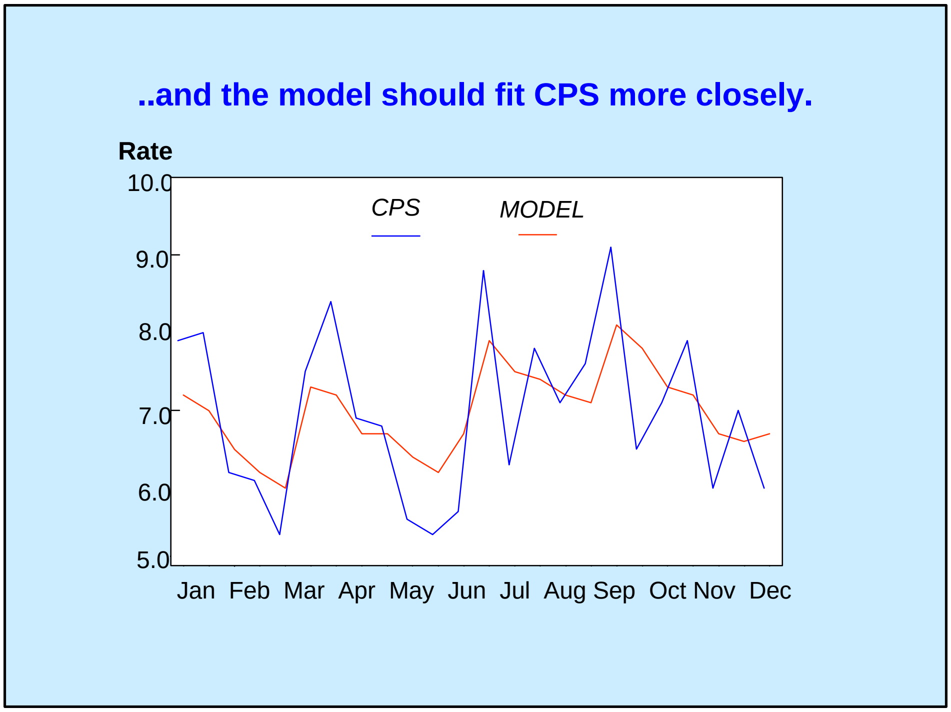
Local Area Unemployment Statistics

Program Manual



U.S. Department of Labor
Bureau of Labor Statistics
August 2010

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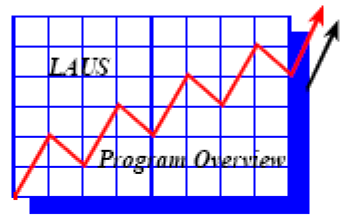


1 Local Area Unemployment Statistics Program: Introduction and Overview

Introduction

The Local Area Unemployment Statistics (LAUS) program is a Federal/State cooperative program which produces monthly employment and unemployment estimates for approximately 7,300 geographic areas. The areas include all States, the District of Columbia, labor market areas (LMAs), counties, cities with a population of 25,000 or more, and all cities and towns in New England, regardless of population. These estimates are key indicators of local economic conditions. They are used by State and local governments for planning and budgetary purposes and as determinants of the need for local employment and training services and programs. LAUS estimates are also used to determine the eligibility of an area for preferential treatment or benefits under various Federal assistance programs.

The underlying concepts and definitions of all labor force data developed by the LAUS program are consistent with those of the Current Population Survey (CPS). Each month, a tiered approach to estimation is used. Model-based estimates are produced for the nine Census divisions that geographically exhaust the nation. (These models use inputs only from the CPS.) The division estimates are benchmarked to the national levels of employment and unemployment each month. The benchmarked division model estimate is then used as the benchmark for the States within the division. Monthly estimates for all States, the District of Columbia, New York City, Los Angeles-Long Beach, and the respective balances of New York and California, are produced using estimating equations based on time series and regression techniques. These “signal plus noise” models combine current and historical data from the CPS, the Current Employment Statistics (CES) program, and State unemployment insurance (UI) systems. Models are also utilized for five additional substate areas and their respective State balances. These models are like the division models in that they only utilize data from the CPS. The areas are: the Chicago-Naperville-Joliet, IL metropolitan division; the Cleveland-Elyria-Mentor, OH metropolitan area; the Detroit-Warren-Livonia, MI metropolitan area; the Miami-Miami Beach-Kendall, FL metropolitan division; and the Seattle-Bellevue-Everett, WA metropolitan division. Area and balance of State models are controlled directly to their respective State totals.

Monthly estimates for Puerto Rico are produced from a survey modeled on the CPS survey. This survey is conducted by Puerto Rico and the resultant estimates are provided to BLS by the Puerto Rican Bureau of Employment Security.

Estimates for substate labor market areas (other than the substate areas noted above) are produced using a standard methodology called the "Handbook" method. This method also uses data from several sources, including the CPS, CES, State UI systems, and the decennial census, to create estimates which are then adjusted to the model-based measures of employment and unemployment for the State or balance-of-State area, as appropriate. Below the labor market area level, estimates are prepared for all counties and cities of 25,000 population, using disaggregation techniques based on decennial and annual population estimates and current UI statistics.

History

Since the late 1940's, sub-national estimates of employment and unemployment have been developed by States under the guidance of the Federal government. These estimates were initially developed in response to a need to quantify labor dislocations during World War II. To meet this need, the War Manpower Commission developed an estimation program to supply figures on local area labor and material shortages. With the end of the war, the Labor Department's Bureau of Employment Security (BES) (now the Employment and Training Administration) took over responsibility for manpower programs.

As the need for more detailed statistics increased, there was also a need for more conformity in estimation in the individual States. In 1950, BES introduced guidelines on estimation, entitled *Techniques for Estimating Employment*, and distributed them to the States. A decade later, revised and updated techniques were republished in the *Handbook on Estimating Unemployment*. This was a 70-step method of estimating procedures for producing unemployment data for the State and for labor market areas. The Handbook method used a series of "building blocks", including establishment employment and unemployment insurance data, to produce unemployment rates equivalent to the Current Population Survey (CPS) but without the high cost of a household survey. As early as 1961, the local area unemployment statistics were used to distribute federal funds to local areas under such programs as the Area Redevelopment Act.

In 1962, the President's Committee to Appraise Employment and Unemployment Statistics (the Gordon Committee) criticized the validity of the Handbook method. This was followed by a series of independent studies comparing the Handbook estimates to those from the Census or from the CPS. They reported the existence of biases and inaccuracies in the Handbook procedures. In 1971, the General Accounting Office, after a year-long audit of two States' unemployment estimating programs, came to the same conclusions, and also found that States were independently introducing their own changes into the Handbook Method. The GAO recommended that the States' procedures be reviewed and monitored in order to reestablish methodological conformity, in that any State change which improved the accuracy and comparability of the statistics be integrated into the methodology, and that "high priority" be given to a general improvement in the estimating methods.

In the early 1970's, BLS was publishing CPS-based labor force statistics for selected States and large areas while BES was publishing Handbook-based statistics for all States and areas. Shortly after the GAO report was issued, OMB, as part of its review of statistical programs in the Department of Labor, determined that general purpose statistics should be the responsibility of BLS. In November 1972, the responsibility for local area unemployment statistics was transferred to BLS. Therefore, beginning in 1973, BLS (with the cooperation of all States) published monthly labor force data for all States and labor market areas, based on the Handbook procedures. One year later, BLS introduced the first major revisions to the program. The revisions had a two-fold purpose: to introduce more conformity between LAUS and CPS data, and to achieve a greater level of consistency of procedures among the States.

The most important of the methodological changes introduced by BLS in November 1973 was the direct use of CPS data. At that time, the CPS was a nationally-based sample. In order to identify usable State CPS data, a reliability criterion was established which required that State samples be sufficiently large to estimate the unemployment level with a coefficient of variation (CV) of no more than 10 percent at one standard error when the unemployment rate is 6 percent. Applying this standard resulted in the identification of 19 States and 30 metropolitan areas for which CPS data could be used directly as the annual average benchmark for 1970-73. During 1974, the Census Bureau revised the procedure used to weight up State sample data to reflect the universe, which resulted in a lower estimated variance. Thus, 8 more States were able to be benchmarked to the CPS. In 1975, BLS contracted with the Census Bureau to expand the sample by 9,000 households in the 23 remaining States and the District of Columbia, so that all States were able to be benchmarked to annual average CPS estimates in 1976.

In 1978, BLS broadened the applicability of the reliability criterion for use of CPS data by also considering monthly data, within the context of a budget proposal to expand the CPS to yield monthly employment and unemployment data for all States by June 1981. Under the expanded criterion, which specified a 10-percent CV on monthly data, monthly CPS levels were used directly for 10 States, 2 areas, and the respective balance-of-State areas. The use of annual average CPS data for the other 28 metropolitan areas was discontinued at that time, so that all substate areas not meeting the monthly reliability criterion would be treated the same. Ultimately, the budget proposal which initiated the direct use of monthly State CPS data was rejected as too costly.

In addition to the 1975-76 increase to the CPS to obtain reliable annual average data for all States, in 1980, 9,000 households were added to improve the reliability in the 40 nondirect-use States. A final sample increase of 6,000 was implemented in 1981 to improve the reliability of data in 30 specific metropolitan areas, 10 of their central cities, and the respective balance-of-State areas. In 1982, however, because of the Federal budget cut, the 1981 supplement and one-half of the 1980 supplement were eliminated.

Another part of the improvement commitment supported by the budget supplements was a $2.5 million effort to standardize and improve the unemployment insurance data which provide the only current unemployment measure for all substate areas. Funding for this initiative was provided to BLS in 1975-76, and used through contracts with States to correct and augment unemployment insurance statistics to make them more appropriate for use in LAUS estimation. Inconsistencies within and among States were eliminated, quality control measures were instituted, and manual tallies were replaced with computer-generated tabulations. Through such improvements as the use of place-of-residence of the claimant, the CPS reference week, and the elimination of claimants who had earnings due to employment, closer adherence to CPS concepts was achieved. The resultant improved unemployment insurance data were implemented in LAUS estimation in 1978.

In July 1985, the CPS redesign based on the incorporation of 1980 Census data was fully implemented. A key part of the redesign involved a change in the sample structure of the CPS from a national-based one to a State-based stratified sample. Based on the redesign and sample restructuring, the reliability of the CPS data at the State level was improved such that the monthly and annual CVs for direct use of CPS data were reduced to 8 percent.

In 1986, updated inputs to the Handbook based on 1980 Census data and a number of important methodological improvements in component groups of the Handbook employed and unemployed not covered by unemployment insurance were implemented.

Also in 1986, efforts to utilize econometric techniques to estimate monthly State employment and unemployment were strengthened. The earliest BLS attempts to explore regression methods go back to the late 1970's. In addition to internal work, BLS contracted with Mathematica Policy Research, Inc., which conducted extensive State and area research using time series and cross-sectional models. Their final report was delivered in 1981.

Internal model research continued through the 1980's, resulting in the identification of variable coefficient models as a possible substitute for the nondirect-use State method used at that time—Handbook estimation adjusted to a six-month moving average CPS. In 1986, the State Research Group was established with participation of selected State research directors to facilitate the evaluation of model-based estimates and to ensure adequate communication of State needs. In 1987, a subsequent group of State research directors was established—the Regression Implementation Committee—to further evaluate the model approach during the one-year period of dual estimation in 1988. In addition to internal and State review of the model-based estimating method, Professor Art Dempster of Harvard University participated in the evaluation effort. The result of these efforts was the implementation of variable coefficient models in the nondirect-use States in January 1989.

Following the incorporation of the first generation of State econometric models, model research continued. Since seasonally-adjusted estimates were available for the direct-use States, efforts were focused on the seasonal adjustment of the model-based State estimates. A BLS workgroup was established in 1989 to evaluate the appropriateness of seasonally adjusting the model estimates using the X-11 ARIMA software used for the CPS. The workgroup's positive report in the fall of 1991 led to the introduction of monthly seasonally-adjusted nondirect-use

State estimates in 1992.

Also in the early 1990's, a major effort was undertaken to improve the model specifications. Research was conducted to explicitly account for important characteristics of the CPS sample design. This led to better control of the effects of sampling error on the model estimates. In addition, a more flexible modeling of State-specific seasonal and trend effects was identified. The resultant second-generation models were referred to as "signal-plus-noise" models. These modeling results were provided to States for comment in early 1993, and were implemented in 1994.

In January 1996, the Bureau reduced the number of households in the Current Population Survey, to accommodate lower funding levels for the labor force program. One result was that the sample was no longer sufficient to provide monthly data directly for the 11 large States, New York City, and the Los Angeles Metropolitan Area. In response, monthly estimation for these States and areas was replaced by the time series modeling methodology used for the other 39 States and the District of Columbia. Also in January 1996, the LAUS substate estimation process was streamlined and input options were eliminated to accommodate the reduction of resources for the LAUS program.

In January 2005, a major program redesign was implemented. Work on the Redesign began in Fiscal Year 2001, with a budget initiative to enhance the quality and quantity of LAUS program statistics. Major LAUS Redesign components included improvements to the method of State and large area estimation, including real-time benchmarking, extending the model-based estimation methodology to additional substate areas, improving the methods used in all other areas through better techniques and input data, and updating the geography with 2000 Census-based areas.

The 2005 LAUS Redesign introduced a new generation of LAUS models. The objectives of the new generation models were to implement direct model-based seasonal adjustment with reliability measures and to improve the benchmarking procedure by incorporating real-time monthly benchmarking. At the same time, 6 area models were introduced along with corresponding Balance of State models.

Real-time benchmarking addressed a number of concerns with the prior generation of LAUS models. It reduced annual revisions by incorporating the CPS benchmark on a current basis. It eliminated prior model biases and benchmarking issues. It ensured that national events and shocks to the economy were reflected in State estimates as they occurred. It also eliminated the discrepancy between the sum-of-States estimates and the national not-seasonally-adjusted totals. Measures of error on the seasonally-adjusted and not-seasonally-adjusted estimates and the over-the-month change were introduced for Division, State, and area model estimates.

The LAUS Redesign also included projects to improve methodology, update geography and decennial census inputs, and improve the quality of inputs to the estimates. The Redesign resulted in significant improvements to the accuracy of the LAUS labor force estimates and has enhanced the ability to analyze labor market behavior. Methodological changes included improvements to substate unemployment estimation that addressed long-standing inadequacies with the previous method and an innovative approach to adjusting place-of-work employment to place-of-residence that more accurately reflects complexities of commuting. In addition, all LAUS areas were revised for the latest OMB and BLS geographic definitions.

In January 2010, BLS introduced additional improvements to the LAUS models with the implementation of smoothed-seasonally-adjusted (SSA) estimates. The SSA estimates incorporate a long-run trend smoothing procedure, resulting in estimates that are less volatile than those previously produced by the LAUS estimation methodology. The use of the SSA methodology is effective in reducing the number of spurious turning points in current estimates. More importantly, SSA estimation can reduce revisions in historical estimates and remove the potential disconnection between historically benchmarked and current estimates.

LAUS Time Line

Year	*Historical Developments Related to LAUS*
1933	Wagner-Peyser Act created Employment Service for registering the unemployed
1935	Social Security Act created Unemployment Insurance System
1937	Works Projects Administration began collecting household-based labor force data
1939-1945	War Manpower Commission developed program on local area labor and material shortages
1943	Responsibility for conducting household survey transferred to Bureau of the Census
1948	Monthly Report on the Labor Force renamed Current Population Survey (CPS)
1950	BES (now ETA) published the manual "Techniques for Estimating Unemployment"
1959	Responsibility for analyzing and publishing CPS data given to BLS; Census continues to conduct survey
1960	Manual for estimating area unemployment revised by BES, title changed to "Handbook on Estimating Unemployment" (70-Step Method)
1961	Area Redevelopment Act passed
1962	President's Committee to Appraise Employment & Unemployment Statistics (Gordon Committee) issued final report
1965	Public Works and Economic Development Assistance Act (PWEDA) passed
1972	Responsibility for LAUS program transferred to BLS
1973	Comprehensive Employment and Training Act (CETA) passed
1975	CPS sample expansion; CPS benchmarking extended to 27 States
1975	First round of UI Database Survey conducted by BLS
1976	CPS benchmarking extended to all States.
1976	Public Works Employment Act (PWEA) passed

LAUS Time Line *(Continued)*

Year	Historical Developments Related to LAUS
1976	National Commission on Employment and Unemployment Statistics (Levitan) and National Commission on Unemployment Compensation established
1978	Direct use of monthly CPS estimates for limited number of States and areas introduced
1978	First UI database improvements incorporated into the Handbook estimates
1979	Levitan Commission issued recommendations
1982	Job Training Partnership Act (JTPA) replaced CETA
1983	Second round of UI Database Survey conducted by BLS
1985	Updated State-based CPS sample based on 1980 Census introduced
1986	Major revisions to Handbook methodology incorporated
1989	Variable coefficient model estimates incorporated for nondirect-use States
1992	Seasonal adjustment of model-based estimates introduced.
1994	Second generation of LAUS models introduced; 1990 Census data incorporated into LAUS; new CPS questionnaire and data collection method implemented
1996	Direct-use States adopt model based estimation method; Handbook method streamlined to 13 steps
2005	Third generation of LAUS models introduced, bringing real-time benchmarking and model-based seasonal adjustment to the methodology; improvements to Handbook methodology include dynamic ratio adjustment for place-of-work employment and updated new and reentrant unemployed estimation; 2000 Census data incorporated into LAUS; and redesign of the State estimating system.
2010	Smoothed-seasonally-adjusted methodology implemented to develop official seasonally-adjusted estimates.

Data Sources

LAUS estimates are designed to reflect the labor force concepts embodied in the Current Population Survey (CPS) through the direct use of CPS data in the estimation and the incorporation of official labor force specifications in other program inputs. This allows LAUS estimates for a State to be conceptually comparable to national labor force measures and to LAUS estimates in other States.

LAUS estimates are based on data from a number of different sources. Primary source data for the creation of employment and unemployment estimates include the CPS; the State Unemployment Insurance (UI) systems; the Current Employment Statistics (CES) program; the Quarterly Census of Employment and Wages (QCEW); and the Decennial Census. Each of these inputs to LAUS estimation is described in detail in the following four chapters. A brief summary of each data source is provided below.

The Current Population Survey

The CPS is a monthly sample survey of households, conducted by the Bureau of the Census under contract to the Bureau of Labor Statistics. It provides statistics on the labor force status of the civilian noninstitutional population 16 years of age and over. CPS data are collected each month from a probability sample of approximately 60,000 occupied households and yield estimates of demographic, social, and economic characteristics of the population.

The Bureau of Labor Statistics has responsibility for analyzing and publishing monthly employment and unemployment estimates for the Nation. CPS data are valuable inputs into LAUS monthly estimation due to their regular availability, comparability across States, and measurable statistical error.

Unemployment Insurance Systems

Under the Unemployment Insurance system, an employer must pay a tax for each employee covered by the State law. Coverage includes the State UI program and the Federal Civilian Employment program. This tax is, in effect, an insurance premium paid to provide for possible unemployment benefits. When any employee in a covered job becomes unemployed, he/she may file an Initial Claim for unemployment insurance benefits. For the first initial claim filed in a year, a monetary determination as to whether the individual is covered by the State unemployment insurance system and, if so, how much in benefits is due, will then be made by the State. A nonmonetary determination follows, looking into the nature of the individual's job loss. A qualifying claimant will receive weekly compensation until the maximum benefit amount is exhausted or until the person returns to work, whichever is earlier.

The UI administrative statistics created in this process are useful for LAUS estimation because they are current and area-specific, allowing for their use in estimation for a great many geographic areas. (See Chapter 3 for more details on the UI system.)

Current Employment Statistics and QCEW

Both the CES and QCEW programs are Federal/State cooperative programs which obtain employment data from employers.

The CES is a voluntary sample survey of establishments covered by State and Federal UI laws. It is designed to produce monthly estimates of employment, hours, and earnings for the Nation, all States, and most major metropolitan areas.

The QCEW data series is a universe of monthly employment and quarterly wage information by industries covered for unemployment insurance, State, and county. Completion of a quarterly contribution report, which is basis for the QCEW, is mandatory in industries covered by Federal and State UI laws.

Data obtained through these two programs are used in LAUS employment estimation. (See Chapter 4 for a detailed discussion of the CES and QCEW programs.)

Decennial Census

The Decennial Census is a universe count of the national population conducted each decade by the Bureau of the Census. The primary purpose of the Decennial Census is to apportion seats to the U.S. House of Representatives and for determining legislative district boundaries. Through the 2000 Census, the census also was a source of socioeconomic and demographic data in great geographic detail.

The LAUS program methodology uses decennial census data, in part, for adjusting establishment-based employment estimates to residency-based employment estimates, for estimating certain employment and unemployment components in the Handbook methodology, and disaggregating or apportioning labor market area estimates to smaller areas. (See Chapter 5 for additional details on the decennial census.)

Summary of Estimation Methods

Monthly estimates of employment and unemployment are prepared for approximately 7, 300 geographic areas, which include all States, labor market areas, counties, cities with a population of 25,000 or more, and all cities and towns in New England, regardless of population. At each level of geographic detail, the estimation method used depends on the most current data sources available.

Statewide Estimates

A tiered approach to estimation is used for statewide estimates. First, model-based estimates are developed for the nine Census Divisions that geographically exhaust the nation using univariate signal-plus-noise models. The Division models are similar to the State models, but do not use unemployment insurance claims or payroll employment as input variables. The Division estimates are benchmarked to the national levels of employment and unemployment on a monthly basis. The benchmarked Division model estimate is then used as the benchmark for the States within the Division.

Monthly labor force estimates for all States, the District of Columbia, the Los Angeles-Long Beach metropolitan area, New York City, and the respective balances of California and New York are based on dynamic time series regression models that utilize data from the CPS, UI systems, and the CES survey. Both smoothed-seasonally-adjusted and not-seasonally-adjusted estimates are produced each month.

The model methodology is also utilized for five additional substate areas and their respective balances of States. These models are univariate, like the Division models, in that they do not use UI or CES inputs. The areas are: the Chicago-Naperville-Joliet, IL metropolitan division; the Cleveland-Elyria-Mentor, OH metropolitan area; the Detroit-Warren-Livonia, MI metropolitan area; the Miami-Miami Beach-Kendall, FL metropolitan division; and the Seattle-Bellevue-Everett, WA metropolitan division. The substate area and the balance-of-State estimates are benchmarked to the statewide control totals of not-seasonally-adjusted employment and unemployment estimates. (See Chapter 6.)

Labor Market Estimates

States are divided into Labor Market Areas (LMAs) which exhaust the geographic area of the State. LMAs are economically integrated geographic areas within which individuals can reside and find employment within a reasonable distance or can readily change employment without changing their place of residence. Other than the areas noted above for which model-based estimation is used, independent estimates are produced for all LMAs using a standard procedure known as the "Handbook" method. The Handbook method yields employment and unemployment estimates for an area comparable to what would be produced by a random sample of households in the area, but without the expense of a CPS-like labor force survey. Handbook estimates are adjusted to add to the LAUS Statewide or balance-of-State employment and unemployment estimates to create the official LMA LAUS estimates. LAUS estimates for sub-LMA areas, such as individual counties within multi-county LMAs and cities with populations over 25,000, are derived by a disaggregation technique using population estimates and UI statistics, or data from the decennial census. (See Chapters 7, 8, and 9 for further details.) At the end of the year, State and substate areas are revised and benchmarked to reflect updated, revised input data and model estimation. (See Chapter 10.)

LAUS Estimation Techniques

Area	Estimation Method
Nine Census Divisions	***Signal-plus-noise univariate regression model***
50 States	***Signal-plus-noise bivariate regression model***
District of Columbia	***Signal-plus-noise bivariate regression model***
New York City, Balance of NY State	***Signal-plus-noise bivariate regression model***
Los Angeles, Balance of California	***Signal-plus-noise bivariate regression model***
Chicago, Cleveland, Detroit, Miami, Seattle and balances of Illinois, Ohio, Michigan, Florida, and Washington	***Signal-plus-noise univariate regression model***
Remaining Labor Market Areas (LMAs)	***Handbook, Additivity***
Sub-LMA Areas	***Disaggregation***

Publication and Administrative Uses of LAUS Estimates

The Bureau of Labor Statistics was given responsibility to develop and publish the most current national, State, and local labor force and unemployment data by the Office of Management and Budget in Statistical Policy Directive No. 11, "Standard Data Source for Statistical Estimates of Labor Force and Unemployment." This directive also requires the use of BLS-developed LAUS estimates by federal executive departments, agencies, and establishments in allocations of federal resources and eligibility determinations. The complete text of this Directive is provided at the end of this Chapter.

Publication of LAUS Estimates

Each month, labor force, employment, unemployment and unemployment rate estimates for all 7,300+ LAUS areas are published by BLS. Data from the LAUS program are made available to users in a variety of ways.

- The monthly "Regional and State Employment and Unemployment" news release is issued approximately two weeks after the national release of labor force data. It presents data for the Census regions and Divisions and all modeled LAUS estimates. The Bureau's public database, LABSTAT (http://www.bls.gov/lau/), is also updated with these estimates at that time.

- The monthly "Metropolitan Area Employment and Unemployment" news release is issued about 12 days after the Region and State release and contains labor force and unemployment estimates for all metropolitan areas in the nation. These estimates are also issued in LABSTAT at that time.

- Estimates of labor force, employment and unemployment for micropolitan areas, small labor market areas, counties, cities with a population of 25,000 or more, and all cities and towns in New England are issued in LABSTAT at the same time the Metropolitan area data are released.

- Annual average employment status data are provided each year in a press release entitled "State and Regional Unemployment, Annual Averages", which is typically issued at the end of February. It presents data on the population, civilian labor force, employed, unemployed, and unemployment rate for regions, Divisions, and States.

- The annual publication, *Geographic Profile of Employment and Unemployment*, provides annual average CPS data for census regions and Divisions, the 50 States and the District of Columbia, 50 large metropolitan areas, and 17 central cities. Data are provided on the employed and unemployed by selected demographic and economic characteristics.

Legislative Uses of LAUS Estimates

Each year, LAUS estimates are used to distribute federal funds to States and areas or make eligibility determinations by a number of federal programs. The following table, "Administrative Uses of Local Area Unemployment Statistics", presents information on the federal programs that utilize LAUS data in allocating funds to States. Allocation formulas, reference periods, and geographic coverage information are presented. Total funding for these programs amounted to $60,849.3 million in Fiscal Year 2009. These programs are described in greater detail in the section below. The American Recovery and Reinvestment Act of 2009 used LAUS data to allocate an additional $144,350.0 million to States. These programs are also described in greater detail below and on the Bureau's website at http://www.bls.gov/lau/lauadminuses.pdf.

ADMINISTRATIVE USES OF LOCAL AREA UNEMPLOYMENT STATISTICS				
User Agency/Program	**2009 Funding (Millions)**	**Geographic Areas Used**	**Reference Period**	**Allocation Formulas/Qualifying Criteria**
Department of Labor – Employment and Training Administration				
Adult Employment and Training Activities (WIA, Title I, Chapter 5)	$ 861.5	States and Areas of Substantial Unemployment (ASUs). An ASU is a contiguous piece of geography consisting of counties, cities, and/or parts of each, with a population of at least 10,000 and an unemployment rate of at least 6.5 percent. (1) (2)	Most recent program year (July -June).	Funding based on the following proportions: 1/3 on relative number of unemployed in ASUs, 1/3 on relative number of excess unemployed (i.e., number of unemployed in excess of 4.5 percent of labor force), and 1/3 on relative number of economically disadvantaged adults, age 22-72. Not more than 0.25% of funds allocated to outlying areas. (Additional minimum/maximum provisions apply.)
Youth Activities (WIA, Title I, Chapter 4)	$ 924.1	States and ASUs. (1) (2) (3)	Most recent program year (July -June).	Funding based on the following proportions: 1/3 on relative number of unemployed in ASUs, 1/3 on relative number of excess unemployed, and 1/3 on relative number of economically disadvantaged youth, age 16-21. Not more than 0.25% of funds allocated to outlying areas. Up to 1.5% allocated to Native American programs. (Additional minimum/maximum provisions apply.)
Dislocated Worker Employment & Training Activities (WIA, Title I, Chapter 5)	$ 1,466.9	States. (1) (2)	Most recent program year (July -June) for unemployed and excess unemployed; most recent calendar year for unemployed 15+ weeks.	Funding based on the following proportions: 1/3 on relative number of unemployed, 1/3 on relative number of excess unemployed, and 1/3 on relative number of individuals unemployed for 15 weeks or more. Not more than 0.25% of funds allocated to outlying areas.
Employment Service Grants to States (Wagner-Peyser Act, Section 5)	$ 703.6	States. (1)	Most recent calendar year.	State funding algorithm is based on the following proportions: 2/3 on relative number of civilian labor force and 1/3 on relative number of unemployed.
Labor Surplus Areas	(4)	Counties, cities over 25,000 population, and county balances. (1)	Most recent 2-calendar year average.	An area qualifies as a LSA when its average unemployment rate is 20 percent or more above the national rate (including Puerto Rico) for the period, with the threshold being no lower than 6 percent and no higher than 10 percent.
Federal-State Extended Unemployment Benefits (EB)	(5)	States. (1)	Most recent 3 months for total unemployment trigger (TUR) or most recent 13 weeks for insured unemployment trigger (IUR).	State is eligible to pay EB if: (1) the seasonally adjusted total unemployment rate (TUR) for the most recent 3-month period is at least 6.5 percent and at least 10 percent above the State TUR for the same 3-month period in either of the 2 preceding years, or (2) the insured unemployment rate (IUR) is at least 5 percent and at least 120 percent of the average IUR for the same 13-week period in either of the 2 preceding years.
Youthbuild Program	$47.0	Census tracts and non-metropolitan counties.	Not specified.	An area can qualify if it is an underserved area, which is defined as an area comprised of census tracts with the following distress criteria: (i) a census tract where the unemployment remains high (50 percent or more above the nation's unemployment rate) and (ii) a census tract where a high rate of poverty persists.
Department of Labor – Veterans' Employment and Training Service				
Jobs for Veterans Act of 2002	$ 168.9	States. (1)	Most recent 3-calendar year average.	Funding is based on an estimate of the number of veterans seeking employment in a State as a portion of the number of veterans seeking employment nationwide.

ADMINISTRATIVE USES OF LOCAL AREA UNEMPLOYMENT STATISTICS				
User Agency/Program	**2009 Funding (Millions)**	**Geographic Areas Used**	**Reference Period**	**Allocation Formulas/Qualifying Criteria**
Department of Agriculture				
The Emergency Food Assistance Program (TEFAP)	$247.9	States. (1) (2) (3)	Ten-month average of most recent October-July period.	Farm commodities and funds are allocated based on the following proportions: 3/5 on relative number of persons in households below the poverty line and 2/5 on relative number of unemployed persons.
Department of Agriculture (cont.)				
Welfare Reform Act—Waivers to Supplemental Nutrition Assistance Program (SNAP) Time Limits for Able-Bodied Adults Without Dependents (ABAWD)	$38,601.0 (6)	States, metropolitan areas (MAs), counties, cities, Indian reservations, and specially designated areas (e.g., census tracts). (1)	Generally 12-month periods, but no less than 3 months for unemployment rate. Not specified for insufficient jobs criterion.	Waivers are granted to areas with: (1) an unemployment rate over 10 percent for the latest 12-month (or 3-month) period or (2) insufficient jobs.
Department of Commerce – Economic Development Administration				
Public Works Program	$129.3	Areas defined by geographic/political boundaries, e.g., States, cities, counties, Indian reservations. (1) (2) (3)	Most recent 24-month average.	An area qualifies if: (1) the unemployment rate is at least one percentage point above the national rate, (2) the per capita income is 80 percent or less of the national average per capita income, or (3) there is a special need, as determined by EDA, arising from actual or threatened severe unemployment or economic adjustment problems resulting from severe short-term or long-term changes in economic conditions.
Economic Adjustment (Title 9)	$35.3	Same geographic areas used in the Public Works Program.	Most recent 24-month average.	Same qualifying criteria used in the Public Works Program.
Department of Defense – Defense Logistics Agency				
Procurement Technical Assistance (PTA)	$12.0	States, counties, and cities. (1)	Most recent 24-month average.	An area qualifies for assistance if: (1) the unemployment rate is at least one percentage point above the national average for the most recent 24-month period or (2) the per capita income is 80 percent or less of the State average.
Department of Health and Human Services				
Temporary Assistance to Needy Families (TANF)—Contingency Fund Drawdown	$272.9 (7)	States, District of Columbia, and Puerto Rico.	Most recent 3-month average.	States and the District of Columbia can access funds if they are determined to be "needy," based on a seasonally adjusted unemployment rate that is at least 6.5 percent for the 3-month period and at least 110 percent of the rate for the corresponding period in either of the 2 preceding calendar years; or if the number of food stamp recipients increases at least 10 percent during the 3-month period. (TANF automatically gives block grants—with an upper limit of $71 million—to Puerto Rico.)
TANF—Exemption from Benefit Limitation	$17,059.0 (8)	States, District of Columbia, and Puerto Rico. (3)	Not available.	In transitioning from welfare to work, individuals are granted up to 6 weeks for which a job search or participation in a workfare program will be counted as work. This time limit is extended to 12 weeks if the State unemployment rate is at least 50 percent above the national rate. (TANF automatically gives block grants—with an upper limit of $71 million—to Puerto Rico.)
Department of Homeland Security – Federal Emergency Management Agency				
Emergency Food and Shelter Program	$200.0	Counties and cities. (1) (2)	Most recent 12-month average.	Jurisdictions qualify for FEMA funding if they meet one of the following criteria: (1) 13,000 or more unemployed with a jobless rate of 4.3 percent or more, (2) 300-12,999 unemployed with a jobless rate of at least 6.3 percent, or (3) 300 or more unemployed with a poverty rate of at least 11 percent.

ADMINISTRATIVE USES OF LOCAL AREA UNEMPLOYMENT STATISTICS				
User Agency/Program	**2009 Funding (Millions)**	**Geographic Areas Used**	**Reference Period**	**Allocation Formulas/Qualifying Criteria**
Department of Homeland Security – U.S. Citizenship and Immigration Services				
Immigration Act of 1990 Employment Creation Visas	(9)	MAs and counties, cities, and sub-areas within MAs.	Most recent calendar year or 12-month average.	Visas are granted for lower investment amounts in rural areas or areas with an unemployment rate at least 50 percent above the national average.
Department of the Treasury				
Riegle Community Development and Regulatory Improvement Act of 1994—Bank Enterprise Awards	$20.0	MAs, counties, cities, and possible sub-areas (e.g., census tracts). (1) (2) (3)	Most recent 12-month period before announcement of application period.	An institution may qualify if part or all of its service area: (1) is located within one unit of general local government, (2) has a contiguous boundary, (3) (a) has a population of 4,000 or more, if in a metropolitan area, or (b) has a population of 1,000 or more, if outside of a metropolitan area, or (c) is entirely within an Indian reservation, (4) has a poverty rate of at least 30 percent, and (5) has an unemployment rate at least 1.5 times the national rate.
Riegle Community Development and Regulatory Improvement Act of 1994—Small and Emerging CDFI Assistance Component (Technical Assistance)	$2.4	Same geographic areas used for the Bank Enterprise Awards.	Same reference period used for the Bank Enterprise Awards.	Same qualifying criteria used for the Bank Enterprise Award.
North American Development Bank (NADBank) Community Adjustment and Investment Program (CAIP)	$22.5 (10)	Communities (discrete geographical areas) i.e., counties, towns, or cities.	Most recent 12-month average.	Eligibility for CAIP financing is based on: (1) significant job loss connected to the passage of NAFTA and (2) an unemployment rate that is at least one percentage point above the national rate over the same time period.
Appalachian Regional Commission				
Area Development Program Distressed Counties Grants	$75.0 (11)	410 counties in 13 states (all of WV and parts of AL, GA, KY, MD, MS, NY, NC, OH, PA, SC, TN, VA); currently 81 counties qualify.	Most recent 3-year average.	An area qualifies as distressed if it ranks in the worst 10 percent of the nation according to ARC's index-based County Economic status Classification System, which compares each county with national averages of: (1) the unemployment rate, (2) per capita market income, and (3) the poverty rate.
Small Business Administration				
Historically Underutilized Business Zones (HUBZones)	(4)	Census tracts, non-metropolitan counties, or Indian reservations. (1)	Most recent annual average for unemployment rate.	An area qualifies if it is: (1) a "qualified" census tract (as defined in the 1986 IRS code), (2) a non-metropolitan county with (a) median household income less than 80% of the statewide non-metropolitan median or (b) an unemployment rate at least 140% of the statewide average or the national average, or (3) within the boundaries of an Indian reservation, or (4) a military base closed under the Defense Base Realignment and Closure Act of 1990.
Total Appropriations	$60,849.3			

NOTE: The term "cities" also includes townships and boroughs in selected states for various programs.
(1) The District of Columbia and Puerto Rico are treated as states.
(2) Outlying areas include the U.S. Virgin Islands, Guam, American Samoa, Northern Marianas Islands, Marshall Islands, Micronesia, and Palau.
(3) Native American Program includes American Indians, Native Hawaiians, and Alaska Natives.
(4) Program does not allocate funds, but gives preference to firms in bidding on federal procurement.
(5) Under regular state extended benefits, monies are not appropriated, but are drawn from the Unemployment Insurance Trust Fund. If the 3-month average TUR is at least 8%, and at least 10% above the TUR for the same 3-month period in either of the 2 preceding years, the State enters a "high unemployment period" during which 20 weeks of EB are payable.
(6) Dollar amount is full cost of Food Stamp Program. Soup Kitchen and Food Bank funding was merged into the Welfare Reform Act of 1996, and, though the program may continue to receive donations, there is no separate funding.
(7) Under the Welfare Reform Act, a Contingency Fund of State Welfare Programs was established, with a $2 billion limit.
(8) Dollar amount is the full cost of the TANF program.
(9) Under the Act, at least 3,000 visas are distributed to eligible immigrant entrepreneurs who establish a new commercial enterprise in a targeted employment area (rural area or area with high unemployment).
(10) Dollar amount is the total amount of capital available to finance adjustment assistance.
(11) At least half of this program funding is allocated to counties classified as distressed.

June 26, 2009

Department of Labor:

Employment and Training Administration, Workforce Investment Act, Title 1, Chapter 5: Adult Employment and Training Activities

Program Objectives: To provide job training and related assistance to economically disadvantaged individuals and others who face significant employment barriers. The ultimate goal of the Act is to move trainees into permanent, self-sustaining employment. This legislation authorizes training and services for the economically disadvantaged and others who face significant employment barriers. Training is afforded through grants to States for local training and employment programs. States are responsible for further allocating funds to their Service Delivery Areas (SDAs) and for overseeing the planning and operation of local programs. Program services include an assessment of an unemployed individual's needs and abilities and a strategy of services such as classroom training, on-the-job training, job-search assistance, work experience, counseling, basic skills training, and support services.

Employment and Training Administration, Workforce Investment Act, Title 1, Chapter 5: Youth Activities

Program Objectives: To serve eligible low-income youth, ages 14-21, who face barriers to employment. Funds for youth services are allocated to State and local areas based on a formula distribution. Service strategies, developed by workforce providers, prepare youth for employment and/or post-secondary education through strong linkages between academic and occupational learning. Local communities provide youth activities and services in partnership with the WIA One-Stop Career Center System and under the direction of local Workforce Investment Boards.

Employment and Training Administration, Workforce Investment Act, Title 1, Chapter 5, Dislocated Workers

Program Objectives: To assist dislocated workers to obtain unsubsidized employment through training and related employment services using a decentralized system of State and local programs. The Workforce Investment Act (WIA) provides funds to States and local substate grantees. The Act authorizes employment and training help for dislocated workers. Workers who lose their jobs in mass layoffs or plant closings and others who have been laid off and are unlikely to return to their jobs can take advantage of early intervention programs, occupational skill training, job search assistance, support services, and relocation assistance.

Employment and Training Administration, Employment Service Grants to States

Program Objectives: The employment service is available to all those legally authorized to work in the United States in order to assist millions of job seekers and employers and, in some areas, provide job training and related services. The Federal Government, through the Employment and Training Administration, provides general direction, funding, and oversight, and also assists the States with programs of test development, occupational analysis, and maintenance of an occupational classification system. The State employment security agencies operate 1,800 local Employment Service offices. In accordance with their needs, States may provide specialized assistance to such groups as youth ages 16-22, women, older workers, persons with disabilities, rural residents and workers, and the economically disadvantaged.

Public employment service assistance, including employability assessment and referral to training if necessary, is free to job seekers. Most of the service's appropriations come from the trust funds collected under the Federal Unemployment Tax Act (FUTA), with a small portion coming from general revenues.

Employment and Training Administration, Labor Surplus Areas

Program Objectives: The purpose in classifying labor surplus areas is to put the Federal Government's procurement contracts into areas of high unemployment. Employers located in these labor surplus areas are eligible for preference in bidding on Federal procurement contracts to direct government funds into areas where people are in the most severe economic need.

Employment and Training Administration, Federal-State Extended Unemployment Compensation Program and Special Temporary Programs

Program Objectives: Unemployment compensation is designed to provide benefits to most workers out of work due to no fault of their own for periods between jobs. Most States pay a maximum of 26 weeks of regular benefits, except for two States-- Massachusetts and Washington --which pay up to 30 weeks of benefits. In periods of very high unemployment in individual States, benefits are payable for as many as 13 additional weeks, up to a maximum of 39 weeks. In 14 States, an additional 7 weeks of benefits are available to unemployed workers, depending on the unemployment rate. Reflecting the high unemployment during the 2008-

2010 recession, the Unemployment Compensation Act Extension Act of 2008 was enacted to provide up to 53 additional weeks of benefits to unemployed workers.

Employment and Training Administration, Workforce Investment Act, Title I, Subtitle D, Section 173A*: Youthbuild Program*

Program Objectives: To provide disadvantaged youth with: the education and employment skills necessary to achieve economic self sufficiency in occupations in high demand and postsecondary education and training opportunities; opportunities for meaningful work and service to their communities; and opportunities to develop employment and leadership skills and a commitment to community development among youth in low-income communities. As part of their programming, YouthBuild grantees will tap the energies and talents of disadvantaged youth to increase the supply of permanent affordable housing for homeless individuals and low-income families and to assist youth develop the leadership, learning, and high-demand occupational skills needed to succeed in today's global economy.

Veterans' Employment and Training Service, Jobs for Veterans Act of 2002

Program Objectives: To establish priority of service for veterans in Department of Labor job training programs. The Act calls for priority of service to be implemented by all "qualified job training programs," defined as "any workforce preparation, development or delivery program or service that is directly funded, in whole or in part, by the Department of Labor.

Department of Agriculture:

Temporary Emergency Food Assistance Program

Program Objectives: To make funds available to States for storage and distribution costs incurred by nonprofit eligible recipient agencies in providing nutrition assistance in emergency situations and to aid needy people. TEFAP was created to reduce excess USDA inventories of surplus commodities in storage, especially dairy products such as cheese, and to supplement the diets of low-income households at a time of high unemployment. Each State designates one agency to administer TEFAP. Once USDA commodities are made available to the States, State officials are responsible for determining the eligibility of organizations to receive the commodities and for entering into agreements regarding allocation and distribution. In addition, States are responsible for determining the types and amounts of each commodity to be made available to organizations within the State.

The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 provided for the absorption of the Soup Kitchens/Food Banks Program into TEFAP and requires the Secretary to use $100 million yearly from the Food Stamp account to purchase commodities for TEFAP during Fiscal Years 1997 through 2002.

Welfare Reform Act—Waivers to Supplemental Nutrition Assistance Program

Program Objectives: The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 limits receipt of Food Stamp benefits to 3 months in a 3-year period for able-bodied adults who are not working, participating in a work program for 20 hours or more each week, or in workfare. States may request a waiver of this provision in areas with an unemployment rate above 10 percent, or for those residing in an area that has an insufficient number of jobs to provide employment for individuals.

In addition, waiver of this provision may also occur in recognition of the challenges that low-skilled workers may face in finding and keeping permanent employment. In some areas, including parts of rural America, the number of unemployed persons and the number of job seekers may be far larger than the number of vacant jobs. This may be especially so for persons with limited skills and minimal work history.

Department of Commerce:

Economic Development Administration, Public Works Program

Program Objectives: To assist States and local areas in the development and implementation of strategies designed to arrest and reverse the problems associated with long-term economic deterioration. Grants are provided to help distressed communities attract new industry, encourage business expansion, diversify local economies, and generate long-term, private sector jobs.

Among the types of projects funded are water and sewer facilities primarily serving industry and commerce; access roads to industrial parks or sites; port improvements; and business incubator facilities. Proposed projects must be located within an EDA-designated Redevelopment Area (RA) or Economic Development Center. Projects in other areas of an EDA-designated Economic Development District are also eligible if they will directly benefit a RA within the District. Projects must be consistent with an approved Overall Economic Development Program (OEDP). An applicant may be a State, political subdivision of a State, Indian tribe, special-purpose unit of government, or a public or private nonprofit organization or an association representing the RA or part thereof.

Economic DevelopmentAadministration, Economic Adjustment

Program Objectives: The Economic Adjustment Program helps States and local areas design and implement strategies for facilitating adjustment to changes in their economic situation that are causing or threaten to cause serious structural damage to the underlying economic base. Such changes may occur suddenly (Sudden and Severe Economic Dislocation) or over time (Long-Term Economic Deterioration) and result from industrial or corporate restructuring, new Federal laws or requirements, reductions in defense expenditures, depletion of natural resources, or natural disasters.

Strategy grants provide the recipient with the resources to organize and carry out a planning process resulting in an adjustment strategy tailored to the particular economic problems and opportunities of the impacted area(s). Implementation grants may be used to support one or more activities identified in an adjustment strategy approved, though not necessarily funded, by EDA. Implementation activities may include, but are not limited to: the creation or expansion of strategically targeted business development and financing programs including grants for revolving loan funds, infrastructure improvements, organizational development, and market or industry research and analysis.

Department of Defense:

Defense Logistics Agency—Procurement Technical Assistance

Program Objectives: To provide funding assistance to civil jurisdictions and nonprofit agencies working with small and disadvantaged businesses. The purpose of the Procurement Technical Assistance (PTA) Cooperative Agreement Program is to (1) generate employment and improve the general economy of a locality by assisting business firms in obtaining and performing under Federal, State, and local government contracts; (2) increase Department of Defense assistance for eligible entities furnishing PTA to business entities; and (3) assist eligible entities in the payment of the costs of establishing and carrying out new PTA programs and maintaining existing PTA programs.

Department of Health and Human Services:

Temporary Assistance for Needy Families—Contingency Fund Drawdown and Exemption from Benefit Limitation

Program Objectives: Temporary Assistance for Needy Families (TANF) was established under the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 to replace Aid to Families with Dependent Children (AFDC), Job Opportunities and Basic Services (JOBS), and Emergency Assistance (EA) programs. In order to receive the new block grants under TANF, States must submit a State TANF plan outlining how they intend to conduct a program that provides assistance to needy families with children and provide parents with job preparation, work, and support services to enable them to leave the program and become self-sufficient. States must submit plans every two years and may submit amendments to keep the plan current whenever they wish to make changes in the administration or operation of the program. In addition to State plans, federally recognized Indian Tribes and approved Alaskan Native entities are also eligible to submit TANF plans to the Secretary of Health and Human Services.

Department of Homeland Security:

Federal Emergency Management Agency: Emergency Food and Shelter Program

Program Objectives: To help meet the needs of hungry and homeless people in the U.S. and its territories by allocating Federal funds to the neediest areas, ensuring quick response, fostering public and private cooperation, ensuring local decision-making, and maintaining minimal reporting. The program began in 1983 to help meet the needs of hungry and homeless people throughout the United States and its territories by allocating federal funds for the provision of food and shelter to those impacted by natural disasters or emergencies. The program is governed by a national board composed of representatives of the American Red Cross; Catholic Charities, USA; Council of Jewish Federations; the National Council of the Churches of Christ in the USA; the Salvation Army; and the United Way of America. The national board awards funds to jurisdictions based upon a formula. Once an award is made, local boards decide which agencies are to receive funds, and then those agencies are paid directly by the national board.

Funds are used to provide the following, as determined by the local board in funded jurisdictions: (1) food, in the form of served meals or groceries; (2) lodging in a mass shelter or hotel; (3) one month's rent or mortgage payment; (4) one month's utility bill; (5) minimal repairs to allow a mass feeding or sheltering facility to function during the program year; and (6) equipment necessary to feed or shelter people, up to $300 per item.

U.S. Citizenship and Immigration Services, Immigration Act of 1990 (IMMACT)

Program Objectives: To make 10,000 visas available each fiscal year to qualified immigrants seeking to enter the U.S. for the purpose of engaging in a new commercial enterprise. The new commercial enterprise may take any lawful business form and must both benefit the U.S. economy and create full-time employment for not fewer than 10 U.S. citizens, lawful permanent residents, or other immigrants lawfully authorized to be employed.

To encourage the establishment of new enterprises in areas which would most benefit from employment creation, 3,000 of the employment creation visas are reserved for qualified aliens who have made investments in "targeted employment areas." Such areas are defined to include rural areas and areas which have experienced high unemployment. A rural area is defined as any area other than an area within a metropolitan statistical area (MSA) or within the outer boundary of any town having a population of 20,000 or more. An area of high unemployment under the Act is defined as a non-rural area with an average unemployment rate of 150 percent of the national average in the previous calendar year. Alternatively, a letter from an authorized body of the government may certify that the area has been designated a high unemployment area.

Department of the Treasury:

Riegle Community Development and Regulatory Improvement Act of 1994, Bank Enterprise Awards Program and Small and Emerging CDFI Assistance Component

Program Objectives: To promote the formation and expansion of Community Development Financial Institutions (CDFIs); promote community lending and investment activities by banks and thrifts; enhance the liquidity of community lending products; and enhance the capacity of CDFIs, banks and thrifts to engage in community lending and investment activities. The Bank Enterprise Award Program is intended to encourage banks and thrifts to invest in and support community development financial institutions and to increase the lending and services provided in distressed communities by traditional financial institutions.

North American Development Bank:

(NADBank), Community Adjustment and Investment Program (CAIP)

Program Objectives: To finance community adjustment and investment efforts throughout the United States and Mexico. U.S. appropriations of $225 million will be leveraged into financing for community adjustment projects that will provide significant benefits for U.S. citizens and businesses. The NADBank's U.S. community adjustment window will operate nationwide to offer financing directly through existing federal credit programs to assist communities and businesses adjust to the new trade environment created by NAFTA.

Appalachian Regional Commission:

Area Development Program Distressed Counties Grants

Program Objectives: The Commission was established to assist in the long-term development of the chronically depressed region. Its main objectives are the creation of new jobs and preparation of the people in the region to compete for jobs wherever they choose to work and live. The non-highway program focuses on the creation of new jobs and private investments and special help for the region's poorest or distressed counties. New jobs and private investment are encouraged by grants supporting education, water and sewer services for industrial and commercial needs, housing, small business development, health care, development of natural resources, and research on topics directly related to the region's economic development.

Small Business Administration:

Historically Underutilized Business Zones (HUBZones)

Program Objectives: To encourage economic development and create jobs in urban and rural communities by providing contracting preferences to small businesses located in and hiring employees from historically underutilized business zones. A firm may be determined to be a qualified HUBZone small business if it is located in a historically underutilized business zone, it is owned and controlled by one or more U.S. citizens, and at least 35 percent of its employees reside in a HUBZone.

Under the program, three types of contracts exist: (1) A competitive contract, in which at least two qualified small businesses are expected to submit offers, and at least one of which will be at a fair market price; (2) a sole source contract , and
(3) an open competition award, in which a qualified HUBZone small business receives a price preference over another non-HUBZone bidder that is other than small.

The American Recovery and Reinvestment Act of 2009

The American Recovery and Reinvestment Act of 2009 (ARRA), also known as the “Recovery Act” or “Economic Stimulus Act”, was designed to stimulate spending and limit economic downturn. It contains funds for both existing programs and new programs. The ARRA allocates approximately $60,849.3 million to States based in whole or in part on LAUS estimates. The details of the ARRA programs are described in the table below and on the Bureau’s website at http://www.bls.gov/lau/lauarra.pdf.

ADMINISTRATIVE USES OF LOCAL AREA UNEMPLOYMENT STATISTICS—American Recovery and Reinvestment Act Allocations

User Agency/Program	Increase from FY 2009 Funding (Millions)	Geographic Areas Used	Reference Period	Allocation Formulas/Qualifying Criteria
Department of Labor – Employment and Training Administration				
Adult Employment and Training Activities (WIA, Title I, Chapter 5)	+$ 500.0	States and Areas of Substantial Unemployment (ASUs). An ASU is a contiguous piece of geography consisting of counties, cities, and/or parts of each, with a population of at least 10,000 and an unemployment rate of at least 6.5 percent. (1) (2)	Average 12-months ending June 30.	Funding based on the following proportions: 1/3 on relative number of unemployed in ASUs, 1/3 on relative number of excess unemployed (i.e., number of unemployed in excess of 4.5 percent of labor force), and 1/3 on relative number of economically disadvantaged adults, age 22-72. Not more than 0.25% of funds allocated to out lying areas. (Additional minimum/maximum provisions apply.)
Youth Activities (WIA, Title I, Chapter 4)	+$ 1,200.0	States and ASUs. (1) (2) (3)	Average 12-months ending June 30.	Funding based on the following proportions: 1/3 on relative number of unemployed in ASUs, 1/3 on relative number of excess unemployed, and 1/3 on relative number of economically disadvantaged youth, age 16-24. Not more than 0.25% of funds allocated to outlying areas. Up to 1.5% allocated to Native American programs. (Additional minimum/maximum provisions apply.)
Dislocated Worker Employment & Training Activities (WIA, Title I, Chapter 5)	+$ 1,250.0	States. (1) (2)	Average 12-months ending Dec. 31.	Funding based on the following proportions: 1/3 on relative number of unemployed, 1/3 on relative number of excess unemployed, and 1/3 on relative number of individuals unemployed for 15 weeks or more. Not more than 0.25% of funds allocated to outlying areas.
Employment Service Grants to States (Wagner-Peyser Act, Section 5)	+$400.0	States. (1)	Average 12-months ending Dec. 31.	State funding algorithm is based on the following proportions: 2/3 on relative number of civilian labor force and 1/3 on relative number of unemployed.
Unemployment Compensation—Emergency Unemployment Compensation (EUC08)	(4)	States. (1)	Most recent 3-month average TUR or a 13-week average IUR.	Expanded emergency unemployment compensation to 20 wks nationwide and created 2nd tier of EUC08 for people in states with high unemployment rates. Tier 2 is available for States with a 3-mo. avg. seasonally adjusted unemployment rate of at least 6% or a 13-wk avg. IUR of at least 4% and provides up to 13 more weeks of EUC08 benefits (for a total of 33 wks).

User Agency/Program	Increase from FY 2009 Funding (Millions)	Geographic Areas Used	Reference Period	Allocation Formulas/Qualifying Criteria
Department of Agriculture				
The Emergency Food Assistance Program (TEFAP)	+$150.0	States. (1) (2) (3)	October 2007 – December 2008	Farm commodities and funds are allocated based on the following proportions: 3/5 on relative number of persons in households below the poverty line and 2/5 on relative number of unemployed persons.
Department of Commerce – Economic Development Administration				
Economic Adjustment (Title 9)	+$150.0	Areas defined by geographic/political boundaries, e.g., States, cities, counties, Indian reservations. (1) (2) (3)	Most recent 24-month period.	An area qualifies if: (1) the unemployment rate is at least one percentage point above the national rate, (2) the per capita income is 80 percent or less of the national average per capita income, or (3) there is a special need, as determined by EDA, arising from actual or threatened severe unemployment or economic adjustment problems resulting from severe short-term or long-term changes in economic conditions. [New legislation authorizes ACS as the primary source of unemployment data, with BLS as the secondary source.]
Department of Health and Human Services – Medicaid				
Federal Medical Assistance Percentage (FMAP)	+87,000.0 (5)	States	Most recent 3-month average between Oct. 2008 and Dec. 2010.	States may receive additional assistance under the FMAP based on high unemployment. Using the State's lowest quarterly average unemployment rate beginning with January 2006 as its base quarter, if the State's rate increased by at least 1.5 percentage points over the base quarter it will receive an additional increase in it federal match rate. There are 3 tiers of increasing federal assistance: Tier 1, 1.5-2.5 pts reduces the state's share by 5.5 %, Tier 2, 2.5-3.5 pts. reduces the state's share by 8.5 %; Tier 3 3.5 pts or more reduces the state's share by 11.5%.
Department of Homeland Security – Federal Emergency Management Agency				
Emergency Food and Shelter Program	+100.0	Counties and cities. (1) (2)	Latest annual average unemployment rate for the area.	Jurisdictions qualify for FEMA funding if they meet one of the following criteria: (1) 13,000 or more unemployed with a jobless rate of 5.0 percent or more, (2) 300-12,999 unemployed with a jobless rate of at least 7.0 percent, or (3) 300 or more unemployed with a poverty rate of at least 11 percent.
Department of Justice				
COPS-- Office of Community Oriented Policing Services	+1,000.0	Counties and municipalities	Jan 2008-Jan. 2009.	Unemployment rates along with population, poverty rates, foreclosure rates and fiscal problems within the geographic area are used to determine qualification for funding.
Department of Transportation				
Federal Highway Administration	+$27,500 (6)	Priority given to projects located in economically distressed areas as defined by section 301 of the Public Works and Economic Development Act of 1965, as amended (42 U.S.C. 3161)	Most recent 24-month period.	An area qualifies if: (1) the unemployment rate is at least one percentage point above the national rate, (2) the per capita income is 80 percent or less of the national average, or (3) there is a special need, as determined by EDA.

User Agency/Program	Increase from FY 2009 Funding (Millions)	Geographic Areas Used	Reference Period	Allocation Formulas/Qualifying Criteria
Department of the Treasury				
Community Development Financial Institution Fund (CDFI)	+$100.0	Same geographic areas used for the Bank Enterprise Awards.	Most recent 12-month period before announcement of application period.	An institution may qualify if part or all of its service area: (1) is located within one unit of general local government, (2) has a contiguous boundary, (3) (a) has a population of 4,000 or more, if in a metropolitan area, or (b) has a population of 1,000 or more, if outside of a metropolitan area, or (c) is entirely within an Indian reservation, (4) has a poverty rate of at least 30 percent, and (5) has an unemployment rate at least 1.5 times the national rate.
Internal Revenue Service—Recovery Zone Development Bonds	+$10,000.0	States, counties, and large ($\geq$100,000 population) municipalities	Dec. 2007-Dec. 08	Allocations to states, then substate areas based on Dec. 2007-Dec. 2008 employment decline.
Internal Revenue Service—Recovery Zone Facility Bonds	+$15,000.0	States, counties, and large ($\geq$100,000 population) municipalities	Dec. 2007-Dec. 08	Allocations to states, then substate areas based on Dec. 2007-Dec. 2008 employment decline.
Total Appropriations	**$144,350.0**			

NOTE: The term “cities” also includes townships and boroughs in selected states for various programs.

(1) The District of Columbia and Puerto Rico are treated as states.
(2) Outlying areas include the U.S. Virgin Islands, Guam, American Samoa, Northern Marianas Islands, Marshall Islands, Micronesia, and Palau.
(3) Native American Program includes American Indians, Native Hawaiians, and Alaska Natives.
(4) Under Emergency Unemployment Compensation, monies are not appropriated, but are drawn from the Federal Unemployment Account under Title 12 of the Social Security Act..
(5) Dollar amount is full cost of allotment for Medicaid.
(6) Dollar amount is full cost of allotment for Federal Highway Administration Highway Infrastructure Investment

Department of Labor:

Employment and Training Administration, Emergency Unemployment Compensation

Program Objectives: Emergency Unemployment Compensation (EUC08) is a 100 percent federally funded program that provides benefits to individuals who have exhausted regular State benefits. The EUC program was created on June 30, 2008, and has since been modified several times.

EUC08 initially made up to 13 additional weeks of benefits available to unemployed individuals who had already collected all regular State benefits for which they were eligible and who meet the eligibility requirements. The program was expanded to 20 weeks nationwide. A second tier of benefits was created for individuals in States with high unemployment rate providing 14 additional weeks of benefits. A third tier was added providing 13 more weeks of benefits to individuals who have exhausted their second tier benefits and a fourth tier provides another 6 weeks of benefits for individuals who have exhausted their third tier.

Department of Health and Human Services:

Federal Medical Assistance Percentage (FMAP)

Program Objectives: The Federal Medical Assistance Percentages (FMAPs) are used in determining the amount of Federal matching funds for State expenditures for assistance payments for certain social services, and State medical and medical insurance expenditures. The FMAPs are calculated annually and are based upon a formula which compares individual state income to the continental United States income in order to determine ratios the federal government will utilize in assisting each State.

The American Recovery and Reinvestment Act of 2009 (ARRA) provides additional funding under the FMAP based on high unemployment. For the recession adjustment period (October 1, 2008, through December 31, 2010), the ARRA provides $87 billion in additional Medicaid funding based on temporary increases in States' Federal medical assistance percentages (FMAP).

Department of Justice:

Office of Community Oriented Policing Services

Program Objectives: The Office of Community Oriented Policing Services (the COPS Office) is the component of the U.S. Department of Justice responsible for advancing the practice of community policing by the nation's state, local, territory, and tribal law enforcement agencies through information and grant resources.

The American Recovery and Reinvestment Act provides $1 billion under the COPS Hiring Recovery Program (CHRP) in grant funding for the hiring and rehiring of additional career law enforcement officers.

Department of Transportation:

Federal Highway Administration

Program Objectives: The Highway Infrastructure Investment appropriation of the American Recovery and Reinvestment Act enables the Federal Highway Administration (FHWA) to give priority to projects that are located in economically distressed areas.

An area is economically distressed if it has a per capita income of 80 percent or less of the national average or has an unemployment rate that is, for the most recent 24-month period for which data are available, at least 1 percent greater than the national average unemployment rate.

Department of the Treasury:

Internal Revenue Service, Recovery Zone Development Bonds and Recovery Zone Facility Bonds

Program Objectives: The American Recovery and Reinvestment Act (ARRA) authorized State and local governments to issue Recovery Zone Bonds. The ARRA imposes a national bond volume cap of $10 billion for Recovery Zone Economic Development Bonds and $15 billion for Recovery Zone Facility Bonds. The volume cap for Recovery Zone Bonds is allocated among the States and counties and large municipalities within the States based on relative declines in employment in 2008.

In general, Recovery Zone Economic Development Bonds may be used to finance certain "qualified economic development purposes" and Recovery Zone Facility Bonds may be used to finance certain "recovery zone property," both as described further herein, generally for use within designated "recovery zones," as described below.

The ARRA defines the term "recovery zone" as (1) any area designated by the issuer as having significant poverty, unemployment, rate of home foreclosures, or general distress; (2) any area designated by the issuer as economically distressed by reason of the closure or realignment of a military installation pursuant to the Defense Base Closure and Realignment Act of 1990; and (3) any area for which a designation as an empowerment zone or renewal community is in effect as of the effective date of ARRA, which effective date is February 17, 2009.

Office of Management and Budget Statistical Policy Directive Number 11

Standard Data Source for Statistical Estimates of Labor Force and Unemployment

Accurate, consistent, publicly available estimates of the labor force and of unemployment in the Nation, the States, and local areas are needed for use in the formulation, implementation, and evaluation of public policy.

1. Source of Data

Federal executive branch departments, agencies, and establishments (hereinafter Federal executive branch agency) shall use the most current national, State, or local area labor force or unemployment data published by the Bureau of Labor Statistics, United States Department of Labor, with respect to all program purposes, including the determination of eligibility for and/or the allocation of Federal resources, requiring the use of such data unless otherwise directed by statute. In order to maintain equity among local areas, comparable data series are to be used for all program purposes. Further, unless otherwise required by statute, data adjusted for seasonal variation shall be used for all program purposes as soon as the Bureau of Labor Statistics shall have published such data for local areas being examined for the program purpose then under consideration.

No Federal executive branch agency shall begin or continue collecting or using State or local area labor force or unemployment data other than that published by the Bureau of Labor Statistics, without the written approval of the Secretary of Commerce. This does not preclude the collection of labor force and unemployment data by the Bureau of the Census, United States Department of Commerce, for the Bureau of Labor Statistics or in its conduct of a periodic or other census or statistical survey, and the publication or other distribution thereof.

2. Data Consistency

With respect to any month, a consistent reference time period shall be used for all national, State, and local area labor force and unemployment data. The data for each State and area, to the extent technically feasible, shall be conceptually consistent with the data for the Nation as a whole and the State totals shall sum, within a range of acceptable sampling error, to the national total.

3. Data Publication

The Bureau of Labor Statistics, in accordance with the provisions of Directive No. 4, Prompt Compilation and Release of Statistical Information, shall establish a monthly release date or dates for all regularly published labor force and unemployment data and shall provide the release date schedule to the Office of Federal Statistical Policy and Standards for publication in the *Statistical Reporter*.

The monthly publication or publications by the Bureau of Labor Statistics shall contain data for the Nation as a whole, and for each State and each local area for which the Bureau of Labor Statistics has agreed to publish data. No agreement between the Bureau of Labor Statistics and other Federal executive branch agencies shall be used to limit the number or types of areas for which data are developed and/or published by the Bureau of Labor Statistics. The data published by area shall at a minimum provide the current estimates before seasonal adjustment, and as soon as possible, and to the extent technically feasible, shall also provide the estimate adjusted for seasonality.

4. Notification of Data Need

Federal executive branch agencies requiring State and local area labor force or unemployment data shall notify the Commissioner, Bureau of Labor Statistics, United States Department of Labor, of their need for such data. The notification shall include information about the purpose for which the data are needed and the specification(s) (i.e., statistical reliability, geographic and other) for the data.

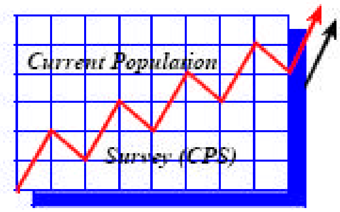
Any Federal executive branch agency required by legislation to use labor force or unemployment data other than that directed by this Directive and any Federal executive branch agency notified by the Commissioner, Bureau of Labor Statistics that the needed data cannot be provided according to specification shall notify the Director, Office of Federal Statistical Policy and Standards, Department of Commerce of that fact. The notification shall include identification of the program(s) affected, legislation implemented by those programs, data specifications, and a report on consultations with the Bureau of Labor Statistics in respect to such data.

5. Definitions

a. Labor Force and Unemployment Data. The term labor force and unemployment data is defined to include all counts or estimates of the total labor force, the civilian labor force, total employment, total civilian employment, total unemployment, and total unemployment rates. The term excludes data, obtained solely from administrative records of the unemployment insurance system, pertaining to counts of covered employment, the insured unemployed, and to the insured unemployment rate.

b. Current Data. For the purposes of this Directive, the term current data means the most current, complete data published by the Bureau of Labor Statistics.

c. Local Area. A local area, for purposes of this Directive, is any geopolitical unit of the United States of America and any combination or part of any such unit or units.



2 Inputs to LAUS Estimation The Current Population Survey

Introduction

The Current Population Survey (CPS) is a monthly survey of about 60,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics. The survey has been conducted since the late 1940's.

The CPS is the primary source of information on the labor force characteristics of the U.S. population. The sample is scientifically selected to represent the civilian noninstitutional population: that is, all persons aged 16 and over, residing in the fifty states and the District of Columbia, not on active duty in the Armed Forces, and not inmates of institutions. The sample is a State-based design, with one-fourth of the households changed each month to avoid placing too heavy a burden on the households selected for the sample. Households are interviewed for four months, are out of the sample for the next eight, then return to the sample for the same four calendar months a year later. Respondents are interviewed to obtain information about the employment status of each member of the household 15 years of age and older in the reference week that includes the 12th of the month. The responses are used to publish data on those aged 16 and over. The sample provides estimates for the nation as a whole and for individual states and other geographic areas that are also used as inputs to LAUS model-based estimation.

Estimates obtained from the CPS include employment, unemployment, earnings, hours of work, and other indicators. They are available by a variety of demographic characteristics including age, sex, race, marital status, and educational attainment. They are also available by occupation, industry, and class of worker. Supplemental questions to produce estimates on a variety of topics including school enrollment, income, previous work experience, health, employee benefits, and work schedules are also often added to the regular CPS questionnaire.

CPS data are used by government policymakers and legislators as important indicators of our nation's economic situation and for planning and evaluating many government programs. They are also used by the press, students, academics, and the general public.

Background

The Current Population Survey grew out of a program set up to provide direct measurement of monthly unemployment, a problem that became especially pressing during the Economic Depression of the 1930's.

The Enumerative Check Census, taken as a part of the 1937 unemployment registration, was the first attempt to estimate unemployment on a nationwide basis using probability sampling. In addition, during the latter half of the 1930s, the research staff of the Work Projects Administration (WPA -- known prior to 1939 as the Works Progress Administration) began developing techniques for measuring unemployment -- first on a local-area basis and then nationally. This research and experience led to the Sample Survey of Unemployment, which the WPA began as a monthly activity in March 1940.

In August 1942, responsibility for the Sample Survey of Unemployment was transferred to the Bureau of the Census, and its title was changed to The Monthly Report on the Labor Force. In 1948, the survey was renamed as the Current Population Survey. BLS assumed responsibility for its publication and analysis in 1959.

The CPS is the oldest continuous household survey in the world. It has been regularly revised and updated to keep pace with statistical and technological advances. Improvements in the identification of households covered in the sample, sample design, methodology, and estimation procedures have been paired with modifications to the questionnaire and interview process to ensure increased reliability and efficiency. In 1957, the Bureau of the Census began seasonally adjusting selected CPS data series with its X-11 model. In January 1989 the X-11 model was updated to the X-11 Auto-Regressive Integrated Moving Average (ARIMA) method, and updated to the X-12 ARIMA method in January 2003.

In response to a need for more data at the subnational level, the 1970s saw a series of State supplementary sample expansions to the CPS which, at that time, employed a national sample design. While the expansions provided reliable CPS annual average benchmarks in all States, they were recognized as inefficient ways of developing State estimates. In 1985, the national-based design was changed to a State-based sampling design. This design required that annual average State estimates fall within specified levels of reliability, while not adversely affecting the reliability of national estimates.

Important technological advances in data collection have also been implemented. In 1994, computer assisted telephone interviewing (CATI) and computer assisted personal interviewing (CAPI), along with a new questionnaire design, were phased in to aid in the collection and reliability of the data.

In September 2000, the Census Bureau began augmenting the monthly CPS sample in 31 states and the District of Columbia, as one part of the Census Bureau's plan to meet the requirements to produce certain estimates for the State Children's Health Insurance Program (SCHIP). States were identified for sample supplementation based on the standard error of their March estimate of low-income children without health insurance. The additional 10,000 households were added to the sample over a 3-month period. Thus, starting with July 2001 data, official labor force estimates from the CPS and Local Area Unemployment Statistics (LAUS) program reflected the expansion of the monthly CPS sample from about 50,000 to about 60,000 eligible households.

Survey Process

The CPS survey process consists of three main phases: sampling, data collection, and estimation.

Sampling involves (1) the determination, stratification, and selection of a sample of Primary Sampling Units (PSUs) and (2) the selection of sample households within those PSUs.

Data collection involves interviewers asking households about activities during the reference week, which contains the 12th day of the month. A questionnaire is completed for each household member 15 years of age and over. BLS determines the labor force status for each household member for the month using the information captured in the questionnaires.

Estimation is the process of taking sample data and making estimates for the population as a whole. Estimation involves a number of steps including data editing and imputation, basic weighting, non-interview adjustment, ratio adjustment, compositing of estimates, and seasonal adjustment.

CPS Labor Concepts and Definitions

In the CPS, persons are classified as "employed," "unemployed," or "not in the labor force." These classifications are mutually exclusive and based on a person's labor force status during the survey reference week (the week including the 12th of the month). Each person is classified according to the activities he/she engaged in during the reference week, as defined by the set of questions in the survey. Respondents are never asked specifically if they are unemployed, nor are they given any opportunity to decide their own labor force status. Interviewers do not determine a person's labor force status. They simply ask the series of questions and record the answers. (See Table 2-1 for the questions used to classify an individual as employed or unemployment.)

Because the CPS is a household-based survey, it counts each person only once, at their place of residence, even if they hold more than one job. It thus produces an unduplicated count of employed and unemployed persons. In contrast, the Current Employment Statistics (CES) survey is establishment-based and designed to produce counts of the number of jobs in the economy: Persons holding more than one job will be counted more than once, depending on which establishments were in the survey sample. Since the LAUS program uses CPS concepts that reflect resident employed, adjustment must be made to make the CES data reflect a residency basis. (See section on Dynamic Residency Ratios.)

Labor Force

Labor force information is obtained after the household and demographic information has been collected. One of the primary purposes of the labor force information is to classify individuals as employed, unemployed, or not in the labor force. Other information collected includes hours worked, occupation, and industry and related aspects of the working population. It should be noted that the major labor force categories are defined hierarchically and, thus, are mutually exclusive. Employed supersedes unemployed which supersedes not in the labor force. For example, individuals who are classified as employed, even if they worked less than full time, are not asked the questions about having looked for work, and hence cannot also be classified as unemployed. Similarly, an individual who is classified as unemployed is not asked the questions used to determine one's primary non-labor market activity. For instance, retired persons who are currently working are classified as employed, even though they have retired from their previous jobs. Consequently, they are not asked the questions about their previous employment nor can they be classified as retired.

The concepts and definitions underlying the collection and estimation of the labor force data are presented below.

Reference week: The CPS labor force questions ask about labor market activities for one week each month. This week is referred to as the "reference week." The reference week is defined as the 7-day period, Sunday through Saturday that includes the 12th of the month. (On occasion, the reference week in November and December may be week including the 5th of the month, to facilitate data collection during the holiday period.)

Civilian Noninstitutional Population (CNP): This includes all persons 16 years of age and older residing in the 50 States and the District of Columbia who are not inmates of institutions (e.g. penal and mental facilities, and homes for the aged) and who are not on active duty in the Armed Forces. This is the base population used in the calculation of labor force statistics.

Employed persons. This includes all persons who, during the reference week, (a) did any work at all (at least 1 hour) as paid employees; worked in their own business, profession, or on their own farm; or who worked 15 hours or more as unpaid workers in an enterprise operated by a member of the family, or (b) were not working, but had jobs or businesses from which they were temporarily absent because of vacation, illness, bad weather, childcare problems, maternity or paternity leave, labor-management dispute, job training, or other family or personal reasons, whether or not they were paid for the time off or were seeking other jobs.

Each employed person is counted only once, even if he or she holds more than one job. Multiple jobholders are counted in the job at which they worked the greatest number of hours during the reference week. (See the discussion of multiple jobholders below.)

Included in the total are employed citizens of foreign countries who are residing in the United States and do not live on the premises of an embassy. Excluded are persons whose only activity consisted of work around their own home (such as housework, painting, repairing, etc.) or volunteer work for religious, charitable, or similar organizations.

The initial survey question, asked only once for each household, inquires whether anyone in the household has a business or farm. Subsequent questions are asked for each household member to determine whether any of them did any work for pay (or profit if there is a household business) during the reference week. If no work for pay or profit was performed and a family business exists, respondents are asked whether they did any unpaid work in the family business or farm. (See Table 2-0 for the questions used to classify an individual as employed.)

Multiple jobholders. Persons who, during the reference week, had either two or more jobs as a wage and salary worker, were self-employed and also held one or more wage and salary jobs, or worked as an unpaid family worker and also held one or more wage and salary jobs. A person employed only in private households (cleaner, gardener, baby-sitter, etc.) is not counted as a multiple jobholder, even if that person works for more than one employer. Working for several employers is considered an inherent characteristic of private household work. Also excluded are self-employed persons with multiple unincorporated businesses and persons with multiple jobs as unpaid family workers.

Since 1994, CPS respondents have been asked questions each month to identify multiple jobholders. First, all employed persons are asked “Last week, did you have more than one job (or business, if one exists), including part-time, evening, or weekend work?” Those who answer “yes” are then asked, “Altogether, how many jobs (or businesses) did you have?” Prior to 1994, this information had only been available through periodic CPS supplements.

Hours of work: Beginning with the CPS redesign in January 1994, both actual and usual hours of work have been collected. Prior to the redesign, only actual hours were requested for all employed individuals.

Published data on hours of work relate to the actual number of hours spent “at work” during the reference week. For example, persons who normally work 40 hours a week, but were off on the Veterans’ Day holiday, would be reported as working 32 hours, even though they wee paid for the holiday. For persons working in more than one job, the published figures relate to the number of hours worked on all jobs during the week.

Data on persons “at work” exclude employed persons who were absent from their jobs during the entire reference week for reasons such as vacation, illness, or industrial dispute. Data also are available on usual hours worked by all employed persons, including those who were absent from their jobs during the reference week.

At work part time for economic reasons. Sometimes referred to as involuntary part-time work, this category refers to individuals who gave an economic reason for working 1 to 34 hours during the reference week. Economic reasons include slack work or unfavorable business conditions, inability to find full-time work, and seasonal declines in demand. Those who usually work part time must also indicate that they want and are available to work full time to be classified as being part time for economic reasons.

At work part time for noneconomic reasons. This group includes those persons who usually work part time and were at work 1 to 34 hours during the reference week for a noneconomic reason. Noneconomic reasons include illness or other medical limitation, childcare problems or other family or personal obligations, school or training, retirement or Social Security limits on earnings, and being in a job where full-time work is less than 35 hours. The group also includes those who gave an economic reason for usually working 1 to 34 hours but said they do not want to work full time or were unavailable for such work.

Usual full- or part-time status. In order to differentiate a person's normal schedule from his/her activity during the reference week, persons are also classified according to their usual full- or part-time statuses. In this context, full-time workers are those who usually work 35 hours or more (at all jobs combined). This group includes some individuals who worked less than 35 hours in the reference week—for either economic or noneconomic reasons—as well as those who are temporarily absent from work. Similarly, part-time workers are those who usually work less than 35 hours per week (at all jobs), regardless of the number of hours worked in the reference week. This may include some individuals who actually worked more than 34 hours in the reference week, as well as those who were temporarily absent from work. The full-time labor force consists of employed persons who usually work full time and unemployed persons who are either looking for full-time work or are on layoff from full-time jobs. The part-time labor force consists of employed persons who usually work part time and unemployed persons who are seeking or are on layoff from part-time jobs.

Prior to 1994, persons who worked full time during the reference week were not asked about their usual hours. Rather, it was assumed that they usually worked full time, and hence they were classified as full-time workers.

Occupation, industry, and class-of-worker. For the employed, this information applies to the job held in the reference week. A person with two or more jobs is classified according to the job at which he or she worked the greatest number of hours. The unemployed are classified according to their last jobs.

The class-of-worker classification assigns workers to one of the following categories: wage and salary workers, self-employed workers, and unpaid family workers. Wage and salary workers are those who receive wages, salary, commissions, tips, or pay in kind from a private employer or from a government unit. The class-of-worker question also includes separate response categories for "private for profit company" and "nonprofit organization" to further classify private wage and salary workers.

Self-employed persons are those who work for profit or fees in their own businesses, professions, trades, or farms. Only the unincorporated self-employed are included in the self-employed category since those whose business are incorporated technically are wage and salary workers because they are paid employees of a corporation.

Unpaid family workers are persons working without pay for 15 hours a week or more on a farm or in a business operated by a member of the household to whom they are related by birth or marriage.

Occupation, industry, and class-of-worker on second job. The occupation, industry, and class-of-worker information for individuals' second jobs is collected in order to obtain a more accurate measure of multiple jobholders, to obtain more detailed information about their employment characteristics, and to provide information necessary for comparing estimates of number of employees in the CPS and in the BLS establishment survey (the Current Employment Statistics).

For the majority of multiple jobholders, occupation, industry, and class-of-worker data for their second jobs are collected only from a quarter of the sample—those in their fourth or eighth monthly interviews. However, for those classified as "self employed unincorporated" on their main jobs, class-of-worker of the second job is collected each month. This is done because individuals who are self-employed unincorporated on both of their jobs are not considered multiple jobholders.

Earnings. Information on what people earn at their main jobs is collected only for those who are receiving their fourth or eighth monthly interviews. This means that earnings questions are asked of only one-fourth of the survey respondents. Respondents are asked to report their usual earnings before taxes and other deductions and to include any overtime pay, commissions, or tips usually received. The term "usual" is perceived by the respondent. If the respondent asks for a definition of "usual", however, interviewers are instructed to define the term as more than half the weeks worked during the past 4 or 5 months. Respondents may report earnings in the time period they prefer—for example, hourly, weekly, biweekly, monthly, or annually. (Based on additional information collected in the interview, earnings reported on a basis other than weekly are converted to a weekly amount in later processing.) Data are collected for wage and salary workers, excluding the self-employed who respond that their businesses were incorporated. These earnings data are used to construct estimates of the distribution of usual weekly earnings and median earnings. Individuals who do not report their earnings on an hourly basis are asked if they are, in fact, paid at an hourly rate and if so, what the hourly rate is. The earnings of those who reported hourly and those who are paid at an hourly rate are used to analyze the characteristics of hourly workers, for example, those who are paid the minimum wage.

Unemployed persons. All persons who were not employed during the reference week but were available for work (excluding temporary illness) and had made specific efforts to find employment some time during the 4-week period ending with the reference week are classified as unemployed. Individuals who were waiting to be recalled to a job from which they had been laid off need not have been looking for work to be classified as unemployed.

A relatively minor change was incorporated into the definition of unemployment with the implementation of the 1994 redesign. Under the formal definition, persons who volunteered that they were waiting to start a job within 30 days (a very small group numerically) were classified as unemployed, whether or not they were actively looking for work. Under the new definition, by contrast, people waiting to start a new job must have actively looked for a job within the last 4 weeks in order to be counted as unemployed. Otherwise, they are classified as not in the labor force

As the definition indicates, there are two ways people may be classified as unemployed. They are either looking for work (job seekers) or they have been temporarily separated from a job (persons on layoff). Job seekers must have engaged in active job search during the above mentioned 4-week period in order to be classified as unemployed. Active methods are defined as job search methods that have the potential to result in a job offer without any further action on the part of the job seeker. Examples of active search methods include going to any employer directly or to a public or private employment agency, seeking assistance from friends or relatives, placing or answering ads, or using some other active method. Other active methods include being on a union or professional register, obtaining assistance from a community organization, or waiting at a designated labor pickup point. Passive methods, which do not qualify as job search, include reading (as opposed to answering or placing) “help wanted” ads and taking a job training course. The response categories for active and passive methods are clearly delineated in separately labeled columns on the interviewers’ computer screens.

Job search methods are identified by the following questions: “Have you been doing anything to find work during the last 4 weeks?” and “What are all the things you have done to find work during the last 4 weeks?” To ensure that respondents report all of the methods of job search used, interviewers ask “Anything else?” after the initial or subsequent job search method is reported.

Persons on “layoff” are defined as those who have been separated from a job to which they are waiting to be recalled (i.e., their layoff status is temporary). In order to measure layoffs accurately, the questionnaire determines whether people reported to be on layoff did in fact have an expectation of recall; that is, whether they had been given an indication that they would be recalled within the next 6 months. As previously mentioned, persons on layoff need not be actively seeking work to be classified as unemployed. (See Table 2-0 for the questions used to classify an individual as unemployed.)

Reasons for unemployment. Unemployed individuals are categorized according to their status at the time they became unemployed. The categories are:

1) *Job losers*: a group comprised of (a) persons on temporary layoff from a job to which they expect to be recalled and (b) permanent job losers, whose employment ended involuntarily and who began looking for work.
2) *Job leavers*: persons who quit or otherwise terminated their employment voluntarily and began looking for work.
3) *Persons who completed temporary jobs*: persons who began looking for work after their job ended.

4) *Reentrants*: persons who previously worked but were out of the labor force prior to beginning their job search.
5) *New entrants*: persons who never worked before and who are entering the labor force for the first time.

Each of these five categories of unemployed can be expressed as a proportion of the entire civilian labor force or as a proportion of the total unemployed.

Prior to 1994, new entrants were defined as job seekers who had never worked at a full-time job lasting 2 weeks or longer; reentrants were defined as job seekers who had held a full-time job for at least 2 weeks and had then spent some time out of the labor force prior to their most recent period of job search. These definitions have been modified to encompass any type of job, not just a full-time job of at least 2 weeks duration.

Duration of unemployment. The duration of unemployment is expressed in weeks. For individuals who are classified as unemployed because they are looking for work, the duration of unemployment is the length of time (through the current reference week) that they have been looking for work. For persons on layoff, the duration of unemployment is the number of full weeks (through the reference week) they have been on layoff.

Not in the labor force. Included in this group are all persons in the civilian noninstitutional population who are neither employed nor unemployed. Information is collected on their desire for and availability to take a job at the time of the CPS interview, job search activity in the prior year, and reason for not looking in the 4-week period prior to the survey week. This group includes *discouraged workers*, defined as persons not in the labor force who want and are available for a job and who have looked for work sometime in the past 12 months (or since the end of their last job if they held one within the past 12 months), but are not currently looking, because they believe there are no jobs available or there are none for which they would qualify. (Specifically, the main reason identified by discouraged workers for not recently looking for work is one of the following: Believes no work available in line of work or area; could not find any work; lacks necessary schooling, training, skills, or experience; employers think too young or too old; or other types of discrimination.)

Data on a larger group of persons outside the labor force, one that includes discouraged workers as well as persons who desire work but give other reasons for not searching (such as childcare problems, family responsibilities, school, or transportation problems) are also published regularly. This group is made up of persons who want a job, are available for work, and have looked for work within the past year. This group is generally described as having some marginal attachment to the labor force.

Prior to January 1994, questions about the desire for work among those who were not in the labor force were asked only of a quarter of the sample. Since 1994, these questions have been asked of the full CPS sample. Consequently, since 1994, estimates of the number of discouraged workers as well as those with a marginal attachment to the labor force are published monthly rather than just quarterly.

Estimates of the number of employed and unemployed are used to construct a variety of measures. They include:

- Labor force: The labor force consists of the all persons 16 years of age and older classified as employed or unemployed in accordance with the criteria described above.
- Unemployment rate: The unemployment rate represents the number of unemployed as a percentage of the labor force.
- Labor force participation rate: The labor force participation rate is the proportion of the age-eligible population that is in the labor force.
- Employment-population ratio: The employment-population ratio represents the proportion of the age-eligible population that is employed.

The CPS Survey Questionnaire for Employed and Unemployed

1. Does anyone in this household have a business or a farm?
2. LAST WEEK, did you do ANY work for (either) pay (or profit)?

   (If 1 is "yes" and 2 is "no", ask 3. If 1 is "no" and 2 is "no", ask 4.)

3. LAST WEEK, did you do any unpaid work in the family business or farm?

   (If 2 and 3 are both "no", ask 4.)

4. LAST WEEK, (in addition to the business) did you have a job, either full or part time? Include any job from which you were temporarily absent.

   (If 4 is "no", ask 5.)

5. LAST WEEK, were you on layoff from a job?

   (If 5 is "yes", ask 6. If 5 is "no", ask 8.)

6. Has your employer given you a date to return to work?

   (If "no", ask 7.)

7. Have you been given any indication that you will be recalled to work within the next 6 months?

   (If 7 is "no", ask 8.)

8. Have you been doing anything to find work during the last 4 weeks?

   (If "yes", ask 9).

9. What are all of the things you have done to find work during the last 4 weeks?

Individuals are classified as employed if they say "yes" to questions 2, 3 (and work 15 hours or more in the reference week or receive profits from the business/farm), or 4.

Individuals who are available to work are classified as unemployed if they say "yes" to 5 and either 6 or 7, or if they say "yes" to 8 and provide a job search method that could have brought them into contact with a potential employer in 9.

Reliability of CPS Estimates

The two types of errors possible in an estimate based on a sample survey are sampling and nonsampling.

Nonsampling error arises from errors in the collection and processing of data. These errors -- including response variability, response bias, other types of bias, and processing error -- occur in complete censuses as well as sample surveys. In some instances, nonsampling error can be more tightly controlled. For example, in a well-conducted survey, it is feasible to collect and process the data more skillfully. Reinterview programs are often used to measure response variability and response bias. However, estimation of other types of bias is very difficult and often adequate measures of bias cannot be made.

Sampling error occurs because only a sample of the population has been surveyed. Standard errors can be estimated when the probability of selection of each member of a population can be specified. These standard errors can be used to compute confidence intervals that indicate the range within which the true population values likely lie.

Nonsampling Error

The full extent of nonsampling error is unknown, but special studies have been conducted to quantify some sources of nonsampling error in the CPS. The effect of the error has been found to be small on estimates of change, such as month-to-month change; however, estimates of monthly levels are generally more severely affected.

Some specific types of nonsampling errors affecting the CPS include response error, nonresponse error, error in independent population controls, processing error, and coverage error.

• *Response Error.* This error arises when survey respondents' answers are incomplete or inconsistent with reality. It includes the inability to obtain information about all persons in the sample, differences in the interpretation of questions, inability or unwillingness of respondents to provide correct information, and inability to recall information. These errors are studied by means of a reinterview program: A random sample of each interviewer's work is inspected through reinterview at regular intervals. This program is used to estimate various sources of error as well as to evaluate and control the work of the interviewer. Results indicate that the data published from the CPS are subject to moderate systematic biases.

• *Nonresponse Error.* This error arises in situations when respondents fail to answer some or all of the questions. In a typical month, about 7-8 percent of occupied sample households are not interviewed because residents are not at home, refuse to cooperate, or are unavailable. Therefore, sample weights are adjusted to account for households not interviewed. To the extent that interviewed households differ from those not interviewed, the estimates are biased. Similarly, for a relatively few households, some questions are left unanswered, either because respondents were unable or unwilling to answer or because of interviewer error. Entries for omitted items are usually imputed on the basis of the distributions of these items for persons of similar demographic characteristics.

• *Independent Population Controls.* These are used to account for population changes in intercensal years. They are extrapolated using the 2000 Census as a base, using data on births, deaths, and net migration. Although the use of independent population estimates in the estimation procedure substantially improves the statistical reliability of many CPS estimates, the independent estimates are also subject to error in both the base and the change factors. Base errors may arise because of under-enumeration of certain population groups, errors in age reporting in the last census, or similar problems in the components of population change (mortality, immigration, etc.) since that date. Also, errors in estimated components of change since the last census affect the accuracy of intercensal population estimates.

• *Processing Error* Although the CPS employs computer-assisted interviewing and a quality control program on coding and all other phases of data processing, some processing error is inevitable in large surveys. Net CPS processing error is probably negligible relative to sampling error and other nonsampling errors.

• *Coverage Error.* Undercoverage in the CPS results from missed housing units and missed persons within sample households. The CPS covers about 92 percent of the decennial census population. It is known that the CPS undercoverage varies with age, sex, race, and Hispanic origin. Generally undercoverage is larger for men than for women and larger for non-whites than for whites.

Ratio adjustment to independent age-sex-race-origin population controls, described later in the Estimation section, partially corrects for the biases due to survey undercoverage. However, biases exist in the estimates to the extent that missed persons in missed households or missed persons in interviewed households have different characteristics than interviewed persons in the same age-sex-race-origin group.

Sampling Error

When a sample is surveyed, estimates are derived for the whole population, based on the sample data and current statistical theory. Since these results are estimates, they differ from the true population values that they mean to represent. This is <u>sampling error</u>, and the variability of this sampling error is measured by the standard error of the estimate. A given survey design is considered to produce unbiased estimates if the average of the estimates from all possible samples would yield, hypothetically, the true population value. If this is the case, the sample estimate and its standard error can be used to construct approximate confidence intervals – ranges of values – that include the true population value with known probabilities. If the process of selecting a sample from the population were repeated many times and an estimate and its standard error calculated for each sample, then:

1.) Approximately 68 percent of the intervals from one standard error below the estimate to one standard error above the estimate would include the true population value.

2.) Approximately 90 percent of the intervals from 1.6 standard errors below the estimate to 1.6 standard errors above the estimate would include the true population value.

3.) Approximately 95 percent of the intervals from two standard errors below the estimate to two standard errors above the estimate would include the true population value.

Although the estimating methods used in the CPS do not produce unbiased estimates, biases for most estimates are believed to be small enough so that these confidence interval statements are approximately true. Generalized variance function techniques are used to calculate sets of standard errors for various types of labor force characteristics. Standard errors computed from these methods reflect contributions from sampling errors and some kinds of nonsampling errors and indicate the general magnitude of an estimate's standard error rather than its precise value. Standard error tables for national estimates are provided in the monthly publication Employment and Earnings, with State and Regional estimates provided on the LAUS website.

CPS Monthly and Annual Reliability Criterion

Data reliability is measured by calculating the coefficient of variation (CV) of the unemployment level; the CV is defined as the standard error of the estimate divided by the estimate itself. The CPS sample design takes into consideration both national and State reliability. The sample design, including the SCHIP expansion, maintains a 1.8 percent CV on national monthly estimates of unemployment level. A 6-percent unemployment rate is assumed. This means a month-to-month change in the unemployment rate must be at least 0.2 percent to be considered statistically significant at a 90-percent confidence level.

For each of the 50 States and for the District of Columbia, the design maintains a CV of at most 8 percent on the annual average estimate of unemployment level, again assuming a 6-percent unemployment rate. Due to the national reliability criterion, samples for the more populous States are substantially larger than the

State design criterion requires. As a result, annual average unemployment estimates for large States such as California, Florida, New York, and Texas, for example, carry a CV of less than 5 percent.

Sample Design

Introduction

The CPS sample design has undergone several changes throughout its history. After each decennial census, the sample is redesigned and a new sample selected. Also, occasionally the number of sample areas and of sample persons is changed. Most changes are made to improve the efficiency of the sample design, increase the reliability of the sample estimates, or control cost. The current CPS sample is designed to produce reliable monthly unemployment estimates for the nation and reliable annual average estimates for the 50 States and the District of Columbia.

In the first stage of sampling, the 754 sample areas, called Primary Sampling Units (PSUs), are chosen via stratification (see below). In the second stage, Ultimate Sampling Unit (USUs) clusters, composed of about four housing units each, are selected. Sample sizes and sampling rates are determined by the specified reliability requirements. While the best estimates of month-to-month change would be obtained by surveying the same households each month, indefinitely surveying a single sample of households would inevitably lead to respondent ‘fatigue,’ increasing the probability of respondent refusals and errors. Therefore, a sample rotation scheme is used, with chosen households interviewed for eight out of sixteen months, and then leaving the sample.

Selection of Primary Sampling Units (First Stage of Sampling)

The entire area of the United States, consisting of 3,141 counties and independent cities, is divided into 2,007 PSUs. Each PSU consists of a county or group of contiguous counties and is defined within State boundaries.

Metropolitan areas within a State are used as a basis for forming many PSUs. Outside of metropolitan areas, two or more counties are normally combined to form PSUs except where the geographic area of the sample county is too large. Combining counties to form a PSU provides greater heterogeneity; a typical PSU includes urban and rural residents of both high and low economic levels, and encompasses, to the extent feasible, diverse occupations and industries. Another important consideration is that the PSU be sufficiently compact so that, with a small sample spread throughout, it can be efficiently canvassed without undue travel cost.

Stratification of Primary Sampling Units

The 2,007 PSUs are grouped into strata within each State. Then, one PSU is selected from each stratum with the probability of selection proportional to the population of the PSU. Nationally, there are a total of 428 PSUs in strata by themselves. These strata are self-representing and generally are the most populous PSUs in each State. The 326 remaining strata are formed by combining PSUs that are similar in such characteristics as unemployment, proportion of housing units with three or more persons, number of persons employed in various industries, and average monthly wages for various industries. The single PSU randomly selected from each of these strata is non-self-representing because it represents not only itself but all PSUs within the stratum. The probability of selecting a particular PSU in a non-self-representing stratum is proportional to its 2000 population. For example, within a stratum, the chance that a PSU with a population of 50,000 would be selected for the sample is twice that for a PSU having a population of 25,000.

Selection of Households Using Census Data

Because the sample design is State-based, the sampling ratios differ by State and depend on State population sizes as well as national and State reliability requirements. The State sampling ratios range roughly from 1 in every 200 households to 1 in every 3,000 households. The sampling ratio used within a sample PSU depends on the probability of selection of the PSU and the sampling ratio for the State.

The 2000 within-PSU sample design uses census block level data from the 2000 decennial census. Normally, census blocks are bounded by streets and other prominent physical features such as rivers or railroad tracks. County, minor civil division, and census place limits also serve as block boundaries. In cities, blocks can be bounded by four streets and be quite small in land area. In rural areas, blocks can be several square miles in size.

For purposes of sample selection, census blocks are grouped into three strata: “unit”, “group quarters”, and “area”. The unit stratum contains regular housing units with addresses that are easy to locate (e.g., most single family homes, townhouses, condominiums, apartment units, and mobile homes). The group quarters stratum contains housing units where residents share common facilities or receive formal or authorized care or custody. These two strata exist primarily in urban and suburban areas. The area stratum contains blocks with addresses that are more difficult to locate. Area blocks exist primarily in rural areas.

These strata are then sampled using sampling intervals which preserve each individual State’s sampling ratio. To reduce the variability of the survey estimates and to ensure that the within-PSU sample reflects the demographic and socioeconomic characteristics of the PSU, blocks within the unit, group quarters, and area strata are sorted using geographic and block-level data from the census. Examples of the census variables used for sorting include proportion of minority renter-occupied housing units, proportion of housing units with female householders, and proportion of owner-occupied housing units.

By grouping, sorting, and systematically sampling blocks in these strata, the sampling process insures that the ultimate sampling units (USUs) selected within the PSU reflect the demographic and socio-economic characteristics of the PSU as a whole. This design reduces the within-PSU variance, compared to the variances associated with a simple random sample of units within the PSU.

Most USUs are formed of four housing unit addresses that are in the same general neighborhood or block. There is some variation in the number of addresses in a USU, primarily because the number of addresses in a block may not be evenly divisible by 4. The number of housing units found in a USU may be more or fewer than the number of addresses for the following reasons: major building or demolition within the area since the census, left over housing units that did not fit into other USUs, and rezoning may have created more units where previously there had been less. Special procedures are used in the group quarters strata for identifying approximate housing unit equivalents and USUs. It is more efficient in terms of cost (interviewer travel time and time spent locating housing units) to sample compact clusters housing units (USUs), as opposed to sampling individual housing units. Due to privacy concerns, housing units within a USU are not adjacent to each other, thus making it more difficult to uncover the identity of individual respondents.

The USUs for the CPS sample are systematically selected from sorted lists of blocks and housing units prepared as part of the decennial census. It is both unfair and impractical to have a single panel of housing units in the sample for an entire decade that follows. Instead, USUs are rotated in-and-out of the CPS sample on a fixed schedule; all housing units in a sampled USU come into the sample and are retired from the sample at the same time. A particular USU is rotated into the sample for 4 consecutive months, is temporarily rotated out for 8 months, is rotated back in for another 4 consecutive months, then is again rotated out and permanently retired from the sample. It is advantageous to replace a USU that is rotated out with a USU that is comprised of housing units from the same general neighborhood This is accomplished by initially setting the systematic sampling parameters in each State and stratum (unit, group quarters, area) so that USUs are selected that include a sufficient number of households for a single monthly sample for that State. Within a block stratum, for each sampled USU, the ensuing 20 USUs are also sampled. These 21 USUs are called a hit string. When a USU in a hit string is rotated out of the sample, it is replaced by rotating in another USU from the same hit string. That is, when one set of housing units drops out of the sample rotation, another set from the same neighborhood is ready to take its place.

Units in the three strata described above all existed at the time of the 2000 decennial census. A sample of building permits, collected by the States in an ongoing cooperative procedure, is included in the CPS to represent housing units built after the decennial census. Adding these newly-built units keeps the sample up-to-date and representative of the population. It also helps to keep the sample size stable. Over the life of the sample, the addition of newly-built housing units compensates for the loss of “old” units which may be abandoned, demolished, or converted to nonresidential use. It is common for State samples to slowly grow over a decade, and systematic "sample maintenance reductions" are sometimes needed to return State samples to their budgeted sizes.

CPS State Sample Sizes and Sampling Ratios

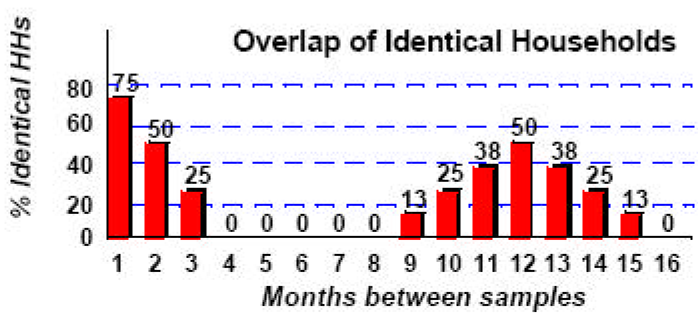
The CPS sample is selected from within the PSUs identified above. The CPS has a State-based sample design which allocates the sample in such a way that each of the States and the District of Columbia has the same minimum target reliability on their annual average estimates. A national reliability criterion is also set. Because the sample design is State-based, the sampling ratio differs by State and depends on the various demographic characteristics of each State. The State sampling ratios vary from approximately 1 in every 200 to 1 in every 3,000 households in each stratum of the State. The sampling ratio is occasionally modified slightly to hold the size of the sample relatively constant given the overall growth of the population (this is called “sample maintenance reduction”). In determining sample size, a number of factors are taken into account including population density, average household size, and variance in the unemployment rate across areas in the State. The preliminary sample size estimate for households is adjusted by a factor which increases the sample size to account for the normal sample loss of eligible households that occurs due to household vacancies, buildings demolished, etc.

The probability design of the CPS is self-weighting, meaning that each housing unit in a State is given an equal chance of selection. The sampling ratio used within a sample PSU depends on the probability of selection of the PSU and the sampling ratio for each State. In a sample PSU with a probability of selection of 1 in 10 and a state sampling ratio of 3,000, a within-PSU sampling ratio of 1 in 300 achieves the desired overall ratio of 1 in 3,000 for the stratum.

The Sample Rotation Design

The best estimates of month-to-month change would be obtained from 100-percent sample overlap, surveying the same households every month. However, indefinitely surveying a single sample of households would lead to respondent "fatigue" or "exhaustion" and the increasing the probability of refusals and respondent errors.

Therefore, part of the sample is changed each month. Each monthly sample is divided into eight representative subsamples, or rotation groups. A given rotation group is interviewed for a total of 8 months, divided into two equal periods. It is in the sample for 4 consecutive months, leaves the sample during the following 8 months, and then returns for another 4 consecutive months. In any one month, one of the eight rotation groups is in the first month of enumeration, another rotation group is in the second month, and so on. Under this system, 75 percent of the sample is common from month to month and 50 percent from year to year for the same month. (See following chart.) This procedure provides a substantial amount of month-to-month and year-to-year overlap in the sample, thus providing better estimates of change and reducing discontinuities in the series of data without burdening any specific group of households with an unduly long period of inquiry. However, the overlap creates a correlated error which must be taken into account in the State-estimation modeling process. (See Chapter 6.)



The rotation plan used for the CPS sample also introduces nonsampling error, referred to as month-in-sample bias. This bias generally refers to the observed phenomenon of rotation groups differing in responses, when theoretically they should have approximately equal measurements. The 4-8-4 rotation pattern adds an additional dimension to the month-in-sample bias because of factors related to the large overlap of households from one month to the next and one year to the next. Samples with large numbers of overlapping units should have a high degree of consistency with regard to interview responses. However, in repeated CPS interviews, the later interviews yield consistently higher or lower estimates than earlier interviews. Unemployment data exhibit the most pronounced month-in-sample bias, with various subgroups, such as nonwhites and females, exhibiting more bias than the general population. Historically, the following national trends have been fairly regularly demonstrated:

• *The unemployment rate drops from month-in-sample one to month-in-sample two and from month-in-sample five to month-in-sample six.*

• *There is an overall trend for the rate to decline from month-in-sample one to month-in-sample eight.*

• *There is an increase, or surge, in the unemployment rate from month-in-sample three to month-in-sample four and from month-in-sample seven to month-in-sample eight.*

• *There is general agreement that the month-in-sample four and eight "surges" are attributable to the probing questions on discouraged workers asked in those months. These questions apparently elicit information that changes previous negative responses regarding the "looking for work" questions, to positive responses. Thus, more unemployed persons are identified. This probing was formerly done in months-in-sample one and five, and significant changes in reported responses result when the shift was made to months-in-sample four and eight.*

It has also been observed that CPS sample responses vary from one month to the next. There are a number of theories to explain this phenomenon. One suggests that for a variety of reasons, sub-groups of potential respondents are successfully interviewed at different rates. The degree of differential response can change from one month-in-sample to another. For example, suppose that employed persons living alone are harder to find than other persons in month-in-sample one (since, often, no one is at home when the interviewer calls). If arrangements are made with those contacted in month-in-sample one to retain them in month-in-sample two, then month-in-sample two could have a better representation of employed persons living alone, relative to other persons, than month-in-sample one.

Because month-in-sample bias is believed to exist in the CPS, it is controlled for in the compositing portion of the estimation process covered later in this chapter. When the two components of the composite estimate are combined, a month-in-sample bias adjustment is added to adjust for the relative bias associated with month-in-sample.

Data Collection

The housing units which belong to the selected USUs (Ultimate Sampling Units) are called "designated" households. The list of designated households is a preliminary list of potential addresses to be sampled. Nationally, there are approximately 72,000 designated households on this list. This list of designated household units is then refined by adding households found by reviewing building permits and subtracting housing units that have been demolished, converted to business use, relocated, or are in the sample by mistake (i.e., units are nonresidential). The result of this refining process is a list of "assigned" households.

This group of assigned households undergoes further refinement when interviewers canvas the areas removing vacant housing units, vacant sites for tents or mobile homes, units occupied by persons with usual residence elsewhere, or units converted to temporary nonresidential use. These are called "Type B" noninterviews. An additional noninterview type, "Type C", occurs when the CPS collector finds a building demolished, converted to permanent nonresidential use, or moved from a site.

The remaining households are called "eligible" households. There are approximately 60,000 eligible households nationally.

CPS data are collected each month during the week containing the 19th day of the month. Respondents are asked about their labor force activity for the entire preceding week—the week containing the 12th. A week is defined as Sunday through Saturday. The data are collected by approximately 1,500 interviewers.

Personal visits are preferred in the first month in which the household is in the sample. In other months, the interview generally is conducted by telephone. Approximately 70 percent of the households in any given month are interviewed by telephone. A portion of the households (10 percent) is interviewed via computer-assisted telephone interviewing (CATI), from three centralized telephone centers (located in Hagerstown, MD; Jeffersonville, IN; and Tucson, AZ) by interviewers who also use a computerized questionnaire.

On the first visit, the interviewer prepares a roster of the household members and completes a questionnaire for each person 15 years of age and older. The roster is updated with each visit. The interviewer does not ask directly if the person is employed, unemployed, or not in the labor force because of potential bias from the different interpretations these terms might have. Instead, a series of questions are asked that allow a basic assignment to one of these three categories to be made. A Computer Assisted Personal Interview (CAPI) is conducted by the interviewers during each visit. Each interviewer has a laptop computer with a computerized version of the CPS questionnaire. When the interviewer has completed a day's interviews, the data are transmitted to the Census Bureau's central computer in Washington, D.C. Once files are transmitted to the main computer, they are deleted from the laptops.

Of the 60,000 eligible households, about 7 to 8 percent are not interviewed in a given month due to temporary absence (vacation, for example) of the occupants, other failures to make contact after repeated attempts, inability of persons contacted to respond, unavailability for other reasons, and refusals to cooperate (about half of the noninterviews). Information is obtained each month for about 110,000 persons 16 years of age or older.

Training and Quality Control

Because of the crucial role interviewers have in the household survey, a great amount of time and effort is spent maintaining the quality of their work. Interviewers are given intensive training, including classroom lectures, discussion, practice, observation, home-study materials, and on-the-job training. At least once a year, they convene for daylong training and review sessions, and, also at least once a year, they are accompanied by a supervisor during a full day of interviewing to determine how well they carry out their assignments.

The data collection technology and the questionnaire provide an opportunity to build functions to assist and improve data quality into the system itself. For instance, computer-aided interview technology guides an interviewer through complex questions: previous answers are used to eliminate further questions that would elicit extraneous or impossible answers. Built-in range checks for responses alert interviewers to possible inaccuracies.

Quality control procedures for the CPS are extensive, with more than 20 percent of the CPS budget spent on training and quality control. The procedures include extensive data checking and editing of the raw data by Census staff. Using information from the completed questionnaire as well as additional comments provided by the interviewer in a "real-time" comments file stored in the computer, the Census Bureau staff reviews and edits the information obtained for each person in the sample, and, where possible, identify and correct omissions, unintelligible entries, and other errors.

Quality control procedures also include monitoring "on line" CATI interviews by Census Bureau supervisory staff; a system of reinterviews, where a selection of the sample is interviewed again, and those responses are compared with initial interview responses; and monthly feedback to the field staff on any errors, omissions, or inconsistencies detected by the computer edits.

Estimation Procedures

There are six main steps to the estimation process in the CPS; editing of raw data and imputation, basic weighting, noninterview adjustment, ratio adjustment, compositing estimates, and seasonal adjustment. This process takes the raw data from the CPS interviews, edits it, weights it to represent the population as a whole, adjusts the data for nonresponse and consistency with independently derived population counts for demographic sub-groups, combines current estimates with estimates for the prior month to reduce the variability of the data, and adjusts for seasonality.

Data Editing and Imputation

Raw CPS data are corrected for inconsistencies or missing items to make them suitable for use in estimation. This process is completed by Census staff at a central location in Suitland, MD, and involves two steps: editing of the raw data and imputing for missing or unacceptable data items. Editing involves identifying and, where possible, correcting inconsistencies, omissions, illegible entries, and other errors in the raw data. When the data are received at the national Census Bureau, they are reviewed for completeness and consistency. Responses to various survey questions are interpreted and combined to classify respondents as employed, unemployed, or not in the labor force.

Imputation involves correcting for item nonresponse – the case in which interviewed persons do not respond to all of the survey questions or their answers to some questions are deleted during the editing process. The empty data cells are filled using the "hot deck" method of imputation, which is based on the premise that persons with similar characteristics provide data that are a good approximation for the missing responses. In the "hot deck" method, data for all interviewed persons are cross-classified by age/sex/race and geography. Missing answers are imputed by using the data from the most recently processed record for a person in the same age/sex/race/geography group.

Basic Weighting

The basic weighting procedure begins the process of inflating the sample data to produce an estimate for the entire population. In the basic weighting procedure, data from each sample person are weighted by the inverse of the probability of the person being in the sample. This is roughly equal to the number of actual persons the sample person represents. Thus, adding the basic weights of all sample persons having a given characteristic yields a simple unbiased estimate of the number of persons in the population possessing that characteristic.

When a selected cluster of housing units is found to have many more units than expected, field subsampling is carried out. Appropriate special weights, reflecting the subsampling of the cluster, are then applied to the sample data.

Noninterview Adjustment

The weights for all interviewed households are adjusted to account for occupied sample households for which no information was obtained because of absence, impassable roads, refusals, or unavailability of the respondents for other reasons (Type A noninterviews). This noninterview adjustment is made separately for clusters of similar sample areas that are usually, but not necessarily, contained within a State. Similarity of sample areas is based on Metropolitan Statistical Area (MSA) status and size. Within each cluster, there is a further breakdown by residence. Each MSA cluster is split by "central city" and "balance of the MSA". Each non-MSA cluster is split by "urban" and "rural" residence categories. The proportion of sample households not interviewed averages between 7 and 8 percent, depending upon weather, vacations, etc.

Sample units found vacant, demolished, or converted to nonresidential use (Types B and C noninterviews) are excluded from those counted for the numerator of this ratio because such units are out of the scope of the survey. This means that the weights are not adjusted upwards.

Ratio Adjustment

The distribution of the population selected for the sample may differ somewhat, by chance, from that of the population as a whole in such characteristics as age, race, sex, and State of residence. Because these characteristics are closely correlated with labor force participation and other principal measurements made from the sample, the survey estimates can be substantially improved when weighted appropriately by the known distribution of these population characteristics. This is accomplished through two stages of ratio adjustment, as follows:

1.) First-stage ratio adjustment - The purpose of the first-stage ratio adjustment is to reduce the contribution to variance that results from selecting a sample of PSUs rather than drawing sample households from every PSU in the Nation. This adjustment is made to the CPS weights in two race cells, black and nonblack; and two age cells, 0-15 and 16+. It is applied only to PSUs that are non-self-representing in States that have a substantial number of black households. The first-stage ratio adjustment procedure corrects for differences that existed in each State cell at the time of a decennial census between a) the race distribution of the population in sample PSUs and b) the race distribution of all PSUs. Both a) and b) above exclude self-representing PSUs. This adjustment is not made to housing units but to the individual household member record.

The first stage ratio adjustment factors do not depend on response data and remain the same from month to month during the entire intercensal period. The factors change when a new sample of PSUs is drawn after a decennial census. The factors also change if the non-self-representing PSU composition of a State changes for any other reason.

2.) Second-stage ratio adjustment - The second-stage ratio adjustment procedure substantially reduces the variance of the estimates and corrects, to some extent, for CPS undercoverage at the national level. The CPS sample weights are adjusted to ensure that sample-based estimates of population match national independent population controls. Each month, independent estimates of various civilian noninstitutional population distributions at the national level are produced based on the decennial census and birth and death data from several sources. Since those characteristics are correlated with labor force status and other items of interest, weighted CPS sample estimates are forced to agree with the known distributions of selected population characteristics.

Beginning in 2003, the second-stage ratio adjustment (also known as “raking”) consists of coverage steps 0A and 0B, followed by three basic iterative steps. California and New York are split into substate areas (Los Angeles-Long Beach-Glendale Metropolitan Division, New York City, and the respective balances of states). The coverage steps are then applied to these, the remaining 48 States, and the District of Columbia, primarily to improve the efficiency of adjustments for subpopulations prone to undercoverage (0A) and to account for variations in race/gender/age differences between States (0B).

Next, a three step, iterative process is applied to adjust the sample weights of the estimates.

- i. State step—6 gender x age cells defined for 53 States/areas.
- ii. Ethnicity step—26 Hispanic and 26 non-Hispanic gender x age cells.
- iii. Race step—34 white-only, 26 black-only, and 26 Asian-only and residual gender x age cells.

Composite Estimation

The last step in the preparation of most CPS estimates makes use of a composite estimation procedure. Statistical theory states that the estimate of a quantity can be improved if two (or more) estimates of that quantity, obtained by different methods, are combined. This technique is called compositing.

The composite estimate consists of a weighted average of two estimates:

1.) The second-stage ratio estimate based on the entire sample from the current month.

2.) A composite estimate for the previous month, adjusted by an estimate of the month-to-month change based on the six rotation groups common to both months.

In addition, a bias adjustment term is added to the weighted average to account for relative bias associated with month-in-sample estimates. This month-in-sample bias is exhibited by unemployment estimates for persons in their first and fifth months in the CPS being generally higher than estimates obtained for the other months.

These composite estimates are then used as controls in the composite weighting procedure. Both employment and unemployment are controlled in each defined cell, and not-in-labor force (NILF) is controlled as a residual. This is an iterative process, similar to that used for second-stage weighting:

i. State step—a single CPS 16+ cell is used for all 53 States/areas.
ii. Ethnicity step—10 Hispanic and 10 non-Hispanic gender x age cells.
iii. Race step—22 white-only, 14 black-only, and 10 Asian-only and residual gender x age cells.

The composite estimate results in a reduction in the sampling error beyond that which is achieved after the two stages of ratio adjustment by taking advantage of the sample overlap of the survey. For some items, the reduction is substantial. The resultant gains in reliability are greatest in estimates of month-to-month change, although gains are also usually obtained for estimates of level in a given month, change from year to year, and change over other interval of time.

Population Controls

The independent population controls to the CPS are prepared by projecting forward the resident population from the 2000 Decennial Census. They are derived by updating demographic census data with information that accounts for births, deaths, and net migration. Subtracting the estimated numbers of resident Armed Forces personnel and institutionalized persons reduces the resident population to the civilian noninstitutional population.

Unlike the LAUS estimates, the monthly national CPS estimates are not revised on an annual basis. (See Chapter 10 Annual Processing.) However, the monthly CPS estimates at the State level that are input to the model estimation are revised each year to reflect the latest population estimates.

Population estimates are released each year by the Census Bureau in a revised time series for the period following the decennial census. For most years, revisions to previous years' estimates tend to be minimal. Revisions can occur for two basic reasons: revisions to input data for population estimates, and methodological changes.

At the beginning of each year, new CPS population controls are introduced for use in Division, State, and substate model estimation. These controls typically reflect both new data for the most recent year and revisions to data for earlier years. After being re-controlled, CPS estimates are then used in model re-estimation. Once the model estimates are re-estimated, smoothed, and adjusted to new the Division control totals, they become the official series.

State CPS labor force levels are adjusted by a simple ratio of the new estimate of civilian noninstitutional 16 years old and over population to the old estimate of the same component. Since the same ratio is applied to both employment and unemployment within a State, there is no impact on percentages, such as unemployment rates and employment/population ratios. The re-controlled estimates are generally an improvement over those provided during last year's benchmarking.

The availability of the monthly re-controlled data is announced in a memorandum to States at the beginning of each year and is accessible by States via the Extract module in the STARS application.

Seasonal Adjustment

Over the course of a year, the size of the nation's labor force and the levels of employment and unemployment 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. The effect of such seasonal variation can be very large; seasonal fluctuations may account for as much as 95 percent of the month-to-month changes in unemployment.

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. These adjustments make nonseasonal developments, such as declines in economic activity or increases in the participation of women in the labor force, easier to spot.

Seasonal adjustment involves using past data to approximate seasonal patterns. The seasonally adjusted series therefore have a broader margin for error than the original data series. They are subject to the same errors as the original series plus the uncertainties of the seasonal adjustment process. Adjusted series are, however, useful in analyzing nonseasonal economic and social trends.

Beginning in January 2003, BLS started using the X-12-ARIMA (Auto-Regressive Integrated Moving Average) seasonal adjustment program to seasonally adjust national labor force data from the CPS. This program replaced the X-11 ARIMA program which had been used since January 1980. Beginning in January 2004, BLS converted to the use of concurrent seasonal adjustment to produce seasonally-adjusted labor force estimates. Concurrent seasonal adjustment uses all available monthly estimates, including those for the current month, in developing seasonal factors. Previously, seasonal factors for the CPS data had been projected twice a year. As a result of this change in methodology, BLS no longer publishes seasonal factors for the labor force series.

All national labor force and unemployment rate statistics, as well as the major employment and unemployment estimates, are computed by aggregating independently adjusted series. For example, for each of the major labor force components—employment and unemployment—data for four sex-age groups (men and women under and over 20 years of age) are separately adjusted for seasonal variation and are then added to derive seasonally-adjusted total figures. The seasonally-adjusted figure for the labor force is a sum of four seasonally-adjusted civilian employment components and four seasonally-adjusted unemployment components. The total for unemployment is the sum of the four unemployment components, and the unemployment rate is derived by dividing the resultant estimate by the estimate of the labor force. Because of the independent seasonal adjustment of various series, components will not necessarily add to totals.

(See Chapter 6 for a discussion of model-based smoothed seasonal adjustment.)

Publications and Uses of CPS Estimates

INTRODUCTION

Information collected in the Current Population Survey (CPS) is made available by both the Bureau of Labor Statistics and the Census Bureau through broad publication programs which include news releases, periodicals, and reports. This section lists many of the different types of products currently available from the survey and describes the forms in which they are available. This section also provides examples of how the data are used for analysis.

BUREAU OF LABOR STATISTICS

Each month, national employment and unemployment data are published initially in *The Employment Situation* news release about 2 weeks after data collection is completed. The release includes a narrative summary and analysis of the major employment and unemployment developments together with tables containing statistics for the principal data series. The news release is also available electronically on the Internet and can be accessed at http://www.bls.gov/news.release/empsit.toc.htm

Subsequently, more detailed statistics are available in the web-only monthly publication *Employment and Earnings Online.* The detailed tables provide information on the labor force, employment, and unemployment by a number of characteristics, such as age, sex, race, marital status, industry, and occupation. Estimates of the labor force status and detailed characteristics of selected population groups not published on a monthly basis, such as Vietnam-era veterans and Hispanics are published every quarter. Data are also published quarterly on usual median weekly earnings classified by a variety of characteristics. In addition, the January issue of *Employment and Earnings Online provides* annual averages on employment and earnings by detailed occupational categories, union affiliation, and employee absences.

About 25,000 of the monthly labor force data series plus quarterly and annual averages are maintained in LABSTAT, the BLS public database, on the Internet. They can be accessed from http://www.bls.gov/cps/#data. In most cases, these data are available from the inception of the series through the current month. Approximately 250 of the most important estimates from the CPS are presented monthly and quarterly on a seasonally adjusted basis. The CPS is also used for a program of special inquiries to obtain detailed information from particular segments or for particular characteristics of the population and labor force. About four such special surveys are made each year. The inquiries are repeated annually in the same month for some topics, including the earnings and total incomes of individuals and families (published by the Census Bureau); the extent of work experience of the population during the calendar year; the marital and family characteristics of workers; the employment of school-age youth, high school graduates and dropouts, and recent college graduates; and the educational attainment of workers. Surveys are also made periodically on subjects such as contingent workers, job tenure, displaced workers, and disabled veterans.

Generally, the persons who provide information for the monthly CPS questions also answer the supplemental questions. Occasionally, the kind of information sought in the special surveys requires the respondent to be the person about whom the questions are asked. The results of these special surveys are first published as news releases and subsequently in the Monthly Labor Review or BLS reports.

In addition to the regularly tabulated statistics described above, special data can be generated through the use of the CPS individual (micro) record files. These files contain records of the responses to the survey questionnaire for all individuals in the survey. While the microdata can be used simply to create additional cross-sectional detail, an important feature of their use is the ability to match the records of specific individuals at different points in time during their participation in the survey. (The actual identities of these individuals are protected on all versions of the files made available to noncensus staff.) By matching these records, data files can be created which lend themselves to some limited longitudinal analysis and the investigation of short run labor market dynamics. An example is the statistics on gross labor force flows, which indicate how many persons move among the labor force status categories each month. Microdata files are available for all months since January 1976 and for various months in prior years. These data are made available on magnetic tape, CD-ROM, or diskette.

Annual averages from the CPS for the four census regions and nine divisions, the 50 states and the District of Columbia, 50 large metropolitan areas, and 17 central cities are published annually in Geographic Profile of Employment and Unemployment. Data are provided on the employed and unemployed by selected demographic and economic characteristics.

Table 2– 1 provides a summary of the CPS data products available from BLS.

Table 2-1. **Bureau of Labor Statistics Data Products from the CPS**

Product	Description	Periodicity	Source
News Releases			
College Enrollment and Work Activity of High School Graduates	An analysis of the college enrollment and work activity of the prior year's high school graduates by a variety of characteristics	Annual	October CPS supplement
Contingent and Alternative Employment Arrangements	An analysis of workers with ''contingent'' employment arrangements (lasting less than 1 year) and alternative arrangements including temporary and contract employment by a variety of characteristics	Biennial	January CPS supplement
Displaced Workers	An analysis of workers who lost jobs in the prior 3 years due to plant or business closings, position abolishment, or other reasons by a variety of characteristics	Biennial	February CPS supplement
Employment Situation of Vietnam-Era	An analysis of the work activity and disability status of persons who served in the Armed Forces during the Vietnam era	Biennial	September CPS supplement
Veterans Job Tenure of American Workers	An analysis of employee tenure by industry and a variety of demographic characteristics	Biennial	February CPS supplement
State and Regional Unemployment The	An analysis of state and regional employment and unemployment	Annual	CPS annual averages
Employment Situation	Seasonally adjusted and unadjusted data on the Nation's employed and unemployed workers by a variety of characteristics	Monthly	Monthly CPS
Union Membership	An analysis of the union affiliation and earnings of the Nation's employed workers by a variety of characteristics	Annual	Monthly CPS; outgoing rotation groups
Usual Weekly Earnings of Wage and Salary Workers	Median usual weekly earnings of full-and part-time wage and salary workers by a variety of characteristics	Quarterly	Monthly CPS; outgoing rotation groups
Work Experience of the Population	An examination of the employment and unemployment experience of the population during the entire preceding calendar year by a variety of characteristics	Annual	March CPS supplement
Other Publications			
A Profile of the Working Poor Geographic	An annual report on workers whose families are in poverty by work experience and various characteristics	Annual	March CPS supplement
Profile of Employment and Unemployment	An annual publication of employment and unemployment data for regions, states, and metropolitan areas by a variety of characteristics	Annual	CPS annual averages
Issues in Labor Statistics	Brief analysis of important and timely labor market issues	Occasional	CPS; other surveys and programs

Uses of Unpublished Tabulations

Unpublished tabulations include the national and State CPS rotation group data and the State demographic and economic file commonly know as the DEMECON tables. These tabulations are used to analyze the movements in the CPS data and provide a better understanding of the current estimates.

Rotation Groups Analysis. These data are available monthly from the CPS and represent the raw data obtained from the monthly sample. As discussed earlier in this chapter, a given rotation group is interviewed for a total of 8 months, divided into two equal periods. It is in the sample for 4 consecutive months, leaves the sample during the following 8 months, and then returns for another 4 consecutive months. (See section 2-15 on Sample Rotation Design.)

Table 2-2 is an example of the monthly rotation group data for the U.S. The new groups that are being introduced to the sample are the first and fifth groups for the current month. The groups that are leaving the sample are the fourth and eighth groups.

Table 2-2. CPS Rotation Group Data

CPS DATA BY ROTATION GROUP						
	Civilian noninsti-tutional population	Civilian labor force				Not in Labor force
		Total	Employed	Unemployed		
				Level	Rate	
Sample Counts						
Total 16 years and over	3,089	1,675	1,622	53	3.2	786
First month in sample	355	180	171	9	5.0	102
Second month in sample	395	231	228	3	1.3	90
Third month in sample	419	217	210	7	3.2	104
Fourth month in sample	373	191	182	9	4.7	100
Fifth month in sample	420	231	223	8	3.5	93
Sixth month in sample	386	200	193	7	3.5	106
Seventh month in sample	365	207	200	7	3.4	98
Eighth month in sample	376	218	215	3	1.4	93
Incoming rotations	775	411	394	17	4.1	195
Outgoing rotations	749	409	397	12	2.9	193
Rotations common to month before	2,314	1,264	1,228	36	2.8	591
Rotations common to month after	2,340	1,266	1,225	41	3.2	593
Rotations common to year before	1,547	856	831	25	2.9	390
Rotations common to year after	1,542	819	791	28	3.4	396

Table 2-3 provides an example of the State spreadsheet used in the rotation analysis. This spreadsheet examines three characteristic of the monthly 4-8-4 sample rotation including how groups entering and leaving the sample affect the monthly estimates, the labor force status of the groups remaining in the sample, and the net effect of the entire rotation change.

The comparison of the in-coming groups for the current month to the out-going groups of the previous months allows the analyst to determine a change in the employment or unemployment level is due to an economic change in the groups currently in the sample or if it is caused by the groups coming into or leaving the sample.

To calculate the *in-coming verses the out-going rotation change*, add group 1 and group 5 of the current month and subtract group 4 and group 8 of the previous month.

In verses out rotation change = $(\text{group1} + \text{group5})_t - (\text{group4} + \text{group8})_{t-1}$

For example, the in-coming verses the out-going rotation change for employment in Table 2-5 is an increase of 33.8 and is derived from the sum of 311.6 (group 1) and 399.8 (group 5) for the current month less the sum of 333.9 (group 4) and 343.7 (group 8) of the previous month.

The *common rotation change* is the sum of the differences between the current month and the previous month. Each group of the prior month is move up to the next consecutive group in for the current month. There are no differences for groups 1 and 5 since these are incoming groups for the current month and did not exist in the prior month.

Common rotation change = $(\text{group2}_t - \text{group1}_{t-1}) + (\text{group3}_t - \text{group2}_{t-1}) + (\text{group4}_t - \text{group3}_{t-1}) + (\text{group6}_t - \text{group5}_{t-1}) + (\text{group7}_t - \text{group6}_{t-1}) + (\text{group8}_t - \text{group7}_{t-1})$

In the employment example in Table 2-3, the common rotation change is -12.5 and is the sum of 11.4, -0.4, 9.4, -28.2, -4.6 and -0.1.

The *net rotation change* is the in-coming verses the out-going rotation change less the common rotation change.

Net rotation change = (in-coming – out-going) – common rotation change

In our example the 12.5 over-the-month decrease in the employment levels of the common rotation groups for the current month is offset by the 33.8 higher employment levels of the incoming groups resulting in a net change increase of 21.3.

Table 2-3. CPS Rotation Group Analysis

Employment

Group	Prior Month	Current Month	Group	Change
		311.6	***1***	-
1	381.8	393.2	***2***	11.4
2	367.7	367.3	***3***	-0.4
3	321.5	330.9	***4***	9.4
4	333.9	399.8	***5***	-
5	368.6	340.4	***6***	-28.2
6	357.4	352.8	***7***	-4.6
7	391.7	391.6	***8***	-0.1
8	343.7	in vs. out rotation change		33.8
		common rotation change		-12.5
		net rotation change		21.3

Unemployment

Group	Prior Month	Current Month	Group	Change
		18.9	***1***	-
1	4.3	7.0	***2***	2.7
2	9.9	12.6	***3***	2.7
3	19.0	15.7	***4***	-3.3
4	15.7	15.3	***5***	-
5	11.6	12.1	***6***	0.5
6	12.9	14.3	***7***	1.4
7	5.9	5.8	***8***	-0.1
8	17.4	in vs. out rotation change		1.1
		common rotation change		3.9
		net rotation change		5.0

Unemployment Rate

Group	Prior Month	Current Month	Group	Change
		5.7	***1***	-
1	1.1	1.8	***2***	0.7
2	2.6	3.3	***3***	0.7
3	5.6	4.5	***4***	-1.1
4	4.5	3.7	***5***	-
5	3.1	3.4	***6***	0.3
6	3.5	3.9	***7***	0.4
7	1.5	1.5	***8***	0.0
8	4.8			

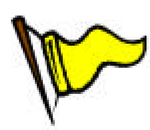
DEMECON Tables These tables contain monthly and quarterly demographic and economic data from the CPS for States and regions including the District of Columbia, New York City and the Los Angeles - Long Beach metropolitan area.

The following tables appear in the DEMECON file:

a. Employment status of the civilian non-institutional population by sex, age, race, and Hispanic origin
b. Civilians not in the labor force by sex and age
c. Unemployed persons by sex, age, race, Hispanic origin, and reason for unemployment
d. Unemployed persons by sex, age, race, Hispanic origin, and duration of unemployment
e. Full- and part-time status of the civilian non-institutional population by sex, age, race, Hispanic origin

Since the data are available by age, race and sex, they are useful to gain insight on demographic groups that may be experiencing changes contributing to the month-to-month variations in the CPS estimates.

However, the data contained in DEMECON file are unpublished and generally do not meet the BLS publication standards for accuracy and reliability. Tables B-2 through B-5 in the Geographic Profiles bulletin provide generalized sampling error information for CPS annual average data. To obtain approximate error measures for the monthly estimates in this package, double the sampling errors in those tables.



Caution should be used in drawing inferences from these data and they should not be released unless they are specifically requested. When providing data to users, a statement similar to the following should be used: *The data provided are unofficial, unpublished, data from the Bureau of Labor Statistics and do not meet BLS publication standards for accuracy and reliability. If you publish or cite these data please refer to them as such.*

U.S. CENSUS BUREAU

The U.S. Census Bureau has been analyzing data from the Current Population Survey and reporting the results to the public for over five decades. The reports provide information on a recurring basis about a wide variety of social, demographic, and economic topics. In addition, special reports on many subjects have also been produced. Most of these reports have appeared in 1 of 3 series issued by the Census Bureau: P-20, Population Characteristics; P-23, Special Studies; and P-60, Consumer Income. Many of the reports are based on data collected as part of the March demographic supplement to the CPS. However, other reports use data from supplements collected in other months (as noted in the listing below). A full inventory of these reports as well as other related products is documented in: Subject Index to Current Population Reports and Other Population Report Series, CPR P23-192, which is available from the Government Printing Office, or the Census Bureau. Most reports have been issued in paper form; more recently, some have been made available on the Internet at http://www.census.gov. Generally, reports are announced by press release, and are released to the public via the Census Bureau Public Information Office.

Census Bureau Report Series

P-20, Population Characteristics. Regularly recurring reports in this series include topics such as geographic mobility, educational attainment, school enrollment (October supplement), marital status, households and families, Hispanic origin, the Black population, fertility (June supplement), voter registration and participation (November supplement), and the foreign-born population.

P-23, Special Studies. Information pertaining to special topics, including one-time data collections, as well as research on methods and concepts are produced in this series. Examples of topics include computer ownership and usage, child support and alimony, ancestry, language, and marriage and divorce trends.

P-60, Consumer Income. Regularly recurring reports in this series include information concerning families, individuals, and households at various income and poverty levels, shown by a variety of demographic characteristics. Other reports focus on health insurance coverage and other noncash benefits.

In addition to the population data routinely reported from the CPS, Housing Vacancy Survey (HVS) data are collected from a sample of vacant housing units in the Current Population Survey (CPS) sample. Using these data, quarterly and annual statistics are produced on rental vacancy rates and home ownership rates for the United States, the four census regions, location inside and outside metropolitan areas (MAs), the 50 states and the District of Columbia, and the 75 largest metropolitan areas. Information is also made available on national home ownership rates by age of householder, family type, race, and Hispanic origin. A press release is issued each quarter as well as quarterly and annual data tables on the Internet.

Supplement Data Files

Public use microdata files containing supplement data are available from the Census Bureau. These files contain the full battery of basic labor force and demographic data along with the supplement data. A standard documentation package containing a record layout, source and accuracy statement, and other relevant information is included with each file. (The actual identities of the individuals surveyed are protected on all versions of the files made available to noncensus staff.) These files can be purchased through the Customer Services Branch of the Census Bureau and are available in either tape or CD-ROM format. The CPS homepage is the other source for obtaining these files. The CPS homepage can be accessed at http://www.bls.census.gov/cps/cpsmain.htm.

3 Inputs to LAUS Estimation: The Unemployment Insurance System

The Federal-State Unemployment Insurance Program provides unemployment benefits to eligible workers who are unemployed through no fault of their own (as determined under State law), and meet other eligibility requirements of State law. Unemployment insurance payments (benefits) are intended to provide temporary financial assistance to unemployed workers who meet the requirements of State law.

Each State administers a separate unemployment insurance program within guidelines established by Federal law. The State law under which unemployment insurance claims are established determines eligibility for unemployment insurance, benefit amounts and the length of time benefits. In the majority of States, benefit funding is based solely on a tax imposed on employers.

The Federal-State Unemployment Insurance (UI) system was established in 1935 as part of the Social Security Act. It was intended by its founders to serve both as a counter-cyclical economic stabilizer for the economy and as a central part of the nation's economic security system for workers with a strong attachment to the labor force who are temporarily laid off or permanently lose their jobs. The program is funded through mandatory payroll taxes paid by employers.

Statistics from the UI systems are the only current measure of unemployment at the substate level available at the county (and in some States, city) level. They are a key input to the unemployment models used to estimate unemployment for the 50 States, the District of Columbia, Los Angeles-Long Beach, the balance of California, New York City and the balance of New York. Claims data from the UI systems are inputs to the Handbook method for estimating labor market area (LMA) unemployment and their use in the claims-based unemployment disaggregation yields more accurate sub-LMA estimates than are obtained from decennial census-based approaches.

While these statistics are biased for estimating total unemployment between States in so far as they reflect the particular State's UI law, the statistics have the advantage of being current and, with proper coding and tabulation, are consistent among areas within States.

Federal Role

The UI system is based on a dual program of federal and State statutes. Much of the federal program is implemented through the Federal Unemployment Tax Act (FUTA). Each State administers a separate UI program with guidelines established by Federal statute. The States also determine the eligibility, the benefit amount and the length of time that benefits are paid.

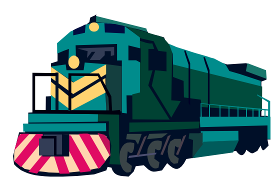
A combination of federal and State taxes is levied on employers to support the UI program. The proceeds from the unemployment taxes are deposited into the Unemployment Trust Fund. Each State has a separate account in the Fund to which deposits are made.

Federal UI Programs

In addition to the regular State UI program which cover the bulk of nonfarm workers, separate Federal UI programs exist for specific types of workers. Railroad workers receive unemployment insurance benefits through the Railroad Retirement Board (RRB). Federal employees are covered through Unemployment Compensation for Federal Employees (UCFE). Former military personnel are covered through the Unemployment Compensation for Ex-Servicemen (UCX).

Special benefits programs exist for specific situations as well. During periods of high unemployment, programs are activated that extend the time period that individuals can receive benefits. Workers who lose their jobs as a result of the nation's trade policies may receive special benefits after they exhaust their regular UI benefit through the Trade Adjustment Assistance program. Workers who lose their jobs due to a natural disaster may qualify for benefits through the Disaster Unemployment Assistance program.

Railroad Retirement Board (RRB)



The Railroad Unemployment Insurance Act provides two kinds of benefits for railroad employees: unemployment benefits and sickness benefits. Benefit payments are based on biweekly claims filed with the Railroad Retirement Board, the Federal agency responsible for administering the Railroad Unemployment Insurance Act. The funds to pay unemployment and sickness benefits are provided by payroll taxes on railroad employers only. Railroad employees do not pay unemployment insurance taxes.

Claims filed through the Railroad Unemployment Insurance Act for unemployment during the reference period including the 12^{th} of the month are used in the calculation of monthly LAUS substate estimates.

Unemployment Compensation for Federal Employees (UCFE)

Unemployment Compensation for Federal Employees is the benefit program for unemployed federal employees. Funding comes from the Federal Government and is distributed through State agencies. Federal wages are not reported to a State unemployment compensation agency until a claim is filed. The claimant's federal wages will be "assigned" to the State of the last duty station or the State of residency if the duty station was outside the U.S or if covered work was done in the State after leaving federal service. This is also the case if the employer was the Federal Emergency Management Agency (FEMA), since this is the only Federal agency that does not report wages to the last duty station.

UCFE claims filed for unemployment in the reference period including the 12th of the month are used in the calculation of monthly Statewide and substate LAUS estimates.

Unemployment Compensation for Ex-Service members (UCX)

Unemployment Compensation for Ex-Service members is the benefit program for ex-military personnel to provide weekly income to meet basic needs while searching for employment.

Those who were on active duty with a branch of the U.S. military or active duty in reserve status as a member of a National Guard or Reserve component continuously for 90 or more days may be entitled to unemployment benefits based on that service. The military wages are assigned to the State where they first file a new claim after the separation from active duty.

UCX benefits are paid under the same conditions as benefits based on other employment. However, since LAUS measures the civilian labor force, UCX claims data are not used in the calculation of LAUS estimates.

Extended Benefits (EB) and Special Temporary Programs

Two types of UI programs grant additional weeks of unemployment compensation to individuals who have depleted their UI benefits under the regular UI program during economic downturns. One is the permanent program that is funded by both the State and the Federal governments, known as State Extended Benefits (EB), and the others are temporary programs that are financed by the Federal government and enacted for periods of higher unemployment.

In addition, a number of States have solely State-financed programs for extending the potential duration of benefits during periods of high unemployment, for claimants in approved training who exhaust benefits, or for a variety of other reasons.

Federal temporary extended benefits programs have been used periodically during economic downturns since the late 1950s. The first temporary program, Temporary Unemployment Compensation (TUC), was effective for the period of

June 1958 to June 1959. Since then, temporary extended assistance programs have occurred seven times under different titles. These include

- Temporary Extended Unemployment Compensation (TEUC), April 1961 to June 1962;
- Temporary Compensation (TC), January 1972 to March 1973;
- Federal Supplemental Benefits (FSB), January 1975 to January 1978;
- Federal Supplemental Compensation (FSC), September 1982 to June 1985;
- Emergency Unemployment Compensation (EUC) November 1991 to April 1994;
- Temporary Extended Unemployment Compensation (TEUC); March 2002 to March 2004; and
- Emergency Unemployment Compensation (EUC08), July 2008 to January 3, 2012.

All Special Extended Benefit Programs

Name	Effective Dates	Weeks of Benefits
Temporary Unemployment Compensation (TUC)	06/58 – 06/59	Up to 13
Temporary Extended Unemployment Compensation (TEUC)	04/61 – 06/62	Up to 13
Temporary Compensation(TC)	01/72 –03/73	Up to 13
Federal Supplemental Benefits (FSB)	01/75 –01/78	Up to 13 or 26
Federal Supplemental Compensation (FSC)	09/82 –06/85	Up to 8, 10, 12, or 14
Emergency Unemployment Compensation (EUC)	11/91 –04/94	Up to 7, 13, 20, 26 or 33
Temporary Extended Unemployment Compensation (TEUC)	03/02 –03/04	Up to 13 or 26
Emergency Unemployment Compensation (EUC 08)	07/08 –1/12	Up to 20 , 34, 47, or 53

Source: Employment and Training Administration, Office of Workforce Security

State Extended Benefits (EB): The EB program has been a permanent part of the Federal-State UI system since 1970 and is available to workers who have exhausted regular unemployment insurance benefits during periods of high unemployment as defined by the trigger "on" criteria below.

The basic EB program provides up to 13 additional weeks of benefits when a State is experiencing high unemployment. A number of States have also enacted voluntary programs to pay up to 7 additional weeks (20 weeks maximum) of extended benefits during periods of extremely high unemployment which is defined as a State 3-month average smoothed seasonally adjusted unemployment rate greater than 8 percent.

A State may trigger "on" for extended benefits for a week if certain criteria are met based on the State's insured unemployment rate (the ratio of individuals collecting benefits to UI covered employment) or alternatively its total unemployment rate (the LAUS smoothed seasonally adjusted rate). There are three separate sets of criteria that can be used to determine if the EB program is activated in a State. One is mandatory and the other two are optional and enacted by State law.

For the mandatory trigger, a State must pay up to 13 weeks of EB if the insured unemployment rate (IUR) for the previous 13 weeks is at least 5 percent and is 120 percent of the average of the rates for the corresponding 13-week period in each of the 2 previous years. This comparison is called a "look-back." Prior to the December 2007-June 2009 recession, ten States had only the mandatory trigger in their State laws. These included Delaware, Florida, Georgia, Iowa, Kentucky, Massachusetts, North Dakota, South Dakota, Utah, and Wyoming. Since then five States remain that have only the mandatory trigger in their State laws; these are Iowa, North Dakota, South Dakota, Utah, and Wyoming.

State law may allow for the use of one of the following alternative triggers instead. However, if a State does not use an alternative trigger, the mandatory method must be used to determine trigger status.

One of the optional triggers allows a State to pay up to 13 weeks of EB if the IUR for the previous 13 weeks is at least 6 percent, regardless of the experience in the previous years. The majority of States have specified the use of this trigger.

The other optional trigger allows a State to pay up to 13 weeks of EB if the average total unemployment rate (TUR), smoothed seasonally adjusted, for the most recent 3 months is at least 6.5 percent and is 110 percent of the rate for the corresponding 3-month period in either of the 2 previous years. If such rate is at least 8.0 percent and is 110 percent of the rate for the corresponding 3-month period in either of the 2 previous years, the duration increases from 13 to 20 weeks. Prior to the December 2007-June 2009 recession, eleven States including Alaska, Connecticut, Kansas, New Hampshire, New Jersey, New Mexico, North Carolina, Oregon, Rhode Island, Vermont, and Washington have permanent laws enacting the TUR options.

Summary of State Extended Benefits Trigger Options Prior to the December 2007-June 2009 Recession

Trigger Option	Number of States	States*	Potential Number of Weeks
5% IUR with look back	52	All States	13
6% IUR without look back	40	AL, AK, AZ, AR, CA, CO, CT, DC, HI, ID, IL, IN, KS, LA, ME, MD, MI, MN, MS, MO, MT, NE, NV, NJ, NM, NY, NC, OH, OK, OR, PA, PR, RI, SC, TN, TX, VT, WA, WV, WI	13
TUR (6.5% and 8%)	11	AK, CT, KS, NH, NJ, NM, NC, OR, RI, VT, WA	20

** States include DC and PR.*

Source: Employment and Training Administration, Office of Workforce Security

A State triggers "off" extended benefits if, for the period consisting of the reference week and the immediately preceding twelve weeks, the requirements of the selected method are not satisfied.

Temporary Changes: The Assistance for Unemployed Workers and Struggling Families Act (Public Law No. 111-5) enacted February 17, 2009, encouraged States experiencing high unemployment to invoke the program's optional total unemployment rate (TUR) trigger by providing that 100 percent of the benefit costs of EB would be federally funded for a specified period. This resulted in 27 States enacting laws allowing for the use of the optional TUR trigger. Among these States are Alabama, Arizona, California, Colorado, District of Columbia, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Kentucky, Massachusetts, Maine, Michigan, Minnesota, Missouri, New York, Nevada, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, Wisconsin, and West Virginia.

The federal funding also applied to States triggering "on" under other EB triggers and was available to States that already have the TUR trigger in their laws. It covered the costs of EB for weeks beginning after February 17, 2009, and before January 1, 2010 and continued to be 100 percent federally funded for the benefit costs of weeks of unemployment ending before June 1, 2010.

The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (Public Law 111-312), enacted December 17, 2010, temporarily extended the 100 percent federal funding for EB. States are reimbursed for 100 percent of the benefit costs of EB for weeks of unemployment beginning after February 17, 2009, and before January 4, 2012. The EB will continue to be 100 percent federally funded for the benefit costs of weeks of unemployment ending before June 11, 2012.

Public Law 111-312 also permits States to amend their EB laws to temporarily modify the provisions concerning "on" and "off" indicators based on the insured unemployment rate and the total unemployment rate. Specifically, it permits states to make determinations of whether there is an "on" or "off" indicator by comparing current unemployment rates to the unemployment rates for the corresponding period in the three preceding years. (Under permanent EB law, the look-back is to unemployment rates during the last two years.) This modification to the look-back provisions will enable many states to remain "on" EB much longer. The new EB indicator provisions are effective with respect to compensation for weeks of unemployment beginning after the date of enactment of the Act (or, if later, the date established pursuant to State law) and ending on or before December 31, 2011.

Once the 100 percent Federal funding was no longer available States that temporarily enacted the TUR most likely reverted to their original UI laws.

State Extended Benefits Trigger Options Summary as a Result of the Assistance for Unemployed Workers and Struggling Families Act and The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (as of February 20, 2011)

Trigger Option	Number of States	States*	Potential Number of Weeks
5% IUR with look back	52	All States	13
6% IUR without look back	40	AL, AK, AZ, AR, CA, CO, CT, DC, HI, ID, IL, IN, KS, LA, ME, MD, MA, MN, MS, MO, MT, NE, NV, NJ, NM, NY, NC, OH, OK, OR, PA, PR, RI, SC, TN, TX, VT, VA, WV, WI	13
TUR (6.5% and 8%)	38	AK, AL, AZ, CA, CO, CT, DC, DE, FL, GA, ID, IL, IN, KS, KY, MA, ME, MI, MN, MO, NC, NH, NJ, NM, NV, NY, OH, OR, PA, RI, SC, TN, TX, VA, VT, WA, WI, WV	20
** States include DC and PR.*			

Source: Employment and Training Administration, Office of Workforce Security

Emergency Unemployment Compensation 2008 (EUC08)**:** The EUC08 program is the latest temporary federal program providing extended benefits. It was created on June 30, 2008, by the Supplemental Appropriations Act of 2008 (P.L. 110-252). It made up to 13 additional weeks of benefits available to unemployed individuals who had already collected all regular State benefits for which they were eligible and who met the eligibility requirements.

EUC08 was payable to individuals who (1) had exhausted all rights to regular compensation with respect to a benefit year that ended on or after May 1, 2007; (2) had no rights to regular compensation or extended benefits (EB); and (3) were not receiving compensation under the unemployment compensation law of Canada. To qualify for EUC08, individuals must have had employment of 20 weeks of work, or the equivalent in wages, in their base periods. Continuing eligibility was determined under the requirements of the State law.

On November 21, 2008, the President signed the Unemployment Compensation Extension Act of 2008. This bill expanded Emergency Unemployment Compensation (EUC08) to 20 weeks nationwide, and created a second tier of EUC08 for individuals in States with high unemployment rates.

The second tier of benefits was available for States with a three-month smoothed seasonally adjusted average unemployment rate of at least 6 percent and provided up to an additional 14 weeks of EUC08 benefits.

A third tier, which provided 13 more weeks of benefits to individuals who had exhausted their second tier benefits, was added for States experiencing a 3-month seasonally-adjusted TUR greater than 6 percent or a 13-week average IUR greater than 4 percent.A fourth tier provided another 6 weeks of benefits for individuals who had exhausted their third tier benefits in States that have a total unemployment rate of at least 8.5 percent or a 13-week average IUR greater than 6 percent.

UI Program	Maximum Weeks of Benefits	Trigger
Regular UI	26	(Some States may allow more weeks, see below.)
EB	13	IUR ≥ 5%, and IUR ≥ 6%, or 3 mo average State smoothed seasonally adjusted TUR ≥ 6.5%
Additional EB* (potentially 14 States)	7	3 mo average State smoothed seasonally adjusted TUR ≥ 8%, enacted by State law
EUC08 1st tier	20	Exhausted all regular UI benefits
EUC08 2nd tier	14	Exhausted all regular EUC 1st tier benefits with 3-month average TUR ≥ 6%
EUC08 3rd tier	13	Exhausted all regular EUC 2nd tier benefits with 3-month average TUR ≥ 6% or 13 week average IUR ≥ 4%
EUC08 4th tier	6	Exhausted all regular EUC 3rd tier benefits in States with TUR ≥ 8.5% or 13 week average IUR ≥ 6%
Total	**92 99***	

EB and Special Temporary Programs and LAUS Estimation: Claim counts from the EB and special temporary programs are not used in LAUS estimation. The LAUS substate methodology already includes an estimate of unemployed exhaustees — those persons who have exhausted the total benefit award under State unemployment insurance within their benefit year and are still jobless. This component is developed by using area-specific counts of individuals who received final payments under State UI and survival rates based on the duration of jobless spells in the Current Population Survey. *(See Chapter 7.)*

Claims data from permanent and temporary extensions of unemployment compensation have not been used directly in LAUS estimation primarily because of their temporary nature. Although individuals exhaust benefits continuously throughout the year, insured claims under permanent or temporary extended benefit programs for these people will be taken only when an extended UI benefit period is established, either by trigger or by special legislation. The administrative and methodological steps needed to incorporate such extended benefit program data into LAUS estimation is disproportionately complex, given the trigger on/trigger off nature of the program and the intricacies of the temporary program. Likewise, data from the regular EB and the four levels of EUC08 are not to be incorporated into LAUS estimation. LAUS uses the estimate of unemployed exhaustees to represent those persons who claimed their total benefit award within the benefit year and are still jobless.

Trade Readjustment Allowances (TRA)

Trade Readjustment Allowances are benefits to persons whose jobs were affected by foreign imports. Benefits are provided through the Federal Trade and the North American Free Trade Agreement.

The Federal Trade Act provides special benefits under the Trade Adjustment Assistance (TAA) program to those who were laid off or had hours reduced because their employer was adversely affected by increased imports from other countries.

The North American Free Trade Agreement (NAFTA) provides special benefits under the NAFTA Transitional Adjustment Assistance (NAFTA-TAA) program. Individuals who were laid off, or had hours reduced because their employer was adversely affected by increased imports from Mexico or Canada, or because their employer shifted production to either of these countries may qualify for benefits. These benefits include paid training for a new job and financial help in searching for work in other areas or relocation to an area where jobs are more plentiful.

Individuals can qualify for these special benefits only after their regular unemployment compensation is exhausted. Thus claims data from the TAA and the NAFTA-TAA programs are not directly counted in LAUS estimates. Individuals who have exhausted their benefits in the regular UI program are already accounted for through final payment counts. See *UI Claims Data for LAUS Estimation* later in this chapter or *Labor Market Area Unemployment* in Chapter 7 for more information on final payments.

Disaster Unemployment Assistance (DUA)

Section 410 of the Robert T. Stafford Disaster Relief and Emergency Assistance Amendments of 1988 created a program for the payment of unemployment assistance to individuals whose unemployment is the direct result of a major disaster as declared by the President of the United States.

Suffering a monetary loss due to damage of property or crops does not automatically entitle claimants to DUA. Individuals may qualify for DUA if: they worked in or were scheduled to begin work in a county declared as a federal disaster county and they cannot work as a direct result of a disaster. In addition, the work that cannot be performed must be their primary source of income and livelihood; and they must not qualify for regular unemployment insurance from any State.

This includes workers who suffer a loss or interruption of work as a direct result of a major disaster, and, self-employed individuals, including farmers and day care providers who lost or suffered a substantial reduction or interruption of self-employment activities as a direct result of a major disaster.

Although individuals may receive DUA benefits, they are not counted as unemployed. The definition of employed persons under the CPS includes all those who were not working but who had jobs or businesses from which they were temporarily absent because of bad weather, whether they were paid for the time off or were seeking other jobs.

Birth and Adoption Unemployment Compensation (BAA–UC)

On August 14, 2000, the Department of Labor published a ruling that allowed States to implement an experiment to provide Unemployment Compensation to employees on approved leave following the birth or adoption of a child. The experiment was to test whether partial wage replacement would strengthen new parents' connection to the workforce, as some studies indicated. State participation was voluntary and States had wide latitude in developing their experiments.

On November 10, 2003, the Department of Labor repealed the Birth and Adoption Unemployment Compensation (BAA–UC) regulations for the following reasons. The UI system is designed to provide temporary wage insurance for individuals who are unemployed due to lack of suitable work. This would generally not be the case for parents who would avail themselves of BAA–UC. Such parents would be out of work because they both initiated their separation from the workforce and are currently unavailable for work; they would have effectively withdrawn from the labor market for a period of time. As a result, BAA–UC paid to these individuals would be a payment for voluntarily taking time off work rather than payment due to lack of suitable work. As such, it would be paid leave, which was not envisioned in the design of the UC program.

Although no State had enacted BAA–UC legislation, individuals who would have received benefits under this experimental program would not have met the CPS criteria for unemployed and therefore would not have been counted in the monthly LAUS estimates.

Self-Employment Assistance (SEA)

Self-Employment Assistance offers dislocated workers the opportunity for early re-employment. The program is designed to encourage and enable unemployed workers to create their own jobs by starting their own small businesses. Under the program, States can pay a self-employed allowance, instead of regular unemployment insurance benefits, to help unemployed workers while they are establishing businesses and becoming self-employed. Participants receive weekly allowances while they are getting their businesses started. To participate in the program an individual must be eligible for unemployment compensation, have been permanently laid off from his/her previous job and identified through the State's UI profiling system as likely to exhaust his/her benefits, and must participate in self-employment activities including entrepreneurial training and business counseling.

The following State have provisions for SEA: California, Delaware, Louisiana (law in place but no active program), Maine, Maryland, New Jersey, New York (expired 12/7/2011), Oregon, Pennsylvania, and Washington (expires 7/1/2012).

Since individuals participating in a State SEA program are exempt from the State laws relating to availability for work, search for work, and refusal to accept work, SEA claims are not included in the claims counts for LAUS estimation.

Short-Time Compensation (STC)

The STC program, commonly known as work-sharing, provides partial UI benefits to individuals whose work hours are reduced from full-time to part-time on the same job. STC allows an employer, faced with potential layoffs because of reduced workload, to reduce the number of regularly scheduled hours of work for all employees rather than incur layoffs. Benefits are payable to workers for the hours of work lost, as a proportion of the benefit amount for a full week of unemployment.

The STC program currently has eighteen States participating: Arizona, Arkansas, California, Connecticut, Florida, Iowa, Kansas, Louisiana, Maryland, Massachusetts, Minnesota, Missouri, New York, Oregon, Rhode Island, Texas, Vermont and Washington.

Workers are not obligated to meet the State's regular UI requirements of availability for work, actively seeking work, or refusal to accept work, but must be available for their normal workweek. Thus, any claim records associated with STC are not included in the LAUS estimation.

Office of Workforce Security Responsibilities

The Office of Workforce Security (OWS) of the Employment and Training Administration (ETA) oversees the UI system and works closely with State employment security agencies. The OWS is responsible for Program Development and Implementation, Performance Review, Legislation, Policy and Research, Fiscal and Actuarial services, and Information Technology.

Each Thursday, the OWS releases the "Unemployment Insurance Weekly Claims Report" at 8:30 AM. This release can be found on the Department of Labor's website at www.doleta.gov.

The seasonally adjusted weekly initial claims series is a leading economic indicator. They are the most current data on the number of people filing for unemployment insurance. The seasonally adjusted continued claims data provide insight as to the duration of the claims initially filed.

Interstate Statistical Data Exchange

The OWS is responsible for administrating and maintaining the *Interstate Statistical Data Exchange,* which operates on the Interstate Connection Network (ICON). The ICON is a hub-oriented data communication network that enables 54 jurisdictions, including Canada, to exchange interstate wage and benefit transactions through batch applications. The ICON hub is located in Orlando, Florida and maintained by Affiliated Computer Services.

The reporting of initial claims and continued claims (referred to as *weeks claimed* by ETA) information by the Liable State to the Agent/Residence State is not only vital for the efficient payment of interstate claims benefits, but it also has the following important uses:

1) Interstate agent weeks claimed are needed for accurate counts of total continued claims without earnings for LAUS estimation.
2) Interstate initial claim and weeks claimed information identifies interstate claimants to the Agent/Residence State for purposes of providing re-employment assistance.
3) Interstate agent weeks claimed information is necessary to the Agent/Residence State's calculation of its insured unemployment rate that is the trigger mechanism for the State's Extended Benefit Program.
4) Interstate agent initial claims and weeks claimed are inputs to major economic indicators which describe emerging and continuing unemployment conditions in the Agent State.

The calculation of the State's total unemployment rate (LAUS estimate), which is the alternate trigger for the extended benefit program, includes the number of residents that regularly commute across the State line to work in another State and are unemployed and filing for benefits against another State. For this reason, the reporting of commuter weeks claimed, for the survey week, is included in the data reporting requirement of the Liable State to the Agent/Residence State.

Liable/Agent Data Transfer

The LADT record format was developed by the National Association of State Workforce Agencies' Interstate Benefit Committee in consultation with the Unemployment Insurance (UI) Committee, the Labor Market Information Committee and the U.S. Department of Labor's Bureau of Labor Statistics and the Employment and Training Administration.

The Liable/Agent Data Transfer (LADT) (Appendix/Table 3-1) is a batch application that has a multi-purpose record format.

There are three types of records identified by the value in the Record Type field (position 472 – Field number 62) on the LADT record layout:

1) Telephone Initial Claim (TIC);
2) Weeks Claimed (WC) (A "Weeks Claimed" record can be either an interstate continued claim or a commuter claim);
3) Reopen/Transfer of Claim (Reopen/Transfer).

The origin of the record is identified by the value in the Liable State FIPS field (Field number 18 - positions 184 – 185 on LADT record layout) and will be either the alphabetic UI postal abbreviation or the numeric FIPS code.

The destination is determined by the value in the Agent State FIPS field (Field number 20 - positions 190 – 191 on LADT record layout) and will be either the alphabetic US postal abbreviation or the numeric FIPS code.

A commuter claim is identified in the Commuter Identification Code field (Field number 58 - position 412 on LADT record layout). An “X” in this field indicates a claim filed by a commuter from the Residence State, while a blank space indicates that it is not a commuter claim.

Commuter Claim data are included in the transmittal due the first Monday of each month. The weekending dates on commuter weeks claimed records must be xx/12/xx through xx/18/xx only. Each month’s commuter data report must include detail data for the “current commuter reporting month” and “prior commuter reporting month.” “Current commuter reporting month” is the most recently completed month. “Prior commuter reporting month” is the month proceeding the most recently completed month.

When each Liable State’s file is received at the Hub, the records are edited and stored. As confirmation of receipt and processing of the file, the Liable State immediately receives, or can request output of, three reports: 1) the Liable Summary Report; 2) the LADT Error Report; and 3) the LADT Edit Counts Report.

After close of business on Tuesday, the Hub database is updated with each Liable State’s file. On Wednesday morning of each week, LADT data are distributed to the destination Agent State(s). There are two reports distributed weekly and one monthly:

1) Agent State Summary Report – Interstate Claims (Appendix/Table 3-2) -
2) Agent State Detail Data Report (contains micro data of all records)
3) On the first Wednesday of each month, a third report, the Agent/Residence Commuter Weeks Claimed Report is also distributed.
   (See Appendix/Table 3-3)

Weekly LADT Schedule	
Monday	The Liable State's detail data report is due at the Hub on Monday of each week.
	Commuter weeks claimed data must be included in the transmission due the first Monday of the month only.
Tuesday	Hub processing of all data received takes place after the close of business on Tuesday.
	Hub processing of all data received takes place after the close of business on Tuesday.
Wednesday	The Hub distributes Agent State detail data no later than 11:00 a.m. on Wednesday.

Additional information on the ETA, the OWS, and UI claims data can be found on the Internet at www.doleta.gov.

Information Technology Support Center (ITSC)

In 1994, the ETA and the Maryland Department of Labor, Licensing, and Regulation established the Information Technology Support Center (ITSC). The ITSC is a collaboration of State employment security agencies, the Department of Labor (DOL), and private sector partners. It promotes the appropriate application of information technology and assists in providing States with more accurate, efficient, cost effective, and timely service for unemployment insurance recipients.

Additional information on ITSC, UI programs, and statistics can be found on the Internet at www.itsc.state.md.us.

State UI Programs

Each State law, subject to federal requirements, establishes guidelines determining employer coverage, individual employee eligibility, the amount and duration of benefits paid for claims, and disqualification provisions. State UI laws also determine the amount of payroll taxes used to fund regular UI benefits that employers must pay. A summary of changes in individual State UI laws can be found in each January issue of the Monthly Labor Review, published by BLS.

UI Coverage

Each State has determined its own laws regarding UI coverage, but they have been greatly influenced by the federal government. The Federal Unemployment Tax Act (FUTA) provides tax incentives that have ensured States conformity with the minimum coverage standards set down in FUTA.

In general, a covered employer is defined under the FUTA as one who has a quarterly payroll of $1500 in the calendar year or preceding calendar year, or one worker in 20 weeks. While many States have chosen to expand coverage beyond the FUTA standards, the notable exceptions and limitations are noted below.

Twenty-six weeks of regular UI benefits are provided by all States. (Two States may provide more than 26 weeks of regular UI benefits. Iowa offers an additional 13 weeks of State financed regular UI benefits if individuals lost their jobs as a result of the employer going out of business and Massachusetts offers 30 weeks of regular UI benefits instead of the normal 26 weeks if the local unemployment rate is greater than 5.1 percent).

Agriculture

For the majority of States, only employers with ten or more workers in twenty weeks, or who paid $20,000 or more in wages in any quarter, are subject to unemployment insurance laws. Farm owners/operators are excluded from coverage in all States.

Domestic Service

Private households, social clubs, and college fraternities and sororities who employ domestic help and pay wages of $1,000 or more in a quarter are subject to unemployment insurance laws.

Nonprofit Organizations

Coverage is required for nonprofit organizations with four or more employees in 20 weeks. Almost half of the States, however, have elected more expansive coverage, typically covering any organization with even one employee in twenty weeks. Ministers employed by religious organizations to perform ministerial duties are excluded from nonprofit coverage.

Self-employed Individuals and Unpaid Family Members

As defined by the unemployment insurance laws, employment is the hiring of workers by others for wages. Self-employed individuals are therefore excluded, except in California, where they may elect to pay contributions for self-coverage. Relatives are not covered unless they receive pay from the official business payroll. However, the employment of minors by their parents, or parents by their children, is excluded.

Railroads

Interstate railroad workers are covered by the Railroad Unemployment Insurance Act administered by the Railroad Retirement Board. Workers on intrastate and scenic railroads may also be covered.

State and Local Government Elected Officials and Others

All State and local government employees are covered under State UI laws with the exception of elected officials, members of the judiciary, State national and air national guardsmen, temporary emergency employees, and policy and advisory positions.

Student Workers at Universities, Interns and Student Nurses

College and university students employed by the school at which they are enrolled, such as work-study students, are excluded from coverage. Many States also exclude the spouses of students who work at the university if the employment is part of a program to provide financial assistance to the student. Student nurses employed by hospitals as part of a training program are not covered. Similarly, medical school graduates working as interns in hospitals are excluded from coverage.

Armed Forces

Military personnel are excluded from State unemployment insurance coverage. They are covered under a separate program, Unemployment Compensation for Ex-Servicemen (UCX), but are not included in QCEW data. Civilian defense workers, however, and all other federal employees covered under the Unemployment Compensation for Federal Employees (UCFE) program are part of the data reported to the QCEW program.

Agents on Commission

Insurance and real estate agents that are paid only by commission are excluded from coverage in almost all of the States.

UI Process

Just as each State has its own UI laws, each State has its own benefit payment system for awarding UI benefits, providing documentation and fiscal control. The benefit payment system is tied in with the taxation records system of the State. Taxes levied from employers are deposited into the State's Unemployment Trust Fund account.

Initial Claim

When an individual becomes unemployed, he or she must file an initial claim to request determination for entitlement and eligibility to receive benefits. Depending on the UI services available within each State, an unemployed person may file an initial claim in person at an Employment Service office, over the telephone, by mail, or via the Internet. There are three initial claim types: new, additional and transitional.

The first claim in a benefit year filed to request benefits is referred to as a *new initial claim*. A claim filed within the same *benefit year* after intervening employment is call an *additional initial claim*. A benefit year is the one-year period during which an individual may receive UI benefits and is usually related to the date of the individual's first spell of unemployment and the filing of the claim.

A claim for benefits filed during the last week of a benefit year while a spell of unemployment is ongoing and requesting an establishment of a new benefit year and another eligibility determination is a *transitional initial claim*. A transitional initial claim is an operational or administrative document facilitating the transition from one benefit year to the next within a continuous spell of unemployment. Therefore, it is excluded from the count of initial claims, since that count represents new spells of unemployment.

Monetary Eligibility Determination

The new initial claim is evaluated, in accordance with the State's laws, to determine if the individual meets the monetary requirements necessary to establish a benefit year and receive benefits and, if so, how much compensation the individual is eligible to receive. Monetary eligibility for benefits is determined by the amount of employment (in weeks or quarters) and wages earned by the individual (in some combination of dollars and time worked) in a specific *base period*.

A base period is a period of time prior to the *benefit year* (or period similar to a benefit year) in which a claimant must have had a specified minimum amount of insured (covered) work in order to qualify for benefits. Wages earned during this period are used in determining the claimant's weekly benefit amount (WBA) and the claimant's maximum total annual benefits. In the majority of States, the base period is the first four quarters of the last five calendar quarters.

There are two types of base periods, an *individual* and a *uniform*. The *individual* base period varies as to the starting date for individual claimants, while a *uniform* base period starts on the same calendar year for all claimants.

A benefit year usually consists of a 1-year period or a 52-week period during which an individual may receive annual benefits. Nearly all States have what is called an individual benefit year in which the beginning date is dependent on the date the claim was filed.

Each State has its own formula for computing an individual's WBA, total benefit award, and duration of benefits. States may also elect to provide benefits to dependents. See the annual ETA publication entitled Comparison of State Unemployment Laws (*http://workforcesecurity.doleta.gov/unemploy/comparison.asp*) for more details.

Claims that do not meet the State-specified requirements for the monetary determination are denied benefits and result in a *monetary disqualification*.

Nonmonetary Determination

The new and additional initial claim is also subject to a nonmonetary determination, in which a State determines whether individuals are eligible to receive benefits based on the circumstances surrounding the loss of employment, ability to work, availability for work, and activity in seeking work.

Each State has its own nonmonetary requirements for an unemployed individual to receive benefits. All State laws provide that a claimant must have become unemployed through no fault of his/her own and must be able and available to work. The purpose of this is to provide benefits to individuals who are unemployed primarily as a result of economic causes.

The nonmonetary determination is broken down into *separation issues* and *nonseparation issues*.

Separation issues refer to situations surrounding the termination of the employment relationship. This includes incidences where the individual voluntarily quits without good cause, or voluntarily quits for personal reasons. (For LAUS purposes, these individuals would be counted as unemployed even though they do not qualify for UI benefits, *as long as they are willing and able to work, and are actively seeking employment*.)

Nonseparation issues pertain to situations in which the individual's actions, the type or seasonality of occupation, or income preclude eligibility. An individual can be precluded from receiving benefits if they are not willing or able to seek employment, or if they refuse suitable employment. Seasonal employees, such as school personnel and professional athletes, are not eligible for benefits during the time period between terms of employment. Disqualifying incomes includes pensions, severance pay and other UI compensation, such as EB, TRA or DUA benefits. Individuals disqualified because they were not able or willing to work would not be counted as unemployed for LAUS purposes. Those disqualified for receiving UI because they have income from pensions or severance pay would be counted as unemployed, *as long as they are willing and able to work, and are actively seeking employment and the amount of money earned does not exceed the weekly benefit amount.*

An individual may pass the monetary eligibility requirements but may *not* receive benefits in the event of voluntary leaving without good cause, discharge or suspension or misconduct, refusal of suitable work, labor dispute, and false statements.

A claimant who does not meet the nonmonetary requirements and is denied benefits is given a *nonmonetary disqualification*.

Nonmonetary Penalties
The circumstances of a nonmonetary disqualification may preclude the individual from ultimately receiving benefits.

Separation Issues*:*
Voluntarily Leaving Work: Since the UI program is designed to compensate wage loss due to lack of work, voluntarily leaving work without good cause is an obvious reason for disqualification from benefits. All States have such provisions. In most States, the disqualification lasts until the worker is again employed and earns a specified amount of wages. However, in a few States the disqualification is a fixed number of weeks and can be up to 12 weeks depending on the reason why the individual needed to leave work. In addition, some States may also reduce the individual's benefit rights, usually equal in extent to the weeks of benefit postponement.

Discharge for Misconduct: A number of States have a variable disqualification for discharge for misconduct. In some States the range is small, for example, the week of occurrence plus 3 to 7 weeks. In others, the range is large, 5 to 26 weeks. Several States provide a fixed disqualification, and others disqualify for the duration of the unemployment, or longer. Some States may reduce or cancel all of the worker's benefit rights and some provide for disqualification for disciplinary suspensions.

Non-separation Issue:
Refusal of Suitable Work: Several States disqualify for a specified number of weeks (3 to 20) any workers who refuse suitable work; others postpone benefits for a variable number of weeks, with the maximum ranging from 1 to 12.

Monetary Penalties
The penalty for a monetary disqualification is in effect until the individual becomes subsequently employed and earns a specified amount of wages to become eligible.

Appeals

An individual whose claim has been denied for either monetary or nonmonetary reasons may request an opportunity for a fair hearing before a UI tribunal or UI authority. A request can be made for a review by an appeals authority on the State's determination of the claim for benefits, the employer's contribution rate, or a decision made by a lower appeals authority.

The employer for whom the individual worked during the wage qualifying base period is charged with the liability for the claim payment. This employer may also challenge the UI decision of the individual's eligibility to receive benefits.

Continued Claim

Once a claimant passes the monetary (for new initial claims only) and nonmonetary eligibility requirements, the individual must satisfy mandatory requirements for each week of unemployment for which he/she claim benefits. These weekly requirements include actively seeking employment and being available for work. Certification, or certifying, is the form and process by which an individual attests to the facts that determine eligibility for a given week.

This certification process must be completed for each week that the individual claims benefits. Most States establish a 52-week period (benefit year) during which the individual may submit claims for benefits.

Individuals may also receive earnings from regular employment, or odd jobs, while certifying for a week of unemployment. In such cases, these claims are designated as *continued claims with earnings*. They are not used in LAUS estimation since they do not meet the LAUS definition of unemployed. (Even one hour of work results in the classification of the individual as "employed" in the CPS.) Continued claimant counts without earnings due to employment are the primary source of unemployment inputs for the Handbook method and an important input into State models.

Final Payments

A final payment is the last continued claim for which an individual can receive benefits within a benefit year. At this point, the individual has exhausted the maximum benefits as was calculated at the time of filing and monetary determination.

Final payment recipients, also referred to as UI *exhaustees*, are the primary input to the monthly estimate of unemployed exhaustees of the Handbook method. (See Chapter 7)

Benefits delivery arrangements

The State conducts UI activities under all of the following arrangements:

Intrastate Benefit Arrangements.

The State provides benefits to individuals who reside in and worked in that State. The State also provides benefits to individuals who worked (and would continue to seek work) in the State but reside in a border State. Intrastate claims filed in the State where the claimant worked but does not reside are referred to as *commuter claims*.

Interstate Benefit Arrangements.

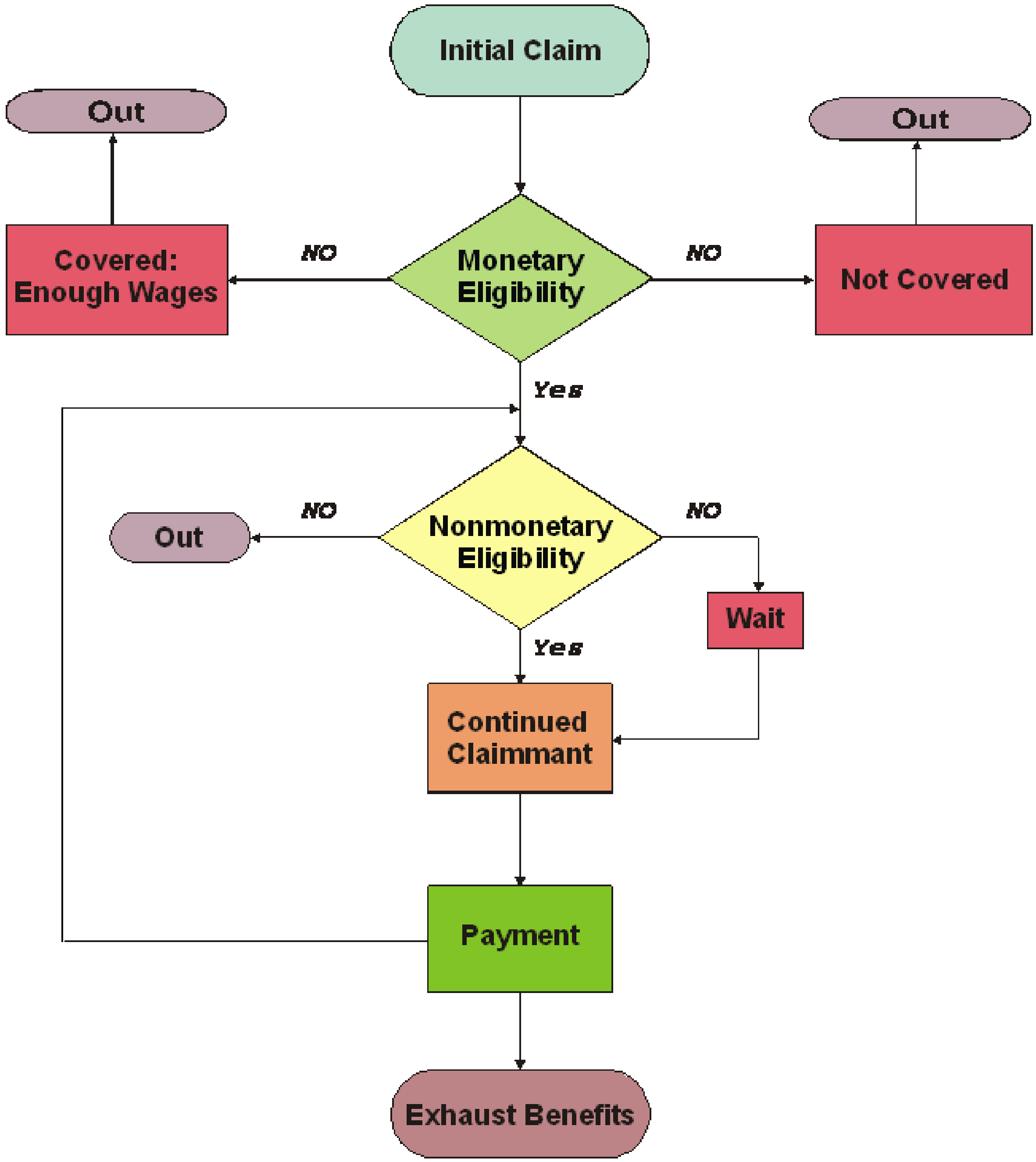
To encourage a claimant to move from a State where no suitable work is available to one where there is a demand for the type of service that the claimant is able to render, States have made agreements to protect the rights of workers who make such moves. These arrangements permit the collection of benefits from the State in which an individual has qualifying wages (*liable State*) even though the claimant is not physically present in that State. The State in which the individual is located may accept the claim, acting as Agent for the State that is liable for the benefits claimed. The liable State may also accept the claim directly from the claimant by telephone or electronic means. Determinations on eligibility, disqualifications, and the amount and duration of benefits are made by the liable State.

Wage-Combining Arrangements.

This arrangement permits workers to combine their wages and employment in more than one State and file in a single State. This holds for situations where there are insufficient wages and employment to qualify for benefits in any one State and where, having sufficient wages and employment to qualify for benefits in one State, the benefit amount would be increased by combining wages and employment in other States. In addition, this arrangement permits workers having sufficient wages and employment to qualify for benefits in more than one State, to combine their wages in those and any other States in which they had wages and employment in the base period of the liable State.

UI Claims Process

The following chart illustrates the process of claims validation in a State.



UI Claims Data for LAUS Estimation

Counts of individuals associated with continued claims are used in the development of State and model-based area unemployment. Counts of individuals associated with two types of claims, continued claims and final payments, are used in the development of sub-state unemployment estimates.

Continued Claims

Continued claimant data for certifications to unemployment in the week including the 12^{th} of the month from the State UI program are used each month in the development of State and area model-based total unemployment. The State UI program data, along with data from the UCFE, and RRB programs, are used each month to calculate monthly LAUS estimates for sub-state areas. Because the unemployment measurement is limited to the labor force status of the civilian population, claims data from the UCX program are excluded.

The continued claimant count is made up of persons who certified to a compensated or non-compensated week of unemployment.

- Compensated claims relate to those claimants who are receiving UI benefits. A claimant who has worked during the week and received any earnings while certifying for unemployment does not meet the criteria for the CPS definition of unemployed and is omitted from the count used in LAUS estimation even if the earnings do not result in a reduction in the benefit award.
- Noncompensated claims include individuals who are unemployed and are certifying weekly for benefits but are not receiving compensation for any of the following reasons:
  - They are certifying during the waiting week,
  - They are certifying while appealing a monetary or nonmonetary disqualification. Or
  - They are certifying while filing a pending claim.

These individuals are unemployed, are in the UI system, and are included in the continued claimant count for LAUS estimation.

The LAUS program recognizes three types of continued claims data: intrastate, commuters and interstate for both regular State UI and UCFE programs.

Intrastate claims

Intrastate claims are claims filed by unemployed persons in the State where they live and worked.

Commuter claims

Commuter claims refers to claimants who worked and would continue to seek work in one State while living in close proximity in another State. These claimants are treated as if they reside in the State of prior employment and file intrastate claims in the State in which they had worked.

Interstate

Interstate refers to interstate claim filed by claimants who resided and became unemployed in one State, and, during their spell of unemployment, moved to another State and filed for UI benefits in the new State of residence. The State where the claimant first became unemployed is still liable for that spell of unemployment and the UI benefits that the claimant receives.

Interstate and commuter claims data are exchanged through the ICON system, which enables States to transmit, and to retrieve appropriate claims data. The file format used by ICON is called Liable-Agent Data Transfer (LADT).

Final Payments

Final payment recipients, also called UI benefit exhaustees, are continued claimants who file for a week of unemployment that exhausts their total benefit award.

Once claimants receive their final payment and leave the UI system, States are unable to track them. The LAUS methodology estimates the number of UI exhaustees who are still unemployed by applying a survival rate to the number of final payments. This survival rate is developed from CPS data on duration of unemployment. For further details regarding this process, see the Labor Market Area Unemployment section of Chapter 7.

Differences: UI Data versus the CPS

CPS data are used directly to produce official labor force estimates for the nation and they are the key input to LAUS model based estimates of unemployment for States and selected areas. Differences between the State UI count of continued claimants without earnings and CPS unemployed result primarily from differences in program coverage of the unemployed by the UI system.

Certain industries and occupations are excluded from UI coverage, including:

- employees of certain nonprofit organizations;
- insurance and real estate agents on commission;
- agricultural workers on small farms and certain seasonal farm workers;
- some domestic workers;
- self-employed persons;
- unpaid family workers;
- some State and local government employees;
- student nurses and interns in hospitals; and
- railroad workers (covered under the RRB program).

Certain unemployed individuals may not be able to receive UI benefits, including:

- people who have not worked long enough and therefore have insufficient wages to establish eligibility for benefits under UI;
- people who quit a job or were discharged for misconduct;
- people who have exhausted their benefits and could not re-establish a benefit year; and
- people with no recent earnings, such as new entrants or reentrants to the labor market.

The UI exclusions limit program coverage to unemployed individuals with recent employment experience and exclude unemployed new entrants and reentrants to the labor market. Also, much of agricultural unemployment is not represented in UI statistics.

BLS Standards for UI Data

LAUS labor force estimates produced for State and substate levels use the same definitions and concepts as the CPS so that the resultant estimates are consistent with the CPS and comparable within and across States. In order to further ensure this, BLS sets standards for the UI statistics used in LAUS estimation

Standards for Continued Claims and Final Payments

Two insured unemployed counts, continued claimants and final payment recipients, are used in the development of LAUS substate unemployment estimates. For the model-based unemployment estimation procedure, only continued claimants are used.

Continued claimants are persons certifying to a compensated or noncompensated week of unemployment under the State UI and UCFE programs. Because measurement is limited to the labor force status of the civilian population, the UCX program is excluded. The continued claimant count includes intrastate claimants, commuter claimants (based on State of residence), and interstate claimants (based on State of residence). UCFE program data are not used in developing unemployment estimates for modeled areas.

Persons receiving final payments are continued claimants certifying to a week of unemployment which represents the last regular benefit payment in the benefit year. Further benefits are not available until the beginning of a new benefit year.

The BLS standard of quality for these continued claims and final payment counts is as follows:

- the counts reflect the State and county of residence of the unemployed;
- the counts are unduplicated and based on the Social Security number and the claimant's week of unemployment for which the claimant certified;
- the counts include both compensated and noncompensated claimants as described above;
- for continued claimants, the claimant's week of certification is consistent with the CPS reference week., i.e., the week including the 12th of the month(see also the December reference week below);
- for persons receiving final payments, the counts are weekly, based on the week for which the claimant is certifying;
- the counts exclude persons with any earnings due to employment, regardless of their entitlement to full weekly UI benefits.

December Reference Week

Normally, the reference period is the week including the 12th of the month. However, this is generally not the case for the month of December. In December, the actual reference week used by the CPS and, thus, LAUS depends on the number of business days between the 12th of the month and Christmas day. As a result, the reference week is most often the week that includes the 5th of the month, the week prior to the week that includes the 12th.

If the 12th of December falls on a Friday or Saturday, the reference period will be the week including the 12th. However, if the 12th falls within Sunday-Thursday, the reference period will be moved up to the week that includes the 5th. This allows adequate time for CPS data collection and processing prior to the Christmas holiday. Additionally, the change in the reference week is necessary because CPS response rates fall substantially for the days immediately before the Christmas holiday.

Standards for Initial Claims

While not part of direct LAUS estimation, initial claims are integral to the UI process itself. Also, initial claims counts may be used in atypical or exception procedures in the Handbook method to develop an estimate of those unemployed who are eligible for UI but delay filing or never file for unemployment benefits. (Estimates of delayed and never filers are no longer required in Handbook estimation, but it is useful to define the standards for initial claims.)

An initial claim is a notice filed by an individual to request determination of entitlement to and eligibility for compensation. A new initial claim is the first claim filed by the claimant within the benefit year. An additional initial claim is a second or subsequent claim filed by the claimant within the benefit year after an intervening period of employment. The initial claims count representing new spells of unemployment previously used in LAUS estimation included both new and additional initial claims filed by individuals for State UI in the week including the 19th of the month.

Reference Period

Unlike continued claims that relate to a certification period in the past, initial claims do not refer to a reference period, but rather represent a point in time. Information requested on the initial claim form typically includes the date of filing, and the date of separation and the separating employer.

Excluded Groups

For purposes of defining spells of insured unemployment, the following types of initial claims are excluded from consideration:

1) Invalid new initial claim where the individual is found to be monetarily ineligible for UI.

2) Transitional initial claim, where a new, unique spell of unemployment has not occurred. Such an initial claim is filed by a claimant during a spell of unemployment in the last week of his/her benefit year, requesting an eligibility determination and establishment of a new benefit year. Because the claimant is in a continuous spell of unemployment and is also filing a continued claim, such transitional initial claims are excluded from the count representing new, emerging unemployment.

3) Reopened claim, where a claimant reopens a continued spell of unemployment after ceasing certifying to unemployment and withdrawing from the labor force. If this atypical action does not reflect an intervening spell of employment, the State may administratively reopen the claims series and allow the claimant to resume filing continued claims. These claims are not to be considered initial claims.

Standards for Residency Coding

With Federal funds allocated to areas below the State level, the use of claims data by residence is imperative, not only as a determinant of the labor market area's total unemployment estimate, but also in the development of county and sub-county estimates. These estimates are created through a method called disaggregation. For further details regarding this process see Chapter 9.

The residency requirement for claims data calls for the coding and tabulating of claimants by State and county of residence. The geographic requirement applies to counties within the State paying the benefits (or acting as agent State for interstate claims) and to counties in contiguous States whose residents cross State lines to file intrastate claims in the State holding their wages and paying the benefits (commuter claimants). If State claims documents (either intrastate or interstate) are preprinted with the State code, border State codes must be entered for commuter claimants to insure correct residency information.

The UI Database Survey

Beginning in 1975 an effort was undertaken by BLS to improve the UI data used in LAUS estimation. This effort started with a survey of the State UI database systems. There were two primary reasons for the survey. The first was to describe the methods States were using to obtain the UI statistics used in developing LAUS estimates, and the second was to provide input to determining the necessary modifications to State systems to achieve more uniform UI data series. Based on this survey, the BLS standards for UI statistics were developed.

A plan of action was developed to eliminate inconsistencies in UI statistics both between and within States as compared to official labor force concepts. Claimant data that represented an unduplicated count of individuals by State and county of residence for the appropriate reference period and with maximum adherence to the CPS definition of unemployment in terms of any earnings due to employment in the week of certification was the focus. These characteristics—unduplicated count of persons, residency, reference period, and exclusion of persons with any earnings—are essential elements for the UI claimant statistics used in unemployment estimation, and areas where improvement efforts have been concentrated.

To obtain an unduplicated count of persons, Social Security numbers are used. Also, the use of the week of certification prevents multiple counting because an individual can certify only once to a week of unemployment.

Basing the UI statistics on claimant residency rather than more program-related locations such as local office or place of employment ensures correspondence with official labor force concepts. Proper residency coding affects all LAUS uses of UI data.

The requirement that UI statistics relate to the week including the 12th of the month also ensures correspondence with the official labor force estimates. The exclusion of persons with any earnings makes the data consistent with the CPS, where one hour of pay qualifies an individual as employed.

The initial UI Data Base Survey was a three-day-long meeting of State research, State UI, and BLS staff. A detailed description of UI administrative and operational processes was obtained.

Based on the results of the UI Data Base Survey, contracts were established with all States to develop unique monthly statistical counts that reflect the BLS standards for UI statistics and that are used for LAUS estimation purposes. These State-developed tabulations have been replaced by tabulations developed by the Program to Measure Insured Unemployed Statistics (PROMIS).

The UI Claims Review and Validation Project

In 2001 a simplified form of the UI Database Survey was introduced. Entitled the *UI Review and Validation Project,* this examination of the data sources for UI inputs into LAUS was designed to be less of a burden for the States to participate in and to be conducted more frequently than the UI Database Survey. Due to the ever-changing nature of technology, UI laws, and administrative procedures, it is necessary to re-examine the data sources and procedures on a regular basis.

The project included reviewing and validating the quality of claimant data extracted from the unemployment insurance (UI) system databases in the States. In addition to the LAUS program, the MLS program requires UI statistics on initial claims for the event trigger, continued claims for describing the ongoing layoff, and final payments. Thus, the validation of UI data extract parameters and specifications used in the State were integral to quality assurance of not only the UI claims data inputs but also the LAUS estimates and the MLS statistics.

The validation procedure consisted of two separate stages, an initial examination of the current procedures in place for obtaining UI claims data for use in LAUS and MLS estimations and a follow up session to address any problems identified in the initial examination.

The initial examination involved an on-site visit to the State agency by BLS staff. The purpose of the visit was to interview the State staff who are responsible for processing and extracting UI claims data for LAUS and MLS estimation and to conduct a detailed examination of the UI source files and the extract programs used for LAUS and MLS purposes. A standard questionnaire form was used to document the claimstaking method, the filenames where the claims are stored, and to determine if the extract program was capturing all the necessary claims data input.

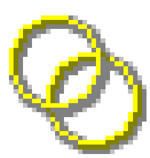
Upon completion of the questionnaire, examination of the UI source files, and a review of the extract program, a determination was made if the State's claims data inputs for LAUS and MLS meet the BLS standards for UI claims data. If any shortcomings are discovered, then a second stage is initiated to ensure that any deficiencies will be corrected.

In the second stage, problems identified in the initial inquiry were addressed. The BLS and the State staff determined solutions to ensure that the BLS data standards are met. Solutions included the re-writing of UI claims extract programs or other programs that process claims data for LAUS and MLS. In addition, the BLS and State staff determined the necessary resources needed to implement the corrections.

The validation process was an on-going project with each State being certified and re-validated periodically as UI polices and technologies change. Two events led to the elimination of this project. One was the limitation of travel to States due to budget restraints starting in 2008. The other was the increasing number of States implementing the PROMIS system.

The in-depth research and analysis required by States to gain approval to officially use PROMIS has provided a much more comprehensive examination of the participating State's UI system and claims extract programs. In many cases the set up of new UI database extract programs specifically for PROMIS has revealed inaccuracies hidden in the legacy system's extract program that went unknown and were not uncovered by the validation project. The PROMIS approval process has effectively removed the need for the *UI Review and Validation Project* at the present time.

Program to Measure Insured Unemployment Statistics (PROMIS)



The PROMIS system is a stand-alone PC-based system that stores all claimant information, including socioeconomic characteristics, and generates the UI inputs to the LAUS and Mass Layoff Statistics (MLS) programs. In addition to generating input files, PROMIS can be used to develop tabulations at the State and area level of UI claimants by socioeconomic characteristics. PROMIS operates as the clearinghouse for multi-purpose input data, allowing flexibility to provide a more complete picture of the unemployment situation at substate levels.

The PROMIS system is designed to provide States with increased quality assurance and resource efficiency to develop monthly statistics. The implementation of PROMIS by a State involves the creation of a new UI database extract program. This enables the most up-to-date LAUS criteria to be incorporated into the extract program and for the program to be written in a current programming language. The extracts used by most States for their legacy systems were developed decades ago and were often not updated as needed. These legacy extracts were written in programming languages that are now antiquated and thus are confusing and unfamiliar to current State staff. A rigorous examination of the PROMIS data and the legacy system data, which is also required, has often exposed flaws in the legacy extract that went unnoticed.

The PROMIS data quality is further enhanced by the Residency Assignment System, which corrects erroneous address information and assigns geocodes for States, counties, cities and towns. (See the Residency Assignment System section of this chapter on pages 3-29 to 3-47 for more information.) In addition, the use of PROMIS facilitates the implementation of claims-based disaggregation by providing claims data at the city and town level. (See Chapter 9 on Disaggregation for more details.)

The following files are produced by the PROMIS system:

- City Claims Input Files compiled by Counties and Cities
- State UI and UCFE Continued Claims Less Earnings (batch IDs: M03, M04, M05, M06, M07, M08) for the LAUS State System
- State UI and UCFE Continued Claims Less Earnings (batch IDs: M03, M04, M05, M06, M07, M08) compiled by Labor Market Area (LMA) for New England States
- Week 1 through Week 6 Final Payments (batch IDs: M10, M11, M12) for the LAUS State System
- Week 1 through Week 6 Final Payments (batch IDs: M10, M11, M12) compiled by Labor Market Area for New England States
- All UI and UCFE Continued Claims Less Earnings (batch IDs: M03, M04, M05, M06, M07, M08), and Week 1 through Week 6 Final Payments (batchM03, M04, M06, M07, M10, and M11
- All UI and UCFE Continued Claims Less Earnings (batch IDs: M03, M04, M05, M06, M07, M08), and Week 1 through Week 6 Final Payments (batch IDs: M10, M11, M12) compiled by Labor Market Area (LMA) for New England States, and one large file containing the output for batch IDs M03, M04, M06, M07, M10, and M11
- MicroData detail behind all LAUS output data (batch IDs: M03, M04, M05, M06, M07, M08, M10, M11, M12, C06 if New England State, C07 if non-New England State)
- 12-month LSS output files for LAUS annual processing: one consolidated file containing non-commuter output (batch IDs: M03, M04, M06, M07, M10, M11); one file containing City Claims (batch IDs: C06 if New England State or C07 if non-New England State); one consolidated file with each of the commuter outputs (batch IDs: M05, M08, M12)

For more information, see the PROMIS system user’s guide available on the LAUS/MLS Intranet under Operations and Manuals.

Residency Assignment System

To assist States in correctly coding the residence of their UI claims records, the LAUS National Office has made available address correction and geocoding software called the Residency Assignment System (RAS). RAS corrects erroneous addresses, city, state and ZIP codes and assigns FIPS codes for States, counties, incorporated places, minor civil divisions (MCD) and census designated places (CDP). It can also be customized to assign State specific city codes.

Overview

States provide the input file(s) and corresponding format file(s) that defines the layout of the input file(s). States determine the layout of the output file and which geocodes are to be assigned. Geocodes include State and county FIPS codes, FIPS place codes, census designated place (CDP) codes, minor civil divisions (MCD) codes, longitude and latitude, and census tracts and blocks. In addition, other codes can be added such as LAUS codes or State specific codes. Job files are created by national office staff to reflect the output file layout and the geocoding requirements of the State.

States upload their input file via EUSweb to their State folder in either the LAUS directory or the PROMIS directory (if the State is approved for PROMIS). Each State can upload, download, rename or delete any of their files in their State folder. The system will automatically process the input file as long as the file is appropriately named (see the following section on input files).

A polling agent program searches each folder for a new input file and automatically runs RAS when one is detected. Once the input file is processed, RAS places the output files in the State folder and saves the input in the Archive subfolder located within the State folder. The polling agent also notifies the State via email when the file has been processed. If for any reason the same file has to be processed again, the original input file can be moved or copied from the archive folder back into the State folder, and the system will automatically process it. The RAS output includes the processed file (*STout.txt)* with the correct addresses and geocode assignment; the job summary report (*ST.ajs*), which contains statistics on the input records and the level of assignment; and the error report *(ST.err*), which lists each record that had errors along with explanations of the errors.

Geocode Assignment

RAS is comprised of two databases, the Address-Level database and the Centroid database, which verify and correct addresses in claims records and assigns geocodes. Both databases can assign the following geocodes: the State and county FIPS codes, longitude and latitude, and census tracts and blocks. However, only the Address-Level database can assign the 5-digit FIPS place codes for incorporated places, census designated (CDP) places, and minor civil divisions (MCD).

Geocode Assignment by Database Type

Address level database (rooftop)	Centroid database (ZIP code)
FIPS county codes	FIPS county codes
Census tracts	Census tracts
Latitude & longitude	Latitude & longitude
FIPS place codes	-
MCD codes	-

In order for RAS to assign a geocode from the Address-Level database, the input record must be able to be corrected and matched to an entry in the Address-Level database. This is called an exact Address-Level match or a roof top assignment. If the input record does not contain enough detailed data in the record to make an exact address level, RAS may be able to assign geocodes from the Centroid database; however, as noted above the Centroid database can not assign MCD codes or place codes.

Address-Level assignment reports a latitude and longitude set that is based on the individual address. Assignment is to the exact individual address or not at all. Thus an address failing to exactly match the Address-Level database will not be assigned a FIPS place code or an MCD code.

Centroid assignment, on the other hand, reports a latitude and longitude set based on the 9-digit ZIP Code. Its precision is at the block-face level. Latitude and longitude may revert to the 7-digit or 5-digit ZIP Code level in areas where data are less extensive.

The system will first attempt to process all records through the Address-Level database. Records lacking the precise address information needed for an Address-level assignment will then be processed through the Centroid database which has less stringent address requirements.

<u>Limitations of the Address-Level Database</u>
Certain place codes are not included in the Address-Level database. These include place codes created after the 2000 Census, place codes for PO Boxes, and records without exact address matches. Although a particular code may not be in the database, the database does contain the geographic makeup of all places. For more information, see the section entitled *The Assignment of Codes Not in the RAS Databases.*)

<u>Place codes created after the 2000 Census</u>**:** Place codes created after the 2000 Census are not included in the Address-Level database. The RAS software uses the Tele Atlas GeoCensus directory data. Tele Atlas supplies the majority of today's geographic information system (GIS) software packages with the GeoCensus directory data. Although the database is updated continuously with new geographic information, new place codes are only introduced at the time of the decennial census.

Although a particular code may not be in the database, the database does contain the geographic makeup of all places in other forms. Census tracts and blocks can be used to identify new places and assign the place code indirectly.

Records without an exact address match**:** States should note that if a record is not an exact address match and thus not assigned a 5-digit FIPS place code or MCD code, it signifies that RAS could not find an exact address match in the Address-Level database. It does not necessarily indicate that the address in the record is not located in that city.

Some or all of the Centroid level matches may be adequate to determine if the address in a record is located in a certain city as they may be accurate at the city street or block levels.

In situations where a specific city does not receive enough exact address matches to assign place codes to support the expected level of unemployment, States can opt to use a specific level of Centroid precision to assign a place code, such as a match code of 1 (street segment), 4 (streets and blocks), or 5 (city blocks or entire towns and villages).

PO Boxes**:** Records containing PO boxes for the address are not assigned MCD or place codes unless they contain both mailing and residence address fields such as in the LADT file. Otherwise, only the county FIPS code is assigned automatically by the system. States must determine if they intend to count records with PO boxes in the county of the Post Office or in the city of the Post Office. If the records are to be counted in a city, the State must provide a list of the cities and the corresponding place codes to be assigned.

For further information on RAS, see Appendix 3-4 for the RAS User's Guide.

APPENDIX TABLE 3-1
LIABLE/AGENT DATA TRANSFER RECORD

Required Fields by Record Type
Y = Required Field
N = Rule Number Listed at End of Layout

FLD NBR	FIELD NAME	FIELD TYPE	BEGIN COLUMN	FIELD LENGTH	TIC	REOP/ TRAN	W/C - IB	W/C - COMM	DESCRIPTION
1	Social Security Number	N	1	9	Y	Y	Y	Y	Enter Claimant's Social Security Number
2	Claimant's Name - First	A/N	10	12	Y	Y			Enter the claimant's first name. First position cannot be blank. Enter at least one alphabetic character.
3	Claimant's Name - Middle Initial	A/N	22	1	Y	Y			Claimant's middle initial.
4	Claimant's Name - Last	A/N	23	23	Y	Y			Enter the claimant's last name. First position cannot be blank. Enter at least one alphabetic character.
5	Mailing Address - Street	A/N	46	30	Y	Y	Y	Y	Enter Claimant's - (Mailing) Street
6	Mailing Address - City	A/N	76	19	Y	Y	Y	Y	Enter Claimant's - (Mailing) City
7	Mailing Address - State	A/N	95	2	Y	Y	Y	Y	Enter Claimant's - (Mailing) State
8	Mailing Address - Zip Code	A/N	97	9	Y	Y	Y	Y	Enter Claimant's - (Mailing) Zip Code
9	Residence Addr - Street	A/N	106	30	6	6	6	6	Enter Claimant's - (Residence) Street
10	Residence Addr - City	A/N	136	19	6	6	6	6	Enter Claimant's - (Residence) City

APPENDIX TABLE 3-1
LIABLE/AGENT DATA TRANSFER RECORD

Required Fields by Record Type
Y = Required Field
N = Rule Number Listed at End of Layout

(Continued)

FLD NBR	FIELD NAME	FIELD TYPE	BEGIN COLUMN	FIELD LENGTH	TIC	REOP/ TRAN	W/C - IB	W/C - COMM	DESCRIPTION
11	Residence Addr - State	A/N	155	2	6	6	6	6	Enter Claimant's - (Residence) State
12	Residence Addr - Zip Code	A/N	157	9	6	6	6	6	Enter Claimant's - (Residence) Zip Code
13	Claimant's Telephone Number	N	166	10	Y	Y			Enter Area Code, Exchange, and Extension of the Claimant's Telephone Number
14	Year of Birth	N	176	4	Y	Y	Y	Y	Claimant's Year of Birth - Format is "CCYY".
15	Sex	N	180	1	Y	Y	Y	Y	Enter the sex of the claimant 1 = Male 2 = Female 3 = Unknown
16	Race	N	181	1	Y	Y			Claimant's Race Code 1 = White 2 = Black 3 = Asian 4 = American Indian/Alaskan Native 5 = Native Hawaiian/Other Pacific Islander 6 = Information Not Available

APPENDIX TABLE 3-1
LIABLE/AGENT DATA TRANSFER RECORD

Required Fields by Record Type
Y = Required Field
N = Rule Number Listed at End of Layout
(Continued)

FLD NBR	FIELD NAME	FIELD TYPE	BEGIN COLUMN	FIELD LENGTH	TIC	REOP/ TRAN	W/C - IB	W/C - COMM	DESCRIPTION
17	Education	N	182	2					Highest Grade Completed 01 - 12 Actual grade completed (12 = GED) 13 = 1 year of college or technical school 14 = 2 years of college or Associate degree/technical school 15 = 3 years of college 16 = 4 years of college or undergraduate degree 17 = 1 year of post graduate study 18 = 2 years of post graduate study or Masters degree 19 = Doctorate
18	Liable State FIPS	A/N	184	2	Y	Y	Y	Y	Liable State FIPS Code. The Liable State cannot be the same as the Agent State.
19	Liable State Office/Call Center Number	N	186	4	Y	Y			Enter number that identifies the Liable Interstate office/Liable Call Center that handles the claim.

APPENDIX TABLE 3-1
LIABLE/AGENT DATA TRANSFER RECORD

Required Fields by Record Type
Y = Required Field
N = Rule Number Listed at End of Layout

(Continued)

FLD NBR	FIELD NAME	FIELD TYPE	BEGIN COLUMN	FIELD LENGTH	TIC	REOP/ TRAN	W/C - IB	W/C - COMM	DESCRIPTION
21	Agent State Local Office/Call Center Number	N	192	4	Y	Y	Y	Y	Enter number that identifies the Local office/Call Center where the claimant filed the claim.
22	Residence State FIPS	N	196	2	5	5	1	5	Residence State FIPS Code. The Residence State cannot be the same as the Liable State.
23	Residence County FIPS	N	198	3	Y	Y	2	2	Residence County FIPS Code.
24	Residence City/Town FIPS	N	201	4	Y	Y	Y	Y	Residence City/Town FIPS Code.
25	Date Claim Taken	N	205	8	Y	Y			Enter the date the claim was taken. Format is "CCYYMMDD".
26	Effective Date of Claim	N	213	8	Y	Y			Enter effective date of the claim. Correlates with today's date, backdate reason, and Liable State. Format is "CCYYMMDD".
27	Program Type	N	221	1	Y	Y	Y	Y	Enter the program type: 1 = UI 5 = UCFE 7 = UCX

APPENDIX TABLE 3-1
LIABLE/AGENT DATA TRANSFER RECORD

Required Fields by Record Type
Y = Required Field
N = Rule Number Listed at End of Layout

(Continued)

FLD NBR	FIELD NAME	FIELD TYPE	BEGIN COLUMN	FIELD LENGTH	TIC	REOP/ TRAN	W/C - IB	W/C - COMM	DESCRIPTION
28	Entitlement	N	222	1	Y	Y	Y	Y	Enter the entitlement type: 0 = Regular 1 = Extended Benefits (EB) 2 = Federal Benefit Extension 3 = Additional Benefits (AB)
29	SOC Code	N	223	4	3	3	3	3	Enter at least the first 3 digits of the Claimant’s Occupational Classification (SOC) Code (left justified) followed by a zero, or enter the first 4 digits of the SOC.
30	Initial Claim	N	227	1	Y				Enter Status of Claim: 1 = New 2 = Additional 3 = Transitional
31	BYB	N	228	8					Benefit Year Beginning Date. Format is “CCYYMMDD”.
32	BYE	N	236	8					Benefit Year Ending Date. Format is “CCYYMMDD
33	WBA	N	244	3					Weekly Benefit Amount (Include Dependents Allowance)

APPENDIX TABLE 3-1
LIABLE/AGENT DATA TRANSFER RECORD

Required Fields by Record Type
Y = Required Field
N = Rule Number Listed at End of Layout
(Continued)

FLD NBR	FIELD NAME	FIELD TYPE	BEGIN COLUMN	FIELD LENGTH	TIC	REOP/ TRAN	W/C - IB	W/C - COMM	DESCRIPTION
34	MBA	N	247	5					Maximum Benefit Amount (Include Dependents Allowance)
35	Base Period Wages - 1st Qtr	N	252	7					Enter BP Wages for the 1st Qtr
36	Base Period Wages - 2nd Qtr	N	259	7					Enter BP Wages for the 2nd Qtr
37	Base Period Wages - 3rd Qtr	N	266	7					Enter BP Wages for the 3rd Qtr
38	Base Period Wages - 4th Qtr	N	273	7					Enter BP Wages for the 4th Qtr
39	Base Period Wages - 5th Qtr	N	280	7					Enter BP Wages for the 5th Qtr
40	Base Period Wages - Total	N	287	8					Enter Total BP Wages for all quarters
41	NAICS - (Employer with Most Wages)	N	295	6					Enter at least the first four digits of the North American Industry Classification System (NAICS) Code (left justified), followed by “00”, for the employer with which the claimant had the most wages, or enter the 6-digit code.

APPENDIX TABLE 3-1
LIABLE/AGENT DATA TRANSFER RECORD
Required Fields by Record Type
Y = Required Field
N = Rule Number Listed at End of Layout
(Continued)

FLD NBR	FIELD NAME	FIELD TYPE	BEGIN COLUMN	FIELD LENGTH	TIC	REOP/ TRAN	W/C - IB	W/C - COMM	DESCRIPTION
42	Last Employer - Name	A/N	301	30					Enter name of Last Employer.
43	Date Employmen t Began	N	331	8					Enter Date Employment Began with Last Employer. Format is "CCYYMMDD
44	Date Employmen t Ended	N	339	8					Enter Date Employment Ended with Last Employer. Format is "CCYYMMDD".
45	NAICS – (Last Employer)	N	347	6	4	4	4	4	Enter at least the first four digits of the North American Industry Classification System (NAICS) Code (left justified), followed by "00", for the claimant's Last Employer, or enter the 6 digit code.
46	Last Employer - Ownership Code	N	353	1	Y	Y	Y	Y	Valid entries are '1' through '5', default is '5'. 1 = Federal government 2 = State government 3 = Local government 4 = International or Foreign 5 = Private
47	Separation	N	354	1					Separation: 1 = Permanent 2 = Temporary

APPENDIX TABLE 3-1
LIABLE/AGENT DATA TRANSFER RECORD
Required Fields by Record Type
Y = Required Field
N = Rule Number Listed at End of Layout
(Continued)

FLD NBR	FIELD NAME	FIELD TYPE	BEGIN COLUMN	FIELD LENGTH	TIC	REOP/ TRAN	W/C - IB	W/C - COMM	DESCRIPTION
48	Recall Date	N	355	8					Enter date claimant is to return to work. If no recall date, enter all zeros, format is "CCYYMMDD".
49	Union	A/N	363	1					Y = Yes N = No
50	US Citizenship	A/N	364	1					Y = Yes N = No
51	Alien Registration Number	A/N	365	20					Enter claimant's Alien Registration Number, if applicable and available.
52	Week Ending Date	N	385	8			Y	Y	Week Ending Date of week claimed, format is "CCYYMMDD".
53	Earnings During Week Claimed	A/N	393	1	Y	Y	Y	Y	X = Yes. Indicated that claimant had earnings during the week claimed. Space = no
54	Date First Payment Issued	N	394	8					Enter the Date the First Payment was Issued. Format is "CCYYMMDD".
55	Exhaustee	A/N	402	1					X = Yes. Complete only upon exhaustion. Space = no
56	Weeks Compensated	N	403	2					Enter the number of weeks compensated during the benefit year.
57	$ Amount of Benefits Paid	N	405	7					Enter the total amount of benefits paid during the benefit year.

APPENDIX TABLE 3-1
LIABLE/AGENT DATA TRANSFER RECORD
Required Fields by Record Type
Y = Required Field
N = Rule Number Listed at End of Layout
(Continued)

FLD NBR	FIELD NAME	FIELD TYPE	BEGIN COLUMN	FIELD LENGTH	TIC	REOP/ TRAN	W/C - IB	W/C - COMM	DESCRIPTION
58	Commuter Identification Code	A/N	412	1				Y	X = Yes. Complete to identify claims filed by commuters from Residence State. Space = no
59	Reopen Claim/Transfer of Claim	N	413	1		Y			1 = Reopen claim. Complete when there is a break in claim series not caused by employment. 2 = Transfer of claim. Complete when there is a change in the Residence/Agent State with no break in claim series. 0 = Neither
60	Ethnic	N	414	1	Y	Y			Enter claimant's Ethnic group. Valid values are: 1 = Hispanic or Latino 2 = Non-Hispanic or Latino 3 = Not Available
61	Filler	A/N	415	57					(for future use)
62	Record Type	A/N	472	1	Y	Y	Y	Y	Required Entry to indicate Type of Record 1 = TIC (Telephone Initial Claim) 2 = Weeks Claimed 3 = Reopen/Transfer
63	Process Date	N	473	8	Y	Y	Y	Y	Enter the Date the claim was Processed. Format is "CCYYMMDD".

APPENDIX TABLE 3-1

LIABLE/AGENT DATA TRANSFER RECORD

Rule Number	Definition of Rule
1	On a Weeks Claimed (IB) – the Residence State FIPS can be the same as the Liable State FIPS as long as the Agent State FIPS is different.
2	Either Mailing Address or Field 23 (Residence County FIPS) should be provided. For New England States, either Mailing Address or Field 24 (Residence City/Town FIPS) should be provided.
3	SOC should be provided if possible. If not provided, a warning message will be returned. THE RECORD WILL BE PROCESSED.
4	Last Employer – NAICS should be provided if possible. If not provided, a warning message will be returned. THE RECORD WILL BE PROCESSED.
5	On a Weeks Claimed – Commuter, the value in the Residence State FIPS (field 20) will determine the receiving state.
6	Residence Address will be completed when the Liable State can provide a Residence Address that is different from the Mailing Address.

APPENDIX TABLE 3-2

Agent Summary Report - Interstate Claims

```
01/03/00         LIABLE/AGENT DATA TRANSFER                PAGE 01
                    AGENT SUMMARY REPORT
               STATE OF (Agent State Name)      FIPS ID IS: 00
     AGENT STATE COUNTS FOR THE SAT. ENDING DATE 01/01/00
```

INITIAL CLAIMS	UI	UCFE	UCX	TOTALS
REG	20	0	0	20
EB	0	0	0	0
FSB	0	0	0	0
AB	0	0	0	0
TOTAL	20	0	0	20

REOPEN/TRANSFER	UI	UCFE	UCX	TOTALS
REG	2	0	0	2
EB	0	0	0	0
FSB	0	0	0	0
AB	0	0	0	0
TOTAL	2	0	0	2

WEEKS CLAIMED - IB	UI	UCFE	UCX	TOTALS
REG	1358	24	11	1393
EB	0	0	0	0
FSB	0	0	0	0
AB	0	0	0	0
TOTAL	1358	24	11	1393

```
01/03/00        LIABLE/AGENT DATA TRANSFER                 PAGE 02
                   AGENT SUMMARY REPORT
              STATE OF (Agent State Name)       FIPS ID IS: 00
   AGENT STATE COUNTS FOR THE SATURDAY ENDING DATE 01/01/00
INITIAL CLAIMS
```

			UI	UCFE	UCX	TOTALS
01	AL	ALABAMA	UI	UCFE	UCX	TOTALS
		REG	0	0	0	0
		EB	0	0	0	0
		FSB	0	0	0	0
		AB	0	0	0	0
		TOTAL	0	0	0	0
02	AK	ALASKA	UI	UCFE	UCX	TOTALS
		REG	1	0	0	1
		EB	0	0	0	0
		FSB	0	0	0	0
		AB	0	0	0	0
		TOTAL	1	0	0	1

APPENDIX TABLE 3-3

Agent/Residence Summary Report - Commuter Claims

```
01/03/00       LIABLE/AGENT DATA TRANSFER            PAGE 01
                AGENT/RESIDENCE SUMMARY
                        REPORT                FIPS ID IS: 00
              STATE OF (Agent State Name)
      CURRENT MONTH = 12/1999  PREVIOUS MONTH = 11/1999
COMMUTER CURRENT          UI      UCFE       UCX       TOTALS
TOTALS
     REG                 184         2         0          186
     EB                    0         0         0            0
     FSB                   0         0         0            0
     AB                    0         0         0            0
     TOTAL               184         2         0          186

COMMUTER PREVIOUS         UI      UCFE       UCX       TOTALS
TOTALS
     REG                 442         0         1          443
     EB                    0         0         0            0
     FSB                   0         0         0            0
     AB                    0         0         0            0
     TOTAL               442         0         1          443
```

```
01/03/00       LIABLE/AGENT DATA TRANSFER            PAGE 02
               AGENT/RESIDENCE SUMMARY
                       REPORT                 FIPS ID IS: 00
             STATE OF (Agent State Name)
COMMUTER CURRENT     CURRENT = 12/1999  PREVIOUS = 11/1999
01  AL   ALABAMA          UI      UCFE       UCX       TOTALS
         REG          0       0        0        0
         EB                0         0         0            0
         FSB               0         0         0            0
         AB                0         0         0            0
         TOTAL             0         0         0            0
02  AK   ALASKA           UI      UCFE       UCX       TOTALS
         REG               0         0         0            0
         EB                0         0         0            0
         FSB               0         0         0            0
         AB                0         0         0            0
         TOTAL             0         0         0            0
```

APPENDIX 3-4

Residency Assignment System User's Guide

The Residency Adjustment System (RAS) is accessed using the EUSweb. State LAUS technicians must have an EUSweb account. To obtain an account, State technicians should contact their regional office. A server account consists of the BLS assigned user ID along with a password and the necessary permissions to access the BLS firewall and LAUS server.

States upload their inputs files through either the LAUS Program menu or, if the State is participating in PROMIS, the PROMIS Program menu. RAS will automatically process the files and return them to the appropriate State folder. Email notification is automatically sent to State users to inform them that their file has been processed and is ready to be downloaded.

Input Files

To use RAS, three files are needed for each claims file type to be processed; these include the input file, the format file, and the definition file. States provide the input file and the format file. The format file describes the layout of the input file and must specifically identify the address fields. States are not limited to one file type. For example, separate files can be processed for continued claims, initial claims, LADT files or any other file a State may need to correct and geocode. Corresponding format files must accompany each file type and individual RAS job files must be setup for each file type.

Input File

The input file is a UI claimant record file that may consist of interstate claims, interstate claims and/or commuter claims. The data for the input file is obtained from the State's UI branch. The file must be submitted in a consistent format for periodic processing since any changes in the input file layout requires that the format file and associated jobs files be modified to reflect the new layout.

At a minimum, records must include street address, city, & zip. Other information, such as local office ID, claim dates, and claimant information, may remain in the file. The conversion process will not affect these fields. The input file must be an ASCII file in fixed record length format. As previously mentioned, for the system to automatically process the input file, it must be named appropriately with the State's alpha abbreviation. The following are accepted file names and their possible contents:

Standard Input File Names

File Name	File Type
ST.txt	generic file
*ST*LADT.txt	LADT file
*ST*COMM.txt	commuter claims file
*ST*COM.txt	commuter claims file variation
*ST*HIS.txt	generic history file
*ST*ANN.txt	generic annual file
*ST*PROMIS.txt	weekly PROMIS input file
*ST*LADTPROMIS.txt	weekly PROMIS LADT input file
*ST*INTRA.txt	intrastate claims file
*ST*REG.txt	regular claims file
*ST*CC.txt	Continued claims file
*ST*IC.txt	initial claims file
ST = State alpha abbreviation	

As long as the above criteria are met, the system can accept any file format. For example, the complete LADT file can be submitted. Each record in the LADT file contains 63 fields at a total of 473 bytes. The maximum number of fields per record and the total number of bytes per record are limited together to 32,767 bytes.

RAS can also filter out unwanted records, such as claims with earnings and UCX claims, prior to processing the input file. For large files, filtering out unwanted records will speed up the RAS processing time.

In addition, large input files can be compressed before they are uploaded to EUSweb using either WinZIP or PKZIP compression utility software. Compressed files, or zipped files, use the same naming conventions as above but must have the "ZIP" extension instead of the "TXT" extension. The polling agent will automatically unzip any files with the ZIP extension before sending them to RAS for processing. This feature will significantly reduce the amount of uploading time for large input files and eliminated EUSweb sessions from timing-out during the upload procedure.

Format File

The format file contains a list of each data field, its length and data type, and must have the "FMT" extension. The file identifies the fields and their locations within a record. Only the address fields (street, city, state, and ZIP code) need to be specifically identified for RAS. It also identifies unnecessary fields that can be ignored during processing or even removed before process begins. Data that the State does not want to identify, such as Social Security numbers, should be included in one large field along with other data. This way the positions of the sensitive data are not identified.

The following is an example of a format file. In this case, the Social Security number can be hidden in the "data" field which is 20 characters long.

Format File Example

```
data,20,c
address,30,c
city,19,c
state,2,c
zip,5,c
eor,2,b
```

The data type is "c" for most of the fields indicating that the field is a character type. Only the "eor", or end of record, is a "b" for binary type. The eor indicator typically consists of two column lengths and is not visible unless using a text editor, such as Word or TextPad, which allows the viewing of all spaces. Although the eor is takes up two column places, it is usually identified as a single symbol, such as ¶ in Word or ↵ in TextPad. The eor indicator can be viewed by the clicking on the following button on the tool bar in Word or TextPad:

¶

Definition File

RAS recognizes a specific set of input fields called PW fields. For RAS to process the data in a field, that field must be mapped to one of the RAS-recognized PW fields. To map fields, a separate file called a definition file, or DEF file, must be created.

The definition file also identifies the type of input file as ASCII. In this file and the RAS as well, the input file is referred to at the *database*. In most cases the definition file would initially contain one line stating "DATABASE = ASCII". During processing, the individual address fields and their associated PW fields will be added. Each definition file must have the "DEF" extension. The definition file is created by the national office staff when the RAS job files are setup.

Output Files

Three files are generated each time an input file is processed by RAS. These include the output file with corrected address fields and assigned geocodes, and two report files that provide information on the geocoding precision and errors associated with the input file.

Output file

States have much flexibility in how their output files are produced. The output can be as simple as having the same file layout as the input file only with corrections. It can also contain additional fields assigned by the system. RAS can overwrite existing address fields with corrected data or the corrected data can be written to new fields in any location in a record. FIPS for States, counties, incorporated places, CDPs, MCDs and State specific codes can be also be written to any location in the record or appended to the end of each record. Several output files can be produced from one input file. Multiple output files can be designated by claim types, such as regular and commuter claims, or other criteria depending on the needs of the State.

Once a file has been processed, the output file will have the same name as the input file but will include the word "out" (ex. CTOUT.TXT). Multiple output files would be named to reflect their contents.

Reports

Two reports are produced by the system, the Job Summary Report, and the Error Report.

Job Summary Report: The Job Summary report provides information regarding the job set up, the input data and the results. This report shows the total number of records processed, the number of records that were filtered out, the types of addresses, i.e. street, PO Box, Military, etc., counts and percentages of the assigned and corrected address components including the county FIPS, city names, FIPS places codes and ZIP codes, and the error code listing and the number of records and the percentage of occurrences for each error type.

The following pages show an example of the job summary report for the output file.

Job Summary Report

```
Job Summary                                              ACE 7.50c Page 5

21-Dec-2006     10:40:08am
Local Area Unemployment Statistics

Postal Code Summary Per File -------------------------------------------------
File Name: P:\LAUS\ST\STOUT.TXT
Filter:    n/a
Records Passed by Filter:    22506

Postal    Assigned          Corrected              Corrected
Codes   Count          %   Count         %        Components      Count        %
------ ---------------  ---------------        ---------------  --------------
ZIP       22495  99.95       454   2.02        City               696   3.09
ZIP+4     20204  89.77     19734  87.68        State                4   0.02
DPBC        n/a    n/a       n/a    n/a        Trunc Addresses    554   2.46
CART        n/a    n/a       n/a    n/a        Trunc Cities         0   0.00
LOT         n/a    n/a       n/a    n/a
LOT Or      n/a    n/a       n/a    n/a
County    22495  99.95         0   0.00
AGeo      16981  75.45         0   0.00
CGeo       5416  24.06         0   0.00
TaxIQ         0   0.00         0   0.00

                         Address Type Summary
               (Percentages based on # of records assigned)
                         Count      %                              Count      %
-------------------------------------     -------------------------------------
Street                   16796  83.13     Firm                         0   0.00
PO Box                    1791   8.86     General Delivery             1   0.00
High Rise                 1529   7.57     Military                     0   0.00
Rural Route                 87   0.43     Unique                       0   0.00

                  CASS Qualitative Statistical Summary (QSS)
             (Percentages based on # of records passing the filter)
                         Count      %                               Count     %
-------------------------------------     -------------------------------------
High Rise Default         1063   4.72     Rural Route Default         16   0.07
High Rise Exact            470   2.09     Rural Route Exact           71   0.32
EWS Match                    0   0.00     LACS Convertible           125   0.56

Error Code Summary -----------------------------------------------------------

Error                    Description                         Count          %
-----   ------------------------------------------------   ---------     ------
E101    Last line is bad or missing                                0       0.00
E212    No city and bad ZIP                                        0       0.00
E213    Bad city and no ZIP                                        0       0.00
E214    Bad city and bad ZIP                                       0       0.00
E216    Bad ZIP, can't determine which city match to select        0       0.00
E302    No primary address line parsed                            18       0.08
E412    Street name not found in directory                       382       1.70
E413    Possible street name matches too close to choose           1       0.00
E420    Primary range is missing                                1524       6.77
```

E421	Primary range is invalid for street/route/building	269	1.20

E422	Predirectional needed, input is wrong or missing	62	0.28
E423	Suffix needed, input is wrong or missing	16	0.07
E425	Suffix & directional needed, input wrong or missing	3	0.01
E427	Postdirectional needed, input is wrong or missing	21	0.09
E428	Bad ZIP, can't select an address match	0	0.00
E429	Bad city, can't select an address match	0	0.00
E430	Possible addr. line matches too close to choose one	0	0.00
E431	Urbanization needed, input is wrong or missing	0	0.00
E439	Exact match in EWS directory	0	0.00
E500	Other Error	2	0.01
E501	Foreign	0	0.00
E502	Input record entirely blank	0	0.00
E503	ZIP not in area covered by partial ZIP+4 Directory	0	0.00
E504	Overlapping ranges in ZIP+4 directory	3	0.01
E600	Marked by USPS as unsuitable for delivery of mail	1	0.00
Total Error Codes:		2302	10.23

Geocensus Summary

Total Input Records:	22506
Less 5 Digit Failure Records:	11
Net Input Records For Geo Processing:	22495

Address Level Geo	Count	%	Centroid Geo	Count	%
(0) Matched	16981	81.01	(1) Street Seg Match	349	6.33
(8) Non Matched	3981	18.99	(4) 7 Digit Centroid	974	17.66
			(5) 5 Digit Centroid	4093	74.23
			(9) Non Match	98	1.78
Input Records:	20962	100.00	Input Records:	5514	100.00

Error Report: The Error Report is a detailed report that shows you exactly which records were assigned error codes during processing. The system uses these error codes to indicate why it was unable to match the address in the USPS directories. By reading these codes, you might be able to correct the data in specific records or find a pattern of incorrect data entry.

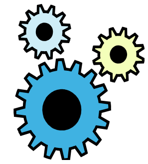
Whereas the Job Summary Report tallies how often error codes occur, the Error Report goes one step further and lists the actual addresses that were assigned those codes. The error report can be customized to display any fields that are included in the input file. Generally, the record number, the error code and the addresses fields are written to the error report.

Not all error types result in the failure to assign geocodes. Many records that are assigned errors may contain errors that pertain to only USPS address standardization requirements. In addition, many errors can be corrected by the system. The next page shows an example of an error report.

Error Report

```
RUN ON: 21-Dec-2006 - 12:40:11PM
LAUS: STATE = TEST
-----------------------------------------------------------------------
REPORTING ON: D:\LAUS\ST\STOUT.TXT

RECORD     ERROR ADDRESS                   CITY                ST  ZIP
4          E101
5          E212  2 MASSACHUSETTS AVE NE                        DC 99999
6          E213  2 MASSACHUSETTS AVE NE    WILMINGTON          DC
7          E214  2 MASSACHUSETTS AVE NE    WILMINGTON          DC 99999
13         E420  MASSACHUSETTS AVE NE      WASHINGTON          DC
15         E423  2 MASSACHUSETTS AVE       WASHINGTON          DC

21-Dec-2006     10:40:08am
Local Area Unemployment Statistics
-----------------------------------------------------------

Error Code List           : ALL
Start Report at Record #  : 1
Max # of Records to Print : 22
Nth Select                : 1.00
Report Type               : PW

Error                    Description
-----  ---------------------------------------------------
E101   Last line is bad or missing
E212   No city and bad ZIP
E213   Bad city and no ZIP
E214   Bad city and bad ZIP
E216   Bad ZIP, can't determine which city match to select
E302   No primary address line parsed
E412   Street name not found in directory
E413   Possible street name matches too close to choose
E420   Primary range is missing
E421   Primary range is invalid for street/route/building
E422   Predirectional needed, input is wrong or missing
E423   Suffix needed, input is wrong or missing
E425   Suffix & directional needed, input wrong or missing
E427   Postdirectional needed, input is wrong or missing
E428   Bad ZIP, can't select an address match
E429   Bad city, can't select an address match
E430   Possible addr. line matches too close to choose one
E431   Urbanization needed, input is wrong or missing
E439   Address found in Early Warning Sysem directory
E500   Other Error
E501   Foreign Address
E502   Input record entirely blank
E503   ZIP not in area covered by partial ZIP+4 directory
E504   Overlapping ranges in ZIP+4 directory
E600   Marked by USPS as unsuitable for delivery of mail
```

How the Residency Assignment System works



The following sequence occurs when the system processes an address:

1. *Parse:* The address is broken down into components (ZIP, city, state, house number, street name, etc.).

2. *Pre-standardize:* Parsed components are pre-standardized to match to the patterns of the directories by converting the data to full capitals, correcting nonstandard abbreviations, and stripping out punctuation and extra spaces.

3. *Match last line:* The system reads the city, state, and ZIP and searches for matching data in the City and ZIP to City file directories. First, by looking up the city and state to find all ZIPS for the city, then, it looks up the input ZIP to find all possible cities for the ZIP. By comparing the results of these two look-ups, the program can verify that the last-line components agree with each other. At this step, it may also correct the spelling of the city and state abbreviation. If the last-line components do not agree, the program expands the search to encompass a larger metro area.

4. *Match address line:* The system searches the databases looking for records that might match the input address line and secondary address. It evaluates all potential matches and assigns a confidence score to each one. The program then selects the record with the highest confidence score. (For a record to be chosen, it must have a high confidence score, and score higher than the other possible matches.) Once the program has chosen a matching record, it can finalize the ZIP and assign geocodes selected by the State such as county FIPS and county name.

<u>Assignment of FIPS Place Codes</u>
The system is comprised of two separate databases: the Centroid level database and the more precise data base, the Address-Level database. The FIPS place codes are assigned from the Address-Level database. This is a more comprehensive database that requires more precise input data requirements to assign a geocode. The system will assign 5-digit place codes to all incorporated areas and Census designated places (CDP) and minor civil divisions (MCD). However, in order for the system to assign a place code, the input record must be able to be corrected and matched to an entry in the Address-Level database. This is called an exact Address-Level match or a roof top assignment. If the input record contains errors such as missing street name, the city may be able to be assigned through the Centroid level database; however, there would not be enough detailed data in the record to make an exact address level match.

<u>Address-level assignment:</u>
A discrete range, a street name, directionals, a suffix, and a ZIP Code are required when assigning Address-Level information. Also, Address-Level requires an exact match on ZIP Code as well as an exact match on each component of the address line in order to make a match.

The Address-Level database is made up of 10 individual databases that represent different geographic regions of the nation. These 10 databases are update quarterly.

Centroid level matches:
A Centroid assignment does not require precise information for each address component. Its precision is at the block-face level or 9-digit ZIP Code and reverts to the 7-digit or 5-digit ZIP Code level in areas where data are less extensive. The 3 levels of Centroid matching are described below. The Centroid database is updated bimonthly.

9-digit (ZIP+4 match or address level): The most specific Centroid geo-match. It is accurate to the block face and is the valid address closest to the center of the block. Usually defines one side of a city block.

7-digit (ZIP+2 match or ZIP sector): Designates a subdivision within a ZIP Code. Zip+2 codes contain smaller groups of streets and blocks than the 5-digit ZIP Codes. The 7-digit is calculated and in general is the balance point of a smaller area within the 5-digit area. The 7-digit area typically encompasses an 8 X 6 block area. The Centroid can be polled off of the balance point by the density of deliverable addresses within this area. Typically, the 7-digit Centroid would not be polled more than a couple of miles off of the calculated balance point, given the size of an 8 X 6 region of city blocks.

5-digit (ZIP Code match or Centroid level): The least precise GeoCensus match. It covers the greatest area of the 5-digit, 7-digit, and 9-digit levels. A 5-digit ZIP Code area can be any size (i.e. many city blocks or entire towns and villages).

Assignment of Codes not in the RAS Databases
As mentioned previously, the RAS databases do not contain codes for place created or changed since the decennial census. However, the databases are continually updated with the latest geographic information and do contain the elements to identify any location.

In order to access the geographic data in the RAS databases and convert them to a specific code, a search-and-replace table is used. A search-and-replace table lists each search value and its replacement value. It can be either an internal table created within a job file or an external table that resides in a separate file.

Place Codes: The most effective method to assign codes to places that are not identified in the Address-Level database is to use census tracts and blocks in conjunction with a search-and-replace table. This method is called the *Census method*. Both the Address-Level database and the Centroid database are capable of assigning a 10-digit census tract/block field.

The Census method uses geographic definitions of places by census tracts and blocks. These definitions are obtained from the US Census Bureau. They are updated twice a year so they contain the latest information on new places and places that have changed since the last decennial census.

The new Census method compares geographic codes from RAS to a crosswalk of Census data. A fifteen digit geographic identifier is created from the two digit State FIPS, three digit county FIPS, and the Census tract and block. The Census block is the smallest area of geography shared by RAS and available Census files. Even at this level of geographic precision, certain blocks will not be unique to a single FIPS place or MCD. Adding county FIPS decreases, but does not eliminate, the number of shared Census blocks.

To accommodate this limitation, the Census method uses two separate tables. The first, much larger table consists of all the unique Census block / FIPS place pairs. These census blocks are not shared between multiple FIPS places. Any record with an address located in such an area will receive the associated FIPS place code.

While this table accounts for a large portion of the State geography, it does not exhaust it; as mentioned above, some Census blocks are shared by two or more places within one county. Because we can not code more precisely, an additional table is used. This table takes the fifteen digit code for the block and appends to the end the official FIPS place names for all places common to that block. RAS creates a similar code by appending the official USPS city name to its fifteen digit code for each record and compares the result to the search and replace table. If a match is found, the associated FIPS code is returned.

If RAS cannot find a match in either table, the system will attempt to provide a code from its internal geocoding database. This is only available for perfectly matched addresses. Typically, this provides codes for only out-of-State areas, which are not part of the Census tables. Occasionally, in-State areas will also receive a code via this method. These records reside in Census blocks with multiple FIPS places. If the address has an acceptable USPS name that is not a FIPS place name, then it will not match in the second Census table. It will, however, receive a code from the RAS internal database if the record is perfectly matched.

The following input is requested but not required from the State analyst:

Level of precision is required for use of the Census table coding:

The National Office highly recommends the use of the Census method for codes “0” and “1”, which are perfect and near-perfect address matches. As of January 2007, the geographic codes and boundaries in the Census tables are six years more recent than the internal RAS database and thus provide a better reflection of current geography. Because match codes “4” and “5” are less precise, the decision is left to the analyst as to whether to use the method for these records. Use at these codes will extend the level of geocoding returned by the system at the cost of more imprecision. No coding is available for records that receive a match code of “9”.

By default, the National Office will use the Census method for codes 0 -5.

Use of the second (“overlap”) table:

The second Census table is used for those Census blocks shared by multiple FIPS places. This table provides little extra coding; early testing show less than 1/10 of 1% of all records receive a FIPS code via this table. Disabling this table will provide a small decrease in overall processing time. Upon request, the National Office can provide the analyst with approximate coding gains and performance time losses that result from the use of this table.

By default, the National Office uses this table.

Use of RAS internal database for extra geocoding

As mentioned above, the RAS internal geocoding database is used to supplement the output of the Census table method. In instances where Census blocks were in a FIPS place in 2000 but are no longer so, this will incorrectly return a FIPS code.

The analyst may direct the National Office to one of three options:

1.) Use the RAS internal database for all uncoded records;
2.) Use the RAS internal database for out-of-State records only; or
3.) Do not supplement the output with the RAS internal database.

By default, the National Office uses the RAS internal database for all uncoded records.

<u>State Specific Codes:</u> This category consists of any codes that are not universally recognized but are internal to a specific State. These codes may identify local UI offices, UI call centers, New England city and town codes, or any other internal code that may be used by States.

To utilize this function, a search-and-replace table must be created. A State must provide the specific codes and their definition criteria for the search-and-replace table. The table is created and added to the State’s RAS job files by LAUS program office staff.

Assessing geocoding precision

There are three different tools available for States to assess the level of geocoding precision for their claims files. These are 1) the GeoCensus Summary, 2) the Match Code, and 3) the Quarterly Geocoding Precision Report.

1) GeoCensus Summary: The GeoCensus Summary is found in the job summary report. This report is generated each time a file is processed and contains summary statistics on the number of records processed, the number and percent of records by address type (including PO boxes), and the number and percent of errors along with a description of the errors. The GeoCensus Summary is located on the last page of the report and identifies the number and percent of records assigned to a county or place by the Address-Level and Centroid databases. Below is an example of the GeoCensus summary.

```
GEOCENSUS SUMMARY----------------------------------------------------------------
TOTAL INPUT RECORDS:                               1646
     LESS 5 DIGIT FAILURE RECORDS:                    0
                                               ----------
NET INPUT RECORDS FOR GEO PROCESSING:              1646
          ADDRESS LEVEL GEO                                   CENTROID GEO
                      COUNT         %                                  COUNT      %
-------------------------------------     -------------------------------------
(0) MATCHED            1178     72.14     (1) STREET SEG MATCH     24       5.13
(8) NON MATCHED         455     27.86     (4) 7 DIGIT CENTROID    142      30.34
                                          (5) 5 DIGIT CENTROID    302      64.53
                                          (9) NON MATCH             0       0.00
-------------------------------------     -------------------------------------
INPUT RECORDS:         1633    100.00     INPUT RECORDS:          468     100.00
```

Any records not containing all the address components will automatically bypass the Address-Level database and therefore are not counted in the non matched summary, item (8). As a result, and in the example above, the (8) non matched count (455) may be less than the total number of records processed by the Centroid database (468).

2) Match Code: The match code is a 1-digit field that identifies the level of coding precision of the latitude and longitude assignment. A lower the number indicates a more precise the assignment. The match code values correspond with the levels of accuracy found in the GeoCensus summary and are listed below. (Note: These codes can be appended to each record. States that wish to have the match code field added to their output file should contact their regional office.)

The following codes are assigned:

- (0) - Matched to Address-level
- (1) - 9-digit match in Centroid (ZIP+4, center of ZIP+4 address range)
- (4) - 7-digit match in Centroid (ZIP+2, postal sector)
- (5) - 5-digit match in Centroid (close to center of ZIP - highest delivery area is weighted and latitude/longitude adjusted toward that area)
- (8) - Not matched in Address-level
- (9) - Both options tried, but no match in either

3) Quarterly Geocoding Precision Report: The new Quarterly Geocoding Precision Report is a snapshot of the geocoding precision for all States for

particular quarter. It contains the same elements as the job summary report but shows the cumulative percentage of records at the various levels of geocoding.

State	File Type	Processing Date	Total Records	Pct of PO Boxes	Address Level	Centroid			Non-Match (9)
					Exact Match (0)	Street Segment (1)	7-Digit Centroid (4)	5-Digit Centroid (5)	
					Pct.	Cumulative Pct.	Cumulative Pct.	Cumulative Pct.	Cumulative Pct.
ST	PROMIS	11/13/06	32,034	0.92	92.2	93.4	96.9	100	0.0
ST	LADT	11/22/06	61,535	13.7	85.2	87.7	96.3	100	0.0

This table enables States to determine if they need to assign place codes for records not coded by the Address-Level database. BLS recommends that States achieve at least a 70 percent match rate for place codes. Looking at the above example, the Address-Level assignment is at 85.2 percent for the LADT file. By adding the Centroid street segment match (ZIP+4 match or address level) it brings the total to 87.7 percent. Therefore the State may want to have the system assign place codes for the records with match codes equal to "1" (the Centroid street segment match). To code 96.3 percent of all records, the State would have to assign place codes for records with a match code of "4" and for 100 percent, a match code of "5". Assignment of place codes for match code levels other than "0" is discussed further in the next section.

This table will be produced at the beginning of each calendar quarter (January, April, July, and October) and provided to States via EUSWeb. If a State sends multiple files to the RAS system, statistics will be developed for each type of file, and then a summary of all State files will also be produced.

Adjustments to city claims for disaggregation

States should keep in mind that the use of RAS can affect their disaggregation of experienced unemployment to the city level and county level. RAS adds or corrects county and city codes to claims with missing or incorrect codes. Any changes in the county or city codes of claimant records must be reflected in both the numerator and the denominator in the disaggregation ratios in the following ways.

- City codes added or corrected can change the numerator in the disaggregation ratios.
- City codes removed from claims with addresses that are not within city limits will affect the numerator in the balance-of-county claims disaggregation.
- Claims records without city codes should be included in the balance-of-county and added to the county claims total.

All addresses, including those not within city limits, will have the county code added to the record. County records with addresses that do not reside within cities are summed together to find the number of balance-of-county claims. This number is the numerator for the balance-of-county disaggregation. The denominator is formed by summing all claims for the county, including those within and without LAUS cities. This must equal the sum of claims for all cities within a county and the balance-of-county number.

States should review their current disaggregation ratios and adjust them based on the geocoding assignment from RAS. The following examples are scenarios in which States would have to adjust their current disaggregation ratios due to RAS geocoding to ensure that the numerator and denominator in the ratios are consistent.

1.) The Village of Elmwood Park is an official LAUS city. However, Chicago, IL, is an acceptable USPS city name for addresses located in Elmwood Park. Prior to using RAS, records may have been identified according to the postal address city and coded to Chicago. RAS codes these records according to physical location, so that they are instead coded to Elmwood Park. This increases the disaggregation ratio for Elmwood Park and lowers the ratio for Chicago, increasing Elmwood Park’s share of the unemployed for Cook County, IL.

2.) Large portions of Sarasota County, FL, are unincorporated. Many addresses have the postal address of Sarasota and Venice, even though they reside in the Sarasota-Bradenton Unincorporated Area and not within city limits. For unincorporated places, RAS would not assign a place code. If records were previously coded based on the postal city, the use of RAS would decreases the numerators of the disaggregation ratios for Sarasota and Venice, decreasing those cities’ shares of Sarasota County, FL, unemployed.

Geographic Resources

The follow Web sites offer services that are helpful in checking and mapping addresses, and FIPS codes.

Geographic Names Information System (GNIS)

http://geonames.usgs.gov/pls/gnispublic

The Geographic Names Information System (GNIS), developed by the USGS in cooperation with the U.S. Board on Geographic Names (BGN), contains information for almost 2 million physical and cultural geographic features in the United States and its territories. The Federally recognized name of each feature described in the data base is identified, and references are made to a feature's location by State, county, and geographic coordinates. The GNIS is our Nation's official repository of **domestic** geographic names information.

This site allows you to query the Federal codes (formerly known as FIPS55) database based on the feature name, county, class code, MSA code or place code. It can be used to obtain information on the FIPS place codes assigned by the Residency Assignment System, such as the physical coordinates (latitude and longitude).

TIGER/Line® Files

http://www.census.gov/geo/www/tiger/

The TIGER/Line files contain the geographic definition of places by census tracts and blocks. These files are used with the RAS search and replace tables to identify places and assign codes for place codes not currently in the RAS databases.

There is one TIGER/Line file (in a compressed format) for each county or county equivalent. The file names consist of TGR + the 2-digit state FIPS (Federal Information Processing Standards) code + the 3-digit county FIPS code (i.e. TGR01031.ZIP for Coffee County, Alabama.) Each state folder contains individual county files as well as a Counts file. The county files are stored in compressed format and are compatible with PK Ware's PK Zip software. The COUNTSnn.TXT files (where "nn" is the state FIPS code) show the counts for the number of records for each record type by county for a state. If the count for a particular record type is 0, then that record type does not exist for that county.

The Census Bureau produces the TIGER/Line files in ASCII text format only; therefore, the data are NOT in the form of map images. To create maps with the TIGER/Line files, one would typically use a Geographic Information System (GIS) package or other mapping software.

Users are responsible for converting or translating the files into a format used by their specific software package. For information on how to use the TIGER/Line data with a specific software package one should contact the company that produced that software.

American Fact Finder

http://factfinder.census.gov/servlet/AGSGeoAddressServlet?_lang=en&_programYear=50&_treeId=420

The Census Bureau's American FactFinder provides access to detailed tables and maps for population, housing, and businesses. The address lookup feature can be used to identify the validity of an address and map its location.

Census TIGER Maps

http://tiger.census.gov/cgi-bin/mapbrowse-tbl

Use this site to map the LAUS city and FIPS place coordinates obtained from GNIS. The results will display the physical location of the place and the LAUS city.

US Postal Service

http://zip4.usps.com/zip4/welcome.jsp

Use this site to check is an address is valid.

FIPS 55-DC3 Index

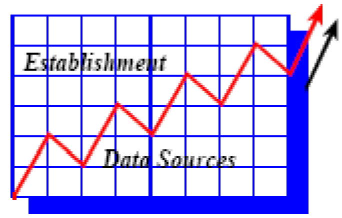
http://www.itl.nist.gov/fipspubs/55new/nav-top-fr.htm

This site contains flat files of all place codes for all States.

FIPS 55-3 Class Code Definitions

http://www.itl.nist.gov/fipspubs/55new/class76.htm

The Residency Assignment System assigns FIPS place code for incorporated cities and census designated places (CDP). This site provides definitions for class codes that can be obtained from The Geographic Names Information System (GNIS) query or the FIPS 55-DC3 Index site.



4 Inputs to LAUS Estimation: Establishment Data Sources

Introduction

There are two establishment-based data sources for employment estimates: the Current Employment Statistics (CES) program and the Quarterly Census of Employment and Wages Program (QCEW), commonly previously referred to as the ES-202 program. The next two sections provide an overview of these two programs.

The Current Employment Statistics Program

The Current Employment Statistics (CES) program is responsible for a Federal-State cooperative monthly survey of 140,000 business establishments nationwide that operates in all States, the District of Columbian, Puerto Rico, and the Virgin Islands. These 140,000 businesses and government agencies represent approximately 410,000 individual worksites. Each month, the survey is conducted in order to provide detailed industry data on employment, hours, and earnings of workers on nonfarm payrolls for the nation, each State, and all 372 metropolitan statistical areas and 8 areas in Puerto Rico defined by the U.S. Office of Management and Budget.

The CES is an establishment survey that measures payroll jobs, unlike the Current Population Survey (CPS) which is a household survey that measures employed persons.

CES Concepts

Establishment. An establishment is defined in the CES as an economic unit, such as a factory, mine, or store, which produces goods or provides services. It is generally at a single physical location and engaged in one, or predominantly one type of economic activity. Where a single location encompasses two or more distinct activities, these are treated as separate establishments, provided that separate payroll records are available.

Employment. Employment is the total number of persons employed full- or part-time in nonfarm establishments during a specified payroll period. Temporary employees are included. In general, data refer to persons who worked during, or received pay for, any part of the pay period that includes the 12th of the month. For Federal government establishments, employment statistics relate to civilian employees only and are reported for the number of persons who occupied positions on the last day of the calendar month. Persons are considered employed if they receive pay for any part of the specified pay period, but they are not considered employed if they receive no pay at all for the pay period. Therefore, persons who are on paid sick leave (when pay is received directly from the firm), on paid holiday, on paid vacation, or who work during a part of the pay period even though they are unemployed or on strike the rest of the period are counted as employed. Not counted as employed are persons who are on layoff, on leave without pay, on strike for the entire period, or who were hired but have not yet reported to work during the pay period.

Since proprietors, the self-employed, and unpaid family workers do not have the status of paid employees, they are not included. Also excluded from the employed are farm workers and domestic workers in households. Salaried officers of corporations are included.

CES Estimation

The estimation methodology for the CES combines annual benchmarks from the Quarterly Census of Employment and Wages program with monthly data from a sample survey to produce estimates of employment, hours, and earnings. All firms with 1,000 employees or more are asked to participate in the survey, as is a sample of firms across all employment sizes. In 2010, the CES sample consisted of about 140,000 businesses and government agencies that represented approximately 410,000 individual worksites drawn from a sampling frame of UI tax accounts. The sample rotation plan allows most firms to report for 4 years and then be rotated out of the sample for a similar period. A sample of smaller firms, with probability of selection proportionate to size, is also selected. The sample frame is the master list of establishments reporting to the Unemployment Insurance system and maintained as the Universe Maintenance System by BLS.

Sample distribution is obtained by stratifying the universe of establishments for each industry into employment-size classes. A total sample size sufficient to produce adequate employment estimates is then determined and distributed among the size classes in each industry based on the average employment per establishment and the relative importance of each size class to its industry. This amounts to distributing the total number of establishments needed in the sample among the cells according to the ratio of the employment in each cell to the total employment in the industry.

Data are collected from the establishments surveyed on the report form BLS 790 or electronic equivalent. (The CES survey is often referred to as the 790 program.) Employment estimates are made at what is termed the basic estimating cell level, and are aggregated upward to broader levels of industry detail by simple addition. Basic cells are defined by industry (usually at the five- or six-digit NAICS level). Within the construction industry, stratification by geographic region also is used.

To obtain all-employee estimates for a basic estimating cell, the following five steps are necessary:

1. A total employment figure (benchmark) is obtained for the basic estimating cell as of a specified month (March).

2. For each report, employment is multiplied by the sample selection weight to obtain weighted employment for the months for which estimates are being made and for the previous month.

3. For each cell, the ratio of the weighted all employees sample total in one month to that in the preceding month (termed the weighted link-relative) is computed for sample establishments that reported for both months.

4. Beginning with the benchmark month, the all-employee estimate for each month is obtained by multiplying the all-employee estimate for the previous month by the weighted link-relative for the current month.

5. Add a net birth/death estimate from the model described below.

This method, the "link-relative technique", produces month-to-month changes for a matched sample of industry establishments. Aggregate monthly estimates are produced by industry and geographic area.

Business birth and death modeling. A net birth/death factor is added to national and State employment estimates to produce the monthly published estimates. Regular updating of the CES sample frame with information from the UI universe files helps to keep the CES survey current with respect to employment change due to business births and deaths. The timeliest UI universe files available however, always will be a minimum of 9 months out of date. Thus, the CES survey cannot rely on regular frame maintenance alone to provide estimates of the employment effects of business births and deaths. BLS utilizes a model-based approach for this component.

While both the business birth and business death portions of total employment are generally significant, the net contribution is relatively small and stable. To account for this net birth/death portion of total employment, BLS has an estimation procedure with two components. The first component uses business deaths to impute employment for business births. The second component is an

ARIMA time-series model designed to estimate the residual net birth/death employment not accounted for by the imputation

Benchmarks

The establishment survey constructs annual benchmarks in order to realign the sample-based employed totals for a specific month each year with the UI-based universe counts for that month. These population counts provide an annual point-in-time census for employment. Until 2007, benchmark levels replaced the original sample-based estimates from April of the previous year to March of the benchmark year for each month. Improvements in the receipt of UI data and in the standardization of State operations have enabled all States to replace estimates with UI data beyond March of the benchmark year. In the March 2009 benchmark, 42 States and the District of Columbia used third-quarter 2009 UI data (that is, through September 2009) in their benchmarking, and eight (8) States used second-quarter 2009 UI data (through June 2009).

Universe counts are derived from the administrative file of employees covered by UI. Approximately 99 percent of in-scope private employment is covered by UI. A benchmark for the remaining 1 percent is constructed from alternate sources, primarily records from the Interstate Commerce Commission and the Social Security Administration. The full benchmark developed for March replaces the March sample-based estimate for each basic cell. The monthly sample-based estimates for the year preceding and the year following the benchmark are also then subject to revision.

Monthly estimates for the year preceding the benchmark month are readjusted using a "wedge back" procedure. The difference between the final benchmark level and the previously published sample estimate is calculated and spread back across the previous 11 months. The wedge is linear. For example, when the benchmark month is March, eleven-twelfths of the March difference is added to the February estimates, ten-twelfths to the January estimates, and so on, back to the previous April estimates which receive one-twelfth of the March difference. This assumes that the total estimation error since the last benchmark accumulated at a steady rate throughout the current benchmark year.

Estimates for the 11 months following the benchmark month are also recalculated each year. These post-benchmark estimates reflect the application of sample-based monthly changes to new benchmark levels, and the re-computation of bias adjustment factors for each month. Bias factors are updated to take into account the most recent experience of the estimates generated by the monthly sample versus the full universe counts derived from the UI.

Reliability of Estimates

Although the relatively large size of the CES sample assures a high degree of accuracy, the estimates derived from it may differ from the figures that would be obtained if it were possible to take a complete census using the same procedures. Although the estimates are adjusted annually to new benchmarks, estimates subsequent to the benchmark month have several potential sources of error. The amount added each month for new establishments, for example, may be too high or too low. Changes in the industrial classification of establishments that result from changes in their product or activity between benchmark months are not reflected. In addition, small sampling and response errors may accumulate over several months as a result of the link relative technique of estimation used between benchmarks.

The Quarterly Census of Employment and Wages Program

Background

The Quarterly Census of Employment and Wages (QCEW) program, also referred to as the ES-202 program, is a cooperative endeavor of BLS and the workforce agencies of the 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands. Using quarterly data submitted quarterly by the agencies, BLS summarizes employment and wage data for workers covered by State unemployment insurance (UI) laws and for civilian workers covered by the program of Unemployment Compensation for Federal Employees (UCFE).

The QCEW program is a comprehensive source of employment and wage data by industry at the national, State, and county levels. Unlike the CPS and CES programs which are monthly sample surveys, the QCEW program is collected quarterly and provides a virtual census of nonagricultural employees and their wages. In addition, about 44 percent of all workers in agricultural industries are covered.

Sources of Data

There are five sources of data for the QCEW program. They are initial status reports, quarterly contribution reports, multiple worksite reports, Federal Government reports, and annual refiling survey forms.

Initial Status Reports

Initial status reports are filed by new employers with the State UI tax unit to initially register their business. These reports provide basic business identification and classification information to establish a UI account. The employer's liability for UI taxes is determined from information provided in this report.

Quarterly Contributions Report (QCR)

QCRs are filed quarterly by all UI-liable employers to the State UI tax unit. These reports provide the name and social security number of covered workers who worked or received pay for the pay period which included the 12th of each month, the total wages paid to covered workers, the portion of total wages subject to unemployment insurance tax, and the employer contribution amount.

Multiple Worksite Report (MWR)

The MWRs are filed quarterly with the State QCEW unit by most employers with more than one business establishment. The MWR provides establishment-level employment and wages data not otherwise available on the QCR.

Federal Government Reports

These reports are filed quarterly by most federal government agencies to report employment and wages data to the State QCEW unit, in accordance with the Unemployment Compensation for Federal Employees (UCFE) program. Data for non-defense federal agencies are provided to the State QCEW unit; information for civilian employees of the Department of Defense is reported directly to BLS-Washington.

Annual Refiling Survey Forms

UI-liable employers are surveyed by the State QCEW units periodically to verify their location(s) and industry activity (ies). Employers are asked to verify physical location, mailing address, and industry and ownership information and to provide corrections if necessary

Data Compilation

State agencies code and summarize the raw data, check for missing information and errors, and prepare imputations of data for delinquent reports. Each establishment is classified by its industrial activity and then independently by one of five ownership categories. (The five ownership categories into which establishments are classified are private industry, Federal government, State government, local government, and foreign or international government.) An establishment is an economic unit, such as a factory, mine, or store, which produces goods or provides services. It usually is at a single physical location and engaged in one, or predominantly one, type of economic activity, for which a single industrial classification may be applied. The North American Industry Classification System is used to classify the industry of each establishment.

Employment data represent the number of workers on the payroll of covered employers during the pay period including the 12th day of the month. Persons on the payroll of more than one firm are counted in each firm. Workers are reported in the State and county of the physical location of their job. Persons on paid sick leave, paid holiday, paid vacation, and so on, are included, but those on leave without pay for the entire payroll period, are excluded. The employment count also excludes employees who earned no wages during the entire applicable period because of work stoppages, temporary layoffs, illness, or unpaid vacations, and employees who earned wages during the month but not during the applicable pay period.

UI Coverage

Each State has determined its own laws regarding UI coverage, but they have been greatly influenced by the federal government. The Federal Unemployment Tax Act (FUTA) provides tax incentives that have ensured States' conformity with the minimum coverage standards set down in FUTA.

In general, a covered employer is defined under the FUTA as one who has a quarterly payroll of $1500 in the calendar year or preceding calendar year, or one worker in 20 weeks. While many States have chosen to expand coverage beyond the FUTA standards, the notable exceptions and limitations are noted below.

Agriculture

For the majority of States, only employers with ten or more workers in twenty weeks, or who paid $20,000 or more in wages in any quarter, are subject to unemployment insurance laws. Farm owners/operators are excluded from coverage in all states.

Domestic Service

Private households, social clubs, and college fraternities and sororities which employ domestic help and pay wages of $1,000 or more in a quarter are subject to unemployment insurance laws.

Nonprofit Organizations

Coverage is required for nonprofit organizations with four or more employees in 20 weeks. Almost half of the States, however, have elected more expansive coverage, typically covering any organization with even one employee in twenty weeks. Ministers employed by religious organizations to perform ministerial duties are excluded from nonprofit coverage.

Self-employed Individuals and Unpaid Family Members

As defined by the unemployment insurance laws, employment is the hiring of workers by others for wages. Self-employed individuals are therefore excluded, except in California, where they may elect to pay contributions for self-coverage. Relatives are not covered unless they receive pay from the official business payroll. However, the employment of minors by their parents, or parents by their children, is excluded.

Railroads

Interstate railroad workers are covered by the Railroad Unemployment Insurance Act administered by the Railroad Retirement Board and thus are not included in the QCEW data. Workers on intrastate and scenic railroads may be covered for UI and included in the QCEW data.

State and Local Government Elected Officials and Others

All State and local government employees are covered under State UI laws with the exception of elected officials, members of the judiciary, State national and air national guardsmen, temporary emergency employees, and policy and advisory positions.

Student Workers at Universities, Interns and Student Nurses

College and university students employed by the school at which they are enrolled, such as work-study students, are excluded from coverage. Many States also exclude the spouses of students who work at the university if the employment is part of a program to provide financial assistance to the student. Student nurses employed by hospitals as part of a training program are not covered. Similarly, medical school graduates working as interns in hospitals are excluded from coverage.

Armed Forces

Military personnel are excluded from State unemployment insurance coverage. They are covered under a separate program, Unemployment Compensation for Ex-Servicemen, but are not included in QCEW data. Civilian defense workers, however, and all other federal employees covered under the Unemployment Compensation for Federal Employees (UCFE) program are part of the data reported to the QCEW program.

Agents on Commission

Insurance and real estate agents who are paid only by commission are excluded from coverage in almost all of the States.

Earnings Data

Total wages, for purposes of the UI quarterly reports submitted by employers, include gross wages and salaries, bonuses, tips and other gratuities, and the value of meals and lodging, where supplied. In a majority of the States, employer contributions to certain deferred compensation plans, such as 401(k) plans, are included in total wages. Total wages, however, do not include employer contributions to Old-Age, Survivors', and Disability (OASDI); health insurance; unemployment insurance; workers' compensation; and private pension and welfare funds.

Uses

The QCEW data serve as the basic source of benchmark information for employment by industry and by size of establishment in the Current Employment Statistics program.

The Unemployment Insurance Name and Address File, developed in conjunction with the ES-202 report, also serves as a national sampling frame for establishment surveys by the Producer Price Index, Occupational Safety and Health Statistics, Employment Cost Index, and other compensation programs.

Differences: Establishment Data Sources versus the CPS

The household and establishment data complement one another, each providing information that the other cannot supply. Population characteristics, for example, are obtained only from the CPS, whereas detailed industrial classifications are much more reliably derived from establishment reports. Certain differences can be accounted for, others cannot. It is useful to be aware of the CPS/CES/QCEW differences for estimation and analysis purposes. Some of the important differences are discussed below.

Place of Work vs. Place of Residence. CES and QCEW data are produced according to the location of the establishment; CPS data provide residency-based employment estimates.

Jobs versus Employed People: CES and QCEW develop estimates of jobs. The CPS estimates employed individuals. Workers holding more than one job will be included more than once in the CES and QCEW employment counts since they will appear on more than one payroll record or contribution report. Persons counted by the CPS are counted only once even if they hold multiple jobs.

Reference Period Differences. The reference period for the CPS is the calendar week including the 12th of the month, except in December when it is often the 5th. The reference period for CES and QCEW is the payroll period including the 12th of each month, which could be weekly, biweekly, semi-monthly, for example.

Employment Coverage Differences. The CPS definition of employment is total employment, comprising wage and salary workers (including domestics and other private household workers), self-employed persons, and unpaid workers who worked 15 hours or more during the reference week in family-operated enterprises. Employment in both agricultural and nonagricultural industries is included. The CES and QCEW definitions reflect nonfarm wage and salary employment and do not include self-employed and unpaid family workers. They include some, but not all, domestics in private households and agricultural workers.

CES and QCEW estimates include 14- and 15-year olds while the universe for the CPS is limited to 16 years of age and older. CES does not cover workers who are on unpaid absence for the duration of the pay period. These workers may be considered employed in the CPS depending on their job attachment as determined in the course of the interview. Workers who are on strike for the entire pay period of the establishment are not included in the CES and QCEW estimates, but are considered employed in the CPS.

Uses of CES Data in the LAUS Program

The nonagricultural wage-and-salary estimates from the CES survey are used as basic employment inputs for several LAUS estimating procedures. CES estimates are used as variables for the State employment models. CES data are used in adjusting place of work employment to place of residence and as current inputs to labor market area employment, where available.

Use of CES in the State Employment Models

The statewide CES employment is a variable in the State employment model and in the models for New York City, Los Angeles, and the respective balances of New York and California. The CES data are adjusted to include individuals involved in labor-management disputes. Those differences between the CPS and CES discussed in the previous section do not require separate adjustments in the model because coefficients are computed separately for each State from their own data and the data relationships. The coefficients represent historical data relationships and describe the degree to which the trends in the CES and CPS employment series are related in each State. The CES variable is always included in the employment model because nonagricultural wage and salary workers represent such a large proportion of the employed. See Chapter 6, Statewide Estimation, for more information on modeling techniques.

Use of CES for Estimating Current LMA Employment

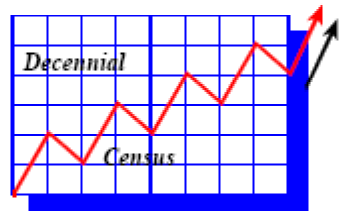
The 372 metropolitan areas plus the 8 areas in Puerto Rico defined by OMB use the nonagricultural wage and salary CES estimates in developing monthly LAUS total employment estimates. If a Labor Market Area (LMA) is not covered by the CES program—for example, a micropolitan or small LMA—but does have a sample-based employment series developed under State auspices, these estimates are used in the Handbook methodology. For LMAs without sample-based employment estimates, nonsample (synthetic) estimation methods, using QCEW estimates, yield place-of-work nonfarm employment. See Chapter 7 for details on producing estimates for areas outside the CES program.

Use of CES in the Dynamic Residency-Adjustment Ratios

Current monthly area nonfarm employment estimates, which are establishment-based, are converted to a residency basis by the application of the Dynamic Residency-Adjustment Ratios. Commutation ratios were developed using Census 2000 employment data that displayed place of residence cross-tabulated by place of work. The data provided information on county-to-county commuting flows for each State in the United States and Puerto Rico. To determine significant commutation patterns for a given labor market area, ratios between the Census employment by place of residence by place of work and the CES March-April 2000 average employment by place of work were developed for each labor market area and for all other areas to which at least 100 of the estimating area's residents commuted.

When multiplied by the current month's sum of CES total nonagricultural wage and salary employment and the number of labor disputants, these ratios yield the residency-based LAUS total nonagricultural wage and salary employment for each labor market area.

See Chapter 7 for a more detailed description of this adjustment.



5 *Inputs to LAUS Estimation: Census Data*

Introduction

The Census of Population and Housing, conducted every ten years by the Bureau of the Census, is primarily intended to provide the population counts necessary for apportionment of seats to the U.S. House of Representatives and for determining legislative district boundaries. The decennial census also has increasingly become a source of data for other uses and provides socioeconomic and demographic data in addition to population estimates.

The LAUS program methodology uses decennial census data for adjusting establishment-based employment estimates to residency-based employment estimates, for estimating certain employment and unemployment components in the Handbook methodology, and disaggregating or apportioning labor market area estimates to smaller areas.

Post-censal population estimates are used in the State CPS estimation methodology and the LAUS employment/population index share disaggregation of the estimates for counties and, in some States, cities over 25,000. Ongoing population estimation is conducted by the Bureau of the Census through a Federal/State cooperative program. Statewide population estimates are produced annually for the United States and counties; sub-county estimates are produced biennially. Data are additive to the next level of geography, i.e., the State is the sum of its counties. Except for the decennial census year, population estimates pertain to July 1 of the reference year.

Prior to the 2010 census, the questionnaire came in two forms: the short form, which includes questions found on every form (100-percent questions) and the long form, which also includes sample questions. The majority of individuals received a short form where questions regarding household relationships, sex, race, age, marital status, Hispanic origin and housing are asked. Approximately one-sixth of the population received the long form where sample questions include the following topics: (1) social characteristics such as education, place of birth, ancestry, disability, and veteran status; (2) economic characteristics such as labor force status, occupation, industry, class of worker, place of work, work experience, and income; and (3) more detailed housing questions.

The 2010 census was limited to the short-form questionnaire which was sent to all households in the United States and Puerto Rico. Information previously gathered by the long-form questionnaire is now provided by the Census Bureau's American Community Survey, which is collected in a sample of approximately 3 million households annually. The LAUS program is considering ways to utilize information from the American Community Survey.

The Decennial Census: Enumerated and Sample-Based Data

Tabulations based on the 100-percent enumerated questions are prepared down to the block level. Tabulations for the sample questions are also prepared down to the block level, but because they are based on a sample, the data are reliable only for larger areas. Areas for which statistics are derived include Census regions and divisions, Metropolitan Statistical Areas, Micropolitan Areas, Urbanized Areas, Urban/Rural areas, Census county divisions, Census Designated Places, Census tracts, Block Numbering Areas, Block groups, Blocks, Alaska Native village statistical areas, Tribal designated statistical areas, and Tribal jurisdictional statistical areas.

Sampling for Designation of Long Form Recipients

The basic sampling unit for the long form census is the housing unit, including all occupants. For persons living in group quarters, the sampling unit is the person. Two sampling rates are employed. In counties, incorporated places, and minor civil divisions estimated to have fewer than 2,500 persons, one-half of all housing units and persons in group quarters are included in the sample. In all other places, one-sixth of the housing units and persons in group quarters are sampled. The purpose of this sample design is to provide reliable estimates for small places. When both sampling rates are taken into account, approximately 19 percent of the housing units in the nation are included in the sample.

Estimation of Census Sample Data

The estimation procedure used for the sample survey involves an iterative ratio estimation technique, called proportional fitting, similar in concept to the estimation procedures used for the Current Population Survey. In each tabulation area, a characteristic total is estimated by summing the weights assigned to the persons or housing units in the area. Initial weights for both households and persons are assigned as the approximate inverse of the probability of selection for the Census sample. Weighting areas are then created with a minimum sample of 400 persons.

Within a weighting area, the ratio estimation procedure is conducted in four stages for both persons and occupied housing units. The first stage identifies 17 household-type groups which include classification by the number of persons in a house and type of housing unit (e.g., persons in a housing unit with or without children, group quarters, etc.). The second stage determines the sampling rate of the weighting area. The third stage classifies persons as household/non-householder and housing units as single- or multiple-units in a structure. The fourth stage applies 180 aggregate age/sex/race/Hispanic origin categories. Groups within these four categories are combined, if needed, to increase reliability. In the final step, the initial weights undergo four stages of ratio adjustment by which each group within each stage is multiplied in two iterations by the ratio of the complete census count to the sum of the initial and subsequent stage weights for each sample person.

Sample data are considered less reliable than enumeration, or 100-percent questionnaire, data. However, estimated standard errors can be used to construct confidence intervals around the sample estimates. These reliability estimates do not account for nonsampling errors that are inevitable in a survey as extensive as the decennial census, and which occur in enumerated as well as sample-based data.

Nonsampling Errors

Nonsampling error can occur in the enumerated and the sample-based data, and can introduce bias into the data as well as increase the total error associated with the estimates. The Census Bureau tries to control for such error during collection and processing procedures. Types of nonsampling error include undercoverage, respondent and enumerator error, processing error, and nonresponse.

Every census results in an undercount, i.e., some people are missed. These undercounts can occur by age, sex, and race categories. The Census Bureau compares its data to other aggregate data sources to analyze the demographic count differences. It also conducts a post-enumeration survey by taking a sample of areas within the US and doing a very accurate count of the persons in those areas. This allows the Census Bureau to estimate the extent of undercount. For the 1990 census, the total undercount of the population was less than 2 percent. The 2000 Census was negatively impacted by a data collection problem pertaining to group quarters, particularly in towns with high percentages of college dormitory residents. In particular, the form used to collect labor force status information in group quarters (the Individual Census Report, or ICR) was processed such that a very large number of incomplete forms were systematically and erroneously allocated to unemployment, resulting in implausibly high unemployment rates being reported for these areas. BLS obtained special tabulations of household-only data from the Census Bureau to utilize in certain estimating procedures. In these tables, the household-only employment and unemployment measures replace the corresponding total civilian measures.

Differences: Census versus CPS/LAUS Estimates

Historically, there have always been differences between the Census and the CPS programs in their respective estimates of unemployment. Prior to 1990, however, the census-based unemployment estimates generally tended to be very close to the CPS estimates. For the 1990 census, this relationship changed, with the 1990 census unemployment estimates considerably higher than those from the CPS. The 2000 Census unemployment estimates continued this pattern, with the Census unemployment rate considerably higher than the national CPS.

There are several important differences between methodology used in CPS/LAUS and the methodology used in the decennial census. These produce differing unemployment estimates. It is important to know how to interpret these differences and explain why the CPS/LAUS estimates are regarded as the more reliable and accurate estimates.

1.) The census is a self-enumeration survey, while the CPS survey is conducted in an interviewer-controlled environment. This provides the CPS with more accurate and detailed response information because interviewers are present to clarify questions.

2.) The CPS questionnaire asks seven specific employment-related questions to arrive at the labor force classification. The census questionnaire asks only four. Misclassification can occur as a result of fewer employment-specific questions.

3.) The CPS has rigorous quality control procedures. Interviewers are trained extensively, proficiency checks are conducted regularly, and a portion of each month's households are reinterviewed as a quality control measure.

4.) The CPS has a definite reference period, i.e., generally the week including the 12th of the month. The census reference period is officially April 1, but the questionnaire instructs the respondent to provide information as of the week before the questionnaire is completed.

5.) There is a known first month-in-sample reporting bias whereby unemployment rates tend to be higher the first time a household reports information. In the CPS, households are interviewed for 4 months, not interviewed for 8 months, and then interviewed again for 4 months, so that 25 percent of the sample could be reflecting this bias. The census is a one-time survey. Consequently, the entire census could be affected by first-time reporting bias.

Because of these reasons, both BLS and the Census Bureau have agreed that the superior estimator of the labor force is the CPS.

The LAUS program uses decennial census data only where no other source of data is available. The direct use of decennial census data is generally avoided because of the superiority of the CPS and because relationships in the data are unlikely to remain fixed over an entire decade.

Uses of Decennial Census Data in LAUS

Uses of Labor Force Estimates

Census employment estimates are used in the employment/population index share disaggregation method, which is used in conjunction with the claims-based unemployment disaggregation method for counties and cities. Because more current estimates of employed residents are not available, the decennial Census estimate of this group is moved over time by changes in annually prepared population estimates. In other words, the Census employment to population ratio is maintained over the decade.

Decennial labor force estimates of total employed and unemployed for sub-county areas are the basis of the Census-share disaggregation method. The use of Census data for disaggregating labor force estimates is required when UI claims data by county or city of residence are not available. The method uses ratios of employment and unemployment in subareas to the respective larger area totals. In this method, the relative distribution of employed and unemployed is fixed for the decade.

In order to develop place-of-residence employment estimates for LMA's, census nonfarm employment levels and residence to work commutation pattners, in combination with CES payroll employment levels, are used as residency adjustment factors for monthly establishment-based employment estimates. (Net commutation patterns from the census are fixed for the decade.)

The census employment levels of agricultural employment and all-other employment (self-employed, unpaid family workers, and domestics in private households) are the benchmark levels for current LMA estimates of these components.

The census estimates of all-other employment are also used in the stratification of States into three groups for the purpose of developing monthly change factors. The monthly change factors, referred to as Step-3 Ratios, are then used to estimate monthly all-other employment levels.

Census journey to work commutation data, which identify place of residence and place of work estimates, are used in the designation of LMA's, including metropolitan areas, micropolitan areas, and small labor market areas.

Uses of Population Data

Census total population data have been used in the population-share disaggregation method for determining sub-county estimates. This method is used only when subarea UI claims data or census labor force data are not available. The disaggregation is based on the ratio of total population in a subarea to total population in the larger area, applied to current employment and unemployment estimates for the larger area. This method is applied only after the claims-based/population-based disaggregation and census-share methods have been used to establish estimates for the larger areas. Approval from the appropriate regional office must be obtained before employing this disaggregation method.

Decennial census population estimates for States, and the subsequent intercensal estimates, serve as the population controls in CPS estimation. In a ratio estimation procedure, known population totals are applied to sample ratios to improve the accuracy of the sample-based estimates of levels.

Age-specific population counts are used in the distribution of new entrant unemployed and reentrant unemployed estimates to States. They are also used in the claims-based unemployment disaggregation of LMA entrants and reentrants.

Employment/Unemployment Data

Data	Use
Total Employment	*Disaggregation of employment estimates*
Total Unemployment	*Disaggregation of unemployment estimates*
Employment:	
Total employment	*Determination of appropriate weighting for dynamic residency adjustment factors*
Agriculture	*Agricultural employment benchmark*
All-other	*Stratification of areas based on 1990/2000 relative change; domestics and self-employed/unpaid family benchmark*
Commutation Data	*Definition of metropolitan, micropolitan, and small labor market areas; also used in dynamic residency adjustment factors*

Population Data

16+ civilian, non-institutional population for States	*CPS population controls*
Total population to sub-county levels	*Disaggregation of employment from LMAs to counties and counties to places*
Total population 16-19, 20+ to sub-county levels (cities over 25,000)	*Claims disaggregation of LMA unemployment estimates*

Post-Censal Population Estimation

Post-censal population estimates are used in the State CPS estimation methodology and the LAUS employment/population index share disaggregation of the estimates for counties and, in some States, cities over 25,000. Ongoing population estimation is conducted by the Bureau of the Census through a Federal/State cooperative program. Statewide population estimates are produced annually for the United States and counties; sub-county estimates are produced biennially. Data are additive to the next level of geography, i.e., the State is the sum of its counties. Except for the decennial census year, population estimates pertain to July 1 of the reference year.

Statewide Estimation

National population estimates from the Bureau of the Census, which account directly for births, deaths, and legal immigration, are done on a relatively straightforward basis. The population of the States must be estimated using less direct methods, because interstate migration, a large component of the change in State populations, cannot be accounted for directly in the way that births, death, and legal immigration can. There are two methods that are used, and the official State estimates are an average of the two. The sum of the States is made to equal the national total in a process known as proportional “raking”.

The first method for statewide estimation uses available administrative records. This method measures interstate migration for persons under age 65 by using address changes on tax returns and the number of exemptions claimed. For the population of age 65 and over, migration is measured using the change in the number of Medicare enrollees.

The second method uses a composite of a number of different factors. They are:

- *migration of the school-age population based on school enrollments;*
- *a regression on changes in various population indicators measurable from various data sources, for the population of adults under 65 years old; and*
- *Medicare enrollments, for the change in the population 65 and older.*

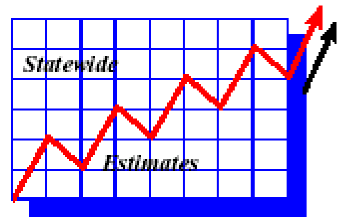
The age pattern of migration used in producing estimates of State populations by age and sex (which affects the total 16 and over) depends primarily on the age distribution of the base population, changes in school enrollments, and the relationship between school-age migration and adult migration as of the last census.

Substate Estimation

Substate population estimates are issued by the Bureau of the Census in two series. In the P-25 series, Census publishes provisional estimates for States, counties, MSA’s, and incorporated places. The annual P-26 series includes revised estimates for all levels except incorporated places.

The estimation methodology is unique for each State, but generally includes an average of three methodologies, with an appropriate “rake” to insure that areas sum to the Statewide total.

- ***Regression (ratio-correlation) Method.*** *A multiple regression equation is used to relate changes in a number of different data series to change in population distribution. Independent variables may include automobile registrations, elementary school enrollments, resident births for various periods, and Federal income tax returns, among others.*
- ***Component Method II.*** *This method employs vital statistics to measure natural increase and school enrollment to measure net migration. These estimates are specific to the civilian population under age 65. To this are added an estimate of the population 65 and older based on Medicare statistics and an estimate of the resident military population based on Department of Defense data.*
- ***Administrative Records Method.*** *This is an alternative component method which uses individual Federal income tax returns to measure civilian inter-county migration, and reported birth and death statistics to estimate natural increase.*



6 Development of Statewide Estimates

Background

Historically, CPS samples have not been sufficiently large to produce reliable monthly estimates directly from the survey for all States. As a result, indirect methods have been used to estimate employment and unemployment. As far back as 1960, Statewide estimates of employment and unemployment were developed under uniform Federal procedures, using the Handbook method. With the introduction of CPS State estimates in the 1970's, a six-month moving average ratio adjustment to CPS levels augmented the Handbook estimate. In the late 1970's, the Levitan Commission was established to review the measurement of the labor force in the United States. Among the recommendations made by the Commission in its report of 1978 was that BLS explore replacing the Handbook with an econometric approach to subnational estimation.

Building on work done by Mathematica Policy Research under contract to BLS, preliminary models were developed in the mid 1980's. In order to involve States directly in the research, the State Research Group, made up of State Research Directors and BLS staff, was established in 1986 with the support of the Interstate Conference of Employment Security Agencies (presently called the National Association of State Work Force Agencies). Regression and time series techniques were employed, with the models extensively evaluated using empirical methods as well as recognized statistical theory.

Modeling can address the small samples in each State which result in unacceptably high variation in the monthly CPS estimates of State employment and unemployment. To produce less variable labor force estimates as well as produce more stable seasonally adjusted estimates, BLS developed time series models which ‘‘borrow strength’’ over time by using historical series of sample observations for a given State to increase its effective sample size. On average, the variance of month-to-month change in the model estimates is about one third of the size of the CPS variance.

A type of regression model known as the Variable Coefficient Model (VCM) best met the criteria. The VCM is so named because the coefficients in its equations are allowed to vary over time to reflect structural changes in the State’s data. The changing coefficients are estimated by the *forward filter*, a widely used statistical technique that evaluates structural change against sampling variability. The forward filter, also referred to as the Kalman Filter, enables the VCM to handle the different relative accuracies that result when an estimate draws upon data from several sources.

In 1988, a year of dual estimation of BLS and the States helped the states make the transition from the Handbook to the VCM. In 1989, this new method was implemented in 40 States. The remaining States were using monthly CPS estimates of employment and unemployment directly.

During the early 1990’s, ongoing research at BLS brought about another improved model that better dealt with error estimation and incorporated new time series variables. Known as the Signal-Plus-Noise model, it also uses variable coefficients and the forward filter. The Signal-Plus-Noise model was implemented in January 1994. In 1996, time series modeling was extended to the 11 more populous direct-use States because of reductions in the size of the CPS sample.

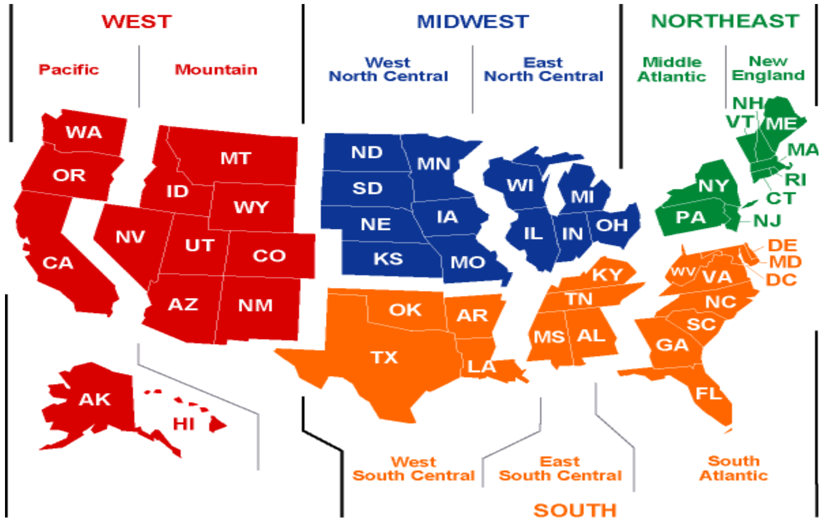
The 2005 LAUS Redesign introduced a new generation of LAUS models. The objectives of the new generation models were to implement direct model-based seasonal adjustment with reliability measures and to improve the benchmarking procedure by incorporating real-time monthly benchmarking. At the same time, 6 area models were introduced along with corresponding Balance of State models.

Real-time benchmarking addressed a number of concerns with the prior generation of LAUS models. It reduces annual revisions by incorporating the CPS benchmark on a current basis. It eliminates prior model biases and benchmarking issues. It ensures that national events and shocks to the economy will be reflected in State estimates as they occur. It also eliminates the discrepancy between the sum-of-States estimates and the national not-seasonally-adjusted totals. The following table illustrates differences between the LAUS sum-of-States unemployment rates and the national CPS rates for both seasonally-adjusted and not-seasonally-adjusted estimates in the years prior to the introduction of the third generation LAUS models.

Difference Between LAUS sum-of-States and CPS national unemployment rates, 1996-2004 (LAUS minus CPS)

Month	1996	1997	1998	1999	2000	2001	2002	2003	2004
Not Seasonally Adjusted									
January	-0.2	-0.2	-0.1	0.0	-0.1	-0.2	-0.4	-0.3	-0.2
February	-0.1	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.1
March	-0.2	-0.3	-0.3	0.0	-0.3	-0.3	-0.4	-0.2	-0.3
April	-0.2	0.0	0.1	-0.1	-0.1	-0.2	-0.3	0.2	-0.2
May	-0.2	-0.1	0.0	0.0	-0.2	0.0	-0.2	-0.3	-0.2
June	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.3	-0.4	-0.2
July	-0.1	0.0	-0.1	-0.2	-0.1	-0.1	-0.3	-0.2	-0.2
August	0.0	-0.1	-0.2	-0.2	-0.2	-0.4	-0.3	-0.3	-0.2
September	0.0	0.0	-0.1	-0.1	0.0	-0.2	-0.1	-0.2	-0.1
October	-0.1	0.1	-0.1	0.0	0.0	-0.3	-0.1	-0.2	-0.2
November	-0.1	0.1	0.0	0.0	-0.1	-0.3	-0.4	-0.2	-0.2
December	-0.1	-0.1	0.0	0.0	-0.1	-0.4	-0.4	-0.1	-0.2
Seasonally Adjusted									
January	-0.1	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1
February	-0.1	-0.3	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
March	-0.1	-0.2	-0.1	0.0	-0.1	-0.2	-0.1	0.0	-0.2
April	-0.2	-0.2	0.0	-0.2	-0.1	-0.2	-0.4	0.2	-0.3
May	-0.2	0.0	0.0	0.0	-0.2	-0.1	-0.3	-0.3	-0.3
June	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.4	-0.5	-0.2
July	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	-0.3	-0.3	-0.2
August	0.1	0.0	-0.1	-0.1	-0.1	-0.3	-0.2	-0.2	-0.1
September	0.0	0.0	0.0	-0.1	0.0	-0.3	-0.2	-0.3	-0.2
October	-0.1	0.0	-0.1	0.0	0.0	-0.4	-0.2	-0.3	-0.3
November	-0.3	0.1	0.0	-0.1	-0.1	-0.4	-0.5	-0.3	-0.2
December	-0.2	-0.1	-0.1	-0.1	-0.1	-0.5	-0.4	-0.1	-0.2

The new models also address consistency issues ensuring that the sum of the State estimates equal that of the nation every month. As part of the real-time benchmarking procedure, each month the State's estimates are controlled to a Census Division. There are 9 Census Divisions which are in turn controlled to the national CPS.



In January 2010, BLS implemented smoothed-seasonally-adjusted (SSA) estimates as the official seasonally-adjusted series for States' labor force data. SSA estimates incorporate a long-run trend smoothing procedure, resulting in estimates that are less volatile than those currently produced by the LAUS estimation methodology. The use of the SSA methodology is effective in reducing the number of spurious turning points in current estimates. More importantly, SSA estimation can reduce revisions in historical estimates and remove the potential disconnection between historically benchmarked and current estimates.

Model Structure

The model structure introduced in 2005 utilizes both univariate and bivariate modeling approaches. Univariate modeling is based only on the past values of the CPS unemployment or CPS employment, and is utilized for Division and Area models. This approach combines the two models; the time series model of the Signal and the Noise model of the CPS survey. The survey estimates used in the models are strengthened by the application of almost 3 decades of CPS sample data.

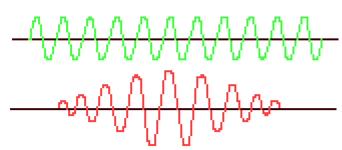
For State estimates, the bivariate modeling procedure is used. Bivariate modeling of the series depends on the past values of the CPS and the past values of a related series (payroll employment and UI claims) and the relationship between the CPS and the input series

.Model Structure		
Geographic Level	**Type**	**Form**
Divisions	Univariate	Additive
States	Bivariate	Additive
Area	Univariate	Unemployment-Multiplicative Employment-Additive

The State models incorporate five features that are tailored to the properties of each State's data series. These features include the smoothness of the trend, the stability of seasonal patterns, survey error, the relationship of the CPS trend to State input trends, and the presence and types of outliers.

Signal-Plus-Noise Approach

The State CPS estimates are broken out into the Signal, which represents the true value of the employed or the unemployed and the Noise, which represents survey error inherent in the CPS sampling procedures.



The observed CPS estimate consists of a true, but unobserved labor force value plus noise, which occurs because the estimates are derived from a probability sample and not the entire population.

$CPS_t = Signal_t + Noise_t$

$Signal_t$ = true value

$Noise_t$ = survey error

The signal/noise estimation models are based on a modeling approach that accounts for and extracts the noise from the CPS time series data, thus providing a better estimate of the signal. An important component of the noise in the CPS data is sampling error; its characteristics are known, or at least can be estimated from survey design information. Two other factors that account for the noise are irregular movements in the data and occasional outliers. When there is a change in the CPS level of employment or unemployment, that change is a combination of the change in the true labor force signal and the change in the noise. The goal of the models is to isolate the signal from the noise to avoid distortions in the CPS estimates and obtain the best possible estimates of the true labor force values.

The models for the employment and unemployment estimates are a combination of two processes: a signal estimation and a noise estimation. The signal is a time series model that is based on historical data relationships that are used in estimating current true labor force values, so a long historical CPS time series is required. While the time series model of the signal depends on past relationships, it does not require that these relationships be fixed over time. A very important feature of this model is a built-in self-tuning mechanism, known as the forward filter, which automatically adjusts the regression coefficients and trend and seasonal components to adapt to gradual structural changes as they occur.

Sudden, unpredictable changes in the time series relationships are handled by incorporating outlier effects into the model.

The noise estimation clears up the distortion caused by the CPS sampling error.

Signal

In addition to survey error, there are other sources of variation in the CPS time series. These sources are identified as the seasonal, trend and irregular components and are taken into account in the modeling procedure.

Based on the decomposition of a time series into the trend, seasonal, irregular and survey error components, the model form may be either additive or multiplicative. In a multiplicative model, the seasonal variation is proportional to the level of the series. As the trend rises, the magnitude of the seasonal variation around the trend rises. The magnitude of the survey error is inversely proportional to the level of the series. The standard errors are therefore relative measures of error.

Time Series Model of the CPS

$$\mathrm{CPS}_t = \begin{cases} T_t + S_t + I_t + e_t \\ T_t \times S_t \times I_t \times e_t \end{cases}$$

$$\mathrm{Sig}_t = \begin{cases} CPS_t - e_t \\ CPS_t / e_t^{*} \end{cases}$$

Where:

Survey Error = e_t
Seasonal = S_t
Trend = T_t
Irregular = I_t

Model Estimation

The first step of the estimation process is to correct the CPS estimate for survey error. This step also occurred in the generation of models that were in use up to 2005.

$$\mathrm{CPS}_t - e_t^* = Sig_t^*$$

The second step is to seasonally adjust the error corrected CPS. The seasonal adjustment procedure is model based. In the previous generation of models, seasonal adjustment was performed independent of the model by the use of ARIMA X-11 software. Once the seasonal factor is removed from the error corrected CPS, the remainder consists of the trend and the irregular components.

$$Signal_t^* - S_t^* = T_t^* + I_t^*$$

The following example illustrates an additive time series model of the CPS. As mentioned above, the CPS is decomposed into trend, seasonal and irregular components.

$$CPS_t = T_t + S_t + e_t$$

Where:

T_t = global linear trend
S_t = fixed seasonal pattern
e_t = purely random (irregular)

The global linear trend model represents a linear relationship between dependent variable (CPS_t) and t, where t is a time indicator. The magnitude and direction of growth are fixed by the slope. The growth per period is determined by the b units. The fixed intercept affects the level of the series. The initial level is determined by a, but has no effect on growth. The smoothest possible trend would require that that growth lies on a straight line centered through the series.

$$T_t = a + bt$$
$$t = 1, \ldots N$$

The fixed seasonal model consists of 12 coefficients, one for each month of the year. Each coefficient, or factor, measures the seasonal effect on the series for a given month. Additive seasonal factors have positive and negative values that indicate deviation above and below the trend level due to seasonality. Summing all 12 months of seasonal factors will equal 0. The fixed seasonal pattern repeats each year.

$$S_m = c_m$$
m = month index 1, 2, ... , 12
$$S_1 + S_2 + \ldots + S_{12} = 0$$

In this example the trend for time period t has an intercept of 10 and a slope of 0.26.

$$T_t{}^* = 10 + 0.26_t$$

$$S_1{}^* = 2.0,\ S_2{}^* = 3.5,\ S_3{}^* = 4.0,\ \ldots,\ S_{12} = 0$$

First, the CPS is corrected for survey error. The survey error model uses an autoregression approach with the current standard error as a weighted sum of its previous values plus the current random error, v_t. The coefficients are provided from sample survey information.

$$e_t = 0.34e_{t-1} + 0.19e_{t-2} + 0.10e_{t-3} + 0.02e_{t-4} + 0.02e_{t-5} + 0.02e_{t-6, \ldots} + v_t.$$

A regression equation is used to model survey error to account for the overlap in CPS (autocorrelated error) and changes in reliability. The autocorrelated component, e_t, is adjusted by a variance inflation factor (VIF). The VIF is based on standard errors computed for the CPS.

$$e_t^{adj} = e_t * VIF_t$$

Removing the estimated error from the CPS yields a value for the signal which equals the value for the signal computed from the trend and seasonal components.

$$CPS_t - e_t^* = Signal_t^*$$

$$Signal_t^* = (10 + 0.26_t) + S_m$$

$$e_t^* = CPS_t - Signal_t^*$$

Next the error corrected CPS is seasonally adjusted by removing the seasonal component.

$$Signal_t^* - S_m^* = T_t^*$$

Variable Regression Coefficients

The simple model may be generalized to handle real series. Most series have changing trends and evolving seasonality. The trend component cannot respond to a change in the direction of the series. The seasonal component cannot respond to changes in the seasonal pattern.

Using variable regression coefficients (VC) allows the coefficients to vary over time so the model can adapt to changing patterns. In estimating the coefficients, more recent observations receive more weight than earlier observations. Past data that are less relevant to current conditions are discounted.

When the trend coefficients vary over time, the trend is able to adapt to changing patterns. A poorly fitting fixed linear trend may miss important turning points in the series. A variable slope trend resolves this problem.

$$T_t = a_t + b_t t$$

Similarly the seasonal component adapts to changing patterns and the seasonal factor for month m will change over time. Seasonal factors that are fixed may no longer reflect the current situation while seasonal factors are made adaptive with the variable coefficient.

$$S_{m,t} = c_{m,t}$$

In addition, the VC is a self-tuning mechanism where the model adapts itself without requiring special intervention. Each component has a "hyper parameter" associated with it that determines how much it changes over time. The hyper parameter is identified as s_i. If $s_i = 0$, then the component is fixed. If $s_i > 0$, then the component changes continuously over time. The hyper parameters are estimated from State data.

Component	Fixed	Varying
Trend level (intercept)	$s_{level} = 0$	$s_{levei} > 0$
Trend slope	$s_{slope} = 0$	$s_{slope} > 0$
Seasonal	$s_{seasonal} = 0$	$s_{seasonal} > 0$
Irregular	$s_{irregular} = 0$	$s_{irregular} > 0$

Noise

Accounting for CPS Sampling Error

There are two properties of the CPS, all controlled through the models, which affect the time series data: changing reliability and the correlated sampling error.

Changing Reliability

Changing reliability is due to one or a combination of several factors. These factors include survey redesigns after decennial censuses, sample size changes due to budget cuts or special supplementation, and variations in labor force levels. Because of these factors, the CPS sampling error variance is not fixed over time.

As the reliability of the CPS estimates changes, so do the weights used to estimate the signal. The estimated signal is a combination of an estimate based on the time series model of the signal historical data and current CPS estimates corrected by a model-based estimate of sampling error. The reliability of the CPS can change over the years. As it improves, less weight is given to the time series model and more weight to current CPS estimates. The reverse is true for periods when the reliability weakens. Thus, the estimated signal is a weighted average of a predicted signal based on historical data and the current CPS estimate. This is represented by the equation below:

$$\mathbf{Signal_t = (1\text{-}w_t)\ Signal_t\ (prediction) + w_t\ (CPS_t - N_t)}$$

where:

$\mathbf{Signal_t}$ = the model estimate of the signal.

$\mathbf{w_t}$ = the weight, between 0 and 1, given to the current CPS.

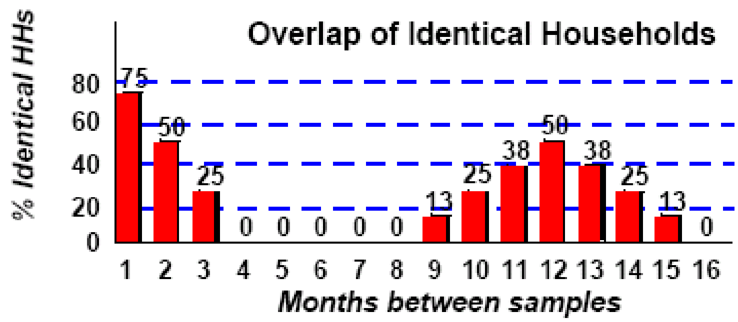
$\mathbf{Signal_t}$ (prediction) = the model-based prediction of the signal based on historical relationships.

$\mathbf{N_t}$ = the noise.

The lower the reliability of the CPS, the less weight is placed on the current CPS; the higher the reliability, the higher the weight.

Correlated Sampling Error

Because of the CPS 4-8-4 sample rotation method, there are significant overlaps in the samples used by the CPS. (See Chapter 2.) Each month three-fourths of the sample from the previous month is interviewed, one-eighth of the sample is interviewed for the first time, and one-eighth is resuming interviews after being out of the sample for 8 months. Each month one-half of the households from 12 months earlier are interviewed. The chart below shows the proportion of the households in the current sample that were also in the sample k months ago. For example, 75 percent of the households in the sample this month were in sample last month, 50 percent were in two months ago, etc. Note that samples from 4 to 8 months and over 15 months apart have no households in common.



The use of a rotation system requires the periodic replacement of the sample. To cover a decade under the 4-8-4 scheme, 15 samples are needed. A key feature of the replacement scheme is that successive samples are generated in a dependent way. Once an initial sample of households is selected, replacements are obtained from nearby addresses. For each original sample, the 14 succeeding ones needed to cover the decade are usually taken from the same neighborhood.

The overlap in the CPS sample is important because it introduces strong autocorrelation in the sampling error. That is, the current value of the sampling error (either an overestimate or an underestimate of the true value) will depend on its own past values. For example, suppose the unemployment rate for the sampled households in the current month is higher than the rate for the entire population. Since 75 percent of these households will remain in the sample next month, the unemployment is likely to be overestimated again.

The extent of this autocorrelation depends not only on the overlap in the sample but also on the stability of the labor force characteristic being estimated. The overwhelming majority of workers spend most of their time in the labor force as employed rather than unemployed. Accordingly, errors in the employment estimates will be more strongly autocorrelated than in unemployment estimates since employment is a more stable characteristic of the households being sampled.

While CPS standard error estimates have been routinely produced for State CPS data, estimates of the error autocorrelations have not. Obtaining this information is potentially very costly, involving complex calculations on huge micro data files. However, as part of BLS model research activities, a method has been developed to estimate the autocorrelations that requires only State CPS data for each rotation group.

The following graph presents the time profile of a CPS error series for a typical State for both employment and unemployment. The vertical axis gives the weights that show how the effect of a CPS error occurring in a given month is distributed over future months, and the horizontal axis indicates the number of months following the occurrence of the error. For the current month (zero months ahead), the weight equals one since the full impact of the error is felt in the month that it occurs. A value of 0.6 for 1-month ahead, for example, indicates that 60 percent of the error in the current month carries over into the next month's estimate.

Time Profile of CPS Error

The strong autocorrelation in the CPS sampling error has important consequences. First, sampling error will account for long-run movements in the CPS. Ordinarily, we think of sampling error as having a transitory effect on a series. If completely random, its effects would quickly average out. This means the weights would drop to zero for all months following the occurrence of the error.

Another important consequence of correlated sampling error is that these errors are unlikely to average out over a 12-month period. If the error were completely random, the number of overestimates and underestimates should be about the same. However, because of the strong autocorrelation in the error, if the CPS underestimates one year, it is likely to do so the next year.

Outliers

CPS data are occasionally affected by outliers. These outliers are CPS values that are inconsistent with the expected behavior of either the signal or noise component. There are two possible causes—a nonrepresentative sample resulting in a noise outlier, or a real non-repeatable event, such as bad weather, strikes, etc., that cause an outlier in the signal. Because these outliers represent sudden changes, they may cause special problems for a model. In fact, we define an outlier as an observation that breaks the pattern of behavior predicted by the model. It is not necessarily an extreme value in the observed series. For example, a series may not change much from one month to the next, but an outlier may have occurred if the series normally has a large seasonal increase.

Even though there may be extreme observations in the CPS accompanied by a few large prediction errors, it is not necessarily good practice to make special adjustments to the model to fit those observations more closely. The purpose of the model is to capture the normal time series behavior of the signal. Thus, the model must be flexible enough to adapt to structural changes in the signal, but if too flexible, it will fail to filter out the noise. If there is prior information about the occurrence of an outlier, then an adjustment may be justified. Otherwise, adjusting the model for outliers is important only to the extent that they distort diagnostic testing, cause bias in parameter estimates, or lead to a deterioration in current performance.

Determining the type of outlier is crucial to deciding how to adjust the model for its effects. Even though there are many complex patterns of outliers, the three below tend to be the most common types of outliers that occur in time series data:

1.) An additive outlier (AO) affects the series for only one month, such as a sudden increase followed by a decrease.

2.) A temporary change (TC) in the level of the series causes an abrupt change in the series followed by a gradual return to its former level

3.) A permanent level shift (LS) refers to an abrupt shift that persists indefinitely into the future, or until an offsetting shift in the opposite direction occurs.

The outlier may be due to a real change in the labor force or result from the measurement process, which includes sampling and other types of measurement errors. The origin of the outlier determines whether it should be included in the signal or the noise component. Ideally, this should be resolved by seeking external information about the potential causes. In practice, such information is rarely available. Since highly transitory outliers in the CPS are more likely to be due to the measurement process than a real economic event, the usual procedure is to assign these types of outliers (AO and TC) to the noise component. On the other hand, a permanent shift in level is considered a real effect and assigned to the trend component of the signal. However, such identification requires that significant number of months of data be available following the occurrence of the outlier in order to identify the type of outlier that occurred. Therefore, outlier identification cannot be made in current estimates. Models are monitored on a current basis to detect the occurrence of outliers in the current year. Once enough data become available to identify the nature of the outlier, its effects are incorporated into the model specification and implemented during the annual re-estimation of the models.

Univariate Trend Models

The univariate models are used to correct the CPS for survey error and to seasonally adjust the model estimates. The local linear trend (T_t) of this model is comprised of a variable coefficient trend where the intercept and the slope change over time.

$$T_t = a_t + b_{t-1}$$

where:

$$a_t = T_{t-1} + \tilde{N}_{a,t}$$

$$b_{t-1} = b_{t-2} + \tilde{N}_{b,t-1}$$

$\tilde{N}$ = per period change

A change in the local trend can result from a change in the intercept or a change in the slope. When there is a change in the intercept, there will be an up-down shift in the level. The slope, on the other hand, changes the trend more gradually.

The smoothness of trend is based on whether the intercept or the slope accounts for most of the change. It the intercept is dominant, the trend appears rough. If the slope is more important, then the trend looks smooth. Based on this, the local linear trend can appear in three forms: smooth, rough and general. The type of trend is determined from the data by estimating the empirical variability in the intercept and slope (hyper parameters).

A smooth trend can result from the trend having a fixed intercept and a fixed slope (global trend), or a fixed intercept and a changing slope. The trend line shows continuous change but not abrupt shifts. Turning points in the series are well defined with local peaks and troughs.

$$T_t = a_t + b_{t-1}$$

Hyper parameters: $s_{levei} = 0$ and $s_{slope} > 0$

A rough trend is caused by a changing intercept with no slope. All change is due to shifts in the level. This gives the trend line a jagged look with many small changes in direction. Occasional large shifts tend to be associated with major business fluctuations.

$$T_t = a_t$$

$$\text{Hyper parameters: } s_{levei} > 0$$

The general form has shifting intercepts and slopes. It may approach behavior of either the rough or smooth trend, depending on the relative size of the change in the intercept and slope components.

$$T_t = a_t + b_{t-1}$$

$$\text{Hyper parameters: } s_{levei} > 0 \text{ and } s_{slope} > 0$$

Bivariate Trend Models

The bivariate trend models are used to seasonally adjust the State inputs from the univariate model and improve the seasonal adjustment of the CPS. This model explicitly estimates the relationships between the trends of the univariate models and determines how strongly correlated the CPS trend is with the UI claims and CES employment series.

The univariate model approach takes steps to correct the CPS trend for survey error. It is represented in the following equation.

$$T_{cps,t} = a_{cps,t} + b_{cps,t}$$

The bivariate model, which addresses the seasonally adjusted State inputs, is represented in the following equation where x is the UI or the CES.

$$T_{x,t} = a_{x,t} + b_{x,t}$$

Next the bivariate model relates the CPS to the State inputs, or $T_{cps,t}$ to $T_{x,t}$. There is a variety of possible relationships. There can be relationships between the trend levels (intercepts), between growth rates (slopes), or some combination of both.

The strength of these relationships is measured by trend correlation coefficients. A value of 1 indicates a perfect relationship and a value of 0 signifies no relationship.

$$\text{Cor}_{\text{level}} = \begin{cases} 1 & \text{perfect relationship} \\ 0 & \text{no relationship} \end{cases}$$

$$\text{Cor}_{\text{slope}} = \begin{cases} 1 & \text{perfect relationship} \\ 0 & \text{no relationship} \end{cases}$$

The relationship between the trend levels is identified as the following equation where the h coefficient relates a level shift in $T_{cps,t}$ to $T_{x,t}$. and $h\alpha_{x,t}$ is the common trend. The R coefficient is the residual unique to the CPS. If $h = 0$, then the $\mathrm{Cor}_{\mathrm{level}} = 0$ and there is no relationship between the CPS and the State input. If $\mathrm{Cor}_{\mathrm{level}} = 1$ then $R_{\alpha,t} = 0$ since the two are perfectly related there can be no CPS residual.

$$\alpha_{cps,t} = h\alpha_{x,t} + R_{\alpha,t}$$

Similarly the relationship between the growth rates is identified as the following equation where the g coefficient relates growth rates in $T_{cps,t}$ to $T_{x,t}$. and $g\beta_{x,t}$ is the common trend. The R coefficient again is the residual unique to the CPS. If $g = 0$, then the $\mathrm{Cor}_{\mathrm{slope}} = 0$ and there is no relationship between the CPS and the State input. If $\mathrm{Cor}_{\mathrm{slope}} = 1$ then $R_{\alpha,t} = 0$ since the two are perfectly related there is no CPS residual.

$$\beta_{cps,t} = g\beta_{x,t} + R_{\beta,t}$$

For strong relationships to exist it is necessary that the two series have trends of the same type, i.e., rough, smooth, or general; however this is not guarantee of a strong relationship.

Even if Cor = 0, it does not necessarily mean that there is no relationship between the CPS and the State inputs. Keep in mind that both series must be related given our understanding of what they measure. Only in a restricted sense does it mean that there is no *net linear* relationship. By saying that there is no net linear relationship we mean that the State inputs (CES or UI series) provide no useful information about the trend in the CPS beyond what we already know from the historical CPS series.

To determine if a net linear relationship exists, a trend model is fitted to the noise corrected CPS. This essentially involves correlating the CPS with its own past values. Next, establish if the State inputs adds any additional information. If not, there is no net linear relationship. Since non-linear relationships may exist, the CES and UI data are used in all State models.

Area Models

In 2005, area models were introduced for the Chicago-Naperville-Joliet, IL metropolitan division, Cleveland-Elyria-Mentor, OH metropolitan area, Detroit-Warren-Livonia, MI metropolitan area, Miami-Miami Beach-Kendall metropolitan division, New Orleans-Metairie-Kenner, LA metropolitan area, Seattle-Bellevue-Everett metropolitan division. (Model-based estimation of the New Orleans-Metairie-Kenner, LA, metropolitan area was suspended following Hurricane Katrina.) Each of these area models is paired with a

Balance of State (BOS) model. The BOS is modeled directly rather than computing it as a residual of a State model less the area model. This is done because modeling the BOS provides error measures. If the residual approach is used, all the error would be aggregated in the BOS. In addition, the BOS CPS data are often more reliable than the area data.

At the area level, univariate models are used. The unemployment model is multiplicative in form and the employment model is additive. The area model and the BOS model for a State are controlled to the State model estimates.

Description of the Employment Model

Overview

The basic form for the signal/noise employment model is a regression equation that uses the monthly CPS employment level as the endogenous variable and the CES employment level as the explanatory variable. Each State employment model can be thought of as having a regression equation form, with a variable coefficient component (CES employment level for the employment model) and two time series components, which reflect the State's CPS seasonal and trend movements not accounted for by the CES.

Chapter 4 discusses the conceptual and coverage differences between the CPS and CES series. While the time series model adjusts for these differences, knowledge of the CPS/CES differences is important to understanding the nature of the model's CES variable. The model accounts for these differences automatically because the regression coefficients, residual trend and seasonal components are computed separately for each State using State-specific data. Knowledge of the survey differences is also useful in understanding why the trends in these two series diverge at times.

Illustrated below is the basic structure of the employment model. The model consists of three components.

Emp = Emp Signal + Emp Noise

Signal = βCESEM + Trend Residual + Seasonal Residual

Noise = CPS Error, Irregular, Transitory Outliers

Description of Signal Component

CES Base Variable

From the CES survey, a monthly estimate is developed of the total number of persons on establishment payrolls who received pay for any part of the employer's pay period that includes the 12th of the month. In the model, the CES employment is used as the major data source for the model's target: the employed portion of the labor force. Data for major strikes are added to the CES estimate from which the employment is calculated.

Time Series Components

The part of the signal that is unaccounted for by the CES variable is represented by the residual seasonal and trend components. The trend component is adjusting for long-run systematic differences between the CES and the CPS series. Time trend equations with variable intercepts and slopes are used to estimate the trend. By allowing the parameters of the trend component to change, the estimated trend component can adapt to change in the data. If there are frequent changes in the level and/or slope of the trend, more weight is given to recent observations in estimating the trend.

The seasonal component is decomposed from the time series model of the CPS. As is the case for the trend, the component is allowed to vary to permit adaptation to changing relationships between the seasonal patterns of the CPS and CES. Because of definitional differences between the CPS and CES, this component is necessary. Differences in seasonality between the two series occur principally because there are large seasonal variations in employed persons on unpaid absences who are counted as employed in the CPS but not in the CES, and to seasonal variation in agricultural employment. For a complete discussion of these differences, see Chapter 4.

Description of the Unemployment Model

Overview

The basic form for the signal/noise unemployment model is a regression equation that uses the monthly unemployment level as the endogenous variable and the unemployment insurance claims (UI) as the explanatory variable. Each State model can be thought of as having a regression equation form, with a variable coefficient component and two time series components which provide flexibility for the State's CPS seasonal and trend movements not accounted for by the explanatory variable.

Below is the mathematical representation of the basic structure of the unemployment model.

The model consists of three variables.

Unemp = Unemp Signal + Unemp Noise

Unemployment Signal = βUI + Trend Residual + Seasonal Residual

Unemployment Noise = CPS Error, Irregular, Transitory Outlier

Description of Signal Component

The Base Variable—UI Claims

The most important variable in the unemployment model is the UI claims count. This is a measure of the number of workers who are currently unemployed and receiving UI benefits. Since the CES data are adjusted to include strikers (CESADJ), the continued claimant count should exclude any known strikers. (In some States, strikers may be eligible for unemployment compensation). The statewide estimate of continued claimants without earnings follows the standards outlined in Chapter 3.

The main weakness of the claims data is that these data are the by-product of the UI tax system and therefore are subject to changes in the State’s laws, making them a biased cyclical indicator. Since 1980 there has been a marked deterioration in the cyclical sensitivity of the claims data. Several factors may account for this. For example, in the latter stages of a severe recession, many workers exhaust their UI benefits and are dropped from the count. As a result, the UI claimant count tends to diverge from the total rate when unemployment is high and converge with the total rate when unemployment is low. Nationally, there have been changes in the long-term relationships between the total unemployment rate and the claims rate. From the 1970’s through the 1980’s, the proportion of CPS total unemployed collecting UI benefits nationally dropped from nearly 60 percent to less than 40 percent. Since the 1980’s, the proportion has generally been between 30 and 40 percent.

The seasonal pattern of the claims data also differs in important ways from the CPS. Most notably, in the summer months, the entry of students into the labor force is not reflected in the UI data. The seasonal component in the model controls for this as well as for other seasonal differences. The model controls for the cyclical bias in the UI data by changing the magnitude of the regression and trend components. (See Chapter 3 for a discussion of the differences between the CPS and UI.)

Time Series Components

The part of the signal that is unaccounted for by the claims count is accounted for by the seasonal and trend variables. Time trend equations with variable intercepts and slopes are used to estimate the trend. By allowing the parameters of the trend component to change, the estimated trend component can adapt to change in the data. If there are frequent changes in the level and/or slope of the trend, more weight is given to recent observations in estimating the trend.

The seasonal component is decomposed from the time series model of the CPS. As is the case for the trend, the coefficients are allowed to vary to permit adaptation to changing seasonal patterns.

Detailed Description of the Estimation Process

Overview

The two approaches to estimation are real-time and historical time. Real-time is a sequential process and makes an estimate for one month at a time immediately after each new CPS estimate becomes available. Historical time, on the other hand, is a batch process. Data are accumulated over time and processed together at once.

The advantage of real-time estimation is that up-to-date estimates are produced without delay. However, there are some disadvantages. The errors in the estimates are largest at the end of the series. The trend and seasonal components appear less smooth. The process requires revisions.

The historical estimate process addresses the disadvantages that occur with the real-time process. It produces smaller errors because it makes use of all available information. The revisions are smaller when new data are added. The trend properties are clearly displayed. The only drawback is that the estimates are not timely.

Forward Filter

The current estimation procedure uses the *forward filter* algorithm. To produce the current month's estimate the forward filter requires only two inputs. One is the prior month's estimates of the signal and noise. The other input is the current month's CPS, CES, UI claims and population data. No other historical data are needed.

The forward filter produces estimates at time t, taking into account information available at this time. As new CPS data become available after t, the estimate at t is not revised with new CPS data. States have the opportunity to update their UI claims and CES data each month, but prior month estimates are not updated with the latest CPS observation. Thus this procedure only goes forward and does not look backward.

The forward filter provides estimates without delay. It is computationally efficient as it requires no more work to process the last observation than it does the first.

Model Re-Estimation

The model re-estimation algorithm revises the forward filter estimates to incorporate all data that become available after the estimate for reference month. It accounts for all information available after time t, i.e., over the whole sample. Re-estimation is done once a year and requires processing all of the current year and historical data.

The re-estimation process uses all available data and thus is more accurate than the forward filter procedure. It is less sensitive to the erratic movements in the CPS. As a result, it provides much smoother model components.

Benchmarking

The purpose of benchmarking is to control for potential bias. The previous unemployment models were slow to adapt to national shocks, while the previous employment models tended to overestimate. To address these limitations, the new generation model estimates are controlled monthly so they sum to the national CPS. This constraint ensures that model employment and unemployment estimates will adapt to national shocks without delay. The national CPS is a relatively reliable benchmark.

Real-time benchmarking adjusts the forward filter estimates to a monthly control one month at a time. Yearly data are not complete until the last month. Historical benchmarking adjusts all the values of the smoothed series at once. This procedure uses complete years of data and is more stable for the trend.

The procedure to benchmark estimates to the national CPS is comprised of 3 stages. In stage 1 the model estimates are produced for the 9 Census Divisions and the aggregated series are constrained to sum to the national CPS. In stage 2 the State model estimates in each Division are summed to the benchmarked Division model estimate from stage 1. In stage 3 the area model estimates are summed to the benchmarked State estimate from stage 2.

As with the State models, the Division model structure is based on the decomposition of a time series into the trend, seasonal, and irregular components. A model of the CPS survey error component is also added.

Benchmark Control Structure

National CPS (Control)

Division Model of the Signal (Stage 1)

State Model of the Signal (Stage 2)

Area Models (Stage 3)

Real Time Benchmarking

The benefits of real time benchmarking to the national CPS are numerous. The estimates are consistent with reliable monthly national estimates. It provides protection from national shocks to the economy such as recessions or catastrophic events like the September 11 terrorist attacks. There is more consistency between the current year estimates and historical estimates. The year end revisions are smaller. Error measures are provided. However, this procedure may introduce additional variability into the current year estimates due to random fluctuations in the benchmark adjustment made each month.

The two approaches to benchmarking are external adjustments and internal adjustments. External adjustments are made after the estimation and are referred to as pro-rata or ratio adjustment. This type is used in the real time benchmarking application. The internal adjustment occurs during the estimation. Theoretically it can produce better reliability measures, though it is difficult to implement and is still being researched.

In the external adjustment, Division model estimates are benchmarked to the national CPS. The national CPS (USCPS) is divided by the sum of the 9 Division model estimates. This ratio is then applied to each Division model estimates to arrive at the pro-rated Division estimate ($Adjusted_{D,t}$).

Step 1

$$Adjusted_{D,t} = Model_{D,t} \left(\frac{\text{USCPS}}{\sum_{D} Model_{D,t}} \right)$$

The next step is to benchmark the State model estimates to the Division controls developed in the previous step. The adjusted Division model estimate ($Adjusted_{D,t}$) is divided by the sum of the State model estimates for that Division. This ratio is then applied to each State model estimates in the Division to obtain the pro-rated State estimate ($Adjusted_{S,t}$).

Step 2

$$Adjusted_{S,t} = Model_{S,t}\left(\frac{Adjusted_{D,t}}{\sum_{S} Model_{S,t}}\right)$$

The final step is to pro-rate the area model estimate by controlling it to the adjusted State model estimate.

Step 3

$$Adjusted_{a,t} = Model_{a,t}\left(\frac{Adjusted_{S,t}}{\sum_{a} Model_{a,t}}\right)$$

In the real time benchmarking procedure, the model estimate that is directly adjusted is the forward filter not-seasonally adjusted estimate, that is the trend plus the seasonal components. Implicitly, all the components are also ratio adjusted by the same factor.

$$\text{Adjusted trend}_t = \text{trend}_t\,(\text{prfactor}_t)$$
$$\text{Adjusted seasonal}_t = \text{seasonal}_t\,(\text{prfactor}_t)$$

$$\text{Prfactor}_t = \left(\frac{Adjusted_{D,t}}{\sum_{S} Original_{S,t}}\right)$$

Pro-rating the State level maintains relative State model shares in the Division total. It does not prevent State trends from moving in different directions. Additionally, larger States get larger absolute adjustment, while smaller States are not dominated.

$$Adjusted_{S,t} = Model_{S,t}\left(\frac{Adjusted_{D,t}}{\sum_{S} Model_{S,t}}\right) = \left(\frac{Model_{S,t}}{\sum_{S} Model_{S,t}}\right) Adjusted_{D,t}$$

Benchmarked model estimates may be somewhat more variable then the original model estimates. The proportionate change in the original model estimates are not exactly preserved due to fluctuation in the benchmark adjustment factor from month-to-month. Only if the adjustment factors are equal to a constant (k) over time, will the proportionate change in the original model estimates be exactly preserved.

$$\left(\frac{Adjusted_{D,t}}{\sum_{S} Original_{S,t}} \right) = k$$

$$\frac{Adjusted_{S,t}}{Adjusted_{S,,t-1}} = \frac{\cancel{k}\ original_{S,t}}{\cancel{k}\ original_{S,t-1}} = \frac{original_{S,t}}{original_{S,t-1}}$$

For seasonally-adjusted estimates, an additional step is employed at this time to reduce the volatility produced by the application of the pro-rata factors. This step is called Smoothing and is discussed in an upcoming section.

Official Estimates

This benchmarking procedure does not eliminate the need for end-of-year revisions; however, it does reduce the size of the revision compared to the previous method. The smaller annual revisions to the real time model leads to less-over-the year distortion and facilitates analysis of the estimates between historical and current year estimates.

Historical Benchmarking

The end-of-year processing involves entering the revised UI claims, CES employment, and population values and re-estimating the forward filter. The resulting smoothed forward filter estimates become the benchmarked smoothed estimates and replace the real time benchmarked estimates.

End-of-Year Processing Steps

Revise Pop, CPS, UI, & CES

?

Make historical estimates

?

Benchmark historical estimates

?

Replace concurrent estimates

In the 'benchmark historical estimates' step, the first stage is to benchmark the Division models. The control total is the not-seasonally-adjusted national CPS estimate of employment or unemployment. Then, develop the historical not-seasonally-adjusted model estimate. Next, re-compute the pro-rata factors for not-seasonally-adjusted estimates. Benchmark both the not-seasonally-adjusted and seasonally-adjusted estimates using the new pro-rata factors.

The second stage is to benchmark the State model estimates of employment and unemployment. The control total is the not-seasonally-adjusted Division estimates of employment and unemployment developed in stage 1.Then, re-compute the pro-rata factors for not-seasonally-adjusted historical model estimates. Then, benchmark both the not-seasonally-adjusted and the seasonally-adjusted estimates using the new pro-rata factors.

Pro-rata factor for Historical State NSA & SA Series

$$\text{prfactor}_{dt} = \frac{\textit{Bmk NSA Historical Div Mdl}_{dt}}{\textit{Sum of NSA Historical State Model}_{dt}}$$

Monthly benchmarking of the seasonally-adjusted estimates does eliminate large revisions due to end-of-year trending but the resulting volatility must be addressed.

Smoothed-Seasonally-Adjusted Estimates

There are a number of sources of volatility in the LAUS estimates. These include sampling error in CPS and outliers, real time monthly benchmarking, seasonality, uncertainty at the end points of the series, frequent level shifts in the trend, and real outliers in the current year (for example, Hurricane Katrina). Volatility is a problem for model estimation when month-to-month change is unexplained, not related to predictable survey error or seasonal patterns, lacks persistence, and is difficult to explain in terms of long-run movements. Major sources of volatility in the models can be controlled for (at least partially). Normal survey error behavior is controlled with the survey error model. One-time outliers have potential solutions—either through end-of-year smoothing or the outlier regression model. Seasonality, a significant source of volatility, is removed with seasonal adjustment.

The principal volatility that we want to try to control for is that which arises from real-time monthly benchmarking. One approach to smoothing seasonally-adjusted benchmarked estimates is through the use of moving averages, or filters. Symmetric averages "move" through a time series from period to period by shifting the time periods to be included forward by 1 period. The center of a moving average is at time *t*, the point being smoothed. The weights of the other time periods add to one. A simple moving average applies the same weight to all time periods. A weighted moving average gives more weight to central observations. Asymmetric moving averages are utilized for time periods with no future observations (for example, current time). The center of an asymmetric moving average is at time *t-1*, the point being smoothed is at time t. A simple average lags the values by 1 period. A weighted average gives more weight to the value in the current period, making it more responsive to change.

Smoothing methods don't work as well at the end of a series as they do in the middle. Time-series models involve averaging over time. At the end of series we must put more weight on a relatively few number of observations When we move toward the center of the series, the weights are spread more evenly over a larger number of observations since we have data following the time point for which we make an estimate. It is always more difficult to tell what is happening at the end of a series. We have only past data and are missing information from future data. We are less certain whether movements are due to trend, seasonal, or irregular components. It is only well after the event that we can form a clear view as to what has happened to the trend.

For the LAUS time series models, we need a set of filters to smooth all of the points in the series. We begin by designing a symmetric filter with "good" properties for historical series. Then, we derive asymmetric filters that converge to the symmetric as more data become available and minimize filter revisions. This results in a "family of related filters" consisting of a given symmetric filter and all of the necessary asymmetric filters needed when there are not enough data points for the symmetric filter.

The Henderson 13 term Trend Filter family is the filter utilized in LAUS smoothing. Its symmetric filter is relatively short. The half length is 6, which means it needs only 6 months of future data. It is a fairly effective smoother, and generally, results in little distortion to the trend cycle. The Henderson asymmetric filter requires 6 terms. It does not over smooth the trend cycle or lag turning points. It reduces volatility in the benchmarked seasonally-adjusted estimates.

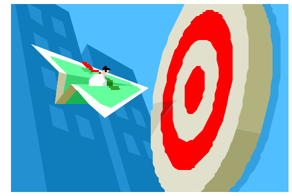
Six different filters are used to smooth the historical series:

Estimates for last year	Length	Number of past observations	Number of future observations
Up to June	13	6	6
July	12	6	5
August	11	6	4
September	10	6	3
October	9	6	2
November	8	6	1
December	7	6	0

For real-time (concurrent) estimation, we use a single asymmetric filter (one-sided) moving average. The filter length is 7 – 1 current observation and 6 previous values looking backward. The Henderson asymmetric filter does not preserve turning points due to irregular variation in the series. Much of this variation is noise. If one-time blips are real economic events, we will treat them as outliers.

Use of the SSA methodology provides more continuity between current and historical estimates. For example, the SSA weighted average estimates for January of the current (production) year overlap the SSA weighted average for December of the prior year (which has been annually revised). There are 5 data points in common for the January and December estimates.

Error Measures



In general, point estimates are never 100 percent accurate. To convey the limitations of the data to our data users it has been the Bureau of Labor Statistics' policy to publish error measure if the methodology permits. With the introduction of the new generation of models in 2005, we are now able to publish error measures.

There are two uses of error measures. One is reliability which gives us an idea of how far are the estimates from the truth. The second is for analysis by giving us an idea of what we can say about the truth.

Standard Error

The standard deviation of errors in the estimates gives a measure of the dispersion of the error around a mean of zero. The larger the standard deviation (Stder), the more likely an individual estimate is far from the true values.

Example: A point estimate of 238,000 persons may have a Stder of 25,600 persons.

Coefficient of Variation

From the Stder other error measures that facilitate analysis can be computed. The coefficient of variation (CV) is a common reliability measure that is useful for comparing the estimates of different size or scale. The CV is computed by dividing the standard error by the estimate.

$$CV = \frac{\text{Stder}}{\text{Estimate}} = \frac{25{,}600}{238{,}000} = 0.11$$

Confidence Intervals

The Stder is also used to construct confidence intervals. A confidence interval for an estimate give us upper and lower limits around the estimate where the true value likely to be located with a given level of certainty or confidence.

$$\text{Estimate} \pm k \text{ Stder}$$

If k = 1.96, the significance is at a 95 percent confidence level. If k = 1.645, it is at a 90 percent level.

Significance

These error measures can be used to determine the difference between a State estimate and the estimate for the nation or another State is statistically significant. It is also used to reveal if the over-the-month change is significant.

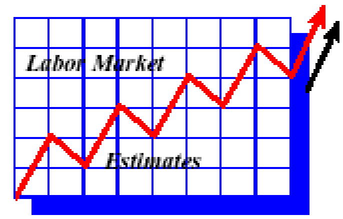
$$z = \frac{\text{Estimate - Mean}}{\text{Stder}}$$

If z = 1.96, then the difference is significant at the 95 percent level. If z = 1.645, then it is significant at the 90 percent level.

Error measures assist the analysis of month-to-month change, the differences from the US and other State estimates and reliability.

Availability of Measures

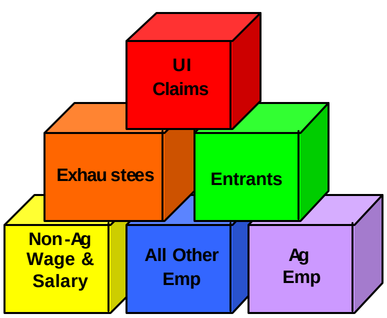
Error measures for both smoothed-seasonally-adjusted and not-seasonally-adjusted estimates are available monthly in the STARS tables. Table 2 provides standard errors (Stder) for the point estimates, while Table 3 provides standard errors for over-the-year change, and Table 7 provides standard errors for over-the-month change.



7 *LAUS Estimation: Labor Market Area Estimates*

Introduction

In the late 1940's, when sub-national labor force estimation was first attempted, employment and unemployment estimates were developed for large labor market areas as well as States, underscoring the importance of substate labor market information. Today, the LAUS program creates estimates for 2,352 Labor Market Areas (LMAs) that exhaust the geography of all States, the District of Columbia, and Puerto Rico.



Estimates for most LMAs are produced independently by a building block approach, which uses current unemployment insurance (UI) data and current nonfarm employment estimates as basic inputs. In addition, components of the labor force not covered by the basic source data are developed using larger-area and decennial Census relationships. This methodology is referred to as the Handbook procedure.

When the Handbook methodology was first introduced as a standard procedure for sub-national labor force estimation in 1960, it was viewed as an attempt to approximate the results of a CPS-type household survey, but without the prohibitive cost of conducting such a survey. The Handbook method utilized a system of estimates that was reflective of the labor market structure of the 1960's in terms of UI coverage. Over the years, refinements were made to the components and basic input data to improve comparability and consistency within the States and with the standard definitions of the labor force as embodied in the

CPS. In addition, the Handbook procedure has been streamlined to reflect expanded UI coverage and economic and behavioral changes in the labor market.

Today, the Handbook methodology consists of 16 line items that can be broken out into employment and unemployment estimation procedures. This chapter will provide details for each Handbook line and the associated inputs entered into the LAUS State System Plus (LSS Plus) software. (The LSS Plus Users' Guide is available on EUS Web at \\Eusdr1\lnsoutbox\LSS PLUS Manual v2010.1.0.pdf.)

Handbook Line Items

Employment	
Line	*Description*
1	Non-agricultural Wage & Salary Employment
2	All-other Employment
3	Agricultural Employment
4	Total Handbook Employment (lines 1 + 2 + 3)
Unemployment	
Line	*Description*
5	UI Claims
6	UCFE Claims
7	Rail Road Claims
8	Total Claims (lines 5 + 6 + 7)
9	Unemployed Exhaustees
10	Non-covered Agricultural Unemployment
11	Unemployed excluding Entrants (lines 8 + 9 + 10)
12	Re-entrants Ratio
13	Re-entrants
14	New Entrants Ratio
15	New Entrants
16	Total Unemployment (lines 11 + 13 + 15)

Additivity

Prior to 1977, the Handbook estimates were the final LAUS estimates for LMAs. Beginning in that year, additivity of the substate Handbook estimates to statewide modeled estimates was introduced to address methodology issues and Federal program allocation needs.

The sums of Handbook employment and unemployment for all LMAs in a State tend to be lower than statewide estimates due to the greater difficulty in obtaining some of the input data elements at the substate level. Forcing the LMA estimates to sum to the statewide totals corrects for any methodological deficiencies in a proportional manner, allowing for the complete, to-the-dollar distribution of federal funds to areas when LAUS data are used in the allocation algorithm.

Additivity is considered a separate methodological step that follows Handbook estimation. (See Chapter 9 for more details.)

Labor Market Area Employment

Employment comprises all persons who did any work at all as paid employees, worked in their own business, own profession, or on their own farm, or who worked 15 hours or more as unpaid workers in an enterprise operated by a member of the family. It also includes all those who were not working but who had jobs or businesses from which they were temporarily absent because of vacation, illness, bad weather, labor-management dispute, job training, child-care problems, maternity or paternity leave, or other family or personal reasons, whether or not they were paid for the time off or were seeking other jobs. (See Chapter 2 for more details.)

The Handbook method decomposes employment into three subcategories. The following table provides a brief summary of the employment inputs entered into LSS Plus for each Handbook line. The sections following the table discuss each item in greater detail.

Handbook Employment

Line	*Line Description*	*Input description (LSS Plus variable ID)*	*Input Source*
1	Non-agricultural Wage and Salary (NAWS) Employment	DRRs (C01)	BLS
		Establishment-based NAWS (M01)	State
		Labor-management disputants (M02)	State
+ 2	All-other Employment	Census all-other Employment (C02)	BLS
		Step 3 Ratio Stratum (C03)	BLS
		Establishment-based NAWS decennial base (C04)	State
		Step 3 Ratios (S01 – S03)	BLS
+ 3	Agricultural Employment	Census Agricultural Employment (C05)	BLS
		Agricultural Employment Change Factors (G01 – G21)	BLS
= 4	Total Handbook Employment		

Non-agricultural Wage and Salary Employment (Handbook line 1)

The Handbook calculation of residency-adjusted non-agricultural wage and salary employment begins with input data that pertain to jobs by place of work (establishment data) rather than employed people by place of residence (household data). The conceptual differences between (1) the establishment-based inputs entered into LSS Plus and (2) the household-based output desired require calculations to adjust the inputs to conform to CPS concepts. The Handbook line 1 calculations apply Dynamic Residency-adjustment Ratios (DRRs) to the establishment-based input data to bridge the conceptual gap.

The States provide two inputs that are entered into LSS Plus each month for the line 1 calculations:

- Establishment-based Non-agricultural Wage and Salary Employment (NAWS)
  - Also referred to as "place-of-work NAWS" or "pre-adjusted NAWS"
  - LSS Plus variable ID M01

- Labor-Management Disputants
  - Also referred to as workers involved in "work stoppages"
  - LSS Plus variable ID M02

BLS provides one input that is entered into LSS Plus once a decade for the line 1 calculations:

- Dynamic Residency-adjustment Ratios (DRRs)
  - LSS Plus variable ID C11

The following sections will provide details regarding the sources and development of these inputs.

Handbook line 1 input: Establishment-based Non-agricultural Wage and Salary Employment (M01)

For most States, there is no single source of M01 data. Obtaining the M01 inputs for all LMAs in a State usually requires the use of various data sources. The principal source is the Current Employment Statistics (CES) survey. For those LMAs that are not within the CES program's scope, a sample-based employment series developed under State auspices is the next best data source. If such a series is not available, a number of ways to produce the input can be used. Details for all data sources and procedures are provided below.

Current Employment Statistics (CES) data

The CES survey, which is also referred to as the "payroll survey" or "establishment survey," yields employment estimates for all metropolitan areas and most metropolitan divisions. It is the principle source of the M01 input and sets the conceptual standard for M01 values derived from other sources. The CES not-seasonally-adjusted estimate of total nonfarm wage and salary employment should be used for LAUS estimation wherever it is available. No adjustment of CES data is necessary to conform to the definition of the LAUS M01 input.

The CES program conducts monthly revisions (data for the prior month are revised with the release of the current month) and annual benchmarking revisions (data for the latest 18 months are revised at the end of each year). The LAUS program incorporates these revisions during monthly and annual processing, respectively. Historic CES corrections that extend beyond the standard two-year LAUS annual processing period are incorporated if substantially large.

Quarterly Census of Employment and Wages (QCEW) data

The QCEW program publishes counts of establishments and jobs and aggregate wage data that are derived from quarterly tax reports. The reports are submitted to State employment security agencies by employers that are subject to either (1) State UI laws or (2) the Unemployment Compensation for Federal Employees (UCFE) program. Each quarter, QCEW releases monthly data. Data for any given year are not final until data for the first quarter of the following year are released.

LAUS estimation generally occurs with only a one-month lag from the reference period. In contrast, the volume of data processed by the QCEW program requires a longer lag of 6 to 9 months between the reference quarter and the release of data. To reconcile the timely needs of the LAUS program with the longer lag of the QCEW program, extrapolation is used for monthly processing. During annual processing, actual QCEW data replace extrapolated data.

Adjustments made to both extrapolations of QCEW data and actual QCEW data are discussed below, followed by details of the extrapolation process.

Adjustments to QCEW data

Several steps are necessary to adjust QCEW job counts to conform to the definition of the LAUS M01 input. Essentially, these adjustments bring QCEW data into alignment with the CES data used for metropolitan areas.

1. Start with the QCEW total job count for the labor market area.
2. Subtract agricultural jobs (NAICS codes 111, 112, 114, and 115).
   - These are accounted for in the Agricultural Employment estimate (line 3).
3. Subtract private household workers (NAICS 814).
   - These are accounted for in the All-other Employment estimate (line 2).
4. Add Presumed Non-covered Employment (PNC).
   - This includes various categories of jobs that are not covered by unemployment insurance laws, but which are included in CES estimates. These include:
     - College students working for their schools,
     - Commissioned insurance agents, and
     - Religious employees.
   - Most States have a periodic survey that estimates PNC at the State and metropolitan area level. The LAUS technician should consult with the CES unit in their State to obtain PNC estimates for labor market areas.
5. Add estimates of railroad employment.
   - These estimates are provided to States by the BLS national office.

Extrapolation of QCEW data

Due to the time lag associated with publication of QCEW data, extrapolation is necessary for LAUS monthly processing. Two approaches exist:

1. Extrapolation using Area-based Change Factors
   - Historic over-the-month changes for each reference month are applied to the prior month's estimate.
   - The historic monthly changes can be those for the prior year or averages of those for several prior years.
   - For example, to estimate March 2010, take the over-the-month QCEW employment change from February 2009 to March 2009 and apply that factor to the February 2010 estimate.
2. Extrapolation using Area Shares of the non-CES Balance of State
   - Historic ratios of area QCEW employment to the QCEW employment of the non-CES balance of State are applied to current CES balance-of-State estimates to yield area estimates.

- The historic area shares can be those for the prior year or averages of those for several prior years.
- The CES balance of State estimate is found by subtracting all MSAs within the State from the statewide estimate.

BLS ARIMA Forecasts

BLS produces nine-month forecasts of QCEW data for labor market areas for all States. The forecast program utilizes historical monthly QCEW data for each labor market area in a State. Once the most recent quarter of QCEW data are available to national office staff, ARIMA software is run producing employment forecasts for each area. States need to add PNC and railroad estimates to these forecasts before utilizing them as inputs to LAUS employment estimation.

Small Domain Estimators

Illinois uses the National Opinion Research Center Small Domain Estimator model to produce non-agricultural employment by industry for their non-CES areas. The model utilizes CES sample, QCEW employment, PNC estimates, allocation of employment for statewide reporters, and economic events not captured in the CES sample. At the end of each year, the model estimates are benchmarked to QCEW employment.

Pennsylvania uses a Small Domain Estimator that is based on the inverse relationship between unemployment insurance claims and employment—when workers get laid off, claims go up and employment goes down; when workers return to work, claims go down and employment goes up.

CES ACES System

Some States utilize features within the CES ACES estimation system to produce employment estimates for labor market areas not included in the CES program. Basically, this model calculates the change in employment for each sample cell and applies that change to the prior month's estimate.

Handbook line 1 input: Labor-Management Disputants (M02)

In addition to the non-agricultural wage and salary employment input (M01), data for workers absent from their jobs due to labor-management disputes are needed. Workers involved in these disputes can be either on strike (a work stoppage initiated by the workers of an establishment) or lockout (a work stoppage initiated by the management of an establishment). In both cases, the workers have jobs from which they are temporarily absent and are therefore considered employed under the CPS definition. (See Chapter 2.)

Counts of workers involved in labor disputes during the reference week are entered into LSS Plus for each Handbook area using the variable ID M02.

Data on labor-management disputes can be obtained from the CES Strike Report and the BLS Work Stoppages Program.

Handbook line 1 input: Dynamic Residency Ratios (C11)

The input data detailed above pertain to workers by their place of employment. The CPS definition of employment pertains to employed individuals by their place of residence. Because the goal of LAUS is to parallel CPS concepts, the establishment data gathered and entered into LSS Plus must undergo adjustment.

While there are several differences between establishment data and household data (see Chapter 4), the largest source of difference at the LMA level is the discrepancy between the location of establishments, where jobs are counted, and the location of residencies, where employed individuals live. The Dynamic Residency Ratios (DRRs) adjust the establishment-based inputs to a place-of-residence, or household, basis.

<u>Development of Residency-adjustment Methodology</u>

Prior to 2005, residency adjustment of the establishment-based M01 and M02 inputs was accomplished by a single ratio for each LMA. The ratio was calculated from 1990 Census data by dividing the number of residents employed in non-agricultural wage and salary jobs within each LMA (obtained from Census data) into the total number of wage and salary jobs in the LMA at the time of the Census.

Beginning in 2005, the single-ratio approach was replaced with the introduction of DRRs. The general concept behind the DRR methodology is that an LMA’s resident employment is a function not only of the jobs available within the LMA (the pre-2005 approach), but also of the jobs available in neighboring LMAs.

Commutation data from the 2000 Census were used to determine the appropriate neighboring LMAs to include in the residency adjustment calculations of each area. The largest commuter areas for each LMA were identified and, to reduce the complexity of the calculations, the number of commuter areas was capped at four for each LMA. A minimum of 100 commuters was set for a commutation area to be included (for New England, the minimum was lowered to 50 commuters).

The DRR inputs and calculations are detailed below.

Inputs for DRR calculations:

1. Census 2000 commutation data

   - County-to-county (or, in New England, MCD-to-MCD) commuter flows from the Census are aggregated to the LMA level.

   - The following are incorporated into the DRRs for each LMA:
     - Commuters residing and working within the same LMA, regardless of

level of commuters, and
  - The four largest commuter flows to neighboring LMAs, where the level of commuters is 100 or more (or, in New England, 50 or more).

2. Census 2000 Non-agricultural Wage and Salary Employment (Census NAWS)

   - Total Census employment is obtained (from Table P43 of Summary File [SF] 3) and the following are subtracted:
     - Agricultural workers (Table P51 of SF3),
     - Self-employed workers in own not incorporated business (Table P51),
     - Unpaid family workers (Table P51), and
     - Private household workers (Table PCT85 of SF4).

3. Establishment-based NAWS Employment decennial base (C04)

   - M01 and M02 data for March and April 2000 (the time of the Census) are averaged.

The following equation displays the DRR calculations for LMA_1:

Ratio 1:

$$\frac{\text{Employed residents } LMA_1 \text{ working in } LMA_1}{\text{Nonfarm employment Mar/Apr 2000 } LMA_1} \text{ X } \frac{\text{Census } NAWS_1}{\text{Total } Commuters_{1+2+\ldots+n}}$$

Ratio 2:

$$\frac{\text{Employed residents } LMA_1 \text{ working in } LMA_2}{\text{Nonfarm employment Mar/Apr 2000 } LMA_2} \text{ X } \frac{\text{Census } NAWS_1}{\text{Total } Commuters_{1+2+\ldots+n}}$$

Ratio *n*:

$$\frac{\text{Employed residents } LMA_1 \text{ working in } LMA_n}{\text{Nonfarm employment Mar/Apr 2000 } LMA_n} \text{ X } \frac{\text{Census } NAWS_1}{\text{Total } Commuters_{1+2+\ldots+n}}$$

The following table displays an example DRR calculation based on the equations above:

(A)	(B)	(C)	(D)	(E)	(F)
Area	Census 2000 Non-agricultural Wage and Salary Emp.	Census 2000 Commuters from Area of Residence	Est.-based NAWS Emp. decennial base (C04)	Control ratio = [(B) for Area of Residence] / S (C)	DRR (C11) = (C) / (D) * (E)
Area of Residence	256,139	235,584	305,400	0.977555	0.754081
Commuter Area 1		13,370	127,450	0.977555	0.102549
Commuter Area 2		7,345	66,950	0.977555	0.107246
Commuter Area 3		2,891	25,960	0.977555	0.108864
Commuter Area 4		2,830	32,745	0.977555	0.084486

The following table displays an example Handbook line 1 calculation using the DRRs from the table above:

(A)	(B)	(C)	(D)	(E)
Area	DRR (C11)	Establishment-based NAWS Employment (M01)	Labor-management disputants (M02)	Residency-adjusted line 1 component = (B) * [(C) + (D)]
Area of Residence	0.754081	311,508	0	234,902
+ Commuter Area 1	0.102549	121,105	200	12,440
+ Commuter Area 2	0.107246	73,645	0	7,898
+ Commuter Area 3	0.108864	26,220	0	2,854
+ Commuter Area 4	0.084486	33,072	0	2,794
= Line 1 for Area of Residence				260,888

All-other Employment (Handbook line 2)

All-other employment includes the following types of workers that are not employed in agriculture:

(1) The self-employed, who work in their own not-incorporated business,

(2) Unpaid family members, who work for a business owned by a family member, and

(3) Private household workers (or “domestics”).

These people are employed by the CPS definition and are the second largest category of total employment behind non-agricultural wage and salary workers.

Two sources of all-other employment data exist--the decennial Census and the CPS. The Census provides more geographic detail while the CPS is available on a monthly basis. Total all-other employment is calculated using CPS estimates of all-other employment, CES estimates of nonagricultural wage and salary data, and Census counts of area nonagricultural wage and salary employment and all-other employment data. The Census counts are used as a base period estimate.

During intercensal years, data for all-other employment are available from the CPS. While these data are published on a monthly basis only for the nation as a whole, unpublished data are available at the State level. Research has shown that the State CPS data, together with State and area wage-and-salary employment, can be used to extrapolate the Census all-other decennial benchmark for LMAs.

Development of All-other Employment Methodology

The original analysis which led to the first estimating methodology was based on an examination of the relationship between all-other employment and wage-and-salary employment in the Nation as a whole and in a randomly selected sample of areas using the 1940 and 1950 Census data. It was found that, in both the areas and the U.S. total, the relative change in wage-and-salary employment was accompanied by a proportional relative change in all-other employment. In other words, slow wage and salary growth was accompanied by slow all-other employment growth, and rapid wage and salary growth was accompanied by rapid all-other growth.

It was also found that the proportional relative changes in all-other employment in the areas and in the Nation were very close to each other. This meant that the relative change in area all-other employment could be derived given the relative change in area wage-and-salary employment and the ratio of the relative national change in all-other employment to the relative national change in wage-and-salary employment.

Analyses utilizing data from subsequent Censuses corroborated the findings of the original study. However, discrepancies between individual areas, on the one hand, and areas and the Nation on the other, proved quite common, and pointed out the need for area adjustment. The CPS sample expansion of the 1970's provided additional geographic detail on all-other employment and allowed the opportunity for analysis and testing of differences in the proportionality factor between States.

Following each Census, the relative change in wage and salary employment divided by the relative change in all-other employment, is calculated and reviewed. Clusters of States with similar proportionality constants are grouped into strata. Four strata were defined following the 1980 Census and three were defined following the 1990 and 2000 Censuses. By grouping States into strata based on their ratio of relative change, it was found that LMA all-other employment estimates could be improved. Specifically, using the proportionality factor for State-based strata to estimate the all-other employment for LMAs significantly reduced the range of error in estimating all-other employment.

Assigning Step 3 Ratio Strata (C03)

Following the 2000 Census, the proportionality constant, *k*, was used to assign States to strata. Once the State-based strata were established, LMAs were assigned to the strata using the same calculation of *k*.
The strata assigned remain in use for the entire intercensal period and determine the Step 3 ratio used in the Handbook calculations.

$$k = \frac{w_t \div w_{t-1}}{a_t \div a_{t-1}}$$

Where:

Variable	*Description*
k	Proportionality constant
w	March/April 2000 Average Non-agricultural Wage and Salary Employment
a	Census All-other Employment
t	Current Census time period (March-April 2000)
t-1	Prior Census time period (March-April 1990)

Strata from the 2000 Census by *k* value

Stratum 1	*Stratum 2*	*Stratum 3*
$k < 1.125$	$1.125 \leq k < 1.432$	$k \geq 1.432$

The numeric stratum identifiers (1, 2, and 3) are used to identify each LMA's stratum in LSS Plus (variable ID C03). The system uses the stratum identifiers to determine the appropriate Step 3 ratio to use in calculations.

Calculating Step 3 Ratios (S01 – S03)

Each month, BLS calculates Step 3 Ratios using CPS and CES data for the States that compose each stratum. The calculated ratios are provided to the States and entered into LSS Plus. The following three steps are used to calculate the ratios.

Step 1. **Determine the all-other employment change ratio.** *The current month CPS all-other employment estimates for each State in the stratum are summed and divided by the sum of the March/April 2000 Census all-other employment estimates for the States in the stratum.*

Step 2. **Determine the nonagricultural wage and salary employment change ratio**. *The current month CES nonagricultural wage and salary estimates for each State in the stratum are summed and divided by the sum of the March/April 2000 (two-month average) nonagricultural wage and salary estimates for the States in the stratum.*

Step 3. **Determine the ratio of relative change for each stratum**. *Divide each stratum all-other employment change ratio by the corresponding stratum wage and salary employment change ratio, i.e., Step 1 divided by Step 2.*

The resulting ratios are assigned the LSS Plus variable IDs of S01, S02, and S03 to correspond with strata (C03 values) of 1, 2, and 3, respectively.

Table 7-1 presents monthly Step 3 ratios by stratum.

Calculating Current All-other Employment

Once LMAs have been assigned to strata (once a decade) and Step 3 ratios have been calculated (every month), Handbook calculations will use the March/April 2000 Average Non-agricultural Wage and Salary employment value (C04), the establishment-based employment inputs for Handbook line 1 (M01 and M02), and Census All-other Employment (C02) to calculate current all-other employment (Handbook line 2). The following formula displays the line 2 calculation for each LMA:

$$= \frac{\text{M01} + \text{M02}}{\text{C04}} \quad \text{x} \quad (\text{C02}) \quad \text{x} \quad (\text{Step 3 Ratio})$$

Detailed explanations of the formula and an example of the calculation:

1) **Calculate the non-agricultural wage and salary employment change ratio.** Divide the current month non-agricultural wage and salary employment, including persons involved in labor-management disputes, by March/April 2000 nonagricultural wage and salary employment.

Non-ag. wage & salary employment (M01 + M02)	**933,100**
¸ March/April 2000 non-ag. employment (C04)	**938,107**
Area employment change ratio	***0.994663***

2) **Calculate current all-other employment based on the unadjusted growth rate of non-agricultural wage and salary employment.** Multiply the ratio calculated above (the non-agricultural wage and salary employment change ratio) by Census All-other Employment.

Area employment change ratio	***0.994663***
´ Census all-other employment (C02)	**53,589**
Unadjusted All-other employment	***53,303***

3) **Calculate all-other employment for the current month.** Multiply the estimate calculated above (unadjusted all-other employment) by the stratum-specific Step 3 ratio provided by BLS. This will adjust for the differing rates of growth between non-agricultural wage and salary employment in the stratum (based on CES data for the States in the stratum) and all-other employment in the stratum (based on CPS data for the States in the stratum).

All-other employment change	**53,303**
´ Step 3 ratio (S01, S02, or S03 depending on C03)	**0.894000**
All other employment (Handbook line 2)	***47,653***

Agricultural Employment (Handbook line 3)

Unlike the non-agricultural Handbook employment estimates, which split employment by class of worker—wage and salary (line 1) and "all-other" (line 2)—the agricultural Handbook employment estimate encompasses all classes of worker—wage and salary, self-employed, and unpaid family—in a single estimate. This is accomplished by applying a monthly change factor to a decennial base of agricultural employment obtained from 2000 Census data. The following formula shows the calculation for each LMA.

$$L03 = (C05) \times (\text{Change factor})$$

Where:

Variable	*Description (LSS Plus Variable ID)*
L03	Handbook Agricultural Employment
C05	Census Agricultural Employment (C05)
Change factor	Agricultural Employment Monthly Change Factor (G01 – G21)

Development of the Agricultural Employment Methodology

Prior to the incorporation of 2000 Census data into the Handbook methodology, the procedure for agricultural employment estimation utilized information from the 1990 Census, the Current Population Survey (CPS), and the Department of Agriculture's Farm Labor Survey (FLS). As of 2002, the FLS ceased to provide information for all farm workers and began limiting its quarterly publication to information for hired workers only. Because hired workers account for only 35 to 50 percent of all agricultural workers, the FLS data became an inadequate benchmark for Handbook agricultural employment estimation.

To be congruent with the CPS definition of employment, the self-employed and unpaid family workers must be included in addition to hired workers. Because of this, FLS data are no longer used. Currently, unpublished monthly estimates of agricultural employment from the CPS are used in lieu of FLS data.

Agricultural Regions

The Agriculture Department, through the FLS, designated twenty-one estimating regions. Fifteen of the regions were creating by grouping States that have similar agricultural activities, while six others each comprise only one State. Though LAUS no longer uses FLS data, the Handbook methodology continues to utilize the FLS agricultural regions. The regions are listed in the following table.

Region Number	*Agricultural Region*	*State(s)**
1	Northeast I	CT, ME, MA, NH, NY, RI, and VT
2	Northeast II	DE, MD, NJ, and PA
3	Appalachian I	NC and VA
4	Appalachian II	TN and WV
5	Southeast	AL, GA, and SC
6	Florida	FL
7	Lake	MI, MN, and WI
8	Corn Belt I	IL, IN, KY, and OH
9	Corn Belt II	IA and MO
10	Delta	AR, LA, and MS
11	Northern Plains	KS, NE, ND, and SD
12	Southern Plains	OK and TX
13	Mountain I	ID, MT, and WY
14	Mountain II	CO, NV, and UT
15	Mountain III	AZ and NM
16	Pacific	OR and WA
17	California	CA
18	Hawaii	HI
19	Michigan	MI
20	Minnesota	MN
21	Wisconsin	WI

** Alaska, the District of Columbia, and Puerto Rico are not included in any agricultural estimating region.*

The States have the option to make use of data for agricultural regions other than their own. This may be done if local knowledge of the agricultural economy indicates that another region better reflects the State's agricultural employment. (In the case of interstate areas, the calculation for the whole area is determined by the controlling State's selection.) Once the selection of an alternate regional factor has been made, it must be continued until the next decennial Census. The production of all current and benchmarked data must also reflect the selection. States must request the use of alternative agricultural factors by means of the atypical/exception request procedure.

<u>Census Agricultural Employment (C05)</u>

The 2000 Census incorporated the North American Industry Classification System (NAICS), which replaced the Standard Industrial Classification (SIC) system. Data from the 2000 Census for agricultural employment include logging as part of a subsector of agriculture (Forestry and Logging, NAICS 113), whereas logging had been classified as a manufacturing activity in the now-defunct SIC system. Numerous other differences between the two systems exist. For LAUS purposes, all employment in the agriculture industry (NAICS 11) is included in the decennial base estimates of Census agricultural employment. The five NAICS industry subsectors that comprise the agricultural sector are listed in the table below. Agricultural employment is obtained from the 2000 Census via Table P51 of Summary File (SF) 3.

NAICS Subsector	*Subsector Title*
111	Crop Production
112	Animal Production
113	Forestry and Logging
114	Fishing, Hunting, and Trapping
115	Support Activities for Agriculture and Forestry

Agricultural Employment Monthly Change Factors (G01 – G21)

A change factor created from the CPS annual average of the current year over the annual average of the prior year is used at benchmark time to rebase to the decennial Census. This ratio is then multiplied by the annual change factor from the previous year in order to link the change factor to the July to July benchmark period and to move the decennial Census number forward. July is used as a base month because it is the most agriculturally active month for the majority of States.

The annual change factor is the CPS annual average of the recently completed year (y) over the CPS annual average of the prior year (y-1) multiplied by the annual change factor from the previous year.

$$\textbf{Annual change factor} = \frac{\textbf{AACPS (y)}}{\textbf{AACPS (y-1)}} \left(\textbf{Annual change factor (y-1)} \right)$$

These annual change factors form the base for all agricultural employment estimation until the next decennial Census update. New monthly change factors are provided following each year’s benchmarking activity to revise monthly estimates from July of the previous year forward. The new July base is then used until the next year's benchmark. The preliminary August-December estimates are replaced with revised estimates, based on the new July adjusted base, providing a consistent series through the next calendar year.

The current production month factor is created by applying the annual change factor to a ratio of the reference month State CPS data over the July CPS of the previous completed year agricultural number.

$$\textit{Monthly factor} = \textit{Annual change factor}\left(\frac{\textit{Ref month CPS}}{\textit{July CPS}}\right)$$

Each month the current change factor produced using the above formula is applied to the LMA agricultural employment estimate from the 2000 Census to arrive at the current month's total agricultural employment estimate for the LMA.

Census LMA agricultural employment	***1,820***
´ ***monthly factor***	***1.037070***
Total LMA agricultural employment	***1,887***

Labor Market Area Unemployment

Unemployment comprises all persons who do not have a job, have actively looked for work in the prior four weeks, and are currently available for work. Persons who were not working and were waiting to be recalled to a job from which they had been temporarily laid off are also included as unemployed.

Receiving benefits from an Unemployment Insurance (UI) program has no bearing on whether a person is classified as unemployed; however, statistics from the UI system are the only current measure of unemployment available with a high degree of geographic detail. Because of this, LAUS makes extensive use of UI records in its Handbook estimation procedures for unemployment. Differences between the CPS concept of unemployment and Handbook estimates of unemployment are resolved via additivity controls to statewide estimates. (See Chapter 9.)

The Handbook method breaks unemployment into two main components—experienced and entrant unemployment—that are each subdivided into sub-components. Total Handbook unemployment (line 16) is experienced unemployment (line 11) plus new entrant and re-entrant unemployment (lines 15 and 13, respectively).

Description	*Handbook Line*
1. Experienced Unemployed (lines 8 + 9 + 10)	11
• Continued Claimants (lines 5 + 6 + 7)	8
o State UI	5
o Unemployment Compensation for Federal Employees (UCFE)	6
o Railroad Retirement Board (RRB)	7
• Exhaustees	9
• Non-covered Agricultural Unemployment	10
2. Entrant Unemployment	
• New Entrants	15
• Re-entrants	13
Total Handbook Unemployment (lines 11 + 13 + 15)	16

Experienced Unemployment (Handbook line 11)

The largest component of unemployment comprises people that were employed in the civilian labor force immediately before their current spell of unemployment. These people are called the experienced unemployed.

The Handbook method estimates this component using three subcomponents:

(1) Continued Claimants (line 8)
- Monthly counts of people receiving unemployment benefits during the reference week

(2) Exhaustee Unemployment (line 9)
- Estimates of people remaining unemployed after exhausting UI benefits

(3) Non-covered Agricultural Unemployment (line 10)
- Estimates of unemployed agricultural workers that are ineligible for UI benefits
- Only applicable for some States

Continued Claimants (Handbook line 8)

Actual counts of current UI claimants under State UI programs, the Unemployment Compensation for Federal Employees (UCFE) program, and the Railroad Retirement Board (RRB) program are included in the count of total continued claimants. Continued claimants are defined as persons without earnings certifying to a compensated or non-compensated week of unemployment during the reference week.

Continued Claimants			
Line	*Line Description*	*Input description (LSS Plus variable ID)*	*Input Source*
5	State UI Continued Claims	Regular UI claims (M03)	State
		Interstate UI claims (M04)	State
		Commuter UI claims (M05)	State
+ 6	UCFE Continued Claims	Regular UCFE claims (M06)	State
		Interstate UCFE claims (M07)	State
		Commuter UCFE claims (M08)	State
+ 7	RRB Continued Claims	RRB claims (M09)	BLS
= 8	Total Continued Claims		

Unemployed Exhaustees (Handbook line 9)

Final payments to beneficiaries of State UI and UCFE programs are tracked by week and form the main input for exhaustee estimation. The exhaustee component represents a significant part of the overall unemployed estimates and is a major contributor to inter-area variability in the estimates. Although States know the number of individuals who receive final payments, they are unable to track them after they leave the UI system. Each month, tabulations of weekly counts (and monthly counts in some areas receiving intrastate commuter claims) of persons who have received final payments from the UI system are used to estimate the number of people who do not immediately find a job or discontinue their job search after exhausting benefits.

Estimates are made to reflect unemployment in the same CPS reference week as continued claims, that is, the week including the 12th of each month. (In some years, the December reference week is the week including the 5th of the month. LAUS technical memoranda advise States when this occurs.) In addition, persons receiving final payments in previous weeks or months are carried forward in decreasing numbers into successive periods, by applying a CPS-based "survival" or continuation rate. This rate refers to individuals who are still actively seeking and available for work. The estimate of current exhaustees for an area is therefore "built up" over the period including the 19th of the previous month through the week including the 12th of the current month, and includes an estimate of the prior month's unemployed exhaustees who remain unemployed in the current month. The level of the pool of exhaustees can rise or fall depending on the volume of final payments and the survival rate.

Inputs for Unemployed Exhaustees (line 9)		
General Input Description	*Specific Input description (LSS Plus variable ID)*	*Input Source*
Weekly UI and UCFE Final Payments	Regular (M10)	State
	Interstate (M11)	State
	Commuter (M12)	State
Quarterly Survival Rates	Rate group limits (S05 – S08)	BLS
	Survival rates (S13 – S16)	BLS

Development of Exhaustee Methodology

Prior to 1987, a national average long-term survival rate was used to estimate the number of unemployed persons that had exhausted UI benefits. The survival rate was based on a formula developed by Hyman Kaitz that used national annual average CPS duration data as the prime input. The underlying premise which establishes the efficacy of the Kaitz method can be stated as follows: There is a close and parallel relationship between the rate of unemployment and the duration of unemployment spells (i.e., the survival rate). However, the application of a single national annual average survival rate to all States and areas, regardless of recent local unemployment rate conditions, does not fully conform to Mr. Kaitz's theoretical model. Therefore, beginning in 1987, a more flexible, timely, and effective application of the basic Kaitz long-term survival rate methodology was made operational.

That method established an unemployment rate-based survival rate that can change at the area level from month to month. Each quarter, the fifty States and the District of Columbia are divided into four unemployment rate groups. Each group represents a set of States within a given range of unemployment rates. In addition, each group contains roughly twenty-five percent of the nationally weighted unemployment. Using the Kaitz formula and quarterly average CPS State duration data, a survival rate is developed for each of the four unemployment rate ranges. Thus, on a monthly basis, States and areas can select a survival rate that most closely relates to recent local unemployment rate conditions. Thus, high unemployment rate areas select a higher survival rate and have higher exhaustee levels and Handbook estimates than low unemployment rate areas.

Research established a lagged correlation of two quarters between the unemployment rate and the survival rate. Adding an operational lag of one quarter results in the use of a given survival rate based on the area's unemployment rate nine months prior.

In implementing this procedure, the following occurs:

1. Every January, April, July, and October, four survival rates are issued based on CPS data for the most recent quarter (4th, 1st, 2nd, and 3rd). (See Table 7-3 for survival rates.)
2. Each month during a given quarter, areas select from among these survival rates in developing LAUS estimates for the quarter of receipt (1st, 2nd, 3rd, and 4th).
3. The selection of the rate is based on the area's total unemployment rate nine months prior to the estimate month. This lag represents the two quarter lagged relationship between the unemployment rate and the survival rate and a one-quarter operational lag.

Calculation of Exhaustees from Weekly Final Payments

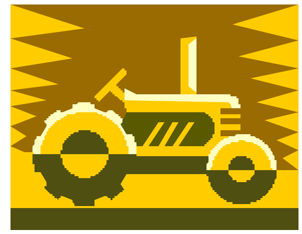
The following two tables illustrate the steps involved in calculating exhaustees. The example in the first table pertains to the two-month estimation period for March (revised prior month) and April (preliminary current month) of 2009. Each column of the worksheet is described in detail in the second table.

(A)	(B)	(C)	(D)	(E)	(F)
Reference Month	Week Ending Date	Total Final Payments	Survival Rate	Exhaustee Estimate *	Exhaustee Calculation $= [(C) + (E)]_{\text{prior week}} \times (D)_{\text{current week}}$
February	2/14/2009	31		365	= Starting Pool
March (rev.)	2/21/2009	30	0.959	380	= (31 + 365) * 0.959
	2/28/2009	29	0.959	393	= (30 + 380) * 0.959
	3/7/2009	16	0.959	405	= (29 + 393) * 0.959
	3/14/2009	17	0.959	403	= (16 + 405) * 0.959
April (prelim.)	3/21/2009	16	0.955	401	= (17 + 403) * 0.955
	3/28/2009	17	0.955	399	= (16 + 401) * 0.955
	4/4/2009	32	0.955	397	= (17 + 399) * 0.955
	4/11/2009	27	0.955	410	= (32 + 397) * 0.955
	4/12/2009		0.955	417	= (27 + 410) * 0.955

** The exhaustee estimate for the reference week is rounded to the whole integer and becomes the monthly Handbook Line 9 value. For the weeks between reference weeks, the exhaustee estimates are unrounded. Rounded values are displayed here for ease of reference.*

Column	*Description*
(A)	Reference Month • The months for which estimates are being generated. • In the example, the estimation period pertains to March (revised) and April (preliminary) of 2009. Estimates for these periods were created during the month of May 2009. The last week of February is included to display the prior month's final payments and exhaustee pool.
(B)	Week Ending Date • The last day of each calendar week displayed by reference month. The last week of each reference month is the CPS reference week (usually the week including the 12th day of the month). • In the example, each reference month starts in the week following the prior month's reference week and extends to the current reference week.
(C)	Final Payments • The count of people receiving their last unemployment benefit payment during the week indicated. • Final payments made from State UI programs and from the UCFE program are included. RRB final payments are not tracked. • Note that final payments made during the reference week are also counted as continued claims.
(D)	Survival Rate • The rate at which exhaustees and final payment recipients from the prior week remain unemployed in the current week.
(E)	Exhaustee Estimate • A weekly estimate of the number of unemployed people who have exhausted UI benefits. • The exhaustee estimate for the reference week is the monthly Handbook line 9 estimate.
(F)	Exhaustee Calculation • The survival rate for the current week is applied to the sum of final payments for the prior week and the exhaustee pool for the prior week to yield the exhaustee pool for the current week. $\text{Exhaustees}_n = \text{survival rate}_n * (\text{Exhaustees}_{n-1} + \text{Final Payments}_{n-1})$ Where "n" is the current week and "n-1" is the prior week.

Non-covered Agricultural Unemployment (Handbook line 10)



Generally, this component is a small part of unemployment, but for some areas with large and highly-seasonal agricultural sectors, it is very important. For the 19 States that estimate non-covered agricultural unemployment, this component accounted for less than one percent of total Handbook unemployment; however, for individual areas within those 19 States, the component accounted for up to a quarter of the unemployed.

Direct estimation of agricultural unemployment may be used in States with at least one LMA where agricultural employment is 25 percent or more of total employment. States that qualify must obtain approval from BLS to estimate agricultural unemployment directly. In such cases, this direct estimation must be used in all labor market areas of the State. Other States may request approval for atypical treatment of agricultural unemployment for a specific LMA if it can be demonstrated that the lack of such an estimate has a deleterious effect on estimates for that area.

In order to develop this estimate, the relationship between the unemployment rate for agricultural workers and for those from nonagricultural activities is used. This relationship varies monthly, reflecting differences in the seasonal patterns for the two groups. Monthly fractional rates for estimating agricultural unemployment are provided by the national office via the LSS Plus software. These rates, which are known as "W factors," were developed by combining separate rates for agricultural wage and salary and agricultural self-employed and unpaid family workers. Each group was appropriately weighted, based on CPS monthly employment levels for the previous two years; the weighted rates are combined by addition. The appropriate rate is then applied to the non-covered agricultural employment estimate.

The following formula details the calculation of non-covered agricultural unemployment. The table below the formula provides details.

If A01 > L03, then L10 = 0, otherwise L10 =

$$\frac{\dfrac{(L03 - A01) * (L08 + L09)}{(L04 + L08 + L09)}}{\dfrac{1}{w} - \dfrac{(L08 + L09)}{(L04 + L08 + L09)}}$$

Where:

Identifier	*Description*
A01	Annual Average Covered Agricultural Employment • Obtained from QCEW data • Entered into LSS Plus at beginning of year
L03	Handbook Agricultural Employment
L04	Total Handbook Employment
L08	Total Continued Claims
L09	Exhaustee Unemployment
L10	Non-covered Agricultural Unemployment
w	Monthly fractional rate (or "w" factor) • Pre-loaded into LSS Plus • Preset across years, but variable by month

Month	*w Factor*
January	0.934
February	0.934
March	0.972
April	0.791
May	0.606
June	0.586
July	0.623
August	0.638
September	0.662
October	0.676
November	0.900
December	1.014

Entrant Unemployment (Handbook lines 13 and 15)

For many unemployed individuals, their current spell of unemployment was not immediately preceded by employment. These individuals entered the labor market from outside the labor force after having completed military service, family responsibilities, education, or other activities outside the civilian labor force. These individuals are known as unemployed entrants.

Unemployed entrants are further divided into two groups:

(1) Unemployed New Entrants

- Individuals who enter the labor market for the first time and do not find jobs.

(2) Unemployed Re-entrants

- Individuals who enter the labor market after a period of retirement from the labor force and are unable to find jobs.

Estimates of new entrants and re-entrants are created for each State, and the statewide estimates are then allocated to the LMAs within the State using annual population data. The table below lists the inputs necessary for entrant estimation in LSS Plus.

Inputs for Unemployed Entrants			
Line		*Input/ Handbook Line description (LSS Plus variable ID)*	*Input Source*
		Statewide Unemployed Re-Entrants (SRE)	BLS
12	x	Re-entrants allocation ratio (L12)	BLS
13	=	Unemployed Re-entrants (= SRE * L12)	
		Statewide Unemployed New Entrants	BLS
14	x	New Entrants allocation ratio (L14)	BLS
15	=	Unemployed New Entrants (= SNE * L14)	

Statewide New Entrant and Re-entrant Unemployment (SNE and SRE)

Statewide new entrant and re-entrant estimates are available from the CPS; however, the data are volatile and are not suitable for direct use. To reduce the volatility of the CPS estimates and obtain inputs more suitable for Handbook estimation, five years of CPS data for a given month are used to develop weighted-average estimates. The following table shows the weights used, where "y" is the current year.

Year	Weight
y	0.40
y – 1	0.25
y – 2	0.20
y – 3	0.10
y – 4	0.05

Once the weighted estimates are calculated, the resulting data for the fifty States and the District of Columbia are controlled to monthly national CPS estimates of new entrant and re-entrant unemployment. This controlling step, which was added to the methodology in 2010, ensures that use of data from earlier years does not bias the overall level of Handbook entrant unemployment upwards or downwards during times of generally falling or rising unemployment, respectively.

Allocation of Statewide Entrants to Handbook Areas (L12 and L14)

Handbook calculations in LSS Plus distribute the statewide new entrant and re-entrant estimates to the LMA level using each LMA's share of statewide age-group population data. BLS obtains the population data from the U.S. Census Bureau and calculates the area-share allocation ratios each year. The ratios are then provided to the States during annual processing. New entrants are distributed using LMA shares of the population aged 16 to 19 years (L14 ratios), while shares of the population aged 20 or more years are used to allocate re-entrants (L12 ratios).

Table 7-1 STRATA STEP 3 RATIOS, BY MONTH

2000	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.96300	0.97100	1.00100	0.99900	0.91800	0.89400	0.87100	0.85500	0.86300	0.85700	0.85500	0.85500
2	1.03700	0.99200	0.98200	1.01800	1.02300	1.03900	1.02200	1.00800	1.03500	0.99400	0.95400	0.96700
3	1.01800	1.02100	1.00600	0.99500	1.02500	1.11800	1.25200	1.24900	1.22800	1.18100	1.12600	1.11900

2001	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.87400	0.87700	0.91600	0.88600	0.84900	0.87500	0.88900	0.83300	0.87700	0.88200	0.89300	0.89100
2	0.99800	0.97400	1.00400	1.00100	1.00700	1.03800	1.05500	1.02400	1.02200	1.02100	0.98900	0.97300
3	1.12500	1.14200	1.10000	1.09000	1.07900	1.15200	1.17200	1.18900	1.09400	1.11000	1.07100	1.11000

2002	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.84100	0.81100	0.81500	0.85200	0.84200	0.87500	0.88400	0.86500	0.88200	0.88500	0.91800	0.90900
2	0.98300	0.97700	0.96900	0.98600	0.99800	1.02300	1.04900	1.04500	1.04700	1.03800	1.03800	0.99700
3	1.10000	1.12100	1.11900	1.12600	1.08600	1.02200	1.06600	1.06600	1.06900	1.13900	1.13500	1.12400

2003	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.94700	0.91800	0.90300	0.90800	0.85800	0.87500	0.90500	0.94200	0.91800	0.91200	0.92400	0.88100
2	1.01500	0.98300	0.99100	1.01200	1.02500	1.09900	1.13000	1.11300	1.09600	1.08900	1.08300	1.06300
3	1.15200	1.12200	1.16200	1.19900	1.21000	1.17400	1.15900	1.14600	1.11700	1.14000	1.18100	1.20700

2004	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.90300	0.92100	0.90200	0.87900	0.87800	0.87400	0.91700	0.97700	0.94900	0.95700	0.95000	0.91100
2	1.09300	1.04200	0.99200	1.02400	1.03700	1.06900	1.11100	1.09700	1.06200	1.07700	1.04000	1.02600
3	1.22600	1.17100	1.15800	1.09800	1.13800	1.20000	1.15000	1.15300	1.09500	1.10200	1.14000	1.13900

2005	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.93200	0.92500	0.93000	0.94200	0.90300	0.89800	0.90200	0.88800	0.91400	0.89700	0.85500	0.86800
2	1.04800	1.04800	1.03900	1.08400	1.05500	1.05700	1.11100	1.06800	1.03000	1.05100	1.02700	1.01400
3	1.23200	1.22700	1.17000	1.12000	1.10500	1.09600	1.15600	1.16200	1.16500	1.13800	1.17700	1.09400

Revised 02/01/11

Table 7-1 STRATA STEP 3 RATIOS, BY MONTH

2006	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.90200	0.92400	0.90600	0.89000	0.87900	0.87500	0.85200	0.88900	0.90000	0.93000	0.90700	0.89200
2	1.06400	1.02900	1.01500	1.03500	1.06700	1.07900	1.11800	1.08600	1.03900	1.04200	1.02500	1.03100
3	1.17500	1.22200	1.18900	1.15900	1.08600	1.11100	1.17200	1.12900	1.18100	1.12100	1.09600	1.12300

2007	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.86200	0.90200	0.89600	0.89200	0.88600	0.91500	0.92500	0.88300	0.88900	0.89000	0.84100	0.80600
2	1.04200	1.03000	1.03600	1.03500	1.03600	1.06600	1.05700	1.06000	1.03300	0.97300	0.96700	0.97200
3	1.12100	1.12100	1.17100	1.10900	1.13900	1.15400	1.13800	1.05800	1.06900	1.07000	1.09700	1.04900

2008	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.81500	0.83600	0.83100	0.88400	0.88400	0.90600	0.94100	0.89400	0.90000	0.85500	0.80500	0.81800
2	0.99600	1.03600	0.98300	0.99200	0.99100	1.00700	1.02800	1.00500	0.96800	0.92100	0.92400	0.91400
3	1.07300	1.00100	1.03800	1.05800	1.10600	1.14200	1.12100	1.06400	1.03600	1.08500	1.06400	1.04200

2009	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.83900	0.86900	0.89300	0.87600	0.89500	0.89700	0.92100	0.93300	0.90000	0.87500	0.89700	0.88000
2	0.91900	0.96200	0.98400	0.99000	0.98600	1.00500	1.01500	1.02600	1.03600	0.98200	0.99500	0.98700
3	1.08800	1.04000	1.05900	1.07500	1.09600	1.19200	1.07200	1.10800	1.01200	1.00300	1.00400	1.03700

2010	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.88400	0.89800	0.86000	0.88200	0.89000	0.88600	0.86100	0.87500	0.84500	0.85600	0.86400	0.85100
2	1.00100	1.01900	1.02300	1.03400	1.02100	1.03400	1.03200	0.99000	0.99500	0.95200	0.94200	0.93100
3	1.02400	1.03000	1.05400	1.02100	1.04300	1.01800	0.99400	1.02900	1.03000	1.10400	1.09400	1.07000

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REGION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NORTHEAST I	2000	0.94296	0.82231	0.98350	1.00000	0.93335	1.00073	0.78851	0.77604	0.77415	0.70356	0.71093	0.64456
	2001	0.65064	0.57431	0.48666	0.61047	0.46364	0.52264	0.70263	0.72600	0.76596	0.78392	0.77877	0.82099
	2002	0.97302	0.77667	0.72212	0.72686	0.55443	0.71808	0.77487	0.71105	0.64971	0.66756	0.78556	0.76027
	2003	0.76192	0.75620	0.53165	0.49161	0.47043	0.70798	0.77841	0.79800	0.73410	0.56654	0.44888	0.39125
	2004	0.31621	0.27084	0.40465	0.45501	0.56755	0.70638	0.66571	0.69768	0.70128	0.47762	0.43720	0.44894
	2005	0.42802	0.45521	0.50089	0.57252	0.54488	0.70657	0.72608	0.70725	0.68141	0.58445	0.60465	0.66228
	2006	0.49678	0.46529	0.57703	0.59870	0.69079	0.60124	0.64586	0.68913	0.68850	0.66266	0.53702	0.55610
	2007	0.36057	0.39227	0.48160	0.49171	0.58939	0.48171	0.60451	0.45726	0.44344	0.43478	0.37949	0.43513
	2008	0.35036	0.35298	0.38323	0.56199	0.55909	0.69736	0.70684	0.50872	0.47528	0.48270	0.47095	0.47611
	2009	0.37300	0.37216	0.32489	0.38254	0.47265	0.53740	0.60101	0.49552	0.36749	0.40821	0.45638	0.38049
	2010	0.39055	0.32767	0.27664	0.38203	0.44918	0.43071	0.58632	0.45131	0.38267	0.37162	0.34955	0.45137
	2011	0.43502											
NORTHEAST II	2000	1.32532	1.35313	1.03846	1.00000	0.94307	1.17532	1.28740	1.01559	1.09981	1.06031	1.10260	1.30612
	2001	1.35157	1.39957	1.09630	1.28606	1.02520	1.13958	1.33868	1.38572	1.46101	1.40312	1.16148	1.39524
	2002	1.57029	1.61837	1.73527	1.67177	1.41139	1.60958	1.53985	1.53188	1.95876	2.32292	2.19023	2.09311
	2003	1.59441	1.02250	0.94511	0.90532	0.88689	1.04091	1.36801	1.33800	1.01271	1.18006	1.59762	1.76959
	2004	1.52504	1.38744	1.65764	1.56659	2.02152	2.03611	1.81118	2.32378	2.00031	1.97744	1.94720	1.45392
	2005	1.83486	1.80895	2.14671	2.20933	2.26560	2.23061	1.81115	2.49557	2.06223	2.27454	1.83105	1.19474
	2006	1.46431	1.28112	1.26833	1.27789	1.46802	1.44661	1.52270	1.56613	1.22126	1.48696	1.59291	1.66936
	2007	1.60261	1.41584	1.67548	1.71369	1.99273	1.82367	1.54987	1.15734	1.32302	1.33701	1.36712	1.55630
	2008	1.26910	1.60881	1.40344	1.37416	1.65422	2.10394	1.92050	1.81808	1.84194	1.53183	1.57012	1.51442
	2009	1.30951	1.24674	1.16771	1.20404	1.55035	1.74565	1.58060	1.69599	1.52116	1.24639	1.25999	1.20550
	2010	1.27805	1.56575	2.03111	2.41455	2.28300	2.14514	1.87173	1.65855	2.00914	2.33548	1.71076	1.80489
	2011	1.88062											
APPALACHIAN I	2000	0.91908	0.76992	1.05046	1.00000	1.06238	1.38645	0.92980	1.19878	1.24622	1.12359	0.92760	1.02312
	2001	0.82992	0.77998	0.77904	0.73234	0.85833	1.07506	0.87703	1.32450	1.38372	1.06794	1.07333	0.84791
	2002	0.53765	0.48993	0.40919	0.54749	0.72271	0.84392	0.85236	0.62017	0.87598	0.77353	0.65075	0.70350
	2003	0.77721	0.63339	0.74754	0.70957	0.99891	1.02514	1.13165	1.12238	1.02766	1.39676	1.27904	1.15948
	2004	1.10000	1.00538	1.08678	1.14374	1.15935	0.98921	1.03855	0.88543	0.86084	0.94853	1.02325	1.13145
	2005	1.09546	0.95523	1.15638	1.16738	0.88922	0.99854	1.03840	0.97630	0.82396	0.78240	0.87279	0.81773
	2006	0.78623	0.77970	0.72995	0.92560	0.77343	0.94166	0.95713	0.65416	0.71561	0.80004	0.93774	1.08425
	2007	1.01542	0.87027	0.82828	0.93638	0.97337	0.95696	0.91842	0.73096	0.68177	0.94224	1.12731	1.03956
	2008	0.94554	0.56275	0.75601	0.83371	0.83667	1.08561	0.88274	0.86249	0.90344	0.67755	0.77049	0.66292
	2009	0.77127	0.73257	0.61366	0.62735	0.87749	0.87368	0.88434	0.66682	0.72506	0.73627	0.84109	0.77453
	2010	0.87825	0.84356	0.82615	0.91657	0.90215	0.91414	0.87943	0.93941	0.87987	0.94789	0.83232	0.57432
	2011	0.64361											

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REGION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
APPALACHIAN II	2000	0.70929	0.77490	0.96237	1.00000	1.03133	1.07813	1.10082	1.16976	1.05360	0.95684	0.73146	0.61322
	2001	0.66860	0.71399	0.96396	0.98580	1.19889	1.01949	0.88502	0.90522	1.01084	1.09800	1.18020	1.32972
	2002	1.22111	1.58552	1.75495	1.68057	1.46400	1.05297	0.95132	1.29513	1.34107	1.67274	1.46891	1.78210
	2003	2.14319	1.85521	2.20231	1.57768	1.14203	0.96547	0.93817	1.37080	1.66507	1.52246	1.61922	1.44822
	2004	1.36933	1.36137	1.40238	1.63149	1.05742	0.90127	0.90106	1.07770	1.08307	0.92918	1.24206	1.05475
	2005	0.80702	0.66866	0.82515	1.08546	1.13965	1.32261	0.91894	0.98943	0.97615	0.79619	1.04668	0.91799
	2006	1.16321	1.25991	1.42169	1.30711	1.19323	1.09229	0.93031	1.22341	1.39011	1.52218	1.42081	1.49501
	2007	1.64101	1.77017	1.76711	1.46305	1.17091	1.16778	0.87851	0.97254	1.26147	0.98887	1.33179	1.14692
	2008	1.03851	1.32547	1.13440	0.87616	0.96288	1.01363	0.90692	0.97778	1.09286	0.87707	1.00893	0.95562
	2009	0.75287	0.71200	0.72117	0.80558	0.86537	0.83474	0.87226	0.92892	0.72949	0.76728	0.66113	0.62839
	2010	0.90701	0.82289	1.11224	0.84540	0.83053	1.04717	1.01940	1.09308	0.91959	1.00600	0.91096	0.49166
	2011	0.62952											
SOUTHEAST	2000	0.95483	1.07659	1.19927	1.00000	0.78481	0.61993	0.74569	0.88022	0.82332	0.84968	0.83133	0.61922
	2001	0.79725	0.61572	0.52041	0.49983	0.59930	0.26001	0.65430	0.53282	0.41047	0.49117	0.34548	0.42995
	2002	0.55653	0.63790	0.69927	0.72625	0.61823	0.67584	0.74660	0.47786	0.44611	0.47339	0.58878	0.64634
	2003	0.65875	0.63170	0.61162	0.61044	0.61162	0.64410	0.80711	0.81045	0.85421	0.88004	0.60653	0.38387
	2004	0.28610	0.19397	0.50959	0.50129	0.71424	0.81209	0.74144	0.78347	0.59313	0.54276	0.40760	0.42512
	2005	0.58960	0.60735	0.64717	0.61960	0.67933	0.69458	0.68239	0.52677	0.59918	0.57051	0.49083	0.52851
	2006	0.69919	0.70067	0.79388	0.64735	0.72088	0.78668	0.85748	0.83706	0.90127	0.77298	0.73639	0.63165
	2007	0.43071	0.53256	0.61254	0.83962	0.99593	0.67114	0.81240	0.67671	0.85007	0.86584	0.72818	0.78918
	2008	0.57006	0.61064	0.60053	0.50753	0.56606	0.69093	0.62939	0.76700	0.77557	0.80941	0.88983	0.84467
	2009	0.67214	0.61853	0.86667	0.80940	0.88611	1.34821	0.76770	0.75673	0.58655	0.66041	0.55810	0.59164
	2010	0.43354	0.44733	0.45733	0.47177	0.58320	0.60807	0.72449	0.76873	0.78454	0.79692	0.55872	0.56312
	2011	0.50801											
FLORIDA	2000	1.45180	1.19803	1.09410	1.00000	0.81355	0.94980	0.68411	0.87047	0.59965	0.50527	0.48302	0.63042
	2001	1.06668	0.93482	0.93927	1.11911	0.89446	0.49382	0.53844	0.60456	0.51576	0.54379	0.47263	0.24064
	2002	0.52422	0.57981	0.77536	0.81411	0.68192	0.57887	0.46556	0.39454	0.41085	0.37313	0.24219	0.32224
	2003	0.38505	0.48165	0.63888	0.59296	0.54685	0.51103	0.47770	0.35488	0.34466	0.32188	0.32254	0.42556
	2004	0.29844	0.34624	0.35787	0.21699	0.35880	0.37216	0.43626	0.40388	0.42751	0.47945	0.37464	0.57526
	2005	0.50610	0.61115	0.58879	0.32957	0.35177	0.32941	0.35449	0.38336	0.42018	0.69368	0.54544	0.43666
	2006	0.61478	0.52184	0.53583	0.53737	0.29568	0.34917	0.38649	0.56852	0.62207	0.71330	0.79636	0.61279
	2007	0.54761	0.41162	0.13186	0.09668	0.11491	0.26217	0.29828	0.29359	0.22039	0.17344	0.19922	0.15627
	2008	0.16598	0.15105	0.13173	0.23701	0.37326	0.39509	0.29970	0.24562	0.22086	0.26448	0.30018	0.27488
	2009	0.29629	0.24703	0.20711	0.32940	0.45951	0.43687	0.38095	0.43645	0.56604	0.70028	0.71562	0.70812
	2010	0.70151	0.52993	0.49244	0.57981	0.52788	0.56076	0.50379	0.76446	1.06823	1.08458	0.89019	0.82451
	2011	0.65183											

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REGION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LAKE	2000	0.87287	1.05878	1.00613	1.00000	1.06250	0.84180	1.02932	1.02042	0.97537	1.00192	0.79302	0.63717
	2001	0.56085	0.53346	0.56403	0.82099	0.87802	0.90959	1.17659	1.18112	1.10400	1.03292	0.82931	0.81969
	2002	0.77122	0.80322	0.90679	0.93147	0.94818	0.97419	1.04934	0.99168	1.15509	1.27280	1.02936	0.97147
	2003	0.89911	0.82077	0.95839	0.98440	0.99010	0.92817	0.92664	0.99611	0.87728	1.12772	1.01173	0.87827
	2004	0.89910	0.85794	0.74936	0.84507	0.82433	0.82974	0.95718	0.83163	0.77159	0.69901	0.64018	0.58515
	2005	0.55346	0.57383	0.61798	0.69041	0.77896	0.86206	0.84180	0.76804	0.78659	0.69140	0.60273	0.64742
	2006	0.67457	0.65528	0.72950	0.79324	0.87934	0.85035	0.86019	0.96818	0.89660	0.92336	0.85217	0.72409
	2007	0.60012	0.75939	0.81388	0.79498	0.83370	0.77266	0.78987	0.78633	0.77297	0.80904	0.69510	0.60407
	2008	0.61819	0.67300	0.72436	0.80413	0.83419	0.87301	0.77356	0.64401	0.69434	0.63251	0.55650	0.50316
	2009	0.71438	0.74265	0.84198	0.91867	0.81631	0.82661	0.90732	0.84807	0.75807	0.71918	0.71840	0.69514
	2010	0.82839	0.91779	0.97479	1.10531	1.16355	1.05412	0.98903	0.85792	0.85334	0.97269	0.91137	1.00936
	2011	1.03569											
CORN BELT I	2000	0.96734	1.16700	1.00166	1.00000	1.10134	1.20600	1.26096	1.33933	1.35228	1.08908	0.92504	0.74289
	2001	0.59660	0.80154	0.92330	0.76574	0.84375	0.73233	1.29686	1.19233	1.19943	1.01092	0.81878	0.85567
	2002	0.87312	0.87544	1.07995	1.22703	1.21312	1.34821	1.41110	1.11592	1.19049	1.38625	1.14771	1.10564
	2003	1.00435	0.75415	0.97789	1.12051	1.20848	1.33601	1.15694	1.02031	0.99366	1.09410	0.89095	0.69844
	2004	0.72901	0.69795	0.72731	0.90532	0.95660	0.98163	1.18160	1.22037	1.46286	1.66532	1.59929	1.34254
	2005	1.09702	1.29301	1.27132	1.48627	1.40450	1.32245	1.32645	1.27720	1.68614	1.64440	1.62039	1.16644
	2006	0.95683	0.90805	0.99683	1.25881	1.14497	1.23479	1.35513	1.10222	1.04726	1.15874	0.94653	1.11589
	2007	1.18233	1.02438	1.07346	0.99586	1.16764	1.19248	1.37135	1.32793	1.21000	1.25331	1.34769	1.12393
	2008	1.20002	1.06470	0.82138	0.73498	0.99297	1.13699	1.41473	1.36779	1.12312	1.20573	1.23403	1.06799
	2009	1.06253	1.00062	0.94793	0.98738	1.07824	1.16452	1.23063	0.93282	0.94185	1.00584	1.04901	1.12387
	2010	1.07880	1.20203	1.17488	1.32935	1.35872	1.53005	1.38264	1.32261	1.08180	1.10602	1.16728	1.39411
	2011	1.53357											
CORN BELT II	2000	0.79853	0.86710	0.91480	1.00000	1.12080	1.00916	1.06962	0.97440	0.87511	0.81929	0.92834	0.74947
	2001	0.90225	1.14254	1.02252	1.12872	1.18183	0.79893	1.14891	0.99096	0.92880	1.17009	1.01318	0.94712
	2002	1.02582	0.90227	0.80408	0.71198	0.58575	0.69431	0.97787	0.92200	0.90332	0.84507	0.71651	0.67987
	2003	0.66738	0.69785	0.68433	0.62742	0.63684	0.84656	0.87228	0.94576	0.87071	0.83442	0.68000	0.54347
	2004	0.60371	0.69929	0.80418	0.99247	0.89546	1.00063	0.91468	0.94437	0.98254	0.87994	0.84662	0.72395
	2005	0.62374	0.69133	0.71149	0.94415	0.92468	0.95985	1.00889	0.81736	0.73576	0.87034	0.83249	0.86878
	2006	0.84837	0.70611	0.76357	0.91851	0.98177	0.94801	0.96697	0.93959	0.79599	0.91565	0.92093	0.92011
	2007	0.87367	0.75867	0.84116	0.88404	0.95736	1.04303	0.88036	0.94427	0.92302	1.09700	0.97097	0.97324
	2008	0.95439	0.85312	0.85208	0.95988	1.02399	1.03923	0.95993	0.91531	0.84486	1.05291	0.93258	0.80937
	2009	0.78290	0.79515	1.03029	0.97458	0.86186	0.80944	0.96336	0.78221	0.79347	0.96886	0.87627	0.82410
	2010	0.82558	0.98341	0.99384	0.93043	0.77302	0.73429	0.92841	0.87515	0.94301	1.11087	0.87216	0.93555
	2011	1.07872											

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DELTA	2000	0.96414	0.79434	0.84434	1.00000	0.91205	0.90121	0.96847	0.88569	1.05761	1.22778	1.17841	1.26016
	2001	0.81551	0.87702	1.10465	0.86849	0.87585	0.80589	0.98611	0.87910	1.00218	1.08982	1.05119	0.99675
	2002	1.09846	0.98152	1.08648	1.00326	1.21005	1.09030	1.14323	1.28280	1.20163	1.61390	1.51789	1.55545
	2003	1.50921	1.18626	1.32175	1.28748	1.35191	1.40014	1.23190	1.51618	1.47237	1.70751	1.55346	1.18732
	2004	1.14701	1.05013	0.92631	0.98219	1.00565	0.87222	1.11551	1.17256	1.09346	1.29218	1.16362	0.85021
	2005	0.91811	0.71478	0.66907	0.97267	1.13808	1.21107	1.24262	1.06598	1.05964	1.24141	0.93102	0.83845
	2006	1.08268	1.13287	1.24734	1.42857	1.20176	1.19026	1.20559	1.24633	1.52254	1.53031	1.44700	1.16303
	2007	1.18139	1.38383	1.26477	1.20674	0.96958	0.84076	0.94157	1.22362	1.60231	1.52990	1.50058	1.32253
	2008	1.39798	1.41513	1.65529	1.35407	1.18031	0.89645	0.96866	1.10377	0.94304	1.11783	1.27429	0.82784
	2009	0.85297	0.90250	0.95218	1.05817	1.27740	1.13754	1.08196	0.97220	0.79877	0.86733	0.94088	0.93975
	2010	0.73742	0.78418	0.83235	0.91040	0.96218	0.89204	1.11915	1.01596	0.78595	0.98878	0.93610	0.90413
	2011	0.94006											
NORTHERN PLAINS	2000	1.01572	1.09924	1.01789	1.00000	1.14141	1.23859	1.23216	1.18723	1.04829	1.08088	1.02472	0.99935
	2001	0.96740	0.96187	1.02658	1.09071	1.10629	1.14954	1.09340	1.06567	1.04425	1.15585	1.06757	0.98783
	2002	1.11418	1.03999	1.01678	1.09733	1.17697	1.16225	1.17052	1.10433	1.04316	1.11074	1.07140	0.96177
	2003	0.96490	0.99879	1.04823	1.07199	1.18130	1.23303	1.22547	1.20903	1.18392	1.21025	1.14235	1.04755
	2004	1.02366	1.00927	1.02891	1.07668	1.14470	1.20262	1.16420	1.06437	0.95699	0.96207	0.93576	0.99724
	2005	0.97332	0.91199	0.98855	0.91227	0.91992	1.06323	1.08221	0.98555	1.04345	1.08832	1.01652	1.04020
	2006	0.97428	0.93140	0.93555	0.93383	0.96789	1.11987	1.12451	1.02759	1.05510	1.02575	0.91272	0.86819
	2007	0.76018	0.76249	0.79791	0.77671	0.85111	1.00412	1.02941	0.89268	0.92018	0.82305	0.73128	0.75166
	2008	0.73258	0.70852	0.79467	0.73615	0.76967	0.94313	1.03752	1.02811	1.00724	0.87927	0.84778	0.86699
	2009	0.84511	0.83039	0.85765	0.87442	0.86182	0.97144	1.00841	1.01846	1.01768	0.91657	0.99043	0.92303
	2010	0.87857	0.98048	0.98573	0.97037	0.92722	1.06428	1.02061	1.04686	1.01603	1.01840	1.02623	0.91826
	2011	0.92396											
SOUTHERN PLAINS	2000	1.13595	1.10192	1.10352	1.00000	1.17774	1.47747	1.59380	1.44767	1.37980	1.20030	1.15649	1.26997
	2001	1.07412	0.92116	1.08330	0.98726	1.12846	1.23240	1.42706	1.43321	1.33126	1.38911	1.27203	1.24962
	2002	1.15057	0.96813	1.09474	1.11036	1.18305	1.13803	1.32134	1.23550	1.38681	1.33767	1.25394	1.12646
	2003	1.22097	1.24139	1.47712	1.45585	1.43222	1.46564	1.38261	1.42465	1.56695	1.50711	1.45023	1.15730
	2004	1.17898	1.08983	0.94489	1.20480	1.01865	1.38368	1.36290	1.49796	1.32658	1.15048	1.06192	0.91693
	2005	0.95102	0.71566	0.80594	1.03346	0.92860	1.06217	1.24223	0.98414	0.95371	0.96579	0.85372	0.84190
	2006	0.81830	0.70997	0.69114	0.78835	0.73438	1.03109	1.10422	0.82833	0.79219	0.76013	0.74870	0.93695
	2007	0.91485	1.03144	1.00126	1.03424	1.04734	1.02590	1.00765	0.68755	0.87891	0.85863	0.91403	1.02896
	2008	1.05805	0.86621	1.04353	1.03890	1.00518	1.14786	1.15314	1.17509	1.42018	1.22729	1.28576	1.28853
	2009	1.08191	1.11308	1.12668	1.20610	1.26288	1.35373	1.15198	1.21951	1.06543	0.96695	1.06849	1.01007
	2010	0.95279	0.92782	0.95802	1.02229	0.96188	1.10616	1.07643	1.01895	1.04096	1.04210	0.97392	1.02767
	2011	0.94622											

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MOUNTAIN I	2000	1.09504	0.98151	0.99354	1.00000	1.00287	1.07058	1.03033	1.00381	1.07478	1.09697	0.81820	0.78179
	2001	0.69411	0.59975	0.61784	0.72999	0.68617	0.88794	1.03125	0.98283	0.99900	0.97862	0.85272	0.78072
	2002	0.61833	0.56013	0.47366	0.59630	0.76115	0.94933	0.94292	0.97218	0.87885	0.85010	0.75413	0.72134
	2003	0.64275	0.71583	0.73192	0.84045	0.89053	0.86774	0.93496	0.96340	0.84476	0.74177	0.68452	0.63057
	2004	0.64602	0.68036	0.74941	0.84774	1.01235	1.06516	1.01003	1.14682	1.01865	1.04281	0.89458	0.75637
	2005	0.76141	0.71552	0.81132	0.79824	0.99986	1.15906	1.04010	1.06538	0.81894	0.91019	0.84297	0.84775
	2006	0.79699	0.76666	0.80769	0.78519	0.90202	1.08129	1.06382	0.93335	0.87817	0.80466	0.77179	0.77147
	2007	0.69931	0.78246	0.87912	0.76840	0.85603	1.03422	0.98455	1.06576	1.12040	0.99217	0.88481	0.92478
	2008	1.01975	1.08122	1.15372	1.17286	1.01177	1.13145	1.11009	1.11278	1.12060	0.98816	1.02694	1.05036
	2009	1.10162	1.09558	1.15299	1.12048	1.00483	1.02200	0.94344	0.92975	0.97492	0.78935	0.87142	0.82507
	2010	0.79332	0.89797	0.94723	0.98813	0.97913	0.86957	0.88417	0.89990	0.89448	0.86638	0.92474	0.84744
	2011	0.95014											
MOUNTAIN II	2000	0.67301	0.83519	0.86818	1.00000	0.95883	0.95490	1.22684	1.12702	0.90973	0.91744	0.74080	0.67459
	2001	0.68265	0.90223	0.86510	0.92792	1.03845	0.82000	1.22723	1.34352	1.64375	1.45568	1.49951	1.41704
	2002	1.47275	1.45838	1.28685	1.31302	1.46833	1.70931	1.59991	1.65489	1.52324	1.73099	1.50960	1.94986
	2003	1.90693	1.35479	1.06228	1.20208	0.99164	1.57921	1.73612	1.41025	1.46151	1.26166	0.95671	0.88576
	2004	1.49322	1.42507	1.70417	1.69936	1.52642	1.90060	1.66173	1.42750	1.32942	0.87944	0.92910	0.80856
	2005	1.28799	1.15537	1.24274	1.27732	1.06232	1.64340	1.54544	1.50243	1.59423	1.44971	1.37801	1.10060
	2006	1.16447	1.21971	1.20348	1.39176	1.18111	1.90223	1.70850	1.79493	1.71858	1.28295	1.59357	1.23140
	2007	1.37839	1.48550	1.27701	1.34013	1.38844	1.36295	1.56176	1.64425	1.57975	1.58460	1.67173	1.41002
	2008	1.34681	0.84999	0.56817	0.28525	0.80729	1.03663	1.65979	1.64866	1.65815	1.65676	1.20414	1.31249
	2009	1.34876	1.27435	1.26086	0.98864	0.93422	1.26541	1.88349	2.44936	2.58115	2.46647	1.69476	1.44542
	2010	1.18573	1.07457	0.90528	0.87820	1.30569	1.52268	1.54998	1.85938	1.90014	1.69575	1.72074	1.19568
	2011	0.91294											
MOUNTAIN III	2000	2.02626	1.65235	1.29765	1.00000	1.36450	1.17068	0.96292	1.18060	0.71930	1.40956	1.75845	1.73058
	2001	1.83203	1.20172	1.32306	0.99393	1.35137	1.30996	0.92513	0.77368	0.67231	0.73248	0.57285	0.70261
	2002	0.92873	0.88422	0.98192	0.78689	0.87045	1.12595	0.93465	0.77397	0.92243	1.17841	0.92625	1.00125
	2003	0.79876	0.73760	0.75969	0.60267	0.58044	0.93363	0.93548	0.87199	1.08739	1.29013	1.14698	1.14275
	2004	0.91285	0.70100	0.59951	0.43188	0.61471	0.92920	0.67553	0.57347	0.62911	0.38173	0.38519	0.40249
	2005	0.29225	0.21641	0.44231	0.54896	1.01867	1.15157	0.77501	0.75358	0.35551	0.37426	0.53768	0.50813
	2006	0.49382	0.37618	0.42256	0.63583	0.67842	0.95222	0.91120	0.81859	0.74149	0.69784	0.67258	0.75684
	2007	0.74466	0.62872	0.63971	0.62285	0.46983	0.72599	0.83508	0.84008	1.11290	0.91566	0.99148	0.78199
	2008	0.99770	0.72246	0.59129	0.58687	0.71846	0.70905	0.79914	0.68446	0.64344	0.41056	0.39679	0.43724
	2009	0.44005	0.43261	0.38871	0.68263	0.63076	0.71439	0.66751	0.76206	0.86497	0.66471	0.75215	0.84340
	2010	0.44343	0.46570	0.42517	0.34618	0.34586	0.63463	0.54014	0.62648	0.72850	1.03742	1.10671	0.81292
	2011	0.60040											

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PACIFIC	2000	0.70716	0.75590	1.05111	1.00000	1.04959	0.98536	0.78307	0.96614	0.90977	0.72071	0.98959	0.92465
	2001	0.72669	0.95332	1.03020	0.83688	0.80365	0.81755	0.75606	0.77712	0.75296	0.61477	0.54157	0.54521
	2002	0.46141	0.48200	0.57958	0.59868	0.69682	0.53382	0.62402	0.60446	0.50035	0.59345	0.45339	0.35090
	2003	0.32530	0.36605	0.32884	0.46672	0.53447	0.59890	0.59011	0.46474	0.48778	0.47919	0.46356	0.48651
	2004	0.49363	0.65620	0.64096	0.68689	0.68315	0.65938	0.74281	0.73760	0.55930	0.46192	0.35827	0.32663
	2005	0.37362	0.41902	0.41759	0.46022	0.36534	0.43308	0.57297	0.48515	0.49182	0.38397	0.34593	0.37298
	2006	0.44970	0.58910	0.46557	0.53693	0.49190	0.62890	0.72367	0.66174	0.52837	0.42784	0.45391	0.38378
	2007	0.61328	0.69573	0.57506	0.50699	0.53893	0.62047	0.73609	0.64929	0.52578	0.48192	0.35636	0.42807
	2008	0.54286	0.60686	0.65070	0.69721	0.52915	0.50030	0.69923	0.60245	0.54806	0.54351	0.42474	0.44652
	2009	0.51833	0.48310	0.44151	0.47869	0.44478	0.52065	0.70134	0.59615	0.57239	0.59454	0.53560	0.48330
	2010	0.55809	0.63940	0.54179	0.62328	0.38188	0.56602	0.71802	0.66563	0.63706	0.68835	0.60184	0.44192
	2011	0.52883											
CALIFORNIA	2000	0.79513	0.90336	0.72709	1.00000	0.98122	0.94770	0.99863	0.95784	0.91729	0.85287	0.71999	0.78695
	2001	0.93313	0.82903	0.80997	0.98891	1.07683	0.89717	0.79054	0.90043	0.82444	0.74548	0.56492	0.55365
	2002	0.70435	0.73619	0.55563	0.81795	0.70261	0.61900	0.88048	0.83004	0.84194	0.79248	0.51903	0.55720
	2003	0.61301	0.59597	0.59434	0.65367	0.74572	0.77888	0.83406	1.19497	1.14101	1.06649	0.82108	0.73068
	2004	0.69957	0.65108	0.61116	0.72067	0.83729	0.78598	0.72174	0.91715	0.78285	0.83316	0.76822	0.69368
	2005	0.44343	0.44124	0.39096	0.47715	0.53340	0.68879	0.77538	0.76827	0.67608	0.60853	0.62671	0.48463
	2006	0.43837	0.48851	0.49030	0.60440	0.71884	0.81569	0.78720	0.89470	0.73028	0.65139	0.58755	0.58882
	2007	0.62070	0.64563	0.61552	0.66503	0.65616	0.71794	0.83323	0.67057	0.83833	0.84816	0.83156	0.89385
	2008	0.80237	0.86819	0.89406	0.86611	0.90892	0.86066	0.84544	0.92731	0.88208	0.98748	0.84298	0.94241
	2009	0.77641	0.78531	0.56580	0.70056	0.74528	0.72105	0.72006	0.73586	0.64433	0.62872	0.60904	0.60368
	2010	0.66176	0.85096	0.66561	0.61640	0.94692	0.73947	0.87661	0.80159	0.63467	0.69411	0.60877	0.59872
	2011	0.64237											
HAWAII	2000	1.22702	0.90942	0.59427	1.00000	1.57722	1.84935	1.69527	1.74949	1.19395	1.22390	1.06279	1.07897
	2001	0.76809	0.61241	0.77031	0.94562	0.75451	0.79362	1.46547	1.45036	1.18337	1.01200	0.78081	1.31135
	2002	1.55472	1.45777	1.28740	1.24612	0.94624	1.21175	1.29918	1.68652	1.70451	1.87598	1.62086	1.47888
	2003	1.36924	1.64882	1.23854	1.35146	1.38681	1.08068	1.10465	1.29515	1.40555	1.68657	2.45368	2.24686
	2004	2.65916	2.73413	2.01171	2.30935	1.91861	0.32765	1.31989	0.80943	0.94748	1.09270	1.02005	1.36424
	2005	1.35401	1.75604	1.97333	1.72819	1.32365	1.69256	1.40079	1.36987	1.20684	0.78273	1.01738	1.17983
	2006	0.86750	1.11075	1.20695	0.82593	0.66906	0.84137	0.93923	0.88369	0.66823	0.63984	0.45787	0.60899
	2007	0.91431	0.98205	1.09815	1.05473	1.00874	1.04388	0.96825	0.54617	0.71357	0.72020	0.91540	0.76154
	2008	0.74792	0.57154	0.76505	1.06797	1.32134	1.25590	1.11452	1.00385	1.20246	1.02391	0.91713	0.67238
	2009	0.72079	0.79950	0.87974	0.94436	1.46728	1.26719	1.08814	1.03120	0.93203	0.78151	0.74932	0.60674
	2010	0.57759	0.83027	0.95634	0.63438	0.58335	0.59415	0.81955	0.93154	0.79020	0.61711	0.61329	0.40961
	2011	0.38465											

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MICHIGAN	2000	0.87287	1.05878	1.00613	1.00000	1.06250	0.84180	1.02932	1.00082	0.93616	0.94311	0.71460	0.53915
	2001	0.44322	0.39623	0.40719	0.64455	0.68197	0.69393	0.94133	0.96117	0.91569	0.87504	0.72836	0.73689
	2002	0.71433	0.75615	0.85523	0.89120	0.92078	0.95781	1.03415	0.98177	1.14725	1.26770	1.03222	0.97961
	2003	0.91274	0.83997	0.98004	1.01011	1.02017	0.96357	0.96651	1.04975	0.93659	1.20858	1.09839	0.96996
	2004	1.00247	0.97032	0.86784	0.97846	0.96760	0.98402	1.12773	0.98380	0.91705	0.83553	0.77020	0.70937
	2005	0.67602	0.70400	0.76001	0.84934	0.95766	1.05956	1.03967	0.96812	1.01057	0.91256	0.82259	0.89732
	2006	0.95039	0.94612	1.05733	1.15560	1.28147	1.26522	1.29690	1.44627	1.32489	1.35178	1.23099	1.02442
	2007	0.82405	1.05072	1.11942	1.07747	1.12239	1.01689	1.02938	1.02611	1.01003	1.05837	0.91121	0.79391
	2008	0.81365	0.88642	0.95468	1.05998	1.10049	1.15242	1.02415	0.84541	0.90480	0.81573	0.70787	0.63002
	2009	0.90244	0.93264	1.05692	1.15123	1.00848	1.01490	1.11453	1.05532	0.95834	0.92413	0.93675	0.92174
	2010	1.09899	1.22238	1.30597	1.47987	1.56498	1.44413	1.37775	1.19511	1.18872	1.35498	1.26956	1.40607
	2011	1.44275											
MINNESOTA	2000	0.87287	1.05878	1.00613	1.00000	1.06250	0.84180	1.02932	1.02982	0.99417	1.03013	0.83062	0.68418
	2001	0.61726	0.59927	0.63924	0.90561	0.97204	1.01301	1.28941	1.28354	1.18820	1.09948	0.86551	0.84414
	2002	0.78020	0.80443	0.90711	0.92333	0.93081	0.94848	1.02001	0.95136	1.09759	1.19941	0.95017	0.88129
	2003	0.79835	0.70960	0.83076	0.84344	0.83638	0.76358	0.74949	0.80913	0.71647	0.92248	0.83212	0.72762
	2004	0.74792	0.71807	0.63370	0.71457	0.70124	0.70907	0.81560	0.70484	0.64990	0.58428	0.53037	0.47970
	2005	0.44892	0.46250	0.49634	0.55428	0.62595	0.69298	0.67194	0.60787	0.61749	0.53632	0.46035	0.49083
	2006	0.50731	0.48672	0.54077	0.58646	0.65000	0.62167	0.62432	0.70460	0.65454	0.67586	0.62608	0.53502
	2007	0.44693	0.56442	0.60587	0.59404	0.62404	0.58163	0.59601	0.58908	0.57474	0.59769	0.50746	0.43451
	2008	0.44090	0.47800	0.51249	0.56842	0.58684	0.61188	0.53258	0.45336	0.49798	0.46540	0.42304	0.39630
	2009	0.55170	0.58113	0.65950	0.72228	0.66178	0.67885	0.74440	0.70433	0.63904	0.61567	0.62359	0.61304
	2010	0.73091	0.81281	0.86812	0.98375	1.04008	0.95884	0.91399	0.79283	0.78859	0.89889	0.84222	0.93278
	2011	0.95711											
WISCONSIN	2000	0.87287	1.05878	1.00613	1.00000	1.06250	0.84180	1.02932	1.02226	0.97905	1.00745	0.80038	0.64638
	2001	0.57190	0.54635	0.57876	0.83756	0.89643	0.92984	1.19868	1.20550	1.12915	1.05895	0.85373	0.84614
	2002	0.79897	0.83378	0.94151	0.96887	0.98810	1.01681	1.09558	1.04778	1.23079	1.36609	1.12433	1.07629
	2003	1.01314	0.94375	1.09983	1.13939	1.15775	1.10548	1.11629	1.18841	1.03371	1.32384	1.17255	1.00021
	2004	1.01374	0.95260	0.81023	0.91398	0.87743	0.87237	1.01434	0.88320	0.82148	0.74648	0.68604	0.62964
	2005	0.59797	0.62146	0.67015	0.74882	0.84457	0.93454	0.91498	0.82786	0.84106	0.73065	0.62732	0.66894
	2006	0.69149	0.66358	0.73729	0.79962	0.88625	0.84779	0.85152	0.96528	0.90126	0.93460	0.87098	0.75103
	2007	0.63515	0.79966	0.86045	0.84859	0.89376	0.84018	0.86406	0.86450	0.85419	0.89795	0.77761	0.68233
	2008	0.70209	0.76635	0.82684	0.91841	0.95560	1.00238	0.89789	0.74023	0.79134	0.71230	0.61677	0.54756
	2009	0.78545	0.81096	0.91897	1.00070	0.87459	0.87925	0.96565	0.88289	0.76741	0.70631	0.68579	0.64133
	2010	0.76345	0.83890	0.87987	0.99908	1.04137	0.90521	0.81624	0.70803	0.70425	0.80275	0.75214	0.83302
	2011	0.85475											

Revised 02/14/2011

Table 7-3 Quarterly Average Exhaustee Survival Rates Based on Unemployment Rates

Survival Rate Use Period	Months for Selecting Survival Rates	Unemployment Rate Range	Weekly Survival Rates
January-March 2000	April-June 1999	0.0-4.0	0.946
		4.1-4.5	0.952
		4.6-4.8	0.952
		4.9 and up	0.955
April-June 2000	July-September 1999	0.0-4.2	0.945
		4.3-4.7	0.947
		4.8-5.0	0.947
		5.1 and up	0.947
July-September 2000	October-December 1999	0.0-3.8	0.940
		3.9-4.0	0.946
		4.1-4.6	0.946
		4.7 and up	0.950
October-December 2000	January-March 2000	0.0-4.3	0.951
		4.4-4.6	0.951
		4.7-4.9	0.951
		5.0 and up	0.961
January-March 2001	April-June 2000	0.0-3.8	0.943
		3.9-4.1	0.943
		4.2-4.8	0.943
		4.9 and up	0.951
April-June 2001	July-September 2000	0.0-3.8	0.939
		3.9-4.3	0.942
		4.4-4.9	0.947
		5.0 and up	0.947
July-September 2001	October-December 2000	0.0-3.5	0.938
		3.6-4.0	0.938
		4.1-4.5	0.938
		4.6 and up	0.943
October-December 2001	January-March 2001	0.0-3.5	0.941
		3.6-4.0	0.945
		4.1-4.5	0.945
		4.6 and up	0.947
January-March 2002	April-June 2001	00.-3.2	0.945
		3.3-3.9	0.945
		4.0-4.4	0.945
		4.5 and up	0.946
April-June 2002	July-September 2001	0.0-4.2	0.942
		4.3-5.0	0.943
		5.1-5.7	0.943
		5.8 and up	0.943
July-September 2002	October-December 2001	0.0-5.2	0.951
		5.3-5.5	0.953
		5.6-5.8	0.953
		5.9 and up	0.955
October-December 2002	January-March 2002	0.0-5.5	0.957
		5.6-6.3	0.959
		6.4-6.8	0.960
		6.9 and up	0.960

Revised 02/01/11

Table 7-3 Quarterly Average Exhaustee Survival Rates Based on Unemployment Rates

Survival Rate Use Period	Months for Selecting Survival Rates	Unemployment Rate Range	Weekly Survival Rates
January-March 2003	April-June 2002	0.0-5.3	0.956
		5.4-5.9	0.961
		6.0-6.3	0.962
		6.4 and up	0.965
April-June 2003	July-September 2002	0.0-4.9	0.977
		5.0-5.5	0.979
		5.6-6.2	0.981
		6.3 and up	0.981
July-September 2003	October-December 2002	0.0-5.2	0.950
		5.3-5.8	0.951
		5.9-6.3	0.953
		6.4 and up	0.954
October-December 2003	January-March 2003	0.0-5.5	0.957
		5.6-6.5	0.960
		6.6-7.6	0.965
		7.7 and up	0.965
January-March 2004	April-June 2003	0.0-3.8	0.960
		3.9-4.8	0.960
		4.9-5.6	0.960
		5.7 and up	0.961
April-June 2004	July-September 2003	0.0-4.7	0.953
		4.8-5.8	0.953
		5.9-7.0	0.957
		7.1and up	0.963
July-September 2004	October-December 2003	0.0-4.0	0.958
		4.1-5.0	0.958
		5.1-7.1	0.960
		7.2 and up	0.961
October-December 2004	January-March 2004	0.0-3.9	0.962
		4.0-5.0	0.962
		5.1-5.6	0.962
		5.7 and up	0.964
January-March 2005	April-June 2004	0.0-3.0	0.959
		3.1-4.0	0.959
		4.1-4.7	0.959
		4.8 and up	0.961
April-June 2005	July-September 2004	0.0-3.0	0.955
		3.1-5.1	0.955
		5.2-6.0	0.956
		6.1 and up	0.959
July-September 2005	October-December 2004	0.0-2.8	0.957
		2.9-4.7	0.957
		4.8-5.7	0.959
		5.8 and up	0.960
October-December 2005	January-March 2005	0.0-2.6	0.958
		2.7-4.4	0.958
		4.5-5.5	0.958
		5.6 and up	0.959

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Table 7-3 Quarterly Average Exhaustee Survival Rates Based on Unemployment Rates

Survival Rate Use Period	Months for Selecting Survival Rates	Unemployment Rate Range	Weekly Survival Rates
January-March 2006	April-June 2005	0.0-2.7	0.960
		2.8-4.4	0.960
		4.5-5.3	0.960
		5.5 and up	0.960
April-June 2006	July-September 2005	0.0-2.9	0.950
		3.0-4.9	0.950
		5.0-5.5	0.952
		5.6 and up	0.953
July-September 2006	October-December 2005	0.0-2.7	0.952
		2.6-4.2	0.952
		4.3-4.9	0.956
		4.9 and up	0.959
October-December 2006	January-March 2005	0.0-2.2	0.96
		2.3-4.8	0.96
		4.9-5.4	0.961
		5.6 and up	0.961
January-March 2007	April-June 2006	0.0-2.8	0.953
		2.9-4.5	0.953
		4.6-5.0	0.954
		5.1 and up	0.955
April-June 2007	July-September 2006	0.0-2.4	0.951
		2.5-4.3	0.951
		4.4-5.0	0.953
		5.1 and up	0.958
July-September 2007	October-December 2006	0.0-1.8	0.950
		1.9-3.8	0.950
		3.9-5.0	0.950
		5.1 and up	0.951
October-December 2007	January-March 2007	0.0-2.1	0.955
		2.2-4.3	0.955
		4.4-5.5	0.957
		5.6 and up	0.959
January-March 2008	April-June 2007	00.-2.1	0.955
		2.2-3.6	0.955
		3.7-4.9	0.959
		5.0 and up	0.959
April-June 2008	July-September 2007	0.0-2.1	0.953
		2.2-3.5	0.953
		3.6-5.1	0.953
		5.2 and up	0.953
July-September 2008	October-December 2007	0.0-4.1	0.947
		4.2-4.9	0.953
		5.0-5.5	0.954
		5.6 and up	0.960
October-December 2008	January-March 2008	0.0-2.9	0.953
		3.0-4.4	0.953
		4.5-5.6	0.958
		5.7 and up	0.959

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Quarterly Survival Rates

Table 7-3 Quarterly Average Exhaustee Survival Rates Based on Unemployment Rates

Survival Rate Use Period	Months for Selecting Survival Rates	Unemployment Rate Range	Weekly Survival Rates
January-March 2009	April-June 2008	0.0-4.6	0.953
		4.7-5.1	0.958
		5.2-6.0	0.959
		6.2 and up	0.965
April-June 2009	July-September 2008	0.0-5.7	0.955
		5.8-6.3	0.956
		6.4-7.3	0.962
		7.4 and up	0.965
July-September 2009	October-December 2008	0.0-5.9	0.955
		6.0-6.7	0.958
		6.8-6.9	0.959
		6.9 and up	0.965
October-December 2009	January-March 2009	0	0.964
		4.9	0.964
		8.1	0.969
		10.0 and up	0.973
January-March 2010	April-June 2009	0.0-8.1	0.967
		8.2-9.9	0.971
		10.0-10.9	0.972
		11.0 and up	0.975
April-June 2010	July-September 2009	0.0-7.8	0.967
		7.9-9.7	0.970
		9.8-10.9	0.975
		11.0 and up	0.976
July-September 2010	October-December 2009	0.0-6.9	0.972
		7.0-8.9	0.974
		9.0-10.9	0.977
		11.0 and up	0.978
October-December 2010	January-March 2010	0.0-7.7	0.975
		7.8-9.9	0.977
		10-11.9	0.980
		12.0 and up	0.982
January-March 2011	April-June 2010	0.0-6.9	0.966
		7.0-8.9	0.974
		9.0-9.9	0.978
		10.0 and up	0.979

Revised 02/01/11

8 LAUS Estimation: Geography

Introduction

The Local Area Unemployment Statistics (LAUS) program is responsible for estimation of unemployment rates for all areas below the national level. This chapter will provide a comprehensive review of LAUS geography beginning with the largest areas and proceeding through the area types in descending order by size.

For each type of geography, the source of the delineation, the role of the geography in LAUS estimation, and the estimation methodology will be noted. Detailed information regarding each estimation methodology can be found in the appropriate chapters.

Census Regions and Divisions

The U.S. Census Bureau has designated supra-State regions and divisions for which LAUS creates labor force estimates. The four Census Regions each comprise two or more Census Divisions. The nine Census Divisions each comprise three or more States. The table below summarizes the geographic composition of these areas.

LAUS creates estimates for Census Divisions using statistical models that incorporate data from the Current Population Survey (CPS). Estimates for Census Regions are developed by summing model-based data for the Census Divisions.

Note that Puerto Rico, which is within the scope of the LAUS program, is not part of any Census Region or Division.

Census Region	*Census Division*	*States*
Northeast	New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont
	Middle Atlantic	New York, New Jersey, and Pennsylvania
Midwest	East North Central	Illinois, Indiana, Michigan, Ohio, and Wisconsin
	West North Central	Iowa, Minnesota, Nebraska, North Dakota, South Dakota, Kansas, and Missouri
South	South Atlantic	Delaware, District of Columbia, Maryland, Virginia, West Virginia, Florida, Georgia, North Carolina, and South Carolina
	East South Central	Alabama, Kentucky, Mississippi, and Tennessee
	West South Central	Arkansas, Louisiana, Oklahoma, and Texas
West	Mountain	Colorado, Montana, New Mexico, Utah, Wyoming, Arizona, Idaho, and Nevada
	Pacific	Alaska, California, Hawaii, Oregon, and Washington

Bureau of Labor Statistics Regions

The Bureau of Labor Statistics (BLS) has subdivided the Nation into regions similar to those designated by the U.S. Census Bureau. However, the BLS regions comprise States directly, rather than via divisions that subdivide the regions. As such, there are no "BLS Divisions."

LAUS does not create estimates for BLS Regions. These areas are for administrative purposes only.

BLS Region Number	*BLS Region*	*States*
1	Boston / New York	Connecticut, New York, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, and Puerto Rico
3	Philadelphia	Delaware, New Jersey, Pennsylvania, District of Columbia, Maryland, Virginia, and West Virginia
4	Atlanta	Alabama, Florida, Georgia, North Carolina, South Carolina, Kentucky, Mississippi, and Tennessee
5	Chicago	Illinois, Iowa, Indiana, Michigan, Ohio, Wisconsin, Minnesota, Nebraska, North Dakota, and South Dakota
6	Dallas / Kansas City	Arkansas, Colorado, Kansas, Missouri, Louisiana, Oklahoma, Texas, Montana, New Mexico, Utah, and Wyoming
8	San Francisco	Alaska, Arizona, Idaho, Nevada, California, Hawaii, Oregon, and Washington

States

LAUS publishes estimates for each of the 50 States in the Nation and for the District of Columbia and the Commonwealth of Puerto Rico. (Though the District and Puerto Rico are not States, the LAUS program generally treats them as such for administrative purposes.)

Estimates for 48 of the States and for the District of Columbia are developed using statistical models that incorporate CPS, CES, and UI data. For the two remaining States—California and New York—estimates are created by summing the respective Balance of State and substate model-based area within each. Estimates for Puerto Rico are derived from a survey similar to the CPS.

Balances of State

Eight Balances of State exist to facilitate model-based estimation for areas within States. The LAUS program delineates these as the portion of a State that remains after removing the substate modeled area within the State.

LAUS creates estimates for Balances of States using statistical models. For six of these, the models are based solely on CPS, while for the remaining two Balances the models are based on CPS, CES, and UI data. The two Balances that incorporate CES and UI data in their models are those for California and New York.

Model-based estimation of the New Orleans-Metairie-Kenner, LA Metropolitan Statistical Area and the Balance of Louisiana ended in August 2005 following Hurricane Katrina and its impact on the available CPS sample in the substate modeled area. Since August 2005, data for the Balance of Louisiana are produced by summing its constituent parts, rather than via model-based estimation.

State	Balance of State	Substate Modeled Area
California	Balance of California	Los Angeles-Long Beach-Glendale, CA Metropolitan Division
Florida	Balance of Florida	Miami-Miami Beach-Kendall, FL Metropolitan Division
Illinois	Balance of Illinois	Chicago-Joliet-Naperville, IL Metropolitan Division
Louisiana *	Balance of Louisiana *	New Orleans-Metairie-Kenner, LA Metropolitan Statistical Area *
Michigan	Balance of Michigan	Detroit-Warren-Livonia, MI Metropolitan Statistical Area
New York	Balance of New York	New York city, NY
Ohio	Balance of Ohio	Cleveland-Elyria-Mentor, OH Metropolitan Statistical Area
Washington	Balance of Washington	Seattle-Bellevue-Everett, WA Metropolitan Division

** The Balance of Louisiana and New Orleans-Metairie-Kenner, LA Metropolitan Statistical Area were dropped as model-based areas following Hurricane Katrina.*

Labor Market Areas

In the late 1940's when subnational labor force estimation was first attempted, employment and unemployment estimates were developed for large labor market areas as well as States, underscoring the importance of substate labor market information. Labor market areas (LMAs) are identified in order to standardize and promote comparability for the collection and use of labor force information in administering various government programs. In the LAUS program, substate estimates of employment and unemployment are prepared for all LMAs in the Nation. Labor market areas are defined in terms of full counties in all areas except New England, where Minor Civil Divisions (MCDs) are used to define LMAs. In the criteria below, the term "county" includes county equivalents and, in New England, refers to MCDs. (The Labor Market Area Directory for 2010 provides titles and definitions for all labor market areas covered by the LAUS program. It is on the BLS website, at http://www.bls.gov/lau/lmadir.pdf.)

Generally a labor market area is defined as an economically integrated geographic area within which individuals can reside and find employment within a reasonable distance or can readily change employment without changing their place of residence. LMAs are either metropolitan areas (MAs), micropolitan areas (MCs) or small labor market areas (SAs of CNs) and exhaust the geography of each of the States, the District of Columbia, and Puerto Rico. The Office of Management and Budget (OMB) is responsible for defining metropolitan and micropolitan areas while the Local Area Unemployment Statistics Division (LAUS) of the BLS performs this function for small labor market areas. Currently, there are 380 metropolitan areas, 590 micropolitan areas, and 1,382 small labor market areas.

Areas are designated on the basis of population, urbanization, and commutation data. Since population and urban area data are inappropriate for defining the generally less populous small labor market areas, commutation data are used to determine which counties are deemed single-county labor-market areas and which are combined into multi-county labor-market areas. Regardless of population size, commuting flows are an indication of the degree of integration of labor markets among counties.

Under the 2000 standards, "Metropolitan Statistical Area" and "Micropolitan Statistical Area" are the terms used for the basic set of county-based areas defined under this classification. In addition, the term "Metropolitan Division" is used to refer to a county or group of counties within a Metropolitan Statistical Area that has a population core of at least 2.5 million. A Metropolitan Division is most generally comparable in concept to the now obsolete Primary Metropolitan Statistical Area.

While a Metropolitan Division is a subdivision of a larger Metropolitan Statistical Area, it often functions as a distinct social, economic, and cultural area with the larger region. Metropolitan Divisions retain their separate statistical identities. Federal agencies provide detailed data for each Metropolitan Division, just as they did in the past for the Primary Metropolitan Statistical Areas.

Standards for Defining Labor Market Areas and Combined Statistical Areas

Metropolitan and Micropolitan Statistical Areas are collectively called Core Based Statistical Areas (CBSAs). The Metropolitan and Micropolitan Statistical Area Standards do not equate to an urban-rural classification; all counties included in Metropolitan and Micropolitan Statistical Areas and many other counties contain both urban and rural territory and populations.

Core

A Core is a densely settled concentration of population, comprising either an urbanized area (of 50,000 or more population) or an urban cluster (of 10,000 to 49,999 population) defined by the Census Bureau, around which a Core Based Statistical Area is defined.

Core Based Statistical Area

A Core Based Statistical Area (CBSA) is a statistical geographic entity consisting of the county or counties associated with at least one core (urbanized area or urban cluster) of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties containing the core. Metropolitan and Micropolitan Statistical Areas are the two categories of Core Based Statistical Areas.

Metropolitan Statistical Area

A Metropolitan Statistical Area (MA) is a CBSA associated with at least one urbanized area that has a population of at least 50,000. The Metropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured through commuting.

Micropolitan Statistical Area

A Micropolitan Statistical Area (MC) is a CBSA associated with at least one urban cluster that has a population of at least 10,000, but less than 50,000. The Micropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured through commuting.

New England City and Town Area

A New England City and Town Area (NECTA) is a statistical geographic entity that is defined using cities and towns as building blocks and that is conceptually similar to the Core Based Statistical Areas in New England (which are defined using counties as building blocks).

Metropolitan Division

A Metropolitan Division (MD) is a county or group of counties within a CBSA that contains a core with a population of at least 2.5 million. A Metropolitan Division consists of one or more main/secondary counties that represent an employment center or centers, plus adjacent counties associated with the main county or counties through commuting ties.

New England City and Town Area Division

A New England City and Town Area (NECTA) Division is a city or town or group of cities and towns within a NECTA that contains a core with a population of at least 2.5 million. A NECTA Division consists of a main city or town that represents an employment center, plus adjacent cities and towns associated with the main city or town, or with other cities and towns that are in turn associated with the main city or town, through commuting ties.

Combined Statistical Area

A Combined Statistical Area is a geographic entity consisting of two or more adjacent CBSAs linked through commuting ties. Areas were combined based on the employment interchange rate, defined as the sum of the percentage of commuting from the CBSA with the smaller total population to the CBSA with the larger total population and the percentage of employment in the CBSA with the smaller total population accounted for by workers residing in the CBSA with the larger total population. Pairs of CBSAs with employment interchange measures of at least 25 were combined automatically. Pairs of CBSAs with employment interchange measures of at least 15, but less than 25, were combined if local opinion in both areas favored combination.

Standards for Defining Small Labor Market Areas

While CBSAs are designated by the Office of Management and Budget (OMB), the LAUS Division of the BLS designates small labor market areas. Similar to the federal statistical areas developed by OMB, multi-entity small labor market areas (SAs) were created based on 2000 Census-based commutation ties. However, unlike the federal statistical areas, no population criteria were applied for SAs.

(1) Worker flows were examined, and counties combined into one small LMA if either of the following conditions was met:

   (a) At least 25.0 percent of the employed residents of one county commute to work in another county

   (b) At least 25.0 percent of the employment (persons working) in one county is accounted for by workers commuting from another county.

(2) Small LMAs, as is the case with metropolitan and micropolitan areas, are required to be contiguous. Counties were first combined based on the commutation criteria, and then potential multi-county small LMAs were checked for contiguity. Noncontiguous portions of potential small LMAs were considered separately. If the noncontiguous area contained more than one county, it was be reevaluated using (1)(a) and (1)(b) above. If the noncontiguous area consists of a single county, it was designated as a separate small LMA.

(3) Subsequent to the verification of contiguity described in (2) above, commuting flows between adjacent small LMAs were evaluated. Those areas for which the measures and thresholds specified in (1a) and (1b) above are met were merged to form one small LMA.

(4) For the New England Minor Civil Divisions (MCD) based small LMAs, due to the very large number of small MCDs, residual MCDs were added to contiguous small LMAs based on commuting flows and/or other economic ties. That is, if, after applying the commutation criteria, an MCD was identified as an individual small LMA, the MCD was added to a contiguous small LMA, especially if the MCD was extremely small. Also, there were a number of individual MCDs isolated between CBSAs. For the purpose of Handbook estimation only, these MCDs were grouped with adjacent micropolitan areas, with their LAUS estimates being disaggregated from the larger area.

Counties

LAUS creates estimates for all of the 3,219 counties in the Nation and Puerto Rico, including county equivalents (Boroughs and Census Areas in Alaska, Parishes in Louisiana, Independent Cities in Virginia, Municipios in Puerto Rico, and various county/city areas in other States).

Methodologies vary for the counties. In most States, they are derived by Handbook estimation or disaggregation, depending on the county's status with regard to Labor Market Area definitions. In the New England States, counties are derived generally by addition of MCDs.

Cities / Subcounty areas

LAUS often uses the term "cities" to denote areas below the county level; however, fewer than half of all subcounty areas included in the LAUS program are legally incorporated as cities within their respective States.

For non-New England States, LAUS creates estimates for subcounty areas (cities and other units of local government below the county level) with populations greater than or equal to 25,000 people. Annual population estimates produced by the Census Bureau are used to determine the set of areas to be included for LAUS estimation.

For the New England States, LAUS creates estimates for all subcounty areas with nonzero labor force levels in Summary File (SF) 3 of Census 2000.

The U.S. Census Bureau identifies two major categories of subcounty areas, each of which are further broken down into two major subcategories:

(1) Places

a. Incorporated Places

These areas are legally incorporated under the laws of a State. The majority of incorporated places for which LAUS creates estimates are cities, though there are four other types of incorporated places for which LAUS creates estimates as displayed in the following table.

Type of Incorporated Place *	States with LAUS areas by Type of Incorporated Place
Boroughs	Connecticut, Pennsylvania, and New Jersey
Municipalities	Alaska and Pennsylvania
Towns	Arizona, California, Colorado, Florida, Illinois, Indiana, Massachusetts, New Jersey, North Carolina, South Carolina, Tennessee, Texas, and Virginia
Villages	Florida, Illinois, New Jersey, New York, and Wisconsin

** Cities, the most common type of incorporated place, are excluded from the table. Nearly all States have cities for which LAUS estimates are created.*

b. Census Designated Places (CDPs)

CDPs are statistical entities and have no governmental functions under State law. LAUS does not create estimates for these areas.

(2) County Subdivisions

a. Minor Civil Divisions (MCDs)

MCDs have legal boundaries and names and governmental functions or administrative purposes specified by State law.

LAUS creates estimates for MCDs in select States. For most, the disaggregation method is used.

State	Number of MCDs recognized by LAUS and Type
Connecticut	149 towns
Maine	498 *
Massachusetts	304 towns
Michigan	32 townships
New Hampshire	224 *
New Jersey	65 townships
New York	63 towns
Pennsylvania	37 townships
Rhode Island	31 towns
Vermont	241 *
Total	1,644

** Multiple MCD types exist in the three northernmost New England States, including gores, locations, plantations, reservations, towns, townships, and unorganized territories.*

b. Census County Divisions (CCDs)

CCDs are statistical entities and have no governmental functions under State law. LAUS does not create estimates for these areas.

City Parts / Incorporated Place Parts

There are 116 incorporated places for which LAUS (1) creates estimates and (2) recognizes territory in more than one county. For any incorporated place estimated by LAUS, estimates for the county-specific parts are created if the incorporated place has more than one county part with a nonzero labor force level in Summary File (SF) 3 of Census 2000. The 116 incorporated places are mostly cities, though there are towns in North Carolina and South Carolina and villages in Illinois with LAUS-estimated county parts. Overall, LAUS creates estimates for 252 parts of the 116 incorporated places.

Handbook Areas

Handbook areas are those areas for which the Handbook Method is used to generate estimates. These areas exhaust the geography of the Nation and Puerto Rico with the exception of the District of Columbia. For the District of Columbia, no Handbook estimates are calculated.

The phrase "Labor Market Areas (LMAs)" is often used as a synonym for those areas for which Handbook estimates are calculated. While there is substantial overlap between LMAs and Handbook areas, there are notable differences. The geographic scope of Handbook areas includes all 50 States and Puerto Rico, but not the District of Columbia. The scope of LMAs includes the District. There are 2,357 Handbook areas, but only 2,352 Labor Market Areas. Of these, 2,305 are common between the two area types. The following table provides detailed information for Handbook areas that are not the geographic equivalent of an LMA.

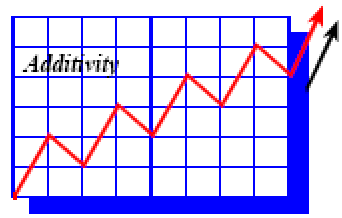
52 Handbook areas that are not LMAs	*47 LMAs that are not Handbook areas*
32 Metropolitan Divisions or NECTA Divisions	*10 Metropolitan Statistical Areas (MSAs) ** *1 Metropolitan NECTA*
14 New England Expanded Estimating Areas	*8 Metropolitan NECTAs* *6 Micropolitan NECTAs* *18 Isolated MCDs* *4 Adjacent LMAs*
6 Components of 2 Metropolitan Divisions	*2 MSAs **

** The 10 MSAs noted in the first category and the 2 MSAs noted in the third overlap. Two of the 10 are comprised of both Metropolitan Divisions that are Handbook areas and Metropolitan Divisions comprised of components that are Handbook areas.*

Expanded Estimating Areas

Expanded Estimating Areas are unique to the New England States and were created to facilitate estimation for very small LMAs. They are Handbook Areas comprising one Metropolitan or Micropolitan NECTA and additional territory. The additional territory included in any given Expanded Estimating Area is either one or more Isolated Minor Civil Divisions (Isolated MCDs) or one Adjacent Small LMA. Of the 14 Expanded Estimating Areas, 8 include a Metropolitan NECTA, while the remaining 6 include a Micropolitan NECTA. In addition to the Metropolitan/Micropolitan NECTA, each Expanded Estimating Area includes either an Adjacent Small LMA or one or more Isolated Minor Civil Divisions (MCDs). These are areas that qualify as Small LMAs, but which were deemed too small for effective Handbook estimation.

All of the MCD components of the Expanded Estimating Areas are disaggregated. Estimates for the NECTA and (where applicable) the Adjacent Small LMA are then created by aggregating the disaggregated MCD components.



9 *LAUS Estimation: Additivity*

Introduction

Linking substate labor force estimates to the CPS begins with a set of independent Handbook employment and unemployment estimates. These are prepared for all LMAs—that is, officially-designated Metropolitan Areas (MAs), single-county labor market areas, multi-county areas, and aggregations of cities and towns in New England—such that they exhaust all geographic subdivisions of a State. Because of nonlinearity in the Handbook, the LMA employment and unemployment estimates will not necessarily equal the statewide total. Hence, an additivity adjustment must be performed. This process introduces conformity between the Handbook and the statewide estimates by making the sum of the exhaustive LMA estimates additive to State levels.

Usual statistical practice is to distribute aggregation differences proportionally among the individual parts. In this manner, all components receive a proportionate share of the difference between the sum of the parts and an independent total. The LAUS program uses this simple linear additivity adjustment method, referred to as the Handbook-Share technique, to adjust LMA estimates to the State control totals. This method consists of distributing the statewide estimates, based on the percentage share of each Handbook area estimate, over the total of the Handbook estimates. This assumes a proportional distribution throughout the State of the difference between the sum of the independent Handbook estimates and the State control totals. This method is applied to all areas for which an independent Handbook estimate is prepared and to the intrastate portions of interstate areas. The adjustments for additivity are performed on a current basis, and whenever the State estimates are revised.

After the Handbook estimates have been adjusted for additivity to the statewide estimates, LMA estimates are referred to as "LAUS" estimates rather than Handbook estimates. These LAUS estimates are then disaggregated further into smaller areas, such as single counties within multi-county LMAs, or sub-county areas, such as cities and towns, for which estimates may be required by legislation. Two methods for disaggregation exist based on the availability of UI claims and decennial census data for apportioning LMA estimates to smaller areas. As with the requirement for additivity of LMA estimates to statewide totals, sub-LMA estimates produced by disaggregation are additive to the LMA estimates. See Chapter 9 for a complete description of the disaggregation process.

Adjustment to Independent Statewide Estimates— The Handbook Share Method

The process of reconciling, or linking, LMA labor force estimates to Statewide (model-based) estimates begins with a set of geographically exhaustive LMA Handbook employment and unemployment estimates. A simultaneous adjustment for additivity of all LMA estimates to the statewide estimates is performed using the percentage distribution of the substate Handbook estimates, also known as the Handbook-Share method. The Handbook-Share method of apportioning the State estimates of unemployment and employment to areas assumes a proportional distribution throughout the State of the difference between the sum of substate Handbook estimates and the independent State estimates. This adjustment is performed for both preliminary and revised estimates.

The Handbook-Share method should be followed by all States unless the State can demonstrate and document why the linear additivity adjustment procedure is inappropriate. The State must also be able to suggest a reasonable and equitable alternative distribution. Reasons for alternative procedures may include inconsistent quality of employment estimates or deficiencies in the Handbook estimates for minor LMAs. Documentation should show how the alternative procedure differs from linear adjustment in terms of the distribution of employment and unemployment in the State. Linear additivity adjustments should be reviewed annually and exception requests should be submitted to the Regional Office before annual benchmarking.

The following worksheet illustrates simultaneous additivity and adjustments to LMAs using the Handbook-Share method.

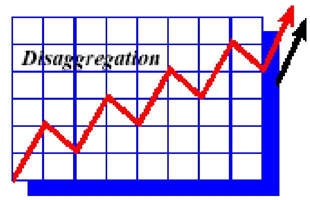
Simultaneous Additivity of LMA Estimates
Using the Handbook-share Method

	Unemployment			Employment		
Area	***Handbook***	***Percent of Summed Handbook***	***Statewide****	***Handbook***	***Percent of Summed Handbook***	***Statewide****
State			*49,300*			*562,800*
MSA 1	18,500	0.394456	19,447	190,600	0.3481279	195,926
Major LMA 1	9,300	0.198294	9,776	107,100	0.1956164	110,093
Major LMA 2	8,700	0.185501	9,145	103,400	0.1888585	106,290
Minor LMA 1	2,300	0.049041	2,418	36,800	0.0672146	37,828
Minor LMA 2	1,900	0.045120	1,997	25,900	0.0493059	26,624
Intrastate Portion of Inter state MSA 2	6,200	0.132196	6,517	83,700	0.1528767	86,039
Sum of substate Areas	46,900	1.000000	49,300	547,500	1.000000	562,800

**For the State, enter the model-based estimate. The substate data are the product of the area's Percent of Summed Handbook and the statewide estimate for unemployment or employment.*

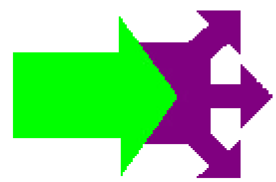
Interstate Areas

For interstate areas, after the independent Handbook estimate is prepared by the "controlling" State, the intrastate portions are calculated through the disaggregation process. These intrastate portions are then adjusted for additivity to the respective statewide levels by each State. The intrastate portions are then summed to the total interstate area to obtain the employment and unemployment estimates for the labor market area.



10 *LAUS Estimation: Disaggregation*

Introduction



Disaggregation techniques are used to obtain current estimates of employment and unemployment for sub-areas within labor market areas. Disaggregation involves prorating employment and unemployment for the labor market area to sub-area jurisdictions. Since these jurisdictions are within LMAs, independent employment and unemployment estimates cannot be developed, as basic data are not always available and current LAUS estimating procedures are not applicable.

Disaggregation methods are used to develop estimates for counties within multicounty labor markets areas, cities within counties (either single-county LMAs or disaggregated counties), and cities and towns within LMAs in New England.

Two methods of disaggregation are appropriate for LAUS use.

1.) The population-claims method uses current UI claims data by county or place (city or town) of residence, 2000 census population data by age group, 2000 census employment data, and the most recent Census Bureau population estimates. This method uses a separate methodology for employment (employment/population indexed share) and unemployment (claims-based unemployment disaggregation).

2.) The census-share method uses 2000 census employment and unemployment data.

A hierarchy of disaggregation techniques exists. For counties and county equivalents and cities and towns in New England, the population-claims method of disaggregation is required since the necessary residency-based claims data are available. Outside of New England, for places within counties, such as cities, the population-claims method of disaggregation was made mandatory in 2007 for States without approved Cooperative Agreement variances. If census data employment and unemployment for the jurisdiction are not available, contact the BLS Regional Office for assistance before proceeding.

Note: Throughout this chapter, the term ‘county’ will be used synonymously with ‘cities or towns’ in New England.

The starting point for disaggregation is the estimate of employment and unemployment prepared for the LMA in accordance with Handbook instructions outlined in Chapter 7 and the directions on adjustment for additivity to statewide totals in Chapter 9.

The Population-Claims Method of Disaggregation

Since current employment and unemployment estimates at the sub-LMA level are required to implement numerous Federal economic assistance and employment and training programs, methods of disaggregation which reflect current economic conditions in these small areas are necessary. Other than the decennial census, there are very few data series for small areas. Two exceptions are the monthly UI claims series and the annual population estimates prepared by the Census Bureau.

Specifically, the current data used in LAUS disaggregation are UI continued claims by place of residence for the week including the 12th of the month and total population estimates prepared annually for counties and biennially for places pertaining to July 1 of the given year. The procedure which incorporates the use of these data is known as the population and claims-based disaggregation procedure.

Population-Based Employment Disaggregation for Counties

Early research showed that, for disaggregating labor market area employment, annually prepared population estimates alone at the county and city/town level were superior to the use of fixed decennial census ratios of total employment. The use of fixed census ratios assumed no change in the ratios over the intercensal decade. The annual population method allowed the ratios to change over time, but assumed that the employment/population ratio in each subarea was equal to the employment/population ratio of the labor market area as a whole. In many instances, this assumption proved unrealistic.

Subsequent research devised a disaggregation procedure which allows for differences in employment/population ratios within a LMA. This procedure utilizes the relationship of the subarea's employment/population ratio to that of the larger area, using decennial census data. The assumption is that the relationship of the employment/population ratios (the ratio of the subarea's share of LMA employment to the subarea's share of LMA population) will hold relatively constant in the intercensal period.

This employment disaggregation method can only be used in conjunction with the claims-based unemployment disaggregation.

Employment Disaggregation Procedure and Sequence

A disaggregation procedure fitting the description above can be expressed as follows:

(Equation 1)

$$\frac{(E_{ic} \div P_{ic})}{(E_c \div P_c)} \times \frac{P_{it}}{P_t} \times E_c = E_{it}$$

Where:

1.) E = total employment

2.) P = total population

3.) c = 2000 census

4.) i = designation of ith county in LMA (variables with no subscript pertain to the LMA as a whole)

5.) t = reference period of the estimates (For employment, the reference period is the month. For population, the reference period is the appropriate year).

When this procedure is used to disaggregate employment, additivity of the counties to the LMA is not assured, because each county has its own employment/population index share. Forcing additivity into the disaggregation yields the following modified formula, known as the employment/population (E/P) Index share procedure:

(Equation 2)

$$\frac{E_{ic}}{\sum_{i-1}^{h} \frac{E_{ic} \times P_{ic}}{P_{ic}}} \times \frac{P_{it}}{P_{ic}} \times E_t = E_{it}$$

Where **E**, **P**, **c**, **i**, and **t** are as defined above and **h** = *the total number of counties in the LMA*. The additivity property can be verified by summing both the left-hand and right-hand terms.

The Census Bureau prepares total population estimates pertaining to July 1 each year for States and substate areas. Using decennial census data and the annually-prepared total population estimates, an employment/population index share is calculated annually for each county in a LMA.

Given the time lag in issuance of the population data from the Census Bureau, estimates for the most recent year may not always be available at benchmark revision time. A LAUS Technical Memorandum, typically issued in late fall each year, will advise the States of the availability of population estimates.

Applying the Employment Disaggregation Procedure

Each year, data are developed to produce the county employment/population index-shares, as follows:

Worksheet A.

Developing County Employment/Population Index-Shares

	2000 CENSUS		**CURRENT**	**1st Stage Employment**	***E/P Index-share***
County	**Employment**	**Population**	**Population**	**(I X III)/II**	**IV ¸ S (IVs)**
	I	**II**	**III**	**IV**	**V**
A	16,500	32,000	35,500	18,305	0.417464
B	12,900	25,300	28,700	14,634	0.333739
C	10,000	22,000	24,000	10,909	0.248797
LMA Total	39,400	79,300	88,200	43,847	1.00000

Step 1. *Data from the 2000 census on total employment and population are entered in Columns I and II for all counties (cities and towns in New England) in the LMA.*

Step 2. *The most recent July 1 population estimates (Current) are entered in Column III, and the year of reference indicated.*

Step 3. *For each county, a first-stage employment level is calculated by moving 2000 census employment by the change in the county's population since the census. Thus, Column IV equals Column I times Column III divided by Column II.*

Step 4. *The county first-stage employment estimates in column IV are summed to a LMA total (Column IV, LMA Total),* **Thus, the LMA total in column IV is a sum and should not be calculated by applying the formula in the column heading to the LMA total employment and population.**

Step 5. *The employment/population index-share is calculated for each county by dividing the first-stage employment level in the county by the labor market area sum obtained in Step 4. Thus, Column V equals Column IV divided by the Column IV LMA Total.*

The sum of the employment/population index-shares should equal one, except for rounding. If it does not precisely equal one, the largest share is rounded so that the sum of the shares is exactly equal to 1. This will ensure that employment from the counties sums to the LMA total employment. The shares are then used in the following Worksheet B, Employment/Population Index-Share Approach to Disaggregating Total Employment, as follows:

Worksheet B.

Employment/Population Index-Share Approach to Disaggregating Total Employment

County	E/P Index-share	January Employmen t	February Employmen t	….	November Employmen t	December Employmen t
I	**II**			**III**		
A	0.417464	12,647	12,891	…	14,814	15,087
B	0.333739	10,111	10,306	…	11,843	12,061
C	0.248797	7,537	7,683	…	8,829	8,992
LMA Total	1.000000	30,295	30,879	…	35,485	36,140

Step 1. *From Worksheet A, Column V, enter the employment/population index-shares in Column II for each county listed in Column I.*

Step 2. *Enter the independent estimate of total employment for the LMA under the appropriate month in Column III. The independent estimate for the labor market is the estimate that results from the application of the Handbook estimating procedure and adjustment for additivity to the statewide controls.*

Step 3. *The county employment/population index-shares are applied to the independent LMA employment estimate to arrive at the disaggregated county employment estimates for the month. The sum of the disaggregated county employment estimates may not add to the LMA total because of rounding. If this is the case, the estimate for the largest county should be adjusted so that the summed estimates equal the LMA total.*

The same procedures are used to produce employment/population index-shares for cities:

Worksheet C.

Developing City Employment/Population Index-Shares

	2000 CENSUS		**CURRENT**	**1st Stage Employment**	***E/P Indexed-share***
City	**Employment**	**Population**	**Population**	**(I X III)/II**	**IV ¸ S (IVs)**
	I	**II**	**III**	**IV**	**V**
A	18,300	38,000	42,000	20,226	0.322077
B	14,000	29,500	33,000	15,661	0.249381
Balance of County	23,600	57,000	65,000	26,912	0.428542
County Total	55,900	124,500	140,000	62,800	1.00000

Step 1. *Data from the 2000 census on total employment and population are entered in Columns I and II for all LAUS cities in the county. State specific cities should not be included. Balance of county employment and population are derived by subtracting the respective data for LAUS cities from the county totals.*

Step 2. *The most recent July 1 population estimates are entered in Column III, and the year of reference indicated.*

Step 3. *For each city and for balance of county, a first-stage employment level is calculated by moving 2000 census employment by the change in the city's or balance of county's population since the census. Thus, Column IV equals Column I times Column III divided by Column II.*

Step 4. *The city and balance of county first-stage employment estimates are summed to a county total (Column IV, County Total).* **Thus, the county total for column IV is a sum and should not be calculated by applying the formula in the column heading to the county total employment and population.**

Step 5. *The employment/population index-share is calculated for each city by dividing the first-stage employment level in the city by the county sum obtained in Step 4. Thus, Column V equals Column IV divided by the Column IV LMA Total.*

The sum of the employment/population index-shares should equal one, except for rounding. If it does not precisely equal one, the largest share is rounded so that the sum of the shares is exactly equal to 1. This will ensure that employment from the cities sums to the county total employment. The shares are then used in the following Worksheet D, Employment/Population Index-Share Approach to Disaggregating Total Employment, as follows:

Worksheet D.

Employment/Population Index-Share Approach to Disaggregating Total

City	E/P Index-share	January Employment	February Employment	….	November Employment	December Employment
I	II	III				
A	0.322077	19,582	20,049	…	21,013	21,674
B	0.249381	15,162	15,524	…	16,270	16,782
County Total	1.000000	60,800	62,250	…	65,243	67,295

Step 1. *From Worksheet C, Column V, enter the employment/population index-shares in Column II for each city listed in Column I.*

Step 2. *Enter the independent estimate of total employment for the county under the appropriate month in Column III. The independent estimate for the county is the estimate that results from the application of the Handbook estimating procedure and adjustment for additivity to the statewide controls.*

Step 3. *The city employment/population index-shares are applied to the independent county employment estimate to arrive at the disaggregated city employment estimates for the month. The sum of the disaggregated city employment estimates may not add to the county total because of rounding. If this is the case, the estimate for the largest city should be adjusted so that the summed estimates equal the county total.*

Claims-Based Unemployment Disaggregation

Research has shown that the use of current claimant information in disaggregating labor market area unemployment to sub-areas is superior to decennial census based disaggregation because it allows for seasonality during the course of the year and change during the intercensal period. However, these studies have also shown that a strict claimant allocation method is not appropriate for total unemployment because claimants are not representative of the total group of unemployed. This is particularly true of the entrant-reentrant segment, as these unemployed have a different seasonal pattern to their joblessness. Disaggregation based solely on claims data generally underestimates urban areas and inaccurately allocates blacks, youth, and older women.

In an attempt to correct for this, claims data by county of residence are used to distribute the experienced unemployed component, i.e., those with recent job attachment.

Decennial census age-group population data may not add to the LMA total because of rounding. If this is the case, the estimate for the largest county should be adjusted so that the summed estimates equal the LMA total.

Census population data are used in disaggregating unemployed entrants and reentrants, under the assumption that the population distribution and age structure of the population within the LMA do not shift drastically over time. Population aged 16 to 19 is one element in the disaggregation; the other is population aged 20 and over. Note that these age groups are those used to calculate the youth population ratio for estimating LMA entrant and reentrant unemployment using the Handbook procedure. Entrant and reentrant disaggregation ratios are calculated only once every 10 years. In addition, differential migration will have an impact on the LMA's distribution of population. However, the lack of current data on migration by age group at the county level precludes any attempt to correct for this.

Required Claims Data for Claims-Based Unemployment Disaggregation

For all multi-county LMAs, the residency requirement for claims data is the coding and tabulating of claimants by county (city or town in New England) of residence, within the State paying the benefits or in border States if the claimant is filing under commuter arrangements.

For interstate LMAs, the claims data used in disaggregation must be coded for residence in counties (cities or towns in New England) in contiguous States where commuter claimant arrangements exist, as well as within the State paying the benefits, in order to use the claims-based method to disaggregate the intrastate portions of the interstate LMA. If commuter claimant data are not available by county of residence, the census-share method must be used to estimate unemployment and employment in each State's portion of the interstate LMA. However, in a given State's intrastate portion, if the State has claims data by county of residence, the claims-based unemployment disaggregation (and the employment/population index share method) must be used to disaggregate to the county level.

The geographic distribution of claimants filing continued claims under State UI and UCFE certifying to unemployment in the week including the 12th of the month by county of residence is used to disaggregate the LMA estimate of experienced unemployed to the county level (city or town in New England). Claimants with any earnings due to employment in the week including the 12th should be excluded from counts used in disaggregation. Though used for Handbook estimation, Railroad Retirement Board (RRB) claims should be excluded from the claims counts used in disaggregation.

Unemployment Disaggregation Procedure and Sequence

The procedure and sequence for unemployment disaggregation is presented below, along with an example. The example assumes the following Handbook data:

- *unemployment, excluding entrants (line 11)= 5,000*
- *reentrant unemployment (line 13)= 1,600*
- *new entrant unemployment (line 15)= 400*
- *total unemployment (line 16)= 7,000*
- *total LMA claimants without earnings = 6,500*
- *independent estimate of LMA unemployment (LAUS) = 12,000*

LMA Distribution of Population

Sub-area	Claimants	>20 yrs.	16-19 yrs.
1	2,500	25%	20%
2	2,250	30%	35%
3	1,750	45%	45%
Total	**6,500**	**100%**	**100%**

Step 1. *For a LMA, determine the percent of Handbook unemployment that is accounted for by the experienced unemployed, those jobless with recent job attachment, i.e., unemployment excluding entrants divided by total unemployment.*

$$\textit{Example}: 5{,}000 \div 7{,}000 = 0.71$$

If any approved atypical adjustment was made to the UI data so that a claims count was removed from the Handbook claims line leading up to Unemployment Excluding Entrants, but is added to Total Unemployment, then that figure should be added to Unemployment Excluding Entrants for purposes of arriving at the experienced unemployed proportion.

Step 2. *Determine the proportion of LMA Handbook unemployment represented by reentrants unemployment divided by total unemployment.*

$$\textit{Example}: 1{,}600 \div 7{,}000 = 0.23$$

Step 3. *Determine the proportion of LMA Handbook unemployment represented by new entrants unemployment divided by total unemployment.*

$$\textit{Example}: 400 \div 7{,}000 = 0.06$$

Note: The proportions obtained in steps 1, 2, and 3 should sum to one (100%).

$$\textit{Example}: 0.71 + 0.23 + 0.06 = 1$$

Step 4. *Apply each of the proportions in steps 1, 2, and 3 to the independent LMA estimate of total unemployed after additivity and adjustment to statewide controls. This results in a disaggregation of total LMA unemployment into three parts:*

A. experienced unemployed
B. reentrant unemployed
C. new entrant unemployed.

Example:

A $= 0.71 \times 12{,}000 = 8{,}571.$

B $= 0.23 \times 12{,}000 = 2{,}743$

C $= 0.06 \times 12{,}000 = \quad 686$

Step 5. *Allocate the LMA estimate of experienced unemployed (estimate A in Step 4) to all counties (cities and towns in New England) based on the percent distribution of place-of residence claims data.*

Sub-area	Sub-area Claims		LMA Claims		Sub-area Ratio		LMA Exp Unemp		Sub-area Exp Unemp
1	2,500	¸	6,500	=	0.38	X	8,571	=	3,297
2	2,250	¸	6,500	=	0.35	X	8,571	=	2,967
3	1,750	¸	6,500	=	0.27	X	8,571	=	2,308

Step 6. *Allocate the LMA estimate of reentrant employment (estimate B in Step 4) to all counties based on the percent distribution of the LMA's population 20 years of age and older from the 2000 census.*

Sub-area	LMA Reentrants		20+ Pop Ratios		Sub-area Reentrants
1	2,743	X	25%	=	686
2	2,743	X	30%	=	823
3	2,743	X	45%	=	1,234

Step 7. *Allocate the LMA estimate of new entrant unemployment (estimate C in Step 4) to all counties based on the percent distribution of the LMA's population 16-19 years old from the 2000 census.*

Sub-area	LMA New Entrants		16-19 Pop Ratios		Sub-area New Entrants
1	686	X	20%	=	137
2	686	X	35%	=	240
3	686	X	45%	=	309

Step 8. *Derive the total unemployment estimate for each county by summing the county estimates derived in Steps 5, 6, and 7. The sum of the county unemployment estimates should automatically equal the LMA total unemployed. If they are not equal due to rounding, the data for the largest county is adjusted accordingly*

Sub-area	Step 5		Step 6		Step 7		unemployment
1	3,297	+	686	+	137	=	**4,120**
2	2,967	+	823	+	240	=	**4,030**
3	2,308	+	1,234	+	309	=	**3,851**
Areas sum to independent LMA LAUS estimates.							***12,000***

Population-Claims Disaggregation of Interstate Areas

In interstate LMAs where all States have the necessary claims data by county of residence, a "Handbook equivalent" for each intrastate portion is disaggregated from the total LMA Handbook estimate using the population-claims method. The data for each intrastate portion are adjusted for additivity to the respective statewide controls. Then the adjusted intrastate portion is disaggregated to the county level by the population-claims method. Employment (line 4) and experienced unemployed (line 11) are created at the LMA level and are disaggregated into the each States' component parts using the same techniques discussed above. Reentrant unemployed (line 13) and new entrant unemployed (line 15) do not get disaggregated since these estimates are already developed at the component level.

The procedure and sequence for disaggregation is presented below, along with an example. The example assumes the following Handbook data:

• *employment (line 4)=*	*63,047*
• *unemployment, excluding entrants (line 11)=*	*23,208*
• *reentrant unemployment (line 13)=*	*7,736*
• *new entrant unemployment (line 15)=*	*1,934*
• *total unemployment (line 16)=*	*32,878*
• *total LMA claimants without earnings =*	*14,621*

Interstate Area Employment Disaggregation Procedure

Each year, data are developed to produce the employment/population index-shares, as follows:

Worksheet A.

Developing Employment/Population Index-Shares for an Interstate Area

	2000 CENSUS		**CURRENT**	**1st Stage Employment**	***E/P Indexed-share***
Component Areas	**Employment**	**Population**	**Population**	**(I X III)/II**	**IV ÷ Σ (IVs)**
	I	**II**	**III**	**IV**	**V**
In-State part	28,875	56,000	62,125	32,033	0.555727
Out-of-state part	22,575	44,275	50,225	25,609	0.444273
LMA Total	51,450	100,275	112,350	57,642	1.00000

Step 1. *Data from the 2000 census on total employment and population are entered in Columns I and II for both the in-state and out-of-state parts in the LMA.*

Step 2. *The most recent July 1 population estimates (Current) are entered in Column III, and the year of reference indicated.*

Step 3. *The first-stage employment levels are calculated for both the in-state and out-of-state parts by moving 2000 census employment by the change in the county's population since the census. Thus, Column IV equals Column I times Column III divided by Column II.*

Step 4. *The first-stage employment estimates in column IV are summed to a LMA total (Column IV, LMA Total),* **Thus, the LMA total in column IV is a sum and should not be calculated by applying the formula in the column heading to the LMA total employment and population.**

Step 5. *The employment/population index-share is calculated for each part of the interstate by dividing the first-stage employment level in the county by the labor market area sum obtained in Step 4. Thus, Column V equals Column IV divided by the Column IV LMA Total.*

The sum of the employment/population index-shares should equal one, except for rounding. If it does not precisely equal one, the largest share is rounded so that the sum of the shares is exactly equal to 1. This will ensure that employment from the counties sums to the LMA total employment. The shares are then used in the following Worksheet B, Employment/Population Index-Share Approach to Disaggregating Total Employment, as follows:

Worksheet B.

Employment/Population Index-Share Approach to Disaggregating Employment for an Interstate Area

Component Areas	***E/P Index-share***	***Current Employment***
I	**II**	**III**
In-State part	0.555727	35,037
Out-of-state part	0.444273	28,010
LMA Total	1.000000	63,047

Step 1. *From Worksheet A, Column V, enter the employment/population index-shares in Column II for each part listed in Column I.*

Step 2. *Enter the independent estimate of total employment for the LMA in Column III. The independent estimate for the labor market is the estimate that results from the application of the Handbook estimating procedure and adjustment for additivity to the statewide controls.*

Step 3. *The employment/population index-shares are applied to the independent LMA employment estimate to arrive at the disaggregated employment estimates for each part for the month. The sum of the disaggregated employment estimates for the parts may not add to the LMA total because of rounding. If this is the case, the estimate for the largest county should be adjusted so that the summed estimates equal the LMA total.*

Interstate Area Claims-Based Unemployment Disaggregation

Step 1. *For a LMA, determine the percent of claims for the in-state and out-of-state parts by dividing the claims of each part by the total LMA claims.*

Component Areas	Claims	Claims Ratio
In-State part	10,381	0.71
Out-of-state part	4,240	0.29
LMA Total	14,621	1.00

Step 2. *Apply each of the proportions in step 1 to the independent LMA estimate of total unemployed to disaggregate the total LMA unemployment into the in-state and out-of-state parts.*

Component Areas	Claims Ratio		LMA Line 11		Experienced Unemployed
In-State part	0.71	x	23208	=	16,478
Out-of-state part	0.29	x	23208	=	6,730

Unlike intrastate LMA disaggregation, interstate LMAs do not disaggregate unemployed reentrants and new entrants because these estimates are already developed for the in-state and out-of-state parts. These parts are summed to obtain the total reentrants and new entrants estimates for the interstate LMA.

Component Areas	Reentrants Line 13	New Entrants Line 15
In-State part	5,493	1,373
Out-of-state part	2,243	561
LMA Total	7,736	1,934

Step 3. *For each part add the experienced unemployed estimate from step2 to the reentrants and new entrants estimates to arrive at the total unemployment for each part. The parts should sum to the interstate LMA total unemployment.*

Component Areas	Step2 Line 11		Reentrants Line 13		New Entrants Line 15		Unemployment Line 16
In-State part	16,478	+	5,493	+	1,373	=	23,343
Out-of-state part	6,730	+	2,243	+	561	=	9,535
			Areas sum to line 16 for the interstate LMA.				***32,878***

In interstate areas where commuter claimant data are not available for all parts, the census-share method must be used to estimate both employment and unemployment for the intrastate portions of the interstate LMA. However, in a given intrastate portion, if the portion is a multi-county area and the State has claims by county of residence (city and town in New England), the population claims method must be used to disaggregate to the county level. In this case, the census-share total unemployment ratio of the intrastate portion to the whole LMA should be applied to unemployment, excluding entrants, B factor unemployment, A factor unemployment, and total unemployment to obtain a Handbook "equivalent" estimate for the intrastate portion. After this intrastate portion is adjusted for additivity to the statewide controls, the population-claims method must be used to disaggregate to the county level.

Disaggregating Employment and Unemployment to Incorporated Places Using the Population-Claims Method

Simple modifications of the employment/population index share employment disaggregation and the claims-based unemployment disaggregation enable the development of labor force estimates for units of local government as small as 2,500 population (according to the 2000 census data), provided claims data are available by residence of the claimant in all such places in the State. The State may specify the population level of the places to which this disaggregation method will apply.

In addition, the balance-of-county estimates (derived after subtracting the disaggregated place estimates) must relate to a specifically defined geographic area. Census data for this geographic area must be available for disaggregation to other places in the balance-of-county area. If such census data are not available, current claims and population data cannot be used to disaggregate any place within the county. In places where commuter claimant arrangements exist, further specification of the claims data is required.

Place estimates disaggregated by the population-claims method should be introduced the first month for which residency claims data are available. Once this method is initiated, it must be used for the rest of the calendar year. At benchmarking time, the State may opt to return to census-sharing, in which case the full time series is revised using the census-share method.

Specification of Population Size for Place Disaggregation

The place level to which the population-claims method is used is established based on the last decennial population size of cities and towns and is adjusted over the intercensal period by the annually prepared county and city population estimates.

In the intercensal period, the State should review the total population estimates for all units of local government issued annually by the Census Bureau to determine whether population changes have occurred which affect the composition of the size class for place disaggregation. If, because of a reduction in population, a city falls below the size specification for place disaggregation using the population-claims method, the State does not have to revert to the census-share for that place, and may continue to use the population-claims. In addition, the collection of residency-based claims data does not have to be extended to other cities in the smaller size class.

A city can move into the size class specified for claims-population disaggregation of places due to an increase in population. If a State is already using the population-claims method at the place level, it has one year to develop the residency claims data needed for disaggregation by coding claims by place of residence for the newly-added city. During that year, the city would continue to be census-shared. If the residency data are not developed for the newly-added city after one year, the State cannot use the population-claims method and must revert to the census-share method for all cities in the size class. Alternately, the State may avoid reverting to the census-share method by redefining upward the size class for place disaggregation at the benchmarking time. Then, the population claims method can be used in a size class covering larger cities. If a city, due to a change in population, moves either in or out of the size specified for population-claims disaggregation of places, the State should notify BLS of this change and the subsequent methodology changes.

Population-Based Employment Disaggregation

The Census Bureau issues total population estimates for all units of local government annually. The latest population estimates and the employment/population index-shares calculated from the census can be used to disaggregate LMA employment estimates below the county level, using the procedure described in Worksheet A. Balance-of-county estimates must also be calculated to allow for the proper application of the additivity adjustment. The case of disaggregating to a place from a single-county LMA is straightforward. The employment/population index share procedure, which involves the use of decennial census employment and population data and annually prepared population estimates, is applied to the LMA total employment estimate for the month in question to obtain the place estimate.

In the case of disaggregating to a place from a county in a multi-county LMA, the county total employment estimate must first be prepared. Population data for counties and places may not be available on the same time frame. For example, 2005 data may be available at the county level, but for cities the most recent data may be from 2004. In this case, 2005 data would be used to disaggregate to the county level, and 2004 data for both the county and cities would be used for disaggregating from the county level to cities within the county. Thus, the disaggregated county employment is further broken down to the place (city) by using the place's most recent population, the county's population for that same year, and the place's employment/population index-shares from the decennial census. The employment/population ratio is then applied to the county employment estimate for the month in question to obtain the place employment estimate.

In developing place data using the employment/population index-share approach, States are reminded that they are to calculate index shares for all places which meet the chosen population specifications and not just for those which are reported to BLS. States are then to calculate a rest-of county estimate by subtracting all disaggregated estimates from the county total. The rest-of-county estimates must relate to a specific geographic area for which census data exist, so that the census-share procedure can be used for disaggregation. If this is not possible, the index share approach cannot be used.

Claims-Based Unemployment Disaggregation

Unemployment in a place of 2,500 population or more may be disaggregated directly from the intrastate LMA (either single-county or multi-county) depending on the existence of commuter claims arrangements and the availability of commuter claims coded by city of residence and on the same reference period. Disaggregating directly from the LMA cannot be done for interstate areas because interstate areas must first be broken down into intrastate portions. Then, unemployment may be disaggregated directly from those portions, based on the conditions described above.

Geographic Basis of Claims Data Used to Distribute Experienced Unemployed

In the claims-based disaggregation, LMA unemployment is disaggregated into three basic components: the experienced unemployed, unemployed entrants related to experienced unemployed, and unemployed entrants related to the labor force. The experienced unemployed component is distributed to areas based on the distribution of claims. In the case of place disaggregation, if commuter claims arrangements exist and these claims are coded and tabulated for city of residence, then the experienced unemployed distributor is as follows:

Claimants residing in the city who file either in their own State or the border State, as a percent of all residents of the county (in the case of single-county areas) or intrastate portion (in the case of multi-county interstate areas and New England interstate LMAs) who file in the State or in the border State.

If commuter claimant arrangements exist, but commuter claims are coded for county of residence only and not city, then the experienced unemployed distributor is the following:

Claimants residing in the city who file in the State as a percent of all residents in the county filing in the State.

That is, commuter claims are not used at all. Use of this modified ratio avoids distorting the city's share of the experienced unemployed, while allowing the county-coded commuter claims to be used.

Unemployment Disaggregation Procedure for Cities or Towns

The following disaggregation is used in almost all cases. It is the same procedure for claims-based county disaggregation described earlier, with the following modifications:

Step 5. *Allocations are based on current claims data by city or town of residence.*

Step 6. *Allocations are based on population 20 years of age and older.*

Step 7. *Allocations are based on population 16-19 years of age for places with a 2000 population between 2,500 and 10,000.*

Use of these ratios parallels the use of county to multi-county LMA ratios. The total unemployment estimate for the place (Step 8) is then the sum of the disaggregated experienced unemployment (Step 5) and the new and reentrants (Steps 6 and 7).

The procedure above can be used for places in:

1.) Single or multi-county LMAs not contiguous to a border State;

2.) Single or multi-county LMAs contiguous to a border State without commuter claimant arrangements; and

3.) Single or multi-county LMAs with commuter claimant arrangements where such claimants are also coded for city of residence.

Modifications to this procedure are required in (1) interstate areas and (2) single or multi-county LMAs contiguous to a State with commuter claimant arrangements where such claimants are coded for county of residence only and not city.

In the case of an interstate area or single- or multi-county LMA contiguous to a State in which commuter claims are coded for county of residence only, the Step 5 proportion must be based on intrastate claims only, with claims data limited to residents of the county and the city filing in the State. The proportion becomes the ratio of city residents filing in the State to county residents filing in the State. The ratio of city residents filing in the State to county residents filing in the State and in the border State will underestimate experienced unemployed in the city. For multi-county areas (including the intrastate portion of interstate areas), it is necessary to first disaggregate to the county level before disaggregating to the place in order to use the county-coded commuter claimant data. Steps 6 and 7 are on the same geographic reference as Step 5, that is, the city as a percent of the county. Step 8 is the sum of the disaggregated experienced unemployed (Step 5) and new entrants and reentrants (Steps 6 and 7).

Use of 2000 Census Data in Disaggregating Labor Force Estimates—Census-Share Method

The use of 2000 census data for disaggregating labor force estimates may be used a State has an approved variance in the Cooperative Agreement or when more current data for disaggregation are not available. This typically will occur for administrative areas such as Areas of Substantial Unemployment, unique geopolitical areas such as Indian reservations, and very small areas such as parts of cities.

The census-share method uses employment and unemployment ratios. These ratios are applied to independent single county LMA estimates after adjustment to State controls, or to disaggregated sub-LMA levels which were based on those independent LMA estimates.

When the claims-based unemployment disaggregation and population-based employment disaggregation are used to disaggregate a place in a county, the balance-of-county area must be a geographic area for which 2000 census data are available for disaggregating to other places in the balance-of-county area.

The Census-Share Method of Disaggregation

The census-share method of disaggregation utilizes the ratios of employment and unemployment in a subarea to the respective total for the larger area according to the 2000 census. These ratios are applied to the current total employment and unemployment estimates for the larger area. This procedure is based on the assumption that the current geographic distribution of employment (or unemployment) is the same as that in the decennial census, or, equivalently, that employment (unemployment) in the subarea has changed by the same proportion since the census as that in the larger area. The 2000 census-share procedure is used to disaggregate from the county to a subcounty area when census labor force data are available and a State opts not to use the claims and population-based disaggregation procedure at the city level. If census labor force data are not available, contact the BLS regional office to make an atypical request to use the population-share procedure.

Disaggregation Procedure and Sequence

The procedure and sequence disaggregation using the census-share method, along with an example, is presented below. For the example, the following data are given:

Census data:

LMA Employment = 20,000		
County 1	=	10,000
County 2	=	6,000
County 3	=	4,000

LMA Unemployment = 8,000		
County 1	=	4,000
County 2	=	2,400
County 3	=	1,600

•*Independent estimate of LMA employment = 35,000*

•*Independent estimate of LMA unemployment = 7,000*

Step 1. *From the 2000 census data, obtain the number of employed in the county.*

Step 2. *From the 2000 census data, obtain the number of employed in the LMA containing the county.*

Step 3. *Divide Step 1 by Step 2. The result is the ratio of the county employment to that of the LMA as of April 2000*

Example:

County 1 = 10,000 ÷ 20,000 = 0.5
County 2 = 6,000 ÷ 20,000 = 0.3
County 3 = 4,000 ÷ 20,000 = 0.2

Step 4. *Apply the ratio developed in Step 3 to the total employment estimate for the LMA for the relevant time period. This will yield the estimate of total employment in the county.*

Example: **Employment**

County 1 = 35,000 × 0.5 = 17,500
County 2 = 35,000 × 0.3 = 10,500
County 3 = 35,000 × 0.2 = 7,000

Step 5. *From the 2000 census data, obtain the number of unemployed in the county.*

Step 6. *From the 2000 census data, obtain the number of unemployed in the LMA containing the county.*

Step 7. *Divide Step 5 by Step 6. The result is the ratio of the county unemployment to that of the LMA as of April 2000.*

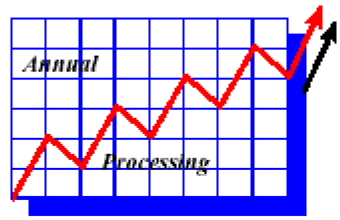
Example:

County 1 = 4,000 ÷ 8,000 = 0.5
County 2 = 2,400 ÷ 8,000 = 0.3
County 3 = 1,600 ÷ 8,000 = 0.2

Step 8. *Apply the ratio developed in Step 7 to the total unemployment estimate for the LMA for the relevant time period. This will yield the estimate of total unemployment in the county.*

Example:

County 1 = 7,000 × 0.5 = 3,500
County 2 = 7,000 × 0.3 = 2,100
County 3 = 7,000 × 0.2 = 1,400



11 *Annual Processing*

Introduction

In the current LAUS methodology, Handbook-based and model-based labor force estimates are revised annually to take advantage of the latest available information. This process is known as Annual Processing or Annual Benchmarking. State model performance is formally reviewed by State, regional and national office staff, and adjustments are made to model specifications when necessary. Then new CPS population controls, revised Handbook components, and revised State-supplied data are incorporated into the State and substate estimates. In summary, annual processing consists of model evaluation and performance review, incorporation of CPS population controls, collection and incorporation of revised input data, re-estimation of State and substate estimates, and benchmarking. The sections which follow discuss these processes in detail.

Annual Model Review

A benefit of using a model-based estimation framework is the ability to adapt a State's model to the changing nature of the State economy and data. The variables in a model are based on the inter-relationships in the State's economy, including seasonal patterns and long-term trends, and the individual nature of the data sources available. The variable coefficients of the signal-plus-noise models allow the models to adjust gradually to structural changes in the economy and to discount unusual changes of input data, such as those resulting from CPS sampling variability. However, for some types of events, such as severe weather or spurious movement in the CPS, it is important to be able to review a model's performance and take direct corrective action. In some cases, intervention variables are added to the model to restore model performance; in other cases, model specifications are revised. (See Chapter 6 for a detailed discussion of intervention variables and model specifications.)

The LAUS model evaluation and performance review is conducted in the fall of each year. First, a technical memorandum is issued which requests State staff to review their model performance and provide comments and evaluations to the national office. The memorandum usually includes a list of suggested topics on model behavior for the States to consider while reviewing their model performance. In addition, States are asked to provide information about their economy which might help to explain model behavior.

At the same time, the Statistical Methods Staff (SMS) review the model performance using statistical tests for diagnostic evaluation and outlier detection. This review focuses on statistical measures of model performance, and is in addition to the battery of statistical tests which are run on the models each month. The tests help to determine whether any changes to current model specifications or outlier interventions are necessary. SMS shares the results of this research and their proposed actions with States, either via technical memorandum or in presentations during the annual State/ regional meetings.

LAUS national office staff monitors model performance as part of their monthly duties. In addition, they summarize State issues and concerns regarding model performance and present resolutions and answers during the annual State meetings. Questions and issues raised by the States are also responded to in a formal LAUS technical memorandum, generally issued just after the conclusion of annual processing activities.

Population Controls

At the beginning of each year, new CPS population controls are introduced for use in Division, State, and substate model estimation. These controls reflect both new data for the most recent year and revisions to data for earlier years. The new and revised controls are developed by the Census Bureau and delivered to BLS in late January.

Resident population at all levels of geography is estimated by updating a base population from the census via estimates of the components of population change, consisting of births, deaths, and migration. The CPS universe, defined as the civilian noninstitutional population, is then estimated by subtraction of the resident military and institutional populations, primarily nursing homes, prisons and jails, mental hospitals, and juvenile facilities. Below the national level, this procedure is supplemented by direct estimates of group quarters populations and, in some instances, student and military populations.

Population controlling occurs when the sample-based monthly CPS labor force estimates are adjusted so that they are consistent with these independently derived population estimates. Adjusting (controlling) the CPS sample-based labor force estimates to be consistent with independently derived population estimates reduces the variability of the CPS estimates, thus improving their quality.

There are several ways CPS population controls affect LAUS estimates. For model-based estimates, the monthly impact is via the CPS inputs to the model estimates. For current estimation, monthly CPS population controls are incorporated into the CPS estimates through the second-stage ratio adjustment step of the CPS estimation process. (See Chapter 2 for a description of the second-stage estimation process.) For substate estimates, the monthly impact of CPS population controls is less direct, and occurs due to the additivity adjustment of substate estimates to their respective statewide or balance-of-State totals.

Annual CPS population controls are incorporated into CPS estimates through the revision of monthly CPS labor force estimates at the end of the year. During annual processing, the revised CPS data are incorporated into the LAUS estimates when the models are re-estimated.

How Population Estimates are Calculated

Current estimates of the national population by age, sex, race, and Hispanic origin are derived by quarterly updates of the resident population (enumerated in the last census) using components of population change. This process uses the following simple formula to update each category.

Revised Population = **Enumerated Base Population**

- **+** Births to U.S. resident women
- **-** Deaths of U.S. residents
- **+** Net international migration

Births and deaths by sex, race, and Hispanic origin are obtained from the National Center for Health Statistics (NCHS), generally through the calendar year two years prior to the last July estimate date. Distribution by sex, race and Hispanic origin is projected to the last July estimate date. The projected distribution is applied to a preliminary series of births and deaths, also obtained from NCHS.

International migration, in its simplest form, is any change of residence across the borders of the United States. The net international migration component of the population estimates combines four parts: (1) net international migration of the foreign born, (2) net migration of natives to and from the US, (3) net migration between the US and Puerto Rico, and (4) net movement of the Armed Forces population to and from the US. Net immigration of the foreign-born population is estimated in two parts, immigration and emigration. The estimate of immigration utilizes information from the American Community Survey (ACS) on the reported residence of the foreign-born population in the prior year. The foreign born who reported living abroad in the year prior to the survey are considered immigrants. For years 2001 – 2004, where ACS data are unavailable, estimates are derived by linear interpolation between the 2000 Census and the 2005 population estimates.

Emigration of the foreign born is estimated using a residual method. The foreign-born household population from the census is “aged” using NCHS life tables to obtain the expected population for the four years prior to the year being estimated (2005, 2006, 2007, and 2008 for the population estimates developed for 2009). This expected foreign-born estimate is then compared to the foreign-born population estimated by the ACS for each of the years estimated. Subtracting the estimated from the expected population produces a residual, which serves as the basis for emigration rates for specific time periods.

Net international migration of the foreign-born population is estimated by subtracting the number of emigrants from the number of immigrants. Age, sex, race, and Hispanic origin information is estimated for each group separately using data from census 2000 and the three-year ACS estimates from 2005 forward.

Net migration between the US and Puerto Rico is also estimated in two parts, immigration and emigration. For 2005 and later years, the ACS and the Puerto Rico Community Survey are the sources of information for the migration estimates.

Net movement of Armed Forces and their dependents is estimated using data from the Defense Manpower Data Center (DMDC) of the Department of Defense. DMDC provides data by age, sex, and Hispanic origin; for race data, the Census Bureau applies the race distribution by Hispanic origin from the Census 2000 active military population to this Armed Forces movement overseas component.

The population of the States must be estimated using less direct methods than those used to derive population estimates for the Nation as a whole because interstate migration, a large component of the change in State populations, cannot be accounted for as directly as births, deaths, and legal immigration. Administrative records are used to derive estimates of domestic migration.

For the under age 65 population, person-level data from Federal tax returns are used to identify how many tax filers and their dependents moved from one county to another between tax filings. The ratio of IRS domestic migrants to IRS non-migrants is applied to all potential migrants within each county to derive total domestic migration estimates.

Domestic migration in the age 65 and over population is derived using Medicare enrollment data. Changes in Medicare enrollment are assumed to mirror changes in the total age 65+ population. Year-to-year change in Medicare enrollment is used calculate year-to-year change in the total population. The resulting estimates are compared to data on total deaths and international migration in the age 65 and over; any residual is deemed domestic migration.

To create population estimates to serve as controls for surveys such as the CPS, the total population estimates are adjusted to remove armed forces personnel, the institutionalized population, and persons under the age of 16.

(For more information on the development of national and State population estimates, see the US Census Bureau documentation at http://www.census.gov/popest/topics/methodology/2009-nat-meth.pdf and http://www.census.gov/popest/topics/methodology/2009-st-co-meth.pdf.)

State Annual Population Controls

Each January, the Census Bureau provides revised population estimates for each State. These estimates use short-term projections, plus the previous year's estimates with revisions to both the previous vintage and the within-year monthly estimates. There are three types of revisions.

1. Components of change are revised because of the availability of updated input data. In addition, new projections are produced for the very recent dates for which no data are available. These revisions are routine and generally affect only recent years' estimates.

2. The Census Bureau may update the methods of estimating the components of population change and special population stock estimates (institutional and noninstitutional group quarters and military) used in the estimates procedure. Such revisions generally affect the data series cumulatively from the previous census forward.

3. In addition to updating the method of estimating the components of population change, the Census Bureau may revise the method of estimating population arising from the components of change and special population stock estimates. This type of change also affects the series from the census date forward.

Once BLS receives the population controls from the Census Bureau, they are used to adjust the State's CPS labor force data. This is done by multiplying each month's CPS employment and unemployment estimates by the ratio of that month's revised population value divided by the original population value. Under normal circumstances, the CPS unemployment rate is not affected because both the unemployment estimate (the numerator of the rate calculation) and the labor force estimate (the denominator of the rate calculation) have been adjusted by the same proportion.

Annual Population Revisions Affecting Substate Area Estimates

Substate area estimates benefit from the monthly and annual CPS population revisions through the additivity process which assures consistency with the State totals. Substate estimates utilize county and place total population data in the disaggregation of labor market area estimates into smaller geographic entities. Total population estimates for counties, incorporated places, and minor civil divisions are revised by the Census Bureau each year.

Annual Re-Estimation

Each year States are provided the schedule for benchmarking activities in a technical memorandum. States are instructed to replace the model input data with revised Current Employment Statistics (CES) employment, striker, unemployment insurance (UI) claimant, and Unemployment Compensation for Federal Employees (UCFE) claimant data for every period for which they have revisions or corrections. The CES nonfarm wage and salary estimates should reflect the most recent Quarterly Census of Employment and Wage (QCEW) benchmark and include any changes beyond the regular two years of CES benchmarking. Claims counts for the current year should be updated wherever possible.

At the end of each calendar year, the LAUS Census division models are re-estimated and their not-seasonally adjusted estimates are forced to sum to the updated national CPS not-seasonally-adjusted levels of employment and unemployment. After revised input data have been provided, the statewide model-based estimates are re-estimated and benchmarked to the newly revised Census division estimates. The selected area and balance of State models are then also re-estimated and the not-seasonally adjusted estimates are benchmarked to their newly revised statewide estimates.

Revised seasonally-adjusted estimates are also pro-rata adjusted. However, these estimates are not controlled in the same manner as are the not-seasonally adjusted estimates. Rather the same benchmark (or pro-rata) adjustment as was used for the not-seasonally-adjusted estimates is applied directly to the seasonally adjusted estimates. Seasonally adjusted estimates are therefore not additive to the estimates at higher levels of geography.

State groupings for model-based annual processing are on a Census division basis because real-time benchmarking is performed at the division level. Once all States in a division have entered their input data and the national office has validated them, the historical series for all States in the division are re-estimated and benchmarked. Typically, five years of model-based estimates are revised during annual processing.

In re-estimation, the entire time series is used to re-estimate every observation. The estimation process is run forward from the beginning of the time series, run backward so that earlier observations benefit from later data, and then run forward again to the end of the year. This is possible because LAUS models use a Forward Filter to modify each of the model's coefficients with the addition of each monthly observation.

The Forward Filter acts as weighting mechanism, which allocates how much a model's coefficients will change (and thus the estimates) with each new period's data. Because the Forward Filter works by evaluating each successive observation, one after another, the models can produce estimates both forward and backward through time. During the initial forward pass, each successive estimate incorporates all of the information from the earlier months in the time series. At the end of the time series, the estimation process is performed backward through time, so that each past month's estimate can benefit from the more recent data. Finally, the process is performed moving forward through time again, so that information from the first two passes can be incorporated into the entire time series.

During annual processing, the smoothed seasonal adjustment process which creates the official LAUS estimates uses a symmetric smoother of thirteen months, centered on the current estimate. In months that do not have six subsequent observations – i.e., July forward of the most recent production year – all future observations are used, with the weights adjusted according to the number of available months remaining. December of the most recent production year is smoothed using only the current and six previous months' data, identical to concurrent estimation. This method eliminates methodological discontinuities between December and January estimates.

Annual Processing of Substate Area Estimates

As in regular monthly estimation, substate area benchmarking is limited in data sources. However, substate estimates are improved by incorporating updated source data, revising prior inputs, adjusting for changes in UI procedures and coverage, incorporating changes in geographic definitions, and adjusting the areas to revised State estimates through additivity. In some cases, such as Handbook agricultural employment estimation, annual benchmarking of the series is most critical, given the lack of ideal source data for generating monthly changes at the labor market area level.

Benchmarking of substate area estimates is conducted during the first four months of each year for the previous two year's estimates. Since five years of model-based estimates are revised during annual processing, the remaining three years of substate estimates are ratio-adjusted to conform to the new model-based control totals. Occasionally, more than two years are revised, typically following changes in methodology or large revisions to population or other input data. The requirements and schedule for this activity are provided to the States via LAUS technical memoranda. In addition, specific instructions relating to the LSS Plus software to be used in benchmarking are provided to the regions and States, typically in January.

Incorporation of Substate Data Updates

The table below lists a number of Handbook inputs data, the reason for the revision or update and the source of the updated.

Input	*Reason for update*	*Source*
	Handbook Employment:	
Agricultural factors	New agricultural data available	BLS
CES employment	Latest QCEW benchmark	States
Atypical	New data available	States
	Handbook Unemployment:	
UI and UCFE claims	Revised counts	States
RRB claims	Revised counts	BLS
New entrants distribution ratios	New age group populations	BLS
Statewide new entrants	Updated population controls	BLS
Reentrants distribution ratios	New age group populations	BLS
Statewide reentrants	Updated population controls	BLS
	Additivity:	
Statewide estimates	Controlled to CPS	BLS
	Disaggregation:	
Employment/Population Ratios	New population data	BLS
New entrant disaggregation ratios	New age group populations	BLS
Reentrant disaggregation ratios	New age group populations	BLS

The two most important Handbook updates are to the CES employment and the UI claims data, both provided by the State.

The monthly sample-based employment estimates from the CES program are benchmarked each year to more complete payroll counts from the QCEW program. CES estimates are revised back to the previous year's benchmark and brought forward, using link-relative extrapolation to the end of the most recent calendar year. This means that employment estimates used in LAUS estimation are typically revised for the preceding twenty-one months.

For areas outside the scope of the CES program, QCEW data should be used for all time periods available. For the months after the most recent QCEW update, States should use the same projection procedures used to generates inputs for monthly estimation. However, all estimates based on QCEW data (e.g., projection of QCEW data by statistical modeling or chained monthly change factors) should be re-estimated using all available QCEW data, rather than using the inputs created during monthly estimation.

UI and UCFE claimant data for substate areas are also revised at benchmarking time. Continued claims without earnings are reviewed by State staff for the benchmarking period. Area claims counts are corrected, finalized, and checked against the statewide total. This is the opportunity to correct errors and omissions uncovered during the course of the year. It is also the time to incorporate the effect that changes in UI law or practice have had on the LAUS estimates.

The CPS State annual average data aggregated by agricultural region is used as the annual benchmark for agricultural employment. An annual change factor is created using the recently completed year average over the prior year annual average. Calculations of the monthly factors use the current July CPS number and monthly agricultural factor as the base in the equations because the majority of agricultural activity nationwide is experienced in July. The monthly factors are created for the July-to-July period using the July factor in the most recently completed calendar year; months after July are created using the July numbers from the current year. Consequently, the series revision for agricultural employment is for the July two years ago to the most recent July, and extended for August to December of the most recent year.

The new entrants distribution ratios (L14) and the reentrants distribution ratios (L12), which are needed to develop the handbook new entrants and reentrants estimates, are revised each year using the latest intercensal population estimates available from the Census Bureau. The L14 ratios, which allocate the Statewide new entrant estimates to LMAs, are updated using the latest 16-19 year old age population data, while the L12 ratios, which apportion the Statewide reentrant estimates to the LMAs, are updated using the latest 20 year and older population data. New L14 and 12 ratios are produced by the national office for all LMAs and are made available to States during annual processing.

New entrants (L15) and reentrants (L13) estimates are benchmarked to incorporate new Census population controls. Benchmarked entrants are created using a three step process. First, the CPS new entrant and reentrant estimates are population controlled. Next, the five year moving averages to compute LAUS entrant inputs are recalculated on the population controlled estimates. Finally, the LAUS inputs are controlled to national estimates of new entrants and reentrants and are provided to States.

The employment-to-population ratios used for employment disaggregation are updated with revised population data from the Census Bureau. Population data for counties, incorporated places, and minor civil divisions are revised each year. The revised population data are incorporated into employment/population indexed-share disaggregation ratios (R01) by the national office. The revised ratios are then provided to the States.

Ratios that disaggregate new entrants (R02) and reentrants (R03) to the county and city levels are also revised by the national office. The revisions incorporate new age-group population data from the Census Bureau.

In addition, annual processing of substate area estimates reflects the annual processing of model-based LAUS estimates. The modeled series provides the control totals for additivity adjustment of area estimates.

Incorporating Changes in Geographical Areas

Changes in population levels, both within metropolitan and non-metropolitan labor market areas and in cities and towns, can impact LAUS geographically defined areas. Population growth in areas can result in the creation of new a labor market area. Growth in areas contiguous to an LMA can result in a redefined LMA. These changes are identified by the US Office of Management and Budget near the end of the calendar years. In addition, cities and towns newly identified as having populations of 25,000 or more are also included as LAUS estimating areas during annual processing.

Substate Processing

BLS and States are each responsible for the creation and provision of certain data inputs, as well as certain activities. The BLS provides the States with title code listings (geographical listing of all areas a state re-estimates), new ratios for disaggregation, the handbook benchmark control file (State revised estimates from STARS), revised population data, annual agricultural factors, revised new entrant and reentrant statewide estimates, and revised entrant distribution ratios. BLS staff also review the transmitted data for accuracy and consistency.

States provide inputs for nonagricultural wage and salary employment, labor disputants, unemployment insurance claimants (regular UI and UCFE) and final payment recipients. States also enter inputs, generate revised estimates, and transmit revised estimates to other States as part of interstate data exchange and to the national office for review.

Revised substate data undergo a thorough review to ensure accuracy and consistency. In reviewing estimates prior to transmission, States should use the Benchmark Compare edits in LSS Plus. These edits will compare the newly benchmarked estimates created in the current annual processing with estimates for the same years produced during the prior year, as a share of the statewide (or Balance-of-State) totals. States are urged to research large changes displayed in the edit output and provide comments or correct the data, whichever is appropriate. (See the appendix to this chapter “Guidelines for Reviewing Benchmark Compare Edit Results” for more information on evaluating the results of the Benchmark Compare edits.)

Appendix to Chapter 11:
Guidelines for Reviewing Benchmark Compare Edit Results

Background

The Benchmark Compare edit is used to evaluate newly benchmarked estimates by comparing them with the pre-benchmarked estimates for the latest year or with previously benchmarked estimates for earlier years. For each year, the two sets of data for the same time period and same geography are compared. Given the assumption that the prior set of data is correct, changes in the new set of data are examined in the context of the LAUS estimation methodology and the expected revisions to inputs.

During annual processing--that is, benchmarking--the statewide (and Balance-of-State where appropriate) controls change due to new population controls, reestimation, and benchmarking to new national CPS totals. However, since the Benchmark Compare edits look at an area's employment and unemployment levels as shares of the State (or Balance-of-State) totals, the changes at the statewide level have no impact on the numerical values displayed in the edit results. In other words, if substate inputs do not change at all, the percentage changes in this edit will all be zero regardless of the magnitude of the end-of-year benchmark revision at the State (or Balance-of-State) level. [This is similar to the monthly Questionable Data Edits for labor market areas (LMAs), which also examine the change in an area's share of the State (or Balance of State).] Changes shown in the Benchmark Compare edits arise from revisions to substate inputs of different magnitudes (or directions) in different areas that affect both Handbook estimation and disaggregation.

The edit results need to be evaluated in the context of the following: (1) the inputs that are expected to change; (2) the normal expected magnitude of those changes; (3) any information about abnormalities for a particular area or time period (such as major claims data corrections or large population estimates revisions); (4) the size and nature of the area (for example, a college town or agricultural center); (5) the methodology used to derive the estimates for the area; and (6) the year in question.

Substate area input changes

A. Employment

Nonagricultural wage and salary employment (M01) generally is revised for the latest 18-21 months. For substate areas for which Current Employment Statistics (CES) estimates are created, earlier time periods may be corrected. The "Recent Corrections" webpage maintained by the CES program lists corrections (that is, changes other than routine revisions) at http://www.bls.gov/sae/saerevisions.htm. In metropolitan areas, the CES revision is generally 2-3 percent or less. In micropolitan or small LMAs, the percentage revision can be larger, though changes approaching 10 percent should be researched for all but the very smallest LMAs. Changes may follow a quarterly pattern (as in the QCEW) and, if large, usually should be consistently in one direction--up or down, not a mixture. This component affects LMAs directly and all disaggregated areas within them indirectly. Changes to this component have a moderate impact, especially in small areas.

Agricultural employment changes from August in the second-to-last year in the series forward, based on estimation factors provided by BLS. Note that a fair number of States use atypical procedures for estimating agricultural employment and, thus, may show a different pattern. This component affects LMAs directly and all disaggregated areas within them indirectly. The impact of changes to this component can be substantial in small, agricultural areas, but is virtually zero in large metropolitan areas.

Employment-population indexed-share disaggregation ratios are revised by BLS for all counties in multi-county areas and cities that use this procedure. This input affects all months of a given year by the same degree, with the impact varying noticeably by year in relatively fast-growing (or rapidly declining) areas. This revision has a modest impact, but it can be proportionately large, especially in small areas where the population is changing at a pace very different from that of other counties in the LMA or cities in the county. Changes tend to be largest in the latest two years, reflecting population data availability for one additional year.

B. Unemployment

Continued claims inputs for the latest year should be based on a second or third, and generally more complete, count of claims. This would generally raise Handbook unemployment levels, which translates into some areas increasing and others decreasing after additivity. The magnitude of the difference between first and second or second and third counts of claims at the statewide level, available from STARS, can be used as a guide. This input affects LMAs and claims-disaggregated areas directly and areas within them indirectly. The impact is generally moderate, but may be large for small areas.

New statewide entrant totals generally are used for the latest two years. This should affect the entrant component in all areas in the same direction, by the same proportion. It has very little impact in most areas, though it has created large percentage differences in extremely small areas.

Beginning in 2007, year-specific ratios were used for the distribution of unemployed entrants from statewide totals to additivity areas and the disaggregation of entrants to the county and city levels based on intercensal age-group population estimates produced by the Census Bureau. The new ratios better reflect current population trends, accounting for migration and mortality, as opposed to merely mortality in the prior approach. The impact of annual revisions to this component is small in most areas.

Edit results suggesting problems

Large percentage changes often indicate problems. These include, but are not limited to, changes of over 10 percent. Generally, the largest changes historically have been employment revisions for the latest 18-21 months in very small areas, though unemployment revisions based on second counts of claimants in the most recent year may be similarly large. Any of the following may indicate problems: (1) employment changes of more than about 2 percent in metropolitan (CES) areas; (2) employment changes of more than about 3 percent in any LMA for months before March of the second-to-last year; (3) large changes in some months and very small changes in other months of the same year (although estimates for December 2010 may have larger revisions than prior months because the December inputs were not revised as part of monthly processing); and (4) large variations in the pattern of differences, particularly for disaggregated areas.

Widespread *lack* of change, when changes are expected, can indicate problems as well. Examples include: (1) zero changes to LMA employment, especially for small areas--this actually happened when one State did not update nonfarm wage and salary employment for small areas; (2) zero changes to disaggregated county-level employment--this may indicate the State mistakenly used the old disaggregation ratios rather than the revised ones; (3) zero changes to just unemployment in the latest year--this may indicate that the State neglected to use revised counts of claims data; and (4) zero changes to both employment and unemployment in December [or any month(s)] of the latest year--this actually happened as a result of a State mistakenly retransmitting an old "production" LAUS data file and the data over-writing benchmarked data in LNS.

For the third-to-last (or earlier) year in the series--not required as part of 2010 annual processing--no input revisions are generally expected, though, total nonfarm wage and salary employment from the CES program may be corrected for certain areas.

Census-shared cities should follow the same pattern of the areas from which they are disaggregated. If estimates for the derivation area change, it is not necessary (or appropriate) to question the census-shared area. However, if a census-shared area does not move in line with its derivation area, that indicates a problem and the census-share ratios and geographic relationships should be checked carefully.

Notes

The Benchmark Compare edit output options consist of screens showing (1) an employment change summary ("Employment" under the "Bmk Com" menu in LSS Plus), (2) an unemployment change summary ("Unemployment"), and (3) employment and unemployment change details ("Detailed Table"). While not required, States are encouraged to enter comments for areas that appear questionable. The summaries are useful for obtaining an overview of the changes, including the pattern by month for an area, while the detail is useful to see the specific employment and unemployment values, both before and after benchmarking. The summaries also include a separate window that shows details for a single month and area. In LNS (but not LSS Plus), the Benchmark Compare detail edit output can be sorted, which allows the analyst to easily identify the largest changes in each direction in relative terms. In LSS Plus, the Detailed Table output can be saved (File > Save As …) in numerous formats, including Excel, and the resulting file can be sorted in a similar manner.

12 *STARS Output Tables*

Introduction

All States use the monthly web-based system called STARS (State Time Series Analysis and Review System) each month to produce their labor force estimates and to transmit the estimates to the BLS national office.

In producing estimates, States provide input data such as CES employment, strikers, and unemployment insurance claims. These data are used not only to produce the estimates, but are also stored in a national office database and are available through STARS, along with data from the CPS, for use in labor force analysis, model interpretation, and other research.

Each time STARS is run, it provides both BLS and State analysts with output containing a series of tables and graphs with essential information for studying employment trends, preparing releases, or understanding the nature of a month-to-month change in model estimates.

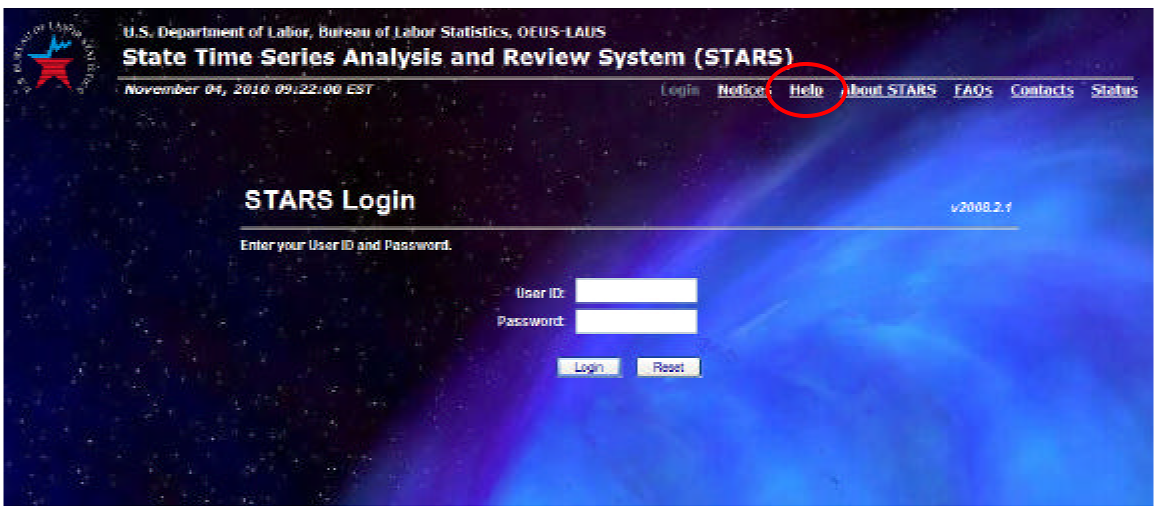
The primary functions of STARS are to:

- *integrate State/BLS data entry.*
- *calculate estimates of labor force, employment, unemployment, and the unemployment rate for the current month and revised estimates for the previous month for States and selected areas. (See Chapter 8 for geographic information on area and balance of State models.)*
- *provide error measures, analytical charts and tables.*
- *allow transmittal of the estimates to BLS.*

CPS data are loaded into STARS at the national office as soon as the monthly national press release is issued. State analysts can enter their inputs when they become available, review their listings, and redo them if an error is found. States have the option to run estimates with preliminary numbers before the actual data are available without transmitting the estimates to BLS, and, when they are correct and verified, final LAUS estimates are transmitted to BLS through the STARS system.

A STARS User's Guide is available to assist users in creating and updating their monthly model-based estimates using the web-based STARS interface. The user's guide is designed to introduce new users to the STARS interface and provide them with the basic skills required for operating STARS.

The latest version of the STARS User's Guide is available at the STARS website under the **Help** link on the login screen menu. Users are not required to log into STARS to access it. The user's guide can be viewed online, printed, or downloaded by individual chapter or in its entirety in PDF format. The guide can also be referenced while a user is logged into the system.



STARS Review Estimates

The **Review Estimates** link in the STARS Monthly Processing Menu enables users to review current, finalized estimation output tables, as well as historical estimation output tables for the selected State, sub-state areas (i.e., metropolitan areas, balance of State) and Census Division. Official STARS estimation output tables are available from January 2005 through the most recent reference month. The output tables can be viewed online, downloaded, or printed. *(See pages 3-24 through 3-29 of the STARS User's Guide.)*

Below is the header page that precedes the estimation output tables. It provides basic information about the estimation run. Starting at the top, it displays the reference month/year and the State. Then it lists the dates and times for when the inputs were entered, when the division estimates were created, when the inputs were finalized and when the division was finalized. Next, it provides a quick look at the inputs that were entered for the current and previous months. There is also a State Comments section that allows a State to document their run in the output. In this example the analyst commented on a possible employment input error. States are encouraged to use this section to identify their runs. These comments are also very helpful to BLS analysts.

```
***************************************************************************
STARS Official Estimation Output for Sep 2010, State: MINNESOTA

Inputs Entered:      2010-10-14 14:46:43
Division Estimation: 2010-10-14 17:27:36
Inputs Finalized:    2010-10-15 09:51:16
Division Finalized:  2010-10-15 09:51:16
***************************************************************************

Inputs Entered:
---------------
Sep 2010 CES nonag w/s employment:         2661159
Aug 2010 CES nonag w/s employment:         2676799

Sep 2010 CES adjustment for major strikes: 0
Aug 2010 CES adjustment for major strikes: 0

Sep 2010 UI continued claims w/o earnings: 40633
Aug 2010 UI continued claims w/o earnings: 49940

Sep 2010 UCFE claims w/o earnings:         209
Aug 2010 UCFE claims w/o earnings:         162




Possible Error Comments entered:
CESEM for Sep 2010: As provided by CES
```

Following the header page are 12 tables and 6 sets of charts.

- Table 1 includes the basic estimates which include levels and ratios for the labor force, employment and unemployment, along with the error ranges for the unemployment rate and the over-the-month changes.
- Table 3 provides the over-the-year changes in the estimates along with the standard errors for the over-the-year-changes.
- Tables 2, 7 and 8 provide error measures for the estimates and the model components.
- Tables 4-6 display the changes in the model components and the CPS.
- Tables 8 and 10 provide information on the data inputs.
- Tables 9 and 10 show the seasonal factors. Table 11 shows the model diagnostics and prediction error.
- Table 12 displays the pro-rata benchmark factors.
- Figure 1 charts the unemployment rate.
- Figure 2 graphs the unemployment level and figure 3 shows the employment level. Figures 4-5 are dedicated to the seasonal factors for unemployment and employment estimates and their inputs.
- Figure 6 displays the CPS population.

Explanations and examples of the tables and figures are provided on the following pages.

STARS Table 1: Year-to-Date Model Estimates

Table 1 is comprised of two sets of tables that present year-to-date information on the LAUS model estimates for the Smoothed Seasonally Adjusted (SSA) series and the not seasonally adjusted (NSA) series. Tables 1a (SSA) and 1b (NSA) provide a quick comparison of current estimates to earlier estimates.

Tables 1a and 1b indicate when the monthly changes are significant at the 5 percent level and the 10 percent level. The error range for the unemployment rate at the 90 percent confidence interval is also displayed. Developing trends and month-to-month changes can be observed. A comparison of the smoothed seasonally adjusted and not seasonally adjusted series can be made. Table 1a is shown below.

STARS Monthly Estimation Tables, Official
Minnesota, 2010
(runtime=14OCT10:17:25:43)

Table 1: Year-to-Date Benchmarked Model Estimates

Table 1a: Smoothed Seasonally Adjusted
(SSA Est. appear as the seasonally adjusted in BLS and State official publications and databases)

	Labor Force		Employment		Unemployment		
Month	Level	LFP	Level	EP	Level	Rate	Error Range+
JAN	2,970,308	72.5	**2,754,352	* 67.2	215,956	7.3	6.6– 8.0
FEB	2,979,529	72.6	* 2,763,512	67.4	216,017	7.3	6.6– 8.0

***** Significant change at 5% level***
**** Significant change at 10% level***
+ 90% Confidence Interval

Tables 1c (SSA) and 1d (NSA) show the over-the month level changes and the over-the month percent changes for the labor force, employment, unemployment and the unemployment. Table 1c is shown below.

STARS Monthly Estimation Tables, Official
Minnesota, 2010

Table 1c: Over-the-Month-Change
Smoothed Seasonally Adjusted
(Change on rounded data)

	Labor Force				Employment				Unemployment			
	Level		LFP		Level		EP		Level		Rate	
Month	Change	%	Change	%	Change	%	Change	%	Change	%	Change	%
JAN	8,071	0.3	0.2	0.3	**11,382	0.4	* 0.2	0.3	–3,311	–1.5	–0.1	–1.4
FEB	9,221	0.3	0.1	0.1	* 9,160	0.3	0.2	0.3	61	0.0	0.0	0.0

STARS Table 2: Standard Errors for Year-to-Date Model Estimates

This table shows the monthly standard errors for each of the labor force components displayed in Table 1. The standard error refers to the variability of an estimate and is used in the construction of confidence intervals.

Table 2: Standard Errors for Year-to-Date Model Estimates

Table 2a: Smoothed Seasonally Adjusted

Month	Std of LF	Std of LFP	Std of EM	Std of EP	Std of UN	Std of UR
JAN	34,113	0.83	32,392	0.79	10,696	0.37
FEB	34,356	0.84	32,590	0.79	10,873	0.37

Table 2b: Not Seasonally Adjusted

Month	Std of LF	Std of LFP	Std of EM	Std of EP	Std of UN	Std of UR
JAN	35,078	0.86	33,192	0.81	11,349	0.40
FEB	35,087	0.86	33,191	0.81	11,377	0.40

STARS Table 3: Over-the-Year Changes

Table 3 consists of four tables. The first two tables show over-the-year changes for the each of the basic types of labor force estimates for the smoothed seasonally adjusted series (Table 3a) and the unadjusted series (Table 3b). Both the level of change and the percent change are given. The data for all years prior to the current year reflect the annual updating. The over-the-year changes give an indication of the state's labor force trends.

Table 3a: Smoothed Seasonally Adjusted
(Change on rounded data)

	Labor Force				Employment				Unemployment			
	Level		LFP		Level		EP		Level		Rate	
Month	Change	%	Change	%	Change	%	Change	%	Change	%	Change	%
JAN	5,133	0.2	−0.4	−0.5	4,043	0.1	−0.4	−0.6	1,090	0.5	0.1	1.4
FEB	10,704	0.4	−0.3	−0.4	23,660	0.9	0.1	0.1	−12,956	−5.6	−0.4	−5.2

Table 3b: Not Seasonally Adjusted
(Change on rounded data)

	Labor Force				Employment				Unemployment			
	Level		LFP		Level		EP		Level		Rate	
Month	Change	%	Change	%	Change	%	Change	%	Change	%	Change	%
JAN	18,941	0.6	−0.1	−0.1	21,054	0.8	0.0	0.0	−2,113	−0.9	−0.1	−1.2
FEB	15,982	0.5	−0.2	−0.3	30,511	1.1	0.2	0.3	−14,529	−5.7	−0.5	−5.8

The second set of tables provides the standard errors for the over-the-year-change associated with the above tables. The standard errors for the over-the-year-changes in the smoothed seasonally adjusted series are found in Table 3c and the standard errors for the unadjusted series are in Table 3d.

Table 3: Standard Errors for Over-the-Year-Change Model Estimates

Table 3c: Smoothed Seasonally Adjusted

Month	Std of LF	Std of LFP	Std of EM	Std of EP	Std of UN	Std of UR
JAN	25,845	0.63	23,430	0.60	10,907	0.40
FEB	26,041	0.63	23,568	0.60	11,077	0.41
MAR	26,145	0.64	23,628	0.60	11,192	0.41

Table 3d: Not Seasonally Adjusted

Month	Std of LF	Std of LFP	Std of EM	Std of EP	Std of UN	Std of UR
JAN	27,071	0.66	24,402	0.60	11,721	0.41
FEB	27,146	0.66	24,454	0.60	11,785	0.41

Tables 4-6: Components of Change

These tables show the components of the unemployment rate, unemployment and employment of both the model and the CPS and how they changed.

Table 4 displays the components of change for the unemployment rate. Table 4a contains the level, trend, seasonal, and smoothed seasonal change for the model. Table 4b contains the changes for the CPS, the signal and the noise. The same items are shown for the unemployment level in Table 5 and the employment level in Table 6.

Since each model estimate is the sum of its variable components, the analyst can see the influence that each variable has on the total estimate by examining the components of change. It may be that one input variable is the primary influence in the current over-the-month change in the estimate.

The analyst can determine if the variable components are behaving in their "normal" way for this time of year by comparison with their past behavior. Historical components of change can be computed using data from the **Extract Data** link in the STARS Monthly Processing Menu.

Table 4: Components of Change Unemployment Rate

Table 4a: Model

	Signal		Trend			Seasonal
Month	Level	Change	Smooth Change	Res Change	Total Change	Change
JAN	8.155	**0.804	−0.132	−0.011	−0.143	**0.946
FEB	8.080	−0.075	−0.003	0.146	0.143	−0.218

Table 4b: CPS

Month	CPSUR	CPSUR Change	Signal Change	Noise Change
JAN	8.060	0.486	**0.804	−0.318
FEB	8.090	0.031	−0.075	0.106

***** Significant change at 5% level***
**** Significant change at 10% level***

Table 5: Components of Change Unemployment Level

Table 5a: Model

	Signal		Trend			Seasonal
Month	Level	Change	Smooth Change	Res Change	Total Change	Change
JAN	241,002	**24,486	−3,311	653	−2,658	**27,145
FEB	239,116	−1,886	629	4,144	4,773	−6,660

Table 5b: CPS

Month	CPSUN	CPSUN Change	Signal Change	Noise Change
JAN	235,439	13,032	**24,486	−11,454
FEB	236,788	1,349	−1,886	3,235

***** Significant change at 5% level***
**** Significant change at 10% level***

Table 6: Components of Change Employment Level

Table 6a: Model

	Signal		Trend			Seasonal
Month	Level	Change	Smooth Change	Res Change	Total Change	Change
JAN	2,714,361	−14,648	**11,382	12,832	**24,214	**−38,861
FEB	2,720,367	6,006	* 9,075	−6,956	2,119	3,887

Table 6b: CPS

Month	CPSEM	CPSEM Change	Signal Change	Noise Change
JAN	2,685,721	−28,371	−14,648	−13,723
FEB	2,690,016	4,295	6,006	−1,711

***** Significant change at 5% level***
**** Significant change at 10% level***

Tables 7-8: Standard Errors

Table 7 shows the standard error for the model components of change for both the smoothed seasonally adjusted and not seasonally adjusted series.

Table 7: Standard Error for Model Components of Change

	Not Seasonally Adjusted				Smoothed Seasonally Adjusted			
Month	UR	UN	EM	EP	UR	UN	EM	EP
JAN	0.24	6,808	11,364	0.28	0.10	2,945	5,263	0.13
FEB	0.24	6,886	11,351	0.28	0.10	2,987	5,296	0.13

Table 8a lists the monthly CPS estimates and table 8b shows the standard error for the CPS levels and changes.

Table 8a: CPS Estimates

Month	CPSUR	CPSUN	CPSEP	CPSEM	CPSPOP
JAN	8.1	235,439	65.5	2,685,721	4,099,102
FEB	8.1	236,788	65.6	2,690,016	4,101,364

Table 8b: CPS Standard Errors for Level and Change

	CPSUR		CPSUN		CPSEM	
Month	Rate	Change in Rate	Level	Change in Level	Level	Change in Level
JAN	0.71	0.78	20,259	22,266	49,349	39,381
FEB	0.71	0.79	20,314	22,590	49,313	39,465

Tables 9-10: State Data, Trend and Seasonal Factors

Table 9 displays the seasonal factors that are applied to the unemployment rate, the unemployment level, the employment level and the employment-population ratio to create the benchmarked seasonally adjusted estimates, which are inputs to the official smoothed seasonally estimates.

Table 9: Seasonal Factors (Concurrent)

Month	Rate	Unemployment	Employment	EP
JAN	0.89	24,486	−50,365	−1.23
FEB	0.67	17,825	−46,479	−1.13

In table 10 the levels, trends and seasonal factors of the UI claims and CES inputs are displayed.

Table 10: State Data, Trend & Seasonal Factors

	UIClaims			CES		
Month	Level	Trend	Seasonal Factor	Level	Trend	Seasonal Factor
JAN	96,573	76,681	19,892	2,580,734	2,628,098	−47,364
FEB	97,992	77,186	20,806	2,580,093	2,631,592	−51,499

Table 11: Diagnostics, Prediction Error and State Inputs

Table 11 is useful for checking new data for unusual values. Before receiving new data into the model, values are predicted from the accumulated historical experience of the CPS data and State inputs. Observations that are far from the predicted value can identify outliers, which are unusually large changes; inliers, which are unusually small changes; or incorrect data due to mistakes.

Table 11: Diagnostics, Prediction Errors
Pred. Error = Actual-Predicted
Table 11a: CPS

	Unemployment		Employment	
Month	Level	Standard	Level	Standard
JAN	−5,661	−0.28	9,922	0.29
FEB	9,924	0.48	−19,128	−0.56

Table 11b: State Inputs

	UIClaims		CES	
Month	Level	Standard	Level	Standard
JAN	−297	−0.12	34,942	5.71
FEB	486	0.20	6,071	0.99

Table 12: Pro-Rata Benchmark Factors

State levels are pro-rated to sum to the Division totals. Table 12 displays the pro-rata factors applied to the State model estimates.

Table 12: ProRata Benchmark Factors
Division Control/Sum of Original Models

	Unemployment	Employment
Month	ProRata Factors	ProRata Factors
JAN	1.03164	0.99182
FEB	1.04049	0.99269

Figures 1-6

Also included in the STARS output are charts that visually display the LAUS estimates, the input data and the seasonal factors.

Figure 1 Unemployment Rate

Figure 1a charts the smoothed seasonally adjusted LAUS unemployment rates, the benchmarked seasonally adjusted LAUS unemployment rates, the unbenchmarked seasonally adjusted LAUS unemployment rates and the seasonally adjusted claims rates. Figure 1b displays the unadjusted LAUS unemployment rates, the CPS unemployment rates and the claims rates.

Figure 2 Unemployment

Figure 2a charts the smoothed seasonally adjusted LAUS unemployment levels, the benchmarked seasonally adjusted LAUS unemployment levels, the unbenchmarked seasonally adjusted LAUS unemployment levels and the seasonally adjusted claims levels. Figure 2b displays the unadjusted LAUS unemployment levels and the CPS unemployment levels and the claims levels.

Figure 3 Employment

Figure 3a charts the smoothed seasonally adjusted LAUS employment levels, the benchmarked seasonally adjusted LAUS employment levels the unbenchmarked seasonally adjusted LAUS employment levels and the seasonally adjusted CES employment levels. Figure 3b displays the unadjusted LAUS employment levels, the CPS employment levels and the CES employment levels.

Figures 4-5 Seasonal Factors

Seasonal factors indicate the expected seasonal variation in the series. Often differences in the seasonal patterns help to explain the difference between the CPS and State inputs series in their direction and magnitude of change.

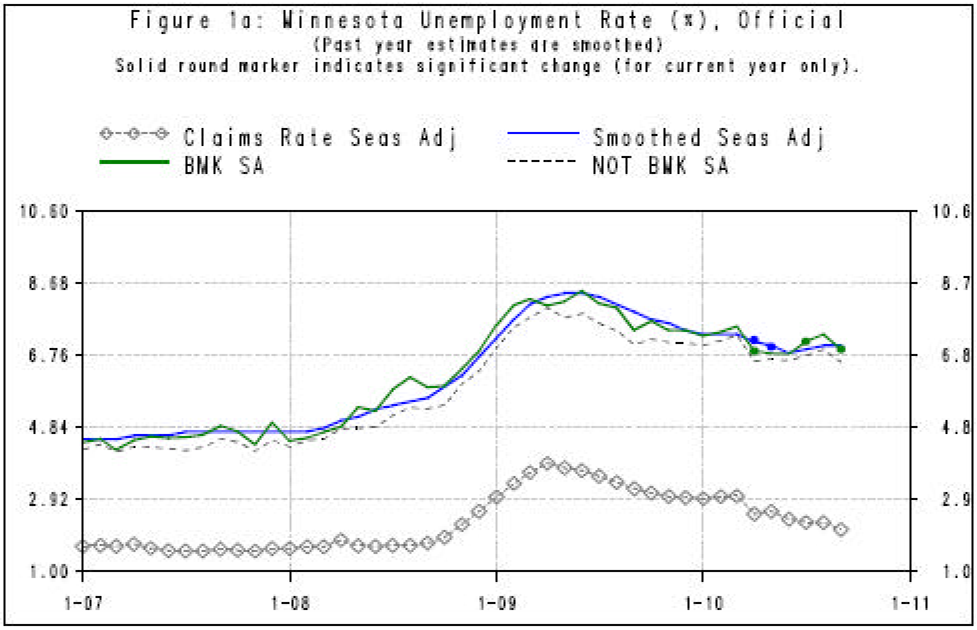
Figure 4a shows the seasonal factors and the seasonal means for the LAUS unemployment series. Figure 4b shows the seasonal factors and the seasonal means for the claims series.

Figure 5a shows the seasonal factors and the seasonal means for the LAUS employment series. Figure 5b shows the seasonal factors and the seasonal means for the CES employment series.

Figure 6 CPS Population

Figure 6 charts the CPS population estimate.

Figure 1: Unemployment Rate



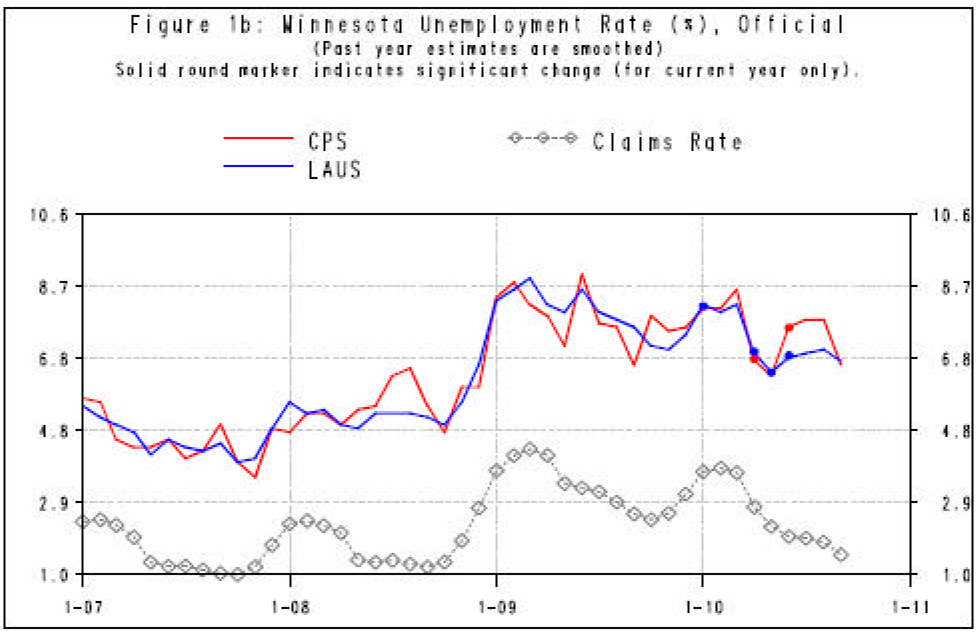
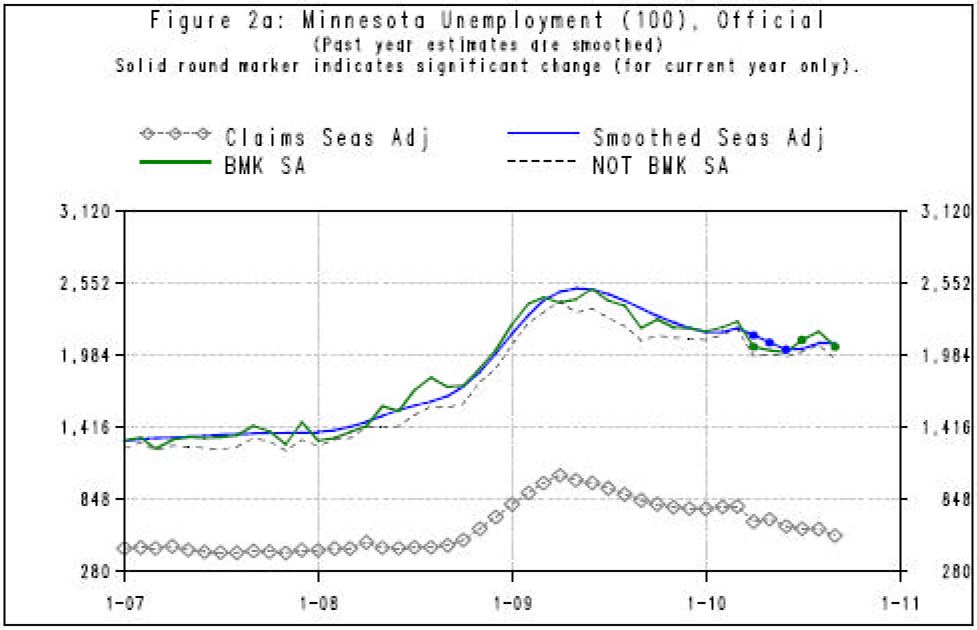


Figure 2: Unemployment Level



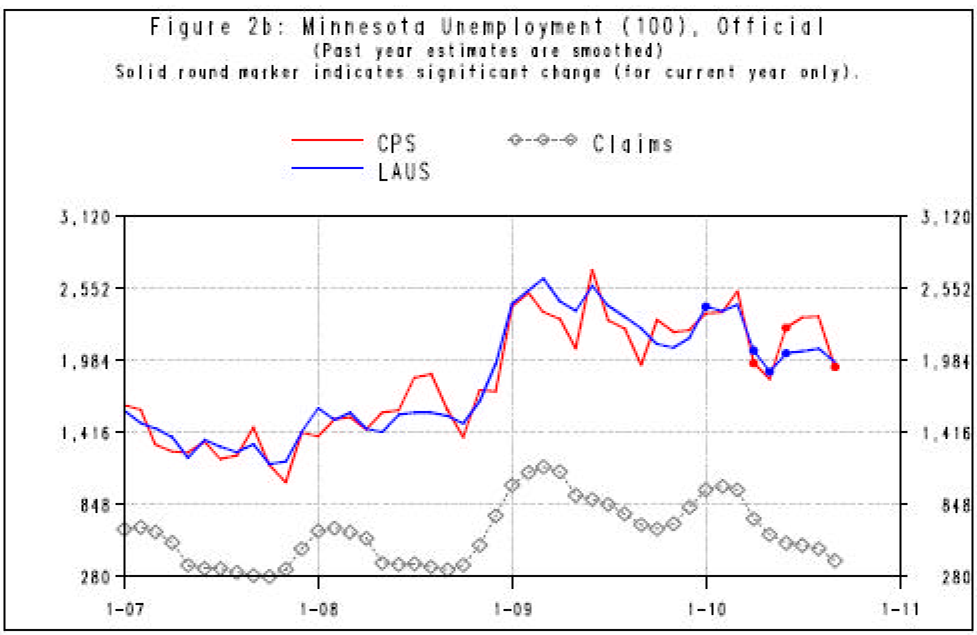
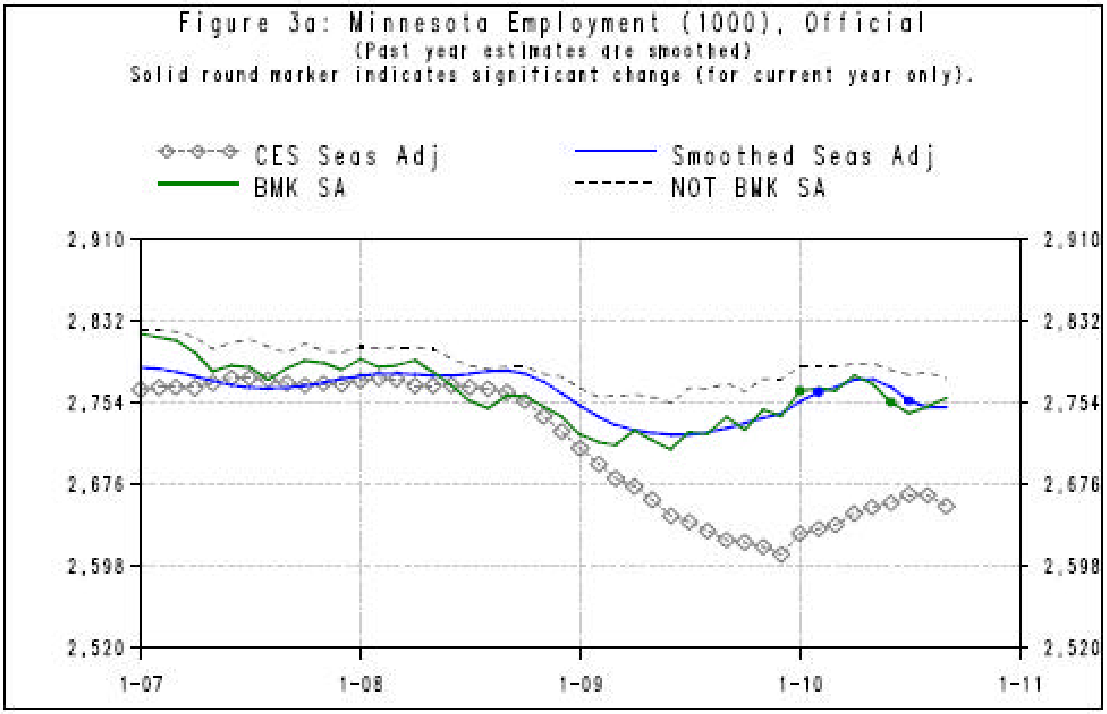


Figure 3: Employment Level



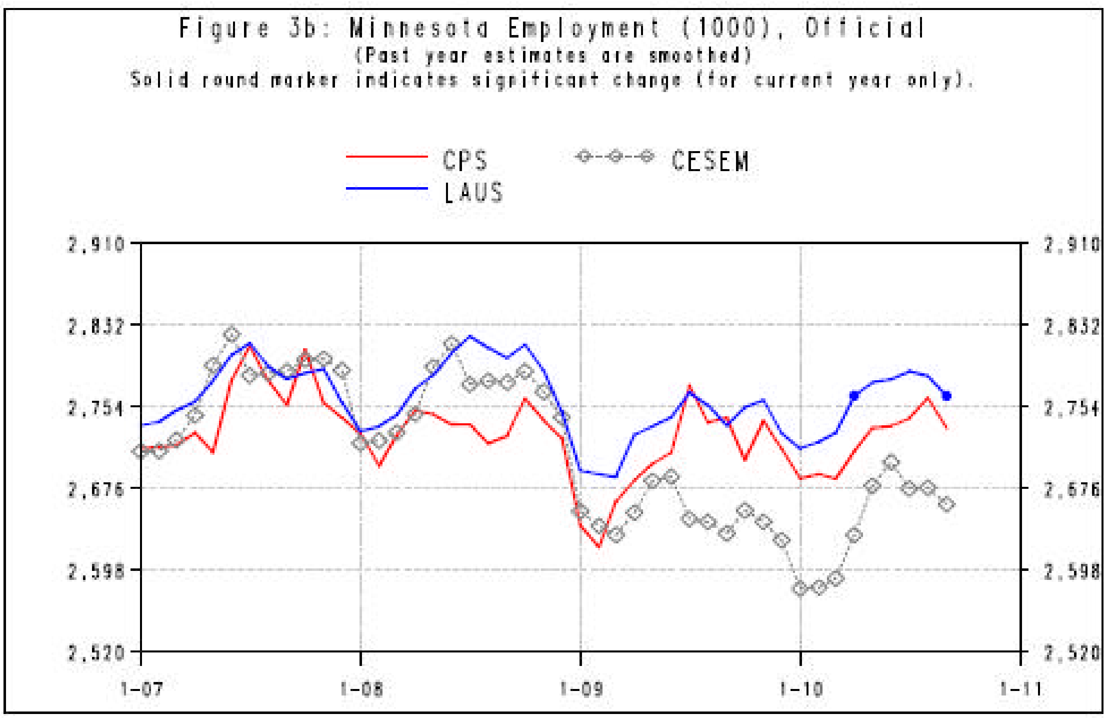
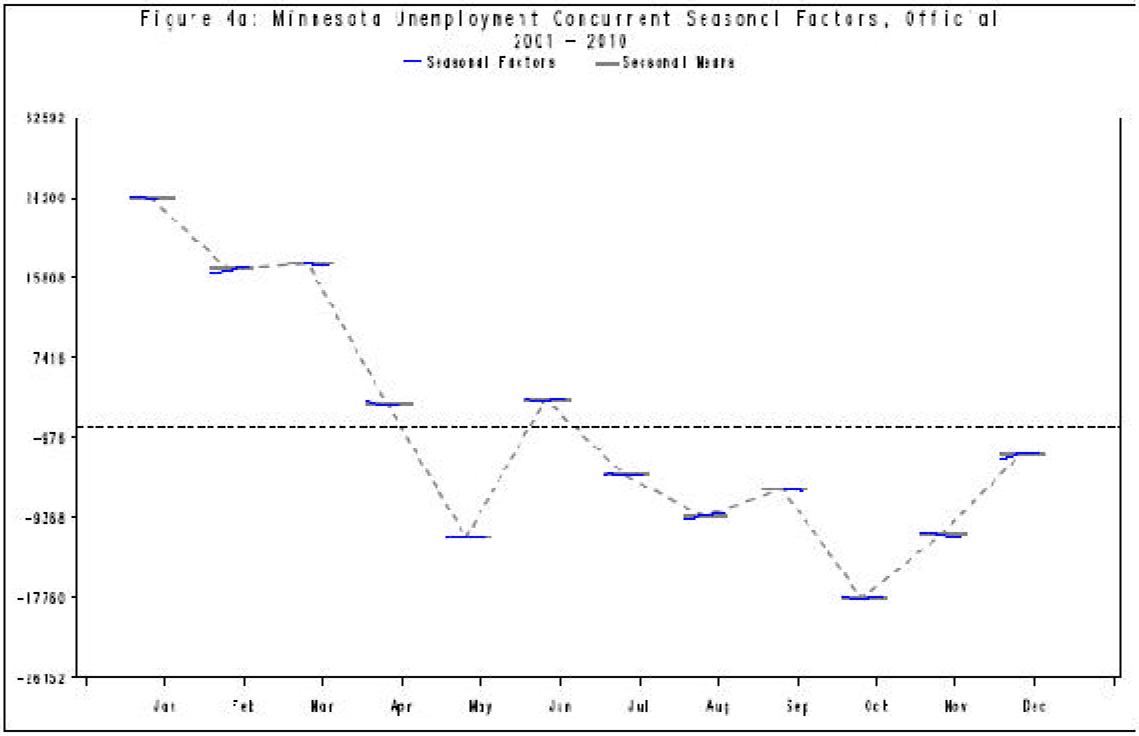


Figure 4: Unemployment Seasonal Factors



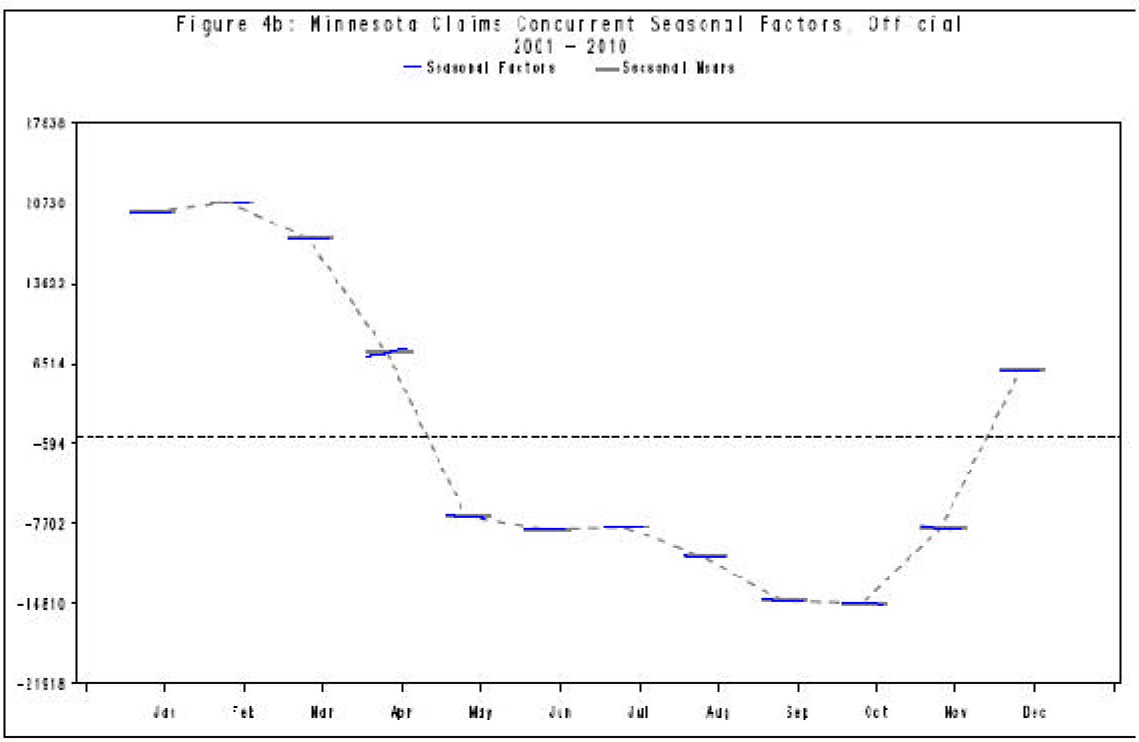
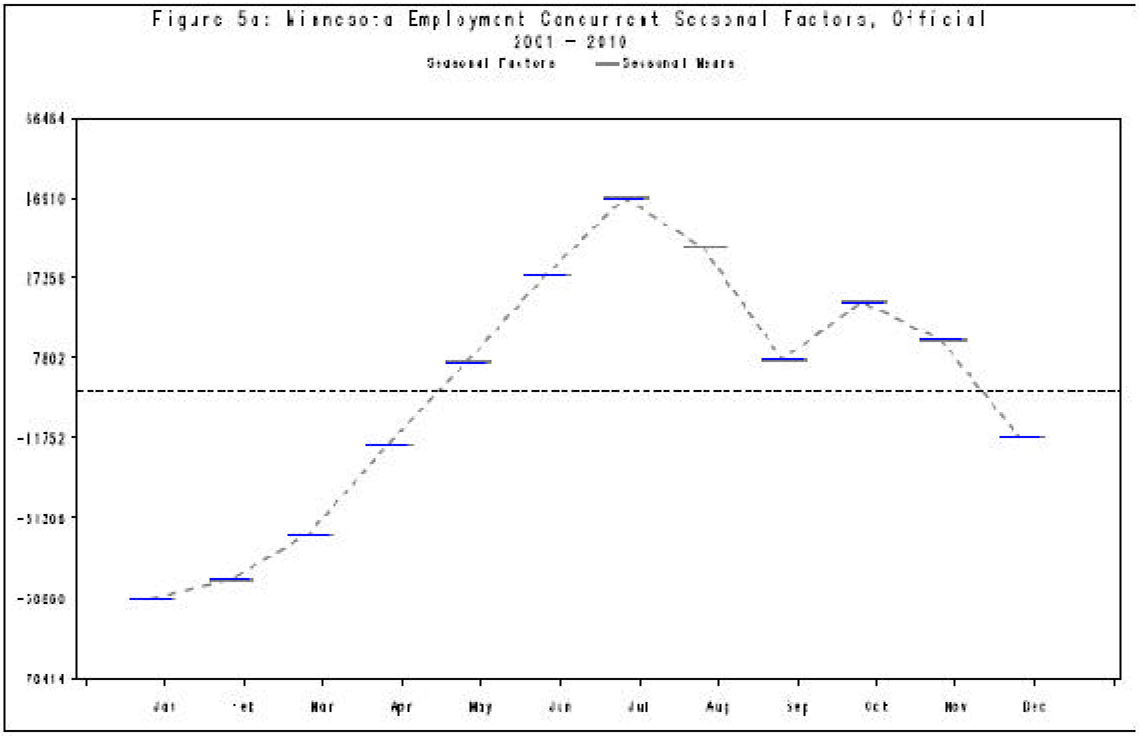


Figure 5: Employment Seasonal Factors



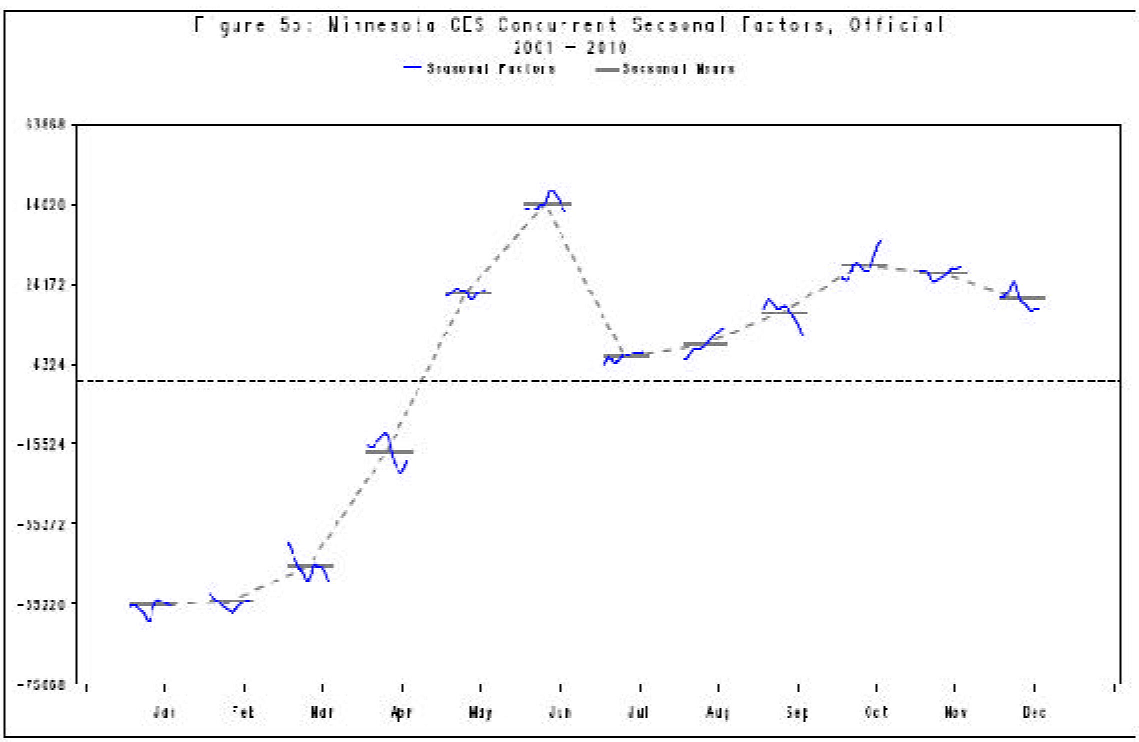
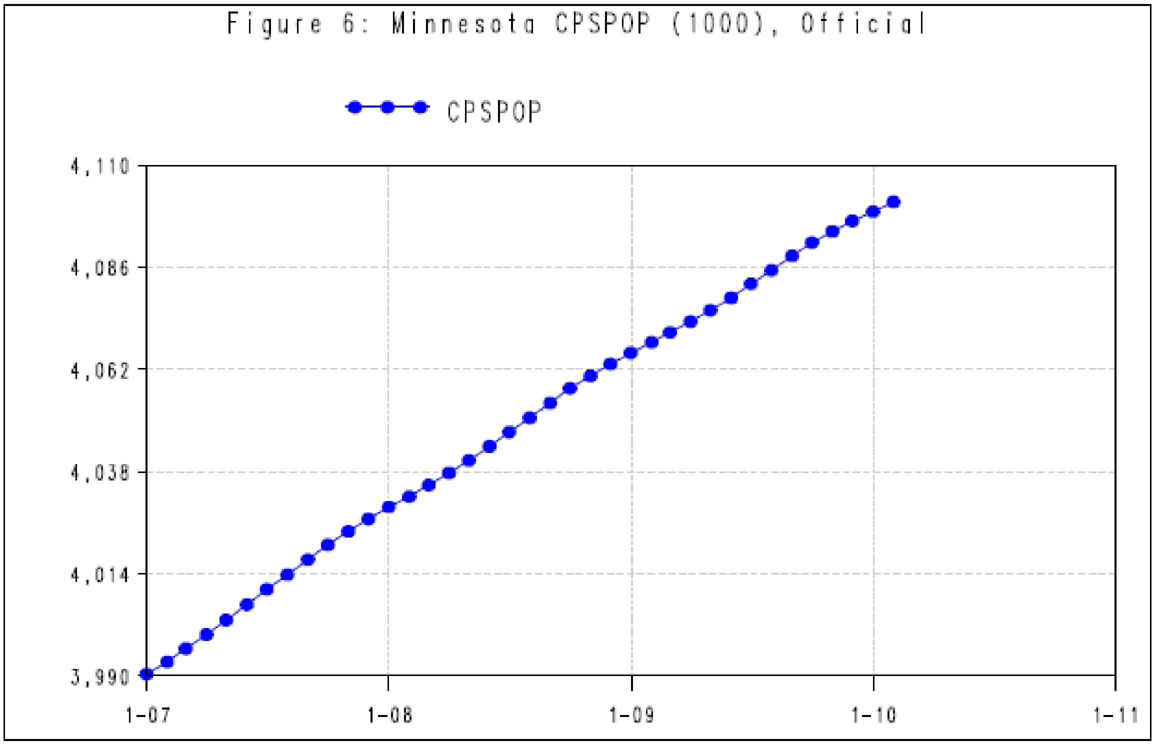


Figure 6: CPS Population



Appendix
Notes for the STARS Tables

What are the STARS Tables?

- They are tools for understanding the LAUS model-based labor force estimates and relating these estimates to the State's and/or area's economy.
- They provide information about the estimates.
- They provide information about the strengths and limitations of the estimates.
- They relate various pieces of information regarding the CPS and model-based estimates to one another so that a more comprehensive understanding of the estimates is achieved.

What are the STARS Tables used for?

- They provide guidance for relating the estimates to the area's overall economy.
  - They provide a snapshot of the current calendar year's estimates.
  - They provide a snapshot of the current calendar year's estimates as they relate to the previous month and year.
  - They provide a snapshot of the volatility of the current year's estimates using statistical measures of reliability.
  - They provide error measures for the estimates – the point estimates themselves and the over-the-month and change in the estimates.
- They provide guidance for relating the estimates to their component parts.
  - They provide a monthly decomposition of the over-the-month change in the CPS estimates into its principle components – signal and noise.
  - They provide a monthly decomposition of the over-the-month change in the Model estimates into their principle components – signal, trend, and seasonal.
  - They provide a monthly decomposition of the over-the-month change in the trend into change in the smoothed estimates and a residual.
- They provide guidance regarding normal and abnormal seasonal movements in the model estimates and the state-supplied model inputs.
  - Seasonal factors for model employment and unemployment estimates
  - Seasonal factors for CES and UI claims state-supplied model inputs.
- They provide guidance regarding possible extreme values for CPS and state-supplied model inputs.
  - Prediction errors for CPS and state-supplied model inputs.
  - Standardized prediction errors for CPS and state-supplied model inputs.
- They provide guidance regarding the impact of real-time benchmarking.
  - Unusually large changes in the pro-rata benchmarking factors from one month to the next.
- They provide graphs of the last three-plus years for CPS, Model, State-supplied model inputs and CPS population so that the user can place the behavior of the current calendar year's data in a larger context. This provides a quick an easy way to relate the current month's estimates with those of the recent past.
  - The impact of unusual CPS and/or state-supplied model inputs on the model-based estimates can be observed and evaluated.
  - Overall trends, as well as departures from these trends can be observed.
  - Concurrent seasonal factors can be compared with the historical norms for a given month.

Appendix
Notes for the STARS Tables

Using the STARS Tables

- Table 1a. This table provides a snapshot of the current year's smoothed seasonally adjusted estimates, including indicators of significant over-the-month change.
  - This table provides the topside labor force characteristics (LF, LFP, EM, EP, UN, UR) with the normal seasonal fluctuations removed.
  - This table provides the error range for the unemployment rate estimate at 90% confidence. The user can say with 90% confidence that the true seasonally adjusted unemployment rate for the general population should fall within this range.
  - This table allows the user to see if there was a statistically significant change in any of the topside labor force estimates.
  - This table allows user to see if there is a trend in the movement of the year-to-date smoothed seasonally adjusted estimates.
- Table 1b. This table provides a snapshot of the current year's unadjusted estimates, including indicators of significant over-the-month change.
  - This table provides the topside labor force characteristics (LF, LFP, EM, EP, UN, UR) with their normal monthly seasonal fluctuations.
  - This table provides the error range for the unemployment rate estimate at 90% confidence. The user can say with 90% confidence that the true unadjusted unemployment rate for the general population should fall within this range.
  - This table allows the user to see if there was a statistically significant change in any of the topside labor force estimates. (used with 1d, below)
  - Combined with table 1a, this table allows the user to see if the month-to-month movements in the unadjusted estimates are consistent with past seasonal behavior.
- Table 1c. This table displays the monthly over-the-month change in the topside smoothed seasonally adjusted estimates for the current year in both level and percent terms.
  - This tables shows the user what the over-the month change was in direction, numeric, and percent terms, and whether there is a pattern in the month-to-month changes – such as, are they consistently positive or negative.
  - This table allows the user to evaluate whether the trend in the smoothed seasonally adjusted estimates is consistent with past behavior and/or expected behavior.
  - When used in combination with table 1a, the user can tell whether a change was statistically significant.
  - When used in combination with figures 1a, 2a, and 3a, it provides the user with context for the current year's estimates – with the caveat that the current year's forward-filter estimates will display more volatility than the historical estimates.

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Notes for the STARS Tables

- Table 1d. This table displays the monthly over-the-month change in the topside unadjusted estimates for the current year in both level and percent terms.
  - This tables shows the user what the over-the month change was in direction, numeric, and percent terms, and whether there is a pattern in the month-to-month changes – such as, are they consistently positive or negative.
  - This table allows the user to evaluate whether the month-to-month movement in the unadjusted estimates is consistent with expected seasonal behavior.
  - When used in combination with table 1b, the user can tell whether a change was statistically significant.
  - When used in combination with figures 1b, 2b, and 3b, it provides the user with context for the current year's estimates – with the caveat that the current year's forward-filter estimates will display more volatility than the historical estimates.
- Tables 2a. and 2b. These tables provide users with year-to-date standard errors for smoothed seasonally adjusted and unadjusted model estimates. The standard errors displayed on these tables are for one standard error (one sigma) The measures can be used to describe the reliability of the model estimates and to calculate error ranges and confidence intervals for the model estimates.
  - The tables provide a means for conveying to data users that model estimates are not precise measures of labor force "truth," but rather are imprecise "estimates" of the labor force characteristics around which ranges can be constructed that include, with varying degrees of confidence, the unobserved "true" labor force value.
  - The standard errors in these tables, together with common adjustment factors (1.0 = 68%, 1.282 = 80%, 1.645 = 90%, 1.960 = 95%, 2.326 =98%, and 2.576 = 99%), can be used to calculate error measures – error ranges, confidence intervals, and coefficients of variation – at various level of reliability for the seasonally adjusted and unadjusted model estimates.
  - These error measures allow the users to convey the critical concept of imprecision associated with all forms of estimates. Just like political poll numbers, CPS estimates and model labor force estimates have uncertainty associated with them.
- Tables 3a. and 3b. These tables provide users with year-to-date over-the-year change – level and percent – for smoothed seasonally adjusted and unadjusted estimates. These tables can be used to evaluate possible cyclical behavior in the model estimates.
  - If the over-the-year changes in the smoothed seasonally adjusted and unadjusted estimates show consistent increases in employment and decreases in unemployment and unemployment rates, this is an indication that the labor market is in a positive phase of the business cycle and is expanding (and possibly tightening).
  - If the over-the-year changes in the smoothed seasonally adjusted and unadjusted estimates show consistent decreases in employment and increases in unemployment and unemployment rates, this is an indication that the labor market is in a negative phase of the business cycle and is contracting.
  - If the over-the-year changes in the smoothed seasonally adjusted and unadjusted estimates show inconsistent employment, unemployment, and unemployment rate changes, this is an indication that the labor market conditions are inconclusive – they may be stagnant or at a turning-point in the business cycle.

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Notes for the STARS Tables

- Tables 3c. and 3d. These tables provide users with year-to-date over-the-year change standard errors for smoothed seasonally adjusted and unadjusted model estimates. The standard errors displayed on these tables are for one standard error (one sigma). The measures can be used to describe the reliability of the model estimates and to calculate error ranges and confidence intervals for the model estimates.
  - The tables provide a means for conveying to data users that model estimates are not precise measures of labor force "truth," but rather are imprecise "estimates" of the labor force characteristics around which ranges can be constructed that include, with varying degrees of confidence, the unobserved "true" labor force value.
  - The standard errors in these tables, together with common adjustment factors (1.0 = 68%, 1.282 = 80%, 1.645 = 90%, 1.960 = 95%, 2.326 =98%, and 2.576 = 99%), can be used to calculate error measures – error ranges, confidence intervals, and coefficients of variation – at various level of reliability for the seasonally adjusted and unadjusted model estimates.
  - These error measures allow the users to convey the critical concept of imprecision associated with all forms of estimates. Just like political poll numbers, CPS estimates and model labor force estimates have uncertainty associated with them.
- Table 4a. This table provides a year-to-date decomposition of the over-the-month change in model unadjusted unemployment rate estimates. The model estimates are decomposed into their signal change, trend change, and seasonal change components.
  - This table allows the user to determine which component is responsible for the overall over-the-month change in the model unemployment rate.
  - The signal change is the overall change in the unadjusted estimate and is equal to the trend change plus the seasonal change.
  - The smooth change is the overall change in the official smoothed seasonally adjusted estimate.
  - The residual change is the change in the trend which is not accounted for in the smooth change. Smooth change and residual change sum to the total trend change.
  - The trend change is the overall change in the seasonally adjusted estimate and is equal to the signal change minus the seasonal change.
  - The seasonal change is equal to the over-the-month change in the seasonal factor and is equal to the signal change minus the trend change.
- Table 4b. This table provides a year-to-date decomposition of the over-the-month change in CPS unemployment rate estimates. The CPS estimates are decomposed into actual change, the signal change, and noise change components.
  - This table allows the user to determine how much noise change was removed from the overall over-the-month change in the unadjusted model unemployment rate.
  - The signal change is the overall change in the unadjusted estimate and is equal to the actual change minus the noise change.
  - The signal change in table 4b will equal the signal change in table 4a.
  - This table allows the user to see how much change is being passed to the model from an unusual change in the CPS unemployment rate.

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Notes for the STARS Tables

- Table 5a. This table provides a year-to-date decomposition of the over-the-month change in model unadjusted unemployment level estimates. The model estimates are decomposed into their signal change, trend change, and seasonal change components.
  - This table allows the user to determine which component is responsible for the overall over-the-month change in the model unemployment level.
  - The signal change is the overall change in the unadjusted estimate and is equal to the trend change plus the seasonal change.
  - The smooth change is the overall change in the official smoothed seasonally adjusted estimate.
  - The residual change is the change in the trend which is not accounted for in the smooth change. Smooth change and residual change sum to the total trend change.
  - The trend change is the overall change in the seasonally adjusted estimate and is equal to the signal change minus the seasonal change.
  - The seasonal change is equal to the over-the-month change in the seasonal factor and is equal to the signal change minus the trend change.
- Table 5b. This table provides a year-to-date decomposition of the over-the-month change in CPS unemployment level estimates. The CPS estimates are decomposed into actual change, the signal change, and noise change components.
  - This table allows the user to determine how much noise change was removed from the overall over-the-month change in the unadjusted model unemployment.
  - The signal change is the overall change in the unadjusted estimate and is equal to the actual change minus the noise change.
  - The signal change in table 5b will equal the signal change in table 5a.
  - This table allows the user to see how much change is being passed to the model from an unusual change in CPS unemployment.
- Table 6a. This table provides a year-to-date decomposition of the over-the-month change in model unadjusted employment estimates. The model estimates are decomposed into their signal change, trend change, and seasonal change components.
  - This table allows the user to determine which component is responsible for the overall over-the-month change in the model employment.
  - The signal change is the overall change in the unadjusted estimate and is equal to the trend change plus the seasonal change.
  - The smooth change is the overall change in the official smoothed seasonally adjusted estimate.
  - The residual change is the change in the trend which is not accounted for in the smooth change. Smooth change and residual change sum to the total trend change.
  - The trend change is the overall change in the seasonally adjusted estimate and is equal to the signal change minus the seasonal change.
  - The seasonal change is equal to the over-the-month change in the seasonal factor and is equal to the signal change minus the trend change.
- Table 6b. This table provides a year-to-date decomposition of the over-the-month change in CPS employment estimates. The CPS estimates are decomposed into actual change, the signal change, and noise change components.

- This table allows the user to determine how much noise change was removed from the overall over-the-month change in the unadjusted model employment.
- The signal change is the overall change in the unadjusted estimate and is equal to the actual change minus the noise change.
- The signal change in table 6b will equal the signal change in table 6a.
- This table allows the user to see how much change is being passed to the model from an unusual change in CPS employment

o Table 7. This table provides users with year-to-date standard errors for the over-the-month (o-t-m) change (i.e., components of change) in smoothed seasonally adjusted and unadjusted estimates. The standard errors displayed on these tables are for one standard error (one sigma). The measures can be used to describe the reliability of the o-t-m change in model estimates and to calculate error ranges and confidence intervals for the over-the-month change in model estimates.
- The tables provide a means for conveying to data users that o-t-m changes in model estimates are not precise measures of "true" labor force change," but rather are imprecise "estimates" of the labor force characteristics around which ranges can be constructed that include, with varying degrees of confidence, the unobserved "true" change in the labor force value.
- The standard errors in these tables, together with common adjustment factors (1.0 = 68%, 1.282 = 80%, 1.645 = 90%, 1.960 = 95%, 2.326 =98%, and 2.576 = 99%), can be used to calculate error measures – error ranges, confidence intervals, and coefficients of variation – at various level of reliability for o-t-m changes in smoothed seasonally adjusted and unadjusted model estimates.
- These error measures allow the users to convey the critical concept of imprecision associated with all forms of estimates.

o Table 8a. This table provides a list of the year-to-date CPS estimates. It provides a quick and easy reference for examining the month-to-month behavior of the CPS estimates.
- This table allows the user to see any unusual month-to-month movements in the current year's estimates.
- This table allows the user to see if there is a trend (i.e., consistent positive or negative month-to-month changes) in the CPS estimates and assess whether the CPS behavior is consistent with expectations.

o Table 8b. This table provides users with standard errors for year-to-date CPS estimates – for levels and over-the-month (o-t-m) change. The standard errors displayed on these tables are for one standard error (one sigma). These measures can be used to describe the reliability of the CPS estimates and to calculate error ranges and confidence intervals for the estimates and o-t-m changes in the estimates.
- The error measures produced from these standard errors provide a means for conveying to data users that CPS estimates are not precise measures of labor force "truth," but rather are imprecise "estimates" of the labor force characteristics around which ranges can be constructed that include, with varying degrees of confidence, the unobserved "true" labor force value, or, o-t-m change in that value.
- The standard errors in these tables, together with common adjustment factors (1.0 = 68%, 1.282 = 80%, 1.645 = 90%, 1.960 = 95%, 2.326 =98%, and 2.576 = 99%), can be used to

calculate error measures – error ranges, confidence intervals, and coefficients of variation – at various level of reliability for the CPS estimates and o-t-m change in those estimates.

- These error measures allow the users to convey the critical concept of imprecision associated with all forms of survey estimates.

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Notes for the STARS Tables

- Table 9. This table provides a list of year-to-date model-based concurrent seasonal factors for the benchmarked seasonally adjusted model estimates, which are inputs to the official smoothed seasonally adjusted estimates. These factors are produced as part of the classical (TCSI) series decomposition that is part of the model estimation process. They are not produced by using an ex-post-facto arithmetic process such as X-12 ARIMA.
  - The table can be used to calculate the model's seasonal component of change, which is equal to the o-t-m change in the seasonal factor.
  - The table can be used in conjunction with figures 4a and 5a to assess how much difference there is in the current seasonal factor compared to the historical average for the month, and by extension, how much the model's seasonal component of change is being impacted by adjustments to the current month's seasonal factor.
- Table 10. This table provides year-to-date state-supplied CES and UI claims data – unadjusted values (level), model-based smoothed seasonally adjusted estimates (trend), and seasonal factors. It provides a quick and easy reference for examining the month-to-month behavior of the state-supplied model inputs.
  - This table allows the user to see any unusual month-to-month movements in the current year's model input variables.
  - The table allows users to assess whether month-to-month movements in the unadjusted values conform to expected seasonal behavior.
  - Using the smoothed seasonally adjusted input variables (trend), the user can evaluate the trend in their model input data – and evaluate whether the trend is consistent with their expectations and other data sources.
- Table 11a. This table provides year-to-date prediction errors – levels and standardized – for CPS unemployment and employment estimates. These error are used to evaluate how unusual (i.e., different from the expected value) the CPS estimates are. Large (more than 2.0) and very large (more than 3.0) standardized prediction errors are a warning sign of a potential outlier, which may, or may not, be smoothed out during re-estimation at the end of the year.
  - This table is used to evaluate how unusual (different from the predicted value) the current CPS estimate is.
  - Typically, unusual CPS values directly impact the current model estimates.
  - Frequently however, if it is a one-time occurrence, the impact will be smoothed out of the model estimates when the estimates are re-estimated.
- Table 11b. This table provides year-to-date prediction errors – levels and standardized – for State CES and UI claims data. These error are used to evaluate how unusual (i.e., different from the expected value) the state-supplied inputs are. Large (more than 2.0) and very large (more than 3.0) standardized prediction errors are a warning sign of a potential outlier, which may, or may not, be smoothed out during re-estimation at the end of the year.
  - This table is used to evaluate how unusual (different from the predicted value) the current state-supplied data are.
  - While the impact on the model estimates is typically less than the CPS, extreme values can have a directly impact the current model variables.
  - Frequently, like unusual CPS estimates, their impact is smoothed out of the model estimates when the estimates are re-estimated.

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- Table 12. This table provides year-to-date pro-rata real-time benchmarking factors for model unemployment and employment level estimates.
  - This table is used to evaluate the impact of real-time benchmarking on the model estimates.
  - Calculating the over-the-month change in the pro-rata factor and multiplying that amount times the model estimate (UE or EM) will produce a reasonable estimate of the impact of real-time benchmarking.
  - Because the pro-rata factors are decimals, multiplying the change in the pro-rata factors by 100 will convert the change into a percentage, which may convey the potential impact more clearly.
- Figure 1a. This graph displays the last three-plus years of smoothed seasonally adjusted model unemployment rate, benchmarked seasonally adjusted rate, the unbenchmarked seasonally adjusted rate and seasonally adjusted UI claims rate.
  - This graph can be used to obtain a visual sense of the trend of the series, whether they are moving in a similar fashion.
  - The graph is useful in spotting any unusual movements in the smoothed seasonally adjusted model or claims rate estimates.
  - The graph is limited, as noted at the top of the graph, by the fact that past years' model estimates are re-estimated and therefore typically much less volatile than current forward-filer estimates.
- Figure 1b. This graph displays the last three-plus years of unadjusted model unemployment rate, CPS unemployment rate, and unadjusted UI claims.
  - This graph can be used to obtain a visual sense of the trend of the three series, whether they are moving in a similar fashion.
  - The graph is useful in spotting any unusual movements in the CPS, model, or claims rate estimates.
  - The graph can be used to evaluate whether the month-to-month movements in the various data series follow expected seasonal patterns.
  - The graph is limited, as noted at the top of the graph, by the fact that past years' model estimates are re-estimated and therefore typically much less volatile than current forward-filer estimates.
- Figure 2a. This graph displays the last three-plus years of smoothed seasonally adjusted model unemployment, benchmarked seasonally adjusted unemployment, the unbenchmarked seasonally adjusted unemployment and seasonally adjusted UI claims.
  - This graph can be used to obtain a visual sense of the trend of the series, whether they are moving in a similar fashion.
  - The graph is useful in spotting any unusual movements in the seasonally adjusted model or claims estimates.
  - The graph is limited, as noted at the top of the graph, by the fact that past years' model estimates are smoothed and therefore typically much less volatile than current forward-filer estimates.

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Notes for the STARS Tables

- Figure 2b. This graph displays the last three-plus years of unadjusted model unemployment, CPS unemployment, and unadjusted UI claims.
  - This graph can be used to obtain a visual sense of the trend of the series, whether they are moving in a similar fashion.
  - The graph is useful in spotting any unusual movements in the CPS, model, or claims data.
  - The graph can be used to evaluate whether the month-to-month movements in the various data series follow expected seasonal patterns.
  - The graph is limited, as noted at the top of the graph, by the fact that past years' model estimates are re-estimated and therefore typically much less volatile than current forward-filer estimates.
- Figure 3a. This graph displays the last three-plus years of smoothed seasonally adjusted model employment, benchmarked seasonally adjusted employment, unbenchmarked seasonally adjusted employment and seasonally adjusted CES employment.
  - This graph can be used to obtain a visual sense of the trend of the two series, whether they are moving in a similar fashion.
  - The graph is useful in spotting any unusual movements in the smoothed seasonally adjusted model or CES employment estimates.
  - The graph is limited, as noted at the top of the graph, by the fact that past years' model estimates are re-estimated and therefore typically much less volatile than current forward-filer estimates.
- Figure 3b. This graph displays the last three-plus years of unadjusted model employment, CPS employment, and CES employment estimates.
  - This graph can be used to obtain a visual sense of the trend of the series, whether they are moving in a similar fashion.
  - The graph is useful in spotting any unusual movements in the CPS, model, or CES employment data.
  - The graph can be used to evaluate whether the month-to-month movements in the various data series follow expected seasonal patterns.
  - The graph is limited, as noted at the top of the graph, by the fact that past years' model estimates are re-estimated and therefore typically much less volatile than current forward-filer estimates.
- Figure 4a. This graph displays the monthly concurrent seasonal factors for model unemployment estimates for the past ten years – with each month's seasonal mean.
  - This graph can be used to determine if the seasonal factors are fixed – there will be no difference from the monthly mean.
  - This graph can be used to determine if the seasonal factors are changing over time – the plot of the seasonal factors will produce a line that crosses the mean. The more vertical the line, the greater the amount of variability from the seasonal mean.

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- Figure 4b. This graph displays the monthly concurrent seasonal factors for UI claims for the past ten years – with each month's seasonal mean.
  - This graph can be used to determine if the seasonal factors are fixed – there will be no difference from the monthly mean.
  - This graph can be used to determine if the seasonal factors are changing over time – the plot of the seasonal factors will produce a line that crosses the mean. The more vertical the line, the greater the amount of variability from the seasonal mean.
- Figure 5a. This graph displays the monthly concurrent seasonal factors for model employment estimates for the past ten years – with each month's seasonal mean.
  - This graph can be used to determine if the seasonal factors are fixed – there will be no difference from the monthly mean.
  - This graph can be used to determine if the seasonal factors are changing over time – the plot of the seasonal factors will produce a line that crosses the mean. The more vertical the line, the greater the amount of variability from the seasonal mean.
- Figure 5b. This graph displays the monthly concurrent seasonal factors for CES employment for the past ten years – with each month's seasonal mean.
  - This graph can be used to determine if the seasonal factors are fixed – there will be no difference from the monthly mean.
  - This graph can be used to determine if the seasonal factors are changing over time – the plot of the seasonal factors will produce a line that crosses the mean. The more vertical the line, the greater the amount of variability from the seasonal mean
- Figure 6: This graph displays the monthly population estimates from the CPS.
  - This graph can be used to determine if changes in the labor forces levels are attributed to changes in the CPS 16 years and over noninstitutionalized population.

Glossary

Additional Benefits (AB) See State Additional Benefits.

Additional Claim An additional claim is a notice of new unemployment filed at the beginning of a second or subsequent series of claims within a benefit year or within a period of eligibility when there has been intervening employment. This is one of three types of initial claims.

Additivity Adjustment The procedure which forces the exhaustive Handbook estimates to equal the State estimate is known as additivity adjustment. The process is usually linear unless an atypical procedure is in effect. The linear additivity adjustment is accomplished through the Handbook share procedure of linking LMAs to the CPS-based State estimate.

Agent State The State in which a claimant files an interstate claim for compensation against another (liable) State where wages were earned is the agent State. Usually, this is the claimant's State of residence.

All Other Nonagricultural Employment This includes self-employed, unpaid family workers, and domestics in private households.

American Community Survey (ACS) A household survey developed by the Census Bureau to replace the long form of the decennial census program. The ACS is a large demographic survey collected throughout the year using mailed questionnaires, telephone interviews, and visits from Census Bureau field representatives to about 3 million household addresses annually

Annual Processing (AP) A series of activities conducted annually which results in benchmarked State and substate estimates. These activities include the State submission of revisions to model inputs, revisions to substate inputs, incorporation of revised population controls, model re-estimation and smoothing, benchmarking, and seasonally adjusting the revised series.

Areas of Substantial Unemployment (ASU) This is defined under JTPA as an area of at least 10,000 population with an average of 6.5 percent or more unemployment in the previous 12 months. It is used for determining eligibility for employment and training programs.

Autocorrelation Identifies whether the error terms in a regression equation are not independent over time. If this is not accounted for in the equation for the regression line, poor coefficients and predicted values may result. All State e models have coefficients adjusted to reflect autocorrelation.

Autocorrelation Coefficient or ρ (rho) A mathematically determined value that measures the relationship or correlation between successive error terms of the same series. A value of "0" means that there is no correlation and a value of "1" indicates strong positive autocorrelation.

Base Period (Base Year) A base period is a specified period of twelve consecutive months (or in some States, 52 weeks preceding the beginning of a benefit year) during which an individual must have the required employment and/or wages in order to establish entitlement to compensation or allowances under an applicable program.

Benchmark This is a point of reference (either an estimate or a count) from which measurement can be made or upon which adjustments are based.

Benefit Year A period, generally a 52-week period, during which individual claimants may receive their maximum potential benefit s UI amount.

Bias The difference between the expected value of the estimate from a probability sample and the true value of the population parameter.

Birth and Adoption Unemployment Compensation An experiment program conducted 2000-2003 that was designed to provide unemployment compensation to employees on approved leave following the birth or adoption of a child.

Bureau of Labor Statistics (BLS) Established in 1884 and now part of the U.S. Department of Labor, this Federal agency functions as the principal data-gathering agency of the Federal Government in the field of labor economics. BLS collects, processes, analyzes, and disseminates data relating to employment, unemployment, the labor force, productivity, prices, family expenditures, wages, industrial relations, and occupational safety and health.

Bureau of the Census (BOC) The BOC is a bureau of the U.S. Department of Commerce. It conducts censuses of population and housing every 10 years and of agriculture, business, governments, manufacturers, mineral industries, and transportation at five year intervals. It also conducts the Current Population Survey (CPS) for the BLS.

Census A count or enumeration (as opposed to a sample or an estimate) of a specified population or some other characteristics in a given area (housing, industry, etc.)

Census Share A method used to disaggregate LMA employment and unemployment estimates to subareas by assigning to the areas the same proportion of the monthly, independent LMA estimate as was evidenced in the most recent census.

Census Tracts Census tracts are small, relatively permanent statistical subdivisions of a county that provide comparable population and housing census tabulations. Tracts are designed to be relatively similar in population characteristics, economic status, and living conditions. The average tract has about 4,000 inhabitants. Census tract boundaries are recommended by local census tract committees and approved by the Bureau of the Census.

Certification (Certifying) The process and form by which a claimant states and attests to facts which will determine eligibility for UI benefits for a given week. These include, for example, a search for work and availability for work.

Civilian Labor Force The sum of all employed and unemployed persons excluding persons under 16 years of age, inmates of institutions, and members of the Armed Forces.

Claim A claim is a notice of unemployment filed by an individual to request a determination of unemployment insurance eligibility and the amount of benefit entitlement, or to claim benefits or waiting-period credit.

Claimant A person who files either an initial claim or a continued claim under (1) any State or Federal unemployment compensation program or (2) any other program administered by the State agency.

Claims-Based Unemployment Disaggregation A method for disaggregating LMA unemployment to subareas by using (1) claims by county of residence to distribute Handbook experienced unemployment and (2) CPS-based data to allocate Handbook new and reentrant unemployment. It is used in conjunction with the population-based indexed share employment disaggregation.

Class of Worker There are three classes of workers: (1) wage and salary workers who receive wages, salary, commission, tips, or pay in kind from an employer; (2) self-employed persons who work for profit or fees in their own business, profession, or trade, or on their own farms; and (3) unpaid family workers who work without pay for 15 or more hours a week on a farm or in a business operated by a household member to whom they are related by birth, marriage, or adoption.

Coefficients The values of the intercept and slope in the formula for the regression line. Coefficients are estimated by a mathematical formulation which calculates coefficients by minimizing the squares of the differences between the actual values (Y) and the predicted values (Y'). They represent (mathematically) the relationship of the independent variable to the dependent variable and how the changes in one variable can be related to another. In the case by a of a variable coefficient model, the coefficients are allowed to change over time to reflect changes that are occurring in the relationships of the dependent and the independent variables.

Coefficient of Variation (CV) The measure of relative dispersion of data. The standard deviation divided by the arithmetic mean times 100 yields the coefficient of variation.

Combined Statistical Area A geographic entity consisting of two or more adjacent Core Based Statistical Areas (CBSA) linked through commuting ties.

Commutation Regular travel of a person from the place of residence to the job location or to the place of filing for UI benefits is referred to as commutation.

Commuter Claimant Under the Intrastate Benefit Payment plan, a worker who travels regularly across a State line from home to work, and by mutual agreement between States, files in the State where the individual last worked when employed, and is treated as a resident of that State.

Compositing An estimating technique which combines information from different sources, taking into account the relative accuracy of each source. In the LAUS regression models, the Kalman Filter technique can be thought of as a type of compositing. It combines CPS and model estimates using their variances as a measure of the accuracy of the data.

Continued Claim A claim filed after the initial claim, by mail, telephone, or in person, for waiting-period credit or payment for a certified week of unemployment.

Core A densely settled concentration of population, comprising either an urbanized area (of 50,000 or more population) or an urban cluster (of 10,000 to 49,999 population) defined by the Census Bureau, around which a Core Based Statistical Area is defined.

Core Based Statistical Area (CBSA) A statistical geographic entity consisting of the county or counties associated with at least one core (urbanized area or urban cluster) of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties containing the core. Metropolitan and Micropolitan Statistical Areas are the two categories of Core Based Statistical Areas.

Correlation A statistical term which indicates a structural, functional, qualitative correspondence between comparable entities. Correlation can be either positive (simultaneous increase or decrease in both variables) or in negative (increase in the value of one and decrease in the value of the other variable).

Correlation Coefficient A mathematically determined value that measures the relationship or correlation between two time series. As with the autocorrelation coefficient, a value of "0" indicates no correlation and a value of "1" indicates a strong positive relationship. A value of "-1" indicates strong negative relationship, or meaning that as one series increases, the other series decreases.

Covered Employment Those jobs covered by the unemployment compensation programs are considered covered employment. At this time, those not covered include some agricultural workers, employees of religious and small nonprofit organizations, household workers, and self-employed workers.

Current Employment Statistics (CES) program A BLS monthly survey of about 140,000 businesses and government agencies, representing approximately 410,000 individual worksites that yields estimates of nonagricultural wage and salary employment, hours, and earnings by industry. These statistics are prepared monthly for the nation as a whole, and by cooperating State agencies for all 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, and about 400 metropolitan areas and divisions.

Current Population Survey (CPS) A monthly survey conducted by the Bureau of the Census of approximately 60,000 assigned households of which 50,000 are eligible for interview. This survey of the civilian noninstitutional population of the United States provides monthly statistics on employment, unemployment, demographic characteristics, and related subjects which are analyzed by the Bureau of Labor Statistics.

Denial of Benefits An action imposed by a State agency after a nonmonetary determination or an appeals decision which cancels, reduces, or postpones a claimant's benefit rights.

Dependent Variable The variable for which estimates are desired, usually termed the "Y" variable. In the LAUS models, the dependent variable used in constructing the model is the monthly CPS estimate.

Determination An official decision by the State UI agency regarding the unemployment claim of a person. (See monetary and nonmonetary determination.)

Disaggregation A method to divide a statistic into its component parts. For example, the LMA unemployment is divided into each component county or city.

Disaster Unemployment Assistance (DUA) A program that provides unemployment assistance to individuals whose unemployment is a direct result of a major disaster as declared by the President of the United States.

Discouraged Workers Individuals not in the labor force who want and are available for a job and who have looked for work sometime in the past 12 months (or since the end of their last job if they held one within the past 12 months), but are not currently looking, because they believe there are no jobs available or there are none for which they would qualify.

Dynamic Residency Adjustment Ratios (DRR) A method to adjust CES employment data for resident employment in an area that accounts for the relationship between employed residents and jobs in that area and in other areas within commuting distance and job growth within these areas.

Earnings Disregarded The amount prescribed by State unemployment compensation laws that a claimant may earn without any reduction in weekly benefit amount for a week of total unemployment are earnings disregarded. This is also referred to as the forgiveness level for earnings. The amounts vary by State.

Earnings Due to Employment These are earnings, either from the regular employer or from odd jobs, which a UI claimant may receive while certifying to a week of unemployment. The existence of these earnings classified the claimant as employed, even when earnings are less than the State's forgiveness level.

Emergency Unemployment Compensation (EUC08) A 100 percent federally-funded temporary program that provided up to 34 weeks of benefits to eligible jobless workers in every state, and up to 19 additional weeks in states with "high unemployment" (for a maximum of 53). The EUC08 program was effective from July 2008 through June 2, 2010.

Employed In the CPS, those individuals 16 years of age or older who worked at least one hour for pay or profit or worked at least 15 unpaid hours in a family business during the reference week are considered employed. Individuals are also counted as employed if they had a job but did not work because they were ill, on vacation, in a labor dispute, prevented from working because of bad weather, or taking time off for personal reasons.

Employment/Population Ratio The proportion of the civilian noninstitutional population who are classified as employed.

Employment and Training Administration (ETA) Agency under the Department of Labor that administers federal government job training and worker dislocation programs, federal grants to states for public employment service programs, and unemployment insurance benefits. These services are primarily provided through state and local workforce development systems.

Enumeration Districts (EDs) Administrative units used in the Census d, are referred to as enumeration districts. They contain, on the average, about 750 people. The EDs provide a list of addresses for housing units which is used to help set up the sample file for the CPS.

Error See Standard Error.

Establishment An economic unit which produces goods or services, is generally found at a single physical location, and is primarily engaged in one type of economic activity.

Exhaustees Individuals who have exhausted all of the unemployment insurance benefits to which they are entitled within a benefit year and cannot establish a new benefit year.

Extended Benefits (EB) The supplemental program, established by Public Law 91-373, that pays extended compensation during a period of specified high unemployment to individuals for weeks of unemployment after they have exhausted regular compensation. The program is financed equally from Federal and State funds and becomes operative at the State level. The State determines benefits and certain restrictions.

Extrapolate A method to project values of a variable in an unobserved interval from values within an already observed interval.

Federal Information Processing Standards (FIPS) Standards for information processing that comprise a geographically exhaustive five digit code system wherein areas such as State, counties, territories, and metropolitan areas are uniquely identified. FIPS codes were officially replaced with the Geographic Names Information System (GNIS) as the Federal and national standard for geographic nomenclature. However, FIPS codes are still maintained by the Census Bureau and are referred to as either Census codes of Federal codes.

Final Payment The last payment to a claimant which exhausts the individual's maximum potential benefit entitlement under a specific program is referred to as a final payment.

Forgiveness Level See Earnings Disregarded.

Gain A weighting factor used in the Kalman Filter in determining the current month coefficients. Using this factor, a portion of the difference between the current month's CPS and the preliminary model estimate is added or subtracted from the previous month's coefficient value. This is used to produce the current month's coefficient.

Geographic Names Information System (GNIS) The Geographic Names Information System (GNIS) is the Federal and national standard for geographic nomenclature. The GNIS contains information about physical and cultural geographic features of all types in the United States, associated areas, and Antarctica, current and historical, but not including roads and highways. The GNIS Feature ID has superseded the Federal Information Processing Standard (FIPS) 55 Place Code as the Federal feature identifier.

Handbook Method A building-block estimation method that uses data from several sources—including the Current Population Survey, the Current Employment Statistics program, and unemployment insurance program—to produce labor force estimates at the substate level. Estimates for Labor Market Areas (LMAs), including both metropolitan and micropolitan areas and small LMAs, are produced using this methodology.

Henderson Trend Filter (H13) A filtering procedure, based on moving averages, to remove the irregular fluctuations from the seasonally-adjusted series, leaving the trend. It is part of a set of trend filters developed by Robert Henderson (1916) for use in actuarial work that are used extensively by seasonal adjustment packages such as X-12-ARIMA.

Household As defined by the Bureau of the Census, a household is all persons who occupy a housing unit. A housing unit is a room or group of rooms intended for occupancy as separate living quarters and consists of either a separate entrance or complete cooking facilities for the exclusive use of the occupants.

ICON (Interstate Connection) A centralized computerized system of reporting and exchanging unemployment insurance claims information between States.

Independent Variables Variables used in the regression equation to predict the dependent variable, "Y". The independent variables are usually termed d the "X" variables.

Information Technology Support Center (ITSC) Established Department of Labor to assist all state Unemployment Insurance agencies in the area of Unemployment Insurance Information Technology.

Initial Claim Any notice of unemployment filed by an individual to initiate (1) a determination of entitlement to an d eligibility for compensation (a new claim), (2) a subsequent period of unemployment within a benefit year or period of eligibility (an additional claim), or (3) a new claim filed to request a determination of eligibility and establishment of a new benefit year within an existing spell of unemployment (transitional claim).

Institutional Population Persons residing in CPS-defined institutions, such as prisons, nursing homes, juvenile detention facilities, or residential mental hospitals. Persons residing outside of these institutions constitute the non-institutional population.

<u>Insured Unemployment</u> Unemployment during a week for which waiting period credit or benefits are claimed under the regular unemployment insurance compensation programs, supplemental extended benefit programs, or the railroad unemployment insurance program, is considered insured.

<u>Insured Unemployment Rate (IUR)</u> The rate computed by dividing Insured Unemployed for the current quarter by Covered Employment for the first four of the last six completed quarters.

<u>Intercept</u> The value of "Y" (dependent variable) where the regression line crosses the "Y" axis is the intercept. The intercept is usually denoted by β_0.

<u>Interpolate</u> A method to estimate values of a function between two known values.

<u>Interstate claim</u> A claim filed in one (agent) State based on monetary entitlement to compensation in another (liable) State. The agent State is usually the claimant's State of residence. The liable State is the location of the establishment in which wage credits were earned.

<u>Intrastate Claim</u> A claim filed in the same State in which the individual's wage credits were earned. A nonresident of the State s, filing an intrastate claim is called a commuter claimant.

<u>Job Leavers</u> Individuals who quit or otherwise terminate their employment voluntarily and immediately begin looking for work.

<u>Job Losers</u> Individuals on layoff and those whose employment ended involuntarily and who immediately begin looking for work.

<u>Kalman Filter</u> A statistical technique used in the Signal-in plus-Noise models to adjust the model coefficient. The coefficients are updated each month with new information using the Kalman Filter technique. This technique combines information from the model and CPS when making the new model estimate by taking into account the relative accuracy of each.

<u>Labor Force</u> The total of all civilians classified as employed and unemployed. The labor force, in addition, includes members of the armed forces stationed in the United States.

<u>Labor Market Area (LMA)</u> An economically integrated geographical unit within which workers may readily change jobs without changing their place of residence. All States are divided into exhaustive LMAs, which include a county or a group of contiguous counties, except in New England where cities and towns are used. Independent Handbook estimates of employment and unemployment are made monthly for each LMA and form the basis for the LAUS estimates.

<u>Labor Surplus Area</u> Defined under the Defense Manpower Policy No. 4A as an area with at least 120 percent of the national unemployment rate. (There is a variable floor and ceiling rate of 6% and 10 %.)

<u>LAUS Estimate</u> The official BLS-published employment and unemployment estimates. For States, they are based on the signal-plus-noise models. For areas, they are developed using the Handbook procedures and are controlled to the State levels.

<u>LAUS Redesign</u> A multi-year, multi-project initiative implemented with January 2005 estimates that improved labor force estimates for State and substate areas. The redesign included improved time-series models, models for six additional metropolitan areas, real-time benchmarking, enhanced procedures for developing substate data, the implementation of 2000-Census based configurations for metropolitan areas, metropolitan divisions, micropolitan areas, and small labor market areas as well as the incorporation of 2000-Census inputs and updates in the methodology.

Least Squares A basic regression technique used to "fit" (calculate) a model equation to a time series of data. There are several different types of least square calculations but all are based on minimizing the sum of the squared differences between the data points and a regression line.

Liable/Agent Data Transfer (LADT) The record format used for the exchange of statistical data via the Interstate Connection (ICON). The LADT record format was developed to accommodate the exchange of data pertaining to: a) interstate weeks claimed; b) intrastate commuter weeks claimed; c)interstate initial claims (new, additional and transitional); and, d) interstate reopened claims and claim transfers by ICON for the exchange of interstate UI claims data among States.

Liable State Any State against which a worker files a claim for compensation through the facilities of another (agent) State is the liable State. The State location of the establishment in which wage credits are earned is the liable State.

Link Relative Technique A method for employment estimation that involves, for each estimating cell, comparing the ratio of all employees in one month to all employees in the preceding month. The all employee estimate for each month is obtained by multiplying this ratio by the all employee estimate for the previous month. The technique is used in the CES estimating methodology.

Local Area Unemployment Statistics (LAUS) The Federal/State cooperative program under which employment and unemployment estimates for States and local areas are developed. These estimates are prepared by State Employment Security Agencies in accordance with BLS definitions and procedures. They are used for planning and budgetary purposes, as an indication of need for employment and training programs, and to allocate Federal funds under JTPA, FEMA, etc.

Mass Layoff Statistics (MLS) A Federal-State cooperative program which uses a standardized, automated approach to identify, describe, and track the effects of major job cutbacks, using data from each State's unemployment insurance database.

Mass Layoff Event A layoff in which 50 initial claims or more have been filed against an establishment during a five-week period, with the separations expected to last longer than 30 days.

Mean Square Error (MSE) A measure of the total error that can arise in an estimate. It is equal to the variance plus the bias squared. Mean square error is a more comprehensive measure of estimation error than is variance and is an important statistical and analytical tool.

Metropolitan Division (MD) A county or group of counties within a CBSA that contains a core with a population of at least 2.5 million. A Metropolitan Division consists of one or more main/secondary counties that represent an employment center or centers, plus adjacent counties associated with the main county or counties through commuting ties.

Metropolitan Statistical Area (MA) A CBSA associated with at least one urbanized area that has a population of at least 50,000. The Metropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured through commuting.

Micropolitan Area (MC) A CBSA associated with at least one urban cluster that has a population of at least 10,000, but less than 50,000. The Micropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured through commuting.

Migration   The permanent movement of an individual's residence from one location to another.

Model   A mathematical equation which relates different variables and data. In time series, this relationship is computed over time. In the LAUS signal-plus-noise models, the monthly State CPS labor force as estimates are related to different independent variables and data that show strong correlations to the monthly estimates.

Monetary Determination   A written notice is issued to inform an individual whether or not the individual meets the employment and wage requirements necessary to establish entitlement to compensation under a specific unemployment insurance program. If an individual is entitled, the weekly and maximum benefit amounts the individual may receive are also determined.

Months for Cyclical Dominance (MCD)   An estimate of the time span required to identify significant cyclical movements in a monthly economic time series. The MCD indicates the shortest span of months over which changes in the series are dominated by cyclical rather than irregular or erratic movements.

Moving Average   A continuous process that uses a series of calculations made by initially taking the simple average, or arithmetic mean, of a consecutive number of items, and then dropping the first item and adding the next item in sequence and averaging, so that the number of items in the series remains constant.

New Claim   The first initial claim filed in person, by mail, telephone, or the Internet to request a determination of entitlement to and eligibility for compensation. This is one of three types of initial claims.

New England City and Town Area (NECTA)   A statistical geographic entity that is defined using cities and towns as building blocks and that is conceptually similar to the Core Based Statistical Areas in New England (which are defined using counties as building blocks).

New England City and Town Area Division   A city or town or group of cities and towns within a NECTA that contains a core with a population of at least 2.5 million. A NECTA Division consists of a main city or town that represents an employment center, plus adjacent cities and towns associated with the main city or town, or with other cities and towns that are in turn associated with the main city or town, through commuting ties.

New Entrants   Individuals who enter the labor market for the first time and do not find jobs. They include students entering the labor market after graduation from school and others who have not previously held a full-time job lasting two weeks or longer.

Nonagricultural Wage and Salary Employment   In the CES program, this is a count of jobs by place of work on nonagricultural establishment payrolls (including employees on paid sick leave, paid holiday, or paid vacation) for any part of the pay period including the 12th of the month. It does not include proprietors, self-employed, unpaid volunteer or family workers, domestic workers in households, military personnel, and persons who are laid off, on leave without pay, or on strike for the entire reference period.

Noninstitutional Population   See Institutional Population.

Nonmonetary Determination   A process that determines whether a claimant meets legal criteria other than wage credits under State UI law. It is usually concerned with: (1) reason claimant left job (separation issues); and (2) job search (able, available, and actively seeking work).

Not in the Labor Force All persons 16 years of age or older who are neither employed nor unemployed are considered not in the labor force. Some examples are students, housewives, retirees, etc.

Place-of-Residence Adjustment of Employment Establishment-based data, which are on a place-of-work basis, are adjusted to reflect the place of residence of the employed. The current adjustment also corrects for multiple jobholding in the place-of-work series. See Dynamic Residency Ratio.

Population-Based Indexed Share Employment Disaggregation A method that uses the annually prepared total population estimates and data from the Census to disaggregate labor market area total employment to the county or city level. This method is used only in conjunction with the claims-based unemployment disaggregation.

Population Controls Refers to population data developed from various independent sources, such as vital statistics on births, deaths, migration, school enrollment, persons living in group quarters, inmates in institutions, etc., which are used in Current Population Survey estimation procedures to independently adjust sample-based labor force levels. Population controls are updated annually by the Bureau of the Census and provided to the Bureau of Labor Statistics.

Population Estimates Annual population estimates prepared by the Census Bureau that entails updating population information from the most recent census with information found in the annual administrative records such as tax records, Medicare records and some vital statistics information.

Predicted Value The value of Y' (Y prime) that one obtains by "plugging in" values of the independent variables into the formula for the regression line is the predicted value. The coefficients have already been determined by a mathematical formulation.

Prediction Period A period of time which is outside the sample period. Coefficients for the regression line derived from the sample period are used to make predictions in subsequent periods. It is also called the "outside sample" period.

Primary Metropolitan Statistical Area (PMSA) A geographic designation used prior to the LAUS 2005 Redesign for a subarea defined within an area that meets the requirements to qualify as an MSA and also has a population of one million or more.

Primary Sampling Unit (PSU) The first stage of CPS sampling involves dividing the United States into primary sampling units, most of which comprise a metropolitan area, a large county, or a group of smaller counties with homogeneous demographic and economic characteristics.

Program for Measuring Insured Unemployment Statistics (PROMIS) A stand-alone PC-based system that stores all claimant information, including socioeconomic characteristics, and generates the UI inputs to the LAUS and Mass Layoff Statistics (MLS) programs and, potentially, other programs. PROMIS operates as the clearinghouse for multi-purpose input data, allowing flexibility to provide a more complete picture of the unemployment situation at substate levels.

Quarterly Census of Employment and Wages Program (QCEW) A federal/State cooperative program that produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance (UI) laws and Federal workers covered by the Unemployment Compensation for Federal Employees (UCFE) program.

Railroad Retirement Board (RRB) The RRB is an independent agency in the executive branch of the U.S. government which administers a comprehensive social insurance system for the nation's railroad workers and their families, providing protection against the loss of income resulting from old age, disability, death, unemployment, and temporary sickness.

Raking   This is the process which forces additivity among components to the aggregate estimate. It is performed on an iterative basis in the CPS.

Real-Time Benchmarking   A tiered approach to estimation in which the census division estimates are benchmarked to the national levels of employment and unemployment on a monthly basis. The benchmarked division model estimates are then used as the benchmark for the States within each division. The distribution of the monthly benchmark adjustment to the States is based on each State's monthly model estimate. In this manner, the monthly State employment and unemployment estimates will add to the national level. Substate estimates are then revised and forced to add to the new State estimates. In the past, this was done annually because the state data were benchmarked to the CPS annual average for each state. Under this approach, benchmarking occurs monthly, while annual processing will continue to be done at the beginning of each calendar year on the previous year's estimates.

Reentrants   In the CPS, persons who previously worked at a full-time job at least two weeks but who were out of the labor force for two weeks or more prior to beginning to look for work.

Reference Week   The week for which data are collected. For the CPS, the reference week is the calendar week including the 12th of the month. For UI data, it is the certification period. In most States, the reference week for UI certifications is the calendar week including the 12th. Exceptions are States with flexible benefit weeks and New York, whose week is a Monday-through-Sunday week.

Regression   A statistical tool which utilizes the relation between two or more variables so that one variable can be predicted from the other(s).

Regression Equations   The basic formula for a regression equation is shown below. In this example, the equation has an intercept (β_0), independent variables (X_1 and X_2) with coefficients (β_1 and β_2 respectively). The equation's error term is ε.

$$Y = \beta_0 + \beta_1(X_1) + \beta_2(X_2) + \varepsilon$$

Regression Line   A line fitted to the points in the scatter plot to summarize the relationship between the variables being studied. When it slopes down (from top left to bottom right), this indicates a negative or inverse relationship between the variables; when it slopes up (from bottom right to top left), a positive or direct relationship is indicated.

Reopened claim   A claim filed after a break in claimed weeks during a benefit year. This break could be caused by illness, disqualification, unavailability, or failure to report for any reason other than job attachment. It is not a break resulting from other employment.

Residency Adjustment Factor   A method formerly used to convert the CES nonfarm job count to a person count by place of residence. It was replaced in 2005 with the Dynamic Residency Adjustment Ratio (DRR) as part of the LAUS Redesign.

Residency Adjustment System (RAS)   A National Office software system that assists States in correctly coding the residency of their UI claims records. The system verifies and corrects erroneous addresses and assigns geocodes including State, county, city/town, longitude and latitude and census tract and block. RAS facilitates the city claims disaggregation process and is required for the use of PROMIS.

Rotation Group One of eight systematic subsamples which comprise the total CPS sample. A rotation group is in the sample for four consecutive months 1 year, leaves the sample during the following eight months, and then returns for the same four calendar months of the next year.

Sample A subset of a statistical population selected for the purpose of making generalized statements about the whole.

Sample Period A period of time which is used to derive coefficients for the regression line. It is also called the "inside sample" period.

Sampling Error The measure of sampling variability, that is, the natural variations that might occur by chance because only a sample of the population is surveyed.

Sample Regression A type of regression in which the dependent variable is calculated from a sample survey. Consequently there is an additional error (sampling error) to be considered.

Sampling Ratio The proportion of units needed to be sampled to provide data of a specified level of statistical reliability is the sampling ratio. Sampling ratios vary by cell, depending on the degree of variability of the measured item.

Scatter Plot A graph which plots the values of the dependent variable (Y) against the values of one of the independent variable (X). By convention, the "X" variable is plotted against the horizontal scale and the "Y" variable is plotted against the vertical scale.

Self-Employment Assistance (SEA) An optional program to help unemployed workers to create their own jobs by starting small businesses. To be eligible for the program an individual must be eligible for unemployment compensation, have been permanently laid off from his/her previous job and identified through the profiling system as likely to exhaust his/her benefits, and must participate in self-employment activities including entrepreneurial training and business counseling.

Seasonal Adjustment A statistical technique that eliminates the influences of weather, holidays, the opening and closing of schools, and other recurring seasonal events from economic time series. This permits easier observation and analysis of cyclical, trend, and other nonseasonal movements in the data.

Separation Issue, Nonmonetary Determination Situations of nonmonetary determination in which the claimant acted in the termination of the employment relationship. For example, voluntary quit without good cause, or voluntary quit for personal reasons.

Series Break An interruption in a time series caused either by a change in definition or in methodology which makes it improper to compare data from after the change with data from before the change.

Short-time compensation A program, commonly known as work-sharing, that allows an employer, faced with the need for layoffs because of reduced workload, to reduce the number of regularly scheduled hours of work for all employees rather than incur layoffs. This program provides partial UI benefits to individuals whose work hours are reduced from full-time to part-time on the same job.

Signal-Plus-Noise Models Econometric models used by the LAUS program to produce State labor force statistics. The models measure the true labor force value contained in the monthly CPS estimates (the signal) by extracting the noise associated with CPS sampling error.

Slope A value that tells how much change in the dependent variable (Y) results from a change in one of the independent variables (X). It is defined as the change in "Y" divided by the change in "X".

Smoothed Seasonal Adjustment (SSA) Seasonally-adjusted estimates that incorporate a long-run trend smoothing procedure. A smoothed-seasonally adjusted series was introduced in 2010 to reduce the number of spurious turning points in the former estimates. The estimates are smoothed using the Henderson Trend Filter (H13) that suppresses irregular variation in real time. This new approach addresses longstanding issues related to end-of-year revision and enhances the analytical utility of the estimates.

Smoothing In the time series regression, one month's data are used in estimating another and the best estimate is made when data from all the other months are incorporated. The process of forward-back-forward model re-estimation is referred to as smoothing because of its impact on monthly estimates. In LAUS, smoothing is part of the annual benchmarking processing to update the model estimates series.

Standard Deviation A measure of dispersion around the mean value of a population frequently denoted by sigma (σ). It is the positive square root of the variance.

Standard Error The term "Standard Error" can be used in many contexts. In general, it refers to the variability of an estimate. In sampling, it usually refers to the confidence interval of the sample estimate -the probability of including the true value with repeated sample. One standard error is about 68 percent confidence; and 1.645 times the standard error is the more commonly used 90 percent confidence. The model estimates also have confidence intervals. These relate to the variability of the estimate relative to the regression line.

State Additional Benefits (AB) Solely State-financed programs for extending the potential duration of benefits during periods of high unemployment for claimants in approved training who exhaust benefits, or for a variety of other reasons. Although some state laws call these programs “extended benefits,” this publication uses the term “additional benefits” to avoid confusion with the federal-state EB program.

State Employment Security Agency (SESA) A generic name for the State agency usually responsible for the following three activities: (1) The Unemployment Insurance Program which includes UI tax collection, administration, and determination and payment of unemployment benefits. (2) The Employment or Job Service Program which is an exchange for workers so seeking work and employers seeking workers. (3) Research and Analysis which includes collection, analysis, and publication of labor market information.

Statistical Population A group of entities or individuals that are of concern to a statistician for a particular investigation. This is sometimes referred to as simply a "population".

Stochastic A term used to denote the randomness of a variable or process. A stochastic, or random, variable is one whose value changes. In the case of the LAUS regression models, the values of the model variables change from month to month.

Survey The process used to collect data for the analysis of some aspect of a group or area.

Time Series A consecutive set of observations over a specified period of time.

Time Series Independence A condition present when successive values of a time series are nonrelated or noncorrelated.

Trade Readjustment Allowances (TRA) Benefits provided to individuals who were laid off or had hours reduced because their job was adversely affected by increased imports from other countries.

Transitional Claim A new claim filed to request a determination of eligibility and establishment of a new benefit year within an existing spell of unemployment. This is one of three types of initial claims.

Unemployment Compensation for Ex-Servicemen (UCX) This federal program provides unemployment benefits to ex-servicemen.

Unemployed In the CPS, those individuals considered unemployed must be 16 years of age or older who do not have a job but are available for work and are actively seeking work during the reference week (the week including the 12th of the month). The only exceptions to these criteria are individuals who are waiting to be recalled from a layoff and individuals waiting to report to a new job within 30 days. They are also considered unemployed.

Unemployed Disqualified Persons who are able to work and are available for work but are disqualified from receiving benefits for separation issues or other nonmonetary reasons.

Unemployment Compensation for Federal Employees (UCFE) This federal program provides benefits to federal employees.

Unemployment Insurance (UI) Insurance premiums collected by the State and Federal governments from which unemployment compensation is paid.

Unemployment Rate The number of persons unemployed, expressed as a percentage of the civilian labor force.

Variable An entity that can take on a number of different values. It is frequently denoted by letters such as "X" or "Y". Examples of variables would be CPS unemployment rate and CES employment.

Variable Coefficient Model (VCM) A type of sample regression model in which the model's coefficients are allowed to change over time.

Variance A mathematical measure of the dispersion of the values of a variable around its mean. The variance may arise from a sampling of the population under study, or may just measure the variability of population values around its means. The variance is frequently denoted as sigma squared (σ^2).

Waiting Week A period of unemployment during which a claimant may not draw benefits and during which certain requirements essential to the establishment of claimant eligibility for benefits must be met.

Weeks Claimed The number of weeks of benefits claimed, including weeks for which a waiting period or fixed disqualification period is being served. Interstate claims are counted by State of residence.

Worksharing See short-time compensation.