XI. EMPLOYMENT

Introduction

BEA's estimates of state employment consist of the number of wage and salary jobs, sole proprietorships, and general partners. The estimates are available annually beginning with 1969.

The state employment estimates are a complement to the place-of-work earnings estimates. Earnings are estimated on both a place-of-work basis by industry, and on a place-of-residence basis for the sum of all industries. The employment estimates are designed to conform conceptually and statistically with the place-of-work earnings estimates; the same source data—generally from administrative records—are used for both the earnings and employment estimates whenever possible. The earnings estimates reflect the scale and industrial structure of a state's economy rather than the income of the state's residents. Therefore, the employment estimates measure the number of jobs in a state, instead of the number of workers who perform the jobs. The characteristics of the state employment estimates follow from this concept and from the characteristics and limitations of the available source data.

The state employment estimates are not fully consistent with the National Income and Product Accounts (NIPA) employment estimates.[1] The state estimates are prepared only on a full-time and part-time basis, while the NIPA estimates are prepared on both a full-time and part-time basis and on a full-time equivalent basis. The state estimates exclude overseas jobs—mainly federal civilian and military employment of U.S. citizens abroad—and border worker adjustments—the addition of U.S. persons commuting to work abroad and subtraction of foreign commuters and seasonal workers in the United States—that are included in the NIPA estimates. Finally, the state estimates include all sole proprietorships and general partners—approximating a full-time and part-time basis, whereas the NIPA estimates of the number of proprietors count only persons whose principal occupation is their self-employment—approximating a full-time equivalent basis of measurement.

Employment estimates measure the number of jobs.—Employment can be measured either as a count of workers or as a count of jobs. In the former case, an employed worker is counted only once; in the latter case, all jobs held by the worker are counted. The state employment estimates are a count of the number of jobs, so that, as with the earnings estimates, a worker's activity in each industry and location of employment is reflected in the measure.

Treatment of part-time jobs.—State employment is estimated on a full-time and part-time basis because of the limitations of the available source data. State level data that separate part-time jobs and wages from full-time jobs and wages, which are needed

[1] The NIPA employment estimates are published in tables 6.4, 6.5, 6.7, and 6.8, which are available on the BEA web site. A list of all NIPA tables (with hyperlinks to the data) can be found by clicking on the *Interactive Data Tables* link on the home page and then clicking on the *National income and product accounts* link.

to prepare full-time equivalent measures, are not available. An average earnings measure can be calculated from the BEA state employment and earnings estimates. Average earnings reflect the extent of part-time employment in the given state and industry, as well as more basic factors such as hourly wage rates.

Geography.—State employment estimates, like wage and salary estimates, are measured by place-of-work—the job location—instead of by place of residence—where the worker lives. Thus the estimates are more representative of the state's industrial base than of the activities of the residents of the state. For nonfarm sole proprietors' employment, the only available annual data are classified by tax filing address, which is usually the filer's residence. BEA assumes that place-of-work and place-of-residence are identical for nonfarm sole proprietors. Since most farm operators live on or near their land, place of work and place of residence are also identical for farm proprietors.

Temporal dimension.—The estimates of wage and salary employment are annual averages of twelve monthly observations for the year. This gives a job which lasts only part of the year a lesser weight that a year-round job. In contrast, the estimates of nonfarm proprietors' employment are counts of the number of proprietors active during any portion of the year. This is because the available source data do not indicate the portion of the year that the businesses are in operation.

Wage and Salary Employment

Wage and salary employment is a measure of the average annual number of full-time and part-time jobs in each state by place of work. All jobs for which wages and salaries are paid are counted. Although compensation paid to jurors, expert legal witnesses, prisoners, and justices of the peace (for marriage fees), is counted in wage and salary disbursements, these activities are not counted as jobs in wage and salary employment. Corporate directorships are counted as self-employment.

The following description of the sources and methods used in estimating wage and salary employment is divided into two sections: Employment in industries covered by unemployment insurance (UI) programs, and employment in industries not covered by UI.[2]

Employment in industries covered by the UI programs

The estimates of about 94 percent of wage and salary employment are derived from tabulations of quarterly unemployment insurance (UI) contribution reports (Form ES-202) filed with state employment security agencies (table K). Employers subject to UI laws usually submit reports for each operating establishment, classified by county and industry. However, in some cases, an employer may group very small establishments

[2] The relevant UI programs are state UI, which covers most private sector and state and local government employment, and Unemployment Compensation for Federal Employees. The agency administering the UI program for railroad employees compiles data differently from the state UI program, and there is no employment reporting under the UI program for persons leaving the military services; accordingly, railroads and the military services are treated as noncovered industries in the estimation of state employment.

into a single "statewide" report without county designation. Each quarter, the state employment security agencies submit the tabulations to the Bureau of Labor Statistics (BLS), which provides the data to BEA. The tabulated data (called the Quarterly Census of Employment and Wages, QCEW) consist of monthly employment and quarterly wages by county by NAICS six-digit detail (beginning in 2001) or by SIC four-digit detail (through 2001).[3]

BEA adds several million administrative records received from the states and the District of Columbia to its database annually. The records are checked for major errors by several computerized edit routines. One edit routine analyzes the current quarter county data for invalid industry codes, duplicate records, and records that contain no data. Another edit routine calculates expected county-level average employment and average wages on a quarterly basis, based on percentage changes for that quarter in the previous two years. If the difference between the actual numbers and the estimated numbers exceeds established limits, the record is identified for further review. Anomalies that remain unreconciled after reviewing comments and other supporting data are referred back to BLS for further investigation.

The basic procedure for preparing the state estimates of wage and salary employment for each UI-covered industry is to average the 12 monthly QCEW employment observations and to allocate the national total in proportion to the averaged series. However, QCEW employment does not precisely meet the statistical and conceptual requirements for BEA's employment estimates. Consequently, the data must be adjusted to meet the requirements more closely. The necessary adjustments affect both the industrial and geographic patterns of state employment.

Adjustment for industry nonclassification.—The industry detail of the QCEW tabulations regularly shows minor amounts of employment that have not been assigned to an industry. The industrial classification scheme used by BEA for its estimates does not allow for a not-elsewhere-classified category. Therefore, for each state, the amount of QCEW employment in this category is distributed among the covered industries in proportion to the industry-classified employment. The amounts involved in this adjustment are quite small—about 0.16 percent of total employment nationally. No error is introduced into the total employment estimate for a state because the adjustment involves only an apportionment within a state of the amount reported for that state.

Misreporting adjustment.—An adjustment is made to the QCEW data for misreporting of private sector employment. In 2008 misreported employment accounted for 1 percent of BEA wage and salary employment (Table K). The national estimate of misreported employment for each industry is made in two parts: One for the underreporting of employment on UI contribution returns filed by employers and one for the employment of employers that fail to file UI contribution returns. The data necessary to replicate this methodology below the national level are not available. Instead, the

[3] The monthly employment observations represent the number of employees receiving wages for the pay periods that include the 12th day of the month. The QCEW tabulations reflect the 1972 SIC for years up to 1987, the 1987 SIC for 1988 through 2000, and the 2002 NAICS for 2001 through 2006. Beginning in 2007, QCEW tabulations reflect the 2007 NAICS. State employment originally reported on an SIC basis have been converted to a NAICS basis. See "NAICS Earnings and Employment by Industry, 1990-2000" in Chapter XII Technical Notes.

national adjustment for each industry is allocated to the state in proportion to QCEW employment.

Adjustments for noncovered segments of UI-covered industries.—BEA makes adjustments to add the employment of several noncovered segments. If relevant source data are not available, the national adjustments are allocated to states in proportion to the QCEW employment of the affected industry or industries. Examples of BEA adjustments for noncovered segments of UI-covered industries are as follows:

- Some insurance solicitors and real estate agents are omitted from UI coverage because they are paid solely by commissions. The national estimates for these two segments are allocated to states in proportion to QCEW employment in each industry.
- Establishments of railroad carrier affiliates and railway labor organizations are covered by the Railroad Unemployment Insurance system rather than by state UI. The state adjustments are based on data provided by the Railroad Retirement Board.
- Corporate officers in Washington State are omitted from UI coverage. The Washington Employment Security Department provides BEA with estimates of the number of corporate officers by NAICS six digit by county.
- Some nonprofit organizations are exempt from UI coverage because they have fewer than four employees. The national estimates are allocated to states in proportion to the QCEW employment of each industry.
- Students and the spouses of students who are employed by the institutions of higher education in which the students are enrolled are generally omitted from UI coverage. State estimates of the noncovered student employment of private, state government, and local government institutions are based on the differences between the relevant QCEW employment data and alternative employment data that include student employment. The alternative data are reported annually by the Census Bureau in *County Business Patterns* for the private institutions and on the Census Bureau's *Annual Survey of Government Employment*.
- UI coverage of local government employees excludes elected officials and members of the judiciary. The national estimates are allocated to states in proportion to QCEW state and local government employment.

Geographic adjustments for government employment.—In several cases, BEA has determined that the QCEW reports attribute government employment to the wrong states; the best available information is used to remedy these deficiencies. Examples of how BEA adjusts the government employment are as follows:

- The QCEW tabulations of federal civilian employment assign all of the employment of the U.S. Congress and its staff to the District of Columbia, although members of Congress employ some of their staff in home district offices. BEA assumes that this home district employment accounts for 25 percent of total congressional employment and reassigns that portion of the total to the states in proportion to their congressional representation.

Employment not covered by the UI programs

Farms.—This industry is only partially covered. Farm employees have mandatory UI coverage or almost complete voluntary coverage in a limited number of states. However, in order to produce a set of consistent farm wage and salary employment estimates across all states, QCEW data is not used. The state estimates are based on the regional distribution of the number of all hired farm workers from the Hired Farm Labor Survey conducted by the National Agricultural Statistics Service, supplemented by state estimates of hired farm labor expenses produced by the Economic Research Service of the U.S. Department of Agriculture.

Farm labor contractors.—This industry is classified in support activities for agriculture and forestry rather than in farms. The UI coverage in Arizona and California is complete enough to permit the use of the QCEW data for state estimates, but most state UI programs only partially cover this industry. For these states, the state estimates of farm labor contractor employment are based on the geographic distribution of expenditures for contract labor reported in the Census of Agriculture.

Railroads.—The railroad industry is covered by its own unemployment insurance program, which is administered by the Railroad Retirement Board (RRB), rather than by the state UI system. Data suitable for estimating state employment of railroads are available from the RRB only on a place-of-residence basis.[4] Because BEA's employment estimates are designed to conform conceptually and statistically to the place-of-work earnings estimates, the RRB data are adjusted to a place-of-work basis by using journey-to-work data from the 2000 Census of Population. The national totals for all railroad companies combined are allocated to states in proportion to the adjusted RRB series.

Private elementary and secondary schools.—Private elementary and secondary schools are treated as a noncovered industry because religiously affiliated elementary and secondary schools, which account for most of the employment in this industry, remain largely outside the scope of the UI program. The state estimates of private elementary and secondary school employment are primarily based on the employment reported annually by the Census Bureau's *County Business Patterns* (CBP). The CBP data are tabulated from the administrative records of the social security program—Old-Age, Survivors, Disability, and Hospital Insurance—and are more complete for elementary and secondary schools than the data prepared under the UI program. The social security program, although exempting nonprofit religious organizations—including schools—from mandatory coverage, has elective coverage provisions that have resulted in broad participation among religiously affiliated elementary and secondary schools.

In about half of the states, the UI coverage of elementary and secondary schools is complete enough to permit the use of QCEW data as the basis for the state employment estimates. For the other states, the state estimates are based on the best available series of private elementary and secondary school employment chosen from data published by state departments of education, data from the U.S. Department of Education's 2004 survey of private elementary and secondary schools, or data from CBP.

[4] RRB provides these data to BEA summed to ZIP-code area totals; BEA assigns these data to counties.

Religious organizations.—The Federal Unemployment Tax Act permits states to exclude religious organizations from mandatory UI coverage. Although most state UI laws do have some provisions for elective coverage, less than 10 percent of the national total employment of religious organizations obtain coverage. Therefore, the state estimates of the employment of religious organizations are based on CBP data. The CBP data are adjusted proportionately to sum to the BEA national employment totals for this industry.

Private households.—For this largely noncovered industry—mainly domestic servants—the national employment estimates are allocated to states in proportion to place-of-work private household employment from the Census journey-to-work data.

Military.—State military employment is measured as the number of military personnel assigned to active duty units that are stationed in the state plus the number of military reserve unit members. The estimates of active duty employment for the Army, Air Force, Navy, Marine Corps, and Coast Guard are based on the annual averages of 12 monthly observations, for a given year, from reports received from each branch of service. Navy personnel assigned to ships and other mobile units and Marines assigned to Fleet Marine Force units are measured according to the units' home ports rather than their actual locations as of the reporting date.

The measure of employment of the military Reserves—including the National Guard—is confined to members of reserve units that meet regularly for training. The state estimates are based on fiscal year—ending September 30—tabulations of military reserve strength provided by the Department of Defense.[5]

Alternative measures of wage and salary employment

Current Employment Statistics. The Bureau of Labor Statistics (BLS)—in cooperation with state employment security agencies—prepares the Current Employment Statistics (CES)—a set of state and local area wage and salary employment estimates—that is similar to the BEA estimates. Both are job-count measures of full-time and part-time employment on a place-of-work basis. The CES estimates are based on a monthly sample survey—using Form BLS-790—of nonagricultural establishments with employees. The sample for UI-covered industries is drawn from all establishments reported in employers' UI contributions returns, and the monthly sample-based series for covered industries is benchmarked annually to QCEW employment; thus both the BEA and the CES series are grounded on the same set of administrative records data. A detailed description of the sampling and estimating methodologies for the CES estimates is presented in the "Explanatory Notes" of BLS's monthly *Employment and Earnings*.

The CES estimates are timelier than the BEA estimates; preliminary BLS estimates are released with a one-month lag. By contrast, the BEA estimates are prepared only as annual averages and are released at the state level nine months after the reference year.

[5] The payroll tabulations include only regularly scheduled training duty; National Guard service during natural disasters, riots, and the like is not included.

The BEA series is somewhat broader in its coverage than the CES series. The BEA series includes industries—agriculture, forestry, fishing, and hunting; private households; and the military—that CES excludes.[6] A misreporting adjustment is unique to the BEA series. However, the CES series includes, within the scope of its coverage, all the noncovered segments of UI-covered industries for which BEA makes explicit adjustments.

The BEA estimates of wage and salary employment are accompanied by a self-employment series that is consistent with the wage and salary employment series as much as the available source data allow. No self-employment series is available in conjunction with the CES employment estimates.

At the national and state levels, the BEA estimates of wage and salary employment are available at the NAICS three-digit subsector beginning with 1990 and by SIC two-digit level for 1969-2001. By contrast, the CES estimates for the nation (in *Employment and Earnings*) are available in more detail: At the state level the CES estimates are presented only at the NAICS sector or SIC division ("one-digit") level; however, more detailed estimates are available from some of the state employment security agencies.

County Business Patterns. Another measure of state employment by place of work is the employment data published in the Census Bureau's *County Business Patterns* (CBP). It differs in source data and coverage from BEA's employment and QCEW employment.

The CBP data are derived from Census Bureau business establishment surveys and federal administrative records.

The coverage of the CBP data differs from that of the QCEW data primarily because the CBP data exclude most government employees, while the QCEW data cover civilian government employees.[7] CBP data also exclude several private industries covered at least in part by the QCEW: crop and animal production; rail transportation; insurance and employee benefit funds; trusts, estates, and agency accounts; and private households. However, the CBP data cover the employees of educational institutions, membership organizations, and small nonprofit organizations in other industries more completely than the QCEW data.[8] In addition, the CBP data reports employment for the month of March only; the QCEW employment data are quarterly and annual averages of monthly data.

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[6] More precisely, the CES excludes all of NAICS sector 11 (agriculture, forestry, fishing, and hunting) except logging (1133).

[7] The CBP data cover only those government employees who work in government hospitals, federally chartered savings institutions and credit unions, retail liquor stores, wholesale liquor establishments and university publishers. QCEW data in most states exclude state and local elected officials, members of the judiciary, state national and air national guardsmen, temporary emergency employees, and those in policy and advisory positions.

[8] Some religious elementary and secondary schools are not covered by QCEW because of a 1981 Supreme Court decision stating "schools operated and supported by churches and not separately incorporated [are] held exempt from unemployment compensation taxes." College students (and their spouses) employed by the school in which they are enrolled and student nurses and interns employed by hospitals as part of their training are also excluded from QCEW. While QCEW coverage varies, half of the states only include nonprofit organizations with four or more employees during twenty weeks in a calendar year.

Beginning in 2001, QCEW includes employees of Indian tribal governments and enterprises in local government. These employees were previously included in the relevant private industries.[9] In the CBP data, these employees are still classified in private industries.

Nonfarm Self-Employment

The BEA state estimates of nonfarm self-employment consist of the number of sole proprietorships and the number of individual general partners.[10] The nonfarm self-employment estimates resemble the wage and salary employment estimates in that both measure jobs—as opposed to workers—on a full-time and part-time basis. However, because of limitations in source data, two important measurement differences exist between the two sets of estimates. First, the self-employment estimates are largely on a place-of-residence basis rather than on the preferred place-of-work basis. Second, the self-employment estimates reflect the total number of sole proprietorships or partners active at any time during the year—as opposed to the annual average measure used for wage and salary employment.

National totals

For each NAICS three-digit subsector (or SIC two-digit industry in years prior to 2001), the national total of nonfarm self-employment equals the sum of the number of sole proprietorships and the number of individual general partners.

Sole proprietorships.—Income from a nonfarm sole proprietorship is reported on Schedule C—*Profit, or Loss, from Business or Profession*—of Internal Revenue Service (IRS) Form 1040—*U.S. Individual Income Tax Return.* A schedule is filed for each business operated by the filer and the industry of the proprietorship reported. In addition, corporate directors—who are not officers in the corporation—use Schedule C to report their director's fees. BEA uses the number of Schedule Cs filed (including those filed by corporate directors) as its measure of the number of sole proprietorships. The national estimate of the number of nonfarm sole proprietorships in each NAICS three-digit subsector is based on a sample of these schedules.[11] In the absence of IRS data for the most recent years, the number of proprietorships is extrapolated forward using prior years' growth rates.

Partners.—A preliminary national estimate of the number of nonfarm partners by NAICS three-digit subsector is based on a sample of returns of IRS Form 1065—*U.S. Partnership Return of Income*. One Form 1065 is filed by each business partnership. The number of partners (which can include corporations and other legal entities as well as individuals) and the industry of the business are indicated on the form.

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[9] For example, employees of casinos owned by tribal councils were included in the North American Industry Classification System subsector "Amusement, Gambling, and Recreation Industries."

[10] Partners can be individuals, corporations, partnerships, estates, trusts, limited liability companies, tax-exempt organizations, or individual retirement arrangements. They can be either general or limited.

[11] When a husband and wife jointly operate a nonfarm sole proprietorship (e.g. a restaurant) and file a joint income tax return, only one will be counted as a proprietor.

The preliminary estimate of the number of partners by industry is adjusted by using relationships from two special tabulations of partnership tax data provided by the IRS. The first tabulation, available annually, is of the number of limited partners—generally at the NAICS sector level. The second tabulation, available for 1986 only, is the number of partners by SIC division by type (e.g. individuals, corporations, other partnerships acting as partners, and fiduciaries) in partnerships with 10 or fewer partners.

The adjustment of the preliminary estimate is at the NAICS sector level. The preliminary estimates of the number of partners are summed to the appropriate industry totals. The number of limited partners from the first IRS special tabulation is subtracted from the preliminary estimate to obtain the number of general partners. Next, the ratio of the number of individual partners to the total number of partners is calculated for each industry from the second IRS special tabulation. This ratio is multiplied by the number of general partners in the industry in each year to yield the number of individual general partners. Finally, the NAICS sector totals of the number of individual general partners are allocated to the three-digit subsectors in proportion to the number of partnerships to yield the final estimate of partners.

In the absence of IRS data for the most recent years, the number of partners is extrapolated forward using prior years' growth rates.

State estimates

Preliminary state estimates of self-employment are also based on tabulations of the number of nonfarm sole proprietorships filing IRS Schedule C, Form 1040 and on the number of nonfarm general partners as reported on IRS Schedule B, Form 1065. However, the entire population of returns is used (rather than just the sample used for the national estimates) and slightly different data from the forms are available for states. Specifically, data are available on the number of partners in each partnership and the type of partnership. Up to four partners in each partnership are counted except limited partnerships which are assumed to have a single general partner.[12] Tabulations are prepared by NAICS three-digit subsector. The national estimates of sole proprietorships and partners are combined to form an estimate of total self-employment and allocated to states in proportion to the preliminary state estimate of total self-employment. In the absence of IRS data for the most recent years, the state allocators for prior years are used.

Farm Self-Employment

Farm self-employment is defined as the number of non-corporate farm operators, consisting of sole proprietors and partners. A farm is defined as an establishment that produces, or normally would be expected to produce, at least $1,000 worth of farm products—crops and livestock—in a typical year. Because of the low cutoff point for this definition, the farm self-employment estimates are effectively on a full-time and part-time basis. The estimates are consistent with the job-count basis of the estimates of wage and salary employment because farm proprietors are counted without regard to any other employment. The distinction between place-of-work and place-of-residence is not significant because most farmers live on or near their land. Similarly, because of the

[12] Up to 500 partners are counted in law and accounting firms.

annual production cycle of most farming, the distinctions between the point-in-time, the average annual, and the any-activity temporal concepts of employment measurement are not significant.

National and State Estimates (1969-2001)

Both the national and state estimates of farm self-employment are prepared by the application of a series of ratios to the annual estimates of the number of all farms prepared by the National Agricultural Statistics Service (NASS), U.S. Department of Agriculture (USDA). For the BEA national estimates, the ratios are drawn from the USDA's annual *Agricultural Resource Management Study* (ARMS), previously the *Farm Costs and Returns Survey* (FCRS); for the state estimates, the ratios are drawn from the quinquennial *Census of Agriculture*. The census ratios are interpolated between census years, and the ratios from the last census are used for each subsequent year.[13] The sequence of estimating steps for the national totals and the preliminary state estimates is as follows:

1. The number of non-corporate farms is derived as the product of the NASS number of all farms and the ratio of the number of non-corporate farms to all farms.
2. The number of sole-proprietor farms is derived as the product of the number of non-corporate farms (step 1) and the ratio of the number of sole-proprietor farms to non-corporate farms.
3. The number of partnership farms is derived as the product of the number of non-corporate farms (step 1) and the ratio of the number of partnership farms to non-corporate farms.
4. The number of farm partners is derived as the product of the number of partnership farms (step 3) and the ratio of the number of farm partners to partnership farms.
5. Total farm self-employment (final for the nation; provisional for the states) is derived as the sum of the number of sole-proprietor farms (step 2) and the number of farm partners (step 4).

Finally, the national totals are allocated to states in proportion to the provisional state estimates (the allocators developed in step 5).

National and State Estimates (2002 forward)

Beginning in 2002, the *Census of Agriculture* started publishing the number of farm operators by legal form of organization for all states. The methodology for estimating farm self employment from 2002 onward therefore includes additional steps in which the ratio of the number of farm operators to the number of farms are applied. In addition, BEA now adjusts the production threshold an operation must meet to qualify as a farm for inflation using the prices received index for all items for all farms from NASS.[14] The new sequence of steps for estimating farm self employment are as follows:

[13] The most recent *Census of Agriculture* in use for the BEA employment estimates is that for 2002.
[14] The USDA $1,000 threshold was set in 1974.

1. The number of non-corporate farms is derived as the product of the NASS number of all farms and the ratio of the number of non-corporate farms to all farms.
2. The number of sole-proprietor farms is derived as the product of the number of non-corporate farms (step 1) and the ratio of the number of sole-proprietor farms to non-corporate farms.
3. The adjusted number of sole-proprietor farms is derived as the product of the number of sole-proprietor farms (step 2) and the ratio of the number of sole-proprietor farms over the inflation-adjusted threshold to all sole-proprietor farms.
4. The number of sole-proprietors is derived as the product of the adjusted number of sole-proprietor farms (step 3) and the ratio of the number of operators to sole-proprietor farms.[15]
5. The number of partnership farms is derived as the product of the number of non-corporate farms (step 1) and the ratio of the number of partnership farms to non-corporate farms.
6. The adjusted number of partnership farms is derived as the product of the number of partnership farms (step 5) and the ratio of the number of the number of partnership farms over the inflation-adjusted threshold to all partnership farms.
7. The number of farm partners is derived as the product of the adjusted number of partnership farms (step 6) and the ratio of the number of farm partners to partnership farms.
8. Total farm self-employment (final for the nation; provisional for the states) is derived as the sum of the number of sole-proprietors (step 4) and the number of farm partners (step 7).
9. Finally, the national totals are allocated to states in proportion to the provisional state estimates (step 8).

[15] Formerly, BEA assumed that sole proprietorship farms had a single operator, the owner. Data from 2002 *Census of Agriculture* revealed that many sole proprietorship farms had more than 1 operator.