I. INTRODUCTION

This guide presents the conceptual framework, the data sources, and the statistical methodologies used by the Regional Economic Measurement Division of the Bureau of Economic Analysis (BEA) to estimate personal income and employment for states. Personal income is defined as the income received by, or on behalf of, all the residents of an area (nation, state, or county) from all sources. It consists of the income received by persons from participation in production, from government and business in the form of transfers, and from government in the form of interest (which is treated like a transfer receipt). Alternatively, personal income can be defined as the sum of wage and salary disbursements, supplements to wages and salaries, proprietors' income, dividends, interest, and rent, and personal current transfer receipts, less contributions for government social insurance. Because the personal income of an area represents the income that is received by, or on behalf of, all the persons who live in that area, and because the estimates of some components of personal income (wage and salary disbursements, supplements to wages and salaries, and contributions for government social insurance) are made on a place-of-work basis, state personal income includes an adjustment for residence. The residence adjustment represents the net flow of compensation (less contributions for government social insurance) of interstate commuters. Disposable personal income is the income that is available to persons for spending or saving. It is calculated as personal income less personal current taxes paid to Federal, state, and local governments. Persons consists of individuals, nonprofit institutions that primarily serve individuals, private noninsured welfare funds, and private trust funds. The last three categories are referred to as "quasi-individuals."

The state estimates of personal income are designed to be conceptually and statistically consistent with the national estimates of personal income in the National Income and Product Accounts (NIPA). State estimates together with the estimate for the District of Columbia sum to a national total which is very similar to the NIPA estimate except for some minor differences in the treatment of U.S. residents working abroad and the income of foreign residents working in the U.S.

A brief history

In the mid-1930's, BEA began work on the estimation of regional income as part of the effort to explain the processes and structure of the nation's economy. As a result, it published annual state estimates of "income payments to individuals" in the April 1940 issue of the *Survey of Current Business*. These income payments were calculated as the sum of (1) wages and salaries, (2) other labor income and relief, (3) entrepreneurial withdrawals, and (4) dividends, interest, net rents and royalties.

During the 1940's and early 1950's, BEA developed an integrated set of national economic accounts, sought additional source data, and improved the methods used to prepare the estimates. One result of this work was the development of state personal income—a measure that is more comprehensive than state income payments. Estimates of state personal income were first published in the September 1955 *Survey*.

State personal income differs significantly from state income payments in five ways:

- State personal income consists of six major components (supplements to wages and salaries and personal current transfer receipts replaced other labor income and relief, and the component, contributions for government social insurance, was added as an explicit deduction);
- Personal income includes more component detail and a broader range of incomein-kind and imputed income items than state income payments;
- Personal income includes the income of nonprofit institutions that primarily serve individuals, private noninsured welfare funds, and private trust funds (collectively called quasi-individuals);
- Personal income includes employer (both private and government) contributions to pension funds—as part of supplements to wages and salaries—instead of the benefits paid by the funds; and
- Personal income includes personal current transfer receipts from business.

In addition, in the mid-1950's, BEA began work on preparing estimates for local areas. It prepared estimates for a few counties in the states in the Mideast and Plains regions.

In the late 1950's, BEA developed estimates of state disposable personal income. This series was published occasionally in the *Survey* in the 1960's and 1970's and has been published annually beginning with 1982.

During the 1960's, BEA developed quarterly estimates of state personal income. The first set of these estimates as a continuous time series was published in the December 1966 issue of the *Survey*. In addition, BEA prepared a personal income series for metropolitan areas and for nonmetropolitan counties for selected years 1929-62.

In the early 1970's, BEA developed estimates of personal income for counties in metropolitan areas. These estimates were published for the first time in the April 1975 *Survey*. Later in the 1970's it developed estimates of employment for states, counties, and metropolitan areas.

In the 1980's, BEA developed estimates of gross domestic product (GDP) by state and industry.¹ These estimates, as an established series, were first presented in the May 1988 *Survey*.

Now, BEA prepares annual and quarterly estimates of state personal income and annual estimates of state disposable personal income, employment, and GDP by state. It also prepares annual estimates of personal income and employment for all metropolitan areas and counties.

Uses of the state estimates

The state estimates of personal income and its components, per capita personal income, disposable personal income, employment, and GDP by state are widely used by both the public and the private sectors to measure and track economic well-being over

¹ These estimates were originally called gross state product.

Introduction

time and to make comparisons across states in the level and composition of economic activity and the value added by a state's industries. These estimates provide a framework for the analysis of state economies, and they serve as a basis for decision making.

Federal agencies use these estimates in econometric models, such as those used to project energy and water use; they also use the estimates as a basis for allocating funds and for determining matching grants. For example, the distribution of \$215 billion in Federal funds is affected by the estimates of state per capita personal income. The estimates of GDP by state are also used to allocate federal funds.

In addition, the Census Bureau uses the estimates of state per capita personal income as the key predictor variable in the preparation of state estimates of the mean annual income of four-person families.

State governments use the state estimates of personal income and GDP to measure the economic base of planning areas. They also use the estimates in econometric models for various planning purposes and to project tax revenue and the need for public utilities and services. Currently, 21 states have set constitutional or statutory limits on state government revenue and spending that are tied to state personal income or to one of its components. These states account for more than one-half of the population of the United States.² A majority of the states use the quarterly estimates of state personal income to project tax collections.

University schools of business and economics use the estimates for theoretical and applied economic research. Some of these schools distribute the estimates in abstracts or similar reports to various state and local government agencies, regional councils of governments, private research groups, businesses, and libraries.

Businesses use the estimates for planning activities, such as evaluating markets for new or established products and determining areas for the location, expansion, and contraction of their activities.

Geographic characteristics of the source data

Personal income, by definition, is a measure of the income received by persons, and the estimates of state and county personal income should reflect the residence of the income recipients. However, some of the data that are used to estimate some components of personal income are reported by the recipient's place of work rather than by the recipient's place of residence. Therefore, these components are estimated on a place-ofwork basis, the amounts aggregated, and the aggregate (called the income subject to adjustment) adjusted to a place-of-residence basis. Thus the combination of the components of personal income plus the residence adjustment yields personal income on a place-of-residence basis.

The estimates of wages and salaries, supplements to wages and salaries, and contributions for government social insurance (by employers and employees) are mainly derived from data that are reported by place of work. These data are reported by industry in the state and county in which the employing establishment is located.

The estimates of nonfarm proprietors' income and contributions for government social insurance (by the self-employed) are derived from source data that are reported by

² National Conference of State Legislatures, *State Tax and Expenditure Limits* 2005, http://www.ncsl.org/programs/fiscal/telsabout.htm.

the tax-filing address of the recipient. This address is usually that of the proprietor's residence; therefore, these data are assumed to be reported by place of residence.

The estimates of farm proprietors' income are derived from data that are reported by the principal place of production, which is usually the county in which the farm has most of its land and in which most of the work is performed. Because most farm proprietors live on, or near, their land, the place of residence is assumed to be the same as the place of work.

The estimates of rental income of persons, personal dividend income, personal interest income, personal current transfer receipts, and contributions for supplementary medical insurance and for veterans' life insurance are derived from data that are reported by the place of residence of the income recipient.

Differences in geographic scope and in classifications between the NIPA and state and county estimates

Estimates of personal income in the national income and product accounts (NIPA) differ from the state and county estimates primarily because of different treatments of the income of U.S. citizens living and working abroad and of foreign nationals living and working in the United States.

The differences mainly stem from different concepts of residence. For NIPA personal income, a U.S. resident has a center of economic interest in the U.S. and resides, or expects to reside, in the U.S. for a year or more. For state and county personal income, a resident is a participant in a U.S. regional economy, regardless of his national allegiance or duration of residence.

In general, the NIPA measure of personal income is slightly broader than state and county personal income:

- NIPA personal income includes the earnings of Federal civilian and military personnel stationed abroad and the property income received by the Federal retirement plans of these workers. The regional measure of personal income does not include this income.³
- NIPA personal income includes all income earned by U.S. citizens living abroad for less than a year. State and county personal income excludes the portion earned while these people live abroad. Both NIPA and state and county personal income exclude the income of private U.S. citizens living outside the country for a year or more.
- NIPA personal income includes the income of foreign nationals only if they live and work in the United States for a year or more. State and county personal income includes the income of resident foreign nationals working in the United States—including migrant workers—regardless of length of residency.
- Both measures include the income of U.S. residents employed by international organizations or by other countries while living in the United States and exclude the income of foreign nationals employed by their home governments or by international organizations in the United States.

³ See David G. Lenze, "New treatment of state estimates of military compensation," *Survey of Current Business* 85 (October 2005): 116.

In addition, the annual estimates of NIPA personal income can differ slightly from the national totals of state and county personal income because of differences in the availability of source data. Some data that were not available when the NIPA estimates were prepared may become available afterwards when state and county personal income is estimated.

Industrial classification

Up through 2000, the Standard Industrial Classification (SIC) was used (with some slight modifications) for the industrial classification of private sector wage and salary disbursements, compensation, earnings, and employment. The *Standard Industrial Classification Manual*, *1967* was used for the years 1969-74, the 1972 *Manual* was used for the years 1975-87, and the 1987 *Manual* was used for 1988-2001 for states and 1988-2000 for counties.⁴

Since 2001, the North American Industry Classification System (NAICS), with some slight modifications, has been used.⁵ The 2002 edition of NAICS was used for the years 2001-06 and the 2007 edition is used for subsequent years. In addition, earnings and employment estimates that were originally compiled on an SIC basis have been converted to a NAICS basis 1990-2000 to provide users with longer time series on the current industrial classification system.

For the public sector, the estimates of wages and salaries, employer contributions for employee pension and insurance funds, and employment are classified by level of government—Federal, state, and local. The estimates for the Federal government are sub classified into civilian and military.

Concordances between the line codes and industry names used by BEA and those in the NAICS and SIC manuals are presented in an appendix.

Per capita personal income

Per capita personal income is calculated as the personal income of the residents of a given area divided by the resident population of that area. In computing per capita personal income for states and counties, BEA uses the Census Bureau's annual midyear population estimates. Except for college student and other seasonal populations, which are measured as of April 1, the population for all years is estimated as of July 1.

In states and counties where farm income predominates, additional considerations should be taken into account. Farm proprietors' income as measured for personal income reflects returns from current production; it does not measure current cash flows. Sales out of inventories are included in current gross farm income, but they are excluded from net farm income because they represent income from a previous year's production. Additions to inventories are included in net farm income at current market prices;

⁴ Executive Office of the President, Office of Management and Budget, Statistical Policy Division, *Standard Industrial Classification Manual*, *1967* (Washington, DC: U.S. Government Printing Office (GPO), 1967); *Manual*, *1972* (GPO, 1972); *Manual*, *1987* (GPO, 1987).

⁵ Office of Management and Budget: North American Industry Classification System, United States, 2002 (Lanham, MD: Bernan Press, 2002) and Office of Management and Budget: North American Industry Classification System, United States, 2007 (Lanham, MD: Bernan Press, 2007)

therefore, farmers' attempts to regulate their cash flows by adjusting inventories are not reflected in BEA's farm proprietors' income estimates. However, this regulation of cash flows by farmers extends their earnings cycles, so it helps them to survive losses or lowered income for 2 or 3 years. In addition, the per capita personal income of sparsely populated areas that are dependent on farming will react more sharply to the vagaries of weather, world market demand, and changing government policies related to agriculture than that of areas where the sources of income are more diversified.

Personal income, adjusted gross income, and money income

Personal income as defined by BEA differs substantially from adjusted gross income (AGI), the principal measure of the income of individuals that is used by the Internal Revenue Service. Personal income also differs from money income, an income concept developed by the Census Bureau.

As compared with AGI, personal income consists of the income of nonprofit institutions serving individuals, private noninsured welfare funds, and private trust funds as well as of individuals, whereas AGI consists only of the income of individuals who file individual income tax returns. Personal income also includes employer contributions to private health and pension funds and to government employee retirement plans, several types of imputed incomes, transfer receipts, and all of the interest received by individuals, whereas AGI excludes all employer contributions, imputed incomes, most transfer payments, and the nontaxable interest received by individuals. Personal income, unlike AGI, excludes personal contributions for social insurance, realized capital gains and losses, and pension and annuity benefits from private and government employee retirement plans.⁶

Personal income differs from money income mainly because money income consists only of the income that is received by individuals in cash and its equivalents.⁷ Personal income, unlike money income, includes imputed income, lump-sum payments not received as part of earnings, certain in-kind personal current transfer receipts—such as Medicaid, Medicare, and food stamps—and employer contributions to private health and pension funds and to government employee retirement plans. Personal income, unlike money income, excludes personal contributions for social insurance, pension and annuity benefits from private and government employee retirement plans, and income from interpersonal transfers, such as child support.

Personal income for a given area and year includes the income received by individuals living in that area during that year. In contrast, money income for a given area and year consists of the income received during the year by individuals living in the area on April 1 of the following year, regardless of where they were living when they received the income. The income received by individuals who died or moved abroad before April 1 of the following year is not included in the money income of any area.

⁶ For more information on adjusted gross income, see Mark A. Ledbetter, "Comparison of BEA Estimates of Personal Income and IRS Estimates of Adjusted Gross Income," *Survey* 86 (November 2006):29-36.

⁷ For a very detailed comparison of personal income and money income see John Ruser, Adrienne Pilot, and Charles Nelson, "Alternative Measures of Household Income: BEA Personal Income, CPS Money Income, and Beyond," available on the BEA web site.

Personal income is prepared quarterly for states and annually for counties, whereas money income is prepared in greatest detail annually for the nation on the basis of responses to the Current Population Survey (CPS). State estimates are also prepared from the CPS, but they are typically the average of two or more years.⁸

Employment

BEA gives equal weight to full-time and part time jobs in its estimates of employment. Wage and salary jobs and proprietors' jobs are counted, but unpaid family workers and volunteers are not. Proprietors' employment consists of the number of sole proprietorships and the number of general partners. Wage and salary employment is on a place of work basis. Proprietors' employment, however, is more nearly by place of residence because, for nonfarm sole proprietorships, the estimates are based on IRS tax data that reflect the addresses from which the proprietors' individual tax returns are filed, which are usually the proprietors' residences. Nonfarm partnership employment reflects the tax-filing address of the partnership, which may be either the residence of one of the partners or the business address of the partnership. Farm proprietors' employment is a count of farms operated by sole proprietors plus the number of partners operating farm partnerships estimated from U.S. Department of Agriculture data. The residence and place of work of farm proprietors' employment is assumed to be the same—the county in which most of farmland is located.

The employment estimates are designed to be consistent with the estimates of wage and salary disbursements, proprietors' income, and earnings. The employment estimates are based on the same sets of source data as the corresponding earnings estimates and are prepared with parallel methodologies. However, two components of proprietors' income—the income of limited partnerships and the income of tax-exempt cooperatives—have no corresponding employment estimates.

Sources of the data

The estimates of personal income are primarily based on administrative-records, surveys, and censuses.

The data from administrative records may originate either from the recipients of the income or from the payer of the income. These data are a byproduct of the administration of various Federal and state government programs. The most important sources of these data are: The state unemployment insurance programs of the Bureau of Labor Statistics, U.S. Department of Labor; the social insurance programs of the Centers for Medicare and Medicaid Services (CMS, formerly the Health Care Financing Administration), U.S. Department of Health and Human Services, and the Social Security

⁸ Money income for states, counties, and cities has been prepared decennially on the basis of data from the "long-form" sample of the census of population. It is prepared annually for states and will eventually be prepared annually for counties on the basis of data from the American Community Survey (ACS). The income detail in the Census and in the ACS is much less than in the CPS. The Small Area Income and Poverty Estimates program of the Census Bureau has prepared post-censal estimates of median household income for counties. In addition, the Census Bureau prepares estimates of median household income for states using data from the annual Current Population Survey and the American Community Survey.

Administration; the Federal income tax program of the Internal Revenue Service, U.S. Department of the Treasury; the veterans benefit programs of the U.S. Department of Veterans Affairs; and the military payroll systems of the U.S. Department of Defense.⁹

The data from censuses are mainly collected from the recipients of the income. The most important sources of census data for the personal income and employment estimates are the census of agriculture, which is conducted by the U.S. Department of Agriculture (USDA), and the census of population and housing, which is conducted by the Bureau of the Census, U.S. Department of Commerce.

Some of the estimates are based on data from other sources. For example, the USDA's national and state estimates of the income of all farms constitute the principal basis for BEA's national and state estimates of farm proprietors' income. The USDA uses sample surveys, along with census data and administrative-records data, to derive its estimates.

Using administrative records data and census data to measure income as defined in the national income and product accounts has both advantages and disadvantages. By using these data, BEA can prepare detailed annual estimates of personal income for the nation, states, and counties at a relatively low cost and without increasing the reporting burden on businesses and households. However, because the source data often do not precisely match the concept being estimated, they must be adjusted to compensate for differences in definitions, coverage, and geographic detail.

Release and publication schedule

The quarterly and annual estimates of state personal income and the annual estimates of local area personal income are first released on BEA's Web site at <u>www.bea.gov</u> and in news releases; the release dates are announced in advance and are listed on the Web site and in the *Survey of Current Business*.

The quarterly state estimates of personal income are subsequently published in the January, April, July, and October issues of the *Survey*.

The preliminary annual state estimates of total and per capita personal income and of total and per capita disposable personal income are published in the April *Survey*. The revised annual estimates of state personal income by major type and of earnings by industry are published in the September or October *Survey*.

The local area estimates of total and per capita personal income are published in the May *Survey*. Accelerated estimates of metropolitan area personal income are published in the September *Survey*.

Preparation and revision schedule

Personal income estimates are first prepared for the Nation and then for states, estimates for metropolitan statistical areas (MSAs) are prepared next, and lastly they are prepared for counties. Estimates for the BEA regions are aggregations of the state estimates, and estimates for micropolitan areas and BEA economic areas are aggregations of county estimates.

⁹ The data from the state unemployment insurance programs are collected by the various state employment security agencies and are assembled and supplied to BEA by the U.S. Bureau of Labor Statistics.

Introduction

Quarterly estimates of state personal income are prepared about three months after the end of the quarter. The preliminary annual state estimates are prepared about three months after the end of the year, and the revised state estimates are prepared about eight or nine months after the end of the year. Preliminary annual MSA estimates are released on an accelerated basis eight months after the end of the year. The annual estimates of local area personal income are prepared about 16 months after the end of the year.

In March of each year, the annual and quarterly state estimates for the three years before the previous year are revised in order to incorporate the newly available data for wages and salaries that are used to prepare the county estimates for those years and to reflect the county-level estimation of the adjustment for residence. In addition, the state estimates for the fourth quarter of the previous year are prepared, and the estimates for the first three quarters are revised; the preliminary annual state estimates for the previous year are prepared by averaging these quarterly estimates.

In April, the estimates of local area personal income for the year before the previous year are prepared, and the estimates for the two years before that are revised.

In June, the state estimates for the first quarter of the current year are prepared, and the estimates for the four quarters of the previous year are revised.

In August or September, the annual state estimates for the previous year are revised using the annual, rather than the quarterly, methodology, and the annual estimates for the two years before that are revised. In a separate release, accelerated annual estimates of MSA personal income for the previous year are published.

In September, the state estimates for the second quarter of the current year are prepared, and the estimates for the first quarter are revised. Further, the estimates for the quarters of the previous three years are revised for consistency with the revised annual estimates.

In December, the estimates of state personal income for the third quarter of the current year are prepared, and the estimates of the first and second quarters are revised.

Aside from this schedule, the state and local area estimates are normally revised again only after a comprehensive, or benchmark, revision of the NIPA. Comprehensive revisions of the NIPA are made approximately every four or five years.¹⁰

In a comprehensive NIPA revision, the national estimates of personal income are affected by statistical changes that result from the introduction of new source data and the use of improved estimating methods. The national estimates may also be affected by the definitional and classificatory changes that are made so that the NIPA will reflect the evolving economy of the United States. For example, as part of the 2003 comprehensive revision, the definition of property and casualty insurance services was changed to recognize the implicit services that are funded by property income; to provide a more appropriate treatment of insured losses that reduces the large swings in measured services that result from catastrophes, such as the terrorist attacks of September 11, 2001; and to change the treatment of reinsurance. As a result, personal interest income now includes an imputed value of interest income attributable to persons as policyholders, and business

¹⁰ For the results of the latest comprehensive revision of the NIPA, see Eugene P. Seskin and Daniel Larkins, "Improved Estimates of the National Income and Product Accounts for 1929-2002: Results of the Comprehensive Revision," *Survey of Current Business* 84 (February 2004): 7-29.

transfer payments to persons now includes net insurance settlements received by persons.¹¹

Tables

The state personal income data are organized in a set of tables. The data are available online and on a CD-ROM. Annual data for 1929-2006 are available for states, the District of Columbia, the eight BEA regions, and the United States.¹² Annual data are presented by SIC two-digit industry for 1958-2000, by SIC one-digit industry for 1929-1957 and 2001, and by North American Industry Classification System (NAICS) three-digit industry for 2001-2006, except as noted. Quarterly data by industry are presented by SIC division for 1948-2001 and by NAICS sector for 2001 to the present.

- Summary of personal income, per capita personal income, and population, 1929-2006 (tables SA1-3) and of disposable personal income and per capita personal income, 1948-2006 (tables SA51-52);
- Annual income and employment summary (table SA04), 1929-2006;
- Annual estimates of personal income by major component and of place-of-work earnings by SIC industry 1929-2001, and NAICS three-digit industry for 1990-2006 (table SA05);
- Annual estimates of compensation of employees by place of work by SIC industry 1998-2001 and NAICS industry 2001-06 (table SA06);
- Annual estimates of wage and salary disbursements by place of work by SIC industry 1929-2001 and NAICS industry 2001-06 (table SA07);
- Annual estimates of number of jobs—both those held by employees and those held by sole proprietors and partners—by place of work by SIC industry for 1969-2001 and NAICS industry 1990-06 (table SA25);
- Annual estimates of number of jobs held by employees by place of work by SIC industry for 1969-2001 and NAICS industry 2001-06 (table SA27);
- An economic profile table that includes a selection of data from several of the other tables and component detail for dividends, interest, and rent for 1958-2006 (table SA30);
- Annual estimates of personal current transfer receipts by major program for 1948-2006 (table SA35);
- Annual estimates of farm income and expenses that include major categories of gross receipts and expenses for all farms and four measures of farm income for 1969-2006 (table SA45);
- Annual estimates of personal current taxes by level of government and by type for 1948-2006 (table SA50);
- Quarterly personal income for 1948-present (table SQ1);

¹¹ Robert L. Brown, G. Andrew Bernat, Jr., and Adrienne T. Pilot, "Comprehensive Revision of State Personal Income: Preliminary Estimates for 2003: Revised Estimates for 2969-2002," *Survey* 84 (May 2004):27-90.

¹² See "Geographic areas" in the Glossary. Also see the list of BEA regions with their constituent states on the BEA website <u>http://www.bea.gov/bea/regional/docs/regions.asp</u> or under "Documentation" on the CD-ROM.

- Quarterly income summary for 1948-present (table SQ4);
- Quarterly estimates of personal income by major component and of earnings by place of work by SIC industry 1948-2001 and NAICS industry 2001-present (table SQ5);
- Quarterly estimates of compensation of employees by SIC industry 1948-2001 and NAICS industry for 2001-present (table SQ6); and
- Quarterly estimates of wage and salary disbursements by place of work by SIC industry 1948-2001 and NAICS industry 2001-present (table SQ7).

Availability of the state and local area estimates

Before the state and local area estimates are published in the *Survey*, they are available in printed and electronic news releases.¹³ The complete set of personal income and employment estimates for local areas are available interactively on BEA's Web site. Go to <u>www.bea.gov/bea/regional/reis/</u> to access these estimates.

The local area estimates of personal income and of employment are also available through the members of the BEA User Group, which consists of state agencies and universities that help BEA to disseminate the estimates in their states. Go to <u>http://www.bea.gov/bea/regional/docs/usergrp.cfm</u> to access a list of the BEA User Group members or see the list of members under "Documentation" on the CD-ROM.

For more information, call the Regional Economic Information System at 202-606-5360, fax 202-606-5322, or e-mail <u>reis.remd@bea.gov</u>.

¹³ BEA's national, regional, international, and industry estimates, the *Survey of Current Business*, and BEA news releases are available without charge on BEA's Web site at <u>www.bea.gov</u>. By visiting the site, you can also subscribe to receive free e-mail alerts of BEA releases and announcements.