Preview of the 2003 Comprehensive Revision of the National Income and Product Accounts

Changes in Definitions and Classifications

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IN December, the Bureau of Economic Analysis (BEA) will release the initial results of a comprehensive, or benchmark, revision of the national income and product accounts (NIPA's). This revision is the 12th of its kind; the last such revision was released in October 1999.

Comprehensive revisions differ from annual NIPA revisions because of the scope of the changes and because of the number of years subject to revision. Comprehensive revisions incorporate three major types of improvements: (1) Changes in definitions and classifications that update the accounts to more accurately portray the evolving U.S. economy,[1] (2) statistical changes that update the accounts to reflect the introduction of new and improved methodologies and the incorporation of newly available and revised source data, and (3) presentational changes that update the NIPA tables to reflect the definitional and statistical changes and to make the tables more informative.

This article is the second in a series of SURVEY OF CURRENT BUSINESS articles about the comprehensive revision. An article in the January 2003 issue described the effects of incorporating the 1997 benchmark input-output (I-O) accounts and identified some of the proposals being considered for this comprehensive revision.[2] An article in the August issue will describe the new and redesigned tables.[3] An article in the September issue will describe the statistical changes. An article in the January 2004 issue will describe other aspects of the revision, including estimates of the effects of the definitional and statistical changes.

Comprehensive revisions, and to a lesser extent annual revisions, provide the opportunity to introduce major changes that are outlined in BEA's strategic plan for maintaining and improving its economic accounts.[4] In discussing the national accounts, BEA's strategic plan outlines several major objectives, including addressing data gaps and other shortcomings, improving consistency and integration with other accounts, and improving consistency with international guidelines. The definitional, presentational, and statistical improvements planned for this year's comprehensive revision constitute important steps toward meeting each of these objectives.

For example, the measurement of financial and insurance services has long been considered a shortcoming in the NIPA's. The definitional changes that will be made to the measures of property and casualty insurance and of commercial banking that are described in this article are the result of considerable research by BEA staff and reflect a better understanding of the output of these industries. A number of other changes that address data gaps and other shortcomings will be presented in the September article on statistical changes.

Several changes to sector definitions will improve the consistency and integration of the NIPA's with other accounts, such as BEA's I-O accounts, the Federal Reserve Board's flow of funds accounts, and the Bureau of Labor Statistics (BLS) productivity statistics. These changes will enable data users to move more easily from one set of accounts to another, thereby expanding the set of information that can be brought to

1. The changes in definition and classification that are discussed in this article are the changes that affect the conceptual content of the components of the NIPA summary accounts.

2. Stephanie H. McCulla and Carol E. Moylan, "Preview of Revised NIPA Estimates for 1997: Effects of Incorporating the 1997 Benchmark I-O Accounts and Proposed Definitional and Statistical Changes," SURVEY 83 (January 2003): 10–16.

3. One of the presentational changes that will be made in the upcoming comprehensive revision, a new NIPA presentation that shows incomes and outlays of households separately from those of nonprofit institutions, was described in Charles Ian Mead, Clinton P. McCully, and Marshall B. Reinsdorf, "Income and Outlays of Households and of Nonprofit Institutions Serving Households," SURVEY 83 (April 2003): 13–17.

4. The BEA strategic plan is available on our Web site at <www.bea.gov>; click on "About BEA" and find the bullet for "Strategic Plan for 2003–2007" near the bottom of the page.

Shelly Smith assisted in preparing the tables and figures for this article.

bear in studying economic changes in a sector or an industry. For example, balance sheets that are integrated with the NIPA's would be useful in examining the association between the rise in wealth in the late 1990s and the decline in personal saving.

Increased integration of the world's monetary, fiscal, and trade policies has led to a growing need for international harmonization of economic statistics. Many of the definitional changes presented in this year's revision will improve consistency with the principal international guidelines for national accounts, *System of National Accounts 1993*.[5] BEA actively participated in preparing *SNA 1993*, and after it was approved by the United Nations Statistical Commission, BEA announced that it would move its accounts toward *SNA 1993*.[6] Since then, BEA has adopted most of the major *SNA 1993* changes that affect gross domestic product (GDP), investment, and saving. In the 1996 comprehensive revision, chain-type indexes were adopted for measuring changes in real GDP and prices, and government fixed investment was recognized. In the 1999 comprehensive revision, investment in software was recognized, the treatment of government employee retirement plans was changed, and capital transfers were identified separately from current transfers. For this year's comprehensive revision, the changes will help bring the NIPA classifications of various transactions into conformity with the classifications used by *SNA 1993*. While these changes, together with the presentational changes that will be described in the August article, will modify the appearance of the NIPA's, in most cases they do not affect the major aggregates, such as GDP, gross national product (GNP), personal income, profits, saving, and investment. (However, national income will be redefined as described in the section "Consistency With International Guidelines.")

BEA supports the goal of international harmonization of its national accounts, and the NIPA's will continue to adopt *SNA 1993* to the extent feasible. Nevertheless, because BEA has decided to retain several important NIPA aggregates, such as personal income and corporate profits, that do not appear in *SNA 1993*, some differences will persist. In most cases, the classification systems used by the NIPA's for sectors, industries, and type of product differ from those recommended by *SNA 1993*. In efforts to harmonize these systems, BEA must consider the needs of the U.S. user community along with the goal of improved international harmonization. Improving consistency with *SNA 1993* remains an element of BEA's mission of producing accurate, relevant, and timely statistics, of responding to customers, and of meeting the challenges of a changing economy.

The major changes in definitions and classifications that will be introduced in this comprehensive revision are as follows.

- Recognize the implicit services provided by property and casualty insurance and provide a more appropriate treatment of insured losses, thereby reducing large swings in measured services
- Allocate a portion of the implicit services of commercial banks to borrowers, thereby recognizing that both borrowers and depositors receive these services from banks
- Recognize explicitly the services produced by general government and treat government purchases of goods and services as intermediate inputs
- Broaden the definition of national income to include all net incomes (net of consumption of fixed capital) earned in production

In addition to these major changes, a number of other changes in definitions and classifications will be introduced, including the following.

- Reclassify Indian tribal governments, farm housing services, owner-occupied housing services, and rental value of fixed assets used by nonprofit institutions serving households in order to improve conformity with other BEA accounts and with accounts of other agencies and to make the NIPA's more usable
- Reclassify certain NIPA components—including miscellaneous compensation, nonresident taxes, business and personal nontax payments, and government current receipts and expenditures—in order to improve consistency with international guidelines
- Split the NIPA foreign transactions account into two accounts—the foreign transactions current account and the foreign transactions capital account—in order to separately identify capital transfers
- Introduce several new aggregates that will provide alternative measures of income, saving, and investment
- Redefine change in private farm inventories to include farm materials and supplies, thereby improving the measures of GDP and gross farm product
- Reclassify military grants-in-kind to improve con-

5. See Commission of the European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, and the World Bank, *System of National Accounts 1993* (Brussels/Luxembourg, New York, Paris, and Washington, DC, 1993); henceforth, *SNA 1993*.

6. See "New International Guidelines in Economic Accounting," Survey 73 (February 1993): 43.

sistency between the NIPA's and BEA's international transactions accounts (ITA's)

- Redefine compensation-in-kind of Federal Government employees to include mass transit benefits

In the following sections of the article, each change is described, the reason for the change is given, and the effect on the accounts is provided. In addition, whenever available, preliminary estimates of the impact of the change are provided.

For each change, table 1 shows the aggregates and components of the current NIPA five-account system (see table 2) that will be affected and the initial year of the revision.

Addressing Data Gaps and Other Shortcomings

This comprehensive revision will introduce definitional changes that will refine the concepts used to measure property and casualty insurance services, implicit services of banks, farm inventories, and compensation of Federal Government employees. These changes, together with the changes in source data and methods that will be described in the September article on statistical changes, will address many of the data gaps and other shortcomings in the NIPA's.

Insurance services

The definition of property and casualty insurance services (other than health insurance) will be changed to recognize the implicit services that are funded by investment income; to provide a more appropriate treatment of insured losses, thereby reducing 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.[7] This change, which will be carried back to 1929, represents another step in BEA's effort to improve its measures of the production of services.[8]

7. Under the current treatment, the terrorist attacks of September 11, 2001, resulted in a decrease in domestic final expenditures for insurance services of about $21 billion (current dollars, annual rate) in the third quarter of 2001. Within imports of services, claims by domestic insurers for reinsurance policies with foreign insurers resulted in a decrease in imports of "other private services" of about $44 billion. These effects lowered gross domestic purchases by about $21 billion and raised GDP by about $23 billion. BEA treated these effects as changes in the corresponding implicit prices for insurance services, so real GDP was not affected. However, the gross domestic purchases price index and the PCE price index were each reduced by about 1 percentage point and the GDP price index was raised by about 1 percentage point.

8. For earlier discussions of the measurement of insurance services, see Obie G. Whichard and Maria Borga, "Selected Issues in the Measurement of U.S. International Services," SURVEY 82 (June 2002): 36–56; and Dennis J. Fixler, "Rethinking the NIPA Treatment of Insurance Services for the Comprehensive Revision," paper presented at the meeting of the BEA Advisory Committee, November 15, 2002 (revised December 23, 2002), available at <www.bea.gov>.

Insurance companies provide financial protection to policyholders through the pooling of risk, and they provide financial intermediation services through the investment of reserves that are held to help cover extraordinary losses. The provision of these services of financial protection and financial intermediation represent the output of the insurance industry. Depending on whether the policyholder is a person, general government, the rest of the world, or a domestic enterprise, these services appear in personal consumption expenditures (PCE), government consumption expenditures, exports of services, or intermediate inputs of owner-occupied housing and of business. In most periods, the insurance premiums received and the investment income earned provide the funds needed for a "normal," or expected, level of insurance claims and insurance services and for additions to reserves. However, in some periods, funds must be withdrawn from reserves to cover extraordinary losses. Alternatively, the insurance company may purchase reinsurance as a protection against extraordinary losses. Therefore, after accounting for investment income, insurance companies set premiums in order to cover the expected costs of providing the services, of settling claims, of maintaining reserves against future claims, and of purchasing reinsurance.

Implicit services. In the NIPA's, the value of insurance services (except for life insurance) is currently measured as the premiums receivable by insurance carriers less the actual insured losses incurred and the dividends payable by mutual insurance companies to their policyholders. As part of the new treatment, the value of the expected investment income on the funds on which policyholders have claim will be added to the value of the premiums earned—that is, the portion of the premiums accrued during the period. This expected investment income is not output in and of itself, but it will be used to impute the value of the implicit component of the intermediation services provided to policyholders. This change recognizes that in setting their premiums, insurance companies take into account the expected income that may be earned from the investment of reserves. This implicit component of insurance services will be referred to as a *premium supplement*.[9]

Normal losses. Another major aspect of the redefinition involves the substitution of normal losses for actual losses incurred in a period in the calculation of the value of insurance services. This change recog-

9. *SNA 1993* recommends that this portion of investment income be included in the measure of insurance output and treated as a premium supplement (paragraphs 6.135–6.140).

nizes that in setting their premiums, insurance companies do not yet know the actual losses in the period. Normal losses represent an approximation of the losses expected to be incurred by the insurance company—that is, the benefits they expect to pay to policyholders. This change will reduce the large swings in

Table 1. Changes in Definitions and Classifications

Change	Principal components affected	Initial year of revision
Addressing data gaps and other shortcomings		
Recognize the implicit services provided by property and casualty insurance and provide a more appropriate treatment of insured losses.	GDP, GNP, GDI, PCE, exports and imports of services, government consumption expenditures and gross investment, net interest, business transfer payments, ROW income, personal income, personal interest income, transfer payments to persons, DPI, personal outlays, government net interest, and government current receipts and expenditures.	1929
Allocate a portion of the implicit services of commercial banks to borrowers.	GDP, GNP, GDI, PCE, exports of services, government consumption expenditures and gross investment, net interest, ROW income payments and receipts, personal interest income, personal income, DPI, interest paid by persons, personal outlays, government net interest, and government current receipts and expenditures.	1929
Redefine change in private farm inventories to include farm materials and supplies.	GDP, GNP, GDI, gross private domestic investment, change in private inventories, proprietors' income, personal income, DPI, personal saving, statistical discrepancy, gross saving, and gross product of farm business sector.	1991
Redefine compensation-in-kind of Federal Government employees to include mass transit benefits.	GDI, wage and salary disbursements, personal income, DPI, personal saving, statistical discrepancy, and gross saving.	1998
Consistency and integration with other accounts		
Reclassify Indian tribal governments to state and local government sector.	GDP, GNP, GDI, PCE, government consumption expenditures and gross investment, current surplus of government enterprises, personal outlays, personal saving, government current receipts and expenditures, government current surplus or deficit, and gross saving.	1990
Reclassify farm housing to real estate industry.	Proprietors' income, rental income of persons, and gross product of farm business sector and of households and institutions sector.	1929
Reclassify owner-occupied housing to households and institutions sector.	Gross product of business sector and of households and institutions sector.	1929
Reclassify rental value of fixed assets used by nonprofit institutions serving households to households and institutions sector.	Gross product of business sector and of households and institutions sector.	1929
Reclassify military grants-in-kind as exports.	Exports of goods and services, Federal Government consumption expenditures and gross investment, and government transfer payments to ROW.	1959
Consistency with international guidelines		
Recognize explicitly the services produced by general government and treat government purchases of goods and services as intermediate inputs.	GDP goods and GDP services.	1929
Broaden the definition of national income to include all net incomes earned in production.	National income.	1929
Reclassify miscellaneous compensation as wages and salaries.	Wage and salary accruals and disbursements, and other labor income.	1948
Reclassify nonresident taxes paid by domestic corporations to tax payments to ROW.	Corporate profits with inventory valuation and capital consumption adjustments, profits tax liability, and business transfer payments to ROW.	1959
Reclassify business nontax liability as current transfer payments to government and rent and royalties to government.	Business transfer payments and indirect business tax and nontax liability.	1929
Reclassify personal nontax payments as current transfer payments to government.	Personal tax and nontax payments, DPI, personal transfer payments, and personal outlays.	1929
Reclassify certain government current receipts and expenditures.	Government current receipts and expenditures.	1946[1]
Reclassify nonresident taxes received by government as tax receipts.	Government tax receipts, government transfer payments, and government current receipts and expenditures.	1959
Split the foreign transactions account into a current account and a capital account.	Net foreign investment.	1929[2]

1. For years prior to 1946, state and local government interest will be presented as net interest and for years prior to 1960, Federal and total government interest will continue to be presented as net interest. For years prior to 1959, subsidies will continue to be presented net of the current surplus of government enterprises.
2. Estimates of capital transfers to the rest of the world are available, beginning with 1982.

DPI Disposable personal income
GDI Gross domestic income
GDP Gross domestic product
GNP Gross national product
PCE Personal consumption expenditures
ROW Rest of the world

Table 2. Summary National Income and Product Accounts

Account 1. National Income and Product Account

Compensation of employees	Personal consumption expenditures
Wage and salary accruals	Gross private domestic investment
Supplements to wages and salaries	Fixed investment
Employer contributions for social insurance	Nonresidential
Other labor income	Residential
Proprietors' income with IVA and CCAdj	Change in private inventories
Rental income of persons with CCAdj	Net exports of goods and services
Corporate profits with IVA and CCAdj	Exports
Profits tax liability	Imports
Dividends	Government consumption expenditures and gross investment
Undistributed profits with IVA and CCAdj	Federal
Net interest	State and local
National income	
Business transfer payments	
Indirect business tax and nontax liability	
Less: Subsidies less current surplus of government enterprises	
Consumption of fixed capital	
Less: Income receipts from the rest of the world	
Plus: Income payments to the rest of the world	
Gross domestic income	
Statistical discrepancy	
GROSS DOMESTIC PRODUCT	**GROSS DOMESTIC PRODUCT**

Account 2. Personal Income and Outlay Account

Personal tax and nontax payments	Wage and salary disbursements
Personal outlays	Other labor income
Personal consumption expenditures	Proprietors' income with IVA and CCAdj
Interest paid by persons	Rental income of persons with CCAdj
Personal transfer payments to the rest of the world (net)	Personal dividend income
Personal saving	Personal interest income
	Transfer payments to persons
	Less: Personal contributions for social insurance
PERSONAL TAXES, OUTLAYS, AND SAVING	**PERSONAL INCOME**

Account 3. Government Receipts and Expenditures Account

Consumption expenditures	Personal tax and nontax payments
Transfer payments	Corporate profits tax liability
Net interest paid	Indirect business tax and nontax liability
Less: Dividends received by government	Contributions for social insurance
Subsidies less current surplus of government enterprises	Employer
Less: Wage accruals less disbursements	Personal
Current surplus or deficit (–), NIPA's	
GOVERNMENT CURRENT EXPENDITURES AND SURPLUS	**GOVERNMENT CURRENT RECEIPTS**

Account 4. Foreign Transactions Account

Exports of goods and services	Imports of goods and services
Income receipts	Income payments
	Transfer payments to the rest of the world (net)
	Net foreign investment
RECEIPTS FROM THE REST OF THE WORLD	**PAYMENTS TO THE REST OF THE WORLD**

Account 5. Gross Saving and Investment Account

Gross private domestic investment	Personal saving
Gross government investment	Wage accruals less disbursements (private)
Net foreign investment	Undistributed corporate profits with IVA and CCAdj
	Consumption of fixed capital
	Government current surplus or deficit (–), NIPA's
	Statistical discrepancy
GROSS INVESTMENT	**GROSS SAVINGS AND STATISTICAL DISCREPANCY**

CCAdj Capital consumption adjustment
IVA Inventory valuation adjustment
NIPA's National income and product accounts

measured insurance services that result from catastrophes such as Hurricane Andrew in 1992 and the terrorist attacks on September 11, 2001.

Formulas. For each type of insurance, normal losses will be calculated as a geometric-weighted moving average of past loss ratios (that is, the ratio of actual losses to premiums earned) multiplied by the premiums earned during the current period. That is, the normal loss in period t, NL_t, is

$$NL_t = NLR_t \times P_t$$

where

$$NLR_t = \alpha LR_t + \alpha(1-\alpha)LR_{t-1} + \alpha(1-\alpha)^2 LR_{t-2} \ldots,$$

P_t is the premiums earned, LR_t is the loss ratio—that is, L_t/P_t—in period t, and α is a parameter. Premiums earned and loss ratios are based on trade source data. The formula is based on the adaptive-expectations model developed by Cagan.[10] The "free" parameter α is the weight applied to the prior period's value in the weighted average; this parameter will be assigned a value of 0.3 based on evidence that it provides the best prediction of future values.[11] Thus, for every deviation in the loss ratio from its previously expected value, the normal, or expected, value for the subsequent period is adjusted by 30 percent.

For each type of insurance, premium supplements will be calculated as a geometric-weighted moving average of past investment gain/loss ratios (that is, "net investment gain/loss on funds attributable to insurance transactions" divided by premiums earned) multiplied by the premiums earned during the current period.[12] That is, the premium supplement in period t, PS_t, is

$$PS_t = NIR_t \times P_t$$

where

$$NIR_t = \beta IR_t + \beta(1-\beta)IR_{t-1} + \beta(1-\beta)^2 IR_{t-2} \ldots,$$

IR_t is the investment gain/loss ratio—that is, I_t/P_t—in period t, and β is a parameter, which will be assigned a value of 0.3. Net investment gains/losses on funds attributable to insurance transactions are available from trade source data and represent the industry rate of return on investment multiplied by the reserves that are directly attributable to policyholders because of prepayment of premiums or accrual of benefits.

Reinsurance. Insurance services will be calculated from source data on direct premiums and direct losses—that is, without any adjustment for reinsurance. Transactions related to reinsurance will be treated in the same way as those related to direct insurance, and the services of reinsurance will be treated as an intermediate input to the insurance carriers industry or as exports of services. Currently, insurance services are calculated from premiums and losses after netting the value of reinsurance that is assumed or ceded.

New flows. As a result of the above changes, several new insurance flows will be recognized in the NIPA's. An insurance company receives premiums and investment income that must fund the ongoing production of services as well as covering a normal level of losses; extraordinary losses are paid from reserves or from reinsurance. One can think of these transactions as being decomposed into four pieces. (1) The policyholders pay the insurance company total premiums (including the imputed portion) equal to the premiums earned plus premium supplements less dividends payable to policyholders. A portion of this total premium is considered a payment for insurance services consumed and is valued as total premiums less normal losses. (2) The remaining portion of the total premium, which is equal to normal losses, is a transfer-like flow from the policyholders to the insurance company that is used to pay for actual losses, additions to reserves, and reinsurance. (3) Because premium supplements are funded by investment income from the portion of reserves that are, in principle, the property of the policyholders, the accounts must show an equal flow of imputed income paid to the policyholders, which will be classified as imputed interest. (4) Actual insured losses (or claims payable) are a transfer-like flow from the insurance company to the policyholder.[13] The net value of (4) minus (2), which equals actual losses less normal losses, will be referred to as "net insurance settlements."

Effects on the accounts. As a result of the new treatment, PCE, government consumption expenditures, and exports will each change by the value of premium supplements on policies held by the corresponding sector plus the difference between actual losses and normal losses on insurance held by the sector. Imports will change by the value of premium supplements on policies of foreign insurance carriers held by domestic residents plus the difference between actual losses and normal losses on those policies. GDP will change by the sum of the value of the changes in PCE, in govern-

10. See Phillip D. Cagan, "The Monetary Dynamics of Hyper-Inflation," in *Studies in the Quantity Theory of Money,* ed. Milton J. Friedman (Chicago: University of Chicago Press, 1956).

11. A paper providing additional details on the estimation methods will be available on BEA's Web site later this summer.

12. Because the denominator of these ratios is premiums earned rather than reserves, these investment gain/loss ratios cannot be interpreted as rates of return.

13. These flows between the policyholder and the insurance company do not strictly meet the definition of a "transfer"—that is, a payment for which nothing is provided in return—because the payment is made as part of the contract between the policyholder and the insurance company. However, because these flows are similar to transfers in that they reflect the part of the payments that are not associated with the purchase of insurance services, they will be included in business transfer payments in the NIPA's.

ment consumption expenditures, and in exports less the value of the change in imports. Premium supplements on policies purchased by business and on policies purchased by homeowners for owner-occupied housing will be treated as intermediate inputs and will not affect the value of GDP.

Offsetting flows will appear on the income side of the NIPA's. Net interest will increase to reflect the implicit income, which is equal to the premium supplements that are allocated to persons and to government. Income receipts from the rest of the world will increase by an amount equal to the premium supplements that are allocated to domestic policies issued by foreign insurance carriers, and income payments to the rest of the world will increase by an amount equal to the premium supplements allocated to foreign policyholders. Business transfer payments will change by the value of net insurance settlements (actual losses less normal losses) paid to persons, to government, and to the rest of the world, less net insurance settlements received by domestic business from foreign insurance carriers. The change to gross domestic income (GDI) will equal the change to GDP, so the statistical discrepancy will not be affected. Because the flows of premium supplements to and from the rest of the world are offset by the flows of implicit income, the addition of premium supplements to exports and to imports will not affect GNP; consequently, the change to GNP will equal the value of net insurance settlements that will be included in business transfer payments plus the value of premium supplements added to PCE and to government consumption expenditures.

In the personal income and outlay account (account 2), personal interest income will increase by the value of imputed interest attributable to persons as policyholders, and business transfer payments to persons will change to reflect net insurance settlements received by persons. Within personal outlays, PCE will change as described above. The changes to the income components will equal the changes to personal outlays, so personal saving will not be affected.

In the government receipts and expenditures account (account 3), net insurance settlements received by government will be shown as "business transfer payments to government" (a new NIPA category within current receipts that will be further discussed in the section "Indirect business tax and nontax liabilities"). Net interest paid will be reduced by the imputed interest attributable to government as policyholders (also see the section "Government current receipts and expenditures," which explains that interest received will be reclassified as part of government receipts). Government consumption expenditures will change as described above. The changes to the current receipts components will equal the changes to the current expenditures components, so the government current surplus or deficit will not be affected.

Within the foreign transactions account (account 4), exports, imports, and income receipts and payments will change as described above. Transfer payments to the rest of the world (net) will change by the value of net insurance settlements paid to the rest of the world less net insurance settlements received from the rest of the world. Net foreign investment will not be affected.

The gross saving and investment account (account 5) will not be affected by this definitional change.

Implicit services of banks

In the NIPA's, an imputation is made for the services that banks and other depository institutions provide without an explicit charge. These services include processing checks, disbursing or transferring funds when and where needed, bookkeeping, protecting deposited funds, and investment services. Charges for these services may be explicit, or they may be implicit—that is, banks may pay depositors lower interest rates rather than charging for each service provided.[14]

BEA has imputed the value of these implicit services as the monetary interest that banks receive from loans and securities less the interest that they pay on deposits and other liabilities, and it has treated depositors as the consumers of these services. The imputed expenditures for the implicit services appear on the product side of the NIPA's in PCE, in exports of services, and in government consumption expenditures; they are treated as intermediate inputs for business.

One of the most important services provided by banks is financial intermediation—collecting funds from depositors or lenders and repackaging them in ways that meet the needs of borrowers, thereby reducing transactions costs for both depositors and borrowers. *SNA 1993* recommends that the value of these implicit services be allocated partly to depositors and partly to borrowers, recognizing that both depositors and borrowers receive these implicit services from banks and other depository institutions.[15] Therefore, as part of the upcoming comprehensive revision, BEA will allocate the implicit services of commercial banks to borrowers as well as to depositors.[16] This change, which will be carried back to 1929, will reduce GDP and the total gross output of banks. A significant

14. The methodology for estimating the services for which banks have *explicit* charges will not change.

15. See *SNA 1993*, paragraph 6.127.

16. The imputation that is made for other depository institutions will not change, but BEA will review the treatment for possible change in the next comprehensive revision.

source of the reduction in GDP will be the reallocation of implicit services from final expenditures to intermediate consumption because a larger share of borrowed funds than deposited funds is attributable to business. GDI will be reduced by the same amount as GDP, so the statistical discrepancy will not be affected.

Use of a reference rate. *SNA 1993* proposes that the implicit financial services, which it terms "financial intermediation services indirectly measured" (FISIM), be allocated using a "reference rate" of interest that represents the opportunity cost of borrowing or lending funds.[17] Under the reference-rate approach, the difference between the interest received by depositors and the interest they would have received had they been paid the reference rate is the value of the implicit services to depositors. Similarly, the difference between the interest paid by borrowers and the interest they would have paid had they borrowed at the reference rate is the value of the implicit services to borrowers.

The reference rate of interest in *SNA 1993* represents the "pure cost of borrowing funds"—a rate that does not include a risk premium or any intermediation services.[18] BEA investigated two approaches to estimating the reference rate, one based on current market interest rates and one based on "book-value" interest rates. Empirical tests indicated that the use of current market interest rates would cause excessive volatility in the estimates of implicit services to depositors and to borrowers, while the use of book-value rates would not.[19]

Book-value interest rates are computed by dividing the annualized interest receipt or payment for a financial product by the stock of that financial product on the balance sheet. To estimate a reference rate, BEA divided the interest received from Treasury and Federal agency securities for each period by the average book values of these securities held by banks during that period. These types of securities are highly liquid and free of credit risk, so their interest rates are presumed to exclude the costs of risk-bearing or illiquidity in addition to excluding routine services to loan customers, such as bookkeeping. Use of this reference rate implies that the Federal Government receives no implicit services from financial intermediaries holding securities.

Allocation among sectors. As discussed above, the allocation to sectors of the implicit services provided by banks and certain other financial intermediaries is currently based on deposits. Once the implicit services provided to borrowers is recognized, this allocation will change because households tend to hold a larger share of deposits, whereas businesses—including owner-occupied housing (which is treated like a business)—tend to receive a larger share of loans.[20] Thus, the share of implicit services allocated to final demand (by households, government, and the rest of the world) will decrease, and the share of implicit services allocated to intermediate consumption (by business) will increase.

Banking output. The recognition of borrower services will also result in changes to the measure of the unpriced, or imputed, portion of the gross output of commercial banks. Currently, the imputed gross output of banks and similar depository institutions is calculated as the interest received from borrowers net of the interest paid to depositors and to other providers of funds. A rationale for this calculation is that if banks were to charge explicit fees for all of their services, the interest paid to depositors would be equal to the interest earned on the investment of their deposits.[21]

An assumption implicit in this calculation is that deposits are the only source of funds available to banks for making loans and for purchasing securities. However, a bank's "own funds" (that is, funds that come from stockholders' equity rather than from deposits or other liabilities) are also a source of funds for lending, so the value of loans and other interest-bearing assets generally exceeds the value of deposits and other interest-bearing liabilities. When a bank loans its own funds, it avoids the cost of paying interest on deposits. Therefore, implicit services should not be attributed to depositors for the interest earned by the bank on the portion of its assets that is in excess of its liabilities, because depositors are not the source of these funds. Similarly, implicit services should not be attributed to stockholders, because no such services are provided on stockholders' equity.

Because the new method separately values the opportunity cost to the bank of using own funds, this amount can be deducted from the imputation of expenditures for borrower and depositor services. To prevent an incorrect imputation of depositor services on stockholders' equity, the measure of imputed out-

17. Several articles on the user-cost-of-money theory as it applies to banking provide a conceptual framework to justify the reference-rate approach: See Diana Hancock, "The Financial Firm: Production with Monetary and Nonmonetary Goods," *Journal of Political Economy* 93 (October 1985): 859–880; Dennis J. Fixler, "Measuring Financial Service Output and Prices of Commercial Banking," *Applied Economics* 25 (April 1993): 983–993; and Dennis J. Fixler and Kimberly D. Zieschang, "The Productivity of the Banking Sector: Integrating Financial and Production Approaches to Measuring Financial Service Output," *Canadian Journal of Economics* 32 (April 1999): 547–569.

18. See *SNA 1993*, paragraph 6.128.

19. A paper providing additional details of the empirical analysis will be available on BEA's Web site later this summer.

20. See the section "Owner-occupied housing services."

21. See U.S. Department of Commerce, Office of Business Economics, *National Income: A Supplement to the Survey of Current Business*, 1954 ed. (Washington, DC: U.S. Government Printing Office, 1954): 46–47.

put must be reduced by an amount equal to the reference rate multiplied by the difference between the bank's assets and liabilities. Consequently, adoption of the reference-rate approach will reduce imputed gross output.

The effects of this change can be shown diagrammatically. Currently, imputed gross output of banks is calculated as the rate of return on assets (rA) multiplied by the value of assets (vA) less the rate paid on liabilities (rL) multiplied by the value of liabilities (vL) (figure 1). Thus, the imputed gross output of banks is represented by the sum of the areas $A + B + C$. With the allocation of a portion of banks' imputed output to borrowers, gross imputed output of banks will be calculated as the difference between the rate of return on assets and the reference rate (rr) multiplied by the value of assets plus the difference between the reference rate and the rate paid on liabilities multiplied by the value of liabilities, or $((rA - rr) \times vA) + ((rr - rL) \times vL)$. Thus, the imputed gross output of banks is represented by the sum of the areas $A + B$. The net effect of the definitional change is to reduce gross output by the reference rate multiplied by "own funds" (the difference between the value of assets and the value of liabilities), or $rr \times (vA - vL)$, which is represented by area C.

As is evident from figure 1, the new measure of imputed gross output will be sensitive to how the relevant types of assets and liabilities are defined. Assets included in the calculation of imputed output consist primarily of loans, securities, and balances due from other banks.[22] Liabilities included consist primarily of deposits plus some nondeposit, interest-bearing liabilities, such as subordinated debt and repurchase agreements. In short, assets are limited to earning assets, and liabilities, to sources of funds.

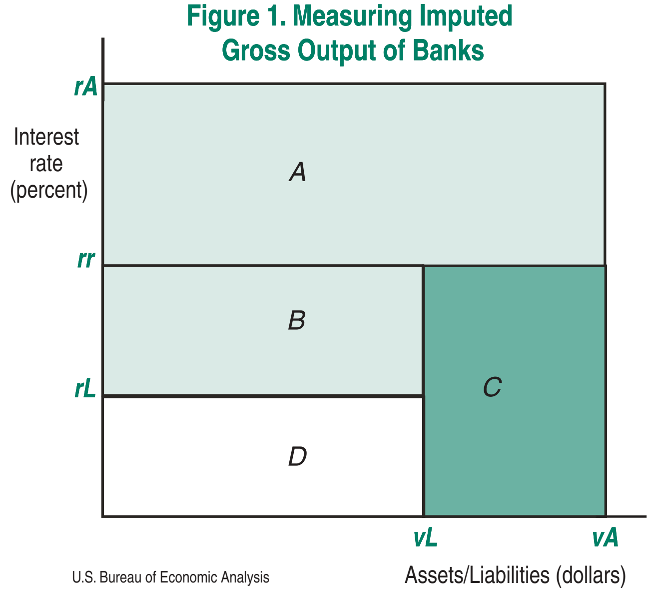
Domestic and foreign output. To calculate U.S. domestic banking output, adjustments are made to remove the output of foreign offices of U.S.-owned banks and to add the output of foreign-owned bank offices in the United States. These adjustments are necessary because the primary source data used to estimate the output of the banking industry, the Federal Financial Institutions Examination Council *Call Reports* published by the Federal Deposit Insurance Corporation, include foreign offices of U.S. banks and exclude the U.S. offices of foreign banks.

Foreign offices of U.S.-owned banks. The output of foreign offices of U.S. banks is currently measured as the difference between their interest receipts from borrowers and their interest payments to depositors. In recent years, the value of deposits in foreign offices has substantially exceeded the value of loans made, but interest rates on deposits are generally lower than interest rates on loans. As a result, depositors have received about the same amount of interest as borrowers have paid, so essentially no output has been attributed to the foreign offices.

Adoption of the reference-rate approach will result in more output being attributed to the foreign offices of U.S.-owned banks. Specifically, the output of foreign offices will increase by an amount equal to the reference rate multiplied by the difference between the deposits and the loans of the foreign offices. Currently, the imputed gross output of these foreign offices is calculated as the rate of return paid on assets multiplied by the value of assets minus the rate of return paid on liabilities multiplied by the value of liabilities, or $(rA \times vA) - (rL \times vL)$ (figure 2). This imputation is represented by the areas $A + B + C - (C + F)$, or $A + B - F$. With the allocation of a portion of banks' imputed output to borrowers, area F is no longer subtracted from the gross output of the foreign offices, and area E is added to their gross output.

Because the output of foreign offices of U.S.-owned banks is deducted from the worldwide gross output of U.S. banks to arrive at domestic output, increases in the output of foreign offices will result in decreases in the domestic output. These decreases reflect a more ac-

Figure 1. Measuring Imputed Gross Output of Banks



22. Imputed output for securities held by banks is generally small because spreads between their interest rate and the reference rate tend to be small. (Spreads for securities issued by state and local governments are based on tax-equivalent yields to make their interest comparable to interest earned by loans and other types of securities.) Federal Government securities are not a source of imputed gross output because, by construction, the spread between their interest rate and the reference rate is zero.

curate allocation of the implicit services provided by domestic banks to their foreign and domestic customers.

Foreign-owned bank offices in the United States. The revisions to the estimated output of foreign-owned banks in the United States will reflect improved source data and are not primarily a result of the adoption of the reference-rate approach. Output of foreign banks is currently measured by applying ratios of balance-sheet items for *all* banks in the United States to the corresponding items for U.S.-owned banks.[23] BEA will continue to use this general approach for measuring the output of these foreign-owned offices. However, the ratios will be revised using improved source data, and they will be applied at a more detailed level to account more accurately for differences in rates earned on different types of assets or paid on different types of liabilities. The revisions to the ratios will lower the estimates of the imputed output of the foreign-owned offices for recent years, because of both lower estimates of their interest income from assets and higher estimates of their interest expense for liabilities.

Effects on components of GDP and GDI. The allocation of a portion of implicit financial services to borrowers will not alter the "identity" between imputed gross output of financial intermediaries and the corresponding net interest flows; therefore, the statistical discrepancy will not be affected. GDP will record the final demand for implicit financial services by household borrowers (other than for owner-occupied housing) and household depositors in PCE, by government borrowers and depositors in government consumption expenditures, and by rest-of-the-world borrowers and depositors in exports of services.

As discussed above, banks are considered to pay depositors imputed interest that is equal to the imputed expenditures for implicit services provided to depositors. The treatment of depositor services will be the same as the present treatment, though the values of these services will be smaller.

For borrowers, however, the treatment of imputed interest will change. A portion of the interest the borrower pays to the bank will be considered an expenditure for implicit services; therefore, the interest paid by the borrower, and received by the bank, will be reduced by the amount of the imputed expenditure for borrower services.[24] This reduction of borrower interest will be accomplished by recording *negative* imputed interest paid by the borrower and received by the bank. For example, if a borrower in the personal sector pays a bank $100 interest, of which $20 is an imputed expenditure for implicit services, then the accounts will show the borrower paying $80 interest—consisting of $100 in monetary interest and –$20 in imputed interest—and $20 in PCE. The effect on net interest is the same as if the bank had paid imputed interest, because net interest equals interest paid by business and by the rest of the world, less interest received by business and by the rest of the world.[25] The effect on net interest of negative imputed interest received by the bank is therefore the same as the effect of positive imputed interest paid by the bank. This treatment of borrower services recognizes that these services are not actually unpriced; rather, the price for borrower services is embedded in the interest paid by the borrower.

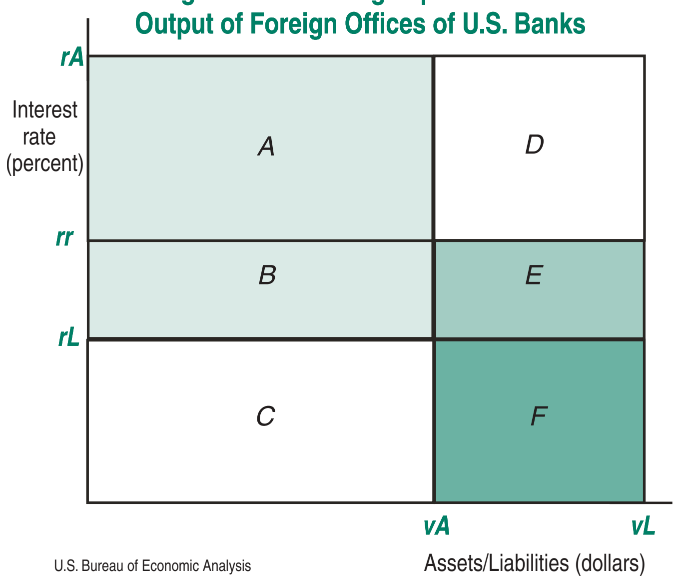
Net interest will be equal to the imputed gross output less the implicit financial services consumed by domestic business, by households on borrowing for owner-occupied housing, by nonprofit institutions serving households, and by the rest of the world. Net interest from services to depositors will equal the imputed interest paid by banks, less the imputed interest received by domestic business and by the rest of the world. Net interest from services to borrowers will equal the imputed interest paid by domestic business, by households on borrowing for owner-occupied

23. The underlying assumption is that foreign-owned offices in the United States face the same interest rates as U.S.-owned banks. More specific information is not available, because the foreign-owned offices do not file *Call Report* information.

24. See *SNA 1993*, paragraph 7.108.

25. For information about a change in the definition of net interest, see the section "Rental value of fixed assets used by nonprofit institutions serving households."

Figure 2. Measuring Imputed Gross Output of Foreign Offices of U.S. Banks



housing, by nonprofit institutions serving households, and by the rest of the world, less the imputed interest received by banks. Imputed income payments to the rest of the world will equal the imputed interest received by the rest of the world for depositor services. Imputed income receipts from the rest of the world will equal the imputed interest paid by the rest of the world for borrower services.

Preliminary estimates. Based on preliminary estimates, the gross output of banks will be revised down about $69 billion for 2001. The imputed output of foreign-owned bank offices in the United States will be revised down about $26 billion, the upward revision to the imputed output of foreign offices of U.S. banks will reduce domestic output about $24 billion, and the imputed output of the domestic offices of U.S. banks will be revised down about $19 billion.[26] Because of the reallocation of part of the implicit services from depositors to borrowers—which reallocates consumption of these services from final expenditures to intermediate purchases—the downward revision to GDP will be larger than the downward revision to bank gross output. Again, based on preliminary estimates, GDP will be revised down about $93 billion for 2001: PCE will be revised down about $78 billion, net exports will be revised down about $9 billion, and government consumption expenditures and gross investment will be revised down about $6 billion.

Farm inventories

In the production account of the farm sector, inventories of farm materials and supplies will be added to the change in private farm inventories and subtracted from intermediate goods and services purchased. This change will improve the measures of GDP and gross farm product, maintain consistency with the 1997 I-O accounts, and move the NIPA's closer to *SNA 1993*. The change, which will be carried back to 1991, will affect GDP and GDI by small, but differing, amounts and will eliminate a small discrepancy between the product side and the income side of the NIPA's.

Currently, the change in private farm inventories reflects inventories of crops and of livestock. However, materials and supplies—such as feed, seed, and fertilizer—are not reflected in inventories. Consequently, the NIPA estimates of GDP, gross farm product, national income, and personal income are misstated if materials and supplies are purchased but not "consumed" in the same period: For example, GDP will be understated because measured *nonfarm* inventories of the supplier are reduced with no corresponding addition to measured farm inventories; and in the farm production account, gross farm product and farm proprietors' income will be understated because intermediate purchases are not reduced by the materials and supplies added to farm inventories.

When the change in farm inventories of materials and supplies is added to GDP, only the proprietors' share of this inventory change will be added to GDI (to farm proprietors' income). The residual corporate share of the inventory change is already accounted for in the source data from the IRS Statistics of Income program, which are used to estimate the income of corporate farms.

Mass transit benefits

Mass transit benefits to Federal Government employees will be incorporated into the estimates of Federal Government compensation in-kind in order to improve the estimates of total compensation received by Federal employees. Currently, these benefits are not included in the compensation estimates, but they are included in PCE for transportation services. Therefore, the incorporation of these benefits in Federal compensation, which will be carried back to 1998, will eliminate a small discrepancy between the product side and the income side of the NIPA's. Federal consumption expenditures and gross investment will not be affected, because the mass transit benefits will be reclassified from intermediate inputs to compensation expense, leaving the total value of the services produced by government unchanged.[27]

On October 1, 2000, all Federal Government employees in the Washington, DC region became eligible for mass transit benefits of up to $65 per month; in January 2002, the maximum monthly benefit rose to $100 per month. The benefits received by Federal employees now amount to about $140 million annually.

The primary source data for the estimates of wages and salaries of Federal Government employees do not include the mass transit benefits. Annual estimates of the benefits will be based on data from the Department of Transportation. Current estimates will be extrapolations using data on monthly transit ridership from a trade association that tracks these data for numerous mass transit systems.

26. Only about $43 billion of the change in estimated output should be attributed to the adoption of the reference-rate approach, because the revision for foreign-owned bank offices should be attributed mostly to improved source data.

27. General government output is measured by the cost of inputs: Compensation, consumption of fixed capital, and intermediate goods and services. Government consumption expenditures is equal to general government output less sales and own-account investment; see the section "Services of general government."

Consistency and Integration With Other Accounts

The following changes in definitions or classifications will improve the consistency and integration of the NIPA's with other accounts, such as BEA's I-O accounts, the Federal Reserve Board's flow of funds accounts, and the BLS productivity statistics. These changes will also make the accounts more informative by providing improved estimates covering the economic activities of Indian tribal governments, by separately identifying owner-occupied housing as a unique activity in the NIPA's, and by classifying the rental value of nonprofit institutions' fixed assets and military grants-in-kind in a more intuitive manner.

Changes in sector classification

The following paragraphs describe reclassifications that will result in the movement of certain components across sectors of the national accounts.

Indian tribal governments. Indian tribal governments and enterprises will be reclassified from the private sector to the state and local government sector. Conceptually, a reclassification from one sector to another should not affect GDP, GDI, or the statistical discrepancy. However, as discussed below, this reclassification, which will be carried back to 1990, will increase GDP and GDI by differing amounts.

Beginning with 2001, the primary source data used to estimate wages and salaries—BLS tabulations of wages and salaries of workers covered by the state unemployment insurance program—reclassified the wages of Indian tribal governments and of Indian-owned enterprise employees from the private sector to the state and local government sector. The BLS reclassification followed a court decision mandating that Indian tribes be treated similarly to governments in accordance with the Federal Unemployment Tax Act. In the 2002 annual NIPA revision, the wages for tribal governments were reclassified from private wages and salaries to government wages and salaries. However, they were not added to the portion of wages that is included in government consumption expenditures, so the reclassification did not affect GDP.

In the upcoming comprehensive revision, the compensation of employees of tribal governments whose primary activities are public administration or provision of public services will now be classified as state and local general government noneducation compensation, which is a cost that contributes to the value of state and local government consumption expenditures. The compensation of employees of tribal governments whose primary activities are provision of goods or services for sale—including employment in casinos, retail stores, and industrial activities—will be classified as state and local government enterprise compensation, which is not included in the value of state and local government consumption expenditures.[28] For years prior to 2001, compensation of tribal government employees will be subtracted from a number of private-sector industries, including amusements, restaurants, hotels, and membership organizations.

If the output of tribal governments had been fully captured in BEA's source data, the reclassification would not affect GDP. The governmental activities of tribal governments would have been classified as nonprofit institutions serving households, and the sales of the tribal enterprises would have been captured in PCE or in other GDP components. Although the coverage of sales of enterprises (primarily casinos in PCE) is reasonably good, the governmental activities of tribal governments have largely been omitted from the source data used to estimate the nonprofit components of PCE. Therefore, GDP will increase as a result of the reclassification, because the additional compensation of employees in state and local general government will be larger than the offsetting reductions in the nonprofit components of PCE.

The reclassification will also raise GDI because BEA will use a new method to measure income from casinos operated by Indian tribes. About half of the federally recognized Indian tribes operate casinos that are classified as government enterprises. The revenue from these casinos will continue to be recorded in the recreation component of PCE for services. The profits of these casinos are not included in the source data used for estimating corporate profits. The profits will now be added to the current surplus of government enterprises, which will increase GDI. Estimates of casino profits and expenses will be based on publicly available financial report data.[29]

The increase in GDP associated with the additional wages in state and local government consumption expenditures will differ from the increase in GDI associated with the newly added casino profits in the current surplus of government enterprises, so the statistical discrepancy will be affected.

Farm housing services. The production of services

28. The output of government enterprises is valued at market prices rather than being based on cost of production. If the output is purchased by persons, by general government, or by the rest of the world, it is included in PCE, in government consumption expenditures and gross investment, or in exports, respectively.

29. Indian tribes own other enterprises—such as automobile dealerships, tobacco stores, gasoline stations, and sawmills—but data are currently insufficient for estimating the associated current surplus.

of farm housing owned by farm operators will be reclassified from the farm industry to the real estate industry.[30] This change will make the industry classification of these housing services in the NIPA's consistent with that in the I-O accounts. Moreover, the treatment of these services will be the same as that for farm housing owned by nonoperator landlords and for all nonfarm housing. The reclassification, which will be carried back to 1929, will not affect GDP or GDI, though it will affect the composition by sector within these aggregates.

Currently, the services of farm housing are recorded as gross farm output, and related maintenance and insurance expenses are recorded as farm nonrent intermediate purchases. Consumption of fixed capital, property taxes (in indirect business tax and nontax liability), and mortgage interest (in net interest) are included in GDI. After the reclassification, these items will be recorded in the households and institutions sector. The related net income will be added to rental income of persons with capital consumption adjustment (and offset by a subtraction from farm proprietors' income). In addition, farm housing units owned by farm operators will be reclassified from farm capital stock to nonfarm (real estate) capital stock.

The U.S. Department of Agriculture (USDA), the source of most of the farm-sector data for the NIPA's, will continue to classify the services of farm housing owned by farm operators as farm production. However, USDA will provide BEA with the detailed data necessary to prepare the estimates on the NIPA basis.

Owner-occupied housing services. The production of services of nonfarm and farm owner-occupied housing and their corresponding gross products will be reclassified from the business sector to the households and institutions sector. The reclassification will improve the institutional composition of GDP, because the gross product of owner-occupied housing is produced for the own final use of households rather than sold on the market. In addition, the reclassification will eliminate one difference between the sector classification used in the NIPA's and that used by BLS in its productivity estimates.[31] The reclassification will also improve consistency with the Federal Reserve Board's flow of funds accounts, which classify owner-occupied housing as part of the households sector rather than as part of the nonfarm noncorporate business sector. This change, which will be carried back to 1929, will not affect GDP or GDI.

Although owner-occupied housing services will be reclassified to the households and institutions sector, the treatment of the transactions associated with owner-occupied housing as business-type transactions will be retained. Owner occupancy of a home is similar to the activities of other business enterprises because it involves incurring expenses (for example, mortgage interest, depreciation, and property taxes) to produce a service.[32] Yet it differs from other business activities because the housing service is produced solely for the homeowner and does not involve a sale of the service to another party. Because the services of owner-occupied housing are considered production, property taxes will continue to be included in indirect business taxes (not in personal taxes), mortgage interest will continued to be included in net interest (not in interest paid by persons), and expenditures for homeowners' insurance will be treated as intermediate purchases (not in PCE).

Rental value of fixed assets used by nonprofit institutions serving households. The rental value of fixed assets owned and used by nonprofit institutions serving households (NPISH's) will be reclassified from the business sector to the households and institutions sector.[33] The reclassification will make the gross product of NPISH's more comprehensive. In addition, the reclassification will eliminate a difference between the sector classification used in the NIPA's and that used by BLS in its productivity program. This change, which will be carried back to 1929, will not affect GDP or GDI.

Conceptually, the gross product of NPISH's should equal the sum of their expenses for labor and for property. Currently, the gross product of NPISH's consists only of their labor expenses (compensation of employees). The property expenses (net interest, consumption of fixed capital, and indirect business tax and nontax liability) are recorded implicitly in the business sector.

Currently, *net interest* is defined as the interest paid by private business less the interest received by private business, plus the interest received from the rest of the world less the interest paid to the rest of the world. Interest payments on mortgage and home-improvement loans and on home-equity loans are included in inter-

30. At the same time, the production of services from both farm and nonfarm owner-occupied housing will be reclassified from the business sector to the households and institutions sector; see the next section.

31. The other difference will be eliminated by the reclassification of the rental value of fixed assets used by nonprofit institutions serving households, which is described in the next section.

32. *SNA 1993* recommends that home ownership be treated as ownership of an unincorporated enterprise that produces housing services consumed by the household (paragraph 6.89).

33. The rental value of these assets consists of the expenses associated with their use, including mortgage interest, consumption of fixed capital, and property taxes.

est paid by business because home ownership is treated as a business in the NIPA's. Interest payments by NPISH's are included in interest paid by "other" private business. As a result of the reclassifications affecting farm housing services, owner-occupied housing services, and the rental value of fixed assets used by NPISH's, the definition of net interest will be expanded to include mortgage interest paid by households for owner-occupied housing and the interest paid by NPISH's.

Military grants-in-kind

The treatment of military grants-in-kind will be changed in order to eliminate an inconsistency between the NIPA's and the ITA's. In the national income and product account (account 1), these grants will be reclassified from Federal defense consumption expenditures to exports of goods and services. In the government receipts and expenditures account (account 3), these grants will be reclassified from consumption expenditures to transfer payments to the rest of the world (net). In the foreign transactions account (account 4), the increase in transfer payments to the rest of the world (net) will be offset by an increase in exports of goods and services. These changes, which will be carried back to 1959, will not affect GDP, because the change in Federal Government consumption expenditures will be offset by the change in exports of goods and services.

Currently, economic and military cash assistance to foreign governments, as well as nonmilitary assistance-in-kind, are classified as transfer payments to the rest of the world. In contrast, military assistance-in-kind, such as purchases of new military goods or services that are delivered to foreign governments, are classified as defense consumption expenditures. (Gifts to foreign governments of goods from existing U.S. military stocks would have been included in defense consumption expenditures in earlier time periods.)

The ITA's do not distinguish between cash and in-kind military assistance: Both are treated the same as nonmilitary assistance, that is, as exports of services, and the military portion is recorded as "transfers under U.S. military agency sales contracts." This treatment is consistent with international guidelines set forth in *SNA 1993* and the International Monetary Fund's 1993 *Balance of Payments Manual*.[34]

34. International Monetary Fund (IMF), *Balance of Payments Manual*, 5th ed. (Washington, DC: IMF, 1993).

Consistency with International Guidelines

The following changes in definition and classification are largely motivated by BEA's efforts to improve conformity with the international guidelines contained in *SNA 1993*. In many cases, these changes will also make the presentation of economic data in the NIPA's more informative by separately identifying distinct types of transactions, such as tobacco settlements and capital transfers, or by presenting useful new aggregates, such as operating surplus and net saving.

Services of general government

Governments serve several functions in the economy—as producers of nonmarket services, as final consumers of these services (the value of the services provided to the general public is treated as government consumption expenditures), and as providers of transfer payments. These functions are financed through taxation and through contributions to social insurance funds. In the NIPA's, the consumption expenditures of general government are currently presented as expenditures for compensation of employees (except the labor services of employees engaged in construction or software production that are classified as investment), for consumption of fixed capital (CFC), and for goods and services (net of sales). The value of general government GDP (or value added) equals the sum of the expenditures for compensation of employees and CFC, which is a partial measure of the services of government fixed assets (general government purchases of goods and services are included in the GDP of the business sector).[35] This framework does not explicitly recognize that governments are engaged in producing services—using labor, capital, and intermediate inputs.

For the upcoming comprehensive revision, BEA has designed a new framework for government consumption expenditures—both Federal and state and local—that will explicitly recognize the services produced by general government. This change will be carried back to 1929.

The value of the government services, most of which are not sold in the market, will be measured by the cost of inputs: Compensation, CFC, and intermediate goods and services purchased. Purchases by general government of goods and services will be reclassified as intermediate purchases. The value of

35. In contrast, the value of business GDP equals the sum of business income from production in the form of compensation of employees, indirect business tax and nontax liability, and property-type income (that is, corporate profits, proprietors' income, inventory valuation adjustments, rental income of persons, net interest, private capital consumption allowances, business transfer payments, and the current surplus of government enterprises less subsidies).

consumption expenditures and gross investment will not change, because the value of the newly recognized services produced by government will be equal to the cost of inputs, including purchased goods and services. The new conceptual framework of the services produced by government and of the goods and services purchased by government will parallel the concepts of output and intermediate inputs of private business in the I-O accounts and the GDP-by-industry accounts; however, government output will be measured by costs of inputs instead of by market prices.

As a result of these changes, the distribution of GDP by type of product will be affected; services output will increase, and goods output will decrease. Because the gross output of general government will increase by the amount of the intermediate inputs, general government GDP (which equals gross output less intermediate inputs) will not change. Thus, general government GDP will continue to be measured as the sum of compensation and CFC.

National income

National income will be redefined to include all net incomes (net of CFC) earned in production. The current definition of national income consists of "factor incomes"—that is the incomes accruing to labor and property of U.S. residents. National income will now also include "nonfactor charges"—that is, business transfer payments, indirect business tax and nontax liabilities, and the current surplus of government enterprises less subsidies. This change will be carried back to 1929.

SNA 1993 does not distinguish between factor incomes and nonfactor charges. It recognizes that indirect business taxes "are not taxes… that can be eliminated from the input and output prices."[36] The *SNA 1993* definition of national income therefore includes all incomes earned in production. In the NIPA's, national income (which will also be known as *net national income*) will equal gross national income less CFC.[37] Based on currently published 2001 estimates, this redefinition would increase national income by about $770 billion (or 9.5 percent). GDP, GDI, personal income, personal saving, and national (gross) saving will not be affected.

Reclassifications

Miscellaneous compensation of employees. Within compensation of employees, the subcomponent "other" in other labor income—which consists of judicial fees paid to jurors and to witnesses, compensation of prison inmates, and marriage fees paid to justices of the peace—will be reclassified as wages and salaries. The reclassification, which will be carried back to 1948, will increase wage and salary accruals (and disbursements) and will decrease other labor income by the same amount. Total compensation of employees and other NIPA aggregates will not be affected. After this reclassification, other labor income will consist of employer contributions to pension and welfare funds, such as private group health and life insurance plans. This reclassification will align the definition of the NIPA category, "supplements to wages and salaries," with the definition of the *SNA 1993* category, "employers' social contributions."[38]

Nonresident taxes paid by domestic corporations. Nonresident taxes—that is, taxes paid by domestic corporations to foreign governments—will be reclassified as part of profits tax liability and will be included in a new component that consists of tax payments to the rest of the world.[39] Currently, these taxes are classified in business transfer payments to the rest of the world, and an offsetting downward adjustment is made to NIPA profits before tax (see line 17 of NIPA table 8.25) so GDI is not affected. Under the new treatment, this downward adjustment to profits before tax will no longer be needed, so profits before tax will increase by the same amount as profits tax liability. This change will be carried back to 1959; estimates of nonresident taxes are not available before 1959.

Based on currently published 2001 estimates, the reclassification would increase profits before tax and profits tax liability each by about $9.1 billion and would decrease business transfer payments to the rest of the world by the same amount. Profits after tax and other NIPA aggregates will not be affected. The presentation of nonresident taxes in the foreign transactions account, where they are shown as part of transfer payments to the rest of the world (net), will not change.

Indirect business tax and nontax liabilities. Most of the nontax components of indirect business tax and nontax liabilities will be reclassified, and the remainder of the category will be renamed. Specifically, Federal deposit insurance premiums and other nontaxes

36. See *SNA 1993*, paragraph 6.230.

37. If analysts should need estimates of national income on the basis of its previous definition, they can be constructed by summing compensation of employees, proprietors' income with inventory valuation adjustment (IVA) and capital consumption adjustment (CCAdj), rental income of persons with CCAdj, corporate profits with IVA and CCAdj, and net interest.

38. See *SNA 1993*, paragraph 7.43.

39. These nonresident taxes are mostly income taxes, though they do include some taxes on production. However, the data are not sufficiently reliable to separate the taxes on income from the taxes on production.

(which consist largely of fines and of regulatory and inspection fees) and state and local fines and other nontaxes (which consist largely of donations and tobacco settlements) will be reclassified as *business transfer payments to government*. This new category will also appear as a current receipt in the government current receipts and expenditures account. Federal Outer Continental Shelf royalties and state and local rents and royalties will be reclassified as part of *income payments on assets* (see the section "Income payments (or receipts) on assets"). The remainder of the indirect business tax category—which includes Federal excise taxes and customs duties and state and local sales taxes, property taxes (including residential real estate taxes), motor vehicle licenses, severance taxes, other taxes, and special assessments—will be renamed *taxes on production and imports*. These reclassifications will be carried back to 1929.

The reclassifications of business payments to government will provide additional information to users by separating special payments, such as tobacco settlements, from the taxes on production and imports. In addition, these reclassifications will better align the NIPA classifications with the classifications used in *SNA 1993*.[40]

Business transfer payments to government were about $47.2 billion for 2001, and the rents and royalties that would be reclassified as part of income payments on assets were about $12.6 billion. Therefore, after removing these nontax components, taxes on production and imports would be about $715 billion for 2001. These reclassifications will not affect GDP, GDI, or government current receipts and current expenditures.

Personal tax and nontax payments. The nontax components of personal tax and nontax payments will be reclassified. Specifically, Federal and state and local nontaxes—which include donations, fees, and fines—will be reclassified as personal transfer payments to government within personal outlays. In the government current receipts and expenditures account, personal transfer payments to government will be shown as a current receipt, together with the newly recognized business transfer payments to government. These reclassifications will be carried back to 1929.

The reclassified estimates will be more informative because the taxes will be separated from other payments to government, such as donations to public universities and recreational fees. In addition, they will be more in alignment with the classifications used in *SNA 1993*.[41] As a result of these reclassifications, disposable personal income would increase by the amount of the reclassified nontax payments, about $52.5 billion for 2001, and personal outlays would increase by the same amount. Personal income, personal saving, and government current receipts and current expenditures will not be affected.

Government current receipts and expenditures. Interest and dividends received by government, together with the current surplus of government enterprises, will be shown as current receipts in the government current receipts and expenditures account. Currently, they are netted against expenditures. Because of these changes, government interest receipts and payments will be presented separately rather than on a net basis, and subsidies paid will be shown as a separate expenditure category that will not be net of the current surplus of government enterprises. These reclassifications will be carried back to 1946.[42]

As a result of the reclassifications, government current receipts would increase by about $113.5 billion for 2001, and government current expenditures would increase by the same amount. In addition, the classification of government current receipts and the level of receipts and expenditures will be affected by other proposals (see the sections "Indirect business tax and nontax liabilities," "Personal tax and nontax payments," and "Government transfer payments to the rest of the world (net)"). The government current surplus or deficit will not be affected.

Government transfer payments to the rest of the world (net). Taxes received from the rest of the world, which are currently netted against gross Federal Government transfer payments to the rest of the world, will now be shown as a government receipt, along with other tax receipts.[43] The remaining government transfer payments to the rest of the world will consist of U.S. Government grants (in-cash or in-kind) to foreign governments and of U.S. Government benefits (mainly retirement benefits) paid to former residents of the United States. These two types of current transfers will be separately identified and will be described in the August article on presentational changes to the NIPA's. This change will be carried back to 1959; estimates of

40. See *SNA 1993*, paragraphs 7.49, 7.128, 7.132, and 8.84.

41. See *SNA 1993*, paragraphs 8.52–8.54 and 8.84.

42. For years prior to 1946, state and local government interest will continue to be presented as net interest, and for years prior to 1960, Federal and total government interest will continue to be presented as net interest. For years prior to 1959, subsidies will continue to be presented net of the current surplus of government enterprises. Detailed data to separate the series for these periods are not readily available.

43. Taxes received from the rest of the world are mostly income taxes, though they do include some taxes on production and current transfers received by government. The data are not sufficiently reliable to separate the taxes on income from the taxes on production.

taxes received from the rest of the world are not available before 1959.

This reclassification will better align the NIPA classifications of these tax and transfer receipts and payments with the classifications used in *SNA 1993*. As a result of this change, government transfer payments to the rest of the world would increase by the amount of the reclassified taxes received from the rest of the world, about $6.9 billion for 2001. Government current expenditures and government current receipts would each increase by this amount. The government current surplus or deficit, net foreign investment, and national saving will not be affected.

The presentation of these transactions in the foreign transactions account, where they are shown as part of transfer payments to the rest of the world (net), will not change. As part of this year's comprehensive revision, BEA will show many more transactions on a gross basis (that is, separately identifying payments and receipts rather than netting them), but some categories, such as personal transfer payments to the rest of the world, will continue to be available only on a net basis.

Foreign transactions current and capital accounts

The foreign transactions account will be split into two accounts—the foreign transactions current account and the foreign transactions capital account. Net foreign investment will be renamed the *balance on current account, national income and product accounts*. In addition, a new aggregate, *net lending or net borrowing, national income and product accounts*, will provide an indirect measure of the Nation's net acquisition of foreign financial assets less the net increase in foreign financial assets in the United States.[44] Net lending or borrowing will be equal to the balance on current account less capital transfers to the rest of the world (net). Capital transfers were introduced in the 1999 comprehensive NIPA revision and are shown in NIPA table 8.29.[45] (Capital transfers are cash or in-kind transfers that are linked to the acquisition or disposition of an asset.) Capital transfers to the rest of the world (net) will be shown on the right (payments) side of the foreign transactions capital account and on the left (investment) side of the gross saving and investment account as a use of savings. This definitional change will be carried back to 1929.[46]

Both *SNA 1993* and the *Balance of Payments Manual* recommend that current foreign transactions—such as exports, imports, income receipts and payments, and current transfer receipts and payments—should be shown in a separate account from capital transactions, such as capital transfers.[47] Since 1999, the ITA's have shown these two types of transactions in separate current and capital accounts.[48] The distinction between current and capital transfers can be important when major assets are transferred, such as the U.S. Government's transfer of the Panama Canal to the Republic of Panama in 1999.

New aggregates

Several aggregates will be introduced that will classify information in new and useful ways for NIPA users. These new measures will also more closely conform the NIPA's with *SNA 1993* and thereby increase the consistency of the NIPA's with the national accounts definitions used in other countries.

Operating surplus. Operating surplus is a profits-like measure that shows business income after deducting the costs of compensation of employees and taxes on production and imports, less subsidies, from gross product (or value added), but before deducting financing costs (such as net interest) or business transfer payments.[49] There will be two versions of this measure: The first, *gross operating surplus*, does not deduct the expense of CFC, while the second, *net operating surplus*, is net of CFC. Net operating surplus will equal GDI less the sum of compensation of employees, taxes on production and imports less subsidies, and CFC. For private enterprises, the net operating surplus can be calculated as the sum of the domestic components of proprietors' income with inventory valuation adjustment (IVA) and capital consumption adjustment (CCAdj), rental income of persons with CCAdj,

44. Direct measures of these financial flows are available in the ITA's. The new NIPA net lending measure will differ from the measures shown in the ITA's because of differences in source data and differences in concepts and coverage.

45. See Brent R. Moulton, Robert P. Parker, and Eugene P. Seskin, "A Preview of the 1999 Comprehensive Revision of the National Income and Product Accounts: Definitional and Classificational Changes," SURVEY 79 (August 1999): 7–20.

46. Estimates of capital transfers to the rest of the world are available, beginning with 1982.

47. See *SNA 1993*, paragraphs 2.106 and 2.137 and *Balance of Payments Manual*, paragraphs 152 and 175.

48. See Christopher L. Bach, "U.S. International Transactions, Revised Estimates for 1982–98," SURVEY 79 (July 1999): 60–119.

49. *SNA 1993* recommends that two concepts be used: "Operating surplus" for corporations or corporate-like entities and for owner-occupied housing, and "mixed income" for other unincorporated enterprises (paragraph 7.8). The term "mixed income" is used in the SNA for the residual income of most unincorporated enterprises because proprietors often contribute unpaid labor, as well as capital, to these enterprises. Because BEA is continuing to review the SNA's recommendations for the sectoring of unincorporated enterprises and of corporate-like entities, the term "operating surplus" will be used in the NIPA's for the residual income of all enterprises. Note that the net operating surplus of general government is, by definition, equal to zero because the NIPA's use CFC as a partial measure of the services of general government capital.

corporate profits with IVA and CCAdj, net interest, business transfer payments, and rent paid by private enterprises to government.

Operating surplus will serve as a supplement to the other NIPA business income measures, such as corporate profits, rather than as a replacement. Because this measure is not dependent on whether financing comes from debt or stockholder equity, it is useful for such purposes as measuring the return to fixed investment. In addition, for large, multiestablishment companies, it is often difficult to match the financing with the industry in which production occurs. Because operating surplus can be calculated from establishment data, it is also a useful tool for studying income at the industry level.

BEA currently produces measures that are similar to operating surplus under several different names. For example, "other value added" in the I-O accounts and "property-type income" in the GDP-by-industry accounts are similar to gross operating surplus.[50] Likewise, a measure similar to net operating surplus has been used to calculate the rate of return on investment by nonfinancial corporations.[51]

Although financial-accounting concepts differ in several ways from the concepts used in the NIPA's, measures similar to gross or net operating surplus are used in financial accounting.[52] For example, the relationship between the new NIPA corporate gross operating surplus and corporate profits with IVA and CCAdj is analogous to the relationship in financial accounting between earnings before interest, taxes, depreciation, and amortization (EBITDA) and earnings before taxes.

Income payments (or receipts) on assets. It is sometimes useful to group together the interest, dividends, and other types of income payments or receipts that result from the ownership of assets. *Income payments on assets* will denote income payable as interest, dividends, reinvested earnings on foreign direct investment in the United States, and rent paid by enterprises to government. *Income receipts on assets* will denote income receivable in the form of interest, dividends, reinvested earnings on U.S. direct investment abroad, and rent received by government from enterprises.[53] Detailed information on these payments and receipts will continue to be shown in the NIPA's, and as will be described more fully in the August article on presentational changes, more of the income estimates will be presented on a gross basis (that is, showing payments and receipts separately).[54]

Net saving. Net saving will be added to the presentation of saving in the NIPA's. The NIPA presentation has traditionally focused on gross saving—that is, saving from all sources, including CFC—as the featured measure of national saving. Because CFC represents the charge for using up or replacing existing fixed assets, it is sometimes useful to look at the Nation's net saving, a measure of the saving that is available for adding to the Nation's net stock of fixed assets. Net saving is calculated as the sum of personal saving, wage accruals less disbursements, undistributed corporate profits with IVA and CCAdj, and the government current surplus or deficit. This new aggregate will serve as a supplement to the NIPA gross saving measure, rather than as a replacement.

Gross domestic investment. Gross domestic investment, will be added to the presentation of investment in the NIPA's. The NIPA presentation has traditionally focused on gross investment—that is, investment from all sources, including net foreign investment.[55] Gross domestic investment measures the total investment in fixed assets (that is, the structures, equipment, and software that are used in production) and in inventories (the change in private inventories), but net foreign investment is excluded. Gross domestic investment is calculated as the sum of gross private domestic investment and gross government investment, or, alternatively, as the sum of gross fixed investment and the change in private inventories.[56] This new aggregate will provide a comprehensive measure of investment on a domestic basis.

50. However, these measures differ from gross operating surplus because they exclude subsidies received by enterprises, whereas gross operating surplus will include subsidies. In addition, the I-O accounts and the GDP-by-industry accounts use some data sources and methods that differ from those used in the NIPA's.

51. See Daniel Larkins, "Note on the Profitability of Domestic Nonfinancial Corporations, 1960–2001," SURVEY 82 (September 2002): 17–20.

52. See Kenneth A. Petrick, "Comparing NIPA Profits with S&P 500 Profits," SURVEY 81 (April 2001): 16–20 and *Corporate Profits: Profits Before Tax, Profits Tax Liability, and Dividends*, Methodology Paper (Washington, DC: U.S. Bureau of Economic Analysis, September 2002), available at <www.bea.gov/bea/mp.htm>.

53. *SNA 1993* (paragraph 7.89) classifies these types of income as "property income," but for clarity and for consistency with the ITA's, the terms "income payments (or receipts) on assets" will be used in the NIPA's.

54. For years prior to 1948, estimates of business income received and paid on assets are not available separately and will continue to be presented on a net basis. For years prior to 1960, estimates of government income received and paid on assets are not available separately and will continue to be presented on a net basis.

55. Net foreign investment is U.S. exports of goods and services and income receipts from the rest of the world less U.S. imports of goods and services, income payments to the rest of the world, and transfer payments to the rest of the world (net). As mentioned earlier, net foreign investment will be renamed "balance on current account, NIPA's" (see the section "Foreign transactions current and capital accounts").

56. At present, the NIPA's do not include an inventory account for government, because of a lack of source data. The change in inventories for a few government categories for which data are available, specifically the Commodity Credit Corporation and the Strategic Petroleum Reserves, are treated as government consumption expenditures.

The national income and product accounts (NIPA) are part of the national accounts of the United States. They are produced by the Bureau of Economic Analysis of the Department of Commerce. They are one of the main sources of data on general economic activity in the United States. They use double-entry accounting to report the monetary value and sources of output produced in the country and the distribution of incomes that production generates. Data are available at the national and industry levels. National income accounting refers to the bookkeeping system that governments use to measure the level of the economic activity such as GDP.Â Accounting records of this nature include data regarding total revenues earned by domestic corporations, wages paid to foreign and domestic workers, and the amount spent on sales and income taxes by corporations and individuals residing in the country. Although national income accounting is not an exact science, it provides useful insight into how well an economy is functioning, and where monies are being generated and spent. When combined with information regarding the associated population, data regarding per capita income and growth can be examined over a period of time. The national income and product accounts (NIPA) are part of the national accounts of the United States. They are produced by the Bureau of Economic Analysis of the Department of Commerce. They are one of the main sources of data on general economic activity in the United States. They use double-entry accounting to report the monetary value and sources of output produced in the country and the distribution of incomes that production generates. Data are available at the national and industry levels.Â Likewise, a nation's system of accounts, (analogous to a firm's Chart of accounts) are typically gradually revised and updated on their own individual schedule. The U.S. NIPAs are prepared by the staff of the Directorate for National Economic Accounts within the BEA.