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Bureau of Economic Analysis



BEA Government Statistics Users Conference

Conference Report

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Residence Inn Marriott Hotel
Washington, DC

This report was prepared by Andrew Cairns, Ben Mandel, Rebecca Rider, and Brooks Robinson

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Executive Summary

The BEA Government Statistics Users Conference was held on September 15, 2004, from 9:00 a.m. to 12:30 p.m. at the Residence Inn Marriott Hotel's Jefferson Room in downtown Washington, D.C. Brooks Robinson, Chief of BEA's Government Division, served as the conference moderator. The conference presenters and attendees included staff members of several federal agencies and economic research organizations.

Rosemary Marcuss, BEA's Deputy Director, welcomed participants to the conference.

Steve Landefeld, BEA's Director, provided opening remarks in which he highlighted positive changes to the National Income and Product Accounts (NIPAs) that resulted from feedback obtained during BEA Advisory Committee Meetings and other intra-agency work. He expressed the necessity for BEA to interact with its users on the issues of output of government services, government inventories, and accrual accounting.

Brent Moulton, BEA's Associate Director for National Economic Accounts, outlined the agency's strategic plan placing emphasis on the four major priorities of the National Economic Accounts directorate. These priorities are improving processing systems, addressing data gaps and shortcomings, improving consistency and integration with other accounts, and improving consistency with international standards. Also, Moulton discussed definitional, statistical, and presentational changes implemented by BEA during the 2003 Comprehensive NIPA revision. One major definitional change was recognizing government as a producer of services. Other definitional changes included changing the treatment of government purchases of equipment provided to other nations as military assistance in kind, recognizing mass transit compensation as in-kind payments by government to their employees, and accounting for compensation paid by Indian tribal governments in the NIPA government sector. BEA adopted the new structures classification introduced by the Census Bureau. Several tax categories were reconfigured and the net presentation was undone for several series. All of these changes were aimed at aligning the NIPAs more closely with the SNA. All of the reclassifications are explained in detail in an article in the June 2003 issue of the *Survey of Current Business*.

Robert Parker, Chief Statistician for the Government Accountability Office, gave a presentation titled, "What Government Statistics Users Really Want." He emphasized the need for a search engine on the BEA website. Also, he reviewed the different initiatives outlined in the BEA strategic plan. He suggested that BEA's strategic plan might be more effective if it were organized by themes rather than by accounts, and that BEA should become more forward looking when developing its strategic plan.

Barbara Fraumeni, BEA Chief Economist, presented on "Price and Real Output Measures for the Education Function of Government." She discussed ongoing research to derive a real output measure for education that is less dependent on inputs than the current real output measures. She explained the four quality adjustments that are being explored—teaching staff composition, class size, high school dropout rate, and college enrollment rate—and presented data on the annual rates of growth in prices and quantities for public education. Rudolph Penner, a Senior Fellow at the Urban Institute, served as a discussant to Fraumeni's presentation. Penner

provided a critique of Fraumeni et al's paper, "Price and Real Output Measures for the Education Function of Government: Exploratory Estimates for Primary & Secondary Education."

Pamela Kelly, Chief of the Government Division's Federal Branch, discussed her branch's research agenda for the Federal Government Capital Account. The three major topics on that agenda are the timing of transactions, work-in-progress, and government inventories. David Lebow, a Senior Economist at the Federal Reserve Board, served as the discussant to Kelly's presentation. Lebow appreciated the Federal Branch's proposed research agenda, but suggested caution in incorporating new measures that were not historically complete.

Bruce Baker, Chief of the BEA State and Local Government Branch, discussed his branch's research agenda. The two major areas of focus for the branch are sectoring and in-kind compensation. The goal of the sectoring research is to make NIPA sectors look more like the *System of National Accounts, 1993* (SNA) sectors. To achieve this, public corporations and quasi-corporations should be moved to the private sector and non-profit organizations serving government should be separately identified in the government sector. Research is also being conducted on three types of in-kind compensation: restaurant meals, tuition, and child care assistance. The most difficult part of this research is finding reliable source data. Laura Rubin, an economist at the Federal Reserve Board, provided comments following Baker's presentation. A major topic of her discussion was state and local government data availability. She noted that there is no compendium of state and local data that is equivalent to the Federal Budget. The only data available on a monthly basis is employment data from BLS and construction data from the Census Bureau. She added that timing of data releases is also a problem. The employment and construction monthly data are released shortly following each NIPA release, making the NIPA data out of date.

Steven Payson, Chief of the BEA Special Studies Branch, detailed his branch's research agenda on statistics for international organizations. The focus of his presentation was on the Government Tax Revenue estimates that are provided to Organisation for Economic Cooperation and Development (OECD). The Special Studies Branch has revised these estimates from a cash accounting basis to an accrual basis. Estimating income taxes on an accrual basis is especially difficult. As a result, these taxes are being recorded using the IMF guidance for "pay-as-you-earn" taxes. James Mackie, a Financial Economist for the Department of the Treasury, led a discussion on accrual based accounting following Payson's presentation. Accrual based accounting of taxes allows taxes to be recorded in the same year as the income generating the tax payment. A major benefit of this type of accounting is that it allows for a more accurate interpretation of economic data.

Brooks Robinson concluded the conference by asking the attendees to complete the customer feedback forms. The forms collected data on the attendees' use of NIPA government statistics and their thoughts on the effectiveness of the Users Conference. Following the conference the results of this informal feedback were tabulated and the results are contained in this conference report.

Transcript of Conference Proceedings

Welcome

Rosemary Marcuss, Deputy Director, BEA

Deputy Director Marcuss welcomed attendees to the BEA Government Statistics Users Conference, noted the uniqueness of government statistics within the National Income and Product Accounts (NIPAs), especially the importance of Federal Government statistics for policy makers and forecasters, and invited attendees to air their views during the conference.

Opening Remarks

J. Steven Landefeld, Director, BEA

Director Landefeld stated that the BEA Government Statistics Users Conference was an extension of an outreach effort that BEA had pursued in the past with groups such as BEA's Advisory Committee and the National Association of Business Economists (NABE). These groups had provided very strong recommendations on how to improve the NIPAs. A key recommendation was that BEA should open up the previous quarter of NIPAs for revision during current estimates, and expedite the delivery of wages and salary data, which came from the broader tax-based ES-2020 Survey. The wage and salary estimates that BEA was publishing were experiencing very large revisions and were causing problems for forecasters of Federal taxes. After considerable effort by the Bureau of Labor Statistics (BLS), BEA's Regional Accounts staff, and BEA's National Economic Accounts staff, BEA was able to open up the previous quarter and incorporate BLS ES-202 data, reduced revisions to BEA's wage and salary estimates, and helped improve Federal tax forecasting tremendously. A side benefit of the just-described effort was an acceleration of BEA's estimates of State Personal Income, making them available much earlier to BEA users out in the states and localities. This was just one example of positive result that came out of BEA talking with members of the user community.

Landefeld said that another very illustrative case study of why it is important to interact with BEA users concerned the measure of government output, particularly the output of educational services. Currently, BEA measures the output of education using wages and salaries, roughly the cost of inputs that are used to produce educational services, plus a measure of depreciation (consumption of fixed capital, CFC). However, BEA realizes that the latter measure is only a partial measure of the return to government capital. BEA comprehends that if one were to lease capital equipment, one would not only charge the depreciation cost of the capital, but the opportunity cost of that capital would be accounted for as well. There has been a 50-year debate about how to measure that opportunity cost. However, BEA, and national accountants around the world have settled for this measure of depreciation as the value that should be included in national accounts.

On the "real" side, he added, there are issues that Barbara Fraumeni et al's paper addresses. For example, what is the best measure of the output of government services? This is

a big question in Europe, because a large portion of some nations' economies is accounted for by the public sector. Some European nations have gone beyond the cost-based measure of output, and have adopted quantity-based (volume) measures of output.

He said that Sweden provided first-hand evidence of the possible problems with volume measures. Consider the case when there are fiscal constraints, but government is able to continue producing at near normal levels. In the case of Sweden's national accounts office, it appeared that productivity increased dramatically when budgets were constrained but production continued at near normal levels. But the public had a different opinion. The public complained about data quality, the quality of services delivery, and about long delays in service delivery.

He added that Fraumeni et al's paper is illustrative of the fact that in the United States, more and more attention is paid to the "Special Education" population (i.e., student with special educational needs). The U.S. has added significantly to the number of instructors and aids that service these students, thereby reducing the student-teacher ratio. Using volume measures, one estimates a significant decline in productivity under these circumstances. Clearly, the output of educational services for this particular aspect of the population is very difficult to measure properly.

Landefeld remarked that this was just one part of the broader, worldwide discussion on measuring the output of government services. To address these issues effectively, BEA needs input from its user community. He asked the following questions: "What direction should BEA take? How many resources should be dedicated to estimating government output using volume measures? Should the topic be kept in a research mode? Should volume output be moved up to 'Satellite Account' status? Ultimately, should BEA consider incorporating volume measures into the main accounts? If we do not obtain a consensus from the professional user community on this topic, we are going to be in very dangerous territory," he added.

Also, he noted that resources are an issue for BEA. For example, BEA has plans to research government inventories. He asked the following questions about dedicating resources to this research: "How important is the research to conference attendees? How important is it for BEA to expand its coverage of this component of governmental operations?" He noted that progress in this area is likely to impinge on other areas due to resource constraints.

He emphasized that an even larger issue, down the road, is "accrual accounting." He asked conference attendees what they thought about BEA measuring taxes on an accrual basis, even though preliminary research indicates that adopting such an approach produces more volatile estimates.

Related to accrual accounting, he said that some nations have begun to place certain components of government accounts, for example, Social Security, on an accrual basis. A decision by BEA to adopt such treatment would put the agency squarely in the middle of a public policy debate involving very uncertain magnitudes over very long periods of time. This is an issue that would not be addressed during the conference, but that must be broached in the future.

He thanked attendees for their participation in the conference and said that he welcomed their thoughts and ideas.

The Government Sector in the National Income and Product Accounts:

2003 Comprehensive Revision and Desired Future Changes

Brent Moulton, Associate Director for National Economic Accounts, BEA

[Link to PowerPoint Slides](#)

Associate Director Moulton thanked participants for attending the conference, and began his talk by taking a step back to see how BEA arrived at the most recent comprehensive NIPA revision, which was released in December of 2003; specifically, he talked about BEA's Strategic Plan. He invited participants to read BEA's strategic plan, which is updated each year to reflect feedback from data users.

He talked about one of BEA's four main strategic plan goals: Upgrade BEA's economic statistics by improving statistical methodologies and source data by using new technologies. Within NEA, efforts are going forth to improve processing systems, fill data gaps, and improve consistency and integration with other accounts. For example, the NIPAs should be integrated with BEA's industry accounts, regional accounts, and international accounts. Also, the NIPAs should be integrated with the Flow of Funds accounts that are prepared by the Federal Reserve Board. Moulton mentioned an on-going project between BEA and the Federal Reserve Board staff to integrate the two accounts. BEA is also integrating its accounts with the BLS productivity statistics and other statistics within the BLS system. Another BEA priority is improving consistency between the NIPAs and international standards.

He discussed several important definitional and statistical changes that were incorporated during the 2003 Comprehensive NIPA Revision: e.g., improvements to financial and insurance services, which are discussed in the September 2003 issue of the *Survey of Current Business*, BEA's monthly journal. Also, he mentioned an article on the new treatment of property and casualty insurance in the NIPAs that appeared in the October 2003 issue of the *Survey*. Another important change was the recognition of government as a producer of services, which is highlighted in the June 2003 issue of the *Survey*.

Beginning with the 2003 comprehensive NIPA revision, Moulton said, BEA treats government as producing the myriad services that we all think about when we consider governments' roles in our lives: Defense services, health services, educational services, police and fire protection services, and the like. The NIPAs now reflect governments as producing output in the form of these services, much the way private sector business produces services. This new treatment of government as a producer is reflected in NIPA table family 3.10.X. This recognition of government as a producer of services changed the distribution of gross domestic product (GDP), shifting output from goods to services. Specifically, services within GDP were raised by roughly 2.0 percent of GDP in 2000 and goods were lowered by a similar percentage.

The decision to reflect government as a producer is consistent with BEA's general effort to move toward and to meet international guidelines, namely, the SNA.

Moulton noted that BEA continues to prepare estimates of the real output of government services, by deflation, direct valuation, and by using quantity extrapolators for compensation. However, he said that it might be possible to improve these measures. Barbara Fraumeni will discuss a method for improving estimates of real output of government services during the conference.

Moulton highlighted other important changes that were incorporated during the 2003 comprehensive revision:

1. Government purchases of equipment provided to other nations in the form of military assistance in-kind is now treated as an export. This change makes the NIPAs more consistent with international guidelines, specifically the International Monetary Fund's (IMF's) *Balance of Payments Manual*.
2. Mass transit compensation in-kind payments by the Federal government to their employees is now recognized. The Federal government provides compensation in-kind to its employees in the form of a mass transit benefit, which was not reflected in employees' wages and salaries. State and local governments and private employers reflect these mass transit in-kind benefits in the wage and salary source data that BEA receives from the Bureau of Labor Statistics (BLS). This change makes the NIPAs more consistent with international guidelines.
3. The compensation paid by Indian tribal governments is now recognized in the government sector. Previously, this compensation was included in the private sector. This change was mandated by a court decision, which required BLS to reclassify the compensation paid by Indian tribal governments and their enterprises from the private sector to the state and local government sector. Also, BEA made an initial step to account for Indian tribal governments' enterprises by establishing a state and local casino gaming enterprise account.
4. A new structures classification system, which was introduced by the Bureau of the Census, was incorporated. Both Federal and state and local structures investment reflects new and useful categories of construction beginning with 1997.
5. BEA reconfigured its presentation of taxes and nontax payments and undid "netting" in the government accounts: Certain taxes were reclassified as *business transfer payments to government*; Federal Outer Continental Shelf royalties and state and local governments' rents and royalties were reclassified to become *income receipts on assets*; certain taxes—including Federal excise taxes and custom duties and state and local sales taxes, property taxes, motor vehicle licenses, severance taxes, other taxes, and special assessments—were reclassified as *taxes on production and imports*; Certain nontaxes--donations, fees, and fines—were reclassified as *personal transfer payments to government*; the remainder of personal tax and nontax payments were renamed as *personal current taxes*.
6. The net presentation of net interest and subsidies less current surplus of government enterprises was undone. *Interest receipts* are now shown as *income receipts on assets*. Interest payment continue to be shown as government expenditure. *Current*

surplus of government enterprises now appears as a component of government receipts, while *subsidies* appears as an independent government expenditure component.

7. A new name for “government transfer payments” was adopted; these payments are now titled *government social benefits*.

Moulton said that these changes were designed to bring the NIPAs into closer alignment with the structure and nomenclature of the SNA. You can read about them in more detail in the June 2003 *Survey* article on the comprehensive revision.

Discussion

Question from Norm Frumkin: When you are working with the Federal Reserve Board on integration with the Flow of Funds, I note that they have, in addition to the sources and uses of funds, an “asset” and “liability” balance sheet framework. Have you given any thought to moving the national accounts into such a balance sheet framework?

Answer from Brent Moulton: We have been engaged in a joint project over the past couple of years with the Flow of Funds Section at the Federal Reserve. There was a paper that came out of that project, which was presented during a 2004 Conference in Research in Income and Wealth (CRIW). The paper contains a prototype set of accounts that integrate the NIPAs with the Flow of Funds Accounts. Extending this work is very much a priority for us. Our goal is to develop a joint (BEA and Federal Reserve) publication that will present an integrated set of accounts on a regularly scheduled basis..

Question from Frank Russek: As a result of the “De-Netting,” where in the accounts is the recording of interest paid by the Federal government?

Answer from Brent Moulton: These data are now reflected in a detail table—NIPA table 3.2. If anyone has difficulty identifying series with which you were familiar, but the presentation of those series changed as a result of the 2003 comprehensive NIPA revision, please contact us. Our goal has been to provide more information, not less.

Question from Ralph Rector: A related point on the “De-Netting,” it would be helpful if the subsidies of state and local governments were shown in some of the NIPA tables. I know that you can obtain these data from the GDP by Industry’s value added measures, but when you evaluate NIPA table 3.1, subsidies to state and local governments from the Federal government are handled in such a way that it is difficult to see the total value of subsidies to state and local governments because of the way subsidies are rolled up into an aggregate in the table.

Answer from Brent Moulton: This appears to be a very detailed question, so we had better get together during the break and sort it out. I think that I follow part of your question, but you seem to be drilling down to a detailed level. We’ll sort this out during the break.

What Government Statistics Users Really Want

Robert P. Parker, Chief Statistician, Government Accountability Office

(These comments do not necessarily represent the opinions of GAO.)

Chief Statistician Parker started his presentation by noting that he spent a number of hours on various Web sites preparing for his presentation. Based on that research, he concluded that what one thing government statistics users really want is a search engine on BEA's Web site: An inter-related, comprehensive search engine. He said that the recommendation might sound strange, but it would solve many problems for users.

Parker said his comments did not reflect the views of GAO and discussed the process GAO would have used had it conducted this users conference. GAO would probably develop a survey first. Second, it would compile a list of as many experts as possible to complete the survey. Third, the survey would be tabulated. Fourth, a report would be prepared. This is a very interesting technique, and it is one that BEA might want to consider.

Parker stated that it was easy to answer the question "What do government statistics users really want?" Answer: "They want the right data at the right time." So how does one find out what the right data are and what the right time is? He started his research looking at the BEA Strategic Plan. He thought that it was a very useful document, but he found it to be lacking in several respects.

He said that the plan was not presented using a "thematic approach." The plan evolves around various accounts: National, Regional, Industry, etc. But when he considered the items that are in the plan, he did not obtain a sense of where they were going. He said that a better approach was to build a strategic plan using a thematic approach. For example, there could be themes in BEA's Strategic Plan related to Social Security, healthcare, the deficit, pensions, homeland security, terrorism, and globalization. BEA and other Federal statistical agencies provide some information on these topics, but he could not discern that there was a specific plan or theme to address these critical issues.

He recommended dropping certain topics from the plan. For example, he said that compensation in-kind has been a topic since the 1960s, but it is not the type of topic that should be high on anyone's research agenda.

He also suggested that BEA should ensure that its strategic plan be integrated across directorates within the agency. He indicated that he saw lots of references to work on government statistics in BEA's strategic plan, and concluded that the focus of BEA's plan for the government sector was on government output. However, the plan left him asking the question, "What is the theme of all of this work?" As an answer to his own question, he came away with the idea that "BEA intends to improve its measures of government output."

Looking ahead, Parker asked: "What is BEA going to do if private savings accounts are established as part of Social Security? Do the accounts reflect enough information on healthcare

spending at all levels of government? What about pensions? If the Pension Benefit Guarantee Corporation (PBGC) experiences a few more bankruptcies, how will BEA record the results?

Parker noted that BEA's strategic plan expresses an intent to improve information on spending by type. He said that there is information in the accounts on spending by type, but the correct question to ask is "Is there concern for spending 'by type' or spending 'by area of interest'?" For example, there is considerable interest in whether state and local governments are spending on outsourcing or offshoring? Is there information on this topic in the NIPAs? Also, there is interest in the amount of Homeland Security expenditures at the state and local levels.

He said that, in the recent past, BEA performed some research on spending in Iraq. He wondered whether more work had been performed in this area. However, without a search engine, it was difficult to determine whether information was available. [He asked that BEA provide information on this topic.](#)

He indicated that certain reconciliation tables that are produced by the Government Division were scheduled to appear later on BEA's Web site. He said that given the benefits of having these tables available during the estimation process and the improved processing system capabilities that are available, it seems that it should be easy to make these tables available earlier, rather than later, in the process.

Parker discussed data integration. He said that a considerably larger set of financial accounting data at the Federal and local levels are available now as opposed to just five or so years ago. He believed that those data should contain some very interesting and useful information. At a minimum, they should enable users to crosswalk from these financial accounting data to the NIPAs.

He noted that there are proposed changes to the Federal Procurement Database (FPD), which BEA has not been able to use in the past, because of reliability issues. He said that reliability issues remain, but that recent developments may motivate a second look at the FPD.

Parker suggested that integration of state and local and regional accounts data should be worth pursuing. Also, topics, which had been explored in the past by BEA (e.g., the environment), but which have not resurfaced in its strategic plan, may warrant reconsideration.

Parker concluded that BEA's Strategic Plan included many good items. But he suggested that they be joined together in a thematic framework. Also, there should be more entries in those areas where BEA will be called upon to provide data in the future.

A New Approach to Measuring Real Government Output and Prices: Education as a Case Study

Barbara M. Fraumeni, Chief Economist, BEA

[Link to PowerPoint Slides](#)

Chief Economist Fraumeni discussed the above titled paper. She stated that the paper reports on research that will be ongoing for the foreseeable future. She made no commitment to change the current NIPA output measure, but several approaches are being considered. The paper concerns only one of the possible approaches. She noted that the current NIPA real output measures are based on cost-weighted inputs. The goal is to derive a real output measure that is less dependent on inputs.

Fraumeni said that the number of pupils would be the basic real output (quantity indicator) measure. This is what is typically done by statistical agencies around the world. She explained that the number of pupils should be quality adjusted because it is believed that the quantity of education has changed over time, say for 1960 versus 2000. It is also believed that the quantity of education received varies depending upon the grade level. For example, it is assumed that a twelfth grader receives the same amount of education as a first grader. The challenge is how to quality adjust properly.

She explained that BEA is seriously considering two methods for quality adjusting the number of pupils quantity indicator; two other methods have been researched. The first is teacher quality. There is no question that teacher quality matters, and there is considerable literature on this topic. Teacher quality can have a significant impact on the amount of education received by students. Of the thirteen factors related to school quality used by the National Center for Education Statistics (NCES), four of them were related to teachers. BEA already uses a teaching staff composition index as part of a labor input index, to prepare real output measures for education compensation.

The second quality adjuster is class size, which is much more difficult to explain. At some level it is clear that class size matters. If one considers a first grade class that has ten pupils, versus a first grade class with fifty pupils, certainly those pupils in the smaller class will receive a better education. Normally, the consideration does not concern such a large difference in class size (10 versus 5), so within a narrower range of differences in class size, does class size have an impact? Using identical data sets, Hanushek and Krueger arrived at different conclusions. We believe that, if there is an impact, it most likely occurs for primary grades. BEA has applied a quality adjustment to all of the primary grades and used a 0.1 weight. This means that if the pupil-teacher ratio is decreased by 10 percent the quality of education received increases by 1 percent.

Fraumeni stated that BEA researched prospects for including a quality adjustment for “high school completion,” without much success. Drop-out rates provides information about those groups of students at risk, but there many other “social capital” factors that impact drop-out rates. Also, BEA research includes college attendance as a quality adjuster. The fact is that

college enrollment has increased. However, this could be the result of factors: (1) The quality of high school education may have increased; (2) labor market factors may have motivated greater college enrollment; and (3) more women may be preparing to enter labor markets. BEA has decided not to include college enrollment as a quality adjuster of the number of students quantity indicator.

She discussed key statistics presented in the paper. She mentioned the decline in the staff composition index during the 1990s, which resulted from the retirement of aging baby-boomer teachers; they were replaced by younger, less experienced teachers. She noted the positive impact on the output of educational services resulting from a decline in the pupil-teacher ratio and in the high school dropout rate over the period. She indicated that the 2 percent increase in college enrollment during the 1990 was primarily due to an increase in the number of women attending college.

She compared the average growth in implicit price derived using the number of pupils quantity indicator over the period (6 percent) with the average growth in the price index for BEA's gross domestic purchases measure (3 percent). She explained part of the difference, saying that it was caused by increased costs associated with providing educational services for "special education students." Further research is required to explain the growth in prices for educational services.

She compared BEA's estimates of the growth of prices for educational services for the U.S. with similar measures for other countries. In the United Kingdom, the growth in prices has been equal to 80 percent of the growth in nominal output; for the Netherlands, it is 75 percent; for Australia, it is 66 percent; and for the U.S., it is 75 percent. These ratios are high, especially when compared to the ratio of price to nominal growth in GDP.

Fraumeni explained that it was difficult to explain the full impact of different quality adjusters on the overall number of pupils quantity indicator, because different adjusters are applied to different components of the quantity indicator. However, from an overall perspective, it is clear that quality adjustment will reduce the growth in prices up to the 1990s; for the 1990s and thereafter, quality adjustment will not reduce prices because the teacher composition index declines over this period.

She said that future research would be augmented by the addition of Michael Christian, a new doctoral recipient from Michigan, to her staff. He will continue to research the real output of educational services, and, time permitting, he may also research the real output of health services. She added that there is a large list of further research that should be undertaken given the sensitive nature of these measures.

Fraumeni introduced her discussant, Dr. Rudy Penner. He is a Senior Fellow with the Urban Institute, the Arjay and Frances Miller Chair in Public Policy. Previously he was Managing Director for the Barents Group. He has also held posts at OMB, HUD, CEA, and was a professor of economics at the University of Rochester. He has authored many books, pamphlets, and articles, and is well known around Washington, D.C.

Comments On Price And Real Output Measures For The Education Function Of Government

**Rudolph G. Penner, Senior Fellow at the Urban Institute
Arjay and Frances Miller Chair in Public Policy**

Penner opened his presentation by elaborating on his educational background. He began graduate school in economics in 1958, and studied under Simon Kuznets, who later won the Noble Prize, in part, for his work on the concepts underlying the national income accounts. According to Penner, Kuznets' used the Socratic teaching method. Kuznets would query the class on a question such as "What is an average?" Students would leave such classes with the idea that an average provided virtually no useful information whatsoever.

Penner said that he began with that background as a lead into his question "What is the GDP?" "What exactly does it measure?" He said that GDP per capita is a horribly crude measure of human welfare in different countries, and it is not designed to be a very good measure of total economic activity either. For example, there may be a country in which sales of carrots and broccoli contribute equally to final demand, but carrots may provide much more consumer surplus, and the GDP misses that important concept entirely. Even for simple products like these, he said, economists do not attempt to fine tune measures of, say, price by asking whether carrots are produced in a more environmentally friendly manner than broccoli or tend to arrive at the supermarket in a fresher state.

Penner argued that there are good reasons not to fine-tune too much, because it is not clear what the GDP measures in the first instance. Therefore, every proposed refinement should prompt the question, "How much will the refinement improve our understanding of what is going on in the economy." In this case, although an output measure for government services should clearly be an improvement over traditional input measures, he was compelled to enquire concerning one statement in the paper.

Penner noted that after asking, "Why measure output?" the authors of the Fraumeni et al paper respond "The simple answer is that an input-based approach to measuring output is not satisfactory, therefore, a measure from an output-based approach, even if it is imperfect, may be an improvement." Penner said that the insertion of the word "may" by the authors is a Kevlar vest that prevents the statement from being shot down, but the real question is whether the improvement is sufficient to warrant spending scarce BEA resources on the measure. Penner noted that every measure would be unsatisfactory to some degree because of the large number of somewhat arbitrary assumptions required in compiling the statistic. He said that one of his mentors, Herbert Stein, would say, "There are many statistics that one should only be allowed to use with a prescription." In that regard, Penner said, "One has to know the side effects of estimating concepts like the output of government."

Penner said that the authors should make it somewhat easier to compare what was happening to the traditional input measure relative to their output measure, and to provide some commentary as to whether the differences were in accord with the opinions of different experts or even anecdotal evidence.

He pointed out that, although the proposed measures were billed as output measures, inputs were used as a crucial part of measuring output; they are just inputs measured differently from the dollar inputs used now to reflect the activities of government.

Penner proposed that in a follow-up paper, the authors might explore measuring the output of educational services much the way economist measure the output of carrots and broccoli. That is, the authors might spend more time looking at market evaluations of education. He noted that the opening paragraphs of the paper imply that this would not be easy and he agreed, because there are many aspects of education for which there is no market price and where one would have to make quite arbitrary assumptions. For example, if outputs are to be ultimately compared to inputs, one might have to assume that an elementary school experience was equally valuable to one who only finished high school as to one who graduated from college. He pointed out that another problem is that a considerable portion of education is pure consumption and worth little to anyone but the recipient.

He noted, however, that the market places a considerable value on educational achievement and that value appears to have grown over time. Clearly, on average college graduates earn much more than the high school graduates, and the difference has been growing. However, that point takes one back to the point that Kuznets raised about averages. One should give some thought to the fact that, while on average college graduates earn much more than high school graduates, there is a huge and growing overlap. That is, many, many high school graduates earn more than many, many college grads, which raises the question, "How important is education in explaining the difference in averages."

Penner said that exploring his lines of reasoning might be difficult, but that they would involve no more arbitrary assumptions than are being used in the analysis put forward by Fraumeni et al.

Penner concluded by praising the authors for a great deal of careful work that contributed to the literature on a very difficult topic.

Discussion

Question from Barry Bosworth of Brookings Institution: I was a little puzzled by the use of things like teacher quality and class size because they strike me as adjusting to the inputs rather than adjusting to the output. Why is there not more emphasis in the paper on trying to incorporate test results into adjusting the quality of the output?

Answer from Fraumeni: At the beginning of the paper, we said that there is another approach that we will investigate, but this paper does not look at it. This is the outcomes-based approach, and the outcomes-based approach uses typically one or the other of two measures. One measure is test scores and the other is the impact of education on earnings. So we are going to go there. We have not gotten there yet. Our first out the door attempt was to use that approach which is used by most other international statistical agencies. The problem with an outcomes measure is that one must strip away the impacts on outcomes that have nothing to do with schools. So we

plan to explore this approach. It is complex, and that is why we believe that it is going to take quite a few years to explore all of the possible approaches and to see what story they might tell.

Follow-up from Bosworth: Have the other countries come up with any overall assessment of their work in this field?

Fraumeni's response: There is an assessment going on in the U.K. called the Atkinson Report. The U.K. is trying to focus on price change, not productivity. The Atkinson report was concerned that the U.K. Government was placing huge sums of money into government functions and yet it appeared that the impact of those resources was to raise prices rather than to increase the real output of government services. We are in close contact with the statistical agency that works with the Atkinson commission.

Fraumeni continued, saying that Penner had asked why the authors used inputs to measure outputs. The reason, Fraumeni said, was because BEA will publish input measures by function (i.e., prices and quantities) in October 2004. Therefore, the authors did not have input measures when preparing the paper, but such measures are in progress.

New Research in Federal Government Statistics: The Government Capital Account

Pamela A. Kelly, Chief, Federal Branch, BEA

[Link to PowerPoint Slides](#)

Kelly covered three topics that are at the center of the Federal Branch's near-term research agenda:

- A. Timing of transactions between change in private inventories and government fixed investment
- B. Work-in-progress and the implications for the measurement of government value added
- C. Government inventories

Considering topic A, Kelly explained that BEA measures government fixed investment on a delivery basis in most cases. On the other hand, work-in-progress is measured as a part of change in private inventories. When equipment is delivered to the government, BEA records an increase in government fixed investment and a decrease in private inventories. GDP should only be measured as the work-in-progress for that time period.

She noted that BEA's private inventory estimates are based on the Census Bureau statistics on Manufacturers' Shipments, Inventories and Orders. She said that BEA assumes that companies that build government equipment report their work-in-progress to Census. The question is: "Do contractors, in fact, report work-in-progress to Census, particularly for defense equipment?" She said that there is some evidence that some contractors do not report work-in-

progress. Studies conducted just prior to the 1999 benchmark revision showed that Northrop Grumman was not reporting work on the B-2 bomber to the Census Bureau.

In the past, BEA developed adjustments to the Census statistics to reflect B-2 bomber work-in-progress, which were in turn used to adjust BEA's private inventory estimates as part of the benchmark. No adjustments were made to the delivery-based government investment. If contractors report as expected, then GDP is correct.

She provided the following example. The Department of Defense buys a plane for \$40 million, which is built by the contractor in one year, with equal amounts of work completed in each of the four quarters. GDP is thus \$10 million in each quarter. If contractors do not report as expected, then GDP is wrong in each of the four quarters of the year. Using the same example, GDP is understated in the 1st, 2nd and 3rd quarters and substantially overstated in the 4th. Consequently, the Federal Branch's research agenda is as follows:

- Reassess the contractor reporting requirements
- Identify systems that are not reported to Census as work-in-progress
- Using that list, focus first on the larger defense programs that are not reported properly
- Develop adjustments for the inventory estimates, using disbursements data by program from the Department of Defense or other source data.

Considering topic B, Kelly noted again that government fixed investment is recorded on a delivery basis, with two exceptions: ships and structures. Focusing on ships, she said that defense shipbuilding was never recorded as work-in-progress in BEA's estimates of change in private inventories. Prior to the recognition of government fixed investment, work-in-progress for defense ships was recorded as defense purchases of ship durable goods. Ships purchases were replaced with ship fixed investment when government investment was recognized as part of the 1995-96 comprehensive NIPA revision, with no change in measurement procedure. Along with the recognition of fixed investment, BEA introduced consumption of fixed capital (CFC) as a partial measure of the services produced by the stock of investment.

As an explanation of the problem, Kelly related the following scenario. A battleship patrolling the Atlantic Ocean carries sailors and marines that are producing defense services for the U.S. Compensation for the sailors and marines is only part of the cost of producing the service. Using the ship is another cost of producing that service, and that cost is measured, in part, by CFC. She pointed out that the SNA does not mention the issue of CFC for military ships, primarily because the 1993 SNA does not recognize most military equipment as investment. Generally, speaking however, the SNA recommends that CFC for equipment be accounted over the entire useful life of an asset. The SNA also recommends that work-in-progress be recorded as change in inventories until the equipment or structure is completed.

The "problem," Kelly noted, is that BEA currently estimates CFC for military ships based on capital stock estimates where ship fixed investment is measured on a work-in-progress basis. This procedure probably overstate government value added because ships require a considerable time to build and can be quite expensive. For example, an Arleigh Burke destroyer

costs about \$1 billion and is built over approximately 3 years. The current NIPA methodology shows CFC for up to 3 years before this ship is actually put into service. The Federal Branch plans to adopt the following research agenda with respect to this topic:

- Determine what data sources are available to measure ships on a delivery basis.
- Assess the impact on the estimates to determine if a revised methodology for measuring ship fixed investment creates statistically significant differences from the current methodology.

Considering topic C, Kelly said that the SNA recommends presenting government inventories as part of the government capital account. The SNA defines inventories as:

- Stocks of outputs held by producers.
- Stocks of products acquired from other units that are intended to be used for intermediate consumption or for resale without further processing.

As background for the topic, Kelly explained that the U.S. had entered into significant armed conflicts in recent years: The 1991 Gulf War and the wars in Afghanistan and Iraq. In response to those conflicts, BEA data users often enquire why they do not see the impacts of the wars in the NIPAs. Kelly said that she explains this outcome by telling data users that, for the most part, the wars were fought with inventories. Until inventories are depleted sufficiently to warrant a ramp up in production, it is unlikely that one would see the war in NIPA estimates, except for a few exceptions: Compensation, if reserves are activated; travel and transportation to move personnel and equipment; and petroleum. Without accounting for government inventories in the NIPAs, there is virtually nothing else that could clearly be identified as related to the war.

The question, according to Kelly, is “How would the government accounts change if an inventory account was incorporated?” She said that the following entries would have to be modified or added to the NIPAs:

- Intermediate goods and services purchased would become intermediate goods and services used
- Gross investment would be divided into two broader categories—fixed investment and change in government inventories.

To illustrate a government inventory measure, Kelly discussed two examples: One using ammunition, which is a product that the Department of Defense uses to provide defense services; and a second using corn, one of the commodities that the Department of Agriculture acquires and sells as part of its farm support programs. In both examples, she suggested the assumption that the government acquires the commodity in the period when it is produced.

In example one, ammunition worth 50 is manufactured in periods t_1 and t_2 . In t_2 , war begins and ammunition inventories are drawn down. The decrease in inventories is offset by an increase in nondurable goods used. GDP is equal to 50 in both periods, recording only the amount of ammunition manufactured. Government consumption expenditures would appear larger than in the current NIPA measures.

In example two, corn worth 35 and 5 is grown in periods t1 and t2, respectively. In t2, the government sells corn of 25 to businesses. This sale has no impact on government consumption expenditures. Instead, change in private inventories is increased. GDP is equal to 35 and 5, respectively, recording only the amount of corn produced.

Kelly said that these examples showed that the recognition of an inventory measure for government would provide useful additional information about government transactions, and that different types of government inventories have different impacts on government consumption expenditures. An inventory measure could be beneficial, but actually producing one is easier said than done. Data are a key constraint at the moment. BEA has information for a limited number of inventory transactions and has no information for most inventory transactions, including:

- Defense supplies and materials
- Strategic and Critical Material stockpile

Kelly explained that for an inventory measure to be truly useful, it needs to include the supplies and materials that are actively used in the production of government services—ammunition, spare parts, and paper. Not only do these types of supplies and materials more directly impact government services, they are believed to be significantly larger than transactions for the Commodity Credit Corporation and the Strategic Petroleum Reserve, which are already included in BEA's Government Sector accounts. To date, BEA has not produced estimates of government inventories because of problems with data for supplies and materials.

However, technology changes, combined with attempts to improve government financial statistics, may provide new and improved data sources. Kelly asked whether BEA would be able to obtain the data that needed to produce an inventory measure. To illustrate a potential obstacle, she noted BEA's inability to obtain classified information on missiles used during the Iraq War, although obtaining information about missile production is readily available. So, when inventory changes are the most significant, BEA may not be able to obtain needed data to estimate inventory change.

The Federal Branch's research agenda on this topic includes:

- Focus initially on defense inventories because they are the most significant and a measure without defense inventories would be of questionable value.
- Work with the Department of Defense to identify data sources
- Develop a methodology for the measurement of inventories

Government Capital Account

David Lebow, Senior Economist, Federal Reserve Board

[Link to PowerPoint Slides](#)

Lebow provided the following comments on the three topics that Kelly discussed. On the first topic of timing and private inventories, he said that certain private companies may not report work-in-progress inventories for goods that are to be sold to the government. As a result, GDP appears to be concentrated in the period when the government purchase occurs rather than when the production actually occurs. He said the important point was that the problem concerned private inventory data, not government data, per se. Also, such reporting affects the timing of GDP, but not the overall level. He said that it was not clear whether this is a large or small problem. He suggested two possible solutions, both start with identifying where the data are missing. Once this is accomplished, efforts can be made to improve the data that are collected, and/or, BEA can impute work-in-progress estimates using available information.

On the second topic that Kelly discussed, Lebow talked about a situation in which ships and structures boost government investment as the ships and structures are built—not when they are delivered. He argued that this is acceptable for the timing of GDP, because the economic production (building of ships and structures) is reflected in GDP as it occurs, which is consistent with the recording of private residential and nonresidential structures in GDP. However, this recording boosts the government’s capital stock inappropriately, as ships or buildings are assumed to add to capital and to produce services—as measured by CFC—before they actually produce services. This is not a matter of timing that washes out on average. In this situation, he commented, GDP is too high. Still, it is hard to believe this phenomenon is very large. The incremental increase in the capital stock when a ship is built must be small relative to the stock itself. The effect on the growth rate of GDP or government spending ought to be smaller than on the level. Still, this problem should be fixed. Lebow said that a possible solution was to include the work-in-progress in government inventories, if the latter are incorporated into the NIPAs. Alternatively, work-in-progress could be added to the private sector inventory accounts. The quickest solution, he said, is to simply “turn off” the work-in-progress contribution to CFC.

On the third topic that Kelly discussed, Lebow considered adding government inventories explicitly to the accounts. He said the idea is to define consumption as the use, rather than the purchase, of an item. He said that one could imagine doing the same thing throughout the accounts, such as measuring PCE food when the food is eaten rather than purchased or measuring ammunition when used as opposed to when produced. But for food, and for most commodities, it is difficult to imagine this making a difference, except perhaps in a case like the run up to Y2K.

On the other hand, Lebow said, it matters if there is a large or sudden change in inventories. In that case, showing the inventory movements explicitly could be more informative. Wars being fought out of inventory would be the classic case. And the CCC and SPR are other likely suspects. This would not affect GDP, it affects the split between inventory changes and final sales.

Lebow said that the important consideration was data availability. He voiced concerns about incorporating partial measures of inventories. Currently, it is common knowledge that inventories are missing from the accounts; we do not know the size of the account, but we incorporate a mental caveat as we look at the accounts. Adding an inventory line to the account, which includes only a portion of total inventories because data are unavailable to prepare a complete inventory account might be misleading—even if it is a step in the right direction. Another important point, said Lebow, is that time consistency is important. He said that he would reject a proposal to incorporate an inventory account that was not historically complete. However, he said that the topic was certainly worth investigating, and starting with defense inventories appeared to be the right thing to do.

He concluded by commenting on the proposed international guidelines for the treatment of missiles; i.e., that they should be recorded as inventories. He disagreed, and said that “missiles should be considered capital goods, providing services—deterrence, if you like—even when they are just sitting there. They should be treated more like a battleship than a bullet.”

Discussion

Question from the audience: Can BEA come up with an estimate of the war in Iraq?

Answer from Kelly: It would be very difficult. Much of the source data from the Department of Defense is “bundled” in the sense that data on the purchase of supplies does not provide any indication that the supplies are being purchased in order to replenish supplies that have been used. So there is not necessarily a distinction in the appropriated funds to make a distinction between Iraq spending and spending that would have occurred without Iraq.

Statement from Ken Schreier of the Department of Defense: The Department of Defense has been spending a fair amount of time trying to come up with a value for inventories. One of the things we have to do is come up with an auditable value for financial statement presentation purposes. So we have this major ongoing effort to do this. I believe that within the next two or three years we will come up with a value that is fully auditable, because it will have to be incorporated and accepted as part of financial statements. All of the agencies in the Federal government have the same challenge. We need to have estimates that are reasonable, consistent, and a baseline to enable us to compare across time. Right now, we are projecting that by the end of fiscal year 2006, the Department of Defense will have good baseline values for inventory and equipment. Virtually all other Federal Government agencies have these values; the Department of Defense will likely be one of the last agencies to accomplish this goal.

New Research in State and Local Government Statistics

Bruce E. Baker, Chief, State and Local Government Branch, BEA

[Link to PowerPoint Slides](#)

Baker provided the following comments on the near-term research agenda for the State and local Branch. He said that the focus would be on improving sectoring in the NIPAs and in improving estimates of in-kind compensation.

On sectoring, he said that BEA plans to make NIPA sectors look more like SNA sectors by moving public corporations and quasi corporations to the private sector, and by separately identifying non-profit institutions serving government in the government sector. Both of these improvements are consistent with recommended SNA treatment. Currently BEA makes a distinction between “general government” and “government enterprises.” Government enterprises are governmental units that recover an “economically significant” portion of their operating costs from user fees. A commonly used rule to identify such enterprises is the “50 percent rule.” Currently, BEA measures government enterprises as units in the following functions: Water, sewer gas, and electric utilities; air terminals, water terminals, housing and urban development; public transit, toll facilities, parking, liquor stores, lotteries, off-track betting, and miscellaneous commercial activities. Government enterprises constitute a significant portion of overall state and local governments, accounting for over \$200 billion in revenue in 2003, although enterprise expenditures were nearly as large. The enterprise surplus was only about \$4.0 billion in 2003. Certain enterprises have high returns (e.g. lotteries), while others have significant losses (e.g. transit).

Baker said that quasi-corporations are a subset of government enterprises. Quasi corporations are defined using three criteria: They must recover an economically significant portion of their revenue from user fees or sales; they must operate their own accounts (including balance sheets); and they must have operational autonomy from their client governments. A good example in the Federal sector is the Postal Service. It covers most or all of its costs from fees, it has its own accounting system, and it operates under its own Board of Governors, which can set rates on their own authority. The difficult problem in the state and local sector is in identifying units that have these characteristics.

He invited conference attendees to consider “A Tale of Two Water Companies.” Falls Church, Virginia and Fairfax, Virginia both have water companies. Both recover all or most of their expenses in user fees or sales. Both have separate accounts. However, Falls Church’s water company is controlled by the city council while Fairfax water company has it’s own independent board. How can one distinguish between dependent Falls Church and independent Fairfax? Both are reported as part of their parent governments.

Baker offered the following suggestions on how to address the problem. One approach would be to modify Census Bureau surveys to ask respondents about the status of their enterprise units. That would require extensive consultation between BEA and the Census Bureau, then

between the Census Bureau and surveyed governments. A second approach would be “pragmatic” and would involve approximation. For example, one could classify all institutional units with specified characteristics as “quasi corporations,” similar to the approach currently in place, which classifies certain functions as “enterprise functions.”

On nonprofit institutions serving government, Baker said that BEA plans to consider moving these institutions into the government sector and to separately identifying them in the sector. Certain non-profits serve government directly such as the National Government Association, the National Association of State Budget Officers, the National League of Cities, etc. State university alumni boosters raise money for university functions. Others “lessen the burden of government” such as municipal hospitals. BEA plans to base estimates of nonprofit institutions output on data from various sources: e.g., the Internal Revenue Service, the Census Bureau, and the Department of Education.

Baker defined in-kind compensation as non-cash compensation, provided in the form of goods or services. Currently, BEA’s Federal estimates include in-kind compensation in the form of transit subsidies, military uniforms, and meals. The State and local Branch plans to research three types of in-kind compensation:

1. Restaurant meals—Meals provided to government employees are treated as in-kind compensation. That is, employees realize a saving by not having to pay for meals from their own funds. In contrast, lodging provided to traveling employees is not treated as compensation because there is no commensurate saving on the margin.
2. Tuition—Employees of state and locally-owned educational institutions are often granted free or reduced cost tuition for their family members. The value of these grants is considered in-kind tuition.
3. Child care assistance—Certain employers provide child care assistance, from child care facilities at the worksite to vouchers.

BEA plans to research these three types of in-kind compensation. The major concern at this point, he said, is identifying source data.

Comments on New Research in State and Local Government Statistics

Laura S. Rubin, Economist, Federal Reserve Board

Rubin did not address the specifics of Baker’s presentation, but she discussed concerns she had formulated while monitoring and forecasting the state and local government sector of the NIPAs for the Federal Reserve Board. She said that data users for this sector are more diffuse than for the Federal sector. Many of these users are interested in data for specific states or localities, which don’t appear individually in the NIPAs. Also, there is no compendium of state and local statistics that is comparable to the Unified Federal Budget. She noted that the National Conference of State Legislatures and the National Association of State Budget Officers report on state general fund budgets but said that these budgets make up only about a quarter of the total

state and local sector that is reported in the NIPAs; data on state general fund budgets differ in a number of ways from budget data reported in the NIPAs.

Rubin said that she encourages state and local organizations to learn about the aggregate state and local figures in the NIPAs to better understand how the sector as a whole is doing and how it relates to the national economy.

She pointed out that the only state and local NIPA source data that are available on a current monthly basis are the employment statistics from BLS and the value of construction put in place (VPIP) data from the Census Bureau. She expressed concern, as a forecaster, that VPIP data are released so soon after the NIPA release, rendering the NIPA estimates obsolete. She asked whether BEA could incorporate these statistics into the NIPA estimates, possibly by obtaining the statistics on an advance/early release basis. She recognizes the difficulties of coordinating data from different agencies or different groups within the Department of Commerce. Relatedly, Rubin noted a great improvement in the timeliness of Government Finance data from the Census Bureau.

Rubin said that Medicaid is another large and important category of state and local government expenditures for which she would like to see better coordination between the Federal Medicaid grants data, obtained from the Centers for Medicare and Medicaid Services, and the state and local governments' Medicaid social benefits data that are reported in the NIPAs.

Discussion

Comments from Joe Huseman of the Census Bureau's Manufacturing and Construction Division: Huseman stated that he was very interested in working to help coordinate the flow of information between the Census Bureau's Manufacturing and Construction Division (MCD) and the Governments Division. He said that there has been a recognizable improvement over the past couple of years in the speed of the delivery of data from the Census Governments Division to MCD.

Brent Moulton: Commented on the development of release schedules, saying that this was one of his duties as the Associate Director for National Economic Accounts at BEA. He said that it was always difficult to time GDP releases so that all of the most relevant source data are included, and that, inevitably, some source data are released after the GDP release.

Improved Government Statistics for International Organizations

Steven Payson, Chief, Special Studies Branch, BEA

[Link to PowerPoint Slides](#)

Payson began his presentation by outlining the areas of work within his Special Studies Branch:

- Measuring the stock of all government assets, and the consumption of government fixed capital
- Preparing estimates of government receipts by industry for the NIPAs
- Preparing estimates and articles on a comparison of BEA's estimates of personal income and the Internal Revenue Service's estimates of federal adjusted gross income
- Preparing estimates of a price index on biomedical research and development on behalf of the National Institutes of Health (NIH) under an interagency agreement
- Preparing estimates of depreciation on the stock of military equipment for the Comptroller's Office of the Secretary of Defense
- Preparing tables of Government Finance Statistics (GFS) for the International Monetary Fund (IMF), through an interagency agreement with the Treasury Department
- Preparing annual statistics on *government tax revenues*, which are presented to by the Treasury Department to the Organisation for Economic Cooperation and Development (or OECD)

Payson said that he would focus on the latter work in his presentation. He said that the Special Studies Branch had been studying and researching international standards and guidelines in connection with the GFS and OECD work. These standards and guidelines are needed, he said, in order to avoid three types of variation that could occur when nations report finance statistics:

- Coverage or scope—There can be inconsistencies among nations regarding the inclusion or exclusion of various concepts within the same financial or economic aggregates.
- Timing—Cash versus accrual accounting practices may be adopted by different nations.
- Detail—Certain concepts in a nation's accounts may be measured at a level that is more aggregate than what is recommended under international standards.

He said that the Special Studies Branch had been adjusting economic estimates to make them as adherent as possible to pre-established international standards and guidelines.

An example of this effort, he said, was estimates of Government Tax Revenue that are provided to the OECD, using SNA standards. In accordance with the SNA, and specifically in response to recent OECD and IMF requests, the Special Studies Branch had revised estimates

from a “cash accounting basis” to an “accrual account basis.” These revised estimates now include NIPA estimates on a calendar-year basis, which are more comparable to estimates provided by other nations.

He said that revenue on a *cash basis* is easy to explain; it is simply the net inflow of cash over a well-defined time interval. An accrual basis, on the other hand, as defined by the International Federation of Accountants, “is a basis for accounting under which transactions and other events are recognized when they occur” (see the International Federation of Accounts (IFAC), 2003 IFAC Handbook of International Public Sector Accounting Pronouncements, p. 29).

As a theoretical example of strict accrual accounting for tax revenue, Payson talked about a case in which an individual earns income in 2003, but pays income tax on that income in 2004. On a cash accounting basis, the revenue would be recorded in 2004 when the cash is received. On a strict accrual accounting basis, the revenue would be recorded in 2003, because the tax is causally linked to the income earned in 2003. As a result of strict accrual accounting, it is easier to identify the relationships between income and income taxes. Generally speaking, he said, accrual accounting requires the recording of receipts *or obligations* (such as pension obligations), whenever they are known to exist with reasonable certainty. The expected receipts or obligations are recorded in the same period as the underlying event that causes them to occur, as opposed to the period in which cash is actually transferred.

Payson said that governments around the world are now being encouraged to change their national accounts from a cash basis to an accrual standard. This shift parallels movement toward broader and more integrated accounting of government stocks and flows. Dr. Gary Davis has spearheaded the Special Studies Branch’s efforts to convert the tax revenue statistics that are submitted to the IMF and OECD from a cash to an accrual accounting basis.

He noted that the IMF and OECD have recognized the difficulty of measuring tax payments on a strict accrual basis—especially income taxes. The problem is that, there may be no clear point in time event to identify as the *cause* of the tax. The tax may be on income earned in, say 2003, but one of the causal events in determining the precise tax is the filing of the tax return in 2004. Consequently, in the case of U.S. income taxes, the Special Studies Branch decided to follow the guidance provided in the IMF’s *Government Finance Statistics Manual, 2001 (GFS)*. The GFS manual recommends an “accrual” accounting treatment for “pay-as-you-earn” taxes that is consistent with current NIPA treatment of personal income taxes. The IMF states that pay-as-you-earn income taxes “may be recorded in the periods in which they are paid, and any final liability on income may be recorded in the period in which it is determined” (see the IMF’s GFS Manual, p. 30.)

He explained that IMF statistics are more than a compilation of various parts – they are an *integrated system of accounts* that tie together the sources and uses of funds with changes in assets and liabilities. Consequently, the system has a “balance sheet component” which the Special Studies Branch plans to analyze in much greater detail over the next couple of years using the Federal Reserve Board’s “Flow of Funds” accounts data.

Other areas of research to be undertaken by the Special Studies Branch, he said, included methods for enhancing BEA's IMF and OECD submissions to include environmental and R&D government expenditures—based on BEA's progress in estimating these two areas. The ultimate goal, he said, was to generate more useful economic and financial statistics that will better serve informed decision-making.

Payson then introduced the discussant for his presentation, Mr. James Mackie. Mr. Mackie is a Financial Economist in the Office of Tax Analysis at the Department of Treasury.

Improved Statistics for International Organizations

James B. Mackie, Financial Economist, Office of Tax Analysis, Department of the Treasury

Mackie began his talk by saying that BEA is a crucial source of valuable information, and applauded BEA's efforts to reach out to users of its statistics.

He discussed "What is accrual accounting for taxes?" He said that Payson had provided a broad definition of accrual accounting. Loosely speaking it is an attempt to record taxes in the year in which the income generating the tax payment occurs. For OECD and national accounts purposes, he said, the implementation of this idea is rather limited. Broadly speaking, accrual accounting tends to involve time shifting cash tax receipts so that they correspond to the period in which the tax system deems the revenue to have occurred.

He provided the following example. Cash payments that are made in January of 2005 for taxable income arising in December 2004 might be shifted back by one month so that they are counted in 2004. He said that Payson made it clear that for pay-as-you-earn taxes, like much of the U.S. personal income tax, the standard can be even looser—such taxes can be recorded in the period in which they are paid. He asked whether the cash-payments had be time adjusted.

Mackie also discussed "What accrual accounting is not." He said that accrual accounting is not an attempt to fundamentally re-measure tax liability based on economic concepts of when income arises. It would not, for example, attempt to implement market-to-market rules for measuring capital gains tax liability. Rather, it accepts the liability as occurring when the gain is realized. It might, however, time shift the cash payment. Nor would accrual accounting try to alter other basic income recognition rules (such as the all events test that governs the deductibility of expenses under U.S. tax law).

He went further to say that accrual accounting as implemented by the IMF, OECD, and other international bodies would not require that net losses reduce tax revenue in the year in which they occur. Instead, the loss limitations would be respected, and the losses would be allowed to reduce tax revenue in the year in which they were used.

Mackie asked, rhetorically, "Why shift to accrual accounting?" The advantage of the shift is to more closely match measured tax revenue with the underlying event—the earning of income. Such matching facilitates interpretation of tax ratios, such as the ratio of tax to GDP.

Movements in the ratio would be uninformative to the extent that tax related to economic activity (GDP) arising in year t while GDP to economic activity arising in year $t+1$. Matching facilitates studies of the effects of tax policy changes on revenues received. While the efforts to date to shift towards accrual have been limited, they are likely to help with the proper interpretation of economic data.

He provided an answer to the question “Is accrual accounting an improvement?” He said that it is better to have an approximate measure of the right concept than an exact measure of the wrong concept. But, partial movement to the right concept might not necessarily be an improvement.

Mackie suggested that additional research on accrual accounting be performed, and he favored a move towards accrual accounting for national accounts statistics. Move further towards accrual? He said that the use of economic aggregates can be tricky even within a country; therefore, greater comparability across countries would certainly be beneficial. As an example of nuances within national accounts data, he noted that, in the NIPAs, the Federal Reserve System is included within the corporate sector. To study private corporations only, one has to remove the FED. He wondered whether data from other countries have similar ambiguities that are not widely known. He said that the ambiguities might even be more severe overseas, where countries have state sponsored enterprises and national champions. He commented that it is not clear how the income, profits, and taxes of such enterprises are accounted for in the national accounts of other nations, and whether research papers that use aggregate data to make international comparisons reflect all appropriate adjustments to make the data comparable.

Discussion

Comments from Keith Dublin of the IMF’s Government Financial Division: The IMF does not view the reporting of government financial statistics on an accrual basis as the only option. We ask governments to report government financial statistics on a both a cash and an accrual basis. We believe that they are not mutually exclusive.

Comments from Mackie: I think this idea of trying to make international submissions of aggregate tax data from the NIPAs more internationally comparable is very important, in part because people are always using these data to make inter-country comparisons. I wonder if adjustments are made to make these countries comparable. If one wants to look at changes in corporate taxes relative to profits you might want to exclude the FED from the NIPA corporate sector. That is a fairly detailed piece of knowledge. Somebody picking up the NIPAs in France or Great Britain may not have this knowledge.

Concluding Remarks and Request for Customer Feedback

Brooks B. Robinson, Chief, Government Division, BEA

Robinson expressed appreciation to attendees for their participation in the BEA Government Statistics Users Conference. He anticipated that attendees found the conference beneficial, and that they became more informed about BEA plans to conduct research in preparation for future major NIPA revisions. He said that BEA had gained tremendous insight concerning how attendees view BEA's research plans, and about attendees data needs based on comments and discussions during the conference, and invited attendees to complete a short feedback form to ensure that their comments and concerns were registered.

He said that BEA planned to prepare a summary of the conference and make it available to attendees on BEA's Web site: www.bea.gov. Besides completing the form, Robinson invited attendees to continue to monitor activities at BEA, and to provide comments on BEA's work. He said that attendees should feel free to contact BEA staff concerning issues related to BEA's work.

He thanked the following BEA staff members (in no particular order) for their assistance in organizing the conference: Mike Moore, Nancy Bryan, Kali Kong, Kathy Dent, Benjamin Mandel, and Stephanie Mak.

At shortly before 12:30 p.m. he adjourned the conference.

Feedback Form Results

BEA received 22 responses to its request to provide feedback on the Government Statistics Users Conference. BEA staff analyzed the responses and created the following table of summary statistics.

Customer Feedback Results
Bea Government Statistics Users Conference
September 15, 2004

	Mean	Mode	Frequently (every week)	Often (every month)	Occasionally (every quarter)	Rarely	Never
			5	4	3	2	1
1. How often do you use NIPA government statistics?	3.5	4	27%	32%	27%	5%	9%
2. How do you access NIPA government statistics?							
BEA Web site (www.bea.gov)	3.4	4	27%	32%	18%	5%	18%
Survey of Current Business.	2.3	1	14%	18%	14%	5%	50%
STAT-USA Web site (www.stat-usa.gov)	1.5	1	5%	5%	5%	14%	73%
Telephone access to staff.	2.3	1	14%	14%	14%	9%	50%
E-Mail access to staff	2.2	1	14%	14%	9%	14%	50%
3. How useful are NIPA government statistics in terms of quality and coverage?							
	Mean	Mode	Very Useful	Useful	Neither Useful nor Not Useful	Not Useful	Very Not Useful
			5	4	3	2	1
3. How useful are NIPA government statistics in terms of quality and coverage?	4.1	4	41%	45%	14%	0%	0%

4. How useful was today's NIPA government statistics users conference?	4.0	4	23%	77%	0%	0%	0%
	Yes	No					
5. Have you ever had a special need regarding NIPA government statistics fulfilled?	68%	32%					
6. Would you be interested in a separate quarterly report that provides a brief discussion of NIPA government statistics?	73%	27%					
7. Can BEA's Government Division consult with you about research projects?	86%	14%					

Of the research topics discussed during this conference, which one is most important to you?

State and Local Government

Social Programs

State and Local Government data

Integration with flow of funds

The Government Capital Account.

Improving NIPA sectoring, especially for government enterprises (quasi-corporations) regarding health care.

Measuring real government output and prices.

Please provide other comments you may have concerning the conference:

1. Like to know more about the project of harmonizing GFS with Flow of funds accounts.

As indicated during the conference, BEA continues to collaborate with the Federal Reserve Board's Flow-of-Funds staff to develop a fully integrated balance sheet for the Government Sector of the National Income and Product Accounts (NIPAs). As this work proceeds we will report on our progress and seek comments from conference attendees. BEA produces production, income, and capital accounts for the Government Sector, while the Flow-of-Funds account reflect the Government Sector's financial accounts. The long-term goal of our research is to synchronize and harmonize data sources, to the extent possible, and then integrate the NIPAs and Flow-of-Funds Accounts into a comprehensive system that provides opening and closing balance sheets.

2. Maybe one way to get state and local people in their governments more interested in the NIPAs is to have a workshop on how they can relate their individual government data with he NIPAs.

A "BEA State and Local Data Symposium" is planned for May 18, 2005. A report on this symposium will be posted to the website.

3. Please, implement the GFSM 2001! USA fiscal policy analysts need it!

BEA's Strategic Plan (see <http://www.bea.gov/bea/about/strat_plan_FY05_09.pdf>) calls for efforts to achieve international comparability in national economic accounting. BEA is currently in the process of transitioning the NIPAs toward international comparability. Brent Moulton, BEA's Associate Director for National Economic Accounts, mentioned selected examples of BEA's accomplishments in this area during the conference—particularly the classification of transactions and the treatment of banking services.

This effort must be considered in the context of an international effort to update the System of National Accounts, 1993 (SNA), which is the world standard for national economic accounting. At this point, plans are to produce a revised SNA by 2008. One component of the SNA revision is to harmonize the SNA with other accounting standards, including the Government Finance Statistics Manual, 2001 (GFSM). BEA is very much involved in the SNA revision, specifically through the Advisory Experts Group (Brent Moulton), the Canberra II Group (Brent Moulton and Barbara Fraumeni, BEA's Chief Economist), the Direct Investment Technical Experts Group (Ralph Kozlow, Associate Director for International Economics), the Task Force on Defined Benefit Retirement Schemes (John Ruser, Associate Director for Regional Economics), and the Organisation for Economic Cooperation

and Development and International Monetary Fund Task Force on the Harmonization of Public Sector Accounting (Brooks Robinson, Chief of BEA's Government Division).

BEA plans to continue its effort to achieve international comparability, mainly by continuing to move toward the current and revised SNA as the standard. Consequently, BEA plans to incorporate, where appropriate, concepts and methods from the GFSM that are embodied in the current and revised SNA.

4. Good overview of activity and personnel.

Thanks for the positive response.

5. Please implement GFSM 2001.

See the response to 3 above.

6. Improve Government statistics for International Organizations.

BEA continues to improve the statistics that are provided to international organizations. Currently, BEA provides statistics to a variety of international organizations, including the International Monetary Fund, the Organisation for Economic Cooperation and Development (OECD), and the United Nations. Most of these statistics are prepared to meet international standards. Because the international standard, mainly the System of National Accounts, 1993 (SNA), is under revision, major improvements may not be undertaken until after that revision is complete in 2008. However, recently, BEA has made significant improvements to the statistics that it provides to international organizations; including reporting certain Government Finance Statistics on an accrual basis and increasing the statistics that are provided to the OECD (namely OECD table 900 on taxes and table 1100 on government expenditures by function). Moreover, in the December 2004 issue of the Survey of Current Business, Charles Ian Mead, Karin E. Moses, and Brent R. Moulton, published an article on the methods used to convert NIPA statistics to an SNA basis.

7. Thanks for inviting me. I felt the conference was helpful.

8. Send materials in advance so we can prepare such as:
- A) overview of what type of feedback you are looking for
 - B) papers, slides, etc. that would allow users to think about responses before the conference-much like a discussant

Thank you for your suggestions. We will implement them at future conferences.

9. Set aside time for those at the conference to raise additional issues not raised by BEA but related to topics of interest to the BEA government statistical unit. This would provide an opportunity for feedback not only on current BEA research but also a broader perspective that could reveal research that users think BEA should be doing. Even if these research projects are not possible, it would allow BEA to explain the difficulties.

See response to 8 above.

10. The treatment of Medicare and social security is an important but unmentioned issue. Whatever treatment is used in the NIPAs, a satellite account should be maintained and published regularly.

Data for social security and Medicare are found in NIPA tables 3.6 and 3.12. The NIPAs now reflect information on contributions to, and benefits from, the social security fund (including Medicare), and the net saving of the fund. This information is grouped neatly together in NIPA table 3.14.

BEA will consider whether it may be appropriate and feasible to develop a more comprehensive set of accounts for social security. If such a set of accounts is developed, they may be shown as part of the core NIPA accounts or they may appear in a satellite account.

11. Subjects were discussed for the Federal Government that will need to be applied to state and local statistics, and vice-versa, but there was no indication of how that will happen.

BEA's research agenda will account for both Federal and state and local government requirements as research is being performed. Conference attendees will be asked to comment on this research.

12. It would be useful to have a general statement on whether government statistics are on a cash or accrual basis (or mixed), why that basis is used, and what, if any, problems there are if the corresponding statistics for private units are not on the same basis.

Generally speaking, in the National Income and Product Accounts (NIPAs), product-side estimates are prepared on an accrual accounting basis, while certain income-side estimates reflect primarily cash accounting methods. The main reason for this difference in measurement methods concerns source data. The source data normally used to account for final demand transactions on the product-side of the NIPAs involve businesses, and business accounting standards require accrual recording of transactions. On the other hand, certain source data that are used to measure income-side transactions are collected from households, and many of these transactions are recorded on a cash basis. This is true for the NIPAs, in general, and for the government sector, specifically.

To achieve international comparability, BEA intends to move toward consistency in the accounting basis of NIPA estimates. BEA has been, and continues to be, engaged in a research program to convert series that are based on cash accounting to an accrual accounting basis. An important series, Medicare, was converted from a cash to an accrual accounting basis during the 2003 Comprehensive Revision of the NIPAs; our plans are to convert additional series during the next major NIPA revision. Also, as mentioned in the response to item 6 above, BEA now prepares certain Government Finance Statistics for the International Monetary Fund on an accrual basis.