

Testimony of
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Rethinking the Gross Domestic Product as a Measurement of National Strength
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Mr. Chairman and members of the committee, I would like to begin by thanking you for the opportunity to appear before you this afternoon. My testimony will discuss how the national income and product accounts (NIPAs) – the source of the Gross Domestic Product (GDP) measurement that is the subject of today’s hearing – might be supplemented with information about non-market activity to provide a more complete picture of national output and the sources of economic growth. My testimony draws heavily on the work of a recent National Academy of Sciences panel that I chaired. The panel was charged with making recommendations about whether and how our accounting of non-market activity might best be expanded and a more in-depth discussion of this topic can be found in the panel’s published report (Abraham and Mackie, 2005; see also Abraham and Mackie 2006).

Concern that the NIPAs are incomplete and thus potentially misleading is not new – these concerns date back to the 1930s when the first U.S. economic accounts were developed by Simon Kuznets (Kuznets 1934). The development of these accounts rightly has been hailed as a major accomplishment. The NIPAs meet rigorous standards

and enjoy broad acceptance among data users seeking to track economic activity. They are, however, primarily market-based and, by design, shed little light on production in the home or in other non-market contexts. Further, even where activity is organized in markets, important aspects of that activity may be omitted from the NIPAs. Unpaid time inputs and associated outputs often are critical to production processes but, because no market transaction is associated with their provision, they are not reflected in the accounts. One illustration is provided by estimates (LaPlante et al., 2002) suggesting that the value of in-home long-term care services provided by family and friends is greater than the value of similar market-provided services.

In other cases, because it cannot be bought and sold, the output resulting from market-based production may be incorrectly characterized or valued. There is wide agreement, for example, that the output of the education sector properly should be considered investment rather than consumption, and that its value should be assessed in terms of the returns on that investment rather than the cost of the inputs used in its production, but this is not how education presently is treated. The conventional accounts do not account for the asset value of human capital production associated with education, or for that associated with health care and other personal investment activities. Available estimates are rough, but suggest that the value of the human capital stock may be as large as that of the physical capital stock (see Kendrick, 1976, and, for a discussion in the context of analyzing economic growth, Mankiw et al., 1992).

Although the importance of non-market—but productive—endeavors has long been recognized, few attempts have been made to provide systematic information about even the most quantitatively significant of them. The state of non-market accounting

today resembles the situation for market-based accounting in the 1920s and 1930s before the creation of the NIPAs. Economic accounting need not, and arguably should not, extend to all non-market activities, but there are certain areas in which non-market accounts, designed to supplement the NIPAs, could make particularly important contributions.

Extending the nation's accounting systems to better incorporate non-market production promises substantial benefits to policymakers and researchers. For example, intangible investments seem certain to have accounted for a very large portion of the advance in living standards over time. But researchers who study economic growth have been forced to supplement data from the national accounts with rough-and-ready estimates from other sources in order to identify the contributions of factors such as investment in research and development or investment in human capital to growth. In this regard, the Bureau of Economic Analysis should be commended for the work it has done to develop a supplemental account that focuses on investments in research and development, but no comprehensive accounting of other intangible investments, most especially investments in our human capital, are available.

Non-market accounting also would illuminate the processes whereby inputs are transformed into outputs in particular sectors. Consider, for example the production of health. In contrast to currently constructed health *expenditure* accounts, which track market payments but do not identify the outputs in a way that is useful for measuring price change or productivity, a health account would relate health improvements—the real “good” that is produced—to medical treatments, as well as to a wide range of other inputs, including diet, the environment, exercise, and research and development. By

most measures, improvements in health have outpaced increases in spending on medical care. Since medical care interacts with these interrelated factors, however, we do not know with any certainty the productivity of resources directed toward health care (Cutler and Richardson, 1997; Cutler 2004). Optimally, expenditures and outcomes would be tracked so that changes in well-being associated with different actions could be monitored; in turn, this information could support better management of expenditures (both private and public) to achieve desired outcomes.

To take another example, education accounts might be designed to relate improvements in skill capital--the output--to the various inputs to the educational process. As in the health case, schooling is characterized by a mix of market and non-market inputs and outputs. The value of time students spend in school—the key non-market input--is likely to be at least comparable to the expenditures on marketed inputs. The *2003 Statistical Abstract* shows that, in 2000, school expenditures on primary and secondary education amounted to approximately \$400 billion and that just over 47 million students were enrolled in primary and secondary schools. Assuming 180 days at 6 hours a day, plus an hour of commuting time and 2 hours of homework per student, students in these grades devoted more than 75 billion hours to their education. If students' time were valued at the then-current minimum wage of \$5.15 per hour (purely for illustrative purposes), the value of unpaid student time would have been almost as large as the expenditures measured in the conventional accounts.

The inherent limitation of the NIPAs—that they fail to consider the full array of the economy's productive inputs and outputs—might be less important if market and non-market activities trended similarly, but there is little evidence to suggest that they do.

To take one frequently cited example, failing to account for the output produced within households may yield misleading comparisons of economy-wide production, as conventionally measured. To the extent that the entry of women into paid employment has reduced effort devoted to household production, the long-term trend in output as measured by GDP may exaggerate the true growth in national output (Landefeld and McCulla, 2000). Similarly, the relatively smaller portion of total output attributable to home production in the United States as compared to many developing countries surely exaggerates its national output relative to theirs.

Perhaps less well recognized are potential problems with the measurement of national output over the business cycle. If people who lose their jobs during cyclical downturns take advantage of their absence from paid employment to increase the effort they devote to home production, the short-term decline in national output may be dampened relative to that measured by GDP. Knowing more about the level and distribution of non-market activity could be important for other purposes as well. Such information could, for example, change perceptions of the extent of economic inequality among U.S. households and how that has changed over time. This, in turn, could affect where welfare and poverty lines are drawn (Michael 1996).

Different observers looking at the limitations of the existing NIPAs and thinking about how they might most fruitfully be expanded might come to somewhat different conclusions about the relative priority of extensions in different directions. The National Academies panel in which I participated recommended that work to develop measures in five areas be prioritized:

- Household production

- Investments in formal education and the resulting stock of skill capital
- Investments in health and the resulting stock of health capital
- Selected activities of the nonprofit and government sectors, and
- Environmental assets and services

Each of these areas involves productive activity that is substantial in magnitude, so that focusing attention on the activity should improve our understanding of the nation's total output; is sufficiently "market-like" in its character that it would fit naturally into an expanded accounting framework that builds on the national income and product accounts; and satisfies a feasibility constraint, meaning that it seems possible to develop sensible approaches to quantifying and valuing the inputs and outputs that the expanded accounting of activity in the area would record.

Just to be clear, I am not recommending that the core National Income and Product Accounts be changed to incorporate the expanded measurement of non-market activity that I am envisioning. Rather, I am proposing that this information be incorporated into a set of satellite accounts that would augment rather than replace the existing accounts. To be useful, however, these satellite accounts should be produced on a regular schedule so that users of the data can count on its being available.

I should also acknowledge that there are a variety of technical and methodological questions that remain to be addressed in order to produce the satellite accounts I am recommending. Many of these questions are considered at some length in the report to which I alluded earlier. Without dismissing their significance, however, I do not believe this to be the proper forum in which to take them up, other than to say that I am confident that, with some effort, appropriate answers to them can be found.

An essential building block for carrying out much of the work to build a system of non-market satellite accounts that the National Academies panel has recommended is the availability of data on how Americans spend their time and, in particular, the time they devote to productive non-market activity. Data on time use are needed to measure the time devoted to household production, to track the time devoted to investments in education and health, and to provide a complete picture of time spent on productive activities in the nonprofit sector, including volunteer as well as paid labor. One reason for the optimism of the National Academies panel regarding the prospects for progress to develop useful non-market satellite accounts was the advent of the American Time Use Survey (ATUS), which in 2003 began to produce exactly the sort of information that is needed on how people allocate their time. Indeed, one of the panel's central recommendations was as follows:

Recommendation 2.1. The American Time Use Survey, which can be used to quantify time inputs into productive non-market activity, should underpin the construction of supplemental accounts for the United States. To serve effectively in this role, the survey should be ongoing and conducted in a methodologically consistent manner over time.

Given the importance of the ATUS for addressing the recognized limitations of the GDP as a measure of national output, I was dismayed to learn recently that the budget the President has proposed for FY2009 eliminates funding for these important data. Without the ATUS, much of the work envisioned by the National Academies panel on non-market accounting and others interested in developing a comprehensive set of supplemental accounts to complement the existing GDP measure, as well as other important research on the quality of our lives more broadly, will not be possible. Put simply, the ATUS is needed

to expand our horizons beyond merely charting where dollars go, to charting where time goes too. Even beyond a more complete accounting of output and productivity, anyone who wants to understand the changing lives of American families, to monitor the well-being of the American population, or to make informed social policy decisions needs information on how our population spends its time.

The loss of the ATUS would make it much more difficult if not impossible to address the limitations of the GDP as a measure of national output that we are discussing here today. For that reason, I would like to express the hope that the Congress will find a way to preserve the funding for this important survey. I am not alone in this view – more than 1500 economists and other researchers, including four Nobel laureates, have signed a letter in support of continued funding for the American Time Use Survey.

In summary, the existing National Income and Product Accounts have great value, but their value would be enhanced by the addition of satellite accounts to track important areas of non-market activity and their contribution to growth. I would be happy to answer any questions you might have about my testimony in this regard.

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