

**PERSPECTIVES ON THE NEW ARCHITECTURE FOR
THE U.S. NATIONAL ACCOUNTS**

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**Paper to be presented at the American Economic Association Meetings,
San Francisco, California
January 4, 2009**

**Session: "Implementation of a New Architecture for the U.S. National Accounts"
Chair: Dale W. Jorgenson
Discussants: Bart Van Ark, David Stockton, Ernst Berndt, Michael Palumbo**

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Paul Samuelson once called the National Income and Product Accounts (NIPAs) one of the great inventions of the 20th century. He was right. It is difficult to imagine modern economics and even public discourse on the economy without them. The NIPAs (and related accounts) provide the basic set of estimates on a wide range of economic variables of interest to economists, citizens, policy makers, firms, investors, workers and consumers. They enforce important economic and statistical properties and reveal many of the most important features of the evolution of the economy. In short, it would be difficult to imagine where our understanding of recent economic events and economic history would be without the NIPAs.

Even a short list of some of the major improvements of recent decades, of important historical changes, is impressive. That list includes: 1. The development and implementation of chained Fisher ideal indexes – with their superlative properties (W. Erwin Diewert 1976). 2. The highlighting of the difference between government consumption and investment; 3. The reclassification of software as investment; 4. Computer price hedonics. Add to these an array of improvements in source data and the changes are impressive indeed¹. However, the economy evolves very rapidly, so our statisticians are constantly playing catch-up. Thus, it is potentially quite important when a major new architecture (NA) is developed and implemented for such a fundamental part of our economic knowledge, a project that promises to be the most important improvement in the national economic accounts in at least a generation.

The New Architecture for the U.S. National Accounts is not so much a single discrete change as a major series of continuous improvements in source data sharing; consistency of concepts, definitions and boundaries; reconciliations of alternative approaches; and gap filling; all based on a comprehensive conceptual framework. All economists who use or refer to the NIPAs, should familiarize themselves with the issues involved and participate in the discussions about the evolution of the accounts.

I. The New Architecture: A Conceptually Consistent and Complete Set Of National Accounts.

The principal value added of the new architecture consists of the following (Dale W. Jorgenson, J. Steven Landefeld and William Nordhaus includes excellent detailed papers on each of these subjects): a) A consistent set of production, income and accumulation accounts with inputs as well as outputs in current and constant prices; b) greater consistency and reconciliation across industry accounts and between industry level data and aggregates; c) greater consistency and integration between real and financial accounts; d) Non-market satellite accounts, e.g. for time use, the environment and natural resources; e) more complete accounts via gap filling, extensions and reconciliations, e.g. capital accounts and capital services estimates for the farm, government, household and nonprofit sectors; and broader measures of investment, e.g. in R&D, human capital, land and mineral rights¹ and their concomitant capital services.

The major advance in the new architecture is a consistent, coherent conceptual framework for the economic accounts that will better integrate economic growth accounting and the national accounts. A major key is developing estimates of real capital services,. With large gaps in market rental prices, such prices are imputed from the user cost of capital formula

(Jorgenson 1963). Both the of lack of consistency and gaps in data derive from the decentralization of the U.S. statistical system and related historical missions of the various statistical agencies. The BEA's GDP accounts and industry level data are not consistent with the BLS's productivity data; the BEA's reproducible assets data are not consistent with the FED's balance sheet and flow of funds data, etc. It is not always easy, or even possible, to reconcile those differences. Sometimes the differences rise to consequential inconsistencies, e.g. between the FED balance sheet and NIPA saving measures; among alternative productivity measures; and among various industry-level measures.

II. Policy Implications

There are numerous implications of the New Architecture (NA) for economic policy. First and most obvious is that the NA will provide more accurate and consistent estimates of long-run trends in economic growth, particularly real GDP, productivity and inflation, and enable more accurate analyses of the sources of economic growth over time in the United States and across countries. That information forms the background for the most fundamental debates and decisions in our society, for example, on the role of government in the economy. These debates must come to grips with the substantially better economic performance associated with our more modest tax and government spending than the high-tax and spending Western European social welfare states (GDP per capita roughly 30% higher). Without national accounts, such comparisons would be guesswork. While the pendulum is swinging back to a somewhat larger and more activist government, how far it goes surely will be affected by that perception and reality; the NA will enable citizens to obtain a more accurate view.

Second, monetary and fiscal policy depend crucially on forecasts of key macroeconomic variables such as potential GDP and productivity, the forecasts of which in turn are usually related to their recent trends. So accurate history is important. The substantial upward revision of real GDP growth when BEA introduced hedonics for computer prices certainly raised many researchers' and government staffs' estimates of future productivity and potential GDP growth. Virtually all fiscal decisions flow from forecasts of revenues and outlays that depend (conditional on tax and spending program structure and demography) primarily on forecasts of income by type – wages, corporate profits, etc., which flow from forecasts of real GDP (or state gross product) growth and inflation. So the improvements enabled by the NA will be reflected in the myriad tax and spending (and therefore deficit and debt) decisions of fiscal authorities that in combination account for a bit less than one-third of GDP.

At the federal level, estimates of productivity growth are the most central input into the Administration's economic projections produced by the Troika (CEA, Treasury, and OMB) which underlie the President's budget. They certainly did when I was the CEA chairman. Likewise, they underlie the Congressional Budget Office's (CBO) economic projections which form the basis for its ten year budget outlook that Congress uses for tax and spending policy decisions.²

Since Congress often focuses on 10 year forecasts, differences of a few tenths of a percentage point per year cumulating over 10 years can lead to large differences in revenue projections and hence deficits and debt, which sometimes feed back into the framework for fiscal decisions. Indeed, the poor productivity performance of the 1970s and 1980s was reflected in

low estimates of future productivity growth well after the productivity resurgence of the late 1990s began, which in turn led to optimistic projections to start this decade. The resulting deficit and then surplus outlook played key roles in fiscal decisions. Of course, more accurate history does not guarantee the ability to quickly identify trend changes. But differences in productivity growth estimates are the primary cause of differences in real GDP growth projections and have an even more consequential effect on longer time-frame projections, such as the 75-year horizon of the SSA Trustees' actuarial projections (SSA 2008) that guide Social Security reform policy debate.

Thus, consistency or at least reconciliation of the BEA GDP estimates and the BLS productivity estimates should strengthen those processes. As Bob Gordon (2001) has demonstrated the several different BEA and BLS output measures lead to conflicting estimates. So that part of the NA will make "productivity estimate shopping" more difficult or at least more transparent.

The NA also has important implications for monetary policy. Not only will the price data in the NA be one of the inflation measures the Fed must consider as it forms forecasts of inflation, but improved estimates of potential GDP, based partly on productivity projections, will feed directly into forecasts of potential GDP and implementation of any monetary policy (rule or discretion) that weights deviations of output from potential. For example, the late 1990s rapid price declines for computers, software, and telecom equipment lowered inflation forecasts and raised forecasts for potential real GDP.

The NA will also improve our understanding of numerous key relationships that might influence policy makers, or the people – including economists researching these issues – who influence policy makers and thus might lead to different and hopefully improved policy decisions. For example, the part of the NA that will lead to better integration and reconciliation of real and financial data, such as the NIPA saving and Fed balance sheet change in net worth data, might better inform and expand the pool of those potentially concerned about the difference between saving out of income flows and saving resulting from revaluations of assets. The late 1990s technology stock and/or 2000s housing price bubbles might have been more apparent with better information on the respective price rises relative to GDP and profits, or income and rent, respectively. Of course, monetary, fiscal and regulatory decision makers had other contemporaneous information that may have rendered even recent historical information from the National Accounts less vital, but the broader and deeper understanding of these phenomena with the NA improved data may have helped nudge policy in a more prudent direction. The ability to examine the entire interactive economic system and trace through implications with a conceptually consistent new architecture will provide a more coherent framework to analyze effects on production, expenditure, income, accumulation and wealth. It will provide a system of double checks and balances on magnitudes of flows and stocks of important economic variables.

I have two suggestions for extensions of the NA and its use. The first is to return to the fundamental analysis of household saving and insurance. Resources devoted to these purposes constitute current purchases of claims to goods and services in different states of the world and at future times. Starting with indirect utility, household expenditure and saving accounts, allowing for heterogeneity of saving motives, liquidity constraints, and household characteristics such as

age and family composition, could be placed on a conceptually more consistent basis emphasizing forward prices of future consumption, analogous to the production frontier forming the conceptual basis of the production account. The second is to produce multifactor productivity estimates and analyses of the sources of economic growth based on alternative technology assumptions, e.g. other than just Hicks-neutrality and constant returns, although those may be natural base cases. We have data on inputs and outputs, but the returns to scale and bias of technical change assumptions can have large effects on productivity estimates and analyses of the sources of economic growth. For example, if tangible capital and human capital (skill) are complementary and if technical change is capital augmenting, what I have labeled (Boskin and Lau 2000) generalized Solow-neutral, more growth would be attributed to technical change and less to growth in labor inputs.

One of the differences in the long debate between Ed Denison (1967) and Dale Jorgenson and Zvi Griliches (1967) on the sources of economic growth was that Denison simply assumed increasing returns to scale (remarkably he buried his assumption of returns to scale of 1.1 in a footnote). Whether our improved living standards have mostly been due to technology or more inputs (capital deepening and better labor as well as more) turns on assumptions of returns to scale and the bias of technical change. The answer to this question has fundamental implications for growth policy, e.g. for the mix of government R&D spending, R&E tax credits, faster tax depreciation and education subsidies. Estimates produced under different assumptions or scenarios would be helpful, as would additional research on these issues.

III. Conclusion

The New Architecture for the U.S. National Accounts promises to be the capstone of the remarkable renaissance of research and policy interest in these very practical issues, which was sparked anew by the realization of the immense consequences of decisions based on inaccurate statistics (Boskin et al 1996). Economists and statisticians in and out of government will contribute as much or more social value-added here as in virtually any other area of economics. While perhaps regretting their lost innocence, those working on such government statistics hopefully will be more than adequately compensated by their increased relevance.

Footnotes:

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¹ Some years ago (Boskin 2000), I noted the tendency for the episodic benchmark revisions to result in upward revisions of GDP historically, with a remarkable degree of “one-sidedness”.

² Some of my earlier research was devoted to a more comprehensive and consistent federal balance sheet and capital and operating budget, e.g. Boskin (1985) and Boskin, Robinson and Huber (1989).

³ These decisions have sometimes even been constrained by these estimates and associated revenue projections. For example, the Gramm-Rudman-Hollings (GRH) budget rules required Administration forecasts of future deficits to meet certain targets, declining towards budget balance. In addition to whatever deficit reduction they enabled, GRH also created pressure to engineer the economic forecasts to produce the desired results. As the targets were too politically painful to meet, they were breached, then raised and delayed, then replaced by rules on actual outcomes (OBRA '90) rather than forecasts of future outcomes. OBRA '90 did indeed limit discretionary spending and its pay-go rules prevented major new entitlement expansions until these constraints were abandoned in 1998 and 2002. The breaching then delaying was repeated by some large European economies' failure to meet their Maastricht Treaty deficit commitments. Finally, proposals to trigger discretionary countercyclical fiscal policy by real-time GDP or employment data, which are often substantially revised, would put even greater explicit policy, if not political, weight on government statistics.

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