

Rethinking the Links: The Public Sector and Economic Growth in the SNA

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Paper Abstract:

In this paper we present the theoretical framework for analysis of public and non-profit sectors as developed under the SPINTAN (FP-7) project. A purpose of SPINTAN is to consider the role of public intangible investments within a coherent national accounts framework. A specific measurement goal is the construction of satellite accounts that capture public investments, tangible and intangible, at the level of detail needed for the economic analysis of impacts of public policies influencing economic growth.

Many of the challenges faced by the SPINTAN project are rooted in conceptual or empirical national accounting issues that SNA2008 (or its practice) does not fully clarify (or fully satisfy). The paper is organized around these challenges, thus offering the project's experience as a contribution to the conference theme, "whither the SNA?"

The Asset Boundary

The first challenge addressed in the paper is the definition of public sector intangibles and the asset boundary of the economy. First, like SNA, household production is excluded from the production boundary. SPINTAN's objective rather is to build state-of-the-art total economy production accounts with a complete accounting of intangible capital.

We find that some public intangible assets basically mirror the private sector analysis set out in Corrado, Hulten, and Sichel (2005), e.g., software and R&D, and which are already capitalized in SNA2008. Others do not. These include information assets, the public collection and open provision of certain types of information—from national accounts to birth/death records. Cultural assets and organizational capital are other assets types that take on a different character in a public setting; the reasoning and empirics for this thinking are reviewed.

Second, we discuss the issue of social infrastructure in the context of the government's role in providing health and educational services. This is a difficult topic for which we lay out alternative arguments, noting of course that it is difficult to go very far regarding these processes as the building of capital without taking on the task of modeling household production. We can, however, trace out the societal impacts of improving the quantity of human capital and human wellness on GDP and level of living.

The paper then reviews how government expenditure is measured and defined, both in the aggregate in GDP and by function of government (education, the economy, defense, etc.). Then the accounting changes that occur when public investments in intangibles are newly

capitalized in national and industry accounts are reviewed. The exercise of reclassifying intermediate and/or final consumption follows Fraumeni and Okubo (2005) and is relatively straightforward; it leads to the conclusion that GDP increases by the amount of the gross return on the new asset(s), national income by the net return to the new assets, and national savings by the net investment change.

...and Data Gaps

But what if a product subsidy is reclassified as a payment for a public asset? What if a production subsidy (say a payment for job training) is reclassified as an investment grant? (And why should the latter two impacts be different? Don't both types of subsidies boost the current return to capital?) These conventions in the SNA are discussed and evaluated from the perspective of productivity analysis and the transparency of links between data on government expenditure and measures of the marginal efficiency of capital and the before- and after-tax rate of return implied by that data.

The next challenge the paper considers is the fact that production at the industry level reflects activity by a mix of activity by institutional unit (IU). The usual industry data do not provide this split. Indeed, only one industry section (NACE Section Q, Industry 84) is pure public production.

Why might this be important? The shares are needed to impute a net return to public capital, which is called for in production accounts. Moreover, the imputation of a net return is needed to see that the contribution of the public sector is not understated (as in not under-weighted).

Imputing a net return to public capital is a long-debated issue but of course public and nonprofit institutions use capital in production just as private enterprise does. The national accounts convention of measuring capital costs as capital consumption would appear to stem from the fact that a net return imputation (a) directly affects GDP and national income and that (b) there is a broad spectrum of imputations.

The paper will discuss and review the options, suggesting the social rate of time preference as a coherent solution for the imputation. The social rate of time preference is the rate at which a society abstains from current consumption. The social rate of time preference is presented as an option in the OECD productivity manual and calculations using the approach suggested there will be presented and analyzed.

The Social Welfare Perspective

The asset boundary defines the value of wealth (and productive capital) in an economic system. The level of living determines how an economy determines opportunities for present and future consumption (social welfare) from a given supply of factor services. Following Jorgenson and Landefeld (2006), the level of living may be calculated using data in full production accounts. Analysis of an economy's efficiency is of course also available from full production accounts; social welfare analysis and productivity analysis are not mutually exclusive.

We then present an analysis of the data in our satellite account for the total economy including public and private intangible capital. Our accounts cover a subset of EU economies plus the United States. We report GDP with and without imputed returns to public capital, investment with and without intangibles (and public intangibles in particular), and, finally, our new level of living estimates for EU economies and the US. The usual productivity measures for major sectors and industries dominated by public and nonprofit activity also are closely analyzed.

We conclude by recapping our main points and their implications for the future structure of national and industry accounts.