

Household Balance Sheets in the Digital Age

What National Accounts Bring to the Table Beyond GDP

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Introduction and Objectives

- The *System of National Accounts (SNA)* provides a framework that can accommodate a broad set of indicators.
- The sustainable development goals (SDG) are a globally accepted set of multidimensional indicators but provide little guidance to policymakers on how to measure progress.
- Innovation of this paper: Extend the SNA framework to cover some of the indicators of the SDGs
 - Rethink the SNA **assets in the digital age**
 - ❖ with granular data available to quantify multidimensional indicators
 - Present an **extended “super” balance sheet** for households on global sustainability



SNA and Socio-Demographics: Evolution

- Discussion regarding the treatment of socio demographic variables goes back many years:
 - The inclusion of human capital and demographic statistics in the SNA framework was discussed during the preparation of the *1968 SNA*. The idea was shelved due to the lack of data and a measurement framework.
 - Both the *1993 SNA* and *2008 SNA* acknowledge the importance of human capital but stress its incompatibility with the SNA definition of assets and the difficulties that valuation and measurement may pose.

A Framework for Social and Demographic Statistics

- Richard Stone developed a *System of Social and Demographic Statistics* (1975) to cover statistics on all aspects of social life that may require policy action.
- Key themes:
 - Analysis of society ought to rest on three pillars: economic, socio-demographic, and environmental
 - Accounting structure of the national economic accounts (SNA) can provide a coherent picture of the stocks and flows of the variables associated with these phenomena.
 - Accounting principles used for national economic accounting could be extended to the broader analysis of society.
 - Stone did not cover environmental in detail
 - ❖ Recognized that separate guidelines were being developed.



System of Environmental Economic Accounting (SEEA)

- Framework to integrate environmental and economic data (2003, 2012).
 - Contains a central framework that can be expanded to include household and social information
- SEEA recognizes non-marketed benefits derived by households from the environment—air filtration; water regulation; carbon sequestration
- SEEA includes asset accounts for water and energy resources and provides for measuring what is available to households for their consumption

UN Multidimensional Indicators

- Sustainable Development Goals (SDGs) were adopted in 2016 as a follow-up to the Millennium Development Goals
- 17 global goals that apply to all countries.
 - Further broken into 169 targets and 304 indicators to determine compliance.
- Purpose of SDGs
 - Achieve sustainable development in its three dimensions – economic, social and environmental – in a balanced and integrated manner.
 - Build on achievements of the Millennium Development Goals.



Digital Age can Bridge the Gap between SNA and SDGs

- Production of market services by households becoming more visible
 - Expands the production boundary and increases social benefits
 - Boundary between own-account production and production for the market becoming more fluid
 - ❖ The sharing economy
- Availability and access to granular data addresses some of the critical issues
 - Availability of microdata on households



Expanded Horizons of Digital Era

Big Data and increased computing power allows collecting and processing data impossible to assemble few years ago. Increased scope of available information makes it possible to explore new frontiers:

- Geospatial and environmental data – live pollution updates (air and water quality)
- Personal health data – constant stream of information from wearables
- Financial data – up to date asset valuations



Rethinking the SNA Assets Boundary

- The *SNA* asset boundary does not cover social and environmental indicators.
- The *2008 SNA* defines assets as entities that must be:
 - owned by units
 - from which economic benefits are derived by their owners by holding or using them over a period of time.
- Ownership principle easy to apply to financial assets and produced assets.
- For non-produced assets, such as natural resources, ownership principle not so straightforward
 - SNA focuses on effective ownership over the entity
 - whether the unit is in a position to benefit from these assets



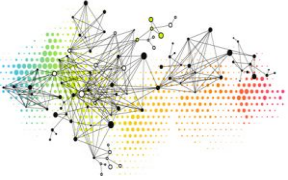
Rethinking the SNA Assets Boundary

- Based on SNA criteria consumer durables and human capital are not considered capable of bringing economic benefit to their owners and are not considered assets.
- To capture production in the digital age, SNA assets boundary needs rethinking.
- The *2008 SNA* notes:
 - consumer durables are not regarded as assets in the SNA because the services they provide are not within the production boundary;
 - human capital is not treated as an asset as it is difficult to envisage “ownership rights” in connection with people, and the question of valuation is not very tractable”.



The Flexibility of SNA Satellite Accounts

- Allows for conceptual variations from the central framework of the SNA.
 - The production boundary can be extended to include household production of services for own final use.
 - Assets boundary extended: overarching criterion is whether the entity is capable of providing an economic benefit to the household.
 - ❖ Not necessary to establish ownership rights
- Allows combination of physical asset accounts with monetary asset accounts while SNA focuses on monetary values.



Conventional Household Balance Sheet (SNA)

Assets

Liabilities

Financial assets

- Currency and Deposits (savings)
- Equity (stocks, bonds, other securities)
- Insurance reserves/Pension entitlements
- Other financial assets

Non-financial assets

- Owner-occupied Dwellings
- Other real property
- Other non-financial assets

Liabilities

- Loans (Mortgage, credit card debt, student loans, other consumer loans)
- Other liabilities

Net worth

Total SNA assets minus total SNA liabilities



Towards the “Super Balance Sheet”

- **Consumer durables** play an increasingly important role in generating household income and improving household wealth.
- Already included in balance sheets by some advanced economies
- Canberra Group—Handbook on Household Income Statistics
- The *OECD Guidelines for Micro Statistics on Household Wealth*
 - Includes services from consumer durables in the conceptual definition of income.
 - Implicitly treats consumer durables as household assets—similar to dwellings—that produce the services.



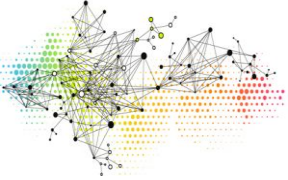
Towards the “Super Balance Sheet”

- **Human Capital** includes human capital developed through educational attainment and job-related training.
 - SNA production boundary relaxed to recognize own-account training.
 - Expenditures on education and training considered cost of creating human capital stocks
- Follows the recommendations of the *Guide on Measuring Human Capital, 2016*.



Towards the “Extended Balance Sheet”

- **Other Assets**
- Access to social and environmental goods and services
- Relate to availability and the household’s ability to access social and environmental goods
 - Household’s ability to access is an indicator of current and future consumption
 - Future consumption is the stream of benefits that can accrue to the household as a result of owning (as a society) and using the asset
 - Current consumption (e.g. electricity; water) is reflected in the current accounts (flows)



Super Balance Sheet (Households)

Assets

Liabilities

Financial assets

- Currency and deposits (savings)
- Equity (stocks, bonds, other securities)
- Insurance reserves/Pension entitlements
- Other financial assets

Non-financial assets

- Owner-occupied Dwellings
- Other real property
- Other non-financial assets
- Consumer durables
- Human capital
- Access to energy (renewable)
- Access to water
- Access to clean air (air emissions)
- Access to communication *
- Access to transportation *
- Access to other infrastructure *
- Access to work *
- Access to nutrition *
- Mental well-being *

Liabilities

- Loans (Mortgage, credit card debt, student loans, other consumer loans)
- Other liabilities

Net worth (SNA Balance Sheet)

Total SNA Assets minus total SNA liabilities

Net worth (Super Balance Sheet)

Total Assets (SNA assets plus extended assets) minus total SNA liabilities



Extended Balance Sheet Assets

- Combination of produced assets and physical assets
- Physical assets – measurement framework presented in the SEEA
 - Access to energy (renewable)
 - Access to water
 - Access to clean air (air emissions)
- Produced assets – measurement framework for economic assets in the SNA
 - Access to communication
 - Access to transportation
 - Access to infrastructure *
- Measurement and valuation issues to be addressed for some physical assets



Implications of Expanding Balance Sheets

- Production boundary extended to include household production of services for own final use
- Higher ratio of non-financial assets to financial assets
- Higher net worth of households with social and environmental advantages
 - Benefits future consumption
 - Higher life expectancy

What the SNA Brings to the Table - Summary

- The SNA provides a framework that can accommodate a broad set of indicators.
- SNA-based “super balance sheets” accommodate multidimensional indicators.
- Balance sheets provide information on net wealth, an important “bottom line” that provides guidance to policymakers on how to measure progress.
- This requires rethinking of the SNA notion of assets.
- The digital age makes this possible
 - ❖ Facilitates production by households—the sharing economy
 - ❖ Presents more granular data for measurement