

# Keeping Economic Statistics Relevant through Updating the *System of National Accounts*

Brent R. Moulton

*ICES-III, Montreal*

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*Measuring the Nation's Economy.*



# Outline

- Address three questions:
  - What is the SNA, and why is it relevant to business surveys?
  - Why update the SNA?
  - What changes are coming, and how do they relate to establishment surveys?

# What Is the SNA?

An accounting system that:

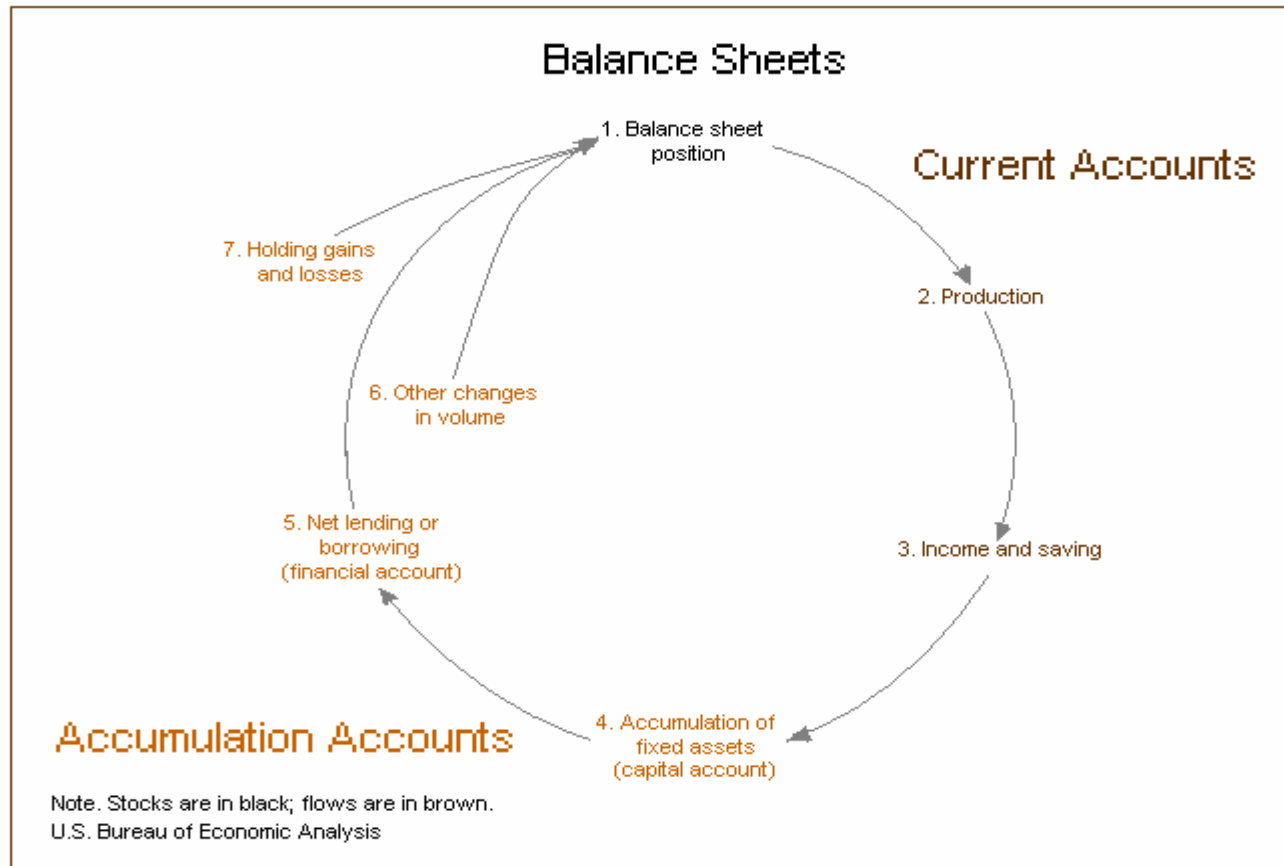
- Organizes economic data within an analytically useful framework.
- Fills gaps in coverage.
- Creates consistent time series.
- Can serve as mechanism for integrating a nation's economic statistics.

# National accounts as an analytical tool

- Data organized to identify key concepts that are important in economic theory:
  - Output - Disposable income - Consumption - Saving - Capital formation
- Economic units grouped into relevant sectors:
  - Corporations, households, government, nonprofit institutions, etc.
- Double entry system of accounts
  - All transactions recorded for both parties.

# SNA's sequence of accounts

Chart 1. Sequence of Accounts



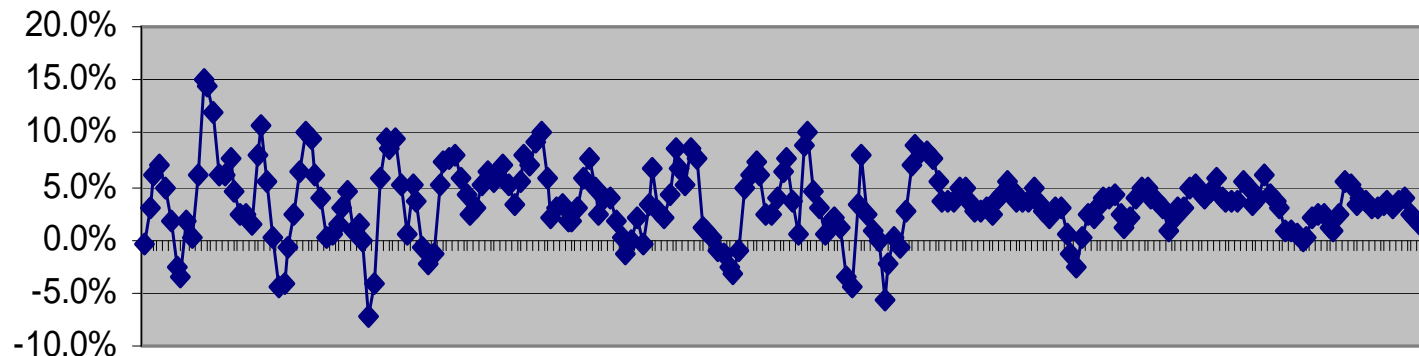
# National accounts are comprehensive

- Identify all output, even when not accompanied by a direct payment.
  - e.g., banking services.
- Coverage includes units missing from many surveys.
  - e.g., small businesses (non-employers), religious institutions, misreported or unreported economic activities.

# Consistent time series

- National accounts create long, consistent time series to fill needs of macroeconomic analysts.
- Conceptual changes are carried back.

U.S. Real GDP growth (1947-2007)



# Integration of economic statistics

- National accounts include many *identities* that provide checks on data.
  - Sum of industry value added = Total expenditures = Income from production.
  - Commodity flow: Total supply of each commodity = Sum of total uses.
    - Supply-use and input-output tables.
  - Disposable income less consumption and capital formation = Net lending.



# *System of National Accounts 1993*

- International guidelines sponsored by five international organizations.
- International consensus on SNA93 as framework for national accounts.
- Led to major improvements:
  - Chain-weighting,
  - Capitalization of software,
  - Output of financial services.

# Need to update SNA93

- Changes in economic environment:
  - Globalization.
  - Technology and the “new economy.”
  - Growing importance of intangible capital.
  - New types of transactions:
    - Stock options; derivatives; public-private partnerships.
  - International harmonization of standards for business accounting.

# Need to update SNA93

- Changes in users' needs:
  - Analysis of productivity and sources of economic growth.
  - Aging population and saving for retirement.
    - Pension-plan liabilities.
  - Administrative uses of national accounts data.

# Need to update SNA93

- Improved statistical methods available:
  - Models for measuring services provided by capital.
  - Improved methods for measuring financial services such as banking, insurance.
  - Quality adjustment of price indexes.
  - Measures of non-market output.

# SNA update process

- Proposal to update SNA was approved by UN Statistical Commission in 2003.
- Intersecretariat Working Group on National Accounts administered the update
  - Eurostat
  - IMF
  - OECD
  - UN
  - World Bank
- Advisory Expert Group (25 members) to review, approve proposed changes.

# SNA update process

- 44 issues were reviewed as part of the update.
- Working groups to review issues, develop proposals:
  - Canberra II Group on Measurement of Non-Financial Assets,
  - Task Force on Harmonisation of Public Sector Accounts,
  - Balance of Payments Committee,
  - Task Force on Employers' Retirement Schemes,
  - Several other working groups and task forces.

# Status of SNA update

- Proposed changes were presented to and approved by the UN Statistical Commission in February-March 2007.
- Text of revised volume is currently being drafted and reviewed.
- Text will be presented in two parts:
  - “Core” chapters in March 2008.
  - Additional chapters in March 2009.
- National statistical offices have begun planning for implementation of the update.

# Major changes in SNA update

- Capitalization of research & development
- New treatment of employee stock options.
- Accrual-based estimates of liabilities for defined-benefit pension plans.
- Measures of *capital services* and integration of multifactor productivity statistics in a more comprehensive production account.
- Output of insurance services.
- Military assets.
- Return to government assets on research agenda.
- Goods for processing.

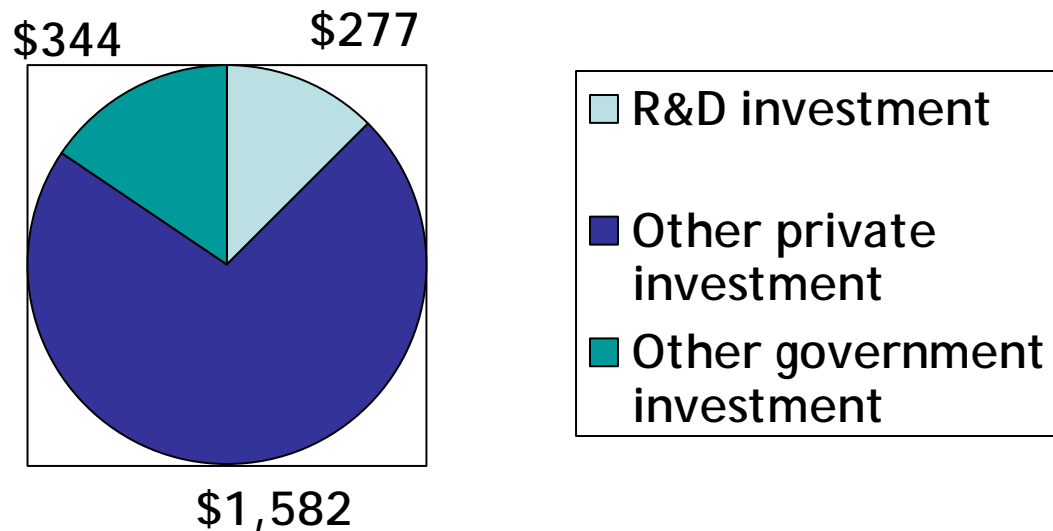


# Capitalization of R&D

- R&D treated as current expense, even though purpose is to improve products, increase production in future periods.
- In updated SNA, R&D will be treated as capital formation.
- BEA, with support from NSF, is developing R&D satellite account as prelude to capitalization in core accounts.

# R&D as share of U.S. investment

U.S. Investment  
(2002-billions)



# Preliminary results of satellite account

- Recognizing R&D as investment would increase GDP level about 2½ percent.
- Increases real GDP growth about 0.1 percentage point.
- R&D investment accounted for 4.6 percent of GDP growth in 1959-2002 and 6.7 percent in 1995-2005.
- Private investment increased 11 percent.

# Agenda for R&D satellite account

- Apply more refined economic estimation concepts and methods.
- Obtain more complete information on R&D process from R&D performers and investors.
- Develop industry input-output accounts.
- Measure international transactions in R&D.

# Employee stock options

- Important and growing form of compensation.
- Contributes to volatility of estimates of wages and profits.
- Problems with current methods:
  - Initial source data exclude stock options.
  - Later administrative/tax data include value when exercised.
- Updated SNA recommends “fair value” accrued between grant and vesting.
- Consistent with new accounting standards.
- Converting from administrative/tax data to accounting data will be challenging.

# Employer pension plans

- Currently, contributions to defined benefit pension plans measured by cash contributions.
- Plans are treated as if owned by employees.
- Consequently, national accounts don't record underfunding or overfunding of plans.
- SNA proposes accrual-type measures based on actuarial calculations of plan liabilities.
- Will provide information on underfunding.
- Unfunded government plans have been controversial.

# Capital services and production account

- Currently, SNA measures labor inputs to production, but doesn't measure real capital inputs.
- Principles for valuation of capital services worked out by Dale Jorgenson and others:
  - "User cost" formula - depreciation, net return, and revaluation.
  - Used to decompose productivity growth into capital, labor, and residual (multifactor productivity) contributions.
- Integration of national accounts with multifactor productivity statistics.

# Insurance services

- Insurance services must be measured indirectly
  - Insurers pay for services using resources made available by difference between premiums and losses.
  - Previously, insurance services calculated as premiums less actual losses - volatile when major disasters occurred.
  - Premiums determined before it is known whether a loss will occur.
  - New method subtracts an estimate of normal or “expected” losses rather than actual losses.
- BEA developed and adopted the new approach to measuring insurance services in 2003.
- Led to reduced volatility in estimates of GDP and prices after major disasters.



# Military assets

- SNA previously had not capitalized weapon systems.
- Many military assets have long service lives; Defense Department must plan for eventual replacement.
- Since 1996, BEA has capitalized all military assets.
- Change will improve international comparability, consistency with public sector accounts.

# Goods for processing

- In SNA 1993, goods sent abroad for processing are shown as exports and imports, even if no change in ownership takes place.
- Under new treatment, a change in ownership is not imputed.
  - Production treated as import of manufacturing services.
- Important implications for classification of manufacturing activities.

# Return to government assets

- Investing has two costs:
  - Depreciation (the wearing out or obsolescence of an asset as it approaches the end of its useful life)
  - Time cost of money (the returns that the investment could have earned, had it been invested in another asset, such as a bond - or used to repay money borrowed).
- Currently, the SNA recognizes only the first cost for government and nonprofits.
- For business, the SNA measures the return residually (profits or “net operating surplus”).
- Recognizing the full cost of government assets would raise GDP - hence, controversial.
- This topic remains on the research agenda.

# BEA plans for SNA update

- Some components of update already implemented in U.S.:
  - Military assets.
  - Insurance.
- R&D is a major change:
  - Satellite account with implementation in core accounts by 2013.
- Other major update issues will require research and source data improvements:
  - Pensions
  - Employee stock options.