



National Accounts Workshop for SADC countries

16-19 June 2009, Windhoek, Namibia

Strengthening statistical capacity-building in support of progress
towards the Internationally Agreed Developments Goals in the
Southern African Development Community region

Overview of the System of National Accounts



National Accounts General Overview

**National Accounts Workshop for SADC
Countries
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Lecture Outline

- ◆ general overview
- ◆ GDP – three approaches
- ◆ quarterly national accounts



SNA: System of National Accounts

- ◆ Comprehensive, integrated set of economic accounts, balance sheets and other tables describing all economic stocks and processes taking place within a country
- ◆ System of concepts, definitions, classifications, and accounting rules often used as standards, or framework, for economic statistics in general



SNA: *Main Users and Uses*

- ◆ Economic policy makers
- ◆ Business
- ◆ Scientific researchers, teachers
- ◆ General public
- ◆ Statisticians



What is a System of National Accounts?

General Definition

National accounts comprise all transactions within a time period (year, quarter, etc.) between the economic agents constituting the national economy and their stocks.



What is a System of National Accounts?

General Definition Elaborated

System of accounts

- ◆ Fully integrated and consistent
- ◆ Complete accounting description of the economy for:
 - The total economy
 - Sectors
 - Sub-sectors



System of National Accounts: *Main Features*

- ◆ In addition, the following are all integrated parts of the SNA:
 - production accounts for industries
 - supply and use, and input-output tables
 - price and volume measures
 - real income measures
 - detailed flow of funds



System of National Accounts: *Main Features*

◆ Flexibility:

- satellite accounts
- social accounting matrices
- environmental accounts
- annual and quarterly accounts
- alternative sectoring
- adding more details



What is a System of National Accounts?

Basic Questions

Who does what?
With whom?
Concerning what?
How?
What for?
When?
How much?



What is a System of National Accounts?

Basic Questions Answered

Who

Institutional units/Sectors

Establishments/Industries

Does what?

Transactions/other flows

Concerning what?

**Products, Assets,
Liabilities**

With whom?

Counterpart



What is a System of National Accounts?

Basic Questions Answered

How?

Production process, income distribution, use of income, financing

What for?

Function, purpose

When?

Time of recording

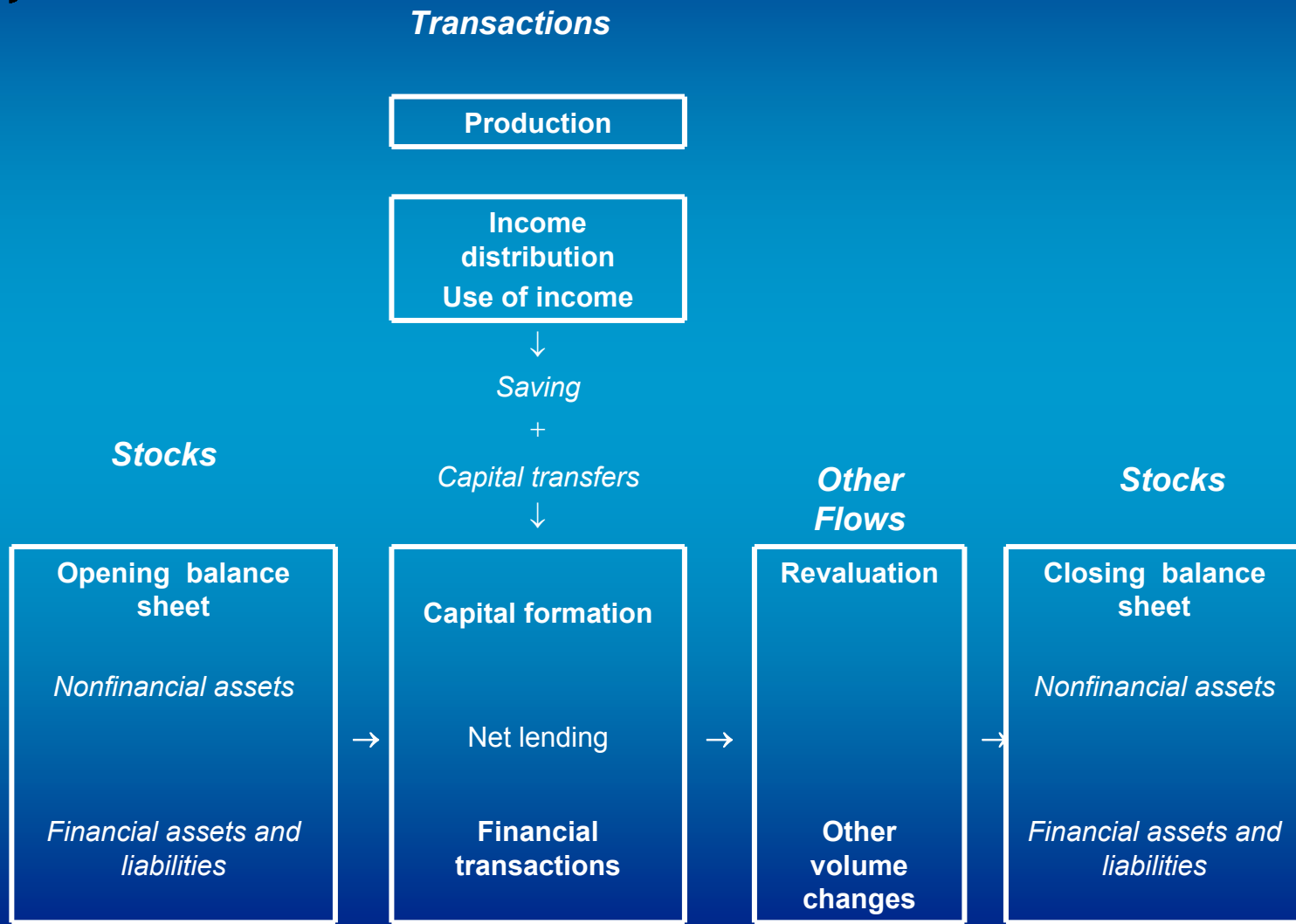
How much?

Valuation

Volume/price measurement



System of National Accounts: Main Features





Compilation

- ◆ GDP can be compiled
 - from the production approach
 - from the expenditure approach
 - from the income approach
 - using product flow balances in a supply and use framework

- ◆ The data compiled using these approaches can provide the foundation for the wider sequence of accounts



Production Approach

- ◆ GDP is derived as sum of value added of industries, plus net taxes and subsidies on products (if output is valued at basic prices)
- ◆ value added is output *less* intermediate consumption
- ◆ breakdown by industries following ISIC (but particulars will depend on country needs) and/or by institutional sector



Expenditure Approach

- ◆ GDP is derived as sum of expenditure categories:
 - household consumption
 - consumption of government
 - consumption of NPISH
 - gross capital formation
 - exports *less* imports



Income Approach

- ◆ GDP is derived as sum of:
 - wages and salaries
 - (net) operating surplus
 - net taxes and subsidies on production and imports
 - (consumption of fixed capital)
- ◆ breakdown by industry (ISIC)/sector



Presentation

- ◆ NA data can be presented as
 - monetary values
 - indices
 - growth rates
- ◆ through
 - accounts
 - T-accounts
 - 1993 SNA matrix presentation of accounts
 - Supply and use tables
 - Input-output tables
 - tables with time series
 - graphs



Example T Account: *Production Account for the Total Economy*

Uses

Resources

Intermediate Consump.	1883	Output	3604
Gross Domestic Prod.	<u>1854</u>	Taxes Minus	133
<i>Consump. of Fixed Cap.</i>	(222)	Subsidies on Products	
Net Domestic Product	(1632)		
	3737		3737



Supply and Use Tables

Supply		
Product	Industry 1,2,...n	Row
1	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Industries producing</div> 	
2		
.		
.		
m		

Use				
Product	Industry 1,2,...n	Final Use		
		Cons.	Fixed Cap.	Inventory
1	<i>Quadrant I</i>	<i>Quadrant II</i>		
2	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Industries using</div> 			
.				
.				
m				
Value Added <i>Quadrant III</i> Output				



Market Non-market Distinction

	Market Production	Production for Own Consumption	Non-market Production
Market Producers	●	○	
Non-market Producers	○	○	●



Main Institutional Sectors

- ◆ Non-financial corporations
- ◆ Financial corporations
- ◆ General government
- ◆ Non-profit institutions serving households
- ◆ Households

- ◆ the Rest of the World (ROW)



National Accounts: *Flows and Stocks*

FLOWS

- Creation, transformation, exchange, transfer, extinction of economic value due to
 - transactions
 - other events
- Refer to a *period* of time
- Are recorded in the *accounts*



National Accounts: Flows and *Stocks*

STOCKS:

- Positions in, or holdings of assets and liabilities
- Refer to a *point* in time
- Are recorded on the *balance sheets*



Stocks: Assets and Liabilities

ASSETS:

- ◆ An entity functioning as a store of value
 - over which ownership rights are enforced, and
 - from which economic benefits may be derived by its owner by holding it, or using it, over a period of time



Accounts and Balancing Items

Production Account

Generation of Income Account

Value Added/GDP

Operating Surplus and Mixed
Income

Allocation of Primary Income Account

Balance of Primary Incomes
National Income

Secondary Distribution of Income Account

Disposable Income

National Disposable Income

Use of Disposable Income Account

Saving

Capital Account

Net lending/Net Borrowing

Financial Account

Net Lending/Net Borrowing





What are Quarterly National Accounts?

- ◆ **System** of Quarterly Time series
- ◆ Integrated and coordinated through a consistent Accounting Framework
- ◆ Provided on a timely basis
 - *Adopt the same principles, definitions and structure as the annual national accounts In principle cover the entire sequence of accounts and balance sheets in the 1993 SNA*
 - usually less complete than annuals because of data availability, time, and resource constraints



Scope of QNA

◆ Basic

– At current and constant prices:

- 👍 GDP
- 👍 expenditures on GDP
- 👍 Output, intermediate consumption, and value added
 - by groups of industries

– At current prices:

- 👍 National income
- 👍 Saving



QNA compilation involves:

- ◆ establishing a set of quarterly national accounts for the period for which annual accounts are available (construction of historical series)
- ◆ updating the set of QNA – deriving estimates for the most current periods where no annual data are available



Scope of QNA

- ◆ Advanced

- Full sequence of institutional sector accounts
- (Financial) balance sheets

Seasonally adjusted data in addition to the original data very valuable

- ◆ Timeliness:

- SDDS requirement: Available within three months after reference quarter



Role of Quarterly National Accounts

◆ QNA Used for:

- Early identification of changes in trends
- **Time-series analysis**
- Timely implementation of economic policies
- Better forecasts, including early estimates of annual accounts
- Framework for business cycle analysis
- Econometric modeling, including studies of seasonal patterns
- Accounting under high inflation



Role of Quarterly National Accounts

available later than various indicator series

but:

- follow the integrated framework structure (allows consistency checks)
- comprehensive GDP and other economy-wide aggregates
- discrete data can be linked to form proper time series (cumulative data and year-to-year changes cannot)

but more timely than annual estimates



time series

Definition: Continuous measurement of the same concept over discrete consecutive periods of time

Which in addition facilitates:

- analysis of the **development over time** in a flexible manner
- identification of underlying trend and **turning points**
- allows **different periods** to be compared

note need for 3-4 years of data (minimum) for seasonal analysis



seasonal adjustment

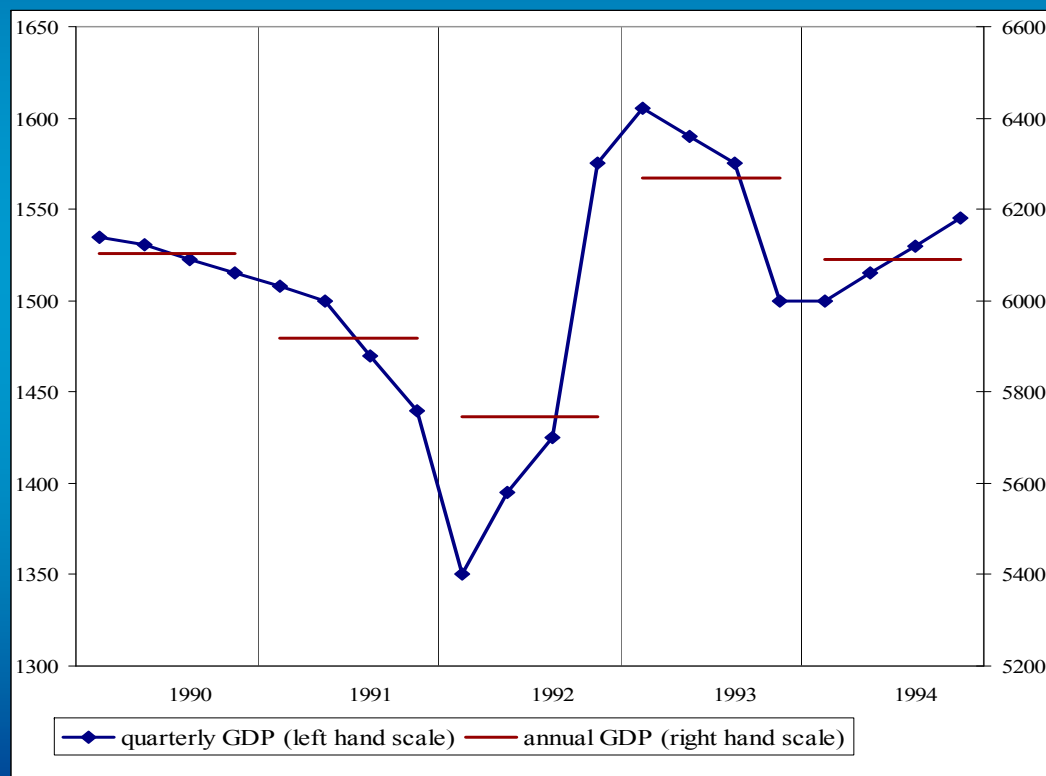
- ◆ break down a series into its components:
 - seasonal
 - trend cycle
 - irregular
- ◆ should a statistics office produce seasonally adjusted estimates?
 - country practices differ



Role of Quarterly National Accounts

Monitoring Business Cycles--Quarterly versus Annual Data

Annual data mask short term economic developments





annuals and quarterlies

sum of the quarterlies should be equal to the annual (benchmarking)

discrepancies arise:

- ◆ independent (collection of) quarterly and annual data
 - quarterly data based on (smaller) sample surveys using simplified questionnaires
 - annual data based on censuses/larger sample surveys using more comprehensive questionnaires (and audited business accounts)
 - periodic collection of more detailed, more comprehensive data



more on discrepancies..

- ◆ more, and more detailed, information available annually
- ◆ may use reconciliation tools (product flow, supply and use tables)
- ◆ quarterly estimates based on simplified methods, for example:
 - fixed input-output coefficients
 - interpolation of annuals
 - trend extrapolation
 - “guesstimates”



discrepancies can be removed by:

- ◆ benchmarking the quarterly data to the annuals so that
 - ◆ quarterly and annual times series for the same phenomena are consistent
 - ◆ accuracy and reliability of the quarterly data are increased
 - ◆ quarterly data can be used to forecast annual data (note the importance of revision studies)
- and note:
- ◆ in some countries with integrated systems, the annual may be derived as the sum of the quarterlies – requires very reliable, timely, and comprehensive quarterly data (not common)



benchmarking

- ◆ “quarterization” of annual estimates for back series
- ◆ extrapolation for forward series
- ◆ various techniques available



relationship between quarterlies and annuals

- ◆ separate compilation systems
- ◆ countries with a comprehensive annual compilation system
- ◆ or
- ◆ integrated system
- ◆ choice depends on circumstances
- ◆ benchmarking is an integral part of QNA compilation



annuals or quarterlies?

annual accounts:

- ◆ preliminary and revised
- ◆ more reliable, detailed, comprehensive

quarterly estimates:

- ◆ more timely, less reliable, less comprehensive
- ◆ provide more up-to-date information about the state of the economy (need for some kind of a “minimum standard”)



current or constant prices?

- ◆ that is, nominal or volume terms or both?
- ◆ decisions will be based on user needs, data sources, resources...



need for revisions

- ◆ allows incorporation of new and more accurate information
- ◆ improve accuracy of estimates without a break in the time series
- ◆ transparency:
 - revision schedule
 - documentation
 - educating users
- ◆ periodic review of data sources
- ◆ and note usefulness of revision studies in improving estimation



summary

- ◆ the system of national accounts is a system of concepts, definitions, classifications, and accounting rules
- ◆ is the framework for economic statistics
- ◆ GDP is an important part, but there is a lot more
- ◆ three approaches to measuring GDP
- ◆ annual and quarterly estimates
- ◆ nominal and volume estimates