Using Input Output Analysis Framework to Improve Key Economic Statistics

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### The Input Output Analysis Framework

The IO framework consists of:

1. Supply and Use Tables
2. Input-Output Tables
3. Technical Coefficient Matrix
4. Total Requirement Matrix

#### Figure 2.1: Input-Output Transactions Table

<table>
<thead>
<tr>
<th>Intermediate use</th>
<th>Industrial Sectors as Consumers (j)</th>
<th>Final use</th>
<th>Rest of the World (ROW)</th>
<th>Total demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Sectors as Producers (i)</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>( M_1 )</td>
<td>( X_1 )</td>
<td>- ( M_1 )</td>
<td>( X_1 )</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>( X_2 )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>( F_3 )</td>
<td>( X_3 )</td>
</tr>
</tbody>
</table>

**Value added**

- Labor, capital, and entrepreneurship
- Government
- Total value added
- Total output
Estimating Gross Domestic Product (GDP)

Three Approaches to Measuring GDP

- Production (Output)
  - \( \text{GDP (production)} = \text{total outputs} - \text{total intermediate consumption} + \text{net taxes on products} \)

- Expenditure
  - \( \text{GDP (expenditure)} = C + I + G + X - M \)

- Income
  - \( \text{GDP (income)} = \text{compensation of employees} + \text{gross operating surplus} + \text{gross mixed income} + \text{net taxes on production} + \text{net taxes on products} + \text{net taxes on imports} \)

No two approaches are likely to produce identical estimates of GDP.

In official statistical releases, the differences are conventionally shown as statistical discrepancies on the side of the approach with relatively weaker data sources.

Limited facility to cross-verify and cross-validate the estimates, and to identify and rectify possible sources of biases and weaknesses.
Estimating GDP through the IO Framework

- The IO framework includes the complete set of data required to estimate GDP.
- It is a system in which data from several sources can be integrated, analyzed, validated, and reconciled in a systematic and scientific manner.
- It ensures that data from any source on a theme or subject matter is not only consistent internally but also cross consistent with other relevant information.
- GDP estimated using the IO system is likely to be of higher quality since the IO data have already been verified, validated and reconciled with all relevant information.

![Input-Output Transactions Table](image)
## Other Key Statistics

- Constant Price GDP
- GDP growth rate
- Productivity
- Investment
- Household Consumption
- Trade
- GVC participation
- Economic and Environmental Impact
- Structural transformation

- A strong requirement for high quality statistics to understand and measure a wide range of economic transactions and developments
- In the increasingly globalized economic environment, a comprehensive and coherent data integration and analysis framework is needed to measure and study any economic phenomenon by considering the contributions and effects of all possible factors
- the IO analysis framework provided the facility to bring together highly diversified yet relevant data from several sources in a very systematic and scientific manner to facilitate a variety of statistical measurement and economic analysis
- The framework can also be used for data confrontation and coherence analysis to improve the quality of standard key statistics
The Tables in the context of SNA2008 and Regional Statistical Capacity Building Strategies

- **Recommended set of accounts**
  - Chapter 6: The production account
  - Chapter 14: The supply and use tables and goods and services account
  - Chapter 15: Price and volume measures

- **Ongoing Initiatives**
  - A number of economies in the region produce SUTs and IOTs periodically
  - During 2008-2014 ADB collaborated with 17 DMCs to produce single year benchmark SUTs and IOTs
  - Currently ADB is working with 19 DMCs to produce benchmark and synthetic tables for multiple years
  - World Bank and UN ESCAP are also engaged in similar capacity building and data development activities in select economies