New Method of GDP Calculation

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1 Why New Series

- The comprehensive review of the methodology for estimation of National Accounts is period exercise of Central Statistical organization. Along with the revision of base years of National Accounts series, CSO also makes improvement in compilation of accounts to expand coverage of activities, to incorporate latest databases and comply with latest international practices. The new series of national accounts released this year is result of this periodic review by CSO.

- The three major components mandated the present revision exercise are:-
  - Revision of base year to a more recent year for meaningful analysis of structural changes in the economy in real terms.
  - Complete review of the existing data base and methodology employed in the estimation of various macro-economic aggregates including choice of the alternative databases on individual subjects.
  - To implement the recommendations of the System of National Accounts (SNA), 2008 regarding international guidelines on the compilation of national accounts prepared under the auspices of the Inter Secretariat Working Group on National Accounts comprising of the European Communities (EUROSTAT), International Monetary Fund (IMF), Organization for Economic Cooperation and Development (OECD), United Nations and the World Bank.

2 Paradigm Changes in New Series

There are two paradigm changes in new series that led to intense debate and discussion.

- Changes in Institutional sector:-
  - Earlier series used the Reserve Bank of India (RBI) Study of Finances for estimation of data on private non-financial corporations. The manufacturing value added was used to be calculated by using data from Annual Survey of Industries (ASI) and Index of Industrial Production.
  - The limitation with IIP and ASI data is – It reduced the total sample two lakh companies registered under factory Act. It did not incorporate data on brand pricing, marketing and allied activities which were earlier outside the purview of manufacturing value added.
For new series, database created by the Ministry of Corporate Affairs under e-governance project, MCA21, is used. It contains annual financial reports created by online data submission by companies under the Companies Act. It expands the sample size as well as the coverage of activity.

E.g. The earlier method used only the number of computers produced by a firm. It did not cover the quality enhancement and technological value up gradation in computers. New series cover these aspects of economic activity.

- Changes in Gross Value Added (GVA) estimates:
  - In earlier series with base year 2004-05, GVA had been prepared at the factor cost. In accordance with international practice and conventions, new series estimates GVA at basic prices.
  - Earlier "GDP at factor cost" was known as simply the "GDP" in India. In the revised series, as is the practice internationally, industry-wise estimates are presented as GVA at basic prices, while "GDP at market prices" will be referred to as "GDP".
  - The statistics department changed the way it calculates the headline GDP growth number to GDP at market prices from GDP at factor cost to make India’s growth rates comparable internationally.
  - To understand the difference, let us look at it from the producers’ point of view. For a producer, GDP at factor cost represents what he gets from the industrial activity. This can be broken down into various components — wages, profits, rents and capital — also commonly known factors of production. Aside from these costs, producers may also incur other expenses such as property tax, stamp duties and registration fees, among others.
  - Similarly, producers may also receive subsidies (production related) such as input subsidies to farmers and to small industries. It is important to note that only taxes and subsidies on intermediate inputs are adjusted.
  - For arriving at the new gross value added (GVA) at basic prices, production taxes, such as property tax, are added and subsidies are subtracted from GDP at factor cost. Put simply, GVA at basic price represents what accrues to the producer, before the product is sold.

**Base year:**

Base year analysis is mainly done to eliminate the effects of inflation and to give a more meaningful picture of the data. This monetary value is first calculated in nominal terms or at current prices. It is then adjusted for inflation or the changes in the general price level over time and is thus, expressed in terms of the general price level of some reference year, called as the base year.

**GDP at Market Price**

GDP at factor costs is a measure of national income that is based on the cost of factors of production. It is essentially looking from the producers’ side. GDP at market prices essentially looks at economic activity from the consumers’ angle. It measures GDP at the last step of the transactions, which is the market price paid by the consumer.

\[
GDP_{MP} = GDP_{FC} + \text{Indirect Taxes} - \text{Subsidies}
\]

- For arriving at the new gross value added (GVA) at basic prices, production taxes, such as property tax, are added and subsidies are subtracted from GDP at factor cost.
- GDP at market prices makes adjustment for any subsidy or indirect tax — to arrive at GDP at market price, indirect taxes are added while subsidies are subtracted from GVA at basic price.
- Finally, inflation needs to be adjusted to arrive at GDP at constant market prices.
3 Implications and Objections

- **Revisions in GDP numbers:**
  - The revised definition of gross domestic product (GDP) and the new base year has pushed up India’s economic growth in 2012-13 and 2013-14, compared to the older series. Taking the old definition and base of 2004-05, India’s GDP growth stood at 4.5 per cent in 2012-13 and 4.7 per cent in 2013-14. However, the new series put GDP growth at 5.1 per cent for 2012-13 and 6.9 per cent for 2013-14.

- **Revision in Manufacturing output:**
  - The manufacturing sector’s growth estimate for 2013-14 is revised to 6.2 per cent from minus 0.7 per cent and for 2012-13 is revised to 5.3 per cent from 1.1 per cent.

The major objections to new series of GDP stem from this upward revision of economic growth and manufacturing growth.

- The data released paints unexpectedly favorable picture of the Indian economy, has been met with skepticism, both from within and outside the government. While there is consensus that the economy is on the mend, economists are questioning the extent of recovery being posited by the new measure of GDP.

- The sharp upward revision in economic growth estimates for FY13 and FY14 and the new growth estimates are not backed by other trends such as growth in the Index of Industrial Production (IIP), rate of gross fixed capital formation (investments), bank credit, corporate profits and railway freight.

- Economists point that revision in the GDP series usually leads to a small change in the level (absolute magnitudes) of the estimates, even at current prices. Seldom is the case when the growth rates in current or at constant prices vary with the base year revision. This basic tenet of economic statistics has apparently been violated in the recent revision, causing serious apprehension among data users.

- Analysis of 189 nations over 33 years by economists showed, never has an economy had such an handsome improvement in growth even while recording a big improvement in external balances as India claimed to have had in fiscal 2014.

- The divergence between the new and old series in the pace of growth of the manufacturing sector has turned out to be stark. The robust expansion of manufacturing portrayed in the new series is not validated by subdued corporate sector performance and weak industrial production. The performance by the listed companies has shown stagnancy in the output in said period. The robust growth projected in manufacturing cannot be attributed to the unorganized manufacturing sector.

**Clarification given by CSO:**

- In the old series the first estimate was derived by applying the IIP growth to estimates of the previous year. These estimates were then updated with the ASI figures when they became available. Both IIP and ASI data are establishment based, i.e. they report output and value added (in case of ASI) for the producing establishment. The implementation of MCA21 program supplemented with the data base of Bombay Stock Exchange (BSE) and existing RBI studies, has given us access to corporate financial statistics which have been incorporated in the new series for measuring manufacturing value added.
• It is argued that change from establishment to enterprise level data has had significant implication for value added and growth. The table shows the change.

<table>
<thead>
<tr>
<th>Series</th>
<th>Year 1 (Advance &amp; Provisional)</th>
<th>Year 2 (1st Revised Estimate)</th>
<th>Year 3 (2nd Revised Estimate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05 series</td>
<td>IIP</td>
<td>IIP</td>
<td>ASI</td>
</tr>
<tr>
<td>2011-12 series</td>
<td>IIP + Advance filing of corporate Accounts</td>
<td>IIP + MCA 21</td>
<td>MCA 21 + Non-corporate ASI</td>
</tr>
</tbody>
</table>

• The establishment approach used in Annual Survey of Industries did not capture the activities of a unit other than manufacturing. Whereas, an enterprise along with its manufacturing activities is also engaged in activities other than manufacturing such as ancillary activities etc. Now, in new approach, the activities of a manufacturing company other than manufacturing are accounted in manufacturing sector. These changes possibly have increased the coverage of registered sector of manufacturing which led to sharp upward revision.

• For long, India had continued to look at gross value added (GVA) at factor cost (or the income earned by the factors of production) as the country’s overall GDP. The new estimates correct the anomaly by adding the taxes (net of subsidies) on production as well as products to the gross value added at factor cost, in order to arrive at the true valuation of national output. Predictably, this change has led to an uptick in the overall GDP growth rate.

4 Conclusion

In sum, one can say, the vast difference in the new series figures is not just because of updation of the database or change in methodology but more so because of the change in data source. The new GDP numbers will be liable to changes in future based on change in base year of IIP WPI and CPI series. These are important indices which play a pivotal role when computing GDP at constant and current prices. Based on revisions of base year of these indices, GDP growth rates may change.