Experts weigh in on criticism of GDP methodology

Critics have been pointing out flaws in India's methodology of computing gross domestic product (GDP) ever since the base year was revised to 2011–12 from 2004–05 and a new way of calculation was adopted. In that respect, the latest criticism by economists Ashoka Mody, Arvind Subramanian and Josh Felman is no exception. To understand the methodology correctly amid these criticisms, *Indivjal Dhasmana* interviewed former Chief Statisticians PRONAB SEN and T C A ANANT and former acting chairman of National Statistical Commission P C MOHANAN and sought their views on how gaps in GDP calculations could be filled, going forward. The questions asked of them were almost the same. While interviews of Sen and Anant were telephonic, Mohanan answered questions on email. Edited Excerpts:

'Averaging production and expenditure sides acceptable in advanced world, not here'

Why are critics pointing to problems in the GDP methodology mainly after the base was revised to 2011-12 from 2004-05? The issue of discrepancies on the expenditure side and deflators did exist in the 2004-05 series as well.
I really don't know. The earlier series used mainly physical indices to calculate GDP, which meant the real GDP was captured better. The new series uses mainly price indices, which means nominal GDP is better accounted for. In the earlier series, you inflate the numbers to get nominal GDP. Now, you deflate it to get real GDP. The associated issue is classification. If you have multi-product firms, how do you classify their GDP or GVA (gross value addition) product-wise? The earlier methodology did not take into account improvement in the quality of products. The result would be the same if Maruti Suzuki produced Alto 800 or Ciaz. This is not the case in the new methodology because it uses price indices.

PRONAB SEN
Former Chief Statistician

India has never averaged the production side growth rate in GDP with the expenditure side growth rate sans discrepancies. Why should it do it now, as suggested by Ashoka Mody?
That is an acceptable way of doing things if you are measuring the two sides of GDP independently. But we don't do it. If we look at the expenditure side, government final consumption expenditure, public investment, private corporate investment, exports and imports are measured independently. The rest, particularly household consumption and investment, is inferred from production side. In the US and other advanced countries, both sides are measured independently. So, discrepancies between the two sides are a measurement problem. In their case, the average of the two sides holds relevance. Not in our case.

In the 2011-12 series, the GDP methodology was revised and it was calculated at market prices, which is an international practice against factor cost used by India earlier. Was switching to market prices not a better way to calculate GDP?
GDP at market prices was calculated earlier, too. We now call GDP at factor cost as GVA at basic prices. They are almost the same except for a few taxes.

The government says it first calculates real GDP in quarterly numbers, and hence, the issue of deflators may not be as important. Your take?
That is rubbish. We first calculate both real and nominal GDP depending on the sectors and segments. In quarterly data, Securities and Exchange Board of India data is used on listed firms instead of Ministry of Corporate Affairs (MCA) data. That is the difference. Sebi data, like the MCA data, are at current prices. On the other hand, the employment data, which is used for a lot of services, are in real terms. So, our calculation is mixed.

Should the Centre fix the gaps in GDP calculation when it revises the base year from 2011-12? What should be the way?
There is a UN-prescribed methodology, which uses supply use tables (SUT). Coming out with SUT is time-consuming. It cannot be updated for quarterly data, but the latest one could be used for annual data and, that too, for revised data, which comes 18 months after the closure of the year concerned. That is all we can do. SUP was brought for 2011-12 and 2012-13 and then there was a gap. Then, the Ministry of Statistics and Programme Implementation (MoSPI) came out with five SUTs, the latest being for 2018-19. In fact, SUT should be brought in every year. It is practically possible to do it, though it is time consuming. SUP takes care of classification problems.

'Averaging production and expenditure estimates is statistical nonsense'

Why are critics pointing to problems in the GDP methodology mainly after the base was revised to 2011-12 from 2004-05? Discrepancies on the expenditure side also existed in the 2004-05 series.
I have no idea why they are raising this issue. GDP accounts, like with any system of double-entry bookkeeping, rely on different data sources for compiling production/income accounts as against those for Expenditure Accounts. These different sources have differences in coverage and completeness, leading to differences in the two estimates. As noted in the SNA 2008, "Even with very sophisticated data collection methods, discrepancies between different estimates will persist due to differences in coverage, valuation and lags in recording" (SNA 2008 ch18 B3 para 18.14). Production side estimates in India represent the most complete estimate of national account aggregates. That is why we take it as a primary method and record the discrepancy on the expenditure side. This is per the recommendation of SNA 2008 (Para 18.17)

Accounts without discrepancies can be calculated when we generate supply-use tables (Para 18.17 and chapter 14). CSO has started preparing SUT since the new series was released with base year 2011-12 *(https://mospi.gov.in/publication/supply-use-tables)*. These tables are generated with a significant lag after all data pertaining to a given year has been received. Details about India's Supply-Use Tables are available in the link provided. Even with SUT, it does not mean that discrepancies have disappeared but that these are now allocated to different segments.

Final point on accounts without discrepancies, "The lesson for users looking at accounts with no statistical discrepancy is to be sure to understand how it was eliminated" (UN SNA 2008 18.19).

India has never averaged the production side growth rate in GDP with the expenditure side growth rate sans discrepancies. Why should it do it now, as suggested by Ashoka Mody?
Averaging across production and expenditure estimates is statistical nonsense. Anyone suggesting such a measure should cite relevant portions from the UN System of National Accounts that permit such calculations. And why average and not some other combination?

T C A ANANT
Former Chief Statistician

In the 2011-12 series, the GDP methodology was revised and it was calculated at market prices which is international practice against factor cost used by India earlier. Was switching to market prices not a better way to calculate GDP?
GDP at market prices has always been reported for Indian National Account compilations. There is nothing new in the 2011-12 series in this regard. In the 2011-12 series, we replaced the concept of GDP at factor cost with the phrase GVA at basic prices. This terminological change allows us to conform to the international standards being followed since SNS 1993. The difference between Basic Prices and Factor Cost is in the separation of production taxes and subsidies from other taxes and subsidies. A complete description can be found in the CSO document -National Accounts Statistics Sources and Methods 2007-para 8.27. Later, in the same chapter, para 8.33 and 8.34, the document notes that the computation of GDP at factor cost is not compliant with SNA 1993. This non-compliance was leading to different international making ad-hoc adjustments to Indian estimates. By reporting in compliance with UN SNA, we have eliminated this source of narrative confusion.

Also, see para 8.34 of the above sources and methods, which clearly notes, "8.34 The conceptual difficulty with gross value added at factor cost is that there is no observable vector of prices such that gross value added at factor cost is obtained directly by multiplying the price vector by the vector of quantities of inputs and outputs that defines the production process. By definition, "other taxes or subsidies on production" are not taxes or subsidies on products that can be eliminated from the input and output prices. Thus, despite its traditional name, gross value added at factor cost is not strictly a measure of value added".

The government says it first calculates real GDP in quarterly numbers and hence the issue of deflators may not be as important. What is your take on that?
Calculation of the quarterly GDP is complicated. The reason for this is that only some data is available on a quarterly basis, therefore, the limited set of quarterly indicators are projected using the Benchmark Indicator Method. (Details may be seen in *https://mospi.gov.in/sites/default/files/publication_reports/Methodology_doc_for_compilation_of_Quarterly_GDP_28july17_0.pdf*). These projections are done for the estimates at constant prices as most of the indicators available are quantitative in nature, like agricultural output, Index of Industrial Production (IIP), etc. Then, constant prices numbers are deflated to get current price estimates. Thus, the observation on constant price growth rates is correct.

Should the government fix the gaps in GDP calculation when it revises the base year from the current 2011-12. What should be the way going forward, according to you?
Every revision of GDP considers new developments in data availability. The next revision should also do the same. One major change to look forward to is that we now have more regular employment data. For instance, the current methodology takes the Employment and Unemployment Survey of 2011-12. These surveys used to come once every five years. These have now been replaced by the annual and quarterly periodic labour force survey (PLFS) from April 2017. The revision should suitably take advantage of this.

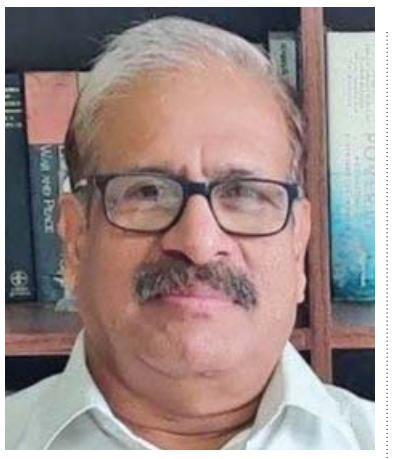
'Revision of GDP base year long overdue'

Why are critics pointing to problems in the GDP methodology mainly after the base was revised to 2011-12 from 2004-05? Discrepancies on the expenditure side and the issue of deflator did exist in the 2004-05 series too.
The current criticism is somewhat strange, given that the present series is over 12 years old. The major concern should be with the non-revision of the base year of GDP to a more recent period based on updated indicators giving proper coverage of emerging sectors.

India has never averaged production side growth rate in GDP with expenditure side growth rate sans discrepancies. Why should it do it now. as suggested by Ashoka Mody?
Valuation of gross value added and related aggregates at basic prices and GDP at market prices instead of factor cost is based on the new system of national accounts adopted by most countries, including India. We follow the production approach for most sectors, and the income approach for some is mainly due to measurement or data issues. Any balancing will reflect discrepancies, especially if a significant component like the private final consumption expenditure is the balancing item.

In the 2011-12 series, the GDP methodology was revised and it was calculated at market prices which is international practice against factor cost used by India earlier. Was switching to market prices not a better way to calculate GDP?
It is difficult to say which is better or more superior. This, along with other changes like the institutional sector classification, etc was done as part of shifting to the new system. There are other methodological innovations like the use of effective labour input to estimate value addition in many activities that were attempted in the present series.

The government says it first calculates real GDP in quarterly numbers and, hence, the issue of deflators may not be as important. What is your take on that?
The problem of deflators was noticed earlier also. We did not have a national consumer price index (CPI) or retail price index earlier. The wholesale price index was used for inflation measurement. The present rural and urban CPI was introduced in 2011 with the base year of 2010, which was later revised to 2012. The WPI and the CPI have not always moved in a very predictable fashion. For GDP, it is the WPI that is used most. Some of these issues will, therefore, remain.



P C MOHANAN
Former Acting Chairman,
National Statistical Commission

Should the government fix the gaps in GDP calculation when it revises the base year from the current 2011-12. What should be the way going forward, according to you?
Revision of the base year for both CPI and GDP are long overdue. The basic data that went into the 2011-12 series were mainly from surveys done in 2011 or earlier. We have since seen the emergence of new sectors like platform-based work and online marketing. The employment surveys and the consumption surveys need to reflect these adequately. Regarding conceptual basis, I think we have to continue with the existing methodology. My big concern is using better databases like the GST or MCA data both at the national stat level estimation. These require a lot of internal exercises and studies. I am not very sure what steps are being taken to review the database and when the new base year is proposed to be implemented.