

Hunting the Heffalump

The analytics used by Arvind Subramaniam to argue over-estimation of GDP is flawed on a number of counts

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Arvind Subramaniam has written a working paper ('India's GDP Mis-estimation: Likelihood, Magnitudes, Mechanisms, and Implications') in which he argues that "actual GDP growth" may have been 4.5 per cent between 2011-12 and 2016-17, instead of the 7 per cent official estimate. One would not normally comment on an un-refereed working paper, but his former government position as Chief Economic Adviser, and the fact that he has chosen to publish his claim in national media, motivates our response.

Subramaniam argues that i) 17 "real indicators" are strongly correlated with GDP growth measured using the old 2004-05 series methodology but not with the new (2011-12) methodology, ii) growth rates for these indicators are "substantially lower in the post-2011 period than before" and iii) in a cross-country regression that relates GDP growth of 70+ countries with just four indicators — credit, electricity, exports and imports — there is an econometric convergence between these and the official GDP estimates before 2011, but not after.

He argues that these, collectively, are evidence that GDP levels (and therefore growth) are over-estimated since 2011.

Criticising official estimates is a serious business. A critique of official GDP estimates must specifically critique coverage or methodology. Subramaniam does neither.

GDP estimates are generated using a publicly available methodology that is well documented, and is based on a comprehensive estimate of all economic activities. GDP estimates use indicators to generate advance estimates, but not final numbers. Certainly, no cross-coun-

try regressions are used in generating GDP estimates.

The analytics used by Subramaniam to argue over-estimation is flawed. First, GDP estimates are always reported at current prices. Price deflators are then applied to calculate real GDP. But since Subramaniam only compares real GDP growth estimates, there is no foundational basis to speak of "over-estimation," since he has produced no alternative estimate of current price GDP.

Second, the national income accounting framework estimates value addition of different economic activities, and not merely changes in indicators of these activities. It is, therefore, conceptually incorrect to relate levels of GDP to levels of indicators. High frequency indicators can, at best, signal changes in different sectors. They are not estimates of value addition by these sectors.

Third, almost all the indicators used in the study are for the organised and commodity-producing sectors. Thus, the indicators inadequately cover the GDP base, significantly, services.

Fourth, when assessing mis-measurement in national income, researchers examine data-related problems in moving from an establishment to an enterprise approach, changes in sampling frames, changes in definition, sampling and non-sampling errors, and other coverage issues in available data sets. Subramaniam does nothing of the sort.

Correlation Issue

For these reasons, the paper has no analytical basis to opine on anything as fundamental (or grandiose) as over-estimation of India's GDP growth.

But the paper is problematic even in its more modest argu-



No trivial matter A critique of official GDP estimates must specifically critique coverage or methodology ISTOCKPHOTO

ments. Subramaniam argues that for his 17 indicators, the correlation with GDP growth reduces post 2011-12. However, such a change in correlation does not automatically imply an over-estimation of GDP. Part of the reason why the indicators show a low correlation with GVA estimates in the new series is because the composition of GVA (in terms of coverage and sectoral reclassification) has changed substantially. Subramaniam does not control for this — he cannot, because composition plays no role in his argument. His case is, therefore, unproven.

Subramaniam's cross-country regression exercise involves underlying assumptions which are not acknowledged. First he assumes (except in India) that there are no significant differences in how GDP is estimated in the countries chosen, such that the dependent variable can be regarded as reasonably homogeneous.

Second, the fact that India is an outlier cannot automatically lead to the inference that India's growth

has been over-estimated, simply because the drivers of India's growth may have changed in the second period. The change in GDP estimation procedure was not done for the fun of it (the implicit assumption) but because there were compositional changes that had to be taken into account.

These changes include wider coverage of activities (particularly in the manufacturing sector), reclassification of many sub-sectors, and use of new databases. They have, to some extent, altered the relation between value addition across sectors and volume based (physical) indicators. These should be examined critically and, in the case of the MCA database, this has been done by other scholars.

Not backed by theory

But these things make no appearance in Subramaniam's argument. He does speculate on the causes of deviation (in his misplaced quest to establish over-estimation) but his speculations refer primarily to the

use of deflators in organised manufacturing and in the services sector. These deflator issues are to do with moving from nominal to real GDP, and Subramaniam leaves these issues for future research. An exercise of this nature could add value if grounded in a theory of growth for countries like India, to test whether India conforms to the posited theory pre and post 2011. But there is no theory backing this, purely data driven, exercise.

Referees' reports would likely raise these issues, *inter alia*, and an improved paper would no doubt emerge in due course. But in the working paper and press article, there is no analytical justification for the grand claim that GDP is over-estimated. For the rest, technical flaws notwithstanding, it confirms what we already know, that GDP growth has slowed in recent years. That's about it.

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