

Arvind Subramanian: Fact Check, Reality Check? New GDP Data

Arvind Subramanian / New Delhi January 11, 2008

Why did nearly 15 years have to elapse before GDP data were updated?

The World Bank's statisticians have changed the economic facts. Under these circumstances, Keynes, the economist, would have us change our opinions, while the great scientist, Einstein, would have us tamper with the facts especially if they clash with our theoretical priors. Which should it be? A little bit of both, it seems.

The key to constructing internationally comparable GDP data is purchasing power parity (PPP) exchange rates, which are different from market exchange rates. For example, in 2005, the market exchange rate of a dollar was 44 rupees. But 44 rupees bought more of a typical basket of goods and services in India than a dollar did in the United States because a lot of nontraded goods such as haircuts, education and health, which make up this basket, were cheaper in India than in the US. PPP exchange rates are the metric that tells us how many rupees (the new answer is 14.7) have the same command over goods and services in India that a dollar does in the US.

Since the 1970s, the Penn World Tables (PWT) produced several editions of cross-country data on PPP exchange rates and PPP-adjusted GDP, each based on detailed prices that were obtained periodically and most recently in 1993. For the years beyond 1993, the PWT and the World Bank continued producing GDP numbers, which can best be described as intelligent "guesstimates."

These guesstimates used the 1993 numbers as the base and extrapolated beyond using price data from the national income accounts for each country. For several countries, including China and the oil exporters, which never provided the detailed price data, there was not even a base year with firm data from which to extrapolate. The latest numbers produced by the Bank are therefore superior by construction because they replace the old guesstimates with actual data.

Unsurprisingly, the old numbers have been substantially revised. For example, in about 40 per cent of cases, GDP per capita has been revised upwards or downwards by more than 20 per cent. For China and India, the downward revision was about 40 per cent. Many oil exporters — Saudi Arabia (28%) and Iran (34%) — saw significant upward revisions. Understanding these revisions is critical to acquiring trust in them.

One way of assessing the new data would be to check for patterns in the revisions. It turns out that, on average, the magnitude of the revisions to the data was much smaller for countries that participated in the 1993 exercise than for countries that never provided

detailed price data. For example, the mean percentage revision (treating positive and negative revisions alike) in the GDP per capita for the latter group was about 34 per cent compared with 14 per cent for the former group (the difference remains substantial even after excluding rich countries, and is larger for PPP revisions). The variability in the revisions (or standard deviation) was also greater for the latter group, especially for revisions to the PPP exchange rates. Thus, the revisions are not random but reassuringly consistent with what we might expect: the more dated the previous data, the greater and more variable the subsequent revisions.

DATA REVISIONS		
	Countries that:	
	Provided detailed price data in 1993	Never provided detailed price data
PPP exchange rate		
Mean percentage revision (revision in absolute value)	15.9	57.9
Standard deviation of percentage revision GDP per capita	20.1	41.1
Mean percentage revision (revision in absolute value)	14.3	34.2
Standard deviation of percentage revision	18.2	18.8

Calculations exclude 3 outliers: Azerbaijan, Zimbabwe, and Republic of Congo

That said, a number of specific revisions raise questions to which the Bank will have to provide answers.

Poverty: The reductions in GDP per capita imply a large increase in measured poverty, especially in China and India. Is this a problem? Yes, the new numbers are going to be awkward for the Bank because China and India cannot suddenly have hundreds of millions more poor people because new data have been produced. We are not quite in a Heisenberg quantum world where measurement affects underlying realities.

But the problem is less big than it appears. First, it should be emphasised that the new revisions change poverty rates according to the *international* one-dollar-a-day standard. But most researchers and policy-makers place far more faith in *nationally* determined poverty benchmarks and estimates. India's poverty rate will always be determined by the NSS surveys (fraught and contentious though even they are) not by international measurements.

The international standard was created to facilitate cross-country comparisons. But it was always recognised that setting this standard was hazardous because of the difficulties in comparing poverty across borders and time. The new revisions have merely served to

expose these difficulties, and it is going to be very interesting to see how the Bank extricates itself out of this problem.

China: Perhaps a better basis for judging, and being wary about, the new China numbers relate to their implications for the Chinese exchange rate. The new data suggest that renminbi undervaluation is about 16%, which is not only substantially lower than most analysts' estimates (of about 30-40 per cent) but also implausibly lower than the estimates for other countries, including India's (undervaluation of about 26 per cent). The price estimates for China were based on urban data, leaving open the possibility that including rural prices will yield more plausible numbers for the magnitude of undervaluation.

Singapore: It is surprising why data for this country, which has presumably one of the better statistical systems, should be amongst those with the greatest revisions (plus 40%).

India: While China's large revision might be understandable because the old data were particularly shaky, why did the Indian numbers change? Recall that the old estimates for 2005 were really extrapolations. For those 115 countries (including Singapore) that provided detailed price data in 1993, these extrapolations were for 12 years. But India last participated in 1985, so the extrapolation was for 20 years.

Indian numbers, therefore, saw greater revisions in part because India's data were older than for other countries. It is possible that the Indian economy has seen so much change since 1985 that extrapolations for twenty years failed to reflect these changes.

The broader policy question that India and the world community should be asking is why nearly 15 years had to elapse before GDP data were updated. Had the Bank devoted more time, effort, and financial resources to doing more such exercises in the past, there would be fewer surprises today.

The World Bank has just replenished its coffers by about \$40 billion to keep concessional finance flowing to poor countries. Nancy Birdsall, President of the Center for Global Development and I have argued (<http://www.cgdev.org/content/publications/detail/14625>) that a large share of the Bank's resources — substantially larger than currently foreseen — should be channelled to activities that produce global public goods. A great example of such goods is knowledge produced by the Bank, including the knowledge embodied in the new GDP data generated by the Bank's statisticians. Like the efforts of the PWT in the past, this knowledge has transformed and enriched our understanding of the poorer parts of the world.

We should therefore raise a toast to these humble folk, the bean counters, who beaver away at such unsexy but invaluable tasks. But as we do so, we should not shy away from asking this question: can the loanwallahs at the World Bank (and elsewhere) make comparable claims of adding value to the world.

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