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How Credible are India's New Manufacturing GDP Estimates?

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A verification exercise of the estimates of manufacturing in India's new GDP series indicates that the over-estimation could be 24.5%-40.9%. The accuracy of the new estimates can be answered only when the Ministry of Corporate Affair data and the methods used in the estimation are open to scrutiny.

1. Introduction

The National Statistical Office (NSO)'s new National Accounts Statistics (NAS) with the base year of 2022-23 replaces the earlier series with the base year 2011-12. The re-basing of the National Accounts is a routine yet mammoth statistical task that all national statistical offices undertake periodically to account for changes in relative prices and cover newer activities in the economy. Such a rebasing also offers scope for introducing newer and improved datasets and methods to better capture economic reality on the ground.

The latest gross domestic product (GDP) revision has been a much-awaited event, as it has come after an interval of 11 years. During these years, there has been a widespread debate among policymakers and data users on the veracity of India's GDP estimates. In the light of the widespread scepticism of the earlier estimates, there has been renewed users' interest in and scrutiny of the official estimates. Last year, even the International Monetary Fund (IMF) had expressed concerns regarding the veracity of India's National Accounts (IMF 2025).

The new series has largely retained the principal databases and methodologies introduced in the last revision, fine-tuning some of them to respond to the issues flagged by data users. However, the details of the changes made would only be known when the NSO releases "Sources and Methods" for the new NAS.

Manufacturing sector Gross Value Added (GVA) (output) estimates were contentious in the last revision. The sector's annual growth rates (including its directional change in the initial years) were much higher than (or different from) those in the older series (2004-05 base-year) (Nagaraj and Srinivasan 2017; Sapre and Bharadwaj 2023). The differences in the estimates were mainly due to two reasons. One, the replacement of the production data from the Annual Survey of Industries (ASI) with financial data from company balance sheets which were obtained from the statutory filing of annual reports with the Ministry of Corporate Affairs (MCA); and, two, the introduction of newer methods for estimating corporate sector GVA.

Retaining the use of the MCA database in the new series, the NSO has fine-tuned its earlier methodology by "segregation of activities in case of multiactivity corporation …"[1] The other relevant changes brought in are the use of Annual Survey of Unincorporated Enterprises (ASUSE) data, replacing the National Sample Survey (NSS) five-yearly sample surveys, and the application of the double deflation method[2] where suitable, replacing the single deflation method, for obtaining the constant prices series.

Table 1: Relevant Annual Survey of Industries (ASI), Annual Survey of Unincorporated Sector Enterprises (ASUSE), Ministry of Corporate Affairs (MCA) and Periodic Labour Force Survey (PLFS) data, and Derived Technical Ratios for Manufacturing Sector

		Variables				Technical Ratios Derived Using the Variables			
		Units/ Companies	Factories	GVA Rs Lakh Crore	Emp (Lakh)	GVA/ Company (Rs Lakh)	GVA/ Factory (Rs Lakh)	GVA/Emp (Rs Lakh)	Emp/ Factory
		1	2	3	4	5	6	7	8
1	ASI Manufacturing	198,419	212,990	23.6	195.9	1,189.4	1,108.0	12.0	92.0
1 A	ASI Private Companies (i+ii)	78,618	88,646	20.3	146.9	2,580.8	2,288.9	13.8	165.7
1A (i)	ASI Private Companies (non-factory units)	8,987	10,085	0.1	0.8	111.3	99.2	12.5	7.9
1A (ii)	ASI Private Companies (factory units)	69,631	78,561	20.2	146.1	2,902.6	2,572.7	13.8	185.9
2	ASUSE	20,146,500	20,146,500	3.8	337.0	1.9	1.9	1.1	1.7
3	Total ASI & ASUSE Units (1)+(2)	20,344,919	20,359,490	27.4	532.9	13.5	13.5	5.1	2.6
4	The manufacturing universe consists of the output generated by 677.5 lakh workers (PLFS data) engaged in manufacturing activities..								
5	Residual workers not covered in ASI and ASUSE: 164.6 lakh, (697.5 − 532.9). These residual workers comprise employment associated with both the residual registered companies [2,72,534 = (3,51,152 − 78,618)] and the residual unincorporated sector. The private manufcaturing companies' registered with MCA for 2023–24 at midpoint are 3,51,152 and as estimated using unit-wise ASI data are 78,618.								
6	Distribution of residual workers: 15.5 lakh in private companies in ASI non-factory sector estimated using technical ratios on estimated residual operational companies; remaining residual 149.1 lakh workers in unincorporated sector.								
7	ASI consists of factories employing 10/20 workers with/without power. In industries like bidi-making, factories employing less than 10 workers are also included. Under varying market conditions, factories reduce employment, but they may continue to remain in the ASI sample frame for five years, or until the next review of the frame.								
8	Companies registered under the Company's Act that have multiple factories and are included under Col. 1 as a single company along with units not registered under the Company's Act. For estimating private companies' share, three categories of organisations are included: (i) Limited Liability Partnerships (LLPs), Organisation Code 3; (ii) Non-Government Public Companies, Organisation Code 6; and (iii) Non-Government Private Companies, Organisation Code 7. The separate organisation codes are given for government companies.								
Source: ASI manufacturing estimates and organisation-wise aggregate estimates are based on unit-level ASI data for 2023-24. They are are consistent with the corresponding estimates from the ASI, Summary Results, 2023-24. Notes: In ASUSE, 2023-24 data, each factory is treated as a separate unit, and no company-level classification exists.									

2. Validating the New Estimates

In the new NAS, the manufacturing sector GVA for 2023-24 at current prices is Rs 38.6 lakh crore (Rs. 38.6 trillion), constituting about 14% of aggregate GVA.[3] An alternative estimate, based on ASI and ASUSE data, that we have prepared is Rs. 27.4 lakh crore (Item 3 in Table). It is lower than the official estimate by 40.9% (or, 11.2 lakh crore).[4] Such a substantial gap between the two estimates calls for a deeper scrutiny of the official estimates, as minor statistical differences cannot account for variation on such a large scale. This article provides a statistical explanation for the observed gap.

> The MCA database has 351,152 active private non-financial companies engaged in manufacturing. However, as per ASI data, there are only 78,618 "private companies" operating 88,646 units (or factories).

Table 1 reports the relevant aggregates and average technical ratios used to account for the gap between the two estimates. Using the ASI and ASUSE datasets, the estimated employment to produce the official GVA is 532.9 lakh workers: 195.9 lakh workers in the factory sector (as measured by the ASI) and 337.0 lakh workers in the unincorporated sector (represented by the ASUSE).

However, according to the Periodic Labour Force Survey (PLFS) estimate, there are 697.5 lakh workers employed in the manufacturing sector-a staggering 30.9% higher than the foregoing estimate used to produce the official GVA. Thus, quite possibly, the contribution of 164.6 lakh "residual workers"-697.5 minus 532.9-may account for the gap in the GVA reported above.[5] Although the definition of a worker in the ASI/ASUSE and PLFS surveys is not strictly comparable, the PLFS-based estimate provides a meaningful reference point

to evaluate the credibility of the official estimate.

Similarly, the MCA database has 351,152 active private non-financial companies engaged in manufacturing.[6] However, as per the ASI, there are only 78,618 "private companies" operating 88,646 units (or factories).[7] It means that if all the active companies in the MCA database were working, the output of 272,534 "residual companies" is left out of the ASI. Hence, also from our Alternative Estimated (AE) reported above.

Thus, the combined potential contribution of the "residual workers" employed in "residual companies" and the remaining in the "residual unincorporated sector" could, in principle, account for the gap. To verify if it is so, the potential contribution of residual workers and companies is estimated in the following manner.

1. Output estimation using the MCA's database on active/registered companies has limitations. How many of the active companies are working on a regular basis is not known, as measured by their filing of audited annual reports in the MCA-21 database. The NSSO's *Technical Report of Services Sector Enterprises in India*, 2019, reported that the proposed survey of services sector in 2016-17 had to be abandoned as 36% of companies in the MCA-21 database in the services sector were either closed, or not traceable, or refused to provide information or mis-classified (Nagaraj et al. 2019).

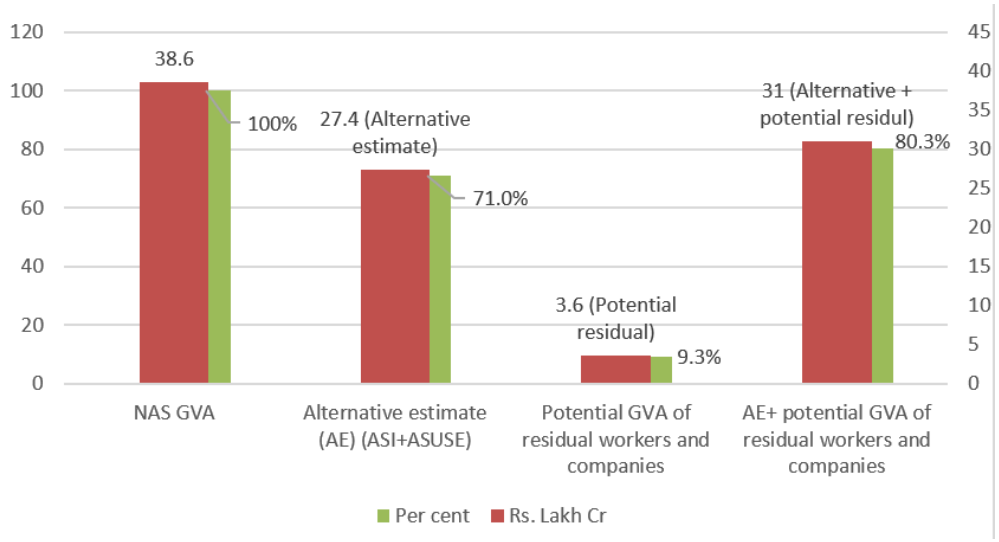
2. Hence, it would be unrealistic to assume that all the 272,534 residual companies (reported above) are in fact working. Instead, we assume that 36% of the residual companies are not working, following the ratio from the above-mentioned report. Applying the ratio for the manufacturing sector, the estimated number of the residual working manufacturing companies is 174,422.

3. Most of these residual working companies are likely to belong to the non-factory manufacturing segment, which explains their exclusion from the ASI coverage. Applying the technical ratios of the ASI Private Companies non-factory sector (from row 1A [i] of Table 1) to these residual working companies yields an estimated employment of about 15.6 lakh workers, producing a GVA of Rs. 1.9 lakh crore.

4. The remaining 149.1 lakh (of 164.6 lakh) "residual workers" are likely to be employed in the residual unincorporated manufacturing sector that were left out of ASUSE. Applying the GVA/worker ratio of ASUSE data (from row 2 of Table 1), their estimated GVA is Rs 1.7 lakh crore.

5. Thus, the sum of the GVA of residual companies and the residual unincorporated sector is Rs 3.6 lakh crore. Adding it to the Alternative Estimated (AE) reported earlier, the potential (or the maximum) overall manufacturing GVA could be Rs 31.0 lakh crore. It still falls short of the official NAS estimate (of Rs 38.6 lakh crore) by 24.5%. In other words, the potential GVA of all workers in the manufacturing sector (as per the PLFS estimate) and working companies would at best be 80.3% of the official estimate. It is lower than the official GVA by Rs. 7.6 lakh crore or 19.7% (Figure 1).

Figure 1: Official Manufacturing Sector GVA and Alternative Estimates for 2023-24



Hypothetically, even under the (unrealistic) assumption that all residual MCA companies are working, the estimated potential manufacturing GVA rises only to Rs 32.0 lakh crore, which is also much lower than the official estimates of Rs 38.6 lakh crore. In other words, the official estimate is still 20.6% higher.

3. Discussion of Results and Conclusions

If the foregoing procedure to validate the official GVA estimate is meaningful, it raises many questions. Does the official estimate represent a fuller description of the production, as contended by the official statistical agency? Or is it an overestimation due to the infirmities in the MCA database? If the official GVA estimate represents is a fuller description of the industrial production, then, how and where did the production escape in the ASI? Were they missed out in the sampling frame, that is, not getting registered under the Factories Act?

> The official reasoning for opting for the MCA database in the previous base-year revision … was precisely this-the supposed failure of the ASI in capturing value addition taking place in an enterprise, outside factory premises.

Or, did the ASI fail to capture the GVA of its companies because the "factory" or the "establishment" as a unit of data collection fails to capture value-addition taking place outside of the factory premises? Which, in principle, is now getting recorded by the MCA database on account of its "enterprise approach"? Alternatively, does the 40.9% higher GVA estimate using the MCA data (as compared to the AE based on the ASI plus ASUSE estimates) represent the outcome of "scaling up" ("blowing up") of the sample estimates for the universe of active companies (whose precise definition and numbers remain opaque)?

The official reasoning for opting for the MCA database in the previous base-year revision, replacing the time-tested ASI () was precisely this-the supposed failure of the ASI in capturing value addition taking place in an enterprise, outside factory premises.

A Central Statistics Office (CSO) methodology paper released in the wake of the introduction of the MCA database offered the following rationale for the official decision. The report said:

Till recently, the ASI was the only comprehensive source of data for the registered manufacturing sector. However, ASI provides estimates for the manufacturing establishments only, and therefore, does not provide any estimates for trading and other activities that may be provided elsewhere by the enterprise. Therefore, the services carried out by the manufacturing enterprises were not adequately covered in the national accounts. With the availability of the comprehensive MCA21 database, this data gap could be addressed by using the 'enterprise approach' for manufacturing, also (CSO 2015: 73).

Is the foregoing reasoning empirically valid? Not very much, perhaps. A fieldwork-based enquiry examining the question found it not to be the case. To quote the study:

A careful perusal of the ASI's *Instructions Manual* provided to field investigators amply demonstrates that … ASI, in fact, captures employment, investment, and value added of activities outside of the factory, such as the head office, R&D, sales and services, and so on, that are part of the enterprise in most cases. We have then sought to corroborate these findings with the ASI filled-in questionnaires for select enterprises and their factories operating in Gujarat and elsewhere. Information gathered from the field supports our contention: the ASI, in fact, includes value addition in activities outside of factories, such as company headquarters and sales force" (Dholakia et al. 2018, p 13).

Thus, the contention of better description of the ground reality using the MCA database, or the hypothesis of overestimation, is at the heart of statistical and methodological disputation in manufacturing sector GVA estimation.

4. To Sum Up

For the year 2023-24 at current prices, manufacturing gross value added in the new GDP series with 2022-23 as the base year is Rs 38.6 lakh crore (Rs. 38.6 trillion). Is the estimate credible? This study examines the question by providing an Alternative Estimate (AE), using ASI data for the overlapping categories of the factory and corporate sectors, and ASUSE data for the unincorporated sector. Such a verification effort could be justified because the manufacturing sector GVA estimate was at the core of much dissensus in the previous base year revision. Further, the MCA database (with minor refinements) and the methodologies followed in the previous series

continue to underpin the new GDP series.

> The NSO needs to make the MCA data and the methods used in the GVA estimation open to scrutiny for independent validation. This is necessary to resolve the statistical contention, which has serious implications for understanding … economic performance.

The alternative GVA estimate reported in the study stands at Rs 27.4 lakh crore-a whopping 40.9% lower than the official estimates. The gap between the two estimates is mainly due to differences in the estimates obtained for the private corporate sector using MCA data, as the use of ASUSE for the unincorporated sector is common to both the estimates. However, in principle, the substantially higher official estimate also includes the contribution of residual workers belonging to companies and the unincorporated sector that are left out of the ASI and ASUSE data sets.

Adding the potential contribution of such units and workers, however, still leaves the official GVA figure higher than the alternative estimate by almost a quarter (24.5%). Whether the higher value of the official GVA figure represents a fuller description of production from the ground using the MCA database (as officially claimed), or an overestimation due to its much-discussed limitations and the methods applied to obtain GVA for the manufacturing sector remains unknown. This is the crux of the matter.

The upshot of the study is that the NSO needs to make the MCA data and the methods used in the GVA estimation open to scrutiny for independent validation. This is necessary to resolve the statistical contention, which has serious implications for understanding national and sectoral economic performance. Such a move alone could restore public confidence in the official data.

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Footnotes:

1 This means separating a company's different economic activities for statistical classification and estimation purposes, rather than seeing the entire company as operating in a single activity.

2 Double deflation in national accounts means estimating real value added by separately deflating output and intermediate inputs using their respective price indices/deflators.

3 The data is from the Second Advance Estimates of Annual Gross Domestic Product for 2025-25 released on 27 February 2026.

4 We compare the manufacturing GVA estimates derived from the NAS with those based on the ASI and ASUSE datasets, using the residual method for both the ASI company data and the ASUSE data using PLFS information. The NAS also uses a residual approach in deriving estimates based on the ASUSE data.

5 Manufacturing employment estimates from the PLFS and corresponding worker estimates from the ASI and ASUSE are broadly comparable, but not strictly reconcilable. The PLFS is a household-based survey that measures persons employed by principal/subsidiary activity status, generally counting a person once according to the activity on which the major time was spent. The ASI and ASUSE, by contrast, are establishment-based surveys measuring "workers/persons engaged" by enterprises; hence, a worker may be employed part-time or may be engaged in more than one establishment or shift. Such engagement may be counted more than once.

6 As per the MCA, "An 'active' company on the MCA portal is a legally registered entity in India that is currently operational, compliant with statutory filing requirements, and has filed its INC-22A (ACTIVE) form, confirming its physical existence, registered office address, and active management" (as reported on the official online website).

7 The difference between the number of companies and units is due to many companies operating more than one factory (that is, multi-plant enterprises).

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