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Some areas of concern about Indian manufacturing sector GDP estimation

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Ever since the release of the 2011-12 series of the National Accounts, the accuracy and reliability of GDP data has been a subject of intense discussions amongst several stakeholders. For the manufacturing sector, the general discontent was driven by the fact that large upward revisions in growth rates from 1.1% to 6.2% in 2012-13 and –0.7% to 5.29% in 2013-14 were not reflective of the actual growth performance of the sector. Such revisions led to question the reliability of the estimates and also prompted a series of commentaries and papers on decoding the growth figures in the manufacturing sector. Nevertheless, some key questions about computation and data sources remained unanswered.

In a recent paper we attempt to compute the value addition in the manufacturing sector and argue that once we recreate the process of estimation, several inconsistencies get reveled. We ask three key questions:

1. Are we correctly measuring output and intermediate consumption in the GVA formula?
2. Should we continue with the existing Paid-up Capital based Blow-up method to account for unavailable companies?
3. Are we correctly identifying manufacturing firms?

1. Questions on measuring output and intermediate consumption in GVA

We follow the Goldar Committee report and use the production side approach to recreate the GVA for a set of firms that file in the XBRL format in the MCA21. We do a mapping of the data fields in the XBRL form with data fields in CMIE Prowess and estimate the GVA. Conceptually, the use of MCA21 involves a shift from the erstwhile *Establishment* to the new *Enterprise* approach of value addition. The establishment approach captured production based data from factories registered under the Factories Act. The enterprise approach captures financial data of firms and goes beyond core manufacturing to capture value addition from post-manufacturing, ancillary or related activities such as marketing, and operations of branch/head offices. How does this change impact value addition? The answer has two parts.

Changes in measures of output

First, under the establishment approach, "Sales" was a measure of output. In the current enterprise approach formula, several disaggregated components of revenues from products, services, operating revenues, financial services, rental income, revenues from brokerage & commission and other non-operating incomes are part of output. The inclusion leads to higher GVA levels as the component of output is now similar to the total income of the company, and not industrial sales. In the paper, we show a comparison with the previous sales based method and argue that changes in output composition alone can lead to increased levels of GVA. This addition eventually pushes the growth rates upwards.

Changes in measures of intermediate consumption

Second, identifying components of intermediate consumption at the enterprise level is equally difficult. Conventionally, subtracting the cost items (related to production) from output provides a measure of value addition entirely from manufacturing activities. However, with large and diversified enterprises, identifying cost items from financial data fields can pose significant challenges. A close scrutiny of the XBRL fields shows omission of important cost components, such as; Power & Fuel expenses, Advertisement and marketing related expenses. These are sizeable components and their omission can underestimate costs, thereby overestimating GVA. Thus, two possible reasons that account for changes in GVA are; increase in output due

to addition of several revenue items, and omissions in components of costs.

2. Questions on the blow-up methodology

Blow-up of GVA is an imputation method to account for data of unavailable companies. In absence of data, Paid-up Capital of *available* companies is being used to infer the value addition done by *unavailable* companies. We replicate the blow-up process by constructing an available and active set of companies based on random samples that give different Paid-up Capital coverage. We find that GVA and PUC do not have a linear relation and one cannot draw sufficient inferences about a company's manufacturing activities by looking at its Paid-up Capital value. The blow-up factor also increases with lower coverage of Paid-Up Capital and given variations in annual filing by companies, the extent of blow-up remains unpredictable.

We propose one possible solution of using industry level growth rates of GVA to scale up previous year's GVA of unavailable companies. We use a sample to first classify each missing company into its industry. Based on past growth rates of GVA for each industry, we scale up the last available GVA of the unavailable company. We argue that the method does not depend on coverage of PUC and captures the economic conditions faced by the firms in the industry. On average, the method gives a lower margin of error, a better representation of firm's conditions and provides a close approximation to the actual GVA contribution of the firm.

3. Are manufacturing companies being correctly identified?

The Goldar committee report highlighted that the identification strategy was first based on using the ITC-HS codes. Since compliance by companies was a major issue, the NIC digits contained in the Company Identification Number (CIN) were used for identification. The problems in using both these strategies are well known. ITC-HS codes identify a product and not the activity. Similarly, the problems in using CIN are also apparent. The 21 digit CIN contains the NIC digits that are assigned to the company based on its economic activity at the time of incorporation. Over time, a company may change its business activity or may diversify into other sectors. Such changes are not reflected in the CIN code. We compute the extent of distortion in GVA due to misclassification and argue that on the aggregate, both manufacturing and services sector will show a distorted picture.

4. Conclusion

Detailed investigation into the computation process shows several areas of concerns about measuring outputs, costs, overestimation due to blow-up of GVA in case of unavailable data and identification of manufacturing companies. The reliability of the GVA estimates is crucially dependent on the robustness of the estimation procedure and availability of accurate data. Understanding and solving the problems require a constructive approach and much deeper insights into the national accounts.

References

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