

## National Accounts Statistics-----Overestimated or underestimated?

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*(The building bricks for the compilation of National Accounts Statistics (NAS) are drawn from various sources differing in scope and coverage , and also using the results of sample surveys of unincorporated enterprises. As the true value of any component in the macro economic identities in the NAS is not known , discrepancies in the interrelationships of the variables will be a natural corollary. As such, underestimation / overestimation of the macro economic aggregates is somewhat illusory. In this paper, the aggregates of credit instruments presented in the Sequence of accounts (SOA) in NAS for the entire economy are compared with those in the Reserve Bank of India ( RBI) Financial Flows Accounts. As the RBI Data releases on company finances for recent years are stated to be drawn from the Ministry of Corporate Affairs data base (MCA-21) as in the case of NAS, the estimates of Private Non- Financial Corporations (PNFC) from the two sources are, prima facie, expected to tally roughly, but wide differences are noticed, and possible reasons thereof are indicated. The problems in using the results of the multi subject surveys for deriving accounts of the Quasi Corporations (QC) for insertion in the PNFC accounts , are also discussed. Though the statistical system in any country is not tailor made to arrive at an ideal System of National Accounts (SNA), the focus should be on improvement of data base , refining the methodology from time to time, conducting additional sample surveys etc,. These aspects are delineated in this paper.)*

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The National Accounts Statistics (NAS) are compiled from several sources differing in scope and coverage, and estimates for some of the macro economic variables are derived from the results thrown up by sample surveys in benchmark years and moving the data for the subsequent years with judgmental indicators. So any limitations in the benchmark estimates will be carried forward to other years. The problem is accentuated when the relevant data are sourced from multi subject surveys, the estimates in respect of which may not be efficient at disaggregated state and /or industry group levels, when compared to those derived from single subject surveys. This assumes considerable importance, when the estimates are derived for some compilation categories (a combination of two or more industrial groups) from the survey results , and used as inputs in the accounts of other sectors. Apart from this, differences in estimates are also noticed , when there are two organisations compiling the accounts with different perspectives. A case in point is the Financial Flows Accounts compiled by the Reserve Bank of India (RBI) describing vividly the intersectoral money flows in the economy, and the Central Statistics Office ( hereafter called the National Statistical Office(NSO)) presenting mainly the real side of the accounts. Though the real side of the accounts should conceptually be mirrored in the financial accounts, discrepancies arise due to differences in data sources, sectoral classification ,estimation procedures, time lag in transactions etc. The same problems are confronted at the sectoral level (e.g. Private Non FinancialCorporations ), even if the data are sourced from the Ministry of Corporate Affairs (MCA). Even so, differences in the key indicators should be narrowed down to tolerable limits.

The SNA,2008presentedamodel set of integrated economic accounts, connecting the current and capital accounts for the economy as a whole. So too, for each sector, the Sequence Of Accounts (SOA) is presented, describing production, distribution and use of income accounts under current account. In the capital reconciliation account, saving and investment are presented with a net surplus/ deficit, with a further linkage to the financial

accounts giving the sources and uses of funds instrument-wise. The sector -wise break up of each credit instrument is attempted in the RBI financial flows accounts, on a "From Whom to Whom (FWTW)" basis, to capture the inter sectoral flow of funds and the financial mechanism thereof; In the NAS of NSO, the financial aggregates are available in the financial counterpart of the SOA. In the SOA of SNA, 2008, a perfect accounting system is portrayed, without any discrepancies. As the true value of any of the components is not known, errors in estimation of each component will distort the macro economic identities, resulting in discrepancies. This is apart from incomplete coverage of some entities/ sub sectors, due to lack of data or fragile data base. Be that as it may, the focus should be oriented towards filling up the data gaps, improve the estimation procedures and conduct additional surveys, wherever needed.

At the time of the last revision of the National Accounts (Base 2011-12), the NSO implemented the SNA, 2008 framework and compiled the SOA for each sector and for the economy as a whole, massaging the available data base. The revised series have become available from 2011-12 onwards. Another revision of the base year is in offing, and it is time to introspect and reconsider the suggestions and comments detailed in Nagaraj ( 2015 ), Rajkumar ( 2015), SubbaRao (2015, 2018 ), Nagaraj and Srinivasan ( 2016 ), and bring out improvements in the next revision. Comments in these studies mainly center around new sources of data used for the purpose of NAS , weak data base used for some of the sectors/ sub sectors and other methodological issues. The crucial issues which need modification or improvement, though detailed in these studies, are condensed under five categories for recapitulation: (1) Gross Domestic Product at factor cost or market prices (2) Discrepancies between Flow of Funds Accounts and NAS (3) Quasi Corporations (QC) (4) Ministry of Corporate Affairs (MCA-21) data base for compilation of accounts of the Private Non-Financial Corporations (PNFC) (5) Multi Subject versus Single subject surveys of unincorporated enterprises. Section I deals with categories (1) and (2). In Section II, the others are covered, as they are interrelated. Section III gives a summary of important observations and concluding remarks.

## Section I

### 1. Gross Domestic Product at Factor Cost or Market Prices?

The SNA ,2008 advocates that GDP at market prices should be the yardstick for measuring economic growth, in lieu of GDP at factor cost, as followed hitherto. The NSO also implemented this change in the NAS series under reference. Possibly the same treatment will be followed in the next revision too. The growth rates will be differing marginally, depending upon the algebraic sum of indirect taxes and subsidies. In the NAS, the GDP at factor cost is dispensed with. Instead, GDP at basic prices (i.e. Gross Value added (GVA)+ taxes on production –subsidies on production) is presented. Further, when taxes on products are added and subsidies are netted out, the GVA or GDP at market prices is arrived at. In a regime of reducing subsidies and increasing indirect taxes, the GDP will be inflated partially. Traditionally ,the GDP at factor cost has been the basis for measurement of economic growth. These aspects were studied in detail by Shetty and Savant( 2016 ), who asserted that Factor Cost GDP is fundamental for measuring real growth rate, and not GDP at market prices.

### 2. Discrepancies between FOF and NAS

In a previous article by SubbaRao ( 2018 ), the financial resources gap from the RBI FOF accounts and the NAS are compared , and wide differences were noticed. The main reasons for these differences were observed to be (1) inclusion of some entities in the unorganized sector under Financial and Non- Financial Corporations Sectors as covered in SNA 2008( e.g. accounts of QCs which were estimated from surveys of unincorporated enterprises and transferred from the Household sector to the two sectors under reference, with fragile data base. (2) Differences in data sources in the accounts of the Private Non- Financial Corporations ( Differences persisted even if the same source MCA-21 used in recent years by the RBI and the NSO ) and Paid Up Capital ( PUC) coverage in the two sources.

As the SOA in NAS is connected to the financial account also listing different credit instruments under sources and uses, the differences in aggregates of some of the credit instruments may also be examined between the two sources. *Apriori*, for a particular credit instrument, the total sources and uses should be equal, as the source of one sector should be counterbalanced by the uses of other sectors holding the credit instrument. However, discrepancies arise due to differences in accounting periods, time lag in transactions, differences in recording the same transaction under different credit instruments in the borrowing and lending sectors and also the estimation procedures. Also, there will be some transactions which cannot be attributed to any credit instrument, and recorded under ‘miscellaneous transactions not elsewhere classified’. As such, the exercise is restricted to important credit instruments in the two sources for some of the recent years .

Table1 : Financial Flows-----Instrument-wise

(Rs. billion)

Credit Instrument	2015-16		2016-17		2017-18	
	Sources	Uses	Sources	Uses	Sources	Uses
Currency and deposits	10440 (11800)	12478 (12701)	13866 (12536)	11694 (11902)	14240 (12975)	13800 (14283)
Debt securities	12187 (12333)	9223 (14084)	14777 (16227)	14037 (15190)	14944 (17083)	14679 (14581)
Loans and borrowing	9801 (12599)	12000 (13725)	499 (-1783)	13333 (9094)	17546 (19572)	16355 (21922)
Equity and Investment fund shares	8479 (7852)	5485 (11347)	10389 (11000)	6336 (10019)	9194 (8966)	5989 (9758)
Insurance, pension, provident fund and standardized guarantee schemes	1880 (4070)	5549 (5618)	4615 (6587)	6795 (6512)	3349 (6459)	7183 (7387)
Total (including other miscellaneous items)	51066 (54586)	49635 (56689)	49721 (51442)	48767 (55567)	65616 (68189)	62476 (72778)

Source: 1.National Accounts Statistics, 2019 ; 2. Reserve Bank of India Bulletin (July 2019) Article on “ Financial Stocks and Flows of the Indian Economy,2011-12 to2017-18.Note: Figures in brackets are from Source (2).

It may be observed from Table 1 that the total financial sources and uses are generally higher in the RBI FOF accounts, compared to those in the NAS, despite enhanced coverage of entities of unorganized segments in the subsectors of the Financial and Non- Financial Corporations in the NAS. A case in point is the inclusion of QCs in the two sectors under reference in the NAS. Instrument wise details give further insight . While the aggregates of ‘Currency and deposits’ are broadly tallying under both sources and uses, wide differences are noticed in respect of other instruments, particularly under ‘Loans and borrowings’. The outliers under this head are more pronounced for the year 2016-17. In the RBI FOF accounts, negative figure shown under sources is effectively a part of the uses. This inflates the uses, without corresponding entry on the sources side, which looks anomalous. So too in the NAS, the sources under this head are relatively low, compared to the uses for the same year. These outliers need to be examined further. It is also to be noted that within the NAS, the total sources are much higher than the total uses in each of the years. Thus it would appear that the uses seem to be understated.

## Section II

### 3. Quasi Corporations

The categories (3), (4) and (5) cited above are interrelated ,as the estimates of QC (3) are derived from the results of (5) and plugged into (4). The limitations in these QC estimates were mentioned in the previous articles, and will not be repeated here. The main points thereof may , however, be recapitulated: (1)The estimates of QC are compiled for certain compilation categories (a combination of two or more NIC codes at disaggregated levels to be in conformity with the industrial classification in the PNFC) . The inadequacy of sample size for some of the disaggregated groups in the surveys under reference will not yield efficient estimates for the purpose. This will be more complex when such exercise is attempted to generate estimates at the state levels. (2) The MOSPI methodology document (2015) indicates only the adjustments made in respect of physical assets, and not financial assets, in respect of which the exercise is somewhat complicated, as this is to be attempted for each of the instruments under sources and uses. The notes appended to NAS do not make a mention of these aspects. Be that as it may, it is interesting to know the share of QCs in value added. A

rough idea in this regard is worked out from the scattered data available for the base year 2011-12.

Table 2: Share of QCs in GVA of Private Non FinancialCorporations(Rs. crores)

1.GVA for NFC including QCs \$	2518494
2.GVA for NFCs excluding QCs@	1946989
3. GVA of QCs (1)–(2)	571505
4. Share (%) of (3) in (1)	22.7

\$ NAS,2016 ; @Source: (MOSPI,2015)Table 2: GV A for NFC sector Excluding QCs .

It may be observed that the QCs accounted for about 23 per cent of the GVA of PNFC.

#### 4.Private Non- Financial Corporations (PNFC)

The MCA-21 is the primary source for building up the estimates of the Private Corporate sector in the NAS; the estimates are built up using enterprise approach, as distinguished from the establishment approach in the erstwhile series ,as in SNA 2008<sup>1</sup>. The PNFCs cover (1) Public and Private Limited Companies in the Private sector (2) Quasi Corporations (Vide Section 3) and (3) Limited Liability Partnerships (LLP). Of these, the transactions of category (1) are predominant in the PNFC, with the QCs coming next; the share of LLP s is relatively insignificant. The RBI estimates cover only the first category. As the NAS does not provide accounts of the QCs separately,a rough estimate of the QC s in the Gross Value Added (GVA) and saving of the PNFCs needs to be worked out to bring the NAS and RBI estimates on a comparable platform. This exercise is attempted for the years 2015-16 to 2017-18, as it is indicated that the MCA-21 is the primary source of RBI studies on company finances, as in the case of the NAS. If so,the estimates from the two sources are expected to be dimensionally comparable. The estimates of GVA in NAS , bereft of QCs, are worked out for the years under reference , using the share of QCs in the GVA for 2011-12 , as indicated in Table 2. The share of saving in GVA of QCs is worked outfor the relevant years ,based on the results of the NSSO 73 rd Round Survey of unincorporated enterprises ( reference year 2015-16).Though the survey collects data on factor payments in a separate block in the Survey, these are not tabulated. However, the estimates of emoluments, rent and interest can be worked out from

the scattered data in the Report, and operating surplus worked out as a residual, which is taken as proxy for saving of QCs. The estimate derived thus may be a little on the high side, as it is not in conformity with the definition used in the NAS <sup>2</sup>. Second, the factor payments to labour and capital in respect of self employed units cannot be disentangled. With these limitations, the saving estimates of QCs are netted out from the saving of the PNFCs, and made comparable with those of the RBI. The relevant estimates are presented in Table 3.

**Table 3: GVA and Saving estimates of NAS and RBI (Rs. billion)**

	2015-16	2016-17	2017-18
GVA including QCs (1)	43406	48711	54210
GVA of QCs (2)	9854	11057	12306
GVA excluding QCs (3) = (1) – (2)	33552 (20536)	37654 (23232)	41904 (32526)
Gross Saving including QCs (4)	15232	16384	18381
Saving of QCs (5)	6996	7850	8737
Gross Saving excluding QCs (6) = (4) – (5)	8236 (7181)	8534 (4631)	9644 (5366)

Source : 1. NAS 2019; 2. NSSO Report No.582: NSSO 73<sup>rd</sup> Round “Economic Characteristics of Unincorporated Non-Agricultural Enterprises ( Excluding Construction) in India ( July 2015-June 2016)

Note: Figures in brackets are the estimates derived from RBI studies , using the Paid up capital blow up factors. The definitions of GVA and Gross saving as indicated in RBI studies are used for the exercise<sup>3</sup>.

It may be observed that the GVA and saving estimates of PNFC based on the RBI studies are relatively low, compared to those in the NAS. In this context , it is necessary to examine the PUC coverage in the RBI studies, details of which are given in Table 4.

**Table 4. PUC coverage ( Per cent) in the RBI studies----- Public and Private Limited Companies**

	2015-16	2016-17	2017-18
Public Ltd. Companies	39.9	58.7	48.7
Private Ltd. Companies	32.9	39.2	25.7

Fluctuations in the PUC coverage are wide in the three years under reference in the RBI studies. This will eventually affect the estimates of stock and flow data in the latest study of RBI cited



above. The PUC coverage is possibly higher in the NAS. The estimates will be drastically affected in the two sources accordingly. Even though it is mentioned that the MCA-21 is the primary source for RBI studies in recent years as in the case of the NAS, the wide differences may be due to reasons, viz. (1) Differences in PUC coverage in both the sources (2) The accounts in the RBI studies pertain to companies common for the set of three years (3) Cut off dates in receipt of accounts from MCA data base may be different in the two sources. (4) The RBI studies cover only operating companies; companies under construction, which have not yet started production, do not come into picture. It is not known whether such companies are excluded in the NAS<sup>4</sup>. These aspects need to be examined in depth, for ensuring dependable data sets from these two sources.

We may also examine whether the existing methodology can be modified to generate better estimates. If the companies are stratified by PUC separately for public and private limited companies, the companies in the top strata can be studied on a Census basis; estimates can be built up by blowing up for the rest of the companies. The summation of the two will provide a better estimate (as in the case of the estimates in the Annual Survey of Industries), reducing the drudgery of analysing several lakhs of companies each year. This suggestion was also made in one of the erstwhile committees on the subject. As the share of public limited companies in all the characteristics of PNFC is significant, it may be appropriate to conduct quinquennial Censuses for this group to provide a credible data base for some benchmark years, as done by the RBI some time back. A High Level Committee should be appointed to examine the various issues and also the redundancies in data collection and processing by the RBI and the NSO in the area of company finances.

#### 5. Multi subject surveys versus Single subject surveys

In the NAS, the results emanating from the Quinquennial 67<sup>th</sup> and 73<sup>rd</sup> Rounds of the NSSO surveys of unincorporated enterprises are used for working out the estimates of QCs. The GVA of QCs is worked out by the labour input method, as product of GVA per worker (derived from the enterprise surveys) and the number of workers from the Surveys of Employment and Unemployment (SEU) (or the Periodic Labour Force Surveys

(PLFS) introduced recently in lieu of the SEU. As the PLFS is conducted annually, the number of workers derived therefrom may yield a better estimate, while they were extrapolated for the years subsequent to the benchmark year in the earlier practice. Be that as it may, a crucial aspect is the credibility of the estimates of GVA per worker, when they are accessed from multi subject surveys, as distinguished from focused surveys in the erstwhile series. The unincorporated enterprises cover various occupational groups, such as Manufacturing, Trade, Transport, Communications, Services etc. When all these are covered in a multi subject survey, the efficiency of the estimates will be relatively low, and the estimates may not be valid at disaggregated levels for different compilation categories. These aspects were examined in detail in a previous study by SubbaRao (2018). In a study made by Manna and Mukhopadhyay (2015), it was revealed that for the Unorganised Manufacturing, the relative standard errors are higher than in the focused survey for 15 out of 22 compilation categories. Possibly, the multi subject surveys have replaced the single subject surveys from the cost point of view, but in the process, efficiency of the estimates is lost. It is necessary to examine these aspects and revert back to the erstwhile single subject quinquennial surveys. Another issue, as already mentioned in the earlier fora or studies is the longstanding issue of pooling of Central and State sample estimates for each of the Rounds of the NSSO to be kept in public domain; for most of the surveys, the results are available only for the Central sample. The above aspects need to be examined further to provide credible estimates for various segments of the unorganized sector not only at All India level but also at the state levels.

### Section 3: Summary of Observations and Concluding Remarks

As mentioned above, the macro economic aggregates in the NAS are derived from several sources, with varying degrees of reliability. In the absence of true values of the parameters or indirect evidence supporting these estimates, judgments on overestimation or underestimation are illusory. Analysis of the financial aggregates revealed that the financial sources and uses are generally higher in the RBI FOF accounts, compared with those in the NAS, despite enhanced coverage of entities of

the unorganised segments(including QCs) in Financial and Non- financial corporations Sectors. These differences are reflected in many credit instruments also, except in 'Currency and deposits'. It is also observed that the total sources are higher than the total uses in each of the years in NAS , partly because of the incomplete coverage of the financial transactions of the QCs, estimates in respect of which are derived from the results of surveys of unincorporated enterprises, which give very limited information on the financial side. As indicated earlier, MCA-21 has been stated to be the primary source of data for the RBI studies on company finances in recent years. If so, the estimates of PNFC (net of QCs) should be dimensionally tallying. But wide differences are noticed in the estimates of value added and saving of PNFC as detailed above, the RBI estimates being lower than those of the NAS, mainly due to the PUC coverage differences in the two sources.

While passing, a few points on the Households Sector also merit consideration. With the removal of QCs, the Households Sector is eclipsed. In the sectorisation of the economy , the Households sector ( including Non- Profit Institutions Serving Households (NPISH)) is classified as one of the major sectors. Effectively, this is a residual sector, as it subsumes other sectors not elsewhere classified. Illustratively, accounts are not available in respect of some subsectors such as Local Authorities, cooperative non-credit societies and other entities in unorganised sector. As such, this sector covers a heterogeneous mixture of other sectors also not accounted for. The limitations of the estimates of QC derived from massaging the results of the Surveys of Unincorporated enterprises are detailed above. The existing practice of estimating saving and investment of the Households Sector through the residual method is considered unsatisfactory and the High Level Committee on Saving and Investment (MOSPI, 2009) recommended that estimates for ' pure households' ( Consumer Households) are to be worked out by conducting comprehensive income and expenditure surveys <sup>5</sup>. Exploratory surveys in this regard are planned. Even so,

efforts should be made to refine the estimates of unincorporated enterprises by reverting to the single subject surveys , mentioned above.

Even though vital gaps in statistics were identified long time back and discussed in several fora, statistical schemes aimed at data improvement get low priority. What is important for one organisation may not be so for another organisation with different priorities, and action plan takes a back seat. It is necessary to identify the data gaps for each sector not only from the point of view of NAS, but keeping in view the varied demands from the users. Adequate budgetary provision should be made to conduct additional surveys or type studies , and the statistical structure strengthened at the Central and state levels. As already mentioned, there is need to resurrect the single subject surveys in respect of the different segments of the unorganised sector .Further , when two organisations are compiling interconnected systems of national accounts, it is necessary to provide dimensionally comparable and credible estimates, following uniform concepts , coverage, methodology etc.

Data requirements will not be invariant over time. The statistical systems need to be finetuned for the purpose. A case in point is the generation of sub national estimates , being emphasised in recent years. The existing statistical system or the data base may not be adequate for the purpose. At the international level also, high frequency data are solicited for stocks and flows of different sectors of the economy. The Data Gap Initiatives (DGI) enforced at the G-20 fora and Special Data Dissemination Standards (SDDS) of the International Monetary Fund(IMF) on capturing data on stocks and flows of the institutional sectors ( with emphasis on the Financial Sector) are a case in point. Collection of data at granular levels with linkages to the macro economic accounts is also discussed in international fora<sup>6</sup>, in view of the varied demands for disaggregated data from the user organisations. This requires a complete revolution in data capture and processing. In a Federal Statistical System, this

requires decentralised data cleaning and processing also, apart from data capture at grass root levels.

Two decades have elapsed , since the National Statistical Commission was set up to revamp the statistical system in the country. Several developments have taken place in this time period with varied demands of data requirements ( particularly in the post financial crisis period) , increased globalisation and cross border transactions .Stringent norms and financial discipline (e.g Basel norms ) on the lending institutions , and the consequent data requirements became a logical necessity in the Financial Sector.In view of the changing data requirements over time indicated above, it is time to institute another high power commission to examine sectorwise data deficiencies, methodologies and the statistical systems in the country.

## NOTES

1.	This approach is not feasible in working out similar estimates at the state level, for which data from Annual Survey of Industries (ASI) need to be mapped with enterprise data, and suitable adjustments made.
2.	Most of the unincorporated enterprises do not maintain full set of accounts as per the definition of SNA.
3.	<p>The GVA and Gross Saving, as defined in the RBI studies, are given below:</p> <p>GVA= Net value added + Depreciation provision</p> <p>Net Value added comprises (a) Salaries, wages and bonus (b) Contribution to provident fund (c) Employees' welfare expenses (d) Managerial remuneration (e) Rent paid net of rent received (f) Interest paid net of interest received (g) Tax provision (h) Dividends paid net of dividends received (i) retained profits net of non- operating surplus / deficit.</p> <p>Gross saving is sum of retained profits and Depreciation provision</p>
4.	If the companies under construction are not excluded from the numerator and denominator in the PUC coverage, the estimates of saving will be overstated, though investment estimate is not affected on this account.
5.	Incomes are generally underreported in these surveys, as evidenced by the pilot survey conducted by NSSO (1983-84). As such, it will be useful to get details on financial side also, to crosscheck the saving estimates derived from the income and expenditure details.
6.	The International Association for Research in Income and Wealth (IARIW) conducted a special conference in 2015 on the Future of National Accounts. These papers are published in Review of Income and Wealth, Series 63, Supplement 2, December 2017. In particular, reference may be made to Anne Harrison (2017) and Peter Van De Ven (2017)

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