

Ministry of Statistics and Programme Implementation

Proceedings of Awareness Workshop on "Challenges and Issues of Official Statistics" for Senior ISS Officers during 18th - 19th May, 2018 at Bengaluru





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Agenda for Awareness workshop on "Challenges and Issues of Official Statistics" for Senior ISS Officers

Date: 18th - 19th May, 2018

Venue:- M/s Davnam Sarovar Portico Suites, Davanam Plaza adjacent to Total Mall, Opposite Madiwala Police Station, Bengaluru-560068

	Topic- National Accounts				
	Date 18.05.2018				
Time	Event	Speakers			
10:00 a.m 10:30 a.m	Registration				
10:30 a.m10:45 a.m.	Welcome & Introductory remark	Shri Rajeev Lochan, DG (SS)			
10:45 a.m12:00 p.m.	Discussion on methodological changes in compilation of GDP	 Chairperson: Dr. A.C. Kulshreshtha Ex-ADG, CSO Shri J. Denis Rajakumar, EPW Smt. T. Rajeshwari, DDG, NAD 			
12:00 p.m12:30 p.m	Tea break				
12:30 p.m01:45 p.m.	Administrative data (issues and challenges)	 Chairperson: Dr. G.C. Manna, Ex-DG, CSO Shri Sanjay Singh, RBI Dr. Amey Sapre, Consultant, NIPFP Shri S.V. Ramanamuthy, DDG,NAD 			
01:45 p.m02:30 p.m.	Lunch Break				
02:30 p.m04:00p.m.	Other issues related to National Accounts	 Chairperson: Dr. R.B. Burman, Chairman, NSC Dr. A.C. Kulshreshtha, Ex-ADG, CSO Shri Kunal Priyadarshi Smt. T. Rajeshwari, DDG, NAD 			
04:00p.m04:30 p.m.	Tea Break				
04:30 p.m06:00 p.m.	 Panel Discussion on issues emerged in previous sessions. Open discussion 	 Chairperson: Dr. R.B. Burman, Chairman, NSC Panelinst: Shri J Dennis Rajakumar, EPW Dr. A.C. Kulshreshtha, Ex-ADG, CSO Dr. G.C. Manna, Ex-DG, CSO 			

Topic- Employment and Unemployment Date 19.05.2018				
Time	Event	Speakers		
09:30 a.m11:30 a.m.	Users' Perspective	 Chaiperson: Shri D.P. Mondal, DG-NSSO Prof. Ravi Srivastava, JNU Prof. Ajit Ghose, IHD Prof. Alakh N. Sharma, IHD Dr. G.C. Manna, Ex-DG, CSO 		
11:30 a.m12:00 pm	Tea break			
12:00 pm- 1:00 pm	Session-I Continued			
01:00 pm- 02:00 pm	Data Producers' view	 Chairperson: Shri P.C. Mohanan, Member, NSC Shri D. Mukhopadhyay, DDG, SDRD Shri Himmat Singh Raghav, Director, Labour Bureau Dr. Mahesh Vyas, CMIE 		
02:00 pm-03:00 pm	Lunch Break			
03:00 pm- 04:30 pm	Session-II Continued			

Awareness Workshop on Challenges and Issues of Official Statistics

Background:

0.0 Everyday there are numerous innovations shaking and affecting the statistical world and they are pouring in from different parts of the world. There are new data sources that are being identified even for traditional statistical products. Changes in society are demanding new statistics to be generated. A need has arisen to bridge the gap between the users and the producers of the data and a platform to be created where nuances of official statistics and the requirements of users in the present perspective can be discussed in a most transparent manner. Thus, it was felt that exposure and extensive discussions between users, producers and academicians on key indicators i. e. National Accounts, Various NSS Surveys, Agriculture Statistics, Labour Statistics, Prices & ICP, Demography, Health Surveys etc.; in the field of official statistics as well as recent developments like Big Data Analytics, Data Mining, Statistical Disclosure Control is the need of the day. Keeping this in view, TPAC recommended that a series of exposure programmes / workshops may be conducted on various areas of official statistics. The first attempt at such awareness workshop was made during 18th – 19th May, 2018 at Bengaluru to discuss about challenges and issues of Official Statistics particularly in the field of National Accounts and Labour Statistics. This document presents the proceedings of the sessions.

Proceedings:

1.0 The discussions in the first three sessions dealt with (i) methodological changes in the compilation of GDP and (ii) some of the challenges that have emerged particularly in the 2011-12 base year series of the National Accounts Statistics (NAS). The discussions broadly revolved around data users' concerns and clarifications about GDP compilation which were addressed by CSO officials from time to time. In the opening address and also from the remarks of the Chairman of various sessions, the efforts of the CSO in bringing out the new base year revision was appreciated and the focus towards continuous improvements in the NAS was reiterated. Issues related to employment statistics were discussed on the second day. A summary of issues raised and observations from various participants have been summarized towards the end of the proceedings.

Session I: Methodological changes in compilation of GDP

1.1 Dr. Dennis Raja Kumar, from Economic & Political Weekly, presented a broad overview of the methodological changes in the 2011-12 series with a focus on estimates of the manufacturing sector, savings and capital formation and classificatory changes in a few sub-sectors.

1.2 While undertaking the rebasing exercise, the CSO had considered several recommendations provided by the United Nation's System of National Accounts 2008 (SNA 2008). The latest rebasing of NAS had witnessed downward or upward revision of absolute size of NAS aggregates, and the differences in the growth of NAS aggregates and sectoral shares in 2004-05 series and 2011-12 series were of the magnitude non-comparable to the previous exercise. While several changes were welcome, analysts/users were puzzled by the contrast of the accelerating growth and the falling rate of investment and savings in the latest NAS series

1.3 In case of the corporate sector, some specific points from a data users' perspective were mentioned.

1.3.1 In line with the recommendations of SNA 2008, an important methodological change was the adoption of enterprise approach in the place of erstwhile establishment approach for defining an economic unit. Technically, enterprise approach is a broad canvass compared to establishment approach. An enterprise may be a single establishment or a collection of establishments. For instance, each factory of Tata Motors is individually reckoned as an establishment, but collectively they are represented by the company as an enterprise. If a company has only a factory that also houses several departments rendering auxiliary services, that company is then an enterprise and at the same time is also an establishment.

1.3.2 An important database for registered manufacturing sector in the previous NAS series was *Annual Survey of Industries (ASI)*, which surveyed factories as a standalone administrative unit. Thus, the ASI had necessarily followed establishment approach. It was felt desirable to take recourse to data source that would be in sync with enterprise approach. Essentially, this implies that CSO has to rely on database comprising companies' final accounts.

1.3.3 Way back in 2006, Ministry of Corporate Affairs (MCA) aimed to achieve filing of returns by 2021, all corporate entities by through implementation of a novel e-initiative popularly known as MCA21. With effect from 2010-11, MCA21 has been made mandatory. Corporates are now required to file returns in a web platform known Business as XBRL (Extensible Reporting Language) or Forms 23 CA/ACA. The XBRL covered four classes of companies, namely companies listed in any stock exchange in India and their Indian subsidiaries, companies having paid up capital of over Rs 5 crore & companies with a turnover of over Rs 100 crore, Other companies must complete filing of returns through Forms 23 CA/ACA; while Form 23ACA collects information related to profit and loss account, the Form 23CA related to balance sheets. As such, MCA21 is the repository of final accounts of active companies and thus, the CSO's decision to use the data culled from MCA 21 dataset is a welcome step.

1.3.4 However, problems arise while taking into account the companies that may not have completed filing by the cut-off date or when CSO procures data from MCA. In the earlier NAS series, Reserve Bank of India (RBI) undertook the task of building up population estimates of corporate investment (capital formation) and savings based on a thin sample of companies that it studied and by using blow-up method i.e scaling-up data of the sample companies by a factor of the population paid up capital (PUC) to the sample companies' PUC. PUC was obtained from Ministry of Corporate Affairs.

1.3.5 However, there are two problems here. In situations where a company has gone out of business or has become inactive, inclusion of its PUC in the numerator leads to overestimation. Nevertheless, in the absence of any other reliable population parameter, the CSO continues to follow blow up procedure, but it considers PUC of only active companies, which are defined as those who filed returns at least once in the preceding three years. Secondly, it is assumed that companies' final accounts represent true and fair view of business and any misrepresentation of facts, sans any window dressing/fudging of accounts by companies, which, if adopted, would get incorporated into NAS. Albeit,

it was recognized that this aspect may be present even now but accounting for the same is beyond the arena of official Statistical agencies.

1.3.6 CSO Response: The company accounts are audited and checking the veracity/misrepresentation of facts by the company is beyond the scope of CSO

1.3.7 In the absence of availability of timely exhaustive data, use of the available companies' data and adoption of the blow-up method is unavoidable and is the standard statistical technique. However, the issue of keeping only the active units in the frame is sine qua non and must be administratively addressed by the MCA or Ministry of Finance.



1.4 Two other issues relating to double deflation and re-basing of NAS series were also discussed. Issues raised :

1.4.1 <u>Desirability of Double Deflation</u>: One important suggestion by the users of economic statistics is that the CSO should use double deflation method at various compilation levels. Value added is arrived at by subtracting input from output. Since prices of input and output behave differently, it is widely accepted that both should be separately deflated by suitable price indices. This requires construction of input price index as well as output price index. It was pointed out that if data on input prices are not adequate, adoption of double deflation may distort the results. It was suggested that if the methodology of double deflation has merit, the same should be adopted irrespective of outcomes.

1.4.2 Response of CSO officials: It was pointed out that double deflation procedure was adopted for the primary sectors, and CSO largely adopts single indicator methods for industry and services sectors, to estimate GDP at constant prices. The use of single indicator methods has been on account of inadequacy of price data on item-wise inputs. In the case of manufacturing sector as inputs account for a high proportion of output and due to limitations in the availability of price data on inputs, keeping in view the caution sounded in the SNA on the unilateral usage of double deflation method, single indicator method has been used.. It was also pointed out that methodology of deflation and basic source of data had not substantially changed in the new series.

1.4.3 Release of Rebased Lead Indicators along with NAS: When NAS new series was released, analysts/users observed that the growth rate of manufacturing sector as per NAS data had diverged from that of Index of Industrial Production (IIP). Analysts/users knew IIP was an output measure, whereas NAS provided the value added. The IIP used by analysts/users belonged to the previous base year of 2004-05. When the new IIP was released with base year 2011-12, the divergence did not appear so much compared to the previous series. It was pointed out that IIP with base year 2004-05 was the only available lead indicator for manufacturing sector at the time when NAS new series was released.

1.4.4 Response of CSO: In the 2004-05 series ASI results were used for estimating value added from manufacturing sector, and when ASI results were not available (ASI results are available with a *lag*), IIP was used. Hence for a particular year when ASI results are not available entire GVA of manufacturing sector was based on IIP. This lead to a significant revisions in GVA of manufacturing sector. In the 2011-12 series, on account of use of MCA data base for the private corporate sector (which is around 70% of the total GVA manufacturing), use of IIP is now reduced to just 21% of total GVA manufacturing. This has reduced the magnitude of revisions.

1.4.5 An important recommendation here is that CSO must rebase indices such as IIP, Consumer Price Index (CPI), Wholesale Price Index (WPI) and so on to the base year of NAS and release them simultaneously with new base year series.

Session II: Administrative data: Issues and challenges

1.5 In a presentation made by Shri Amey Sapre, NIPFP, some conceptual issues and data users' concerns were highlighted under three broad areas;

- Issues with MCA21 data in the context of the new Enterprise approach.
- Issues with the growing divergence between the consumption as per NSS estimates of the Household Consumption Expenditure and the NAS Private Final Consumption Expenditure (PFCE).
- Issues with revisions in GDP data

1.6 Though it was appreciated the 2011-12 base year series has greatly improved the coverage and quality of the macroeconomic aggregates, however, as data users' in general concentrate and use a limited set of macro aggregates and thus the concerns raised broadly related to sectoral estimates, such as manufacturing, or services sector, the expenditure side of GDP, Gross Capital Formation and revisions in GDP data.

1.7 The use of MCA21 dataset for the (organized) manufacturing sector has certainly improved coverage of firms, but has led to some complications in computation and estimates.

1.7.1 On the conceptual front in the manufacturing sector, the move from the Establishment to Enterprise has led to a lot of debate. The traditional source of manufacturing sector output has been the ASI, which provided a volume based measure of economic output. However, under the enterprise approach, financial data available from the MCA is used to infer value addition at the overall 'enterprise' level, instead of a factory unit. This shift has also led to capture of services related output of the company (especially trading or financial services) which may have inflated the total output of the company. While this is not a problem per-se under the enterprise approach, the issue is whether such inclusion of services related output distorts the manufacturing sector's output in comparison to the output presented by ASI. Issues with deflator (WPI) which is being used to deflate nominal values of the manufacturing sector was also highlighted. Similar issues were also raised by Sh. Dennis Rajakumar and elsewhere in regard to the MCA21 dataset. When the PPI would be made available for use in National accounts, this would improve the quality of deflators used.

1.7.2 MCA21 dataset is also being used for preparing estimates of the organized services sector. However, the issue of coverage of companies in

each service sector compilation category has not been adequately flagged.

1.7.3 The issues with the PUC based blow-up factor were also highlighted. Since a small percentage of large (top 4000 or so) companies contribute substantially (i.e. more than 85%) to GVA in the manufacturing sector, the concern that the blow-up may lead to a possible overestimation remains to be examined. The blow-up procedure has also been discussed in detail separately and on the basis of simulation exercise (owing to non-availability of MCA data in public domain) based on random samples of PUC coverage, it was shown that PUC based blow-up may lead to overestimation.

1.7.4 The issue of identification of production costs under the enterprise approach was also raised. Under the ASI, costs associated with production can be directly identified, whereas such identification from Profit/Loss statements of companies is less precise and cumbersome.

1.7.5 One of the major challenges in using the MCA21 data is to produce state level estimates of the manufacturing sector. Since state level identifiers (i.e. statewise operations of companies) are not directly available in the MCA21, allocation of statewise GSDP of manufacturing sector has become complicated. The present method of using statewise proportions of value addition from the ASI is the only available recourse, but it may not provide representative estimates at the State level.

1.7.6 Another last issue related to MCA21 data was the identification of manufacturing firms in the dataset. Since using CIN is the only recourse available, it may lead to a possible misclassification of manufacturing firms. These concerns have been

highlighted in academic papers, but are yet to be resolved in the official data.



1.8 Some other issues, as narrated below, were also flagged;

- The growing divergence between NSS estimates of HCE and the NAS estimates of PFCE is a matter of grave concern. During discussion, the issue was also supplemented by former CSO officials that the discrepancy between NSS and NAS consumption estimates needs to be resolved. This discrepancy may be on account of several factors like understated expenditure from the NSS Consumption Expenditure Surveys owing to recall issues or social consideration, inadequate capture of higher income households etc. Also, since the NAS estimates also include the contribution of NPISH, there has been limited assessment of their contribution in explaining the divergence between component wise consumption expenditure of NAS and NSS.
- On the issue of use of double deflator, officials reiterated that in absence of a complete price vector on inputs and outputs, it might be difficult to implement the double deflation method. Also conceptually, it has been shown that double deflation may distort the results in the absence of

appropriate input price indices. Technically, it has also been shown that double deflation is more suited to sectors (or economic activities) where value addition is a substantial part of value of output, i.e. GVA is a large component of GVO. Also, theoretically, several other problems related to the requirement of a stable input-output relation have also been discussed. See Dholakia (2015) for a detailed discussion and treatment of the problem at hand.

- In the context of re-basing and the release of the NAS, it was reiterated that as per recommendations of the NSC, all related macro series ought to release simultaneously on a common base year. Such a practice will hopefully avoid confusion and data related problems for all stakeholders.
- To analyse the recall issues, it was pointed out that changes had been incorporated in the survey design to understand the impact of different recall periods on consumption expenditure. For instance, whether a 7 day recall period (particularly for food items) provides a much reliable estimate as compared to a 30 day recall period?
- Most important issue, it was pointed out, in this regard was the limited discussion on non-sampling errors that may have affected the overall quality of consumption related estimates.
- Presently, state level estimates of household consumption expenditure are not available as part of the NAS. Since preparing all components of the expenditure side may not be possible at the state level. Users' were of the view that availability of these aggregates at State level would facilitate deeper analysis.

• On revisions in GDP data, it was highlighted that while revisions at the aggregate GDP level were not large in magnitude, the successive revisions (from 1st Advance estimate to 3rd Revised Estimate) at the sectoral level are large and unpredictable. Given such revisions, it is difficult to rely on the gain predictions on the magnitude (or even the direction) of growth rates of sectors. While revisions are inherent and part of the process of compiling national accounts, the effort has been to improve precision despite severe data limitations. However, in this context, there is a need for having detailed explanatory notes for revisions. Lastly, some possible initiatives were mentioned in the course of the discussion: (i) preserving vintage data on revisions for a detailed analysis and building of revisions metrics as followed in other countries, (ii) presenting a calendar of release for state level estimates and (iii) examining the choice of physical indicators used for compiling Advance Estimates and also for subsequent estimates (physical indicators are used for extrapolation in the Revised estimates), especially after the changes in tax structure.

Session III: Other issues related to National Accounts

1.9 Participants from the RBI also presented a paper on revisions in GDP data to highlight the extent and magnitude of revisions in aggregate and sectorwise GDP. The issue was discussed in the context that Advance Estimates provide an early and preliminary assessment of the economy and thus are widely used for policy purposes (eg: setting interest rates). Thus, there are issues of subsequent large revisions in growth rates make it difficult for policy makers to make an assessment of the growth performance of the economy. There are similar issues at the state level as such series are used for calculation of basic macro aggregates such as fiscal and revenue deficit as a percentage of GSDP.

1.10 Senior CSO officials also made two presentations to explain methodological changes incorporated in the 2011-12 series. Ms. T. Rajeswari, DDG, NAD updated users and other officers about the basic guiding principles of base year changes, changes made with respect to sectoral classification and introduction of new methods like the Effective Labor Input Method (ELI). The presentation also touched upon issues that were frequently raised in media about the problems relating to GDP estimates.

1.11 <u>CSO response</u>: Regarding the RBI paper on revisions it was pointed out that revisions in national accounts were as per the revision policy of national accounts depending on the availability of data sources. Any change in source data also gets reflected in the GDP estimates. Further, it was pointed out that the revision analysis done in paper was between estimates of a particular year pertaining to two different base years and as such these estimates are not comparable.

1.12 It was also highlighted that CSO prepares Advance Estimates based on several high frequency indicators and benchmarking procedures that were settled principles in the National Accounts. The Advance Estimates provide an estimate and direction of the growth of the economy two months before the end of the financial year. The estimates are compiled based on data and indicators that are available and not based on, anecdotal evidence.

1.13 Shri SVR Murthy, DDG, NAD made a detailed presentation about the methods and data sources used in the new series. He also highlighted some concerns about data limitations in the

corporate sector and emphasized that although the current practice had been in place for a long time, alternatives to the PUC based blow-up factor and identification of companies in the MCA21 dataset needs more investigation and analysis. Some of the essential points covered were;

1.14 There are considerable challenges in producing estimate for the public sector, Departmental Enterprises and autonomous enterprises. Data from such entities and budget documents is available only in a PDF format and it requires manual transcription to convert them into a usable data format. This is time consuming and cumbersome process for the CSO. Moreover, it has also been observed that, in several cases, estimates do not tally with respect to Annual Financial Statements. New processes need to be explored to facilitate use of data and compile estimates of such entities.

1.15 Progress has been made in respect to identification of companies in the MCA21 dataset. The use of MGT7/9 form has few details of products and the nature of business activities which may be useful in classification of companies. The resolution will require linking of financial statements with MGT7 form to arrive at a better classification of companies. This linking will also help in allocation of GVA to entities in case of mixed/multiple business activities.

1.16 For statewise allocation of GVA, alternative data from GSTIN, EPFO etc. can be explored to arrive at some characteristics that can be used as a measure of size. Also, survey based information of large sized companies needs to be explored for purposes of statewise allocation.

1.17 In case of the unincorporated sector, it was felt that the sample size (73^{rd} round) was inadequate for

a state level representation and also at the compilation category level. There is lack of indicators such as IIP, ASI (HUF) which constrains the estimation and allocation issues.

1.18 Similarly senior officials also emphasized the new challenges faced by the statistical system in terms of a growing digitized economy. For instance, on E-commerce activities, information on digital transactions is available with the National Payments Corporation of India. Data availability in respect of specific e-commerce transactions need to be explored. Peer-to-Peer (consumer to consumer) transactions facilitated by web-based intermediaries like Uber, AirBnB etc. also need to be explored. On prices, quality-adjusted deflators for digital goods and services are required. In the Financial sector, transactions in emerging areas like Payments bank, credit card operations etc. also need to be captured.

1.19 Conceptually, as more consumers tend to act as producers, there is a blurring of the concept of the production boundary. In this context, internet access by households has led to blurring between household production for market purposes, own account production, consumption like self-booking of tickets for travels (air/rail/road/water), booking of hotel accommodation or movies. This needs to be appropriately incorporated in the National Accounts.



Summary of issues:

1.20 Dr. A C Kulshreshtha, Ex-ADG, NAD chairing one of the sessions, welcomed the presentations and the concerns raised by various stakeholders. Dr. G C Manna supplemented and shared several concerns on conceptual and data related issues, particularly in areas of (i) growing divergence between NSS and NAS estimates of consumption expenditure and (ii) the use of ASI based estimates and other indicators and aggregates for allocating all-India GVA to derive state wise estimates of GVA for manufacturing and other sectors of the economy.

1.21 The chair also recognized that:

- There have been growing demands on the official statistical system in terms of data requirements. However, there has also been a sense of inertia within the system to keep pace with changing requirements and adaptability to such demands. Lack of resources, staff strength and coordination with states has led to constrains on periodic surveys and overall compilation of GDP estimates. In response, it was reiterated that the CSO has been working with the states on several initiatives to meet with the requirements, especially in finalizing state level estimates.
- Other areas of national accounts statistics such as; Supply Use Tables (SUT), Flow of Funds, Sequence of Accounts, Regional Accounts, District Domestic Product, were also highlighted by the chair.
- NSS surveys have played a pivotal role in presenting the most detailed and comprehensive assessment of various Socio-economic Indicators. However, it has been reiterated that limited frequency of many surveys has been a cause of concern for various stakeholders and these issues need to be taken on priority.

Specific points related to data users' concerns, requirements and possible way forward

1.22 As an outcome of the deliberations on National Accounts, the issues and concerns which need resolving are summarized herein below:

- i. The new series of National Accounts with base year 2011-12 does not provide estimates of National Income at factor cost and which has always been considered by economists as real measure of income. It was however clarified in this regard that as per 2008 SNA, the Net National Income at market prices is considered as measure of National Income and it includes taxes less subsidies on products. Users requiring measure without tax component may make use of GVA at basic prices.
- ii. The publication 'National Accounts Statistics-Sources and Methods for the revised series' is still not available to the user to understand what exactly are the changes in the methodology and the data sources. It was pointed out that CSO had released a Brochure entitled "Changes in the Methodology and Data Sources in the new series of National Accounts" in June 2015 giving the Sources and methods used in detail.
- iii. To analyse a Revision Matrix, users can not readily find numbers of various revisions as these are not properly documented on website and there is no data bank.
- iv. A major change in the new series on data source is MCA dataset in place of the earlier ASI data. However, MCA data raises several questions, like blow-up factor, fact that a large number (more than 30%) of companies were not found available on ground, details of inputs, employment or products (or even location) are not fully available.

- v. Use of MCA data has created problems as such data for the earlier years/previous series is not available. It may be one of the reasons that back series is still not available.
- vi. Also, with this change, States are not able to prepare their GSDP estimates independently as MCA data is not available at State level.
- vii. Ways to improve the MCA data for its use in national and regional level need to be given utmost priority.
- viii. It was mentioned that quasi-corporate segment was also treated as the corporate sector as the quasicorporate (which includes cooperatives and directory establishments) covered in the Enterprise surveys have the complete set of accounts in accordance with SNA 2008.
- ix. Estimates of Un-organized segments in manufacturing and services sectors in the new series show a significant change (even downward for certain products?). Though use of Effective Labor Input Method, to improve the quality of the GDP was appreciated, it was also pointed out that the method was not very clear to users.
- x. The difference in the estimates of NAS's PFCE and NSS's HFCE has become quite large over time. It used to be something like 20-30% in 1980's but now it is of the order of 45 per cent.
- xi. Data on trade margins is scanty, though the requirement is in respect of all products as estimates of supply are at basic prices and all uses are at purchaser's prices (market prices) and these are to be brought at same price level for the computation of PFCE, which is obtained by commodity flow approach.

- xii. Enterprise Surveys do not provide reliable estimatesxvi. of certain compilation categories and at State level, which is a serious problem. In such scenario preparing District level estimates is quite problematic.
- xiii. Requirement of relevant physical indicators for moving the estimates of services sector was highlighted.
- xiv. Issues of use of appropriate deflators were raised. In some cases, the constant price estimates were found to be even higher than the current price estimate_{xvii}. This normally happens when constant price estimates are estimated by volume extrapolation and volumes are growing at a higher pace and growth rate of prices of these commodities are falling in the negative zone. xv
- IIP based advance estimates/First revised estimates XV. of GVA and the later ASI based quick/revised estimates show a wide range of difference (even in terms of direction). Though the IIP is a measure of change in output but is used to obtain GVA in the National Accounts. It used to give rise to substantive difference in the revisions of the estimates. CSO Response: In the 2004-05 series ASI results were used for estimating value added from manufacturing sector, and when ASI results were not available (ASI results are available with a lag), IIP was used. Hence for a particular year when ASI results are not available entire GVA of manufacturing sector was based on IIP. This lead to a significant revisions in GVA of manufacturing sector. In the 2011-12 series, on account of use of MCA data base for the private corporate sector (which is around 70% of the total GVA manufacturing), use of IIP is now reduced to just 21% of total GVA manufacturing. This has reduced the magnitude of revisions.

For constant price estimates double deflation method is used for agriculture. Question as to why it is not used for manufacturing was raised. An Expert gave a presentation on the estimates of manufacturing in the ASI segment by double deflation through an exercise and showed the significant difference in the two approaches. Feasibility studies need to be undertaken in respect of the manufacturing as was the consensus. With the availability of PPI from OEA, DIPP, the procedure of double deflation could be adopted.

Services sector Price index is still not available. The feasibility of obtaining experimental Service Price Index for certain services from DIPP, Ministry of Commerce needs to be explored.

- xviii. Sales tax data has been used to move the estimates of unorganized trade sector in past. With the introduction of the Goods and services tax(GST) GST data (trading volumes to be estimated) would be used for compiling GVA trade.
 - xix. Estimates of certain services sector such as entertainment service have been based on information of the service tax. Now with the establishment of GST at present corporate growth rates are being used
 - xx. Non-Profit Institutions (NPI) serving Government are accounted for with the General Government. Whereas NPI serving central government coverage is satisfactory, the coverage of NPI serving State government is not up to mark. The State governments have been requested to prepare a frame of NPIs so that estimates could be compiled for inclusion in National accounts aggregates.
 - xxi. The Rangarajan Committee recommendations and other committee's recommendations on Agriculture have still not been implemented in full. Agriculture

has substantive contribution and needs attention. xxvii. There is need to conduct surveys on NPI servingEstimation process of agriculture GVA requires a lotHouseholds (NPISH) so that we have HFCE andof improvement.NPISH FCE final demand categories in position and

- xxii. To implement SNA 2008, recommendations the most important recommendation about the reconciliation of supply and use of all products in the Supply and Use Table (SUT) framework have not been implemented. SUT has to be taken as an integral part of compilation of GDP and sequence of accounts. CSO has prepared SUT for 2011-12 and 2012-13 but the balanced GDP derived from SUT has not been adopted for sequence of accounts. This task needs to be given priority.
- xxiii. All the changes made in the methodology and data base in the new series were explained by the producers (the CSO officers). Though the document pertaining to changes in the new methodology is available in public domain; but detail methodology i.e. "Sources and Methods" and "Back Series" are still not available.
- xxiv. Steps being taken up for improvement of estimates of GDP for the sectors of financial services and business services by finding new web based data sources were mentioned.
- xxv. More frequent information on labor force data from the ongoing Periodic Labor Force surveys (PLFS) was expected. It would, likely, help in improving services sector estimates for the unorganized segments making use of LF as the physical indicator.
- xxvi. Mention was also made of conducting annual surveys on Services sector in future based on success of 74th Round results. These surveys will however cover only organized segment of the services sector. But the problem remains for unorganized segments of services sectors where there are serious lacunae.

There is need to conduct surveys on NPI serving Households (NPISH) so that we have HFCE and NPISH FCE final demand categories in position and the estimates of supply and use of various products reconciled in the SUT framework. It will hopefully reduce the wide existing difference between HFCE and PFCE.

1.23 The entire proceedings were also summarized by Shri RB Barman, Chairman NSC in the concluding session who highlighted the need to revamp the statistical system in the light of changing nature of the economy and data requirements. The use of Big-Data and exploring linkages of various micro level data need to be considered so as to keep pace with the changing nature of data production and usage.



EMPLOYMENT AND UNEMPLOYMENT DATA

Session 1

2.1 In the first session there were four speakers namely Dr G.C. Manna, Ex DG, CSO; Prof. Ajit K. Ghose; Dr Alakh N. Sharma, Director, Institute for Human Development and Prof. Ravi Srivastava, JNU. The session was chaired by Shri D.P. Mondal, Director General, NSSO. 2.2 Dr G. C. Manna (Ex DG, CSO), presented his findings and conclusions based on a preliminary analysis about the level of precision in respect of Labour Force Participation Rate (15+) and Unemployment Rate (All Age-groups) that is likely to be achieved in the ongoing PLFS where it is proposed to estimate the current levels by treating the sample as the independent one even in case of urban areas where there is a 75% overlap in the sample between any two consecutive quarters.

2.3 In his study, Dr. Manna used state-wise estimates as per NSS 68th round (2011-12) as the benchmark estimates of current level parameters (p). From the allocated number of sample primary sampling units (PSUs) and number of sample households per PSU in the PLFS, likely sample number of persons (n) for the respective denominators of LFPR and UR to be netted in the PLFS has been worked out at state level. By using state-wise respective values of p and n and assuming a design effect of 2, likely level of RSE (Relative Standard Error) to be achieved in the PLFS is derived. Further, state-wise upper and lower confidence limits of estimated levels as per PLFS associated with 95% confidence level have been worked out. The adequacy of the PLFS survey design to detect specified change in the levels were also commented upon.

2.4 Broad findings are as under:

- PLFS sample size appears to be adequate for estimating state-wise LFPRs within acceptable margin of error.
- Sample size seems to be inadequate for reliable estimates of URs for most of the states.
- For a large number of states, confidence limits associated with the level parameter are likely to deviate from mean value by more than 2 percentage

point in case of LFPR and by more than 1 percentage point in case of UR.

- Survey design including the adopted sample size seems to be not capable to detect change of even 2 to 3 percentage point in case of LFPR and change of 1 percentage point in case of UR leave apart the change of smaller dimensions which would require much larger sample sizes for majority of the states.
- For all-India, survey design is quite robust to estimate level parameters within acceptable margin of error and also to detect even small change in the respective level parameters.

2.5 At the outset, Prof. Ajit Ghose, opined that he had been an admirer of the NSS surveys on employment and unemployment and had made extensive use of these surveys. He also stated that he had recently worked on a report (India Employment Report 2016), in which he provided detailed analysis of the current state and past evolution of employment conditions in India based on data from the NSS surveys and found the surveys to be very good, much better than the usual labour force surveys carried out in most countries of the world.



2.6 Some of the important issues emerging from his presentations are as follows:

- The standard Labour Force Surveys have been designed considering employment and labour market conditions prevailing in developed countries where employment basically means regular salaried employment (albeit there usually is a small amount of self-employment) and unemployment is excess supply of labour in relation to demand. The existence of a variety of social assistance programmes including unemployment is affordable and that there is a minimum supply price of labour.
- Conditions are fundamentally different in developing economies such as India. Here regular salaried jobs account for a very small proportion of total employment. Much of the employment is either self-employment or casual wage employment.
- In these types of employment, there is underemployment and work-sharing. In fact, underemployment arises from work-sharing.
- Surplus labour shows up in underemployment, not in unemployment.
- In the absence of social assistance programmes, most people cannot afford to be unemployed. They must work even if the work they can find is irregular, part-time, low-productivity and lowincome-yielding. That's why work-sharing exists and that's why many of the employed are poor.
- But we do have some unemployment. How does this arise? Unemployment in India represents queuing by the "young and educated" for jobs in the formal sector of the economy. Queuing involves waiting. So, the "young and educated" must be supported through the waiting period. In the absence of social

assistance programmes, the "young and educated" have to be supported by their families through the waiting period which means they come from relatively well-off families. There is no surprise here. In India, very few of the educated come from poor families.

- This is the "complex reality in a big country" that the NSS surveys had been designed to capture. That's why sophisticated sampling methods and multiple reference periods had to be used and multiple concepts of employment and unemployment had to be devised.
- NSS employment and unemployment surveys have done a remarkable job of capturing "the complex reality in a big country" that has been talked about, thereby enabling the users, to develop a good understanding of how the employment conditions in India's dualistic economy has been evolving.

2.7 Why, then, do we hear so many complaints about the inadequacies of the NSS surveys? There are three main reasons viz. frequency of surveys, presentation of results and conceptual confusion.

- Firstly, Undoubtedly, the NSS surveys, being elaborate and costly operations, have been infrequent. With occasional exceptions, surveys have been conducted every five years since the early seventies. This naturally posed problems for users;
- Secondly, it is also true that survey results were presented in forms that were not readily usable. Users looking for an overall participation rate would have to estimate it, which required quite a bit of effort. And if one wanted to know the size of the labour force, one would have to derive population figures from censuses and use these together with the detailed participation rates. Again, an additional

publication giving the estimates (already using census population) would have been helpful.

Thirdly, there is a serious lack of understanding of the employment and labour market conditions in India among researchers in India. Many assume these are the same as those in developed countries. Since the early 1980s, the growth of labour force has been decelerating basically because of declining female participation rate, leading to decelerating growth of employment. This has been sometimes called jobless growth since the GDP growth has been accelerating during this period. Thus, there appears to be an inverse relation between GDP growth and employment growth. This has been interpreted to mean a rapidly declining employment intensity of growth while in truth, this only shows decelerating labour force growth. This shows a lack of understanding of employment and labour market conditions in India.

2.8 Even though the third kind of criticism can be ignored at official level (being beyond their control), but the first two kinds of criticisms can and should be responded to. In addition to the detailed reports, NSS should bring out publications giving estimates of certain variables in absolute numbers using census population.

2.9 Finally, the absence of high-frequency data has now led to a desperate search for such data. One result is the recent release of monthly estimates of payroll data derived from certain databases such as EFPO, ESIC and NPS. In a way, this exploratory exercise should be welcomed but the disquieting fact is that some analysts/users have shown a serious lack of understanding of what these estimates can tell us in the best of circumstances. Some such researchers even view these data as substitutes for data generated by the NSS surveys. 2.10 In the best of circumstances, these administrative sources can give us partial estimates of formal employment defined as regular employment with entitlement to some kind of social security. It was reiterated that it would only be partial estimates definitionally because enrolment is not obligatory for workers who earn an above-threshold salary. In the case of EPFO, for example, the salary threshold is Rs. 15,000 per month.

2.11 On the other hand, NSS surveys, since 1999/00, have generated data from which estimates of formal employment can be obtained with greater clarity. In addition, the PLFS should now provide the annual estimates. Payroll estimates will make comparative analysis possible, just like the estimates from the ASI. These databases, however, should be cleaned up and properly processed to produces estimates that can complement other available employment data.

2.12 Prof Alakh N. Sharma, pointed out that given the complexities of the Indian labour market, it is difficult to come out with robust indicators of employment and labour market performance like developed countries. Therefore, unemployment is not a valid indicator here and India has developed its system of estimation of own employment/unemployment based on Usual Principal Status (UPS); Usual Principal and Subsidiary Status (UPSS); Current Weekly Status (CWS) and Current Daily Status (CDS). These concepts are unique for any developing country and have more or less served well.

2.13 However, there are certain problems and limitations related to NSS Survey on Employment and Unemployment as given below:

- Issue of reliability of estimates below state level i.e. region/district level. There are even precision issues for smaller States/UTs;
- Methodological interventions through increase of sample size or otherwise including pooling of central & state sample data;
- High margin of errors associated with unemployment rates by gender even at the state level for a number of states;
- Refinements through stratification /sampling techniques;
- Tackling the issue of underestimation of population for urban areas (e.g. improving UFS frame, modifying stratification and sampling techniques etc.);
- Underestimation of workforce, particularly women workers in the informal sector (e.g. huge difference between estimates of 1999-00 and Time Use Survey of 1998-99 conducted by CSO);
- Also significant divergence between estimates of unemployment rates between different surveys (eg Unemployment estimates of NSS quinquennial round 2011-12 and Labour Bureau survey of 2011-12; and
- Some crucial indicators, pointed below, are not directly available from these surveys:
- ➢ Out-migration
- > Activity pattern of those outside labour force
- Quality of employment
- Spell of unemployment
- Earnings of Self-Employed
- Contract Labour

2.14 Prof Ravi Srivastava, in his presentation emphasized the need for providing data as per the recommendations of 19th International Conference of Labour Statisticians (ICLS) and given the overview of the practice followed on the Labour Force Surveys (LFS) in some of the neighboring counties (Nepal, Bangladesh and Sri Lanka) in the Region. The general observation was that most countries have moved to quarterly surveys, all surveys now use Current Weekly Status (CWS); all surveys, except India, collects hours of work, at least for principal and secondary activity "for pay or profit". Major issues with the NSS Quinquennial Rounds, apart from no survey after 2011-12, and limitations of PLFS are as follows:

NSS Quinquennial Rounds:

- Periodicity of the data (several countries, even in the region moved towards QLFS)
- Coverage of issues smaller than most countries in the region (LFS in many countries much more exhaustive in coverage of issues).
- Since 2013 and the 19th ICLS, there has been an issue of moving towards new standards in measurement which can provide deeper understanding of labour market dynamics (unaddressed in the PLFS also).

Limitations of the PLFS 2017-18:

- With the PLFS, focus has shifted to employment for pay or for profit.
- Only the first visit will provide estimates of employment across rural and urban areas (will ignore rural-urban labour flows, seasonality issues more germane to rural areas).
- Coverage of issues more restricted than the quinquennial rounds.

- Conceptual framework not consistent with 19 ICLS

 even in the PLFS, hence revision in the focus and conceptual framework ignored.
- Voluntary paid and unpaid work, trainee work, work in co-operatives excluded.
- Subsidiary work on household production of goods for own use captured as non-work
- Care work (work on household production of services for own use) not captured

Session II

2.15 Shri D. Mukherjee, DDG (SDRD), NSSO after giving a brief of employment and unemployment surveys conducted so far by NSSO, apprised the status of implementation of recommendations of 19th ICLS. It was observed that the feasibility of implementation of the recommendations of 19th ICLS to the extent possible in the Labour Force surveys of NSSO is being examined and on the recommendations of Standing Committee on Labour Force Statistics (SCLFS), a Sub-Committee has been formed to identify the specific recommendations of the 19th ICLS which will be considered for inclusion in the Pilot Survey.



2.16 Position of NSSO, on the issues raised by the data users, is summarised below:

- (i) <u>District level estimates:</u> NSSO sample size does not permit presentation of reliable estimates at the district level. The sample sizes so designed for the surveys of the NSSO are the modest in nature and are fixed in such a way that it is possible to get some usable estimates at the national and State level.
- (ii) Underestimation of Population: Differences could perhaps be partly due to the difference in geographical coverage and coverage of segments of population. Census generally covers the entire geographical area of the country. However, in NSS some areas are usually not covered because of the operational difficulties. NSS also excludes the certain categories of persons from its coverage e.g., persons residing in barracks of military and paramilitary forces, Orphanages, rescue homes, ashrams, vagrant houses, floating population having residences. convicted no normal prisoners undergoing sentence etc. Difference could also be due to non-sampling errors. Certain measures have been taken in 76th round to tackle these issues.
- (iii) <u>Difference with Time Use Survey:</u> Users mentioned that there is difference in labour force statistics available from the Employment & Unemployment survey of NSS with that of obtained from the Time Use Survey conducted during 1998-1999. It was also observed that CSO conducted a pilot survey on time disposition, popularly known as Time Use Survey during the year 1998-99 through the State Directorate of Economics & Statistics in 6 selected states namely Haryana, Madhya Pradesh, Gujarat, Orissa, Tamil Nadu and Meghalaya. Since the scope and coverage of the survey was limited in nature, it may not be appropriate to compare the findings of TUS with those of EUS which is known to provide robust estimate at all India level.

- (iv) <u>Difference with Labour Bureau Survey</u>: Labour Bureau has been conducting annual Employment-Unemployment survey since 2010. The concepts and definitions used in this survey for measurements of the labour force are similar to those used by the NSS. However, information on various aspects of the labour force is collected from persons of age 15 years and above in these surveys by Labour Bureau whereas NSSO in its employment-unemployment surveys collect information for all the household members.
- (v) <u>Data on contract labour, earnings from self-employed and migration</u>: Users pointed out that data on contract labour, earnings from self-employment and migration are not available from EUS of NSSO. It was therefore clarified that:
- The a) Contract labour: National **Statistical** Commission (NSC), considered the proposal of the Ministry of Labour & Employment to conduct the survey on contract labour and decided to constitute a Working Group to suggest the methodology for the survey. The Report of the Committee was considered by the NSC. It was felt that definitional clarity on contract labour is much needed to measure it and recognized that there could be alternative approaches. While it may be true that none of the approaches would be complete for the purpose in view, it would be necessary to identify the most appropriate one or a combination thereof to address the issue. The NSC desired that the NSSO may experiment different approaches in the field and come out with the findings.
- b) Earnings from self-employed: Traditionally earning from wage and salaries are collected in EUS. However in PLFS, earnings from self-employment are also collected.

- c) Migration: Data on internal migration has been collected by the National Sample Survey as part of its enquiries on employment and unemployment in its 38th round, 43rd round, 49th round, 55th Round and 64th Round.
- Limitation of PLFS: Users stated that recently vi. launched PLFS is limited in coverage of issues. Information on disability, occupational health, main job etc., are not available from PLFS. Further PLFS does not implement ILO's recommendation of 19th ICLS. The objective of PLFS is to measure the dynamics in labour force participation and employment status in the short time interval of three months for the urban areas only in the Current Weekly Status (CWS). Thus, in every quarter, PLFS will bring out the level and change estimates of the key labour force indicators in CWS viz. Worker Population Ratio (WPR). Labour Force Participation Rate (LFPR), Unemployment Rate (UR). The SCLFS committee took a conscious decision to keep the schedule of enquiry of PLFS small in the initial years. Provisions have been made in the schedule to integrate various topics as separate module in future. Further, SCLFS is already examining issues related to the ILO's recommendation of 19th ICLS. Conducting a pilot survey to take care of various recommendations of the 19th ICLS is also under consideration.
- vii. <u>Data on child labour</u>: Demand for data on child labour has been discussed on different occasions. It is generally acknowledged that the format of the employment and unemployment surveys of NSSO (including PLFS) may not be suitable to collect data on child labour and it requires a specialised focused survey to collect data on child labour.

2.17 Shri Himmat Singh Raghav, Director, Labour Bureau in his presentation apprised of the details of the three main surveys conducted by Labour Bureau related to Employment and Labour Force indicators. Keys features in respect of these surveys are:

- (i). Annual Employment-Unemployment Survey (Periodicity: Annual, Type: Household survey): In order to fill the data gap for ascertaining the Employment-Unemployment Scenario in the country, Labour Bureau has been entrusted by the Ministry the task of conducting Employment-Unemployment (EUS) surveys on annual basis. So far, five annual employment-unemployment surveys have been conducted by Labour Bureau for the years 2010-11, 2011-12, 2012-13, 2013-14 & 2014-15 and reports of all five surveys have been released. The field work of Sixth Annual Employment Unemployment Survey has been completed and data processing is in progress.
 - (ii) Quarterly Employment Survey (Periodicity: Quarterly, Type: Establishment survey): The main objective of new series of Quarterly Employment Survey (QES) is to measure relative change in employment situation over successive quarters in sizeable segment of Non-Farm Industrial economy. QES collects information on the employment as on 1st day of respective quarter in which the survey is conducted (i.e. data is collected as on 01st April 2016 for the field survey period 01 April to 30 June), in respect of number of males/females, full-time & part-time, regular, contract and casual employment by economic activity. The sample size, at the beginning of the survey was around 10,600 units which has been further increased to around 11,000.

However, to get a more realistic picture of Employment scenario in the country, the expert Group on QES felt a strong need to extend coverage of QES (which covers approximately 1.4% of establishment as per 6th EC) to the Establishments with less than 10 employments (remaining 98.6 % of establishments). Since there is no readily available sampling frame for Establishments with less than 10 employments, The Expert Group has recommended Area Frame Survey for estimation of employment in establishment with less than 10 workers in 7000 First Stage Units (3500 Villages & 3500 Urban Blocks). The total sample size of proposed survey would be around 126000-140000 establishment (7000 FSU X 18 to 20 Establishment per FSU).

(iii) Estimation of Employment Generation under PMMY: The main objective of the Survey is the Estimation of Employment generation under Pradhan Mantri MUDRA Yojna (PMMY). PMMY survey is an establishment survey to collect the information on generation of employment in sectors different broadly categorized as Manufacturing, Services, Allied agriculture. Trading and any other sectors which have been assisted under the PMMY. Under PMMY, at all India level, nearly 5000 branches of Public/Private Sector Banks and MFIs, as First Stage Units (FSU), have been selected and about 1.25 Lakh beneficiaries, as Ultimate Stage Units (USU) would be covered (out of about 10 crore beneficiary accounts under MUDRA). Under PMMY survey, Statewise estimates will be generated for only 25 States, which combined were covering nearly 99% of accounts as well as 99% of Loan amount sanctioned under PMMY.

2.18 Shri Mahesh Vyas, from CMIE, presented the unemployment statistics based on the CMIE panel survey. The high frequency data provides estimates on a weekly, monthly and annual basis. The survey is similar to the NSS's EUS but has only a single question on the status of employment. The results on LFPR and unemployment rates were similar to the NSS's latest available survey. This being a novel experiment by a business concern, several questions were raised on the methodology and execution of the survey. Questions related to recall period, selection of households, data validation, scaling up of estimates, reliability and error margins and retention of respondents were also raised. However, most of the questions could not be addressed and answered in detail owing to paucity of time. However, emphasis on the execution of the survey, data validation and retention of respondents was reiterated and required more discussion.

Suggestions/Recommendations:

2.19 The multifaceted deliberations on the Employment-Unemployment data led to the following suggestions:

- (i) <u>Underestimation of population</u>: There is an urgent need to look into this issue because in absence of any empirical evidence that ratios are more reliable (than aggregates), users may not be very confident about the aggregates derived from ratios;
- (ii) <u>Methodology for deriving aggregates</u>: Whether the population figures at aggregate level of Population Census (i.e. Rural/Urban; Male/Female) should be used for deriving aggregate estimates or age-specific population should be used;
- (iii) <u>Utility of usual status approach</u>: In view of the definition followed, there is a very strong relationship between labour force and work force estimates. Therefore, the question is whether really any fruitful conclusion can be drawn from UPS estimates;
- (iv) <u>Precision of Estimates</u>: It was suggested that statistical precision of estimates was only necessary and may not be sufficient in dealing with the overall quality of the estimates. Since statistical precision is only limited to numerical estimates that may guide policy, the overall quality of survey must be equally emphasized with regard to non-sampling errors,

coverage, inclusion of questions in the schedule and frequency;

- (v) <u>Presentation of Results</u>: Users suggestion that detailed tables at times complicates matters for users and simple descriptive statistics of important indicators can be put in a smaller supplementary publication may be considered by NSSO;
- (vi) <u>Visible and Invisible Underemployment</u>: The problem is measurement of visible and invisible underemployment and not of open unemployment; but the present definitions followed in NSS can not adequately capture visible and invisible underemployment, which is one of the main causes of poverty/working poor. Therefore, there is a need to re-look into the definitions followed.

3.0 Concluding Session: Users as well as producers highly appreciated the efforts made by the NSSTA, MoSPI for organizing this workshop which has given an opportunity to all stakeholders to express their views which is certainly not only be helpful for improving the data quality; but also in understanding the nuances of official statistics to users. All participants emphasized the need of holding such works at very frequent intervals covering the various topics related to entire official statistics.



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Awareness Workshop on Challenges and Issues with Data in Official Statistics

Day 1: Session 3

On Issues Related to National Accounts

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Workshop conducted by National Statistical Systems Training Academy (NSSTA) May 18-19, 2018 Davanam Sarovar Portico Suits, Bangaluru-560068

Outline: Issues related to National Accounts - Challenges

- Reconciliation of Supply and Use at national level
- Balanced GDP at national level through SUT
- Supply and Use Table (SUT) Framework
- Data Issues
- Limitations of Regional SUT
- Regional SUT- Issues
 - Interpretation of Exports, Imports,
 - Data availability on HFCE, NPISH FCE, GFCE, GFCF, CIS,
 - GSDP at factor cost and market prices
 - TTM, Taxes/ subsidies on products matrices
- Concluding Remarks

Reconciliation of Supply and Use at national level

- GDP can be estimated through Production Approach as $GDP_{mp} \equiv GVO_{bp} - IC + product (t-s) + (t-s) on imports$
- GDP can be estimated through Expenditure Approach as GDP_{mp} ≡ PFCE + GFCE + GCF + X − M GCF = GFCF +CII +Acquisition less disposal of valuables
- **GDP** obtained through the two approaches do not tally, have **discrepancies**
- Reconciled **GDP** in Supply Use Table is **Balanced GDP** required for compiling sequence of income accounts

Account 1: Gross Domestic Product and Expenditure

1.1	Net domestic product at factor cost (3.6)	1.6	GovernmentFinalConsumptionExpenditure (3.1)
1.2	Consumption of fixed capital (5.6)	1.7	Private Final Consumption Expenditure (3.2)
1.3	Indirect taxes (3.9)	1.8	Gross Fixed Capital Formation (5.1.1)
1.4	Less Subsidies (3.10)	1.9	Change in Stocks (5.1.2)
		1.10	Exports of goods and services (6.1)
		1.11	Less Imports of goods and services (6.7)
		1.12	Discrepancies
1.5	Gross domestic product (1.13)	1.13	Expenditure on GDP (1.5)

Account 3: National Disposable Income and its Appropriation

3.1	Govt. Final Consumption	3.6	Net domestic product at factor cost
	Expenditure (1.6)		(1.1)
3.2	Private Final Consumption	3.7	Compensation of employees from
	Expenditure (1.7)		ROW, net (6.2-6.8)
3.3	Saving (5.5)	3.8	Property and entrepreneurial
			income from ROW, net (6.3-6.9)
3.4	Statistical discrepancies	3.9	Indirect taxes (1.3)
		3.10	Less Subsidies(1.4)
		3.11	Other current transfers from ROW,
			net (6.4-6.10)
3.5	Appropriation of National	3.12	National Disposable Income
	Disposable Income (3.12)		(3.5)

Account 5: Capital Finance

5.1	Gross Capital Formation	5.5	Domestic saving (3.3)
5.1.1	Gross Fixed Capital Formation (1.8)	5.6	Consumption of fixed capital (1.2)
5.1.2	Change in Stocks (1.9)	5.7	Capital transfers from the ROW, net (6.15)
5.1.4	Errors and Omissions		
5.2	Purchase of intangible assets from ROW, net (6.18)		
5.3	Net lending from the ROW, net (6.20-6.16)		
5.4	Gross accumulation (5.8)	5.8	Finance of Gross accumulation (5.4)

Account 6: External Transactions

	Current transactions		
6.1	Exports of goods and services (1.10)	6.7	Imports of goods and services (1.11)
6.2	Compensation of employees from ROW	6.8	Compensation of employees to ROW (3.7)
	(3.7)		
6.3	Property and entrepreneurial income from	6.9	Property and entrepreneurial income to ROW
	ROW (3.8)		(3.8)
6.4	Other current transfers from ROW (3.11)	6.10	Other current transfers to ROW(3.11)
6.5	Adjustment of merchandise exports	6.11	Adjustment of merchandise imports to
	to the change of ownership basis		the change of ownership basis
		6.12	Surplus of the nation on current accounts
6.6	Current receipts (6.1-6.5)	6.13	Disposal of current receipts
	Capital transactions		
6.14	Surplus of the nation on current accounts	6.18	Purchase of intangible assets from ROW, net
			(5.2)
6.15	Capital transfers from the ROW (5.7)	6.19	Capital transfers to the ROW (5.7)
6.16	Net incurrence of foreign liabilities (5.3)	6.20	Net acquisition of foreign financial assets (5.3)
6.17	Receipts	6.21	Disbursements
Sequence of Accounts

	Uses	Resources
Production Account	Intermediate Consumption	Output, of which: Market output; Output for own final use and Non-market output (Taxes-subsidies) on products and imports
	GVA / GDP (B1)	
	Uses	Resources
on t		GVA / GDP (B1)
nerati f incom vecoun	Compensation of employees	
	(Taxes – subsidies) on production and imports	
v e Q	Mixed income(B3) +Operating surplus (B2)	

	Uses	Resources
of		Mixed income (B3) +Operating surplus (B2)
Primary stribution e Income		Compensation of employees
		(Taxes – subsidies) on production & imports
	Property Income payable	Property Income receivable
Diș	Gross National Income (B5)	

	Uses	Resources					
		Gross National Income (B5)					
econdary ribution of Income	Taxes on income and wealth payable	Taxes on income and wealth receivable					
	Social contributions and other social benefits payable	Social contributions & other social benefits					
		receivable					
	Other current transfers payable	Other current transfers receivable					
Dist	Gross National Disposable Income	36					
	(B6)						

Sequence of Accounts (Contd.)

	Uses	Resources
e _		Gross National Disposable Income (B6)
se of disposabl icome Account	Final Consumption Expenditure, of which: Household FCE; NPISHs and Government FCE	
	Adjustments for households pension funds payable	Adjustments for households pension funds receivable
Ŭ I	Gross Saving (B8)	

	Changes in Assets	Changes in Liability and Net Worth
		Gross Saving (B8)
E	Gross Fixed Capital Formation	Capital transfers receivable minus
noc	Change in Inventories	capital transfers payable
Acc	Acquisition less disposal of valuables	
tal	Acquisition less disposal of non-produced non-financial	
api	assets	
Ŭ	Minus CFC	
	Net Lending /Borrowing (B9)	
unt		Net Lending /Borrowing (B9)
	Net acquisition of financial assets	Net incurrence of liabilities
Fins Acc	Net Lending /Borrowing (B9)	

Supply and Use Tables (SUT)

- An integrated part of SNA
- Interrelationship of industries in an economy with respect to the production and uses of their products as well as imports and exports
- Each industry listed across the top in Two tables
 - depicting outputs produced in the Supply table
 - depicting inputs that are consumed in the Use table
- SUT is compilation tool for data checking and reconciliation, data gaps filling, and to get balanced GDP

Structure of supply table in SUT

A Simplified Supply Table

Supplies	Industries	ROW (2)	Total (3)
Product 1 Product 2 Product 3 Product 4	Output by product and industry	Imports by products	Total supply by product at basic prices
Total	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Total imports	Total supply

Structure of use table in SUT

A Simp	lified Use Table				
Uses	Industries 1 2 3 . . n	ROW	Final Consumption	Gross Capital Formation	Total
Product 1 Product 2 Product 3	Intermediate consumption by product and by industry	Exports by product	Final consumption expenditure by product	Gross capital formation by product	Total use by product at purchaer's prices
Product m					
Primary inputs GVA	$V_1V_2V_3\ldots\ldots\ldots\ldots\ldots\ldots\ldots V_n$				
Total	$g_1g_2g_3\ldots\ldots\ldots\ldots g_n$				
	Total inputs by industry				

Reconciliation of Supply and Use at national level

Supply of products at basic prices from Supply Table is converted to purchaser's price by adding trade transport margins and (t-s) on products, *net* of subsidies and is used as a check to reconcile the total uses (row total) in the Use Table

То	Inter Industry Use						Final Use					Product Supply
Industry Products	1	2	• •	j		n	PFCE	GFCE	GFCF	CIS	Export	
Product 1	X ₁₁	X ₁₂	• •	X _{1j}	• •	X _{1n}	C_1	G ₁	F ₁	S_1	E ₁	$ q_1$
Product 2	X ₂₁	X ₂₂	• •	X_{2j}	•••	X_{2n}	C_2	G ₂	F ₂	S_2	E ₂	q_2
• Product i	•	•	• •	•	••	•				· .		
Trouder	X_{i1}	X_{i2}	• •	\mathbf{X}_{ij}	•••	\mathbf{X}_{in}	C_i	Gi	F _i	$ S_i $		$ $ q_i
• Product n	· X	X.	••	X .	•••	X	\cdot	· G	· F	S	· · F	· ·
Primary Inputs	V_1	V_2	•••	$\frac{X_{nj}}{V_j}$	•••	V_n			<u> </u>		Ln	<u> </u>
Industry Output	g ₁	g ₂		gj		g _n	C	G	F	S	E	X

Use Table

Reconciliation of Supply and Use at national level

- Since PFCE is compiled following *commodity flow method,* for all household consumable products, reconciliation is cool
- Since GFCF by assets is compiled following *commodity flow method,* for all capital asset products, reconciliation is cool
- Since basic materials used in construction are compiled following *commodity flow method,* for those basic material products, reconciliation is cool
- Products like crude, mineral ores that are used totally in the concerned industry and thus reconciliation is cool
- CSO has since prepared SUT for 2011-12 and 2012-13 successfully. Balanced GDP obtained for sequence of accounts

Data Issues

- Final Use:
 - HFCE, NPISH FCE,
 - GFCE,
 - GFCF and CIS
- Intermediate Use:
 - ASI / MCA data for Manufacturing
 - Enterprise Survey data
 - IIP and Services Index
 - TTM

Regional SUT Issues: Interpretation of Exports, Imports

- In Regional SUT
 - Exports could be to other regions within the country or to other countries
 - Imports could be from other regions within the country or from other countries
- In open economy for a region exports/ imports information is not readily available with the official statistical system
- Special surveys needed to obtain such information of export/ import for a region
- One possible way out to deal with could be to treat net export as a residual category of final use assuming domestic output of goods alone as firm. For services which are not traded, reconcile supply and use of the product.

SUT for a Region

То	Inter Industry Use						Final Use				Product Output	
Industry Products	1	2	• •	j	• •	n	PFCE	GFCE	GFCF	CIS	Net Export	
1	X ₁₁	X ₁₂	• •	X_{1j}	• •	X_{1n}	C ₁	G ₁	F_1	\mathbf{S}_1	NE ₁	q_1
2	X ₂₁	X ₂₂	•••	X_{2j}	••	X_{2n}	C_2	G_2	F ₂	S_2	NE_2	q_2
•	•	•	• •	•	•••	•	•	•	•	•	•	•
1	X _{i1}	X_{i2}	•••	X_{ij}	•••	X_{in}	C _i	G _i	F _i	S _i	NE _i	q_i
•	•	•	• •		•••	•	•	•	•	•	•	•
n	X _{n1}	X_{n2}	• •	X _{nj}	• •	X_{nn}	C _n	G _n	F _n	S _n	NE _n	$\mathbf{q}_{\mathbf{n}}$
Primary Inputs	\mathbf{V}_1	V_2	•••	V_j	••	V _n						
Industry Output	g ₁	g ₂		gj		gn	С	G	F	S	NE	X

Regional SUT Issues (Contd.):

Data availability on Final Consumption Expenditures

- HFCE of a region could be obtained making use of Household Consumption Expenditure Survey by NSSO
- FCE of NPISH is not available in the present official statistics
- PFCE (HFCE and NPISHFCE together) by commodity flow method, followed at national level, is not possible at regional level since information on net export is also not available
- NPISHFCE need to be estimated using Economic Census and Enterprise survey data
- GFCE doable through budget analysis, taking central government expenditure allocation for the State
- Care need to be taken for local bodies consumption as also the NPISH serving Government

Regional SUT Issues (Contd.):

Data availability on Gross Capital Formation(GCF)

- GCF comprises GFCF, CIS and Valuables
- Most States compile estimates of GFCF, but only for public sector
- Private/ corporate sector data at State level, still a challenge
- Greater effort needed to compile GFCF by type of assets
- CIS estimate is not readily available for regions. One possible way out could be to also include CIS in the residual category of final uses
- Information on net acquisition of valuables is scanty

Regional SUT Issues (Contd.):

TTM, Taxes/ subsidies on products matrices

- Taxes on products, and Subsidies on products are required for converting supply of products which are at basic prices to producer's prices
- Trade matrix and Transport margins are required for converting the above supply of products at producer's prices to purchaser's prices
- Supply of products from Supply Table converted to purchaser's prices is used to reconcile with the total uses (row totals) in Use Table
- Use Table is at purchaser's prices. For obtaining Use Table at basic prices we would need the taxes/ subsidies on product matrices, and trade-transport margin matrices

Feasibility for estimating Balanced GDP at regional level

- Reconciliation of Supply of products obtained from *Supply Table* and total Use generated in *Use Table*, is feasible for all service sectors as they are neither traded nor have CIS.
- Importantly services sectors account for major share (about 69% in terms of GDP) of output
- For goods producing sectors reconciliation is possible for certain sectors like crude, mineral ores, etc.,
- For remaining the supply may be treated as firm. Validity checks may be done using auxiliary information from national SUT
- The proposed methodology for construction of Regional SUT is feasible and thus the feasibility of estimating Balanced GDP at regional level

Concluding Remarks

- Reconciliation of supply and use of various products at Regional (State) level is necessary for implementing 2008 SNA recommendations on GDP,a challenge!
- Once SUT exercises at regional level are undertaken, Balanced GDP at regional level will follow
- Priority need to attached for compilation of GFCF at regional level. To start with public sector part as firm and the rest even by allocation would help the system
- NPISHFCE compilation work needs attention of both researchers and official statisticians
- Regional SUT will help regional balanced GDP and thus possibility of income accounts at regional level

New National Accounts Series: An Exploratory Exposition

by J Dennis Rajakumar (EPWRF Research Foundation, Mumbai)

Introduction

- India's National Accounts Statistics (NAS) is one of the most massive statistical exercises undertaken in the world.
- A rough back calculation shows that it has more 3,000 data sources: administrative statistical reporting and periodical survey data; again more than 300 such surveys.
- New Series of NAS with 2011-12 as base year, announced on 30th January, 2015.
- The year 2001-12 is not only most recent but also coincide with the Employment and Unemployment Survey (NSSO 68th round)

Introduction

- Guidelines of SNA 2008 mostly followed resulting in far changes
- Some methodological corrections done in January 2016 revision
- Size of savings and investment gone up in the new series (though declining as % of income).
- National income has gone up and its growth rate show a pick up

Introduction

In analyzing these data, the national economy is divided into eight sectors for regular reporting of data:

- 1. Agriculture (including livestock), forestry & fishing;
- 2. Mining & quarrying;
- 3. Manufacturing;
- 4. Electricity, gas, water supply & other utility services:
- 5. Construction;
- 6. Trade, hotels, transport, communication and services relating to broadcasting; (now trade and hotels separated)
- 7. Financial, insurance, real estate & professional services; (now financial services separated)
- 8. Public administration, defense and other services (now other services separated).

Total GVA

Under each of them, there are many sub-sectors for gathering data and GVA compilation; data are also reported for 13 sub-sectors which are further sub-divided for compilation purposes. 54

Features of Base Year Revision

Fundamentally the shift in the base period implies measuring output at base level prices.

Opportunities are taken to expand the data base; to introduce new products into the data coverage: agriculture, industrial products, IT items, etc.

Introduction

There are five macro segments of NAS for which regular data are published:

- 1. GVA,GDP, NDP, NNP & national income concepts;
- 2. Domestic Savings;
- 3. Domestic Capital Formation (or investment);
- 4. Domestic Consumption
- 5. Capital Stock

There are also data compiled for (i) input-output tables; & (ii) Flow-of-Funds of the Indian Economy.

Method used for estimation:

- 1. Production method
- 2. Income method
- 3. Expenditure method

Features of Latest Revision

Shift in the base, from 2004-05 to 2011-12

The revision has taken place

- Methodology followed for data compilation
- Data presentation
- Data sources

A close look suggests they are mostly pertaining to

- Corporate Sector data;
- Data for the Government sector;
- Changes in the factor income method for the informal Sector

Radical changes introduced in NAS latest revision

- a) Conceptual changes
- b) Classificatory changes at sectoral level
- c) Improvements in coverage of sectors
- d) Methodological changes in compilation

Conceptual changes

"GDP as a statistical indicator has a limited purpose, which is to describe and quantify the process of value addition in the economy" (CSO)

GDP at factor cost has been discontinued income based and *not based on output with observable vector of prices*

Introduction of Gross Value Added (GVA) at basic prices

Gross Domestic Product (GDP) at market prices as GDP

Savings rate to be worked as GS as percentage of Gross Disposable National Income

Conceptual change: Reporting of Income under SNA 2008

1. GVA at Factor Cost (earlier GDP at fc)

2. Add: Production Taxes

(Land revenue, stamps and regn fees, professional taxes)

3. Less: Production subsidies

(to railways, input subsidies to farmers, to village and cottage industries, etc)

4. GVA at Basic Price (1+2-3)

5. Add: Product Taxes

(Excise duties, sales taxes, customs duties, service taxes)

6. Less: Product subsidies

(Food, petroleum and fertilizer; interest subsidies to farmers and HHs, etc)

7. GDP at market price (4+5-6)

Conceptual change: GVA at Basic Price

GVA at Basic Price =

- **Compensation of Employees**
- + Operating Surplus/Mixed Income
- + Consumption of Fixed Capital
- + Production Taxes *less* Production Subsidies

GVA at Factor Cost=

- GVA at Basic price
- Production Taxes *less* Production Subsidies

Classificatory changes at sectoral level

Separate estimates of various aggregates for institutional sectors for the first time in the Indian NAS because

"intrinsic difference in their economic objectives, functions and behaviour"

non-financial financial corporations general government

Refinement in the coverage of institutional categories

Classificatory changes

Institutional categories

- **Public sector**
 - **Public Financial Corporations (Dept and Non-dept)** Public Non-financial Corporations (Dept and Non-dept) **General Government**
- Private corporate sector
 - **Private Financial Corporations**
 - **Private Non-financial Corporations**
- Household

GVA at basic price by institutional categories: Earlier no such reporting (SNA 1993 and 2008 recommended) Savings and capital formation are available based on above categories 63

Improvements in coverage of sectors

- Separation of quasi-corporations from the household sector and adding them to the corporate sector
 - Use of MCA 21 e-governance data for a comprehensive set of over 5.5 lakh companies instead of the RBI sample study of around 4,500 companies
 - And blowing up based on the paid-up capital estimates for the sector as a whole
- A substantially improved coverage of local bodies and autonomous institutions under the General Governance
- Financial corporations to cover a number of capital market enterprises

Methodological changes in compilation

Shifting to the enterprise approach from the establishment approach

head office operations have been allocated to the non-financial corporations in the mining and manufacturing sectors

Adoption of effective labour input method instead of the bland labour input method (LI method) for a majority of unincorporated enterprises

Scope of capital formation have been broadened intellectual capital and cultivated biological resources added

Changes in Methodology ...

Of the informal sector:

Hitherto through the labour input method

- Based on enterprise surveys of NSS, an average value added per worker is taken.
- Then total labour input (total of usual and subsidiary activity of workers engaged in the activity) is computed from Employment and Unemployment Surveys. Labour input is also projected for the period between two surveys.
- Then: Workforce is multiplied by the average value added per worker to arrive at GVA in that industry

Now: Effective Labor Input Method has been adopted

It gives due weights to different categories of workers such as owners, hired workers and helpers

Changes in Methodology ...

Gross Capital Formation (GCF)

Gross Fixed Capital Formation

- 1) Dwellings, Other Buildings & Structures
- 2) Machinery & Equipment
- 3) Cultivated Biological Resources
- 4) Intellectual Property Products (intellectual capital investments in R&D; mineral exploration; database and software and other IPPs)

Changes in Stock

Valuables (now attributed to physical savings of HH sector)

Consumption of Fixed Capital

Changes in Methodology

Of the Government sector:

- Local bodies which were captured on a sample basis are now being captured on complete account basis for 60-70 per cent.
- The work is in progress to extend it to close to 100 per cent.
- This was a big change, due to which government accounting improved enormously.

Methodological changes in compilation

A few other important changes FISIM based on the Reference Rate approach

Output of RBI treated as non-market at cost

Estimates for the unorganised financial services based on specific field surveys rather than the blanket 1/3rd approach.

Method of estimation that did not change

 Commodity flow approach to estimates of capital formation

- Residual approach to household sector
- Blow up factor

Implications

Application of MCA 21 as the primary source for corporate resulted in:

- Aggregate GDS and GCF gone up;
- Sizable upward revision in corporate savings and GCF;
- Due to residual method, household sector's GCF declined and therefore the sector's savings;
- Sectoral GVA of mining and manufacturing gone up
Implications

Application of MCA 21 ...

 Sectoral GVA of trade has gone down because of trade of manufacturing companies now treated as part of manufacturing

This is due to the change from establishment concept to enterprise concept

Have these impacted NAS numbers?

Analysis of level, growth rates and sectoral shares:

Percentage differences (for example, 2011-12) = <u>Estimates for 2011-12_{2011-12 series}</u> – <u>Estimates for 2011-12_{2004-05 series</u>} Estimates for 2011-12_{2004-05 series}</u>

Point differences in Growth rate (for example, 2012-13)

= Estimated growth for 2012-13_{2011-12 series} minus Estimated growth for 2012-13_{2004-05 series}

Relative share

Expenditure component to GDP

Sectoral GDP to total

Institution-wise savings and investment to total

Overlapping years:

For base years 2011-12 and 2004-05: 2011-12, 2012-13 and 2013-14 *For base years 2004-05 and 1999-2000*: 2004-05. 2005-06, 2006-07, 2007-08

Percentage differences in national income aggregates (at current prices)										
Aggregates	2004-0)5 series ove	er 1999-200	0 series	2011-12 se	2011-12 series over 2004-05 series				
, 1991 C Barco	2004-05	2005-06	2006-07	2007-08	2011-12	2012-13	2013-14			
GDP at factor cost	3.3	3.3	4.6	6.0	-3.5	-2.0	-0.9			
NDP at factor cost	4.0	4.3	5.8	7.5	-4.4	-2.8	-1.2			
GNP at factor cost	3.3	3.3	4.5	6.2	-3.5	-2.1	-1.0			
NNP at factor cost	4.1	4.3	5.7	7.6	-4.4	-2.9	-1.4			
GDP at basic prices					-5.0	-3.7				
NDP at basic prices					-6.1	-4.6				
GDP at market prices	2.9	3.0	4.0	5.6	-3.0	-1.6	-0.7			
NDP at market prices	3.6	3.8	5.0	6.8	-3.8	-2.3	-1.1			
GNP at market prices	3.0	3.0	4.0	5.7	-3.1	-1.6	-0.8			
NNP at market prices	3.6	3.9	4.9	7.0	-3.9	-2.3	-1.2			
Gross national disposable income	2.9	2.9	4.0	5.6	-3.0	-1.6	-0.7			
Net national disposable income	3.5	3.7	5.0	6.8	-3.7	-2.2	-1.0			
Private final consumption expenditure	4.2	4.6	7.3	9.4	-4.5	-1.8	0.4			
Govt. final consumption expenditure	4.9	6.9	5.2	7.1	-5.6	-10.7	-14.0			
Gross domestic capital formation	5.2	0.6	0.6	3.0	5.5	8.5	9.5			
Net domestic capital formation	9.1	2.7	2.6	6.0	5.9	10.2	13.1			
Exports of goods & services	0.0	0.0	-1.3	1.9	-0.3	0.5	1.3			
Imports of goods & services	0.0	0.0	-0.2	4.4	-0.2	0.0	-1.1			
Gross domestic saving	5.3	0.6	0.7	3.2	7.2	10.6				
Net domestic saving	9.3	2.8	2.8	6.4	8.5	13.7				
Consumption of fixed capital	-2.8	-4.4	-4.2	-4.9	4.2	4.3	2.1			
GFCF	3.9	0.7	0.0	2.3	4.8	8.1	11.0			
Changes in stock	35.7	10.0	35.0	18.3	21.3	24.1	-3.7			
Valuables	0.0	0.0	0.0	0.0	2.6	2.7	₇₄ -4.4			

Point differences in growth rate between latest and previous series at current prices									
	2004-05 s	eries over	1999-2000		2011-12 serie	s over 2004-05			
Aggregates		series			series				
	2005-06	2006-07	2007-08		2012-13	2013-14			
			At curr	ent pri	ces				
GDP at factor cost	0.0	1.5	1.6	_	1.7	1.4			
NDP at factor cost	0.3	1.6	1.9		1.8	1.8			
GNP at factor cost	0.0	1.4	1.8		1.7	1.3			
NNP at factor cost	0.3	1.5	2.1		1.8	1.7			
GDP at basic prices					1.6				
NDP at basic prices					1.7				
GDP at market prices	0.0	1.2	1.7		1.7	1.0			
NDP at market prices	0.3	1.3	2.0		1.8	1.4			
GNP at market prices	0.0	1.1	1.9		1.7	0.9			
NNP at market prices	0.3	1.2	2.2		1.8	1.3			
Gross national disposable income	0.0	1.3	1.7		1.6	1.0			
Net national disposable income	0.2	1.4	2.0		1.8	1.4			
Private final consumption expenditure	0.4	2.9	2.2		3.2	2.4			
Government final consumption expenditure	2.2	-1.8	2.0		-6.3	-4.2			
Gross domestic capital formation	-5.6	0.1	2.8		3.1	0.9			
Net domestic capital formation	-7.7	-0.1	4.1		4.2	2.5			
Exports of goods & services	0.0	-1.7	3.6		0.9	0.9			
Imports of goods & services	0.0	-0.2	5.1		0.3	-1.1			
Gross domestic saving	-5.5	0.2	2.9		3.4				
Net domestic saving	-7.5	0.0	4.3		5.0				
Consumption of fixed capital	-1.9	0.2	-0.8		0.1	-2.4			
GFCF	-3.8	-0.8	2.7		3.4	2.8			
Changes in stock	-30.4	26.1	-19.3		2.3	-24.4			
Valuables	0.0	0.0	0.0		0.2	⁷⁵ -4.5			

Point differences in growth rate between latest and previous series, at constant prices										
	2004-05 s	eries over 1	.999-2000	2011-12 series	over 2004-05					
Aggregates		series		seri	series					
	2005-06	2006-07	2007-08	2012-13	2013-14					
		2000 07	At const	ant prices	2020 2 1					
GDP at factor cost	0.0	-0.2	0.3	0.9	1.7					
NDP at factor cost	-0.1	-0.2	0.3	1.0	2.1					
GNP at factor cost	-0.2	-0.3	0.4	1.5	1.8					
NNP at factor cost	-0.2	-0.3	0.5	1.7	2.2					
GDP at basic prices				0.9						
NDP at basic prices				0.9						
GDP at market prices	0.0	-0.4	0.7	0.9	1.6					
NDP at market prices	-0.1	-0.4	0.8	1.0	1.9					
GNP at market prices	-0.2	-0.5	0.9	0.9	1.5					
NNP at market prices	-0.2	-0.6	0.9	1.0	1.8					
Private final consumption expenditure	1.5	2.2	0.9	0.3	1.9					
Government Final Consumption Expenditure	2.7	-1.7	2.2	-5.6	-3.4					
Gross domestic capital formation	-3.3	0.2	3.5	1.8	1.4					
Net domestic capital formation	-5.4	0.2	4.6	2.5	2.6					
Exports of goods & services	8.5	-0.8	3.8	1.8	-0.7					
Imports of goods & services	-8.5	-3.0	3.3	-0.6	-5.6					
Consumption of fixed capital	0.2	-0.2	0.2	0.5	-0.4					
GFCF	-1.4	-0.7	3.3	4.1	3.5					
Changes in stock	-35.3	26.2	-20.3	5.2	-20.2					
Valuables	0.6	-1.3	0.2	-33.1	-10.6					

Point differences in the annual variations in deflators: Latest series over previous series											
A	2004-05 se	ries over 1		2011-12 series over							
Aggregates		Series			2004-05	Series					
	2005-06	2006-07	2007-08		2012-13	2013-14					
GDP at factor cost	0.1	1.5	1.1		0.7	-0.5					
NDP at factor cost	0.3	1.6	1.4		0.7	-0.4					
GNP at factor cost	0.2	1.5	1.2		0.0	-0.6					
NNP at factor cost	0.5	1.7	1.5		-0.1	-0.6					
GDP at basic prices					0.6						
NDP at basic prices					0.7						
GDP at market prices	0.1	1.4	0.9		0.7	-0.7					
NDP at market prices	0.3	1.6	1.1		0.7	-0.6					
GNP at market prices	0.2	1.5	0.9		0.7	-0.7					
NNP at market prices	0.4	1.6	1.1		0.8	-0.6					
Private final consumption expenditure	-1.0	0.6	1.2		2.8	0.3					
Government final consumption expenditure	-0.6	0.0	-0.3		-0.2	-0.5					
Gross domestic capital formation	-1.8	-0.1	-0.7		1.1	-0.6					
Net domestic capital formation	-1.7	-0.2	-0.6		1.5	-0.2					
Exports of goods & services	-7.2	-0.7	-0.4		-0.9	1.5					
Imports of goods & services	5.9	2.4	1.5		0.8	5.3					
Consumption of fixed capital	-1.9	0.3	-1.0		-0.4	-1.8					
GFCF	-2.0	-0.1	-0.6		-0.9	-0.9					
Changes in stock	3.6	-1.9	1.2		-3.6	-3.2					
Valuables	-0.6	1.2	-0.2		25.9	974					

Percentage differences in sectoral GDP (at current prices)												
						2011-12	series over	2004-05				
Sectors	2004-05	series over :	1999-2000	series		series						
	2004-05	2005-06	2006-07	2007-08		2011-12	2012-13	2013-14				
Agriculture, forestry & fishing	2.4	1.9	5.4	6.9		3.0	5.2	2.6				
Mining & quarrying	0.3	-0.1	0.7	6.3		15.7	27.7	31.6				
Manufacturing	-0.1	0.4	2.8	3.9		13.0	18.2	26.2				
Electricity, gas & water supply	4.6	5.5	8.1	10.2		41.5	40.8	28.5				
Construction	7.5	1.7	1.0	3.4		12.1	10.9	13.2				
Trade, hotels & restaurant	3.5	6.0	7.8	8.9		-40.1	-35.9	-31.6				
Transport, storage & communication	2.3	1.8	0.7	-1.3		-11.0	-11.6	-9.0				
Financing, insurance, real estate &												
business services	7.9	9.0	11.9	16.4		8.0	7.3	5.4				
Banking & insurance	1.9	2.0	2.1	4.1		-0.3	-2.3					
Real estate, ownership of dwellings & business services	12.2	13.6	18.6	24.8		12.5	12.3					
Community, social & personal												
services	2.1	1.9	-0.7	-0.8		-11.4	-13.6	-14.3				
Public administration & defence	0.7	-0.1	-2.2	0.6		-1.4	-4.0					
Other services	3.1	3.4	0.3	-1.8		-18.9	-20.7					
GDP at factor cost												
	3.3	3.3	4.6	6.0		-3.5	-2.0	-0.8				
Agriculture	2.4	1.9	5.4	6.9		3.0	5.2	2.6				
Industry	2.3	1.1	2.4	4.3		14.7	18.3	22.8				
Services	4.1	5.0	5.6	6.7		-14.6	-13.8	-12.2				

Point differences in the sectoral growth	ı between l	atest and _l	previous se	eries, at current pr	ices	
	2004-0	5 series ove	2011-12 series	2011-12 series over 2004-		
Sectors		2000 serie	s	05 ser	ies	
	2005-06	2006-07	2007-08	2012-13	2013-14	
			At curre	nt prices		
Agriculture, forestry & fishing	-0.5	3.7	1.6	2.4	-2.9	
Mining & quarrying	-0.4	0.9	6.1	10.4	3.0	
Manufacturing	0.5	2.9	1.3	4.9	6.9	
Electricity, gas & water supply	0.9	2.6	2.1	-0.6	-11.3	
Construction	-6.8	-0.8	2.7	-1.2	2.3	
Trade, hotels & restaurant	2.8	2.1	1.1	7.7	7.3	
Transport, storage & communication	-0.6	-1.3	-2.2	-0.8	3.2	
Financing, insurance, real estate & business						
services	1.1	3.1	4.5	-0.8	-2.1	
Banking & insurance	0.0	0.2	2.1	-2.3		
Real estate, ownership of dwellings & business						
services	1.5	5.1	5.9	-0.2		
Community, social & personal services	-0.1	-3.0	-0.1	-2.9	-0.9	
Public administration & defence	-0.8	-2.3	3.1	-2.9		
Other services	0.3	-3.5	-2.4	-2.6		
GDP at factor cost	0.0	1.5	1.6	1.7	1.4	
Agriculture	-0.5	3.7	1.6	2.4	-2.9	
Industry	-1.4	1.6	2.2	3.4	₇₀ 4.0	
Services	1.0	0.6	1.2	1.1	2.0	

Point differences in the sectoral growth betw	ween lates	t and prev	ious serie	es, at co	nstant pri	ce		
Sectors	2004-05 s	eries over 1	999-2000		2011-12 s	eries over		
Sectors		361163			2004-0	5 361163		
	2005-06	2006-07	2007-08		2012-13	2013-14		
	At constant prices							
Agriculture, forestry & fishing	-0.7	0.2	0.9		0.2	-0.7		
Mining & quarrying	-3.6	-1.4	0.4		2.4	3.9		
Manufacturing	1.0	2.5	2.1		5.1	6.5		
Electricity, gas & water supply	2.0	4.0	3.0		0.3	-1.9		
Construction	-3.4	-1.5	0.7		-0.5	3.1		
Trade, hotels & restaurant	1.9	0.7	0.0		5.7	6.9		
Transport, storage & communication	-3.1	-3.7	-3.0		0.9	2.6		
Financing, insurance, real estate & business services	1.2	0.2	0.2		-1.4	-2.1		
Banking & insurance	1.6	0.3	1.3					
Real estate, ownership of dwellings & business services	1.4	0.9	-0.1					
Community, social & personal services	0.0	-2.9	0.1		-1.3	-1.1		
Public administration & defence	-0.6	-2.1	3.4					
Other services	0.5	-3.4	-2.2					
GDP at factor cost	0.0	-0.2	0.3		0.9	1.8		
Agriculture	-0.7	0.2	0.9		0.2	-0.7		
Industry	-0.5	1.2	1.6		2.7	4.7		
Services	0.3	-1.2	-0.6		0.9	1.5		

Point differences in the annual variations in deflators: Latest series over previous series												
Sectors	200 19	4-05 series 99-2000 se	over ries		2011-12 se 2004-05	eries over 5 series		2011-12 series over 2004-05 series (Jan 2015)				
	2005-06	2006-07	2007-08		2012-13	2013-14		2012-13	2013-14			
Agriculture, forestry & fishing	0.3	3.4	4.0		1.9	0.0		1.3	-2.0			
Mining & quarrying	3.2	5.3	10.7		7.8	6.8		6.5	-2.1			
Manufacturing	-0.5	-0.4	-1.2		-0.4	-0.2		-0.6	0.9			
Electricity, gas & water supply	-1.1	-2.4	-3.3		-0.8	-7.8		-7.5	-13.0			
Construction	-2.6	-1.9	-0.3		-0.6	-1.5		-0.7	-0.3			
Trade, hotels & restaurant	0.7	1.8	2.8		1.3	1.3		1.3	0.1			
Transport, storage & communication	2.2	4.5	5.3		-1.6	-1.1		-1.9	0.7			
Financing, insurance, real estate & business												
services	-0.1	2.4	6.3		0.6	0.8		2.4	0.2			
Banking & insurance	-1.3	-1.4	-0.7		0.0			4.6				
Real estate, ownership of dwellings & business												
services	0.1	3.6	9.1		0.4			0.7				
Community, social & personal services	-0.1	0.0	-0.2		-1.4	-1.1		-2.1	0.7			
Public administration & defence	-0.2	-0.2	-0.7		-0.8			-0.9				
Other services	-0.2	0.0	0.0		-1.7			-3.1				
GDP at factor cost	0.1	1.5	2.6		0.6	0.2		0.5	-0.3			
Agriculture	0.3	3.4	4.0		1.9	0.0		1.3	-2.0			
Industry	-0.8	-0.5	-0.1		0.4	-0.4		-0.4	-0.8			
Services	0.6	2.2	3.8		0.1	0.5		0.58	1 0.6			

Sectoral shares (in%) in total GDP at current prices, in 2004-05 and 2011-12											
		2004-05			2011-12	2					
Sectors	1999-2000	2004-05		2004-05	2011-12						
	series	series	Difference	series	series	Difference					
Agriculture, forestry & fishing	19.2	19.0	-0.2	17.9	19.1	1.2					
Mining & quarrying	2.9	2.9	-0.1	2.7	3.2	0.5					
Manufacturing	15.8	15.3	-0.5	14.7	17.2	2.5					
Electricity, gas & water supply	2.1	2.1	0.0	1.6	2.4	0.8					
Construction	7.4	7.7	0.3	8.2	9.5	1.3					
Trade, hotels & restaurant	16.0	16.1	0.0	17.4	10.8	-6.6					
Transport, storage & communication	8.5	8.4	-0.1	7.3	6.8	-0.6					
Financing, insurance, real estate & business services	14.1	14.7	0.6	16.5	18.4	2.0					
Banking & insurance	5.8	5.8	-0.1	5.7	5.9	0.2					
Real estate, ownership of dwellings & business services	8.2	9.0	0.7	10.7	12.5	1.8					
Community, social & personal services	14.0	13.8	-0.2	13.8	12.6	-1.1					
Public administration & defence	6.0	5.9	-0.2	5.9	6.1	0.1					
Other services	8.0	8.0	0.0	7.8	6.6	-1.3					
GDP at factor cost	100.0	100.0	0.0	100.0	100.0	0.0					
Agriculture	19.2	19.0	-0.2	17.9	19.1	1.2					
Industry	28.2	27.9	-0.3	27.2	32.3	5.1					
Services	52.6	53.0	0.4	54.9	48.6	-6.3					
Correlation between sectoral shares in 2004-05 series ar	nd 1999-2000	series = 0.	999			82					
Correlation between sectoral shares in 2011-12 series an	d 2004-05 se	ries = 0.902	1								

Expenditure components of GDP at current prices (in %), in 2004-05 and 2011-12											
		2004-05			2011-12						
Items	1999- 2000 series	2004-05 series	Differences		2004-05 series	2011-12 series	Differences				
Private Final Consumption Expenditure	58.4	59.1	0.7		57.1	56.2	-0.9				
Government Final Consumption Expenditure	10.7	10.9	0.2		11.4	11.1	-0.3				
Gross Capital Formation	31.6	32.5	0.8		36.4	39.6	3.2				
Gross Fixed Capital Formation	28.4	28.7	0.3		31.8	34.3	2.6				
Changes in stocks	1.9	2.5	0.6		1.9	2.4	0.5				
Valuables	1.3	1.3	0.0		2.7	2.9	0.2				
Exports of goods and services	18.1	17.6	-0.5		23.9	24.5	0.7				
Less Imports of goods and services	19.9	19.3	-0.6		30.2	31.1	0.9				
Discrepancies	1.0	-0.8	-1.8		1.5	-0.3	-1.8				
Total	100.0	100.0	0.0		100.0	100.0	0.0				

Percentage differences in savings and capital formation (at current prices)											
						2011-12 s	eries over				
Institutions	2004-05	series ove	r 1999-200	0 series		2004-05 series					
	2004-05	2005-06	2006-07	2007-08		2011-12	2012-13				
			Gross Fiz	xed Capita	Formation	-					
Public Sector	11.0	8.3	8.2	2.0		0.3	-11.6				
Private Corporate Sector	-1.4	2.1	1.1	12.3		15.5	36.8				
Household Sector	4.4	-5.1	-6.3	-8.6		0.2	1.9				
Total	3.9	0.7	0.0	2.3		4.8	8.1				
	Gross Capital Formation										
Public Sector	10.9	7.9	8.2	3.0		-5.4	-12.7				
Private Corporate Sector	-1.1	1.8	2.1	15.1		26.7	46.2				
Household Sector	9.1	-2.9	-0.4	-9.8		-2.3	-2.1				
Total	5.9	1.4	2.6	3.8		5.7	9.0				
				Gross Savi	ngs						
Public Sector	8.0	2.5	10.9	17.1		20.8	17.7				
Private Corporate Sector	0.2	0.2	-1.1	12.5		25.6	39.1				
Household Sector	6.5	0.5	-0.1	-2.8		0.5	1.0				
Financial saving	3.3	4.1	0.3	4.9		-1.1	-0.7				
Saving in physical assets	9.1	-2.9	-0.4	-9.8		-4.7	-4.6				
						-(2.3)	-(2.1)				
Total	5.3	0.6	0.7	3.2		6.0	9.4				
						(7.2)	(10.6)				
Figures in brackets percentage char	nges including	valuables					84				

Gross savings rate (at current prices)											
		2004-05				2011-12					
ltems											
items	1999-2000	2004-05			2004-05	2011-12					
	series	series	Differences	:	series	series	Differences				
		As % c	of Gross Natio	nal Disp	osable Ind	come					
Public Sector	2.1	2.2	0.1		1.2	1.5	0.3				
Private Corporate Sector	6.6	6.4	-0.2		7.1	9.2	2.1				
Household Sector	22.3	23.1	0.8		22.2	23.0	0.8				
Financial Saving	9.9	9.9	0.0		6.8	7.2	0.3				
Saving in Physical Assets	12.4	13.2	0.8		15.4	15.5	0.1				
Total	31.0	31.7	0.7		30.6	33.8	3.2				
(Household savings in Valuables)						0.4					
		-	As percen	tage to	total						
Public Sector	6.9	7.1	0.2		3.9	4.4	0.5				
Private Corporate Sector	21.2	20.2	-1.0		23.3	27.3	4.0				
Household Sector	71.8	72.7	0.8		72.7	68.2	-4.5				
Financial Saving	31.8	31.2	-0.6		22.4	21.2	-1.2				
Saving in Physical Assets	40.0	41.5	1.5		50.4	45.9	-4.5				
Total	100.0	100.0	0.0		100.0	100.0	0.0				
(Household savings in Valuables)						1.1	85				

Investment rate (at current prices)										
		2004-05				2011-12				
Items	1999-2000 series	99-2000 2004-05 ries series			2004-05 series	2011-12 series	Differences			
			As % of GDI	P at mar	ket prices		1			
Gross Fixed Capital Formation	1									
Public Sector	6.4	6.9	0.5		7.1	7.3	0.2			
Private Corporate Sector	9.5	9.1	-0.4		9.4	11.2	1.8			
Household Sector	12.5	12.7	0.2		15.2	15.7	0.5			
Total	28.4	28.7	0.3		31.8	34.3	2.6			
Gross Capital Formation	Gross Capital Formation									
Public Sector	6.9	7.4	0.5		7.7	7.5	-0.2			
Private Corporate Sector	10.8	10.3	-0.4		10.1	13.2	3.1			
Household Sector	12.7	13.4	0.8		15.8	15.9	0.1			
Total	30.3	31.2	0.9		33.6	36.7	3.0			
	As percentage to total									
Gross Fixed Capital Formation							-			
Public Sector	22.5	24.1	1.5		22.3	21.4	-0.9			
Private Corporate Sector	33.5	31.8	-1.7		29.7	32.7	3.0			
Household Sector	44.0	44.2	0.2		48.0	45.9	-2.1			
Total	100.0	100.0	0.0		100.0	100.0	0.0			
Gross Capital Formation										
Public Sector	22.7	23.8	1.1		23.0	20.5	-2.4			
Private Corporate Sector	35.5	33.1	-2.4		30.1	36.1	6.0			
Household Sector	41.8	43.1	1.3		46.9	43.4	-3.6			
Total	100.0	100.0	0.0		100.0	100.0	₈₆ 0.0			

Key aggregates of national accounts (Base Year 2011-12)											
		At Constant (2011-12) Prices					At Current Prices				
Item	2011-12	2012-13	2013-14	2014-15	2015-16	2011-12	2 2012-13	2013-14	2014-15	2015-16	
GROWTH RATES											
GVA at factor cost		5.4	6.5	7.1			13.5	5 12.9	10.6		
GVA at basic prices		5.4	6.3	7.1	7.2		13.6	5 12.7	10.5	7.0	
Taxes on Products		9.5	5.3	8.0	7.5		18.9	13.5	12.4	19.4	
Subsidies on Products		12.7	-7.9	4.8	-5.6		21.5	-2.3	8.1	-5.7	
GDP at market prices		5.6	6.6	7.2	7.6		13.9	13.3	10.8	8.7	
Consumption of Fixed Capital		10.0	9.2	8.3	7.2		15.6	5 13.1	. 11.2	8.7	
PFCE		5.3	6.8	6.2	7.4		15.5	5 14.8	10.5	12.3	
GFCE		0.5	0.4	12.8	2.2		9.6	6 8.6	18.4	5.4	
GCF of which:		6.8	-1.9	6.3			12.9	1.8	9.3		
GFCF		4.9	3.4	4.9	3.9		10.8	3 7.3	7.9	3.3	
Exports of goods and services		6.7	7.8	1.7	-5.2		13.8	3 17.0	0.2	-5.4	
Imports of goods and services		6.0	-8.2	0.8	-2.8		14.5	5 2.6	1.3	-5.6	
GNDI							13.6	5 13.2	10.6	8.5	
Gross Saving							11.2	2 10.7	10.5		
Net Saving							9.3	9.6	10.2		

Key aggregates of national accounts (Base Year 2011-12)										
	At Constant (2011-12) Prices				At Current Prices					
Item	2011-12	2012-13	2013-14	2014-15	2015-16	2011-12	2012-13	2013-14	2014-15	2015-16
As % of GDP at market prices										
GVA at factor cost	92.7	92.5	92.4	92.3		92.7	92.4	92.1	91.9	
GVA at basic prices	92.8	92.6	92.3	92.2	91.9	92.8	92.6	92.1	91.9	90.4
Taxes on Products	10.2	10.6	10.4	10.5	10.5	10.2	10.6	10.7	10.8	11.9
Subsidies on Products	3.0	3.2	2.8	2.7	2.4	3.0	3.2	2.7	2.7	2.3
Consumption of fixed										
capital	10.5	10.9	11.2	11.3	11.3	10.5	10.7	10.6	10.7	10.7
PFCE	56.2	56.0	56.1	55.6	55.5	56.2	57.0	57.7	57.6	59.5
GFCE	11.1	10.6	9.9	10.4	9.9	11.1	10.7	10.2	10.9	10.6
Gross capital formation	39.0	39.4	36.2	35.9		39.0	38.6	34.7	34.2	
GFCF	34.3	34.1	33.0	32.3	31.2	34.3	33.4	31.6	30.8	29.3
VALUABLES	2.9	2.8	1.5	1.6	1.5	2.9	2.8	1.4	1.5	1.4
Exports of goods and										
services	24.5	24.8	25.1	23.8	20.9	24.5	24.5	25.3	22.9	19.9
Imports of goods and										
services	31.1	31.2	26.9	25.2	22.8	31.1	31.2	28.3	25.9	22.5
Discrepancies	-0.3	0.8	-0.4	-0.3	1.9	-0.3	0.8	0.4	0.4	0.1
Gross Saving to GNDI						33.8	33.0	32.3	32.3	
PFCE to NNI	63.4	63.8	64.1	63.5	63.4	63.4	64.6	65.5	65.3	67.5



Per cent



Problems arising from the use of MCA 21

Blow up factor could not be dispensed and this could impact the level due to Inability to determine Non-existing companies Companies not actively engaged in economic activities

21-digits CIN code poses additional problem SDP estimates Industry groups

Concluding Remarks

- Revisions are necessary to reflect changes in the structure of the economy
- This new series have attracted widespread interests due to:
 - Lack of corroborative evidences supporting numbers;
 - Changes in conceptual framework such as discarding GDP at fc and adoption of GDP at mp as the measure of national income;
 - Methodological issues

Needs attention

- declining trend in saving and investment rate and rising growth rate do not tie up
- corporate data and motivation of companies
- reconstruction of IIP with rebasing of NAS
- WPI to the base year of NAS but PPI is more appropriate
- reconciling production-side and consumptionside estimates
- double deflation method

Needs attention

 Non comparison over the previous years due to changes in scope

Capital formation, savings and institutional categories

though suitable adjustments may be made, data availability in the past will leave much desired

Manufacturing GVA: New Series Compared with 2004-05 Series

	Growth at Current		Growth at	: Constant	GVA Share in Total			
	Pri	ces	Pri	ces	GDP			
	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12		
	Series	Series	Series	Series	Series	Series		
2011-12	-	-	-	-	14.7	18.1		
2012-13	6.9	11.6	1.1	6.2	14.1	17.9		
2013-14	2.2	9.3	(-) 0.7	5.8	12.9	17.3		

Pai	Part B: GVA of								
Year	Public Sector ¹	Private Corporati ons ²	Total Corporat e Sector [2+3]	ASI (GVA at Current Prices) ³	Derived (Account o Office Ope [4-5	GVA on of Head erations 5]	Total Manufacturing (Organised plus Unorganised)		
(1)	(2)	(3)	(4)	(5)	(6)				
2011-12	1,31,973	10,98,467	12,30,440	9,76,939	2,53,501	[25.9]	14,09,986		
2012-13	1,32,864	12,30,222	13,63,086	10,07,280	3,55,806	[35.3]	15,73,632		
	(0.7)	(12.0)	(10.8)	(3.1)	(40.4)		(11.6)		
2013-14	1,38,184	13,37,727	14,75,911	10,65,111	410,800	[38.6]	17,14,730		
	(4.0)	(8.7)	(8.3)	(5.7)	(15.5)		(9.0) ⁹⁶		

Issues and Challenges related to use of Official statistics

S V Ramana Murthy, DDG National Accounts Division Bangalore 18-05-2018

Use of Official Statistics In National accounts

- Administrative Statistics- by product of governance, implementation of laws
- Budgets
- MCA data
- Export Import Data
- Surveys & Censuses- specific to the cause
- Population census
- Housing census
- Live stock census
- Specific products
- IIP
- WPI

Contd.

- The National Accounts compiled by institutional sectors and by industry
- The 5 Institutional sectors can broadly be classified as
- Public sector- General Government, Departmental enterprises, local governments, Autonomous Institutions, Non departmental enterprises
- Private corporate sector- companies, limited liability partnerships, banks
- Private unincorporated sector- unorganised enterprises, money lenders etc.
- The industry classification based on NIC

Timelines and Coverage

- As per the release calendar of National Accounts, annual estimate are frozen after 6 releases, 2 advances, provisional, FRE, SRE, TRE depending on the availability of data.
- 1st Advance (Jan) only 8 months of high freq. data indicator based
- 2nd Advance(feb) based on data up to Dec- indicator based
- PE (may)based on full years high freq data- indicator based
- FRE- no ASI, partial MCA, Budget data RE, NDE accounts (few), local bodies
- 2RE ASI, MCA, Budget data actual, local bodies accounts, large no of NDEs
- 3RE refinement in data based on data received from states

Share of Institutional Sectors

GVA by economic activity and Institutional Sectors (%)- 2011-12

S.No.	Item	GG	DE	NDE	Pvt. Corp	HH	Total
1.	Agriculture, forestry and fishing	0.0	2.7	0.1	2.5	94.7	100.0
2.	Mining and quarrying	0.0	0.0	61.6	16.6	21.9	100.0
3.	Manufacturing	0.0	1.8	7.1	78.9	12.1	100.0
	Electricity, gas, water supply &						
4.	other utility services	9.9	5.2	57.1	24.7	3.1	100.0
5.	Construction	5.5	1.5	0.4	17.0	75.5	100.0
	Trade, repair, hotels and						
6.	restaurants	0.0	0.0	2.3	41.6	56.1	100.0
	Transport, storage, communication						
7.	& services related to broadcasting	0.0	14.5	9.9	36.5	39.2	100.0
8.	Financial services	0.0	1.2	50.8	48.0	0.0	100.0
	Real estate, ownership of dwelling						
9.	& professional services	0.2	0.0	0.3	43.4	56.2	100.0
10.	Public administration and defence	100.0	0.0	0.0	0.0	0.0	100.0
11.	Other services	45.0	0.0	0.1	31.1	23.9	100.0
	TOTAL GVA at basic prices	9.7	2.1	8.6	34.7	44.9	101 100.0

Issues and Challenges in producing estimates for Public Sector- GG, DE and Autonomous Inst

- For GG & DE, Local bodies and autonomous- from budget documents of Central, State and local governments and autonomous bodies accounts
- Challenges- coverage of data improves over time.
- Budgets are available in pdf formats, require transcription manually, conversion and classification of items head wise taking time
- Sometimes estimates in DDGs do not tally with AFS
- Central estimates allocation to states based on indicators especially the supra regional

Non Departmental enterprises

- Current database- 1600 central & state NDEs
- 350 central NDEs and remaining state PSEs
- Some NDEs created on Act of parliament or state such Airports Authority Ltd(AAI), FCI
- Lay down accounts in parliament or state legislatures before they are released.
- FRE- 70-75% of GVA, rest imputed
- 2nd RE 95-98% GVA
- Estimates of central NDEs Allocated to states based on DPE survey – usually two year lag, CE – no of employees and OS – based on gross block

Corporate sector

- IN the 2004-05 series, ASI was used to estimate the manufacturing sector contribution
- ASI was based on 67000 units (including census and sample)
- In the services sector a small sample of RBI (out of 3500) was used to estimate the service sector
- In the new series, 2011-12, 1,38,502 enterprises data was used to derive the manufacturing sector estimate compared to 21,104 establishments from ASI
- Over 5 lakh companies data were made use of in the new series.
- Includes over 30000 xbrl companies contribute 70% of the GVA

Size and Coverage of MCA 21 data

- E-governance project of MCA
- 14 lakh companies are on the rolls
- No of active companies as on 31st March, 2017 11,69,303 of which 11,02,730 are private limited and the rest public.
- The authorised capital for private limited companies is Rs 18,20,600 crores compared to Rs 36,07,452 crore of public limited

MCA-21 data

XBRL (More Detailed)

- Listed (and their subsidiaries)
- Paid Up Capital > Rs 5 Cr
- Turnover > Rs 100 Cr
- 30000 in number

Exemptions:

Banking, NBFCs, Power, Insurance

Non XBRL (Less Detailed) : Other Reporting Companies over 5 lakh in number

Identification of Industrial Activity (Based on CIN)

Digit No.	What it Shows?	Remarks	
1 st digit	Listing status	If Company is Listed it will start with 'L 'and if Company is not Listed it will start with 'U'	
Next 5 digit	Industry code	As per NIC 2004	
Next 2 digit	State code	i.e. MH for Maharashtra.	
Next 4 digit	Year of incorporation	I.e. for Company formed in Calendar Year 2011 the same will be 2011.	
Next 3 digit	Ownership	PLC for Public Limited Company PTC for Private Limited Company.	
Last 6 digit	ROC reg.	i.e. 090868 for ROC- Mumbai i.e. 090633 for ROC- KOLKATA	
Name of The Company	WIPRO LIMITED	HOUSING DEVELOPMENT FINANCE CORPORATION LIMITED	BOSCH LIMITED
------------------------	---	---	-------------------------
Rank (GVA)	6 (Rs 30,000 Cr)	7 (Rs 30,000 Cr)	67 (Rs 4000 Cr)
CIN	L32102KA1945PLC020800	L70100MH1977PLC019916	L85110KA1951PLC000761
Industrial Activity	Manufacture of electrical capacitors	Real Estate Activities	Human Health Activities
Actual Business	Computer & Related Activities	Finance	Manufacturing

Distribution

	2011-12		2015-16	
	XBRL	Non XBRL	XBRL	Non XBRL
Number of Companies	30,094	4,43,824	39,661	5,88,661
Paid Up Capital (Rs lakh Cr)	8.4	4.3	12.3	6.6
Turnover (Rs lakh Cr)	71	20.7	92.2	33.1
GVA (Rs lakh Cr)	14.8	5.7	23.4	8.8
No. of Companies (%Share)	6.4	93.6	6.3	93.7
Paid Up Capital (% Share)	66.1	33.9	65.1	34.9
Turnover (% Share)	77.4	22.6	73.6	26.4
GVA (% Share)	72.2	27.8	72.7	27.3

Receipt of data from MCA

- MCA shares data with MOSPI based on the following timelines of corporate filings
- > 31st July, 2017 for 2015-16 filings
- ➢ 30th November, 2017 for 2016-17 filings
- Data is received in 3 phases (i) data items mainly relating p& L and Balance sheet (ii) balance sheet items reserve surplus, inventories, cash & bank balance, borrowings etc- XBRL. (iii) fixed assets block from XBRL
- The XBRL format is detailed. Ratios derived from XBRL are used to disaggregate items from non XBRL companies

Issues Related with MCA data

- Correct Identification of Industrial Activity
- Classification in case of Multiple Activity Enterprise
- Blowing up of estimates with PUC- contentious but has been going on for decades (RBI)
- State Wise Allocation of GVA

Present Resolution

- Online Research (companies website, Reuters, Bloomberg etc.)
- MGT_7 Form(MCA Digitised)<u>1404819158 mgt 7.pdf</u>
- Based on the number of business activities undertaken entered, the table to enter details of the business activities will be populated with a maximum of ten rows.
- ➢ % of turnover of the company for each main activity undertaken. Ensure sum of all % entered is at least 50%, if activities are not more than 10. etails of the activities contributing 10% or more of the turnover are provided.
- MGT (Form (Non digitised, Directors Report)

Future

 Linking of the Financial Filings with MGT -7 and provision of Industrial Activity Codes by MCA along with Profit & Loss Accounts and Balance Sheet information.

Multiple Activity

 Presently , entire GVA contribution attributed to major activity

 Future : Depending on availability of MGT- 7 information, matter would be put before ACNAS for decision whether apportioning needs to be done.

State Wise GVA allocation

- State of Registration (CIN) may be different from the State where actual Production Takes Place.
- Establishments may be spread across several States.

Present Method

• Agriculture :

State wise Sectoral distribution is not done.

• Mining :

Proportion of production : Coal - O/o Coal Controller, Crude Oil

- M/o Petroleum & Natural Gas,

Others - Indian Bureau of Mines

• Manufacturing :

Private corporate component of ASI

• Services:

Labour Input Proportion (State wise) calculated for different services in the base year (68th Round) applied on the GVA.

Alternatives for Future

• Surveys: Establishment wise Information collection for at least large sized companies

 Administrative Statistics : Exploring alternative sources like GSTN, EPFO for availability of establishment wise data to provide some size measure for state wise allocation

Unincorporated /HHSector

- Data sources- NSS surveys on Unincorporated enterprises, Employment unemployment surveys, census of housing stock, population, indicators, indicators- sales tax, service tax, cargo handled at ports, passenger tonne km, education health expenditure,
- Derive bench mark estimates (GVA=ELI*GVAPEW) and move forward using indicators
- Improvements in the new series
- Effective labour input method- differential weights to employers, hire workers and unpaid family workers
- In the old series all had equal weights (GVA= LI*GVAPW)
- LI moved using inter survey growth

Unincorporated sector- challenges

- Challenges
- Sample size not representative at compilation category level
- Lack of representative indicators- IIP, ASI(HUF)
- Allocation to states a challenge as Sample size not representative at state level<u>73rd round</u> <u>results.xlsx</u>

New Series

of

National Accounts Statistics

Ministry of Statistics & Programme Implementation

NATIONAL ACCOUNTS DIVISION, CSO, MOSPI

OUTLINE OF THE PRESENTATION

- BASE YEAR REVISION Guiding Principles
- MAJOR CHANGES Coverage, Methodology, Data Sources etc.
- FREQUENTLY RAISED ISSUES IN MEDIA
- ISSUES AND CHALLENGES

BASE YEAR REVISION-GUIDING PRINCIPLES

• Revision of base year to a more recent year

Review of the existing data base and methodology

 Implementing the international guidelines on the compilation of national accounts, the System of National Accounts (SNA), 2008

CONSULTATION WITH EXPERT BODIES

 Advisory Committee on National Accounts Statistics (ACNAS)

 Subcommittees of ACNAS – to look into the issues in the compilation of national accounts and make necessary recommendations for the new series of national accounts

CONSULTATION WITH EXPERT BODIES -SUBCOMMITTEES

- Sub-Committee on Unorganised Manufacturing & Services Sectors
- Sub-Committee on Agriculture and Allied Sectors
- Sub-Committee on Private Corporate Sector including PPPs
- Sub-Committee on System of Indian National Accounts
- Committee on Private Final Consumption
 Expenditure

Major changes

- Presentation of Macro economic aggregates for different Institutional sectors
 - General Government
 - Non-financial corporations
 - Financial corporations
 - Households including Non-Profit Institutions Serving Households

Major Changes- Institutional Sectors

	Old (base year: 2004-05) series	New (base year: 2011-12) series
1.	Public Sector	1. Public Non-Financial Corporations
	1.1 Administrative Departments	2. Private Non-Financial Corporations
	1.2 Departmental Enterprises	3. Public Financial Corporations
	1.3 Non-Departmental Enterprises	4. Private Financial Corporations
2.	Private Sector	5. General Government
	2.1 Private Corporate Sector	6. Household Sector including NPISHs
	2.2 Household Sector	
	including	
	Non-Profit Institutions	
	Serving Households (NPISHs)	126

Coverage

- Non-financial /Financial corporations
 - Departmental Commercial Undertakings, NDCUs and Private Corporate Sector
 - Includes Quasi-Corporations
 - Unincorporated Enterprises covered in Annual Survey of Industries
 - Unincorporated enterprises of manufacturing that are not covered under ASI but maintain accounts
 - Co-operatives providing non-financial services
 - Unincorporated enterprises providing non-financial services maintaining accounts
 - Unorganised financial enterprise
- General Government
 - Government Administrative Departments
- Households including Non-Profit Institutions Serving Households

Improvements in coverage –

Corporate sector

2004-05 series RBI Study on Company Finances -

Estimates were compiled on the basis of financial results of around 2500 companies.

2011-12 series

Comprehensive coverage of Corporate Sector thro' MCA21 database - over 3 lakh companies for FRE and over 5 lakh (common companies) for SRE

Financial corporations

Financial corporations in the private sector, other than banking and insurance, limited to a few mutual funds and estimates for the Non-Government Non-Banking Finance Companies based on RBI studies Inclusion of stock brokers, stock exchanges, asset management companies, mutual funds and pension funds, as well as the regulatory bodies, SEBI, PFRDA and IRDA.

Improvements in coverage –

2004-05 series

Local Bodies

Estimates compiled on the basis of information received for autonomous seven institutions and local bodies of four States

Use of results of recent surveys

2011-12 series

Improved coverage of local bodies and autonomous institutions, covering around 60% of the grants/transfers provided to these institutions.

Incorporation of the results of the NSS Surveys, recent viz., Unincorporated Enterprise Survey (2010-11) and **Employment-**Unemployment Survey (2011-12), alongwith the adoption of an "Effective Labour Input Method" for unincorporated manufacturing non-financial services and enterprises

Effective Labour Input method

 Effective LI method to address the issue of differential labour productivity by assigning weights to different categories of workers engaged in an economic activity based on their productivity.

Use of results of recent surveyscontd

- All India Livestock Census, 2012
- NSS 70th round (2013) All India Debt and Investment Survey and Situation Assessment Survey
- Population Census, 2011
- Study on yield rates of meat products & by-products of different livestock species conducted by National Research Centre on Meat, Hyderabad
- Study on the inputs in the Construction sector by Central Building Research Institute (CBRI), Roorkee
- Study on 'Harvest and Post-harvest losses of major crops and livestock products in India' conducted by Central Institute of Post-Harvest Engineering and Technology (CIPHET), Ludhiana.

Private Corporate sector

- Comprehensive coverage of Corporate Sector thro' MCA21 database – over 3 lakh companies for FRE and over 5 lakh for SRE (constitute approximately 85% of total PUC of nonfinancial private corporate sector as provided by MCA)
- Two e-platforms, namely 23 AC/ACA and XBRL
- XBRL format (Extensible Business Reporting Language) is a global standard for exchanging business information.
 - Listed (and their subsidiaries)
 - Paid Up Capital > Rs 5 Cr
 - Turnover > Rs 100 Cr
- Non XBRL
 - Others

MCA Data in brief Contd.

- Banking companies, Power companies, Non-Banking Financial Companies (NBFC) and Insurance companies are exempted from XBRL filing as of now.
- Company Identification Number (CIN) provides information on type of ownership, major economic activity etc.

Coverage - Private Non-financial corporate Sector

• In addition to MCA 21 data the following are also covered:

- Estimates derived from data on Limited Liability Partnership (LLP) from MCA (contributing less than 1% of GVA of non-financial private corporate sector in 2011-12)
- Estimates for quasi private corporate sector from NSSO's sample survey results (Enterprise Survey)

Coverage and methodology in 2004-05 Series

- Mining and Quarrying: Data from IBM, Office of Coal Controller, Ministry of Petroleum and Natural Gas etc.
- Manufacturing: Annual Survey of Industries
- Electricity: Analysis of private electricity companies as per listed by Central Electricity Authority (CEA)
- Service Sector Industries:

Base year estimates prepared by Labour Input method

Moving the base year estimates for further years by use of growth rate as observed in the sample study of RBI or inter survey growth rate etc.

Major changes...

- Local Bodies
 - Includes urban local bodies and rural local bodies municipalities, DRDAs, panchayats
- Reporting of accounts improved in the local bodies in the recent years
- Accounts reported have been captured in national accounts, accounting for 60% of the funds transferred to such bodies

Industry-wise changes

- Agriculture, forestry and fishing
 - Segregation of crop and livestock production
 - Adoption of Agriculture Census (2010-11) and Livestock Census (2012)
 - Revision of yield rates of meat & by-products of different livestock species
- Mining
 - Estimation of value addition from extraction of sand through an indirect method, in accordance with its use in construction
 - 'Enterprise Approach' using MCA21 database to account for head offices, ancillary activities, etc. not covered under the 'establishment approach'

Industry-wise changes - Mining

- Major minerals, coal & lignite and Crude petroleum and natural Gas - Annual Reports of Public Sector Companies, MCA21 database for the annual reports of Private Sector Companies
- Minor minerals Except sand State Geological Departments
- Sand indirectly estimated as input of sand used in the construction sector
- Constant price estimates are derived using deflators compiled using relevant WPI and from the IBM data on production, prices and input rates.

Industry-wise changes – Manufacturing

- Organised Manufacturing
 - Annual Survey of Industries the only source of information till now
 - Limitation of ASI
 - "establishment approach" in ASI
 - Designed for capturing the manufacturing activity only
 - Services provided by head offices, other establishments not sufficiently covered
 - Supplemented with the MCA21 database

MANUFACTURING – enterprise approach

- GG/ Public corporations Analysis of Budgets and accounts of public enterprises
- Private corporations MCA data base
- Propreitorship, partnerships, quasi corporate sector (unorganised enterprises maintaining accounts) - based on ASI data.
- IIP at 2-digit level of NIC is used to extrapolate previous years' value added when ASI is not available.

MANUFACTURING – enterprise approach

• Unorganised Manufacturing

Compilation of base year estimates

- Modified method "Effective Labour"
 - Different relative weightage of owners, helpers and hired workers.
 - Estimates of value added calculated on the basis of "effective labour"
 - Weights estimated by using a Nested Cobb Douglas production function
- The benchmark compilation category-wise estimates are moved to subsequent years using the ASI growth.
- Constant price estimates: Single deflation using relevant WPI

Industry-wise changes –

 Electricity, Gas and water Supply – Use of MCA data base as against data from annual reports of private electricity companies registered with CEA in 2004-05 series

Industry wise changes - Construction

- Rates and ratios based on information received from study on cost of construction by CBRI.
- Estimation of value of output used in construction for Bitumen and bitumen mixtures, and Glass and glass products in addition to Cement and cement products, Iron & steel, Bricks & tiles, Timber and Fixtures & fittings.
Industry wise Changes - Unorganised Nonfinancial Services

- No regular source of information; Quinquennial Surveys of NSS the only option;
- Trade not covered in the earlier Survey Gap of more than 10 years (For the 2004-05 series, results of NSS 55th Round in 1999-2000 was used)

Compilation of base year estimates (in 2004-05)

- LI Method
 - number of workers (from Employment Survey) and the value added per worker (from Enterprise Survey) in the industry.

Limitation – assumed equal productivity for each type of worker

Unorganised Services in the New Series.... Major changes...

Compilation of base year estimates – Using effective labour Input method

Extrapolating to the succeeding years

- Use of indicators reflecting current situation
 - Sales tax used in the case of unorganized trade
 - Use of Service Tax (in some cases) as an indicator for growth in the respective service(s)

Financial corporations sector - Major changes

- Financial Corporations
 - Increased coverage to capture extensive growth in financial sector
 - all mutual funds as registered under SEBI
 - all pension funds as registered under PFRDA
 - all financial auxiliaries
 - stock brokers, stock exchanges, asset management companies, regulatory authorities (SEBI, IRDA, PFRDA)

Financial corporations sector - Modifications: Methodological						
Description	Base year 2004-05	Base year 2011-12				
Computation of FISIM	FISIM = total property receipts (dividend+ interest+ net profit on sale of investments) = total interest payments by the banking sector	Reference Rate (RR) approach FISIM = (LR-RR)* average stock of loans + (RR-DR) * average stock of deposits. RR = harmonic mean of lending rate and deposit rate for the banking sector				
GVA computation of Central Bank	Banking department and issue department were treated separately. Issue department - a part of General Government, outside financial sector. Market output computed for banking department, a part of	 Entire RBI included in financial sector Entire RBI treated as non-market Output computed using cost method 				
	tinancial sector.	147				

Financial corporations sector - Modifications: Additional Data

Description	Base 2004-05	Base 2011-12	Data source
Private Mutual Funds	X		list and data from SEBI
Private Pension funds	×		PFRDA
Regulatory authorities IRDA, SEBI, PFRDA	×		IRDA, SEBI, PFRDA
Stock exchange, stock brokers (registered with SEBI) and AMC	×	V	list from SEBI, data from MCA
Unorganised financial sector	fixed ratio: 1/3 rd of GVA of Government Companies and NGNBFC	V	Moneylenders: RBI Basic Statistical Returns, AIDIS 2012 and 67 th round of NSS enterprise survey Remaining unorganised: 67 th round of NSS enterprise survey

Expenditure-side aggregates....

- Updation of expenditure pattern of the households using NSS CES (2011-12)
- PFCE of education and Health supplemented by expenditure incurred by NPISHs.
- Updation of wastage ratios of crops and livestock products using a study conducted by CIPHET
- Revision of service lives of assets
- Indirect taxes and subsidies classified as production and product.

Expenditure-side aggregates

- "Intellectual Property Products" (IPPs) included as asset
 - consists of research and development
 - mineral exploration
 - databases and software
 - other IPPs
- IPPs are recognised in the business accounts as "Intellectual Capital"
- Valuables purchased by households as savings alongwith "household savings in physical assets"

Key National Accounts Estimates

- 2004-05 series
 - Economic growth measured by GDP at factor cost
- 2011-12 series
 - GVA at basic prices
 - Basic Prices are inclusive of production taxes (such as fees for setting up an enterprise, land revenue tax) less production subsidies (such as subsidies on seeds, fertilizers)
 - Natural price for the entrepreneur,
 - production taxes/subsidies are considered by entrepreneur for deciding the price of the product

BASIC PRICES AND FACTOR COST

- Gross value added at factor cost used in the 2004-05 series is not a concept used explicitly in the SNA.
- There is a conceptual difficulty with gross value added at factor cost as by definition, "other taxes or subsidies on production" are included in the price considered by the producer for deciding the price of the product.
- Gross value added at factor cost estimated in the 2004-05 series is not strictly a measure of value added devoid of all taxes or subsidies on production.

National Accounts Estimates....

- Measurement of growth
 - GDP at market prices
 - Market prices are reference prices for valuation
 - Includes "Taxes on products -Subsidies on products"

 IMF/ WB compares economies by "GDP at market prices" and its growth

SNA 2008 recommendations

- Valuation of various GVA at basic prices and GDP at market prices
- Estimates of the institutional sectors Nonfinancial and financial Corporations, General Government and households are shown separately
- Distinction between General Government and public corporations has been made
- Unincorporated enterprises belonging to households, which have complete sets of accounts have been treated as quasicorporations.

SNA 2008 recommendations

- Allocation of head office to the non-financial corporations sector - In the new series, this has been implemented in the mining and organised manufacturing sectors.
- Output of Financial Intermediation Services Indirectly Measured (FISIM) has been calculated using a reference rate for the financial sector, except in the case of central bank (Reserve Bank of India).
- Output of central bank (RBI) is measured at cost.
- Asset classification as recommended by SNA2008 nonfinancial assets have been classified as 'dwellings, other buildings and structures', 'machinery and equipment', 'cultivated biological resources' and 'intellectual property products'.

FREQUENTLY RAISED ISSUES

IIP growth and manufacturing growth

- IIP is only a volume based index which measures ouput or production
- GVA Captures the value addition in the economy
- GVA for manufacturing is compiled using the enterprise approach.

FREQUENTLY RAISED ISSUES

IIP growth and manufacturing growth

- Use of enterprise approach has captured ancillary activities and head offices.
- This component of value added was earlier being excluded from GDP because it was not covered in ASI, although the concerned enterprise belonged to the manufacturing segment.
- IIP methodology, on the other hand, uses only a fixed basket of items with weights assigned according to their relevance in the base year
- Thus, the two measures are not comparable because of (i) different data sources, (ii) methodological differences.

Frequently raised issues

Growth in Trade

- For the 2004-05 base revision, results of NSS 55th Round in 1999-2000 was used.
- In years succeeding the base year, the estimate of value added was moved using volume indicators .
- The indicator based growth had overstated value added estimated for 2011-12 in the old series - the 2011-12 estimates in the new series are lower than those in the old series.
- Change of indicator from a volume indicator to one based on value, namely sales tax collections.
- In the 2004-05 series volume indicator based on output of commodity producing sectors was used.

Frequently raised issues

Deflators used in National Accounts

- The only price indicators available with CSO for national accounts compilation is the data on CPI and WPI.
- The use of CPI in national accounts has been restricted to those services for which sector specific CPI are available and also in the case of collective services like public administration and defence, where lion share of value added is compensation of employees.

- Recent RBI study compares the growth rates of AE and Final estimates during the period 2003-04 to 2016-17
- Three base year revisions during the period 2003-04 and 2016-17(1999-00, 2004-05 and 2011-12)
- Between the FAE, SAE and Final Estimates of any particular year, CSO also releases the Provisional Estimates (PE), First Revised Estimates (FRE) and Third Revised Estimates (TRE)

- Base Revision exercise entails a review/revision in the set of data sources, incorporation of recent survey results, methodological changes, new censuses and type studies and improvements in coverage and procedures of compilation.
- Estimates across different base years are not directly comparable.
- Base year of GDP estimates for 2008-09 (AE) was 1999-2000, while for the Final Estimates (2008-09 FE)it was 2004-05.
- Base year of GDP Advance Estimates of 2011-12 (AE), 2012-13 (AE) and 2013-14 (AE) was 2004-05 while the base year of Final Estimates of these years was 2011-12.

Revisions in headline GDP data in the 2011-12 series are given in the table below. The differences in AE and FRE estimates may be noted.

Year	GDP Estimates (2011-12 Base Year)					
	First Advance (FAE)	Second Advance (SAE)	Provisional (PE)	First Revised Estimates (FRE)	Second Revised Estimates (SRE)	Third Revised Estimates (TRE)
2014-15	7.4		7.3	7.2	7.5	7.4
2015-16	7.6		7.6	8.0 ^{&}	8.2	
2016-17*	7.1	7.1	7.1	7.1		
2017-18	6.5	6.6				

* - First Advance Estimates was released from 2016-17

&- Revisions were impacted by use of WPI 2011-12 series. The growth in WPI (all commodities) was (-)3.7% in 2011-12 series as against (-)2.5 % in the 2004-05 series

- Advance Estimate of GDP released by CSO provides the first signal from the system of national accounts about the status of the economy.
- Compiled using the same methodological framework adopted for later estimates as per recommended procedures in the SNA.
- Indicators used are agricultural production data (advance estimates of agricultural production for agricultural year from the source agency), corporate data (latest information or the 'early birds' are taken into account), IIP, motor vehicles growth, cargo handled at major ports, Budget/Revised estimates of Revenue expenditure and receipts etc.

- Revisions in the source data also results in revisions in PE/FRE/SRE/Final estimates.
- In 2008-09 the growth in tax revenue receipts which was 15.9 % at BE stage was revised downwards to 5.9% at RE stage and actuals was 2%.
- In 2009-10 growth in non-plan revenue expenditure, which was 10.7 % at BE stage, was subsequently revised upwards to 14.8% at RE stage and actuals was at 17.7%.

• Extract from the RBI Mint street memo No.12

"....It may be advisable for data users to read GDP growth numbers carefully along with other high frequency indicators of the real economy. For example, just two days after the release of first advance estimates (FAE), i.e., on January 7, 2018, the Ministry of Agriculture and Farmers Welfare issued a press release expressing optimism about upward revisions in output of 'agriculture, forestry and fishing' sector. Furthermore, corporate results of the 'early birds' showed encouraging operating performance for 2017–18:Q3"

- Advance estimates are compiled by CSO based on actual data and not on optimism or anecdotal evidence.
- Transparency is a key aspect of communications policy for Advance Estimates.
- Reasons for revisions, if any, in the Advance Estimates are indicated clearly when the PE/FRE is released by MoSPI, to facilitate users to understand the factors underlying revisions and interpret possible changes in the economy.

Issues and Challenges

- Contribution of Private Corporate Sector is around 27% in total GVA
- Issues in compiling State level estimates as operational details are not available. What is available is only State wise registration details.
- At present Statewise Allocation of Private Corporate Sector estimates is done using different indicators

Issues and Challenges

- Data (Annual Reports/Budgets) are received mostly in hard copies or pdf files.
- Availability of Service production and Price indices – Slow progress
- Presence of a large informal sector- lack of regular data flow – Hence base year estimates extrapolated using indicators.

Issues and Challenges

- Data for the new and emerging areas, like payments bank, credit and debit card units, mobile payments platforms, etc. are not available as of now.
- NAD has taken up this issue with the National Payments Corporation of India (NPCI).
- Frame of all financial enterprises, particularly in the organised sector is to be developed and updated.

Official Statistics: Some Issues Related to National Accounts Statistics

By: Sanjay Singh

Workshop on 'Challenges and Issues with Data on Official Statistics'

> Bengaluru May 18-19, 2018

GDP Revision in India-New Series



FAE=First advance est., SAE=Second advance est., AE: Advance est., PE=Provisional Estimate, FRE: First revised est., SRE: Second revised est., TRE: Third revised est.,

- Though overall GDP growth did not revise much, but its components recorded considerable revision.
- GFCE observed significant revision.
- GFCF revised upward sharply during demonetisation.

Absolute Revision in GDP Growth After Three Years – An International Comparison



Average Absolute Revision (bps): India=106, US=64, UK=68, Japan=55, Germany=29, France=47, Australia=42, Canada=21.

Source: OECD

Drivers of investment growth



- Investment in Intellectual property products (IPP), which has a share of over 10% in GFCF, measured based on the corporate balance sheet.
- Whether, coverage of IPP can be expanded? (like, start-ups)

Filing of Intellectual Property Applications: Can it be used

Application	2012-13	2013-14	2014-15	2015-16	2016-17
Patent	43,674	42,951	42,763	46,904	45444
Design	8,337	8,533	9,327	11,108	10213
Trade mark	1,94,216	2,00,005	2,10,501	2,83,060	278170
Geographical Indication	24	75	47	14	32
Copyrights	Copyright admini CGPDTM in 2016	istration shifted to -17	14812	16617	
Semiconductor Integrated Layout Designs (SCILD)	SCILD administra in 2016-17	ation shifted to I	-		
Total	2,46,251	2,51,564	2,62,638	3,55,898	3,50,467

Source: Office of the Controller General of Patents, Designs, Trademarks and geographical indicators, DIPP, Ministry of Commerce and Industry.

GVA: Manufacturing sector

	Quarterly		Contribu				
	Estimates		Provisional	Revised	tion		
		Estimate	Estimate	Estimate			
Organized Manufacturing							
DCUs	Assumed	Assumed	Assumed	Budget/	1.7		
	Growth	Growth	Growth	Accounts			
NDCUs	Assumed	Assumed	Assumed	Budget/	6.2		
	Growth	Growth	Growth	Accounts			
Private	Quarterly	Quarterly	Quarterly	MCA database	65.2		
corporate sector	Statements of	Statements of	Statements of				
	listed companies	listed companies	listed companies				
Quasi	IIP Data	IIP Data	IIP Data	ASI Data	6.7		
Corporates							
Total contribution of Organized Sector							
Unorganized Sector							
Unorganized	IIP Data	IIP Data	IIP Data	ASI Data	20.1		
sector							
Total					100		

Discrepancies in National Account Estimates – International experience



Source: World Bank

Some data gaps on NAS

General

- Unorganized trade and transport.
- GVA from Petroleum products undergo significant revisions.

G-20 Data Gaps Initiatives

- Publication of GFCF for dwellings at quarterly frequency.
- Housing Start-up.

Other

- Public and private sector investment at quarterly frequency.
- Publication of PFCE for fruits and vegetable separately as done in the case of earlier (2004-05) series.
- Supply and use table available till 2012-13 (Improving timeliness).

Structure of Presentation

Issues related to;

- Price Statistics
- National Accounts

Price Statistics – compiled by RBI

House Price Index

- RBI compiles quarterly House Price Index, based on registration prices, for ten major cities.
- An aggregate House Price Index is also derived based on these ten indices.
- Examining to extend the HPI by incorporating few more cities.

Banking Service Price Index

- Monthly Banking Services Price Index (a part of the Experimental Services Price Index).
- Both for Direct and Intermediation Services.
- Data are released through the web-site of the Office of the Economic Adviser, Govt. of India.
Price Statistics – further improvement

Consumer Price Index (Housing) compiled by the CSO

- Housing price index is released along with the sub-groups rent (house, garage); residential building & land (cost of repairs only), water charges and watchman charges.
- Providing Separate Rent data under the head : CPI for owner occupied housing, Employer provided housing (also separately for Central Govt., State Govt. and PSUs) and Other housing.

G-20 Data Gaps Initiatives

• Need to explore for compilation of Commercial Property Price

Consumer Expenditure– deviation in NSSO and NAS data

	NSSO	NSSO	NAS	Real Per Capita
	(Rural)	(Urban)	(all India)	GDP growth
1999-00 over 1993-94	1.7	2.2	3.7	4.0
2004-05 over 1999-00	0.2	1.3	2.6	4.7
2011-12 over 2004-05	2.9	3.4	6.9	6.9

NAS estimates are higher than NSSO numbers.

Statistical Discrepancies in GDP Estimation

