

Tracing the Contours of Official Economic Statistics in India: A Sectoral Analysis

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Abstract

The system of official economic statistics in India has undergone myriad changes since Independence. There have been various developments in its administrative structures and changing levels of focus on different economic sectors. The types of datasets available for these sectors have been ever-evolving and undergo dynamic changes owing to real-time measurement and analysis using ICT.

The Agricultural and Livestock Censuses capture data on the agricultural sector. For the Industries sector, Annual Survey of Industries and the Directorate of Industries in states are the two major sources of data. Since economic liberalisation in India, there has been an increased focus on the Services sector and developing a well-organised mechanism to cover it. This sector is covered by National Sample Surveys, Ministry of Corporate Affairs' MCA-21 Database, GSTN and others. The unorganised and informal sectors of the economy also find coverage in NSS Rounds on Employment and Enterprises. The Census of India, the Economic Census, Price Indices and NSS Rounds pertaining to Consumption Expenditure, Enterprises and Employment, among others, are major sources of economic statistics as well. We also have new arrays of data for the formal sector in the form of EPFO, Direct Tax, Property Tax and others.

Using this sector-wise classification of Agriculture, Industries, and Services, and also including the unorganised and informal sectors, the paper explores India's structure of economic statistics. While the paper draws attention to recent datasets and rounds of surveys, the focus is also on the evolution of the system of official economic statistics in India. The paper highlights issues with the credibility and utility of the available data, in light of a declining GDP growth which also gives rise to more serious questions on the reliability of the country's data architecture and system of economic statistics. It also discusses structural changes such as those of the MoSPI and NSC.

The system of official economic statistics in India now faces the challenge of adapting to Information and Communication Technology. The paper thus emphasises the role of strengthening realtime and Management Information Systems' data in order to enable evidence-based policy making and planning and realise the vision of 'New India' and a US\$ 5 trillion economy.

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1. Background and Motivation

As the Indian economy has grown since its independence, it has experienced decades of sectoral changes, evolving reform processes and technological advances. In turn, it has become one of the major fastest growing developing economies in the world and is poised to become further strengthened in the 21st century as it has strong macroeconomic fundamentals and a unique ‘India’ brand in the era of *globalization*.

One of the contributors to the strong economic fundamentals in India has been its robust official statistical architecture, which responds to the dynamics of the country’s governance and planning structures, socio-economic, technological and other reform processes. Understandably, the system of official economic statistics in India has undergone myriad changes. There have been various developments in its administrative structures and changing levels of focus on different economic sectors.

At present, the Ministry of Statistics and Programme Implementation (MoSPI) is the nodal ministry of Government of India (GoI) concerned with aspects of coverage and quality of statistics that are regularly released. The surveys conducted by the Ministry are based on scientific sampling methods. Its Five-Year Vision Plan for 2019-2024 has urged the National Statistical System to be geared for meeting the demands of the society and policymakers through the reliability, comprehending capacity and accessibility of the digital data. It has highlighted that to reach the goal of becoming a USD 5 trillion economy by 2024-25, real-time monitoring and improved metrics of various parameters of the economy is needed (Ministry of Statistics and Programme Implementation, 2019). This further becomes relevant in the Sustainable Development Goals (SDG) era. In fact, aligning to the Agenda 2030 suggestion to the member states to conduct regular and inclusive reviews of progress at the national and sub-national levels, the United Nations Department of Economic and Social Affairs (UN DESA) has come up with guidelines for the national statisticians to enable them to monitor progress made in the implementation of the SDGs based on data produced by national statistical systems.

For ensuring evidence-based policymaking, the Guidelines on Integrated Economic Statistics provide practical guidance on advancing consistency, coherence and reconciliation of statistical information through the application of the methodology of integrated economic statistics using the System of National Accounts 2008 as the overarching conceptual framework (Department of Economic and Social Affairs Statistics Division, UNDESA, 2013).

In India, sectoral level data has been gathered through multiple sources such as the Agricultural and Livestock Censuses capture data on the agricultural sector. For the Industries sector, Annual Survey of Industries and the Directorate of Industries in states are the two major sources of industry data. Since economic liberalisation in India, there has been an increased focus on the Services sector and developing a well-organised mechanism to cover it. This sector is covered by National Sample Surveys, Ministry of Corporate Affairs’ MCA-21 Database, Goods and Services Tax (GST) and others. The unorganised and informal sectors of the economy also find coverage in National Sample Survey (NSS) Rounds on Employment and Enterprises. The Census of India, the Economic Census, Price Indices and NSS Rounds pertaining to Consumption Expenditure, Enterprises and Employment, among others, are major sources of economic statistics as well. We also have new arrays of data for the formal sector in the form of Banking, Employers’ Provident Fund Organisation, Direct Tax, GST, Property Tax and others, as well as various administrative and program data also in the form of Management Information Systems (MIS) and Dashboards. The types of datasets available for various economic sectors have been ever-evolving and undergo dynamic changes owing to real-time measurement and analysis using Information

and Communication Technology (ICT). This paper adopts the sectoral framework to understand and trace the contours of official economic statistics in India. The sector-wise analysis would assess the classification of the three broad industry structure i.e. primary or agriculture, secondary or industries, and tertiary or services, along with the unorganised and organised sectors. This paper explores India's structure of economic statistics and examines the challenges and possibilities to suggest possible ways forward from this sectoral analysis.

While the paper draws attention to recent datasets and rounds of surveys, the focus is also on the evolution of the system of official economic statistics in India. The paper highlights issues with the credibility and utility of the available data, in light of a declining rate of growth of Gross Domestic Product (GDP), which also gives rise to more serious questions on the reliability of the country's data architecture and system of economic statistics. It also discusses the structure, issues and changes in MoSPI, NSSO, and National Statistical Commission (NSC).

This paper is divided into five sections. The introductory section is followed by the sectoral overview of the sources of economic statistics in India. Section three traces the contours of official sectoral economic statistics and in doing so it discusses the Indian Statistical System and vision documents for New India pertaining to statistics and data for a "new economy". Section four highlights some impediments in producing authentic data and ensuring reliable information. The paper finally concludes with a discussion on the ways forward to address the critical gaps in India's statistical system to ensure a streamlined collection, calculation, and monitoring of data that will ultimately address the national priorities for the benefit of its citizens.

2. Sources of Official Economic Statistics in India: A Sectoral Overview

2.1 Official Economic Statistics

Here, we talk about the structure of economic statistics in India. One part lies with government bodies like MoSPI and Ministries such as Labour, Annual Survey of Industries etc, and the other with entities who reproduce the data, both of government such as NITI Aayog and RBI as well as private, such as ISEC, IndiaStat and others.

Table 1: Official Economic Statistics, Selected

Area	Data Source	Source Organisation
National Income and Accounts	http://www.mospi.gov.in/publication/national-accounts-statistics-2019	MoSPI
Taxation	https://www.gst.gov.in/ https://www.incometaxindia.gov.in/pages/about-us/central-board-of-direct-taxation.aspx	GST, CBDT
Monetary, Banking and Finance	https://dbie.rbi.org.in/DBIE/dbie.rbi?site=statistics	RBI
Prices	http://labourbureau.gov.in/ (for CPI) https://enindustry.nic.in/ (for WPI)	Labour Bureau Department of Economic Affairs
Budget and Public Finance	https://www.indiabudget.gov.in/ http://dea.gov.in/data-statistics	Department of Economic Affairs
Businesses	http://www.mospi.gov.in/7th-economic-census	MoSPI
Insurance	http://www.irdai.gov.in/	IRDAI
Demography	Census https://censusindia.gov.in/ SECC https://secc.gov.in/welcome Aadhar https://uidai.gov.in/	RG1, Census Commissioner of India and UIDAI
Labour, Employment and Wages	National Sample Survey(NSS): Employment and Unemployment Periodic Labour Force Survey: http://www.mospi.gov.in/sites/default/files/publication_report_s/Annual%20Report%2C%20PLFS%202017_18_31022019.pdf	MoSPI
Consumption Expenditure, Debt and Investment	All India Debt and Investment Survey: http://www.mospi.gov.in/sites/default/files/publication_report_s/KI_70_18.2_19dec14.pdf Consumer Expenditure Survey: http://mospi.nic.in/sites/default/files/publication_reports/Report_no556_rmf68_30june14.pdf	NSSO, MoSPI
Migration and Mobility	http://censusindia.gov.in/Census_And_Yo/migrations.aspx	Registrar General and Census Commissioner of India
Infrastructure	Database on Infrastructure Projects in India, Department of Economic Affairs, goi.in/infrastructureindia.gov.in/	DEA
Government Schemes and Programs	https://www.digitalindia.gov.in/ https://www.mypgov.in/ https://data.gov.in/	

National Income and Accounts: It is compiled by CSO and details of the methodology is outlined in documents released (MoSPI, 2015; UN, 2008; MoSPI, 2019g). National Accounts Statistics: Sources and Methods 2012 describes the sources and methods of estimation of macroeconomic aggregates, domestic product, consumption expenditure, saving, capital formation, capital stock, accounts of the public sector and consolidated accounts of the nation, which are presented in the Central Statistical Office (CSO)'s annual publication 'National Accounts Statistics' (NAS). MoSPI has released updated Methodology for Compilation of the Gross State Value Added (GSVA) in the New Base (2011-12) in 2019.

The CSO releases National Accounts Statistics each year with many faces of national accounts by economic sectors/activities, further accounts classifications and details of any changes. The latest available National Accounts Statistics is for year 2019 (<http://www.mospi.gov.in/publication/national-accounts-statistics-2019>). These accounts are also available for quarterly estimates, however, the yearly one is most used for reporting and analysis. The latest base year series used is 2011-12, which was 2004-05 earlier.

At the sub national and district level, CSO suggests the methodology for state DES to calculate and estimate the same. However, DES mostly reports yearly GVA and rarely goes into further details or enquiry in practice.

We do not have any estimates at the local levels, especially for cities. However, during the changes in the base year, CSO does give rural and urban classifications and also outlines method for the same. Nonetheless, no estimation can be found officially using the same. Currently, India has 4302 cities, around 4000 census towns (not incorporated by law), 2.4 Lakh Gram Panchayats and 6.4 Lakh villages.

An Input Output transaction table is also a part of MoSPI's data provisions. [Methods](#) and [data](#) for the same are provided. Further discussions² on Input Output and social accounting in India also exist.

Taxation: The information on direct, indirect (Goods and Services Tax (GST), <https://www.gst.gov.in/>) and other taxes are given by respective boards such as Central Board of Direct Taxes, <https://www.incometaxindia.gov.in/pages/about-us/central-board-of-direct-taxation.aspx> under the Ministry of Finance (MoF).

Budget and Public Finance: Similarly MoF also presents Union Budget (<https://www.indiabudget.gov.in/>) each year along with Economic Survey in the Parliament. It has statistics on revenue, borrowing, payment, expenditure, outlays, deficits and so on. These are also available at Department of Economic Affairs, MoF (<https://dea.gov.in/data-statistics>):

- [External Debt](#)
- [Public Finance Statistics](#)
- [Central Government Borrowings](#)
- [National Summary Data](#)
- [Monthly Economic Report](#)
- [Overseas Direct Investment ODI](#)
- [Debt Statistics Middle Office](#)
- [QEDS](#)

Monetary, Banking and Finance:

The RBI Database on Indian Economy and Handbook of Statistics on Indian Economy give data in this area. The information is given in four parts: Annual Series, Quarterly/Monthly Series, Series with less than Monthly Frequency and Major Growth Rates and Ratios. The areas covered are National Income and Employment, Output and Prices, Money and Banking, Financial Markets, Public Finance,

²http://ngil.cstep.in/uploads/default/files/publications/stuff/WorkingPaper_Compilation_of_InputOutput_Table_Final_CSTEP.pdf

Trade and Balance of Payments, Currency and Coinage, Socioeconomic Indicators, External Sector, Exchange Rates, Macroeconomic Aggregates, Wholesale and Consumer Price Indices, among others.

Prices:

All-India item-wise Consumer Prices Indices (Industrial Workers, Agricultural and Rural Labourers) and Retail Price Indices are given by the Labour Bureau: <http://labourbureau.gov.in/>

Wholesale Price Index is given by the Office of Economic Adviser, Department for Promotion of Industry and Internal Trade <https://eaindustry.nic.in/>

Businesses: Corporate, Industry, Enterprises: The data in this area comes from myriad sources such as the Economic Census, Enterprise Surveys, Ministry of MSMEs (which provides Udyog Aadhaar for identification), GST (registrations, returns and collection), databases of the Ministry of Corporate Affairs and the Registrar of Companies, Directorate of Industries, PAN and TAN databases, among others.

The [Economic Census](#) has been carried out since 1977, (1980, 1990, 1998, 2005, 2013 and 2019) with its scope specifying multiple exclusions. The NSS Enterprise Surveys also exclude sectors such as the Primary Sector, Construction and Government enterprises. This makes it important to assess how and where the informal sector is being included in the country's data collection machinery and where to look for data on the same.

Additional resources are available from the Development Commissioner, Ministry of Micro Medium and Small Enterprises³ and Ease of Doing Business from NITI Aayog⁴.

Foreign Trade and Investments: Export Import Bank of India (Exim Bank) - <https://www.eximbankindia.in/> - provides data of relevance.

Insurance: Data is given by the Insurance Regulatory and Development Authority <https://www.irdai.gov.in/>

Demography: Census (<https://censusindia.gov.in/>), Socioeconomic Caste Census <https://secc.gov.in/welcome> and the Aadhaar database <https://uidai.gov.in/> are perhaps the three most pertinent sources of data in this area.

Labour, Employment and Wages: The important sources of labour market information at enterprise levels are: the economic census, the census of small-scale industries (SSI), the annual survey of industries (ASI), the Directorate General of Employment and Training (DGET), the Commission for Agricultural Cost and Prices (CACP) and the NSSO (through EUS and PLFS). Apart from these major sources, various sub-national agencies, departments of governments, international agencies such as International Labour Organization (ILO) and the Labour Bureau also provide sector and region specific information relating to labour markets. Data from the Employee Exchange, Employees' Provident Fund Organisation (EPFO), Employees' State Insurance Corporation (ESIC), and the Pension Fund Regulatory and Development Authority (PFRDA) also becomes of note.

Housing and Land:

Houselisting and Housing Census, NSS Rounds on Housing and Amenities and Slum Settlements, NFHS and is also embedded in other survey data. PMAY program data, other govt schemes maintain

³ http://www.dcmsme.gov.in/ito_msme/censuses.htm

⁴ https://niti.gov.in/writereaddata/files/document_publication/EoDB_Single.pdf

housing program related data. Official estimates for property prices in the market are obtained from the RESIDEX, prepared by National Housing Bank (NHB) (<https://residex.nhbonline.org.in/>) and the Housing Price Index of the Reserve Bank of India (RBI). Estimates from institutional and private sources are also available from real estate companies and institutions such as Housing and Urban Development Corporation (HUDCO), National Buildings Organisation (NBO), National Buildings Construction Corporation (NBCC), Construction Industry Development Council (CIDC), CREDAI, NAREDCO, JLL, CBRE, Knight Frank, Cushman & Wakefield, Propequity, KPMG, McKinsey Global Institute, Colliers, HDIL, ET Intelligence group and so on. Furthermore, nestoria.in, housing.com, commonfloor.com, 99acres.com, makaan.com and many others provide online portals for real estate and housing. However, all these collect information for a handful of large cities and a limited number of projects in India, and, hence, lack robustness. Circle rates are obtained from the Registration and Stamps, Dept. of the Department of Revenue for all the states and cities. Municipal Valuation Committees/local bodies decide these rates for different localities, such as colonies, wards, zones, etc. Circle rates consist of land and construction costs by type of settlements, colonies, location, etc. (Kundu & Kumar, 2019).

Social Statistics:

There are myriad datasets for health and education. Notably, they include the National Family Health Survey, Health Management Information Systems, District Level Household and Facility Survey and the Sample Registration System. Certain NSS rounds also cover Social Consumption (Health and Education) and Sanitation and Housing Conditions, among others. Further, education is covered by the All India Survey on Higher Education, and the Annual Status of Education Report.

Supplementary data also come from sources such as the India Human Development Survey.

Environment, Forest and Natural Resources Statistics: Apart from the CSO, various ministries and departments of Central and State Governments collect information related to Environment Statistics and the same are published in various publications namely, Forestry Statistics, The State of Forest Report, Inventory of Forest Resources of India, State of Environment, etc. by organisations within the Ministry of Environment and Forests; Agriculture Statistics at a Glance and Fisheries Statistics by the Ministry of Agriculture; Water Statistics by Ministry of Water Resources, etc.

2.2 Official Sectoral Economic Statistics: Agriculture and Allied Activities

Table 2: Sources of Official Sectoral Economic Statistics: Agriculture

Data Source	Source Organisation	Years
Agricultural Census	Ministry of Agriculture and Farmers Welfare	1970-71 1976-77 1980-81 1985-86 1990-91 1995-96 2000-01 2005-06 2010-11 2015-16
Livestock Census	Department of Animal Husbandry and Dairying, Ministry of Fisheries, Animal Husbandry and Dairying	Quinquennially since 1919 (20th Census launched in October 2018)
Economic Census	Ministry of Statistics and Program Implementation	1977 1980 1990 1997 2005 2013 2019
National Sample Survey: Situation Assessment of Agricultural Households	National Sample Survey Office, Ministry of Statistics and Program Implementation	59th Round (2003) 70th Round (2013)
National Sample Survey: Land and Livestock Holdings	National Sample Survey Office, Ministry of Statistics and Program Implementation	8th Round (1954-55) 16th Round (1961-62) 26th Round (1971-72) 37th Round (1982) 48th Round (1992) 59th Round (2003) 70th Round (2013)
Annual Reports	Department of Agricultural, Cooperation and Farmers Welfare, Ministry of Agriculture	

The Agriculture Census has been conducted at five yearly intervals since 1970-71 to collect data on structural aspects of operational holdings in the country. It is carried out in three phases – Collection of data on primary characteristics like number and area of holdings by social groups, gender etc (Phase I), Collection of detailed data on land use, irrigation status etc (Phase II) and Input Survey collecting data on pattern of input use (Phase III). Similarly, the Livestock Census since 1919, quinquennially carries out a complete enumeration of livestock, poultry (and others, along with their sex composition, age,, distribution, utility wise distribution etc.), machinery and implements, among others.

National Sample Surveys also emerged pertaining to the Agriculture Sector, namely, the Survey of Land and Livestock Holdings (since 1954) and the Situation Assessment Survey (2003 and 2013), which collect information on various aspects of farming and other socio-economic characteristics of agricultural households, as well as household and livestock ownership.

There also exists a plethora of ancillary agrarian data (<http://www.mospi.gov.in/4-agricultural-statistics>, http://agricoop.nic.in/sites/default/files/pocketbook_0.pdf, <https://eands.dacnet.nic.in/>) on consumption of inputs, cultivation costs and income, cropping pattern and yields, among others.

2.3 Official Sectoral Economic Statistics: Industry

Table 3: Sources of Official Sectoral Economic Statistics: Industry

	Data Source	Source Organisation	Years
1	Economic Census	Ministry of Statistics and Programme Implementation	1977 1980 1990 1998 2005 2013 2019
2	Annual Survey of Industries	National Sample Survey Office, Ministry of Statistics and Programme Implementation	Since 1960
3	National Sample Survey: Enterprise Surveys	National Sample Survey Office, Ministry of Statistics and Programme Implementation	15 surveys from 33rd Round (1978-79) to 73rd Round (2015-16)
4	Index of Industrial Production	Central Statistics Office, Ministry of Statistics and Programme Implementation	
5	Mining and Mineral Statistics	Mining and Mineral Statistics Division, Indian Bureau of Mines	

The Annual Survey of Industries was launched in 1960 by replacing both, the Census of Manufacturing Industries (CMI) and the Sample Survey of Manufacturing Industries (SSMI). It is limited to the registered manufacturing and repairing units only (Since 1998-99). Its frame is based on the lists of registered factories or units maintained by the Chief Inspector of Factories (CIF) in each State and those maintained by the licensing authorities in respect of bidi and cigar establishments.

The units or factories in the ASI frame are grouped into census and sample sectors. While the factories in the census sector are surveyed on a complete enumeration basis, a representative sample from the sample sector is considered for survey in any survey year.

The important aspects of the sampling design of ASI, 1999-2000 are as under:

- All registered manufacturing and repairing units in the frame are grouped into two basic strata namely, the census sector and the sample sector. The units in the census stratum are surveyed on a complete enumeration basis.
- The census sector comprises the following
 - All manufacturing and repairing units in the frame in the five States and Union Territories of Manipur, Meghalaya, Nagaland, Tripura and Andaman and Nicobar Islands; and
 - For the remaining States and Union Territories: All manufacturing and repairing units employing 200 or more workers.
- In each of the States and Union Territories other than five States and Union Territories specified above, the complete list of units in the sample sector is stratified into different strata with each stratum consisting of all manufacturing and repairing units belonging to a particular industry 4-digit code of National Industrial Classification, 1998.
- A sample of suitable size from each stratum is drawn circular systematically with equal probability and in the form of two independent sub-samples after arranging the units according to district and number of workers.
- Of the total number of 1,74,167 units in the frame, the gross allotment of units considered for survey (which includes non-operating factories appearing in the frame) at the country level is 35,391 of which 9,570 are the census sector units.

Started in the 33rd Round (1978-79) of the National Sample Survey, Enterprise Surveys serve as follow up surveys to the Economic Census (since 1977). They give data on, among other things, Value Added, Enterprises by Type and Ownership and Workers. This survey excludes the Primary Sector, Construction and Government Enterprises.

(Additional information is available at resources such as <http://mospi.nic.in/industrial-statistics> and <http://mospi.nic.in/24-industrial-statistics>)

2.4 Official Sectoral Economic Statistics: Services

Table 4: Sources of Official Sectoral Economic Statistics: Services

	Data Source	Source Organisation	Years
1	Economic Census	Ministry of Statistics and Programme Implementation	1977 1980 1990 1998 2005 2013 2019
2	National Sample Survey: Enterprise Surveys	National Sample Survey Office	15 surveys from 33 rd Round (1978-79) to 73 rd Round (2015-16)
3	National Sample Survey: Service Sector Enterprises	National Sample Survey Office	63 rd Round (2006-07) 74 th Round (2016-17)

The survey on Service Sector Enterprises has been carried out in the 63rd (2006-07) and 74th (2016-17) Rounds of the National Sample Survey and the latter is deemed to be a prelude to a proposed Annual Survey on Service Sector Enterprises (ASSSE).

(Additional information is available at resources such as: <http://mospi.nic.in/25-services-sector-statistics>)

2.5 Official Sectoral Economic Statistics: Unorganised/Informal Sector

Figure: Conceptual Framework of Informal Employment from NSS 68th Round Report on Informal Sector and Conditions of Employment in India

Production units by type	Jobs by status in employment									
	Own-account workers		Employers		Contributing family workers		Employees		Members of producers' cooperatives	
	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal
Formal sector enterprises					1	2				
Informal sector enterprises (a)	3		4		5	6	7	8		
Households (b)	9					10				

(a) As defined by the Fifteenth International Conference of Labour Statisticians (excluding households employing paid domestic workers).
(b) Households producing goods exclusively for their own final use and households employing paid domestic workers.

Note: Cells shaded in dark grey refer to jobs, which, by definition, do not exist in the type of production unit in question. Cells shaded in light grey refer to formal jobs. Un-shaded cells represent the various types of informal jobs.

Informal employment: Cells 1 to 6 and 8 to 10.
Employment in the informal sector: Cells 3 to 8.
Informal employment outside the informal sector: Cells 1, 2, 9 and 10.

Table 5: Sources of Official Sectoral Economic Statistics: Unorganised/Informal Sector

	Data Source	Source Organisation
1	Report on Conditions of Work and Promotion of Livelihoods in the Unorganised sector	National Commission for Enterprises in the Unorganised Sector
2	Growth Pole Programme for Unorganised Sector Enterprise Development	
3	Reports on Financing of Enterprises in the Unorganised Sector and Creation of a National Fund for The Unorganised Sector (NAFUS)	
4	Reports on Definitional and Statistical Issues relating to Informal Economy	
5	Skill Formation and Employment Assurance in the Unorganised Sector	
6	Reports on Social Security	
7	Special Programme for Marginal and Small Farmers	
8	National Policy on Urban Street Vendors	
9	A Report on Technology Upgradation for Enterprises in the Unorganised sector	
10	The Challenge of Employment in India - An Informal Economy Perspective (Vol-I)	
11	The Challenge of Employment in India - An Informal Economy Perspective (Vol-II)	
12	National Sample Survey: Informal Non-Agricultural Enterprises	National Sample Survey Office, Ministry of Statistics and Programme Implementation

[NCEUS](#) and NSSO have produced the above reports. In addition, certain rounds of the NSS Enterprise Surveys focus on the Unorganised Manufacturing and Services sectors, but no report focusing on the unorganised and informal sectors is very recent. More recent rounds of the National Sample Surveys on Employment and Unemployment capture the informal sector under the enterprise types Proprietary and Partnership. This definition lends itself to an overestimation in the number of workers as well as enterprises in the country's informal sector.

2.6 Economic Statistics: Others Official Statistics, Administrative Data and Non-Official Sources

Such other data is captured in many ways, such as Program and Administrative data from Management Information Systems and Dashboard of Central and State Government Schemes and Ministries. A variety of business and economic databases exists, private or otherwise, with [Centre for Monitoring Indian Economy](#), [EPW Research Foundation](#), [World Bank Open Data](#), being a few of them.

It is important to note that much of the data produced at the national level is also generated by Directorates of Economic and Statistics at the state level, by applying their own frame for location.

3. Tracing the Contours of Official Sectoral Economic Statistics

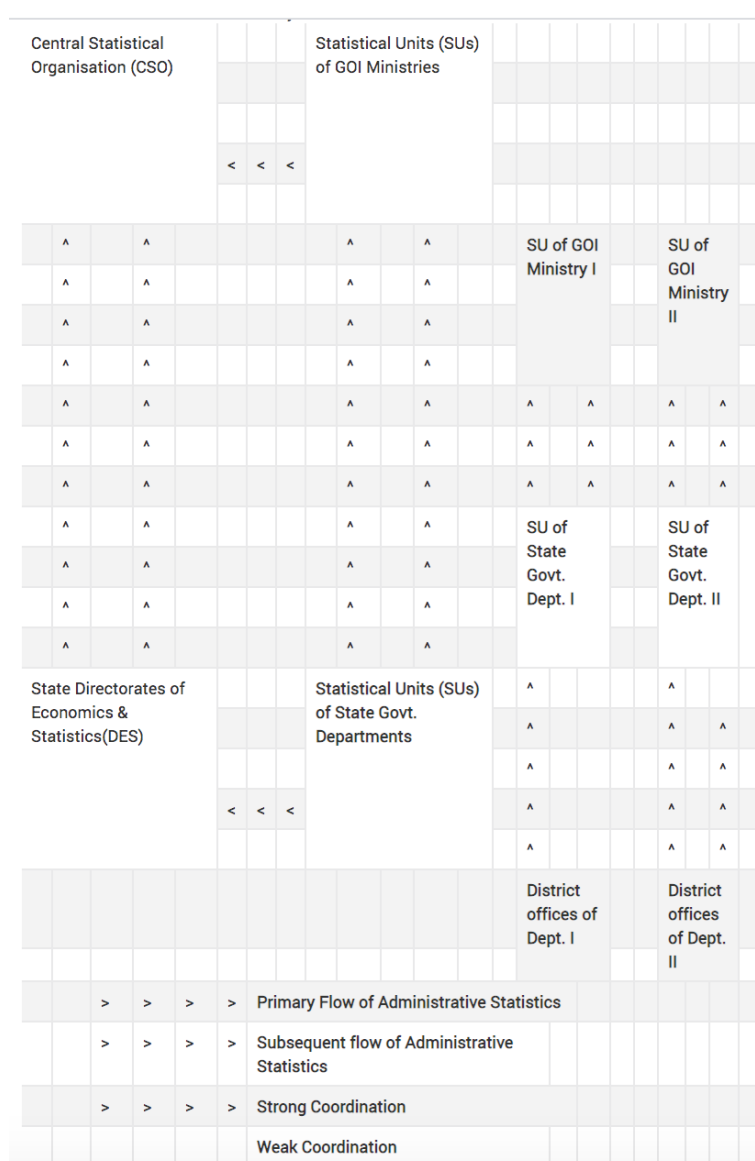
3.1 Tracing the Contours: Indian Statistical System

Structure of MoSPI

The Indian Statistical System (<http://www.mospi.gov.in/indian-statistical-system>) presently functions within the overall administrative framework of the country. By and large, the flow of statistical information emanates from the States to the Centre except in cases where the State-level operations are an integral part of Centrally- sponsored schemes or data are collected through national sample surveys. The Central Statistical Organisation (CSO) in the Ministry of Statistics and Programme Implementation (MoSPI) is the nodal agency for a planned development of the statistical system in the country and for bringing about coordination in statistical activities among statistical agencies in the Government of India and State Directorates of Economics and Statistics. The coordination and flow of information between the MoSPI and the statistical systems of the states is given in the Annexure.

The National Sample Survey (NSS), initiated in the year 1950, is a nation-wide, large-scale, continuous survey operation conducted in the form of successive rounds. It was established to fill up data gaps for socio-economic planning and policy-making through sample surveys. To get rid of the inordinate delays in release of survey results, all aspects of survey work were brought under a single umbrella by setting up the National Sample Survey Organisation (NSSO) in 1970. Since its creation, the NSSO has been functioning under the overall direction of a Governing Council with autonomy in the matter of collection, processing and publication of survey data, thus ensuring freedom from political and bureaucratic interference.

The NSSO carries out Household and Enterprise Surveys, undertakes the fieldwork for the Annual Survey of Industries, provides technical guidance to the States in respect of the Crop Estimation Surveys besides assessing the quality of primary work done by the State Agencies in area enumeration and yield estimation, prepares the urban frames useful for selection of urban blocks for the surveys and collects price data for rural retail prices as well as selected items consumed by the urban non-manual employees required for the preparation of consumer price indices for agricultural labourers and urban non-manual employees, respectively.



National Statistical Commission (NSC)

Based on the recommendations of the C. Rangarajan Commission, the National Statistical Commission (NSC) was set up to evolve policies, priorities and standards in statistical matters (MoSPI, 2001). It was established as an interim measure, and not as a permanent National Commission on Statistics to serve as a nodal and empowered body for all core statistical activities of the country, evolve, monitor and enforce statistical priorities and standards and to ensure statistical coordination among the different agencies involved. During 2002, many debate sparked over the same raising various concerns (Dasgupta, 2002; MoSPI, 2001; MoSPI, Rangarajan, 2001; Rath, 2002; 2009; Vidwans, 2002).

Therefore, in the absence of any legislative framework, the NSC has faced challenges in implementing its recommendations. In light of this, the present government has prepared the Draft National Statistical Commission (NSC) Bill 2019 to adhere to the Rangarajan Commission's recommendations in totality. The Bill primarily envisages encouraging Government agencies to proactively bring forth issues pertaining to the national statistical system proactively for discussion in the Commission (MoSPI, 2019).

The MoSPI is also seeking Comments/ Suggestions on Draft National Statistical Commission (NSC) Bill 2019 (<http://www.mospi.gov.in/sites/default/files/nscbill/nscbilld.pdf>).

The period since its establishment and the Draft NSC 2019 has witnessed conflicts between the NSC and the office of the chief statistician of India (CSI)—who apart from being the secretary to the ministry of statistics and programme Implementation (MoSPI) is also the secretary to the NSC. This led to the decline in the credibility of the Indian statistical system exaggerated by a divided leadership meant that led to several reform proposals to become stuck in a limbo. The peak of this conflagration came with the resignation of the two of its members resigned, citing undue government influence in the publication of an NSSO report on jobs (2018c; MoSPI, 2019b; NSC, 2018).

Reports of the NSC Committees (<http://www.mospi.gov.in/reports-committees>) are: Legislative measures on statistical matters, Unorganized Sector Statistics, Statistics of Agriculture & Allied Sectors, Periodic Labour Force Survey, Statistical Audit of All India Index of Industrial Production, Price Statistics, Data Management.

Request for Comments and Suggestions on the Report of Committees constituted by NSC (http://www.mospi.gov.in/nsc_draft_reports) in public domain are: Report of Committee on Financial Sector Statistics, Report of Committee on Real Sector Statistics, Report of Committee on Online Reporting System, Report of Committee on Analytics, Report of Committee on Fiscal Statistics.

NSC brings each year Action Taken Report (<http://www.mospi.gov.in/action-taken-report>) and Annual Reports (<http://www.mospi.gov.in/annual-report>).

Draft National Policy on Official Statistics, 2018

MoSPI also invited Comments on Draft Policy: **National Policy on Official Statistics** in 2018 MoSPI (2018c) (http://mospi.gov.in/sites/default/files/announcements/draft_policy_17may18.pdf) and there is news that this policy can be announced soon.

Central Statistical Organisation (CSO)

With a view to coordinating statistical activities of the different ministries of the Government of India and the State Governments and the evolving of statistical standards, the CSO was established in May 1951. The responsibilities of CSO include preparation of national accounts; conducting Annual Survey of Industries, Economic Censuses and their Follow-up Enterprise Surveys; constructing IIP and consumer price indices for urban non-manual employees; compiling Social Sector Statistics; imparting training in official statistics; formulating a Five Year Plan programme relating to development of

statistics in the States and Union Territories; disseminating various statistical information including those relating to social and environment statistics; undertaking periodic revision of National Industrial Classification, etc. The CSO is also responsible for periodically conducting the Conference of Central and State Statistical Organisations.

One of the major responsibilities of the CSO is to act as the nodal agency for planned development of the statistical system of the country. The CSO is entrusted with the responsibility not only to coordinate the statistical activities of the Government of India and State Directorates of Economics and Statistics (DESSs) but also to lay down and maintain norms and standards in the field of statistics. Though the CSO has no legal authority to enforce standards and coordination, the work is done through institutional arrangements like interdepartmental meetings of Working Groups, Technical Advisory Committee on various subjects, Standing Committee, etc. in the case of Central Ministries.

National Statistical Organisation (NSO)

The NSC operates through the NSO, which is the official agency to implement policy decisions of the NSC. It has been formed by a merger of the NSSO and CSO (Magazine, 2019a). It functions as the single full-fledged Department of MoSPI headed by a Director General is responsible for conduct of large scale sample surveys in diverse fields on All India basis. Primarily data are collected through nation-wide household surveys on various socio-economic subjects, Annual Survey of Industries (ASI), etc. Besides these surveys, NSO collects data on rural and urban prices and plays a significant role in the improvement of crop statistics through supervision of the area enumeration and crop estimation surveys of the State agencies. It also maintains a frame of urban area units for use in sample surveys in urban areas.

3.2 Tracing the Contours: Official Sectoral Economic Statistics

India's Economic Performance

India GDP growth (annual %) - World Bank - 1961-2018

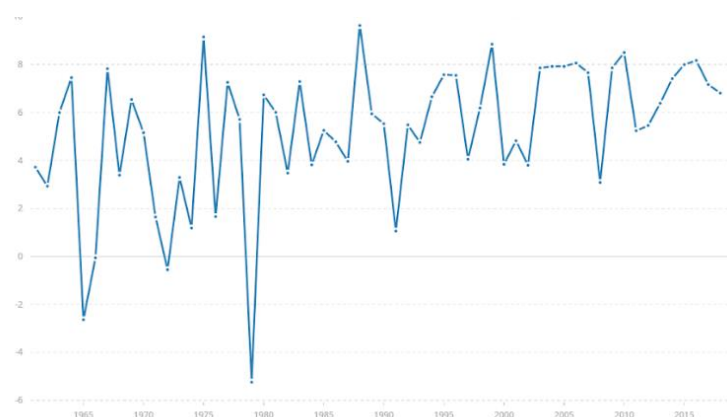
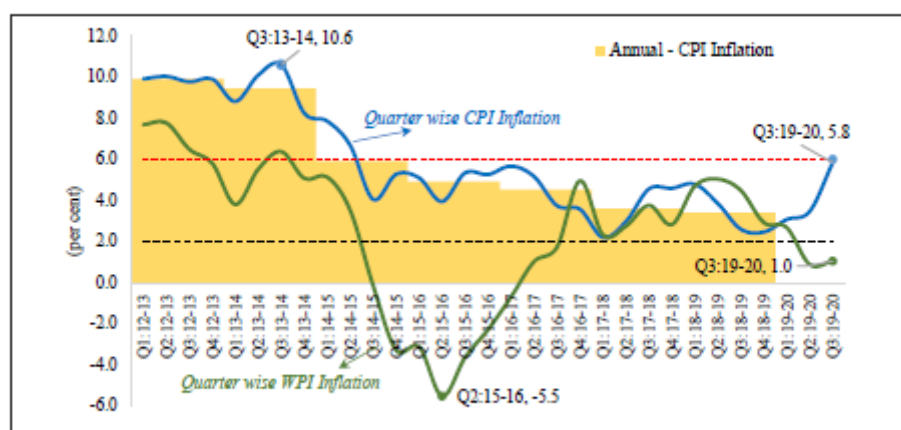


Figure 10: CPI and WPI inflation



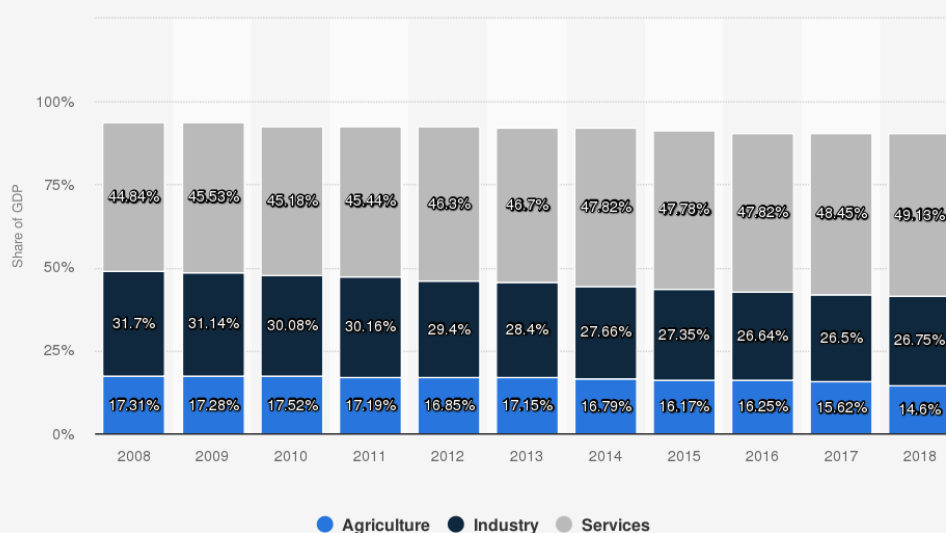
Data Source: National Statistical Office and Department for Promotion of Industry and Internal Trade (DPIIT)

Table 2: Quarter wise growth of real Gross Value Added (GVA) and GDP (per cent)

	2018-19				2019-20	
	Q1	Q2	Q3	Q4	Q1	Q2
GVA at basic prices	7.7	6.9	6.3	5.7	4.9	4.3
Agriculture, forestry & fishing	5.1	4.9	2.8	-0.1	2.0	2.1
Industry	9.8	6.7	7.0	4.2	2.7	0.5
Services	7.1	7.3	7.2	8.4	6.9	6.8
GDP at market prices	8.0	7.0	6.6	5.8	5.0	4.5

Data Source: National Statistical Office

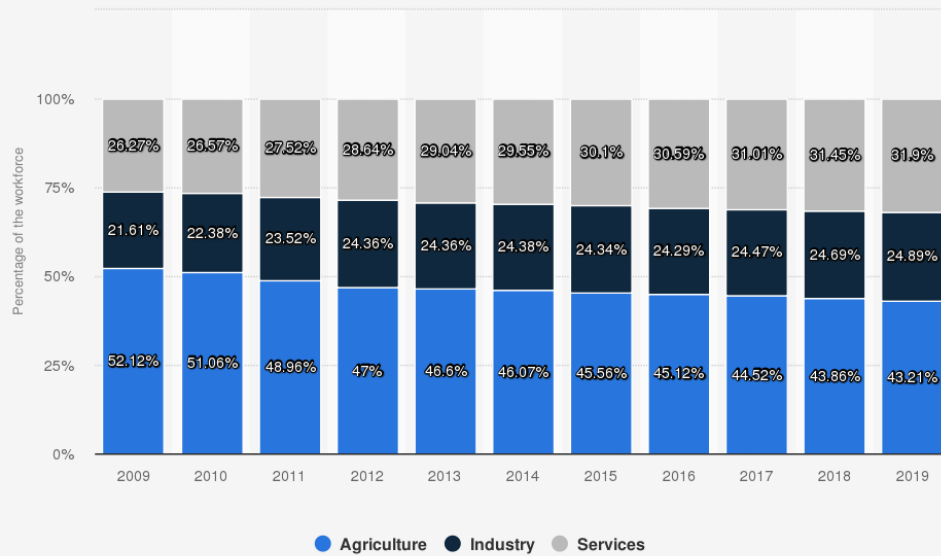
India: Distribution of gross domestic product (GDP) across economic sectors from 2008 to 2018



Source
World Bank
© Statista 2020

Additional Information:
India; World Bank

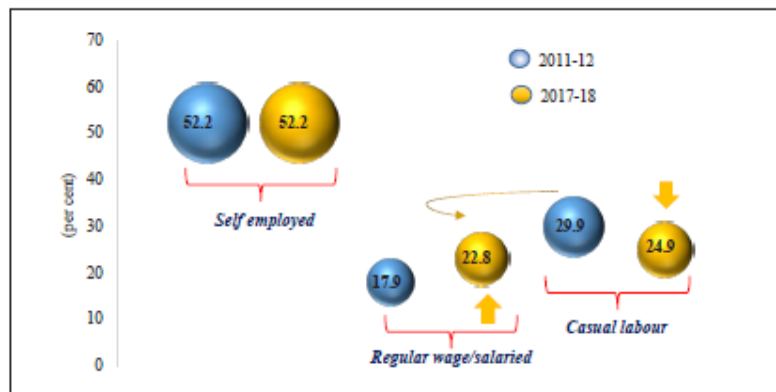
India: Distribution of the workforce across economic sectors from 2009 to 2019



Source
World Bank
© Statista 2020

Additional Information:
India; World Bank; 2009 to 2019

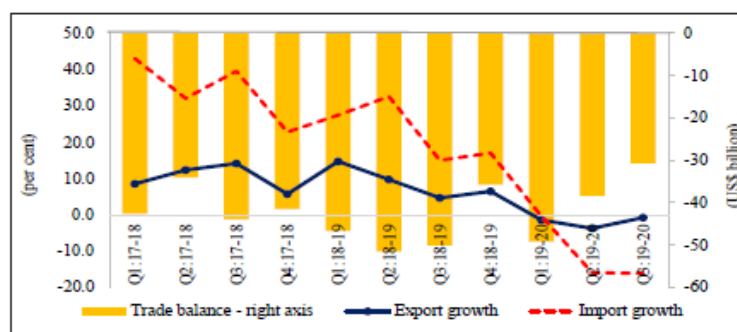
Figure 11: Distribution of workers by all ages in usual status (PS+SS) by statuses in employment



Data Source: Periodic Labour Force Survey 2017-18, Ministry of Statistics & Programme Implementation

Note: PS- Principal Status, SS- Subsidiary Status.

Figure 16: Growth of merchandise exports and imports



Data Source: Department of Commerce, Ministry of Commerce and Industry

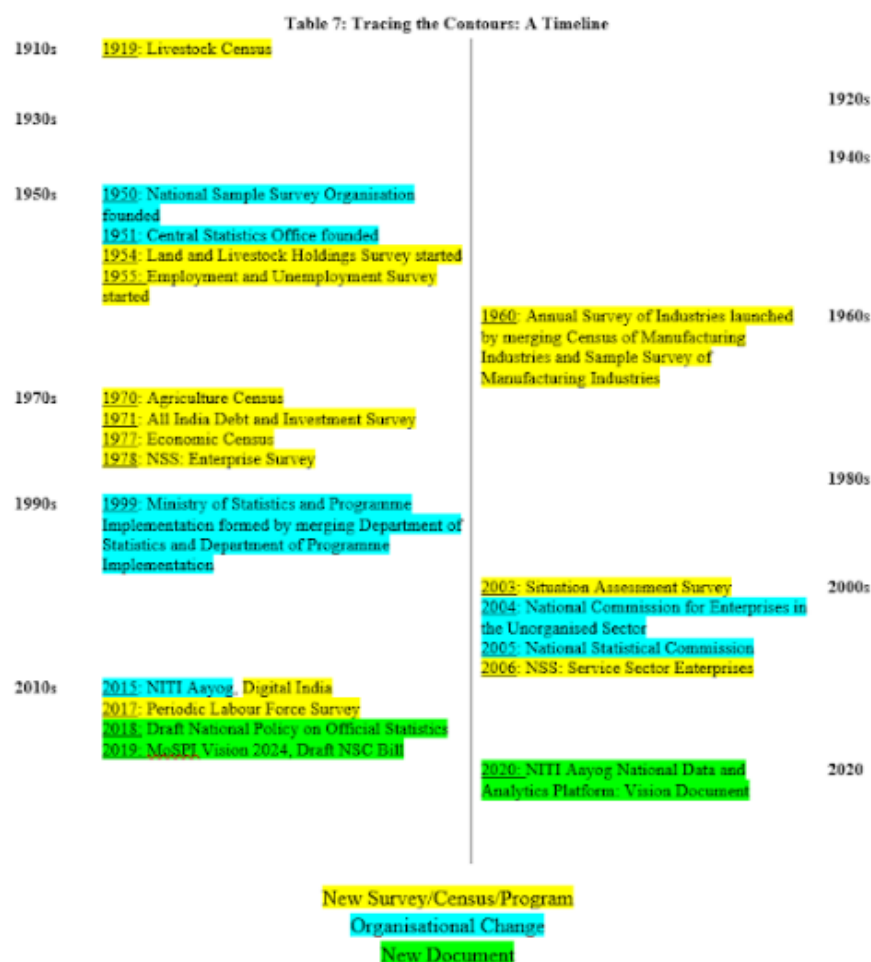
Statement 1.7: Net Value Added by economic activity
(₹ करोड़ पर (2011-12) बाबों पर at constant (2011-12) prices)

(₹ crore)

2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	S.No.	Item
10	11	12	13	14	15	16	1	2
1406268	1421409	1497458	1486314	1491336	1586172	1665454	1	Agriculture, forestry and fishing
900975	896366	941924	896784	863338	906893	940234	1.1	crops
322185	338786	357438	383865	412786	454002	486246	1.2	livestock
123070	123343	130661	133134	135428	137276	140076	1.3	forestry and logging
60039	62915	67436	72535	79782	88000	98896	1.4	fishing and aquaculture
229186	228405	224332	248479	276579	305599	321660	2	Mining and quarrying
1146928	1213903	1278832	1393158	1595405	1727597	1828558	3	Manufacturing
123811	119338	118076	125088	125997	140152	152462	4	Electricity, gas, water supply & other utility services
738178	728691	747210	781289	809853	854413	896377	5	Construction
838114	927744	976637	1071289	1188025	1305546	1434014	6	Trade, repair, hotels and restaurants
756484	843600	893014	982597	1087389	1196119	1318232	6.1	Trade & repair services
81630	84144	83623	88691	100636	109426	115782	6.2	Hotels & restaurants
443721	472334	500799	551388	599696	608740	616891	7	Transport, storage, communication & services related to broadcasting
48531	54892	57772	61570	64166	58608	62629	7.1	Railways
227712	241857	259750	278557	297102	309303	321839	7.2	Road transport
4666	4404	4632	5360	5401	5974	6491	7.3	Water transport
1032	630	1093	1637	2742	3987	5287	7.4	Air transport
54651	56714	60542	66081	70825	75138	80180	7.5	Services incidental to transport
4352	4932	4392	4629	5242	5016	5565	7.6	Storage
102777	108906	112618	133553	154215	150710	134897	7.7	Communication & services related to broadcasting
473399	521589	568348	616582	659909	682672	710945	8	Financial services
897897	971315	1086282	1208961	1359742	1507017	1602785	9	Real estate, ownership of dwelling & professional services
405592	413234	418382	448787	466379	510482	574908	10	Public administration and defence
486677	517652	546683	602151	648053	709622	797144	11	Other services
7189771	7535614	7963039	8533489	9220979	9938018	10601202	12	TOTAL NVA at basic prices

Sectorally, agriculture has become a subsistence economy with a burden of heavy dependence of population and rain gods (low irrigation coverage), low prices of produce (supply chain & finance deficiencies), rising cost of input (market support) and dismal and disappointing sad news. Manufacturing growth rate going flat for some time, despite the Make in India mission, although growth has peaked out and thus bottom out. Service sector continues to expand and continues to be a major source of growth. The unorganised sector which accounts for about 45% of the GDP, has been badly hit by demonetisation and GST. The non-agriculture component of this sector contributes to 31% of the GDP. The unorganised sector employs 80-90% of the Indian workforce. However, there are definitional issues and higher formalisation reporting on the account of GST, ESIC, EPFO etc compliance are the silver lining (Mehta & Kumar, 2019) despite high levels of unemployment as reported by PLFS, 2109, which has been a characteristics of last decade as well termed jobless growth.

Tracing the origin of Sectoral Official Economic Statistics



The table above outlines the origins of sectoral official economic statistics in India. While 1950s witnessed origin of major organisational and key statistics, annual survey of industries was started in 1960s by incorporating both census and surveys being held earlier. The 1970s had more professional approach towards sectoral statistics and Agricultural Census, NSS All India Debt and Investment Surveys, Economic Census and NSS Enterprise Surveys were launched. In 1990s, MoSPI was formed by the merging Department of Statistics and Programme Implementation. The decade of 2000s (with Situation Assessment Surveys of Agriculture, coming up of National Statistics Commission, NSS Service Sector Enterprises, National Commission for Enterprises in Unorganised Sector) and 2010s (with PLFS and many digital, technological and process improvements) shows more maturity and seriousness towards the sectoral economic statistics and structures.

Latest estimates and information from Sectoral Official Economic Statistics

As mentioned before the National Accounts Statistics as given by CSO is available latest for the year 2019 at the base year 2011-12 series (<http://www.mospi.gov.in/publication/national-accounts-statistics-2019>). Recently, it is also reported to the parliament that the Advisory Committee on National Accounts Statistics (ACNAS) has recommended to the MoSPI to consider 2020-21 as the next base year of National Accounts in view of the structural reforms. The latest estimates for industry by ASI are available for 2017-18. The latest Economic Census available is 6th for the year 2013. The latest Agricultural Census is for the year 2015-16. The latest estimates for enterprises are for the year 2015-16 and for services - 2016-17 from the NSS rounds (MoSPI, 2018a; MoSPI, 2018b; MoSPI, 2019a; MoSPI, 2019c; MoSPI, 2019e; MoSPI, 2019f; MoSPI, 2020a; MoSPI, 2020b)

Also real time data for number of companies (MCA), industries (registrar of industries & CIFs), MSME (registered), PAN, tax payers, GST enrolled businesses, bank accounts, Mudra loans, EPFO, ESIC, PFRDA, etc are available at the sources mentioned before.

3.3 Tracing the Contours: Vision for New India: Statistics and Data

MoSPI: Five- Year Vision 2019-2024

The Vision 2024 for the National Statistical System is spearheaded by MoSPI (MoSPI, 2019d; http://www.mospi.gov.in/sites/default/files/main_menu/parliament_matters/Vision_2024_of_MoSPI.pdf) on the highlighted fact that the official statistics is a public good and is an essential part of the development architecture of India. It extensively uses digital technology to provide holistic and coherent data on a real-time basis and is committed to reform the existing institutional, organizational and technical challenges for policy and stronger dissemination practices for the public. Some of the areas highlighted in the reform process are: integration of administrative data sets from the various government institutions and agencies; creation of a common database of registries across beneficiary schemes at the national level to inform the policymakers of the exact number of beneficiaries, which would help in better implementation of government schemes and empower the people to make better decisions, and; strengthening of data dissemination in a timely and user-friendly manner as well as monitoring of large infrastructure projects.

Some of the transformational strategies to achieve the above reforms are: strengthening the institutional framework of the National Statistical System for data driven interventions for measuring the progress of the goal to achieve the USD 5 trillion economy by 2024 with enhanced ease of living; backdrop of Industry 4.0; SDGs; Digital India program; strengthening technological and physical infrastructure and; effective management of human capital. Implementation of the objectives for achieving the Vision 2024 requires mobilization of institutional, legal and policy, IT, human capital, research and development and enhanced user engagement strategies. Towards this, the government has adopted the UN Fundamental Principles of Official Statistics to promote professional ethics in production and dissemination of official statistics in the country. A National Quality Assurance Framework was announced in 2018 by MoSPI, which was based on UN Quality Assurance Framework. It also follows UN Guidelines on Integrated Economic Statistics in response to the need for consistent framework for measuring national economic activities. The approach for transformation in MoSPI would be broadly in the line of UN ECE High Level group for the Modernisation of Official Statistics This will help strengthen and establish an agile institutional framework in MoSPI that will operationalise the generic Statistical Business Process Model in statistical operations and services. Over next five years, MoSPI will implement wide ranging reforms of statistical products & processes to realise its vision by the following themes:

- | | |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Theme I: | Strengthening statistical infrastructure for real-time monitoring of the economy. |
| Theme II: | Integrating data and registries, existing in silos in various Ministries, into the National Statistical System through an Integrated Information Portal by developing data sharing protocols and use of technology |
| Theme III: | Strengthening the monitoring of large infrastructure projects |

These will be achieved in a time bound manner by 3 transformational strategies:

Strategy I: Strengthening Institutional Framework

Strategy II: Strengthening Technological and Physical Infrastructure

Strategy III: Effective Human Capital Management

Harnessing technological innovations like big data analytics and Artificial Intelligence to develop a **National Integrated Information Portal** is under process, which will be a repository of all official statistics and homogenised metadata is an important constituent of the Vision 2024, with the aim to achieve the targets in a strict time-bound manner.

Figure 5.2: Integrated Statistics for Real Time Monitoring of the Indian Economy

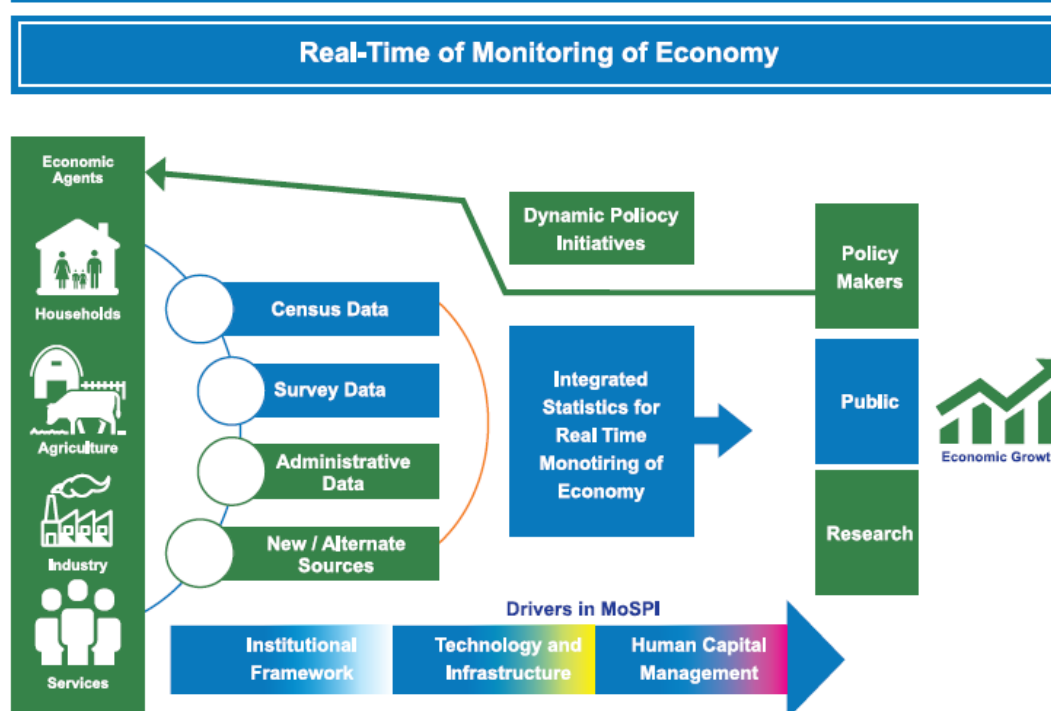
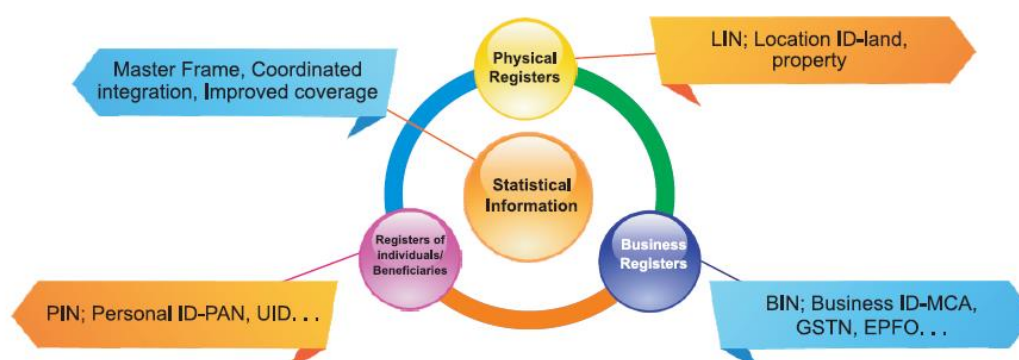


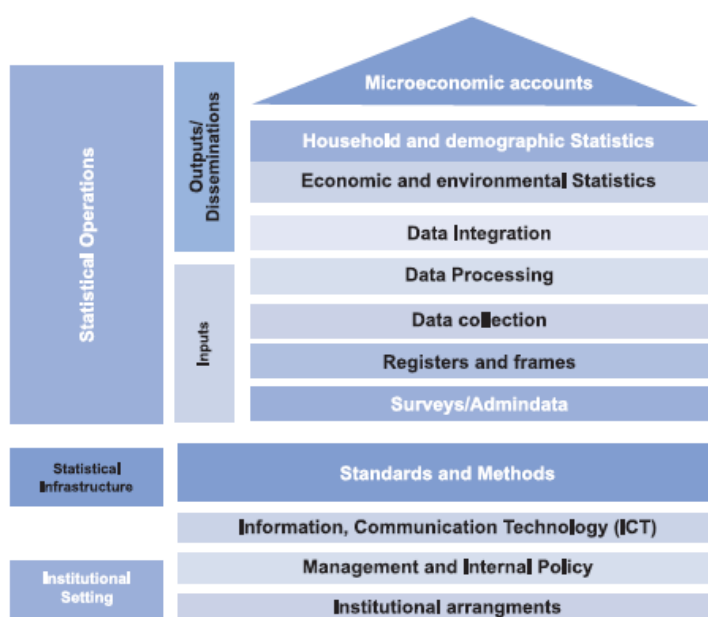
Figure 7.2: Coordinated Information Flow across Registries



The expected outcomes of the revamped statistical system are:

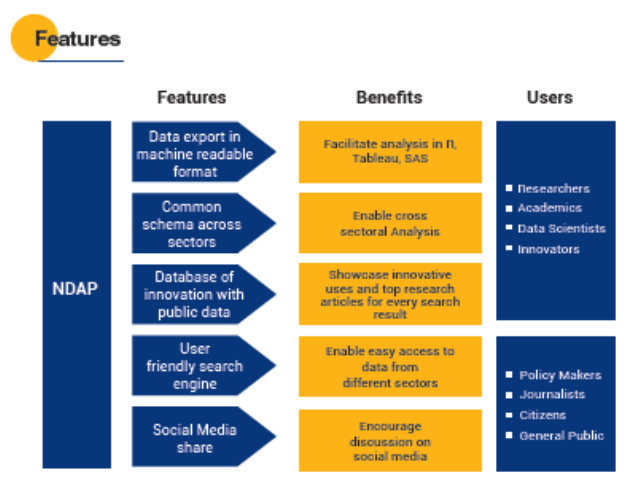
- Improved Statistical products and processes that are relevant, accurate, reliable, timely, accessible, coherent and comparable at local, sub national and international levels.
- Better data integration with minimum redundancies
- Multi disciplinary statistical product
- Partnership and intense collaborations among stakeholders
- Improved user - produces discussion and dissemination forum

Figure 9.1: Architectural Framework for Integrated Statistics Approach



NITI Aayog: National Data and Analytics Platform (NDAP) Vision Document, January 2020

Proposed to be released in 2021, the Vision Document for the National Data and Analytics Platform (NDAP), 2020 by NITI Aayog (NITI Aayog, 2020) is a flagship initiative that lays down the aim of democratising access to public government data through a world class user experience, by standardising data, providing flexible analytics and ensuring ease of accessibility.



Mentioning the challenges of incoherence and lack of user-centric publishing of data, the document outlines an approach that includes standardisation of data across multiple Government sources, provide flexible analytics and make it easily accessible in formats conducive for research, innovation, policy making and public consumption. The aim is to draw inspiration from the best platforms around the world; build on the success of existing Indian data platforms (eg. www.data.gov.in; DISHA-<https://rural.nic.in/disha>); pursue an user-centric approach to providing access to data, and; provide access to data from multiple sectors in one place. Standard Operating Procedures (SOPs) will be developed to keep data updated. The governance structure lists:

- a High-Powered Steering Committee under the chairmanship of Vice Chairman, NITI Aayog to provide direction, oversee progress, guide on data sources, and address various inter-ministerial issues on collating data.
- a Technical Advisory Group consisting of sector and technology experts to provide expert consultation on the development of the platform, management of data, and aligning the platform for user-needs.
- a Project Management Unit to coordinate with different stakeholders and manage various facets of NDAP, and,
- A technology vendor will be engaged for development and operation of the NDAP.

As stated in the Union Budget 2020-21 speech,

“There is a growing need for the Indian Statistical system to meet the challenges of real time monitoring of our increasingly complex economy. Data must have strong credibility. The proposed new National Policy on Official Statistics would use the latest technology including AI. It would lay down a road-map towards modernised data collection, integrated information portal and timely dissemination of information.”

4. Official Sectoral Economic Statistics: Analysis and Discussion

4.1 Analysis

The lack of timely, credible and reliable data has time and again led to debates and counter-debates from the government and scholarly community alike. Some of the recent contentions have arisen due to discrepancies in the empirical evidence linking the microeconomics with the macroeconomic realities and to consider institutions and governance as important components of this analysis of statistical systems. Since the data of different economic sectors are collected in different years, there exists no centralised system for harmonisation of the data. An integrated, decentralised information system populated with granular data will enable data to be carried flexibly wherever required, queried, and analysed in business contexts at all levels of governance for a deeper insight (Barman, 2016; Barman, 2018; Barman, 2020; Bhattacharya, 2019; Bhattacharya, 2020; Chandrasekhar, 2019; Dasgupta, 2002; Himanshu, 2019; Magazine, 2019a; MoSPI, 2015; Nagraj, 2015; Sen, 2020; Singh, 2019; Bhalla, 2019a; Bhalla, 2019b; Teltumbde, 2017). Further, discrepancies in the GDP data has questioned India’s quest for growth and development and taking the great leap forward in economic growth in the world (Anant, 2016; Debroy, 2019; Business Today, 2019; CSO, 2015; EPW, 2016b; EPW Engage, 2019; Nagraj, 2017a; PTI, 2016; Rajakumar & Shetty, 2016; Subramaniam & Josh, 2019; Teltumbde, 2017; Times of India, 2019; Verma, 2016; Waghmare, 2018).

Even for the macroeconomic indicators from the RBI’s trends and progress of banking in India and flow funds accounts and national accounts, critiques and discrepancies have been highlighted in the literature (Rao, 2017; Roa, 2018).

The recent and aforementioned debacle on the employment data architecture has brought India’s problem of huge unemployment to the forefront (Basu, 2019; Himanshu, 2019; Kapoor, 2017; Kapoor,

2018; Kapoor, 2019; Mehta & Kumar, 2019a; Mehta & Kumar, 2019c; Mehta & Awasthi, 2019b; Mehta et al, 2020; Bhalla, 2019a; Bhalla, 2019b). It is only in the absence of proper data that targeted and precise policy measures cannot be curated to tackle unemployment in the country.

A more worrying story now emerges for the NSS Consumption Expenditure data which is used for assessing poverty and inequality, for which the report of the recent round held in 2018 has not been released yet. (Himanshu, 2019; Mazumdar et al, 2017; Mehta & Kumar, 2019b; Bhalla, 2019a; Bhalla, 2019b). There has also been arguments especially by Bhalla (2019a&b) that the NSS estimates suffer from serious methodological issues on account of under-estimation and terms the results of NSS as 'statistical embarrassment' and 'truly bizarre'.

Similar debate has also arisen over the Aadhar data and processes (EPW, 2016a; Mathews, 2016; Prakash, 2016; UIDAI, 2016). It is interesting that both sides of the debates have been raised, and this necessitates a resolution through indepth research and evidence presentation in the form of white papers.

In the agriculture and allied sector, lack of proper database acts as an impediment to the implementation and success of all related policies and schemes on ground (Mehta & Kumar, 2017; Shetty et al, 1968). Even the latest scheme PM-KISAN where direct benefit transfer support is given to the farmers, lack of any database or register is largely affecting the implementation and monitoring process.

Even the industry sector is beset with challenges of discrepancies and methodological issues of manufacturing. Dynamic changes (Industry 4.0 & Future of work) and reconfiguration has been highlighted in the backdrop of Make in India mission (Bedi & Banerjee, 2007; Mehta & Awasthi, 2019b; Nagraj, 2017b; Nagraj et al, 2018).

The service sector, which has become the core of the economy, encompasses many dynamic sectors and has been under larger focus since last decade (Nagraj, 2009; Nagraj, 2015). Further, service sector estimates are now also based on the dynamic MCA frame for larger compliance and methodological improvements. The MCA has made it mandatory for every company to update their location by geo-tagging.

The definitional issues for unorganised sector is creating measurement issues, especially with technological upgradation and capacity of the authorities to bring them into formal sectors, which has been also underlined as the silver lining, this can be ascertained through PAN, GST, EPFO, ESIC, PFRDA, etc. (Borgohain, 2017; Mazumdar, 2008; Nagraj, 2016; NSC, 2012, NCEUS, 2008). Nonetheless, the conditions and social security of this sector remains the major challenge.

Other official statistics including sanitation, education, health, housing, etc as well as administrative statistic and MIS also have plethora of discrepancies arising from official sources itself, highlighting leakages, non-transparency and credibility issues (Kumar, 2014; Kumar, 2015; Kumar, 2016; Kundu & Kumar, 2017; Mehta & Kumar, 2019c; Mehta et al, 2020; Singh & George, 2017)

All this reflects the inefficient and inept system of statistics management, and calls for immediate redressal, which has been, though, incorporated in the vision documents, however, execution and progress towards these needs to be demonstrated with collective confidence.

It must be noted that the Program Implementation part of MoSPI is regressive. It is still dependent upon the 20-point program of the year 2006, over which each year the progress is made. Therefore, with changing times and agenda precision, it is important to review the program objectives, in order to provide fresh insights into the achievements and also provide the way forward to address the gaps.

It is for the first time that we are gearing up to a digital census- both Population Census and Economic Census (already under process) , NPR will decide the actual frame. The importance of NPR cannot be

underrated. While NPR was used for the first time in 2010, but the issue has become so contentious over the past 4-5 months, it becomes doubtful that whether the citizens would provide the accurate and voluntary information or not, or whether it will simply become a lengthy and futile exercise, so as to produce a good database.

4.2 Discussion

From the above discussion, it is clear that there are several sources of data in India, among which the major ones are MoSPI's CSO, NSO, Economic Census, Agriculture Census, ASI, etc. It needs to be mentioned here that the methodology of estimation of national accounts is almost a decade old, and in the absence of updated data, the sub national-accounts is being hindered due to the un-incorporation of latest data. In such a situation, absence of clarity of the statistics hinders the work of the researchers and remains futile for even the DES, which otherwise could have enabled them to arrive at robust and insightful state or district estimates. Based on relevant updated methodology for estimation by the CSO, which the DES takes time to comprehend, and hence the latter tends to come up with consolidated data after several years. For instance, the data on the beneficiaries of any government scheme, data on migration data (released after 10 years), etc. This leads to the loss in utility and purpose, since under prevailing situation several updates on the existing data have already taken place. As a result, there emerges a vicious circle of delay in the data production and consequent addition of backlogs of latest data. In this age of digital information, the private sector is much well equipped and is racing ahead of the public sector in generating data. This has further strengthened the state versus market debate. This type of bureaucratic complexity is unique for India and is unseen in any developed or emerging economy. China, for example, invites global audience when it releases and presents the country's quarterly and annual estimates. Such an exercise infuses credibility and consistency in data ushering in trust among the people, as a smooth program implementation is entirely dependent upon it. In absence of such a mechanism in India, appropriate planning for government work cannot be done and hence the ambitious projects often evaporates into thin air. This has lately brought the entire system of statistics from the government to grassroots under a lot of criticism.

Therefore, it is important to have annual white papers to be produced by each district, and a competition must be instilled among the districts on which district produces the best and first data. For this more financial empowerment of the MoSPI is needed, which will cater to the various challenges in terms of data production and re-instill the sense of it being a trustworthy, professional and credible institution in the minds of the people.

As India traversed from the five-year plans of the erstwhile Planning Commission to the mall, medium and long term vision reports of the NITI Aayog, one thing has remained unchanged, i.e., dependency on the decadal Census data for its various plan measures. As we move towards New India with a US\$ 5 trillion economy, it becomes absolutely important to incorporate, report and disseminate data for their proper utilisation, application and furtherance of research and development. In the age of Randomised Control Trials (RCTs) and experimental methods for evidence-based policy making, the monitoring and evaluation as well as the evidence-based research suffers in the absence of adequate data, periodic monitoring, reporting and evaluation. As a result, the situation of the availability and coherence of financial and fiscal data becomes more complex and cumbersome.

The Indian Statistical System is faced with real-time and complex challenges. For instance, for the first time the Census would be recorded on handheld devices. MoSPI has been using these devices for all its surveys for some time now. But several experts have raised doubts on the estimates and credibility of data produced through such exercises. It has been mentioned that not every government report must be accepted, as sometimes institutions fail to produce a credible report. Sometimes it must be recognised that the statistical institution of a country can fail the most basic of 'smell' tests and is in dire need of reforms (Bhalla, 2019). As mentioned above, there are no sectors left untouched by questions on the credibility of their data. However, these experts have shown to switch positions and arguments on the

credibility debate of the statistics, thereby presenting serious concerns on the integrity of the data in front of the whole world. Despite the criticisms, there can be no denying that the official economic statistics continue to remain the most valued, appropriate, rich and reliable for informed research and policymaking.

When criticised on the declining growth of the economy, the government has on several occasions produced counter-facts from other sources of non-traditional indicators/statistics like the MUDRA, Foreign Direct Investment, Jan Dhan Yojana, GST, etc. Through these indicators, it has been shown that the number of beneficiaries actually benefited out of the flagship schemes have increased, and hence have contributed to the growth of the country. Therefore, it is important that all available and comparative data sources must be incorporated while making any argument or perspective.

Due to a perceived lag in decadal Census data and the periodicity accrued due to it, a credibility crisis of data was also experienced in the mid-to-late 1990s. As a result, the interim reform mechanism for statistics came with the establishment of the NSC in the year 2000. Although the Census remains the most credible and rich source of information for almost all experts, its. Reading, understanding, analysis and reporting presents changes as per convenience.

Instead of organising hackathons and competition to crack big data, etc. the focus must be on making the statistical architecture more open and credible. This is because official data is used primarily by the researchers and policy makers, and hence a sense of trust and confidence must be built between the two so that experts/specialists committed to the cause of harnessing official data for the greater good are effectively utilised by the government. This must not be done by simply outsourcing the survey requirements to some other government agency, but instead new dedicated private professional organisations must be handheld to develop their potentials at par with international standards to cater to the new economy in India and abroad. Only then India would lead by example, or become the Vishwa Guru. The Urban Frame Survey, Village Frame, etc. must be upgraded for real time information and made more dynamic, as it used time and again. There must be a convergence of the programs and schemes of the ministries, and the space application centres for better coordination of geo-tagging of data, data visualisation and optimum resource utilisation, so that the statisticians, economists and policy makers are able to comprehend the Spatial Economics for producing professional data and planned smart development.

The coming of the era of Industry 4.0, AI, blockchain and gig economy has further pushed for the need for new forms of data. In the business as usual scenario, it will be difficult to adapt to the needs of the changing methodology, and hence there is a need to revamp the entire gamut of data estimation.

On several occasions in India, the economic changes are attributed to the business or seasons or structural or simply natural or cyclical. This inability to acknowledge the real reasons behind the changes leads to speculation and loss of trust in the economy and government.

The surveys of NSO being central sample also provides for and encourages state governments to conduct state samples by DES, to arrive at pooled sample data with higher sample size for robust local level estimates. This pooled data is the very crucial and need of the hour for local economic planning, implementation, monitoring and development. But there is hardly any volition from the part of the DES to conduct state samples and hence the local level estimates lags behind in the absence of such data.

5. Conclusions and Way Forward

The government departments and programs acknowledge and explain that there are possibilities of over-reporting at the local levels, which suggests that the data entry processes have been fabricated on a very large scale leading to false data reporting in past and thus needs to be carefully checked in future. The programs and schemes also focuses on the timely achievement, therefore, it requires stringent measures

to ensure that the data provided at the local and state level on the MIS database must not suffer from false reporting and the credibility of this important administrative statistics is restored. This is because the ICT will be extensively used in the days to come with the requirements of new sources of data, example, payroll data, night lights data, GIS data, mobile phone and big data. In this situation, the limitations in capturing the new sectors of the gig economy and in the sectoral level data collection as well as addressing the multiple sources of structural issues becomes imperative.

The commendable contribution of MoSPI in producing the the Swachh Survekshan 2016 to understand the impact of the Swachh Bharat Mission must be replicated for other generating each of the various other datasets in a similar proactive fashion. While several outcomes of the Swachh Survekshan can be contested, yet the timeliness adhered to understanding the implications of the government scheme cannot be underrated. Only when such proactive approach of MoSPI is visible, then the program implementation part of it exhibits vibrancy and dynamism.

The MIS data has taken cognisance of these issues and made several recommendations for improvements in monitoring such as maintaining names, initiatives using ICT technology with information on the geographical location and so on. However, the actual usage of these along with time-bound reporting happens to be very low. While the role of ICT has helped to improve the system for information collection and monitoring, the massive scale at which this technology has to be used in a time-bound manner especially in rural areas remains a challenge, along with concerns of professional data entry and ensuring quality.

The administrative/MIS database which provides periodic real-time information using ICT by every local level unit can be a very useful, effective, economical and sustainable source of information. The real-time information from MIS should be effectively used and applied to the geographic information system to analyze spatial information. It can also provide visualisation till GPs which can be very useful for administrative purposes, spatial and micro-planning, and local resource management.

While the proposed upgradation of MIS to enable reporting is a step forward; past experiences with the information based on MIS provided by local levels raises question on ‘reliability’, and suggests that focus is needed to ensure trust on this database maintained by the government offices. In the absence of trust, economic transactions in a society are adversely impacted, ultimately yielding to a slowdown of economic activity, and eventually, stagnation (Singh, 2019). Therefore, India must strengthen the credibility of its national statistical system, and in its plans to centralise the data in the MoSPI must be an informed and cautious exercise, as it can become a hurdle for its quick and timely release for public research and debate (Kundu, 2019).

Therefore, there is an immediate need to strengthen and empower the GPs, Blocks, and Districts with sufficient infrastructure, capacity building and resources for periodic, quality and sustainable data reporting and maintaining the reliable database at par with International level and standards, MoSPI can certainly play a holistic role here.

Thus, more emphasis is needed on building processes and institutions at the very grassroots levels which ensures zero leakages and act as a modern digital database for evidence-based policy making and achievement of program output in a timely manner ensuring accountability and transparency. Constant monitoring and evaluation as well as scrutiny and validation from various available official data sources at various disaggregated levels is necessary along with village/district level studies on best practices.

Special attention for effective inclusion in implementation is needed towards backward districts, regions, and hamlets of marginalized sections within villages. The desired collective behavioral change also requires a change in the social climate and necessitates ‘behaviour change’ within the government till the local levels to create the enabling ecosystem. The implementation processes need to be paced up, raised civic conscience needs to be converted into a public movement and sustained for years ahead. The delay in work execution along with financial delays requires to be addressed immediately with effective monitoring and scrutiny with help of MoSPI.

Since the Indian statistical system is severely underfunded and understaffed, large investments in terms of financial and human resources are urgently needed to strengthen the system (Chandrashekhar, 2019). These investments become pertinent to bring to reality the Prime Minister's vision for a digital India. In this new digital India, the way data is collected, the way it is analysed, and the way it is consumed needs serious reassessment. The need is to broaden the scope beyond its traditional role of keeping account of economic activity in the economy, and instead focus on providing real-time business intelligence for informed policymaking. Having a common data architecture, based on accepted definitions, for each and every sector is important as it helps in reducing the cost of data collection, and facilitates informed and precise policy action to reach the targeted population.

Since there are so many changes and reform measures being undertaken in the country, we propose holding the census every five years instead of the present decadal system. It will keep the information database updated and vibrant. Proper policy planning and decision making can be ensured through this change.

Further, we recommend consistency in the calculation of the GDP data. The methodology adopted in the calculation of the data must be clarified and made coherent to avoid confusion by often changing the base years in determining the growth challenges and prospects of the country. Equally important for the government is to be punctual in the release of the data. It has been proposed that the government make a prior announcement of the timeline of the release of the data, and more importantly stick to it, which will help maintain its sanctity (Sen, 2020). This will demonstrate its commitment to facilitating appropriate measures for the benefit of the citizens through its various schemes.

The road to improving credibility of official statistics would take a long time with a broad consensus that much will depend on effective leadership. Dis-entangling the overlapping functions of various statistical bodies and creating a uniformity and cohesiveness in the duties and responsibilities along with empowering the NSC are the best steps forward to ensure credible, accessible and legible economic statistics. It is important for MoSPI to regain and retain the authority over collection and storage of data from the local level, and not let it become overly spread out.

The system of official economic statistics in India now faces the challenge of adapting to Information and Communication Technology. The paper thus emphasises the role of strengthening realtime and Management Information Systems' data in order to enable evidence-based policy making and planning and realise the vision of 'New India' and a US\$ 5 trillion economy.

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Annexures

Annex Table 1: Resources Curated by NITI Aayog Website
<u>MOSPI Statistical Yearbook India 2017</u> <u>RBI Handbook of Statistics on Indian Economy 2015-16</u> <u>RBI Real-time Handbook of Statistics of Indian Economy</u> <u>World Bank</u> <u>Ministry of Statistics and Programme Implementation</u> <u>Statistical Publications</u> <u>Directorate of Economics and Statistics, Dept of Agriculture, Cooperation and Farmers Welfare</u> <u>United Nations Statistical Databases</u> <u>United Nations India Stats</u> <u>United Nations India Country Profile</u> <u>Asian Development Bank</u> <u>India by the Numbers</u> <u>IMF Data Bank</u> <u>IMF Indian Statistics</u> <u>ComTrade (UN)</u> <u>UNESCAP</u>