

Session II: Traditional Estimation Practices: Determining the Level and Growth of the Informal Economy

Measuring Informal Economy in India _ Indian Experience

By S V Ramana Murthy¹

*The share of informal unorganised sector is more than 50% and given the size of India, dependency on surveys of unorganised informal sector is inevitable. The administrative data on these enterprises and on employment is also not available given the size and characteristics of the informal sector. The frequency of surveys of unorganised enterprises and employment are around 5 years. This paper presents, the different approaches followed in the compilation of various different sectors of Gross Value added of the informal economy. An approach titled **Effective Labour Input** approach to estimating the GVA of the unorganised sector is presented in the paper. The paper is organised in the following sections (1) Introduction on Indian Informal economy (2) Data Sources (3) Estimation of Bench mark estimates of different sectors of the economy (4) Estimates of intervening period (5) Conclusions.*

JEL E01

Key words Informal economy, unorganised sector, System of National Accounts

I. Introduction

India in 2015 has changed its base of the National Accounts to 201-12. It is currently the sixth largest economy measured in terms of PPP. The contribution of various sectors to total GVA are presented in Table 1. The agriculture sector which employs more than 40% of the workforce contributes 17-18% of the Gross Value (GVA) added of the economy. The services sector (excluding construction) contribute 50% of the GVA. The comparison with 2011-12 is because of 2011-12 is the base year for the new series which was released in 2015.

Table 1: Structure of the economy :Share of Broad Economic Activity sectors in Overall Gross Value Added (%)

Industry	2011-12	2016-17	2017-18
Agriculture, forestry and fishing	18.5	17.9	17.2
Mining and quarrying	3.2	2.3	2.3
Manufacturing	17.4	16.8	16.4
Electricity, gas, water supply & other utility services	2.3	2.5	2.7
Construction	9.6	7.8	7.8
Trade, repair, Accommodation	10.9	11.5	11.8
Transport, storage, communication & services related to broadcasting	6.5	6.7	6.4
Financial services	5.9	5.4	5.4

¹ Deputy Director General, National accounts Division, Ministry of Statistics and Programme Implementation, National Statistical Office, New Delhi, India, email: svr.murthy@nic.in. The view expressed are personal.

Real estate, ownership of dwellings & professional services	13.0	15.5	15.6
Public administration and defence	6.1	5.9	6.2
Other services	6.6	7.7	8.1
TOTAL GVA at basic prices	100.0	100.0	100.0

Source: Computed from National Accounts Statistics, 2019

II. The informal/unorganised sector of the economy.

The terms unorganised/ informal sector are used interchangeably in the India context. The informal sector/unorganised sector consists of enterprises which are own account enterprises and operated by own account workers or unorganised enterprises employing hired workers. They are essentially proprietary and partnership enterprises. Table 2 presents the contribution of formal informal sector to total GVA. It may be mentioned that India treats unincorporated enterprises maintaining accounts as quasi corporates and are treated as part of the formal sector. The table presents the share of informal /unorganised sector GVA to total as shown in Table 2 is more than 50% across all years. However, as stated if quasi sector is also taken into account, the share reduces below 50%. The share of unorganised sector is highest in agriculture as the holdings are small and fragmented. This is followed by trade, construction, real estate, professional services etc and other services.

Table 2- Share of formal/informal sectors across broad sectors to GVA

Industry	2011-12				2016-17				2017-18			
	Organised / formal	Unorganised/ Informal		Total	organ ised/f ormal	unorganised/i nformal		Total	organ ised/f ormal	unorganised/inf ormal		Total
			Of which HH*				Of which HH*				Of which HH*	
Agriculture, forestry and fishing	3.2	96.8	94.8	100.0	2.8	97.2	95.2	100.0	2.9	97.1	95.2	100.0
Mining and quarrying	77.4	22.6	22.6	100.0	77.4	22.6	22.6	100.0	77.5	22.5	22.5	100.0
Manufacturing	74.5	25.5	12.7	100.0	76.4	23.6	12.5	100.0	77.3	22.7	12.0	100.0
Electricity, gas, water supply & other utility services	95.7	4.3	3.2	100.0	95.0	5.0	5.0	100.0	94.7	5.3	5.3	100.0
Construction	23.6	76.4	76.4	100.0	26.6	73.4	73.4	100.0	25.5	74.5	74.5	100.0
Trade, repair, Accommodation and food services	13.4	86.6	56.0	100.0	13.4	86.6	55.8	100.0	13.4	86.6	55.8	100.0
Transport, storage, communication & services related to broadcasting	53.0	47.0	39.6	100.0	53.7	46.3	38.5	100.0	52.3	47.7	39.6	100.0
Financial services	90.7	9.3	0.0	100.0	88.1	11.9	0.0	100.0	88.1	11.9	0.0	100.0
Real estate, ownership of dwelling & professional services	36.9	63.1	57.2	100.0	46.8	53.2	46.7	100.0	47.2	52.8	46.0	100.0
Public administration and defence	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0
Other services	58.8	41.2	22.6	100.0	52.7	47.3	24.4	100.0	52.1	47.9	24.3	100.0
TOTAL GVA at basic prices	46.1	53.9	45.5	100.0	47.3	52.7	43.6	100.0	47.6	52.4	43.1	100.0

*Excludes quasi corporates

Source: Computed from National Accounts Statistics, 2019

III. Structure of Informal employment in India

Informal worker as defined as a worker with no written contract, paid leave, health benefits or social security. The table 3 gives a sense of the formalisation of the workforce over the period 2011-12 to 2017-18. In terms of employment share the unorganised sector employs 83% of the work force and 17% in the organised sector. There are 92.4% informal workers (with no written contract, paid leave and other benefits) in the economy. There are also 9.8% informal workers in the organised sectors indicating the level of outsourcing. These are possibly the contract workers. In 2017-18 the share of unorganised sector employment has increased by 3.6 percentage points while on the other hand the share of formal employment has increased by 0.9 percentage points. There has been an increase in share of formal employment. This also indicates the efforts of the government to provide social security to workers in the unorganised sector.

Table 3 Distribution of total employment (%)

Worker	2011-12			2017-18		
	Unorganized	Organised	Total	Unorganized	Organised	Total
Informal	82.6	9.8	92.4	85.5	5.2	90.7
Formal	0.4	7.2	7.6	1.3	7.9	9.3
Total	83.0	17.0	100.0	86.8	13.2	100.0

Source: Computed from NSS 68th unit level data on employment unemployment, 2011-12 and Periodic Labour Force Survey, 2017-18

IV. Data Sources for the unorganised sector of the Indian economy

The main data sources for agriculture for compiling the national income estimates are (i) land use statistics (ii) area and production of principal crops (iii) cost of cultivation studies. The land utilisation statistics are from the revenue department. The ministry of agriculture provides the production estimates crop wise estimated through the crop cutting experiments conducted by the state governments. The cost of cultivation studies provides the information on inputs such as seed, diesel, electricity, animal feed and repair maintenance of farm machinery. However, the fertiliser association of India, Central electricity Authority of India provide more reliable data on consumption at state level. There are several boards that such as Tea, Coffee and rubber also provide data on crop production.

Due to the size of the country, and the presence of such a large informal sector as detailed above, the dependency of surveys is inevitable and the frequency of such surveys that can be made available every year is also limited. Therefore, the non-agricultural unorganised sector segment are covered through surveys are usually conducted with a gap of 5 years.

The major sources of data are (i) **Enterprise surveys (ES)** -the unincorporated sector non-agricultural survey (excluding construction). This survey excludes agriculture activities except cotton ginning, mining and quarrying, electricity and construction, essentially belonging to the activities of manufacturing, Trade and Other services. The coverage is restricted to unincorporated enterprises i.e not registered under the companies act 2008, public sector

enterprises and Annual survey of Industries² and cooperatives. The coverage is confined to Proprietary and partnership enterprises, Trusts, Self-help groups (SHGs), Non-Profit Institutions (NPIs), etc. These surveys collect information on value of output, intermediate consumption, value added and additions to capital stock required for national income estimation. The coverage of workers includes full time, part time workers, contract workers.

The design of the survey is a multi-stage household sampling design with villages (rural areas) being the first stage units (FSUs). The FSUs are selected on the basis of census population and listing of enterprises are carried out. The ultimate stage units are selected from this list. In the urban areas, the urban frame survey maps are used, each town is divided into certain number of Investigator Units (IV Units) which are further divided into UFS blocks.

Since, the estimate of workers from the enterprise surveys differ from that of the regular employment unemployment surveys, these surveys are better at estimating ratios such as value added per worker, value added per enterprises etc. That is the reason value added per workers are derived from the enterprise surveys and labour input are derived from the employment and unemployment surveys. The enterprise surveys capture the organised segments by location (rural urban) and type of enterprises such as own account enterprises, directory establishments (employing more than 5 workers) and non-directory which employ less than 5 workers.

(ii) **Employment unemployment surveys (ES).** These are two stage stratified random sampling designed covering the entire country to capture information from the households. Typically the information is collected from the head of household on the household members relating to gender, education and employed. Also, information on the type of enterprise (proprietary partnership, government, public/private companies, cooperative societies trust, NPISHs, employer households (private households employing maids, drivers etc,) and others in which one is employed. Information on conditions of employment are also collected. The households are also classified as self-employed, wage workers, non-workers, attending educational institutions etc. by location.

In the employment and unemployment surveys of the quinquennial rounds of NSSO, persons are classified into various activity categories in three approaches on the basis of activities (economic/non-economic) pursued by them during certain specified reference periods. The three approaches are usual status approach, current weekly status approach and the current daily status approach. Three reference periods used in NSS surveys are (i) one year, (ii) one week and (iii) each day of the reference week. In the usual status approach, the activity status of a person is determined on the basis of the reference period of one year. Based on the classification of the individuals into various activity categories in the three approaches, labour force indicators like, labour force participation rate (LFPR), worker population ratio (WPR), unemployment rate (UR) are derived in usual status (principal status), usual status (principal status +subsidiary status), current weekly status (CWS) and current daily status (CDS). The usual status is considered for this paper. The activity participation of the people is not only dynamic but also

² The Annual survey of Industries cover those enterprises which employ 10 or more workers with power and 20 or more without power.

multidimensional - it varies over regions, age, education, gender, industry and occupational categories. Hence,

The main surveys under reference are given below apart from other surveys.

- (1) NSSO 2010-11 unit level data, 67th round, Unincorporated Non agricultural (excluding Construction) enterprise survey in India, Ministry of Statistics and Program Implementation. Government of India. New Delhi.
- (2) NSSO 2011-12 unit level data, 68th round, Employment Unemployment survey, NSSO Ministry of Statistics and Program Implementation. Government of India. New Delhi.

V. Estimation of GVA for the unincorporated manufacturing and non-financial enterprises

In the absence of annual enterprise surveys, the GVA estimates in respect of unorganised segments of manufacturing and services sectors are compiled indirectly through Labour Input Method (LI Method) using the benchmark-indicator procedure. In this procedure, the benchmark GVA estimates are initially prepared at detailed activity level for the base year of national accounts series using the estimated labour input (which is the total of principal and subsidiary activity of workers engaged in the activity) and the value added per worker (VAPW) in the activity. For subsequent years, the GVA is estimated by extrapolation using appropriate indicators relevant to the economic activity. Therefore, for estimation of GVA for these unorganised segments of economy, data on labour input and VAPW are required for the base year. It is pertinent to mention here that the labour input used in the national accounts relates to the number of jobs performed in the economic activities, rather than the number of persons employed as emphasised by the SNA also. This means that a person performing two jobs is counted twice in the labour input procedure. This labour input corresponds conceptually to the labour input used in estimating the value added per worker from the NSS enterprise surveys.

In the Indian, national accounts statistics, the estimates of value added are compiled at detailed activity level, known as 'compilation categories'. These compilation categories are determined by regrouping the economic activities at different levels described in the National Industrial Classification (NIC), 2008, which, in turn, follows the International Standards Industrial Classification of All Economic Activities, Rev.4 (ISIC Rev.4) of the United Nations. The complete list of compilation categories of national accounts in the new (2011-12) series is given in Annexure.

Effective Labour Input method

In the new series, a new method called "Effective Labour Input Method" (ELI Method) has been adopted for the following enterprises:

- All unincorporated manufacturing enterprises, except those covered under the Annual Survey of Industries
- Unincorporated service enterprises, except those of 'Trade & Repair Services', 'Accommodation and food service activities', 'Non-mechanized Road transport' and 'Telecommunication'.

In the Labour Input Method (LI Method), as was being used in the 2004-05 series, while compiling GVAPW from the Enterprise Survey, it is assumed that there is equal contribution from all categories of workers engaged in an economic activity i.e. the productivity of an employer, a casual wage worker, or a family worker is equal. The motivation has been SNA 2008, para 19.56 also³. The new method addresses differential labour productivity issue by assigning weights to the different categories of workers engaged in an economic activity based on their productivity. The weights were compiled using the data on establishments covered in the NSS 67th round Survey on Unincorporated Enterprises, 2010-11.

In this method, different categories of workers are weighted on the basis of their marginal productivity using a nonlinear production function which relates the total production or total GVA with the amount of capital and the amount of labour of three categories of workers. For computing weights, a production function is used which relates the amount of two or more inputs and the amount of output that can be produced by those inputs. The sub-committee on Unorganised Manufacturing & Services Sectors for Compilation of National Accounts Statistics With Base Year 2011-12 proposed to use a **nested Cobb-Douglas production function** whose functional form is given by:

$$Y = AK^\beta [L_2 + \delta_1 L_1 + \delta_2 L_3]^\alpha$$

where, $Y = \text{GVA}$

$K = \text{Capital input}$

$L_1 = \text{Labour input of owner (in person days per year)}$

$L_2 = \text{Labour input of hired worker (in person days per year)}$

³ As per SNA 2008 (Chapter 19, para 19.55, 19.56), "It is possible to produce a quality-adjusted measure of the labour inputs that takes account of changes in the mix of workers over time by weighting together indicators of quality for different grades of workers. (The term quality-adjusted is used as being parallel to the idea of quality-adjusted price indices but it could also be seen as an adjustment for the change in the composition of the workers involved.) The quality indicators used can relate to variables such as academic qualifications, trade qualifications, experience (typically based on age of the worker), industry of employment and so on. The various indicators are weighted together using average hourly wages for a worker falling into each category. The premise behind this approach is that workers are hired only until their marginal price (that is, their wages, including on-costs) is less than the marginal revenue expected to result from their production. Further, para 19.62 states that "Volumes of output per hour worked (or per person employed) are described as measures of labour productivity. However, this is a somewhat unsophisticated measure because changes in this measure can reflect a number of factors other than just the number of hours of labour employed". However, calculating a quality-adjusted labour input measure using the above approach is very data intensive.

L_3 = Labour input of helper (in person days per year)

The coefficients δ_1 and δ_2 give respectively the relative marginal productivity of the owner and helper categories of workers in terms of hired worker.

For estimating the coefficients of the model using NLR procedure in SPSS, the natural log is taken and the model becomes:

$$\log Y = \log A + \beta \log K + \alpha \log [L_2 + \delta_1 L_1 + \delta_2 L_3] + \gamma S$$

where, Y = GVA

K = Capital input

L_1 = Labour input of owner (in person days per year)

L_2 = Labour input of hired worker (in person days per year)

L_3 = Labour input of helper (in person days per year)

S = A dummy variable for sector (Rural = 0, Urban = 1)

The NLR procedure makes use of the Levenberg-Marquardt algorithm which is an iterative procedure for estimating parameters of a non-linear model and requires initial value of the parameters. To get initial value of the parameters, the simple Cobb-Douglas model is used which is given by:

$$\log Y = \log A + \beta \log K + \alpha \log L + \gamma S$$

The parameters of the above model can be obtained from linear regression procedure. The coefficients of labour terms, δ_1 and δ_2 , in this equation give the relative marginal productivities which are used as conversion factors for conversion of “owners” and “helpers” in terms of hired worker for computation of “effective labour input”. For e.g. $\delta_1 = 0.5$ implies that 10 owners are equivalent to 5 hired workers.

Once the coefficients are estimated, the effective workers i.e. $[L_2 + \delta_1 L_1 + \delta_2 L_3]$ are estimated and hence effective GVAPW or GVA per effective worker (GVAPEW) are estimated for each compilation category. The same coefficients are used to estimate labour input from 68th round and is termed as effective labour input (ELI). And finally, the GVA for a compilation category is obtained as the product of GVAPEW and ELI for that compilation category.

The NSS 67th round Enterprise survey collected, inter alia, data on employment for four categories of labour viz. i) working owner-801; ii) formal hired worker-802; iii) informal hired worker-803; iv) other worker/helper-804.

The NSS 68th round EUS classifies the status of workers as - “worked in h.h. enterprise (self-employed): own account worker 11, employer-12, worked as helper in h.h. enterprise (unpaid family worker) 21, worked as regular salaried/ wage employee -31, worked as casual wage labour: in public works-41, in other types of work-51”.

A concordance was established between the two survey workers as under

Codes 11 & 12 of EUS = Code 801 of ES
Code 21 of EUS = Code 804 of ES
Code 31 of EUS = Code 803 of ES
Codes 41 and 51 of EUS = Code 802 of ES

The GVA adjusted for labour productivity (Effective GVA) was then computed as the product of Effective LI from EUS and GVA per effective worker from ES. This method, was adopted for the unorganised manufacturing as a whole. Effective LI method was used for the unincorporated enterprises of mechanized road transport, services incidental to transport, courier services, cable operators, professional, scientific & technical activities, activities of membership organisations and all categories of personal services.

The Effective LI method based on establishment was modified in a few categories of non-financial services, namely, education, health, water transport, storage, real estate, renting of machinery, computer & related services, legal and accounting services, by using effective LI and the GVA per effective worker (GVAPW) of rural establishments and urban directory establishments, as the case may be. This method would be referred to as “modified effective LI method”.

$$\text{GVA} = \text{Effective LI (Rural)} \times \text{GVAPW (Rural Establishments)} + \text{Effective LI (Urban)} \times \text{GVAPW (Urban Directory Establishments)}$$

In some other categories, namely, Trade & repair services, Accommodation and food service activities and Non-mechanized Road transport, telecommunication, where it was felt that the productivity of different categories of labour may not have a significant impact on GVA, especially in the unorganised segment, the “LI method” was used as below:

$$\text{GVA} = \text{LI (Rural)} \times \text{GVAPW (Rural Establishments)} + \text{LI (Urban)} \times \text{GVAPW (Urban Directory Establishments)}$$

VI Bench mark estimates for the base year 2011-12.

The ELIM is not used in all the sectors for estimating the benchmark estimates. Some of the sectors of unorganised sector where this method is not followed are the agriculture, Mining and quarrying sector, construction sectors. The estimates of GVA are compiled by institutional sector wise which can be classified into general government, non-departmental corporations (financial corporations and non-financial) and unincorporated enterprises including household enterprises, non-profit institutions serving households.,

Agriculture: base year prices and current year’s crop production give the base years output and when the inputs are subtracted gives the gross value added for the crop sector.

Mining Sector: The mining sector is predominantly organised and has very little presence of unorganised sector. The state (sub national) department of geology collects the data relating to minor minerals (such as dolomite etc). In the case of sand which is an important component of construction, the value addition is estimated in an indirect manner. The sand output is based on an administrative permits given to mine sand from river beds but given the output of construction, it was found that output of sand was an underestimate. So an indirect method was adopted. The output of sand was derived as an indirect estimate of the value of output of ‘extraction of sand’ at basic prices is derived through the value of commodities used

for 'construction'. As per the Central Building Research Study (CBRI) study, the value of sand used in the construction is estimated as 8.2% of the total value of inputs used for the activity. Since inputs are valued at purchasers' prices, suitable adjustments of trade transport margins were made to arrive at the value of output for sand from the corresponding annual estimate of the value of inputs in construction. Further, using the input rate from Indian Bureau of Mines (IBM) for sand, the GVA of sand is derived and added to the minor mineral GVA to arrive at the overall GVA of minor minerals.

Manufacturing sector All unincorporated manufacturing enterprises, except those covered under the Annual Survey of Industries have been estimated using the effective labour input method. The Annual survey of industries covered the departmental enterprises (supported by Government budgets) and all factories registered under the Factories Act under Section 2m(i) & 2m(ii) employing more than 10 workers with power or 20 workers without power. Therefore, apart from factories of the Incorporated Enterprises, it also included factories of unincorporated enterprises which were registered under the Factories Act.

$$GVA = \text{Effective LI} \times \text{GVA per Effective Worker (GVAPEW)}$$

Construction sector The construction sector as is evident from the main data sources are not covered in the unincorporated enterprise surveys. The construction sector GVA is estimated for the following components (i) Dwellings, Other Buildings & Structures (DOBS) (ii) Construction in plantations (iii) Mineral explorations construction is divided into accounted and unaccounted construction. The accounted construction is estimated at the national level using commodity flow method. The estimates of construction for the institutional sectors measured through expenditure approach, of private corporations from books of accounts, general government from budgets and public corporations from annual reports are subtracted from the overall estimate of commodity flow method giving household sector estimate as a residual. In addition, the unaccounted DOBS is similarly arrived at. However, in addition to these estimates, expenditure on construction activity in plantations and mineral explorations is separately estimated and included in GVA from construction.

Trade This sector consists of Maintenance and repair of motor vehicles and motor cycles, Sale of motor vehicles, Whole sale trade except of motor vehicles, Retail trade (except motor vehicle). The bench mark estimates for the unorganised trade are derived have been derived adopting the traditional labour input method as was adopted in the earlier series with base 2004-05. The Labour input (measured in terms of total number of workers for rural and urban sectors and the gross value added per worker (all types) for establishments for rural sector and gross value added per worker from directory establishments (establishments employing more than 6 workers) were considered for estimation of bench mark GVA.

$$GVA = \text{LIR} \times \text{GVAPWR}(\text{Est}) + \text{LIU} \times \text{GVAPWU} (\text{Directory Establishment})$$

Similar approach was followed for accommodation, freight transport other than by motor vehicles, other communication.

Transport This sector consists of road, air water transport, but air is not of the unorganised sector as it is a formal sector. Scheduled and non-scheduled passenger transport, freight by motor vehicles services incidental to transport follow the approach of estimating GVA as

$$\text{GVA} = \text{effective LI} * \text{GVA per effective worker}$$

Professional and scientific activities, Courier cable operators, activities of membership organisations, reaction, washing, hairdressing also follow this approach of estimation of GVA.

Ownership of Dwellings The urban bench mark estimates for ownership of dwelling is obtained by the estimating the average rent per dwellings and the repair and maintenance. While the rural estimate is derived by the user cost method. This involves the estimation of the value of stock of houses and expecting a certain rate on this investment. The repair and maintenance estimates are obtained from the All India Debt and investment surveys.

Financial services This sector in the unorganised sector consisted of private money lenders and unorganised financial enterprises. In the new series 2011-12, the bench mark estimates for private moneylenders have been derived using the information available from the NSS 70th round All India Debt and Investment Survey (AIDIS), 2013, RBI's annual publication - Basic Statistical Returns of Scheduled Commercial Banks in India, RBI's "Report of the Technical Group to review legislations on moneylenders", 2007 and NSS 67th round Survey on Unincorporated Enterprises, 2010-11. For the remaining unorganised financial enterprises, the estimates of GVA have been derived from NSS 67th round Survey on Unincorporated Enterprises, 2010-11.

Other services The following services such as water transport, storage, renting of machinery, computer services, legal activities, coaching centre, human health activities have followed this procedure of estimation of GVA.

$$\text{GVA} = \text{Effective LI (rural)} \times \text{GVAEW(Est)} + \text{LIU} \times \text{GVAP EW (urban Directory Establishment)}$$

VII. Moving the estimates forward

The benchmark estimates of GVA of the unorganised sector are moved forward to other years using certain set of indicators which are detailed below.

List of indicators used for Moving the benchmark estimate Value Added for each Compilation Category in the Unorganised Manufacturing and Non-Financial Services Sector in the New Series (B.Y. 2011-12) – Current Prices

S.No.	Compilation Category	Indicator (2011-12 Series)
1.	Manufacturing Unorganised	Estimates compiled compilation category-wise by using IIP and WPI, till ASI data becomes available

S.No.	Compilation Category	Indicator (2011-12 Series)
2.	Maintenance and repair of motor vehicles and motor cycles	Motor vehicles Sales growth * WPI
3.	Sale of motor vehicles	Total sales tax/GST converted to turnover and adjusting for private corporate and NDEs give turnover for sales tax/GST paying unorganised sector. Growth is used as an indicator
4.	Wholesale trade except of motor vehicles and motor cycles + Wholesale of lottery tickets	As in 3
5.	Retail trade except of motor vehicles and motor cycles + retail sale of lottery tickets	As in 3
6.	Repair of computers and personal and household goods	Service tax/GST growth
7.	Accommodation and food service activities	Corporate growth
8.	Scheduled passenger land transport	Growth in registered vehicles * CPI (Transport & Communication)
9.	Non-scheduled passenger land transport by motor vehicles	
10.	Freight transport by motor vehicles	
11.	Other non-scheduled passenger land transport	
12.	Freight transport other than by motor vehicles	
13.	Water Transport	Index of cargo handled at major and minor ports X WPI
14.	Storage and warehousing	Corporate growth
15.	Services incidental to transport	Combined growth of Road & Water Transport
16.	Courier activities	Service tax/GST growth
17.	Cable operator	Service tax/GST growth of cable operators
18.	Telecommunication	
19.	Recording, Publishing and Broadcasting services	Corporate growth
20.	Real Estate Activities	Corporate growth

S.No.	Compilation Category	Indicator (2011-12 Series)
21	Computer and information related services	
22	Professional, scientific and technical activities (including R&D)	
23	Administrative & support service activities excluding rental and leasing services	
24	Rental and leasing services	
25	Legal activities	
26	Accounting, book-keeping	
27	Ownership of dwellings	House rent index
28	Coaching centres + Activities of the individuals providing tuition	Growth in consumer expenditure on education and health
29	Education excluding (Coaching centres + Activities of the individuals providing tuition)	
30	Human health activities and care services with/without accommodation	
31	Sewage And Refuse Disposal, Sanitation And Similar Activities	Now a component of utilities sector
32	Activities Of Membership Organisations	Service tax/GST growth
33	Recreational, cultural and sporting activities	Growth in non-food consumer expenditure
34	Washing and cleaning of textile and fur products	-do-
35	Hair dressing and other beauty treatment	-do-
36	Custom Tailoring	Growth in non-food consumer expenditure
37	Other personal services	-do-
38	Private households employing staff	Labour input growth

Note GST Goods & service tax WPI wholesale price Index CPI- consumer price index

VIII. Issues on Non-Observed Economy

According to the OECD hand book on Non observed economy the groups of activities most likely to be non-observed are those that are underground, illegal, informal sector, or undertaken by households for their own final use. Activities may also be missed because of deficiencies in the basic data collection programme.

- i. The informal employment by definition have no written contract, paid leave and hence pay no minimum wages, nor pay attention to conditions of work.
- ii. In India, Gambling and prostitution is illegal in India. However, gambling is a state subject and some of the states such as Goa have casinos where gambling is legal. Betting on Horse races', lotteries in a few states are legal. Gambling is a major industry. The illegal gambling industry both offline and online runs into billions as per guess estimates. Cricket betting is also very prevalent. No adjustment is made in the National counts.
- iii. The production undertaken by households for their final use is taken into account are limited to agriculture, fisheries and forestry. In case of manufacturing goods only weaving of textiles is taken into account while the rest of manufacturing is not. While the services of owner occupied dwellings and domestic services produced by employing paid domestic staff are included. The Output of own account capital formation – included as part of the household final use.
- iv. Time use survey is being conducted in India which may give more activities which may not be accounted for in the current socio economic activities.

IX. Limitations

- i. Wage data would have been ideal in measuring ELI but the presence of self-employed and unpaid family workers where wage rates are not available, choice remained for the different categories of workers instead.
- ii. The information on increase in fixed assets in the surveys is also very poor.
- iii. The assumptions (linear aggregation of different types of labour – employers, hired workers and unpaid family workers) in the estimation of effective labour input were assumed to be too simplistic.
- iv. In the services sector the application of effective labour input method was limited and a modified effective labour input was used.
- v. The bench mark estimates of the informal sectors are moved forward using indicators which are deemed appropriate at that point of time but it has been observed that these estimates differ with the new survey results. They may be an over or under estimate.
- vi. The new base change of 2011-12 had seen a drop in the levels of GVA by almost three percent. This may be because of the lag between two surveys and the indicators.
- vii. The surveys are essentially based on oral information and not all information collected is record based. These have impact on the expenditure side of the GDP also as some of the estimates of private final consumption expenditure are moved using estimates derived from the supply side for example communication expenses are moved by the current prices GDP estimates of communication.
- viii. The supply side estimation of GDP is accepted to be more robust than the expenditure side. These differences will show up in the discrepancies.

- ix. No adjustment is made for the non-observed economy.

X. Challenges and way forward

The share of informal sector to the economy is more than 50% of GVA which pose many challenges. The nature of the informal sector enterprises is dynamic. The birth and deaths of enterprises are also very fast. The survey results provided by the system i.e once in five years make it difficult for the policy makers to enact suitable policies.

- i. To obviate the reasons stated above the NSO has initiated the conduct annual surveys of unincorporated sector and the periodic labour force surveys. This would enable the National Income estimates to be compiled on an annual basis based on the current information.
- ii. It would, if deem fit the labour input method of estimating the GVA to be adopted or the effective labour input method which would require the estimation of coefficients on an annual basis instead of fixing then for a period of 5 years as of now.
- iii. Also, there have been impact of the Goods and Service Tax on the informal sector enterprises. The GST was introduced in 2017-18. The system allows for claiming the taxes paid on inputs by corporates and other enterprises if and only if the supplier of inputs uploads the invoices denoting the supplies on a matching basis to offset the input tax credit. Since, the informal sectors because of the turnover of enterprises are not required to register themselves under the GST system are usually left out and are deprived from getting business with the large corporates. Some of the enterprises do get themselves registered in the GST system to get into business with large enterprises.
- iv. **Use of administrative data of Goods and Service tax data.** The goods and service tax network has currently more than 12.5 million enterprises registered. The filings by enterprises paying GST is monthly. Apart from the tax details, the enterprises also file returns on turnover, the nature of business (activity – manufacturing, trading or services) and the likely products they are dealing in (based on HS classification). There is also a proposal to triangulate the data filed by an enterprise with various tax authorities such as the Income Tax, the Ministry of Corporate affairs and the GST. These would give the necessary correction factors by residual for the informal sector at the macro level or at activity or product levels.
- v. The National Accounts Division is currently able use the corporate sector data for the compilation of annual accounts. The Ministry of corporate affairs is making this data available for over 0.7 million companies for the new series.
- vi. The use of AI and Big data needs to be incorporated in the measurement of contribution of the informal sector.
- vii. Indian statistical system is decentralised, therefore, quality standards should also be generated/ developed for all major statistical products in the system horizontally and vertically. The Guidelines on National Quality Assurance Framework issued by Ministry of Statistics and Programme Implementation (MOSPI) in April 2018 advised all the Central Ministries & States to assess the quality of their statistical products by mapping them with the quality parameters as per the template of NQAF.
- viii. The National Accounts Division, Survey Design and Research Division and the Price Statistics Division of MOSPI are ISO 9001: 2015 certified. Other division are also striving to achieve certified standards.

References

- (1) NSSO (2013), 2010-11 unit level data, 67th round, Unincorporated Non-agricultural (excluding Construction) enterprise survey in India, Ministry of Statistics and Program Implementation. Government of India. New Delhi.
- (2) NSSO (2014), 2011-12 unit level data, 68th round, Employment Unemployment survey, NSSO Ministry of Statistics and Program Implementation. Government of India. New Delhi.
- (3) NSO (2019), 2017-18 unit level data, Periodic Labour Force Survey, NSSO Ministry of Statistics and Program Implementation. Government of India. New Delhi.
- (4) CSO (2015) Changes in methodology and data sources in the new series, base year 2011-12, June 2015, Ministry of Statistics and Program Implementation. Government of India. New Delhi.
- (5) CSO (2012) Sources and methods, 2012, Ministry of Statistics and Program Implementation. Government of India. New Delhi.
- (6) NSSO (2014), 70th Round, January- December, 2013 All India Debt and Investment survey, Ministry of Statistics and Program Implementation. Government of India. New Delhi.
- (7) SNA system of National accounts 2008, UNSD
- (8) National Statistical office (2015), Report of the Sub Committee on Unorganised Manufacturing & Services Sectors for Compilation of National Accounts Statistics with Base Year 2011-12
- (9) National accounts Statistics, 2019, Ministry of Statistics and Programme Implementation
- (10)** OECD (2002), Measuring the Non observed Economy

**COMPILATION CATEGORIES ADOPTED IN NEW SERIES (B.Y. 2011-12) AND THEIR
CONCORDANCE WITH NIC 2008 (ISIC 4.0)**

Sl. No.	Compilation Category	NIC 2008
1.	Agriculture, forestry & fishing	
1.1.	Crops & Livestock	01
1.2.	Forestry	02
1.3.	Fishing & aquaculture	03
2.	Mining & quarrying	05-09
3.	Manufacturing	
3.1.	<i>Manufacturing of food products, beverages and tobacco</i>	
3.1.1.	Production, processing and preservation of meat, fish, fruit, vegetables, oils and fats	101-104
3.1.2.	Manufacture of dairy products	105
3.1.3.	Manufacture of grain mill products, etc. and animal feeds	106+108
3.1.4.	Manufacture of other food products	107
3.1.5.	Manufacture of beverages	11
3.1.6.	Manufacture of tobacco products	12
3.2.	<i>Manufacturing of textiles, apparel & leather products</i>	
3.2.1.	Manufacture of textiles + cotton ginning	13+01632
3.2.2.	Manufacture of wearing apparel, except custom tailoring	14-14105
3.2.3.	Manufacture of leather and related products	15
3.3.	<i>Manufacturing of metal products</i>	
3.3.1.	Manufacture of Basic Iron and Steel + Casting of iron and steel	241+2431
3.3.2.	Manufacture of basic precious and non-ferrous metals + Casting of non-ferrous metals	242+2432
3.3.3.	Manufacture of fabricated metal products, except machinery and equipment	25
3.4.	<i>Manufacturing of machinery and equipment</i>	
3.4.1.	Manufacture of electronic component, consumer electronics, magnetic and optical media	261+264+268

Sl. No.	Compilation Category	NIC 2008
3.4.2.	Manufacture of computer and peripheral equipment	262
3.4.3.	Manufacture of communication equipment	263
3.4.4.	Manufacture of optical and electronics products n.e.c	265+266+267
3.4.5.	Manufacture of Electrical equipment	27
3.4.6.	Manufacture of machinery and equipment n.e.c	28
3.4.7.	Manufacture of Transport	29+30
3.5.	<i>Manufacturing of other goods</i>	
3.5.1.	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting material	16
3.5.2.	Manufacture of paper and paper products	17
3.5.3.	Printing and reproduction of recorded media except publishing	18
3.5.4.	Manufacture of coke and refined petroleum products	19
3.5.5.	Manufacture of chemical and chemical products except pharmaceuticals, medicinal and botanical products	20
3.5.6.	Manufacture of pharmaceutical; medicinal chemicals and botanical products	21
3.5.7.	Manufacture of rubber & plastic products	22
3.5.8.	Manufacture of other non-metallic mineral products	23
3.5.9.	Manufacture of furniture	31
3.5.10.	Other Manufacturing	32
3.5.11.	Repair and installation of machinery and equipment	33
4.	Electricity, gas, water supply and other utility services	
4.1.	Electricity	351
4.2.	Gas – Manufacture & distribution	352+353
4.3.	Water Supply	36
4.4.	Sewerage, waste management and remediation activities	37,38,39
5.	Construction	Industry divisions 41,42,43

Sl. No.	Compilation Category	NIC 2008
6.	Trade, repair, Accommodation and food service activities	
6.1.	Trade & repair services	
6.1.1.	Trade and repair of motor vehicles (including motor cycles) and retail sale of automotive fuel	45+473
6.1.2.	Wholesale trade except of motor vehicles and motor cycles + Wholesale of lottery tickets	46+92001
6.1.3.	Retail trade except of motor vehicles and motor cycles + retail sale of lottery tickets	47-473+92002
6.1.4.	Repair of computers and personal and household goods	95
6.2.	Accommodation and food service activities	55, 56
7.	Transport, storage, communication & services related to broadcasting	
7.1.	Transport	
7.1.1.	Transport via Railways	491
7.1.2.	Road transport	492
7.1.2.1.	Mechanized Road Transport	492-49226-49232
7.1.2.2.	Non-mechanized Road Transport	49226+49232
7.1.3.	Water Transport	50
7.1.4.	Air Transport	51
7.1.5.	Services incidental to transport	522
7.2.	Storage	521
7.3.	Communication & services related to broadcasting	
7.3.1.	Postal activities	531
7.3.2.	Courier activities	532
7.3.3.	Activities of cable operators	61103
7.3.4.	Telecommunication	61-61103
7.3.5.	Recording, Publishing and Broadcasting services	58,59,60
8.	Financial Services	64,65,66
9.	Real estate, ownership of dwellings and professional services	

Sl. No.	Compilation Category	NIC 2008
9.1.	Real estate and ownership of dwellings	68
9.1.1.	Real Estate activities	68 – 681 (p)
9.1.2.	Ownership of dwellings	681 (p)
9.2.	Professional services	
9.2.1.	Computer and information related services	62,63
9.2.2.	Professional, scientific and technical activities (including R&D)	70 to 75
9.2.3.	Administrative & support service activities and other professional activities	
9.2.3.1.	Legal activities	691
9.2.3.2.	Accounting & book keeping activities	692
9.2.3.3.	Rental and leasing services	77
9.2.3.4.	Administrative and support services excluding rental and leasing services	78 to 82
10.	Public Administration and defence	84
11.	Other Services	
11.1.	Education (including coaching and tuition)	85
11.2.	Human health activities and care services with/without accommodation	86,87,88
11.3.	Recreational, cultural and sporting activities	90,91,92 (-92001,92002),93
11.4.	Activities of membership organisations	94
11.5.	Personal Services & Other Services, n.e.c	
11.5.1.	Washing & cleaning of textiles and fur products	9601
11.5.2.	Hair dressing and other beauty treatment	9602
11.5.3.	Custom tailoring	14105
11.5.4.	Other personal service activities	9609,9603
11.6.	Private households with employed persons	97