

Kapoor, Radhicka

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Waiting for jobs

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Working Paper No. 348

Waiting for Jobs

Radhicka Kapoor

November 2017



INDIAN COUNCIL FOR RESEARCH ON INTERNATIONAL ECONOMIC RELATIONS

Table of Contents

Acknowledgement	i
Abstract	ii
1. Introduction	1
2. Existing Data Sources	3
2.1 <i>Household Surveys</i>	4
2.2 <i>Census and Surveys of Establishments</i>	6
2.3 <i>Administrative Data Sources</i>	13
2.4 <i>Government Schemes</i>	17
3. Using National Accounts Statistics to estimate employment	21
4. Conclusion	31
Bibliography	33

List of Tables

Table 1: Total Employment by Sectors (in millions).....	4
Table 2: Projected Population, Worker Population Ratio and Total Employed	5
Table 3: Industry-wise Worker Population Ratio and Total Employed.....	6
Table 4: ASI – Total Employed by NIC 2 Digit industry (in thousands)	8
Table 5: Total Workers by Contract Type (in thousands).....	9
Table 6: Employment in Unregistered Manufacturing (in millions)	10
Table 7: Labor Bureau: Total Employment and Change in Employment	12
Table 8: Employees Provident Fund: Total Membership Including Exempted and Unexempted Members (in Lakh)	14
Table 9: Total number of members (on an average) in EPF whose contributions have been received (in Crores)	14
Table 10: Employees State Insurance Scheme (in lakhs)	15
Table 11: Number of Beneficiaries Registered under NPS	16
Table 12: Mudra Yojana (Amount in Rs crores)	19
Table 13: Mahatma Gandhi National Rural Employment Guarantee Act	20
Table 14: Changes in the Institutional Structure of NAS	21
Table 15: Elasticity by industry group	24
Table 16: Employment in Private Corporate Manufacturing sector by industry group.....	26
Table 17: GVA in manufacturing at constant prices 2011-12 (in Rs crores).....	27

Table 18:	Employment in Private Corporate Manufacturing Sector (in thousands).....	27
Table 19:	Comparison of Industry wise growth of GVA from NAS and ASI (2011-12 to 2014-15).....	29
Table 20:	Total Employment in the Organized and Unorganized Manufacturing Sector ..	31

List of Figures

Figure 1:	Comparison of Actual and Predicted Values of Employment across Industry Groups.....	30
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Abstract

Employment data in India is far from adequate if policy responses have to be more effective and timely. Most employment surveys suffer from drawbacks such as limited data coverage, infrequent data collection and long time lags. To address these gaps and revamp the existing employment data systems, the government has put in place a Task Force. However, new employment data is unlikely to be available until the latter half of next year. Understanding and analyzing employment trends in the interim period is imperative. This study attempts to do so by undertaking a detailed analysis of multiple data sources-households' employment and unemployment surveys, enterprise surveys, administrative datasets, data from government schemes and National Accounts Statistics. Results from our analysis reflect a sluggish pace of job creation over the last three years and underscore the severity of India's jobs crisis. However, it needs to be noted that simply creating a large number of jobs in the face of intensifying demographic pressures is inadequate. These jobs need to be 'productive jobs'.

Keywords: *Labour Force, Employment, Employment Data, Household Surveys, Enterprise Surveys*

JEL classification: *J21, J29, J40, J46, J60*

Author's email: rkapoor@icrier.res.in; radhicka.kapoor@gmail.com

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Waiting for Jobs

Radhicka Kapoor

1. Introduction

Jobs or the lack of them can make or break governments. It is therefore unsurprising that as the share of India's working age population peaks, productive job creation has become a key priority for the government. The importance of employment generation in existing government policies and those on the anvil has increased manifold. What is equally important is correctly counting the number of employed and the number of new jobs created. Employment statistics are a key input in designing macroeconomic policies and need to be reliably sourced, accurate and timely for policy responses to be meaningful. However, India suffers from a lack of comprehensive and real time data on employment which has made it difficult for policy makers to assess the extent of employment generation at different points of time. Much of the data on jobs is generated with a considerable time lag and is often restricted to the organized sector.

Recognizing the challenges arising from the paucity of reliable real time jobs data in India, the government set up a Task Force to revamp the employment data architecture in May, 2017.¹ The Task Force has recommended that the quinquennial employment and unemployment surveys conducted by the National Sample Survey Organisation (NSSO) be scrapped and replaced with a more robust household and enterprise survey. The NSSO will now be conducting an annual household survey with a quarterly module in urban areas named the Periodic Labour Force Survey (PLFS)². This will produce annual nationwide employment and unemployment estimates and quarterly urban estimates. In addition to the PLFS, the Task Force has recommended the introduction of a time-use survey³ and the use of technology that can speed up data collection reducing the time lag between data collection and processing. To strengthen establishment level data, it has suggested instituting an annual enterprise survey using enterprises registered with the Goods and Services Tax Network (GSTN) as the sample frame. A subset of enterprises would be tracked at higher frequency to produce monthly or quarterly estimates. For own account enterprises and those with a turnover below INR 2 million, the Task Force has proposed a separate 'Annual Survey of Enterprises excluded from GSTN'. This would derive its frame from the Economic Census, which will be conducted more regularly.

While these recommendations will help generate higher frequency employment data, it will be another couple of years before India has a new jobs dataset. In the interim, it is imperative to understand what has happened to job creation as the incumbent government has made it a

¹ <http://pib.nic.in/newsite/PrintRelease.aspx?relid=161679>

² The idea of a PLFS has long been in the making. It was in fact launched in April 2017, even before the Task Force was formed.

³ This survey will be conducted by MoSPI and collect information on how individuals allocate their time over a specified time period.

key priority since assuming power in 2014. This is precisely the attempt of this exercise. In the first part of this study, we undertake a comprehensive analysis of multiple data sources and surveys to examine employment trends over the last three years. The Task Force has identified four potential sources for this purpose: household surveys, enterprise surveys, administrative data and data from government schemes. In this study, we examine employment trends from each of these. This includes household surveys conducted by the NSSO and Labour Bureau; enterprise surveys such as the Annual Survey of Industries (ASI) and the NSSO's Survey of Unincorporated Non-Agricultural Enterprises; administrative datasets such as Employees Provident Fund Organisation (EPFO) and National Career Services (NCS); and government schemes such as Micro Units Development & Refinance Agency (MUDRA) and Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The importance of analyzing multiple data sources to get a comprehensive picture of India's labour markets cannot be underestimated. Cross validation of data from alternative sources not only augments data credibility but is also imperative given the dualistic nature of India's labour markets i.e. the prevalence of a formal/organised sector which coexists with a large 'unorganised sector'. Collecting data on the unorganized/informal sector, which accounts for a substantial component of the labour market in developing countries is particularly challenging as informal activities usually do not get covered in regular data collection systems.

In the second part of the paper, we use Gross Value Added (GVA) data from India's National Accounts Statistics (NAS), which are released at a higher frequency and updated faster than most employment data to get a sense of trends over the last couple of years. This is a preliminary attempt at providing quick estimates of employment in recent years in the absence of real time data. The complexity of this task is accentuated by the fact that India's NAS underwent a significant conceptual revision in 2015. Importantly, we are able to do this exercise for the manufacturing sector only. Computing elasticity estimates from the ASI data for thirty broad industry groups, we use GVA estimates from NAS to estimate employment changes.

Results from our analysis reflect a languid pace of job creation over the last three years. An examination of multiple data sources in this study confirms that despite being one of the world's fastest growing economies, job growth in general and formal job growth in particular leave much to be desired. Data from the Labour Bureau's annual household employment survey shows a decline in total employment in India from 480.4 million (2013-14) to 467.6 million (2015-16). For the manufacturing sector, which has been a key priority area for the government, we find that employment generation has been rather sluggish. Using data from the most recent Annual Survey of Industries, we find that for the organized manufacturing sector, employment has increased by a paltry 315,140 between 2013-14 and 2014-15. Our estimates using the National Accounts Statistics suggest that this sluggishness has persisted with a mere 408,975 jobs created in the private corporate manufacturing sector between 2014-15 and 2015-16. Between 2015-16 and 2016-17, the same figure stood at 315,546 jobs. While our methodology is subject to several caveats which are discussed in detail later, there is no denying the slow pace of job creation. For the unorganized manufacturing sector, using

data from the recently released NSSO's survey of Unincorporated Non-Agricultural Enterprises (73rd Round), we find employment in this sector to have increased from 34.88 million to 36.04 million. Significantly, this increase has largely come from own account enterprises. This rise may simply be a result of workers being compelled to take on low productivity engagements because there is a serious dearth of formal jobs and people cannot afford to remain unemployed for long. A study of various administrative datasets such as NCS, though fraught with challenges, reaffirms the slow pace of job creation. An analysis of employment creating potential of government schemes shows that these are unlikely to make a big dent to the jobs challenge. Furthermore, there is a question mark on the sustainability of jobs created by these schemes. The stagnant trends across multiple sources indicate the severity of India's jobs crisis. However, it also needs to be noted that simply creating a large number of jobs in the face of intensifying demographic pressures is inadequate. These jobs need to be 'productive jobs'. But, we are unable to say much about the quality of jobs created given the paucity of data.

2. Existing Data Sources

Employment statistics in India are collected, compiled and released through multiple agencies. The Ministry of Statistics and Programme Implementation (MoSPI) is one of the major producers of labour statistics in India. It collects, compiles and publishes data through its two important offices, the National Sample Survey Office (NSSO) and the Central Statistics Office (CSO). Data is collected through regular, periodic and ad-hoc surveys. The Ministry of Labour and Employment (MoLE) is another key source of labour statistics. The Labour Bureau in the MoLE has been the central agency collecting and disseminating data on various dimensions of labour on the basis of the periodical administrative reports and returns on over four dozen labour laws that it administers and implements. Realising the need for regular and frequent labour statistics, it has also been conducting Annual Employment and Unemployment surveys since 2009-10 (Papola, 2014).

To get a holistic picture of India's labour markets given their dualistic nature, employment estimates are generated using both household and enterprise surveys. Household surveys are able to capture the unorganized sector, particularly the self employed workers and those employed in household enterprises. In that sense, they largely satisfy the requirements of completeness. Enterprise surveys, on the other hand, do not capture households and fail to capture informal sector activities effectively. Nevertheless, given the fact that they collect data from worksites, they provide a more detailed picture of the industry structure of employment and characteristics of enterprises. Household surveys face the problem of whether the respondent, a household head or member (who may not be the worker in question) can provide correct information of the characteristics of the enterprise including the employment size, in which the worker works (Papola, 2014).

In addition to household and enterprise surveys which are typically disseminated with a considerable time lag, the recently released 'Report of the Task Force on Improving Employment Data' has identified two more sources of measuring employment and unemployment. These include 'administrative data' and 'data from government schemes'.

The former refer to the datasets created in the course of enrolling workers in pension, medical insurance and other such programs, while the latter refer to the large scale social and economic programs undertaken by the government. Given that these data sources are partial in coverage, they cannot be looked at in isolation. Perhaps it is for this reason that they have rarely been used to analyse employment trends. Nevertheless, we attempt to study these sources.

2.1 Household Surveys

The quinquennial household surveys on employment and unemployment conducted by the NSSO are the primary source of various labour force indicators at the national and state levels. They provide the most comprehensive data on the employment situation in the country as they cover both the organized and unorganized sectors of the economy and have a country-wide geographical spread. The most recent round of this survey was conducted in 2011-12 (NSS 68th Employment Unemployment Round). According to this, total employment in India stood at 474.2 million. Of this, a paltry 16% were engaged in the manufacturing sector. Despite 36.7 million exiting the agriculture sector between 2004-05 and 2011-12, almost half the workforce was still engaged in agriculture. Further, it was found that 92.8% of India's workforce was engaged in the unorganized sector. The problem with this survey however is that data is collected only once every five-six years, following which it takes almost a year to be released making these numbers even more dated. Therefore, despite its comprehensive nature, this source cannot provide us timely and frequent employment statistics.

Table 1: Total Employment by Sectors (in millions)

Sector	2004-05	2011-12
Agriculture	268.6	231.9
Manufacturing	53.9	59.8
Non-manufacturing	29.4	55.3
Services	107.3	127.3
Total	459.1	474.2

Source: Mehrotra et al (2014)

Note: The numbers in the table are based on the usual principal and subsidiary status (UPSS) approach.

Realising the need for regular and frequent labour statistics, the Labour Bureau has also been conducting annual Employment Unemployment Surveys (EUS) since 2009-10. Broadly, there are no significant differences in the methodology adopted by NSSO and Labour Bureau in concepts and definitions followed in estimating employment and unemployment characteristics (Papola, 2014). The important distinctions between the two surveys and their implications however, relate to the criteria used for selection of households. NSSO stratifies the households on the basis of affluence in rural areas and monthly per capita expenditure in

urban areas⁴. On the other hand, the Labour Bureau uses the total number of members aged 15 years and above in the households as criteria for selecting the households⁵. A multi-stage stratified systematic sampling technique has been adopted for this survey. So far, there have been five EUS surveys-2009-10, 2011-12, 2012-13, 2013-14 and 2015-16⁶. Given that Labour Bureau surveys are conducted annually, whilst the NSSO conducts them quinquennially, we would have expected the former to be used more extensively in research. However, given the accessibility of unit level data from NSSO surveys which allows more detailed and disaggregated analysis, the latter is cited more frequently.

Data from the two most recent EUS of the Labour Bureau conducted in 2013-14 and 2015-16 show that as on 1st March 2014, the total number of workers by usual status (principal and subsidiary status) in India was 480.38 million. By 1st July 2015, this number had fallen to 467.65 million. In the manufacturing sector, specifically, employment declined from 51.4 million to 48.1 million over the same time period. Employment in construction, too, declined from 56.2 million to 54.2 million during this period. The only sector to have witnessed a significant increase in employment during this period was wholesale and retail trade where employment increased from 43.7 million to 48.1 million. It is important to note that the employment numbers reported by the Labour Bureau's EUS, like the NSSO's EUS encompass both the organized and unorganized sectors.

Table 2: Projected Population, Worker Population Ratio and Total Employed

Reference Period	Projected Population above age 15 (in millions)	Worker Population Ratio (per 1000)				Total Employed (in millions)	
		Total	Male		Female		
			Rural	Urban	Rural		Urban
EUS 2013-14	894.5	537	743	714	351	175	480.4
EUS 2015-16	926.0	505	757	671	302	148	467.6

Source: Labour Bureau's Annual EUS, 2013-14 and 2015-16

Note: The estimates are based on the UPSS approach.

⁴ This is because NSSO conducts Employment-Unemployment Survey as a subset of a larger Household Expenditure Survey.

⁵ The Expert Committee set up for designing the methodology for Labour Bureau Survey believes that number of members aged 15 years & above or economically active population is a better criterion for stratification under the Employment-Unemployment Survey (Report on the Labour Bureau Third Employment and Unemployment Survey 2012-13)

⁶ It is important to mention here that unlike in the NSSO, where the field work is spread over one complete agriculture year starting from July, in the Labour Bureau survey, the field work is completed within 6-7 months from the launch of the survey. There is a possibility of seasonal variations under the Current Weekly Status and Current Daily Status approach as the field work is not spread over uniformly throughout the year. The reference period for each of the above mentioned surveys is as follows-2009-10 (April 2009 to March 2010); 2011-12 (July 2010 to June 2011); 2012-13 (October 2012 to March 2013); 2013-14 (January 2014 to July 2014) and 2015-16 (April 2015 to December 2015)

Table 3: Industry-wise Worker Population Ratio and Total Employed

Industry	Worker Population Ratio (per 1000)		Total Employed (in millions)	
	Jan - Jul	Apr - Dec	Jan - Jul	Apr - Dec
	2014	2015	2014	2015
Agriculture	478	469	229.6	219.3
Mining	5	4	2.4	1.9
Manufacturing	107	103	51.4	48.2
Electricity	3	3	1.4	1.4
Water supply	3	3	1.4	1.4
Construction	117	116	56.2	54.2
Wholesale and retail trade	91	103	43.7	48.2
Transport and storage	45	46	21.6	21.5
Accommodation and food services	16	16	7.7	7.5
Information and communication	9	8	4.3	3.7
Financial and insurance activities	10	10	4.8	4.7
Real estate activities	2	2	1.0	0.9
Professional, scientific and technical activities	8	9	3.8	4.2
Administrative and support service activities	18	16	8.6	7.5
Public administration and defence	14	16	6.7	7.5
Education	40	41	19.2	19.2
Human health and social work activities	12	11	5.8	5.1
Arts, entertainment and recreation	2	2	1.0	0.9
Other service activities	15	16	7.2	7.5
Activities of households as employers; undifferentiated goods- and services	7	8	3.4	3.7
Activities of extraterritorial organizations and bodies	0	0	0.0	0.0

Source: Labour Bureau's Annual EUS, 2013-14 and 2015-16

2.2 Census and Surveys of Establishments

In addition to the household surveys, enterprise or establishment surveys which compile data from the workplace also prove to be a good source for estimating employment. The Annual Survey of Industries (ASI) conducted by MoSPI is the only regular and frequent establishment survey conducted in India. It is the main source of industrial statistics in India and provides detailed information on the growth, composition and structure of the organized manufacturing sector (comprising activities related to manufacturing processes, repair services, gas and water supply and cold storage)⁷. It was launched in 1960 with 1959 as the

⁷ It is important to note that the coverage of enterprises in sectors other than manufacturing is incomplete. For sub-sectors other than manufacturing and repairing, there exists no such scheme of independent collection of data from bigger units on a regular basis. Traditionally, the coverage of ASI has been broadly confined to

reference year and has continued for all years since, except for 1972⁸. The most recent year for which this data is available is 2014-15. The survey gathers information only on “registered” or formal sector firms that are covered by Sections 2m(i) and 2m(ii) of the 1948 Factories Act i.e. those firms that use electricity and hire more than ten workers, and those that do not use electricity but nevertheless employ twenty or more workers.

According to the most recently released ASI estimates, we find that between 2013-14 and 2014-15, a mere 315,140 jobs were created in the organized manufacturing sector (Table 4). The manufacture of motor vehicles, trailers and semi-trailers created the largest number of jobs (roughly 100,000). This was followed by the manufacture of machinery and equipment which created 64,417 jobs and the textiles industry which created 41,765 jobs. The industry which witnessed the largest job destruction was manufacture of fabricated metal products (except machinery and equipment) where 51, 244 jobs were lost. The industries which accounted for the largest share of jobs in 2014-15 and seem to have greater potential for job creation relative to other industries are: manufacture of food products and beverages (accounted for 10.46% of total employment in 2014-15), manufacture of textiles (13.73%) and manufacture of chemical and chemical products (13.01%).

the activities of manufacturing and repairing (also electricity undertakings for many years in the past). In other words, the whole gamut of services sector activities, which are growing at a rapid pace, has remained out of the purview of ASI. In the existing system of data collection, contribution of services sector activities pursued by the units other than those in the government or public sector is being estimated through the follow-up surveys (FS) of establishments undertaken by the NSSO. Given the diverse nature of the services sector and the variation of the services sector units in terms of its size, it would be more appropriate that the FS confines to the survey of only relatively smaller units in the services sector and the scope of ASI is widened to cover the bigger units in the non-manufacturing including the services sector. Once this is in place, database for the entire organised sector covering both manufacturing and non-manufacturing sectors would be available on an annual basis from a single source, namely, the ASI.

⁸ The scope and coverage of ASI survey has been modified from time to time. From ASI 2000-01 to ASI 2003-04, the census sector was modified to include units employing 100 and more workers instead of 200 and more workers and to some extent because of this, ASI data since 2000-01 are not strictly comparable with that of previous ASI rounds. In ASI 2004-05, National Industrial Classification (NIC) 2004 was introduced and from 2008-09, the latest classification NIC-2008 was introduced.

Table 4: ASI – Total Employed by NIC 2 Digit industry (in thousands)

NIC	Industry	2013-14	2014-15
10	Manufacture of food products	1582.53	1613.32
11	Manufacture of beverages	158.51	160.62
12	Manufacture of tobacco products	444.94	438.52
13	Manufacture of textiles	1496.19	1537.96
14	Manufacture of wearing apparel	978.71	988.65
15	Manufacture of leather and related products	311.59	327.14
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	78.98	85.75
17	Manufacture of paper and paper products	248.53	241.49
18	Printing and reproduction of recorded media (This division excludes publishing activities, see section J for publishing activities)	156.99	172.19
19	Manufacture of coke and refined petroleum products	109.96	122.73
20	Manufacture of chemicals and chemical products	708.40	712.99
21	Manufacture of pharmaceuticals, medicinal chemical and botanical products	618.49	610.25
22	Manufacture of rubber and plastics products	591.00	597.03
23	Manufacture of other non-metallic mineral products	970.37	996.51
24	Manufacture of basic metals	976.20	1004.45
25	Manufacture of fabricated metal products, except machinery and equipment	678.91	627.66
26	Manufacture of computer, electronic and optical products.	222.99	212.54
27	Manufacture of electrical equipment	513.94	505.99
28	Manufacture of machinery and equipment n.e.c.	647.20	711.62
29	Manufacture of motor vehicles, trailers and semi-trailers	792.89	892.96
30	Manufacture of other transport equipment	283.50	302.36
31	Manufacture of furniture	60.37	57.08
32	Other manufacturing	274.13	291.02
33	Repair and installation of machinery and equipment	34.91	44.54
	Total	12940.22	13255.36

Source – ASI published statistics 2013-14 and 2014-15

What is particularly noteworthy here is that of the 315,140 jobs created over this time period, 85.02% were contractual jobs. The steady increase in the share of contract workers in the Indian organized manufacturing sector over the last fifteen years is well documented in the literature (Kapoor & Krishnapriya, 2017). Between 2000-01 and 2013-14, the share of contract workers in total employees increased from 15.8% to 26.5%, while that of directly employed workers declined commensurately from 61.2% to 51.3%. These trends reflect a significant informalisation of the organised workforce and deterioration in the quality of jobs. Not only are the wages paid to contract workers lower than those paid to regular workers, but

the former also do not enjoy social security cover under different legislative provisions. The sector which recorded the highest increase in contract worker usage was the manufacture of tobacco products (207,370). The rise in contract workers in this sector coincided with a similar decline in the number of directly hired workers resulting in no net job creation in this sector. The sector which accounted for the next highest increase in contract workers was the manufacture of motor vehicles. A total of 56,208 contractual jobs were created in this sector, which accounted for 56.1% of total jobs created in this industry.

Table 5: Total Workers by Contract Type (in thousands)

NIC 2008	2013-14			2014-15		
	Workers	Directly Employed	Contract Workers	Workers	Directly Employed	Contract Workers
10	1232.68	897.52	335.17	1249.68	898.81	350.86
11	121.35	59.19	62.16	123.27	59.70	63.56
12	425.80	327.82	97.98	419.27	113.92	305.35
13	1267.67	1057.41	210.26	1297.27	1109.60	187.68
14	823.85	720.48	103.38	844.95	754.06	90.89
15	266.15	209.62	56.53	278.58	220.06	58.52
16	60.04	42.71	17.33	64.99	49.29	15.70
17	193.03	134.98	58.04	188.78	136.54	52.24
18	100.71	79.48	21.23	109.25	86.99	22.26
19	81.64	39.86	41.78	91.02	39.86	51.16
20	494.25	296.49	197.77	519.00	310.54	208.46
21	381.66	198.15	183.51	369.20	194.97	174.22
22	466.79	293.94	172.85	460.90	307.55	153.35
23	788.82	308.01	480.81	816.94	323.78	493.16
24	748.92	409.28	339.64	792.40	423.98	368.43
25	523.95	302.04	221.90	482.21	290.86	191.35
26	152.71	100.07	52.64	143.96	91.58	52.38
27	370.07	219.42	150.65	377.95	229.56	148.40
28	441.73	292.96	148.77	476.92	321.59	155.33
29	604.69	343.50	261.20	690.81	373.40	317.40
30	223.64	115.24	108.41	237.52	122.43	115.08
31	44.39	29.24	15.15	40.84	30.02	10.82
32	212.56	171.26	41.31	229.32	178.92	50.41
33	24.37	16.38	7.99	32.63	15.22	17.41
Total	10051.48	6665.03	3386.46	10337.64	6683.23	3654.42

Source: ASI published statistics 2013-14 and 2014-15

In the context of contract labour, it is important to mention that over 60% of enterprises have not reported information on contract labour (data on this variable is missing in the dataset). This points to the difficulty in having a suitable frame for soliciting cooperation for correct

reporting from respondents (in context of contract workers) in an establishment survey. It may be possible to collect information for such estimates more accurately from household surveys like the EUS; however, at this point the NSSO's EUS does not collect data on this⁹.

Unlike the organized manufacturing sector, data for the unorganized manufacturing sector is available only quinquennially. The NSSO occasionally conducts surveys of unorganized industry and services. The most recent such survey 'Unincorporated Non-Agricultural Enterprises (Excluding Construction)', NSS 73rd Round provides data on unregistered firms in the non-agricultural sector (excluding construction) for the year 2015-16. The previous such survey was conducted in 2010-11 (NSS 68th Round). The NSSO classifies unregistered firms into three categories (a) *own-account manufacturing enterprises* (OAMEs) i.e. those that operate without any hired worker employed on a fairly regular basis, (b) *non-directory manufacturing establishments* (NDMEs) i.e. those that employ fewer than six workers (household and hired workers taken together), and (c) *directory manufacturing establishments* (DMEs) i.e. those that employ a total of six or more household members and hired workers. For estimation purposes, the last two categories have been subsumed into one category referred to as establishments. The significance of this survey stems from the fact that it takes into account the self-employed and employment in establishments with less than 10 workers, which most other surveys fail to take into account. That it is conducted just once in five years is a major limitation. Comparing data from the 2010-11 and 2015-16 rounds, we find that the total number of workers engaged in unregistered manufacturing enterprises increased from 34.88 million to 36.04 million. Importantly, it was OAMEs which accounted for much of this increase (1.82 million). On the other hand, the total number of workers engaged in the establishments declined by 0.67 million. It is important to note that there exists significant heterogeneity within the unorganized sector as OAMEs pay lower wages and have lower productivity as compared to non-household enterprises/establishments (which employ at least one hired labourer). This suggests that there are significant welfare gains to be made from transitioning from OAMEs to establishments. The increasing employment in OAMEs is disappointing as it is more likely to be a lack of choice and reflection of distress rather than productive engagement in entrepreneurial activity (Fields, 2013).

Table 6: Employment in Unregistered Manufacturing (in millions)

	2010-11	2015-16
OAMEs	20.84	22.67
Establishment	14.04	13.37
Total	34.88	36.04

Source: NSSO's survey of Unincorporated Non-Agricultural Enterprises (68th and 73rd Round)

Before concluding this discussion on the ASI and NSS enterprise surveys, we need to mention an important drawback of these databases. It has been observed that the NSS

⁹ NSS provides information on distribution of workers by the following categories: self employed, regular wage/salaried employees and casual labourers. Directly employed workers reported in the ASI dataset may include permanent, casual and daily wage workers and apprentices.

enterprise survey reports a considerably large number of units which employ more than 10 workers. In 2015-16, over 12,000 of the surveyed enterprises in the NSS 73rd round hired 10 or more workers. In the 2010-11 survey, there were close to 10,000 surveyed units having 10 or more workers. These units should in fact have been in the ASI frame and this reflects the incomplete coverage of this frame. Including such units in the NSS enterprise survey is likely to create problems in estimation of GVA as these larger units have a higher GVA as compared to enterprises having less than 10 workers. This is an important limitation as the purpose of the NSS survey is to create estimates of GVA per worker which are then used to estimate the share of unorganized manufacturing sector in GDP (Manna, 2010). While the inclusion of larger units in the survey would drive up these estimates, another concomitant problem noted by Manna (2010) is that respondents in the unorganised sector tend to understate receipts of establishments resulting in lower estimates of GVA per worker. These issues are likely to create serious problems in estimating GVA per worker. Just as there are several larger units included in the NSS frame, it has been observed that there are several units hiring less than 10 workers which have been reported in the ASI frame.

In addition to the above mentioned enterprise surveys, the CSO (MoSPI) also conducts the Economic Census (EC). This is a count of all establishments/units engaged in production of goods and services and is the most comprehensive database of non-agricultural economic establishments in the country.¹⁰ The most recent EC was conducted in 2015-16. Prior to this, it was held in 2005-06. While, the main purpose of the EC is to provide a frame for other data collection exercises such as NSS's Unincorporated Non-Agricultural Enterprise Surveys, it also provides basic information on number of establishments/units, their employment location, type of activity and nature of operation. Despite providing information on the number of persons working and the number of hired employees in the units, the census is not a good instrument for estimating the size of the workforce or for analyzing employment trends. It has been observed that compared to the Labour Bureau's Employment Unemployment Survey, the employment estimates of the EC grossly underestimate employment (National Statistics Commission, 2012). Total workers computed from the EC stand at 131.29 million, significantly lower than the total employment figure of 242.4 million for the industrial and services sector from the Labour Bureau's Employment Unemployment Survey (2015-16). For the manufacturing sector, too, the total workers reported in EC are only 30.35 million compared to the figure of 51.4 million reported in the Labour Bureau's survey. The under reporting of employment in the EC appears to be a consequence of the under reporting of units in it. Manna (2010) explains that one of the limitations of the EC is that the number of own accounts establishments estimated from the Census are significantly lower than those reported by the NSS Enterprise survey. He finds that the total number of establishments in the EC (2005-06) is about 22% lower than the NSS's Survey of Unorganised Manufacturing Enterprises conducted in the same year. For the most recently conducted EC and NSS Survey of Unincorporated Non Agricultural Enterprises (2015-16), we once again find this discrepancy. In the manufacturing sector specifically, the EC reports

¹⁰ It excludes those involved in crop production and plantation, public administration, defense and compulsory social security, related to production and/or distribution of goods and/or services other than for the sole purpose of own consumption were covered.

that the total number of enterprises without hired workers is 7.21 million. For the NSS Enterprise Survey, however, we find the number of OAMEs to be 16.8 million. But, this figure should in fact be lower than the EC given that the latter must have universal coverage. While the reasons for the under reporting of units in the EC are not clear, they appear to be driving the under reporting of employment statistics in the EC.

Given the lack of high-frequency employment statistics, which pose a serious handicap for policymakers, the Labour Bureau has been conducting Quarterly Employment Surveys (QES) since April 2016 in eight sectors: manufacturing, construction, trade, health, education, restaurants and accommodation, information technology and business process outsourcing, and transport¹¹. The most recently undertaken survey reflects an addition of 1.22 lakh jobs during the period from October 2016 to January 2017. The rate of increase in employment in the eight key sectors in October 2016 - January 2017 was only 32,000 as against 77,000 workers in July-September 2016. However, these figures leave much to be desired in terms of understanding employment dynamics and need to be interpreted with caution. These numbers are based on responses/records from economic establishments employing 10 or more workers in eight sectors. Given that a disproportionately large share of enterprises in India are quite small, the coverage of this survey is far from adequate (excluding OAMES, over 80% of firms in India hire less than ten workers). The sample size of the survey is 10,600 units and the methodology is not based on updated panel of survey respondents. Furthermore, these statistics are based on reporting/records by firms and are not verified, making their credibility suspect. In fact, the Labour Bureau itself cautions against the use of these statistics in assessing the unemployment situation in the country.

Table 7: Labor Bureau: Total Employment and Change in Employment

Sector	Base line	Jul over	Oct over	Jan'17 over	
	(April 2016)	Apr'16	Jul'16	Oct'16	
	Total (in lakh)	Change in Employment (in lakh)			
Manufacturing	101.17	-0.12	0.24	0.83	
Construction	3.67	-0.23	-0.01	-0.01	
Trade	14.45	0.26	-0.07	0.07	
Transport	5.8	0.17	0	0.01	
Accommodation & Restaurant	7.74	0.01	-0.08	0	
IT/ BPO	10.36	-0.16	0.26	0.12	
Education	49.98	0.51	-0.02	0.18	
Health	12.05	0.33	0	0.02	
Total	205.22	0.77	0.32	1.22	

Source: Labour Bureau Quarterly Report on Employment Scenario (New Series)

¹¹ Prior to this, the Labour Bureau looked at the following eight sectors — textiles including apparel, leather, metals, automobiles, gems and jewellery, transport, information technology/business process outsourcing (IT/BPO), and handloom/powerloom. This was discontinued in December 2016 and replaced by a new quarterly series which looked at eight broader sectors.

2.3 Administrative Data Sources

In addition to household and establishment surveys, the recently released report of the Task Force on improving employment data has suggested the use of administrative data relating to payrolls, social security systems and provident fund for compiling information about the labour market. While these sources can potentially be exploited to collect employment data and gauge the extent of formalization of the labour force, they need to be construed with caution as new entries into these datasets do not necessarily reflect new jobs. Also as pointed out by the Task Force itself, there is significant overlap and duplication across these schemes. We would need a common identifier across these datasets to avoid double-counting. In the absence of such an identifier, we look at each of these data sources separately in this section.

The Employees' Provident Fund Organisation (EPFO) database contains information on employees for whom employers make contributions towards provident fund. The number of workers enrolled in this can give us an estimate of formal jobs. According to EPFO Annual Reports, the total number of EPF member accounts stood at 171.4 million on 31st March, 2016 up from 117.8 million in March 2014. These numbers can be misleading for several reasons. First, of these 171.4 million EPF accounts only 22% received contributions during the year 2015-16 (Lok Sabha Question, 2017)¹². This discrepancy arises as very often after switching from one establishment to another, members do not withdraw or get their balance transferred to the new PF account. Second, it is not statutorily mandated for members to withdraw the accumulations after they are no longer in employment. As a consequence of the above, several members have multiple accounts and a number of accounts are classified as 'Inoperative Accounts'¹³. Third, estimates computed using this dataset may well end up under reporting formal employment. This became particularly evident during the 'Employment Enrollment Campaign' launched in January 2017 to extend PF benefits to employees hitherto deprived of PF benefits¹⁴. The subscriber base of the Employees Provident Fund Organization (EPFO) rose by 10.1 million in the last six months as a consequence of the scheme (ibid). This is significant as it means more employees will now be covered under a bigger social security net. However, it does not reflect net job creation. In fact it reflects the fragility of these measures in estimating employment and that firms tend not to accurately reveal the number of employees. Importantly, these numbers are likely to increase as contract workers are included. EPFO has recently pulled up firms failing to ensure remittance of the provident fund, pension and insurance amounts on behalf of their regular contract workers and those employed through contractors (Financial Express, 2016)¹⁵. Having found laxity on the part of the contractors in depositing the amounts after claiming huge EPF sums from the principal employers, the EPFO has fixed the responsibility of remittance with the latter.

¹² Lok Sabha Starred Question No 218. <http://164.100.47.190/loksabhaquestions/annex/12/AS218.pdf>

¹³ If there is no contribution paid during the last 36 months, then that account is classified as "inoperative". All such Inoperative Accounts have, however, definite claimants.

¹⁴ This campaign provided an opportunity to employers to voluntarily come forward and declare details of all employees who were entitled for PF membership between 01.04.2009 to 31.12.2016 but could not be enrolled for any reason.

¹⁵ <http://www.financialexpress.com/industry/banking-finance/epfo-moves-to-ensure-pf-benefits-to-contract-workers/232310/>

Table 8: Employees Provident Fund: Total Membership Including Exempted and Unexempted Members (in Lakh)

As on 31st March, 2013	As on 31st March, 2014	As on 31st March, 2015	As on 31st March, 2016	As on 31st March, 2017
887.6	1178.1	1584.7	1714.1	1933.9

Source: Annual Reports of the Ministry of Labor and Employment and Lok Sabha Starred Question No. 218

Note: For the purpose of EPF data, the industries have been bifurcated into unexempted and exempted establishments and members respectively. The unexempted establishments are those which have to compulsorily subscribe to the provisions of the Act by virtue of their being either a) A factory engaged in any industry specified in Schedule -I to the Act in which twenty or more persons are employed or b) To any other establishment employing twenty or more persons or class of such establishment, the Central Government notifies in the Official Gazette. The exempted establishments are those that are excluded from the coverage but voluntarily subscribe to the Act such that the employer and the majority of its employees have agreed that the provisions of the Act should be made applicable to their establishment.

Table 9: Total number of members (on an average) in EPF whose contributions have been received (in Crores)

2013-14	2014-15	2015-16
3.26	3.49	3.76

Source: PIB Release of the Ministry of Labour and Employment¹⁶

The Employee State Insurance Scheme (ESIS) sanctioned under the Employees' State Insurance Act aims to provide social security cover to employees, providing medical care, sickness, maternity, employment injury, disablement, dependants and unemployment¹⁷. For the purpose of counting, the Task Force has suggested using the workers covered under this act to estimate formal employment. The total number of insured persons has increased over the last three years from 19.5 million to 21.3 million, a meager rise. But using this data to analyse trends in formality is fraught with difficulties as the scheme is still not universal and has important exclusions even within the organised sector (Hoda and Rai, 2017). The scheme excludes five categories of establishments and workers, namely, employees of central and state governments, employees in factories with less than 10 workers¹⁸, employees in establishments in non- implemented areas, seasonal factories and workers drawing more than Rs 15,000 per month¹⁹. The under reporting of formal employment in the ESI numbers is also

¹⁶ <http://pib.nic.in/newsite/pmreleases.aspx?mincode=21>

¹⁷ The scheme is financed by contributions from employers and employees. The rate of contribution by employer is 4.75% of the wages payable to employees. The employees' contribution is at the rate of 1.75% of the wages payable to an employee. Employees earning less than Rs. 137/- a day as daily wages, are exempted from payment of their share of contribution.

¹⁸ In some states, the threshold limit for coverage of establishments is still 20 employees and the state governments/UTs are in the process of reducing the same.

¹⁹ Now Rs. 21, 000/- per month w.e.f. 01/01/2017 (Hoda & Rai, 2017)

evident from the fact that since December 2016, when the ESIC-SPREE scheme (i.e. Scheme for promoting registration of Employees and Employers who have been kept out of ESI coverage) was launched, 88,931 new employers and 10.2 million new employees were enrolled (as of May, 2017).

Table 10: Employees State Insurance Scheme (in lakhs)

	As on March, 2014	As on March, 2015	As on March, 2016
State/Union Territories covered		31	33
No. of insured persons	195.47	203.44	213.61
Total Beneficiaries	758.45	789.34	828.84
No. of employers covered	6.70	7.24	7.84

Source: Annual Report of the Employees State Insurance Corporation (2015-16) and Report on ESIC's last five year performance on key indicators.

Note: ESI total beneficiaries include insured persons and their family members

Another source cited by the Task Force to estimate formal employment is the National Pension System (NPS). Launched in January, 2004 with the objective of providing retirement income to all the citizens, this scheme is regulated by the Pension Fund Regulatory & Development Authority Act²⁰. Initially, the scheme was designed for government employees only. From May 2009, it was opened up for all citizens of the country including the unorganized sector workers on voluntary basis. The total number of subscribers registered under the NPS has increased significantly from over the last three years (Table 11). However, much of this increase is driven by government employees for whom this scheme is mandatory. While the total number of subscribers in the private corporate sector has more than doubled over this period, this category accounts for a miniscule share of total subscribers. This is largely a consequence of the voluntary nature of the scheme and is an important caveat in using this data for estimating formal employment in the private sector.

²⁰ NPS is applicable to all new employees of Central Government and Central Autonomous Bodies (except Armed Forces) joining Government service on or after 1st January 2004. It is also applicable to all new employees of State government and State Autonomous Bodies (barring Tripura and West Bengal) as per the cutoff dates in notification of state government.

Table 11: Number of Beneficiaries Registered under NPS

Sector	Total Number of Subscribers					
	As on March, 2013	As on March, 2014	As on March, 2015	As on March, 2016	As on January, 2017	As on June, 2017
Central Government	1140883	1357589	1511528	1657623		
State Government	1626224	1991455	2630194	2923882		
Private Sector	213667	341109	460047	688887		
1) All Citizens	70418	78774	86774	215372		
2) Corporate Sector	143249	262335	373273	473515	554000	613000
NPS-Lite/ Swavalamban	1779944	2816027	4146880	4480014		
Atal Pension Yojna				2484895		
Total Number of Subscribers	4760718	6506180	8748649	12235301		

Source: Annual Report, 2015-16, Pension Fund Regulatory and Development Authority

Note: The different segments of users for the National Pension Scheme are as follows: (i) Employees of the State Government which includes the State Autonomous Bodies (compulsory basis except West Bengal and Tripura that have not yet notified adoption) (ii) Employees of the Central Government which includes the Central Autonomous Bodies (compulsory basis) (iii) Private Sector (voluntary basis) which includes the a) Corporate Sector for companies which wish to use the NPS platform for providing retirement benefit to its employees with flexibility in the amount of contribution and b) All Citizens who wish to join the contribution scheme whether resident or non-resident subject to age between 18-60 years.²¹ This sector constitutes the subscribers from unorganized sector such as self-employed, traders, business owners and others not covered under any other sector. (iv) NPS Lite/Swavalamban a feature optimized low cost model for unorganized sector (v) Atal Pension Yojana with minimum guaranteed pension by the government for unorganized sector.

It is important to clarify that two sub-categories of regular employment exist in the organised sector. The first are regular formal employees who are entitled to institutionalised non-wage benefits and social security such as provident fund and pension. The second are regular informal employees who do not receive any of the above benefits. An examination of the EPF or ESIS or NPS data tells us only about regular formal employees. Here too, there are discrepancies. Using unit level data from the NSS's employment unemployment survey, Ghose (2015) computes total formal employment in the organised sector to be 33.57 million in 2011-12. This varies significantly from the above mentioned estimates²². This raises concerns about the robustness of administrative datasets in estimating formal employment and the incongruities which may arise due to differences in definitions and concepts used.

²¹ The age limit for the national pension scheme has been increased w.e.f. 1st November, 2017. Now, any Indian Citizen, resident or non-resident, between the age of 60- 65 years, can also join NPS and continue up to the age of 70 years in NPS. <http://pib.nic.in/newsite/PrintRelease.aspx?relid=173147>

²² He computes total employment in the organized sector at 68.91 million (UPS approach). Of this regular formal employees accounted for 33.57 million. Regular informal employees were 22.8 million and casual employees were 12.54 million.

Another administrative source which can potentially be used to assess employment trends is the National Career Services (NCS). Launched in July 2015, the NCS replaced the National Employment Service comprising a network of 978 employment exchanges. In the previous system, both job seekers and employers had to physically visit the employment exchanges, register and verify documents leaving both parties dissatisfied. The NCS attempts to provide a more dynamic, efficient and amenable service for job matching by creating a nation-wide online platform for jobseekers and employers. Data on the number of job seekers and the number of placements is reflective of the pace of job creation and whether it is keeping up with the demand for productive jobs. Recent estimates from the NCS show that as of 31st March 2016, 36.25 million candidates were registered on the NCS portal²³. By September 2017, this had increased to 39.22 million. This was against a paltry 746,264 vacancies posted on the exchange²⁴. Data from the employment exchanges, prior to the launch of NCS, also shows an abysmal placement percentage of 0.95% and 0.7% in 2012 and 2014 respectively²⁵ (MoLE Report, 2014). This reinforces the enormous gap between the pace of job creation and demand for productive jobs. This data is fairly contemporary and doesn't suffer from lack of timeliness, however it has several limitations. Firstly, the information on employment exchanges is mostly confined to urban areas. Although their coverage has been increasing over time and attempts are being made to leverage post offices as employment registration centres, still not all unemployed go and register with the exchanges. Secondly, it has been observed that job seekers continue to be registered on the live register even after obtaining jobs. Thirdly, several job seekers registered on the exchange are already employed in low paying establishments of the private and unorganized sectors of the economy. Such individuals do not strictly classify as 'unemployed' and are essentially in search of better paying and more productive jobs in the organized sectors of the economy. Importantly, this data masks significant regional disparities. Despite all these caveats, what is striking from these statistics is that the total number of job seekers far exceeds the total employment available in the organized sector of the economy and there is an urgent need to accelerate the pace of job creation.

2.4 Government Schemes

The recently released task force report on employment has suggested that given the significant investment made by the government on schemes such as the Micro Units Development & Refinance Agency (MUDRA) Yojana, Pradhan Mantri Employment Generation Programme (PMEGP), Pradhan Mantri Awas Yojana (PMAY), Pradhan Mantri Gram Sadak Yojana (PMGSY), Pradhan Mantri Rojgar Protsahan Yojana (PMRPY) and Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), the role of these in generating jobs should also be incorporated in our analysis. There is hitherto relatively little analysis on the employment generating impact of these schemes. Much of the policy

²³ National Career Services Portal, MIS Reports. Available at: https://www.ncs.gov.in/_layouts/15/ncsp/ViewStaticReport.aspx

²⁴ This is a sharp increase from July 2017, when the total number of jobseekers stood at 38.50 million (against 707,523 vacancies posted on the exchange).

²⁵ The placement percentage is computed as a share of total job seekers across the country. The total number of job seekers on the live registers stood at 44.7 million in 2012 and 48.2 million in 2014.

discourse around these has been dominated by their fiscal implications. Whilst these schemes do not typically fit into the ‘jobs story’, the taskforce has made the case of broadening the scope of employment statistics to include the jobs created via these schemes. Therefore, we will discuss some of these in this section.

In April 2015, the government launched the Pradhan Mantri MUDRA Yojana to provide funding to the non-corporate, non-farm sector income generating activities of micro and small enterprises whose credit needs are below INR one million. The objective of this scheme was to promote micro enterprises and new entrepreneurs and generating self employment opportunities. In 2016-17, almost 39.7 million loans were given across the country, an increase of 4.82 million from the previous year (PMMY Report, 2017). Besides providing financial resources to existing enterprises, the scheme has also incubated new businesses. Approximately 25% of the loans disbursed in 2016-17 were to new entrepreneurs²⁶. The MUDRA Yojana has attracted much attention over the last few months amidst claims that “even if we assume that only one person has been employed through the ventures launched using MUDRA loans, at least seven crore people have got employment in the past three years” (Economic Times, 2017). However, more careful research is needed in interpreting the employment creating potential of MUDRA. Every new loan certainly doesn’t imply creation of a new job. It is improbable that these loans are being given to those who were formerly unemployed. They are more likely being given to people who are moving to self employment from other jobs resulting in no new net job creation. Further, given that the average size of the loan disbursed under MUDRA is quite small, it is unlikely that the loan seekers are providing a job to anyone other than themselves. The average loan size as computed from the PMMY report (2017) was approximately INR 44,000 in 2016-17. For new entrepreneurs/ accounts this was roughly INR 70,000.²⁷ This was lower than the average annual emoluments paid to workers in unincorporated non agricultural enterprises, roughly INR 74,871 in rural areas and INR 92,441 in urban areas in 2015-16 (NSS, 73rd Round, 2015-16). Finally a disproportionately large share of loans disbursed (over 90%) was under the Shishu category (PMMY Report 2017 and 2016). These are mostly likely to have been disbursed to micro enterprises/single person operations which are improbable to be engines of job creation in the near term. The PMEGP is another scheme which aims to facilitate entrepreneurship and expansion of small businesses by providing financial loans to self-employed individuals and firms²⁸. Over the years, the total number of persons finding employment under the scheme has declined from 357,502 in 2013-14 to 323,362 in 2015-16. Only in 2016-17 did the employment figures pick up to 407,840 (Lok Sabha Question, 2017)²⁹.

²⁶ The corresponding figure for 2015-16 was 35%.

²⁷ These figures have been calculated using the numbers reported in Table 12.

²⁸ The upper limit on loans is Rs. 25 lakh to the manufacturing sector and Rs. 10 lakhs to the business or service sector.

²⁹ Lok Sabha Starred Question 212. <http://164.100.47.190/loksabhaquestions/annex/12/AS212.pdf>

Table 12: Mudra Yojana (Amount in INR crores)

Category	2015-16			2016-17		
	Number of Accounts	Sanctioned Amount	Disbursement Amount	Number of Accounts	Sanctioned Amount	Disbursement Amount
Total	34880924	137449.27	132954.73	39701047	180528.54	175312.13
New Accounts/ Entrepreneurs	12474668	61649.95	58908.08	9989470	72960.14	69973.96

Source: Overall Performance Reports, 2016-17 and 2015-16

While the above mentioned schemes are loan/credit schemes to spur self employment, the government has also launched the Pradhan Mantri Rojgar Protsahan Yojana (PMRPY), a scheme to incentivize creation of new jobs in the formal sector. Under this scheme, the government will be paying the 8.33% employee pension scheme contribution of the employer for new employment generated³⁰. This will enable workers to have access to social security benefits of the organized sector. Since the program was launched in August 2016-17, it is still in its infancy and we cannot say much about its impact on employment generation. As of 31st July 2017, only 5,400 establishments employing a total of 2.99 lakh new workers had availed benefits under this scheme (Lok Sabha Question, 2017)³¹.

The task force has also pointed to the role of public works and employment programmes such as MGNREGA which aim to provide livelihood security to households, in the form of wage employment. Employment generation, as measured by total persons worked, initially witnessed a decline relative to 2013-14 figures (7.39 crores), before rising modestly in 2016-17 to 7.67 crore individuals. The total number of households provided employment as well as the average days of employment provided have witnessed a slow and gradual rise from 2013-14 levels, barring the year 2014-15 which witnessed a decline in employment (Table 13). Therefore, employment under MGNREGA has not witnessed a sharp increase. It is important to mention, however, that analyzing the employment situation using data from entitlement based programs such as MGNREGA is fraught with challenges. Being a demand-driven program, an increase in demand for work under such a scheme reflects the lack of alternative productive job opportunities. At the same time, implementation flaws in the scheme, the inability of implementing agencies to plan and generate enough work have disincentivised beneficiaries from seeking work. The above mentioned figures, therefore, reflect both demand and supply-side factors. Further, it needs to be pointed out that such programmes cannot provide the productive sustainable jobs the poor need to overcome their poverty. They simply provide subsistence-level aid, and are a palliative, at best.

³⁰ For new employees covered under this scheme, whose monthly salaries are up to Rs. 15,000, the Central Government will fund the employer's contribution of 8.33% of the monthly salary to the Employee's Pension Scheme, for the first three years of employment.

³¹ Lok Sabha starred question 212. <http://164.100.47.190/loksabhaquestions/annex/12/AS212.pdf>

Table 13: Mahatma Gandhi National Rural Employment Guarantee Act

Progress	2017-2018*	FY 2016-2017	FY 2015-2016	FY 2014-2015	FY 2013-2014
Cumulative Expenditure (in Rs. Crores)	39558.13	58048.83	43262.09	32833.45	33222.14
Employment Provided					
Households (in Crores)	4.03	5.12	4.81	4.14	4.8
Persons (in Crores)	5.8	7.67	7.23	6.22	7.39
Person-days (in Crores)	137.49	235.77	235.15	166.21	220.37
Total No of HHs that completed 100 Days of Wage Employment	696671	3991732	4847975	2492654	4659347
Average days of employment provided per HH	34.15	46.02	48.85	40.17	45.97

Source: MGNREGA Dashboard-

http://mnregaweb4.nic.in/netnrega/all_lvl_details_dashboard_new.aspx; * as on 17th Oct 2017

In addition to the above schemes, it has also been argued that the various infrastructure and housing schemes launched by the government to bridge India's infrastructure gap will give an impetus to job creation. Spending on roads, railways, housing and other infrastructure projects has increased sharply since the eleventh five year plan (2007-12). The budgetary allocation to PMGSY from the Central Government has increased from INR 90,000 million in 2013-14 to INR 190,000 million in 2015-16 (MoRD, 2017). More recently, in October 2017, the Finance Minister announced that 83,667 kms of roads will be spent by the centre and states over the next three years on rural road building leading to generation of 14.2 crore mandays of jobs³². To provide 'Housing for All' by 2022³³, the government proposes to construct around 20 million houses in urban areas by 2022³⁴ and in rural areas, 10 million houses by 2019³⁵. It is believed that this too will drive up employment in the construction sector. However, at this point there is no accurate data on the number of jobs created through these programs specifically.

While it is important not to ignore the role of government schemes in employment generation and accord them their rightful place in the employment data architecture, it needs to be reiterated that these programs are unlikely to create the large number of jobs India needs for its rapidly rising workforce. Further, there is a question mark on the sustainability of jobs created through these schemes. Nevertheless, given that estimates of employment generation on account of the above-mentioned and various other schemes are mostly not available, we need to develop a methodology that generates reliable real time estimates of job creation. One possible approach is to use input-output matrices which examine the forward and backward

³² pibphoto.nic.in/documents/rlink/2017/oct/i2017102401.pptx

³³ By 2022, the government aims to provide every rural family and all urban slum dwellers a pucca house with basic amenities.

³⁴ <http://pib.nic.in/newsite/PrintRelease.aspx?relid=122576>

³⁵ <http://pmayg.nic.in/netiay/about-us.aspx>

linkages between various industries and study their interdependencies, to estimate net employment generation across various sectors. However, this is beyond the scope of this study.

3. Using National Accounts Statistics to estimate employment

In January 2015, India’s Central Statistical Office (CSO) introduced the new series of National Accounts Statistics (NAS) with the base year 2011-12, replacing the earlier series with 2004-05 as the base year. While the base year of the NAS is revised periodically, this time the methodology of computing these statistics has also been changed to bring them in line with the UN System of National Accounts, 2008 (SNA, 2008). The new series has made a substantial number of conceptual changes and incorporated several new data sources. Significant amongst these is the introduction of a new institutional structure. In the old series, the economy was categorized into the organized and unorganized sectors. The new series, however, has narrowed this distinction and the main classification is between the corporate and non-corporate sector³⁶. As pointed out by Nagaraj & Srinivasan (2016), “Analytically, the new NAS conceives India except for the household sector and general government, as a corporate economy with the dominant unorganized sector sheltering most of labour force, bulk of who is self-employed often using family labour”. Within each ownership category, there is a secondary distinction between the financial and non-financial sector (Table 14). Thus in the new series, there are six ‘institutional’ sectors consisting of public non financial corporations, private non-financial corporations, public financial corporations, private financial corporations, general government and household sector.

Table 14: Changes in the Institutional Structure of NAS

Old Series	New Series
I. Organised sector:	1. Public non-financial organization
1. Public sector	2. Private non-financial corporations
(i) Administrative dept	3. Public financial corporations
(ii) Departmental enterprises	4. Private financial corporations
(iii) Non-departmental enterprises	5. General Government
2. Private corporate sector	6. Household sector
3. Factory manufacturing	
4. Recognised educational and medical institutions	
II. Unorganised sector	

Source: Nagaraj & Srinivasan (2016)

The manufacturing sector, in particular, has received much attention in the new NAS. In the old series, the manufacturing sector consisted of two parts: organised/registered/formal sector (comprising of all factories/establishments registered under the Factories Act) and the

³⁶ The distinction between corporate and organized sector will be discussed in greater detail later in the section.

unorganized / unregistered / informal manufacturing. While ASI was the main database for the registered manufacturing sector, the unregistered manufacturing sector was captured indirectly via NSS sample surveys. In the new NAS series, CSO has changed its approach to define a unit of analysis as an 'enterprise' instead of an 'establishment'. Consequently, the company has become a unit of administration although it may own several factories, each of which were taken as individual establishments in the previous series. Adoption of this methodology has entailed a move to a new corporate sector database, namely, the MCA-21 database. This is an e-initiative of the Ministry of Corporate Affairs (MCA) comprising of data from annual accounts of companies, statutorily filed online with MCA. The new series has more or less done away with ASI, replacing it with Private Corporate Sector (PCS) data for estimating manufacturing sector gross value added (GVA). It provides manufacturing output, input and GVA for thirty industry groups. Importantly, since, the new series adopts an enterprise approach, the thirty major industry groups for which manufacturing GVA and output are reported, are not strictly similar to the two digit industrial classification of NIC 2008. These industry groups are reported in Table 15.

Although NAS does not report employment data, we attempt to use the GVA obtained from it to get an estimate of recent employment. We do this in the following manner. First, we construct estimates of the employment elasticity of GVA for each of the 30 industry descriptions reported in Table 15 using industry wise time series data from ASI. We then apply these elasticity estimates along with the GVA data from the NAS to estimate employment changes over the time period under study. Using the initial employment data available from ASI, we then provide employment estimates for subsequent years.

Employment elasticity measurement has often faced criticisms on two grounds. First, the relationship between employment and output need not be uni-directional. From the perspective of an economy-wide production function, the use of labour and complementary factors of production generates national output or GDP. Second, the notion of employment elasticity is valid only for a given state of technology, knowledge and policies. Notwithstanding these criticisms, employment elasticity represents a convenient way of summarising the employment intensity of growth or sensitivity of employment to output growth (Islam and Nazara, 2000). For the purpose of this exercise, we use the employment elasticity of growth simply as a measure of how employment and output move together over time. We do not try to establish a causal relationship between the two (Kapsos, 2005).

In terms of the methodology of estimating elasticities, there are a number of alternatives such as the arc elasticity method (which uses two data points) and the point elasticity method (which requires time series data). The choice of method is determined by the availability of data. In the case of the organized sector, since we have annual data, we use the latter method. For the unorganized sector, since data is available quinquennially, we can only compute the arc elasticity. We can then use this arc elasticity (between the time period 2010-11 and 2015-16) along with the GVA of the household sector from the NAS to compute employment for this sector for 2016-17. However, given the unreliability of using the arc elasticity methodology and the fact that we have data for the unorganized sector for 2015-16, we

refrain from constructing employment estimates for this sector after this point. Further, it needs to be pointed out that the procedure for calculating GVA in the NSS 67th and 73rd Round differs and the arc elasticity estimates may not be completely accurate. Therefore, we do not undertake this exercise for the unorganized sector.

Given that time series information on GVA and employment is available for each industry description for the organised manufacturing sector, we estimate industry-wise elasticities using the following log linear specification:

$$\ln L_t = \beta_0 + \beta_1 \ln Y_t$$

Here variables L and Y are employment and real GVA respectively at time t. The coefficient β_1 measures the elasticity of employment with respect to GVA i.e. the percentage change in L for a given (small) percentage change in Y³⁷. We estimate this equation for each of the 30 industry groups using ASI data for the years 2008-09 to 2014-15. These elasticities are reported in Table 15. We compute the point elasticity as opposed to arc elasticity as it minimizes loss of information. Furthermore, the latter has been shown to be highly unstable in the literature (Kapsos, 2005).

As can be seen in Table 15, employment elasticity of GVA varies substantially across the various industry groups, with industries such as manufacture of electrical equipment; transport equipment; chemical and chemical products; and pharmaceutical, medicinal chemicals and botanical products reporting significantly higher elasticities as compared to other industries. It is important to do this exercise at a disaggregated level as the employment output relationship is not the same across different industries.

In addition to the above, we also use a panel regression approach to compute overall elasticity of the manufacturing sector. Pooling the industry wise data over the time period 2008-09 to 2014-15, we construct efficient estimates of elasticity of the overall manufacturing sector using fixed effects:

$$\ln L_{it} = \beta_{0i} + \beta_2 \ln Y_{it}$$

Here variables L and Y are the same as above, *i* denotes the particular sub-sector of organized manufacturing and *t* denotes the year. The co-efficient provides the point elasticity of employment. We incorporate industry fixed effects to control for unobservable industry specific time invariant factors. We find the overall elasticity for this period to be 0.29.

³⁷ $\beta_1 = \frac{d \ln L}{d \ln Y} = \frac{dL/L}{dY/Y}$ For infinitesimally small changes, the change in ln L and ln Y is equal to the relative or proportional change in L and Y respectively.

Table 15: Elasticity by industry group

Code NIC 2008		
101 to 104	Production, processing and preservation of meat, fish, fruit, vegetables, oils and fats	0.23
105	Manufacture of dairy products	0.54
106+108	Manufacture of grain mill products, etc. and animal feeds	0.06
107	Manufacture of other food products	0.15
11	Manufacture of beverages	0.42
12	Manufacture of tobacco products	0.15
13+01632	Manufacture of textiles + cotton ginning	0.07
14+14105	Manufacture of wearing apparel, except custom tailoring	0.45
15	Manufacture of leather and related products	0.39
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting material	0.17
17	Manufacture of paper and paper products	0.17
18	Printing and reproduction of recorded media except publishing	0.41
19	Manufacture of coke & refined petroleum products	0.05
20	Manufacture of chemical and chemical products except pharmaceuticals, medicinal and botanical products	0.63
21	Manufacture of pharmaceutical; medicinal chemicals and botanical products	0.68
22	Manufacture of rubber & plastic products	0.55
23	Manufacture of other non-metallic mineral products	0.16
241+2431	Manufacture of basic iron and steel + casting of iron and steel	-
		0.05
242+2432	Manufacture of basic precious and non-ferrous metals + casting of non-ferrous metals	0.21
25	Manufacture of fabricated metal products, except machinery and equipment	0.58
261+264+268	Manufacture of electronic component, consumer electronics, magnetic and optical media	0.32
262	Manufacture of computer and peripheral equipment	-
		0.11
263	Manufacture of communication equipment	0.31
265+266+267	Manufacture of optical and electronics products n.e.c	-
		0.42
27	Manufacture of electrical equipment	0.83
28	Manufacture of machinery and equipment n.e.c	0.24
29+30	Manufacture of transport equipment	0.62
31	Manufacture of furniture	0.43
32	Other manufacturing	0.35
33	Repair and installation of machinery and equipment	0.60
	All Manufacturing	0.29

Source: Estimates are based on author's calculations

Before proceeding further, it is important to clarify that elasticities in Table 15 are computed for the time period 2008-09 to 2014-15. In our analysis using NAS data, we assume that these industry-wise elasticities remain constant over the next year. It has been shown in the

literature that the relationship between output/GVA and employment is not straightforward as it is affected by various factors such as economic structure, demographics, productivity, prices, institutional factors, exchange rate volatility, quality of human capital and technology (Pattanaik & Nayak, 2014). Given this, it appears reasonable to assume that the above-mentioned factors are unlikely to change in the short run.

The NAS 2017 report disaggregated GVA data for each of the above mentioned industry groups for the years 2014-15 and 2015-16. Applying the above-mentioned elasticities on NAS's GVA data, we compute employment in each of the industry groups for the years 2014-15 and 2015-16. These results are reported in Table 16. We find that total employment in the private corporate manufacturing sector stood at 13.37 million in 2014-15³⁸. By 2015-16, total employment in the private corporate manufacturing sector rose to 13.78 million, reflecting an increase of simply 408,975 jobs. Much of this increase came from manufacture of wearing apparel, textiles and chemical and chemical products. The industry which witnessed significant job destruction was manufacture of fabricated metal products. It is important to note that while this methodology gives us an estimate of employment, it tells us nothing about the quality of jobs created.

³⁸ It is important to clarify that this value is different from the value of total employment in the organized manufacturing sector reported in ASI. As seen in Section, this value stood at 13.25 million in 2014-15.

Table 16: Employment in Private Corporate Manufacturing sector by industry group

Code NIC 2008	Total Persons Engaged (in thousands)	
	Estimates using elasticity methodology and NAS data	
	2014-15*	2015-16*
101 to 104	230.91	250.83
105	138.19	153.69
106+108	364.16	392.05
107	915.63	843.75
11	161.11	170.72
12	453.69	439.42
13+01632	1574.44	1620.73
14+14105	955.93	1083.88
15	311.58	344.06
16	82.49	86.79
17	248.16	246.32
18	183.16	175.12
19	112.4	124.24
20	718.29	780.8
21	650.86	679.08
22	604.45	598.14
23	989.74	1006.25
241+2431	847.21	867.6
242+2432	143.75	140.4
25	687.16	654.46
261+264+268	100.64	110.4
262	25.9	15.26
263	39.23	33.09
265+266+267	50.27	56.05
27	502.96	531.85
28	663.04	723.2
29+30	1224.45	1239.42
31	61.5	64.44
32	295.22	301.48
33	35.77	47.75
All	13372.28	13781.25

Source: Author's calculations using NAS data

For the year, 2016-17, the disaggregated industry wise GVA has not been reported yet. However, provisional estimates of the GVA of the manufacturing sector (the household and private corporate sector combined) have recently been made available. Back of the envelope calculations provide us quick estimates of total employment for 2016-17. From previous

years' data, we find that the private corporate sector accounts for roughly 87% of total GVA in the manufacturing sector (Table 17). Applying this proportion to the total GVA of the manufacturing sector in 2016-17³⁹, we obtain an estimate of GVA in the private corporate manufacturing sector. We then use the overall elasticity of the manufacturing sector and changes in GVA between 2015-16 and 2016-17 to get an approximate estimate of overall employment for the private corporate manufacturing sector in 2016-17. The estimates indicate that total employment in this sector stood at 14.09 million suggesting an increase of 315,546 jobs over this time period.

Table 17: GVA in manufacturing at constant prices 2011-12 (in Rs crores)

Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Corporate	1230439 (87.27%)	1288919 (86.69%)	1346108 (86.25%)	1471710 (87.11%)	1643999 (87.82%)	
Household	179546 (12.73%)	197954 (13.31%)	214601 (13.75%)	217794 (12.89%)	228116 (12.18%)	
Total	1409985	1486873	1560709	1689504	1872115	2019927

Source: National Accounts Statistics (2015-16); percentage share in parenthesis

Table 18: Employment in Private Corporate Manufacturing Sector (in thousands)

	2014-15	2015-16	2016-17
Private Corporate Manufacturing Sector	13372.28	13781.25	14096.80

Source: Author's Calculations using NAS data

In the absence of any other macroeconomic variables on which recent data is available and with which we can establish a relationship with employment, we use the GVA data from the new NAS series to estimate recent employment trends. However, it is important to acknowledge the caveats of this methodology given the controversy surrounding the manufacturing sector and its various estimates in this revision. Firstly, in the old series, the 'household sector' included 'Quasi Corporations' (QCs). In the new series, QCs which appear and maintain accounts like the corporate sector have been included under private non-financial corporations⁴⁰. Consequently, the size of the private corporate sector has gone up in the new series with a corresponding reduction in the size of unorganized sector, which is now the 'household sector' (Nagaraj & Srinivasan, 2016)⁴¹. In our analysis above, we use GVA of

³⁹ We assume this share remains constant.

⁴⁰ Nagaraj and Srinivasan (2016) argue that no evidence on changes in their structure and inherent characteristics warranting the shift is offered. It seems to have been done for no reason except that the corporate form of organization is emphasized in SNA (2008).

⁴¹ There is another reason to which the shrinkage of the unorganised sector can be attributed. Method of estimating GDP in non-agriculture household sector has changed. Earlier, GDP in a particular activity was a product of VA per worker and number of workers employed in a particular industry or sector. VA/worker was estimated using large sample surveys. However, in the new series GVA is estimated using a production function, which has led to a sharp decline in VA/worker.

private corporate manufacturing sector. To the extent that the GVA of this sector may have gone up due to the inclusion of QCs, it needs to be borne in mind that our estimates of employment may be larger than what they would have been in the old NAS series. This would suggest an even more sluggish pace of job creation than observed through the above numbers.

Secondly, while we compute employment elasticity⁴² of GVA using the ASI database, we apply this on the GVA estimates obtained from the new NAS series. This may lead to some discrepancies. As mentioned above, GVA data reported in the new NAS series is estimated from the mandatory filing of company balance sheet data with the Ministry of Corporate Affairs. Rajakumar (2017) explains that since these statistics are compiled from the companies' annual financial statement, the GVA reported from these includes not only manufacturing activities but also various services rendered by the enterprises' head office and other functional departments. On the other hand, the GVA reported from ASI, where the establishment is the unit of analysis as opposed to the enterprise captures only organized manufacturing activities. Table 19 reports the differences in the GVA of the 30 broad industry groups for the years for which we have data for both series i.e. ASI and NAS (2011-12 to 2014-15). For the following industry groups - manufacture of other food products; beverages; coke & refined petroleum products; basic precious and non-ferrous metals and furniture, we find major differences in GVA. Rajakumar (2017) suggests that subtracting manufacturing GVA reported in ASI from corporate manufacturing GVA reported in NAS reflects non-manufacturing component in NAS series. In our methodology, while we use ASI data to compute employment elasticity of GVA, we apply these elasticities to GVA obtained from NAS. To the extent that we incorporate non-manufacturing activities in GVA, our employment estimates maybe biased.

⁴² We compute point elasticity using the regression based approach given that annual data is available.

Table 19: Comparison of Industry wise growth of GVA from NAS and ASI (2011-12 to 2014-15)

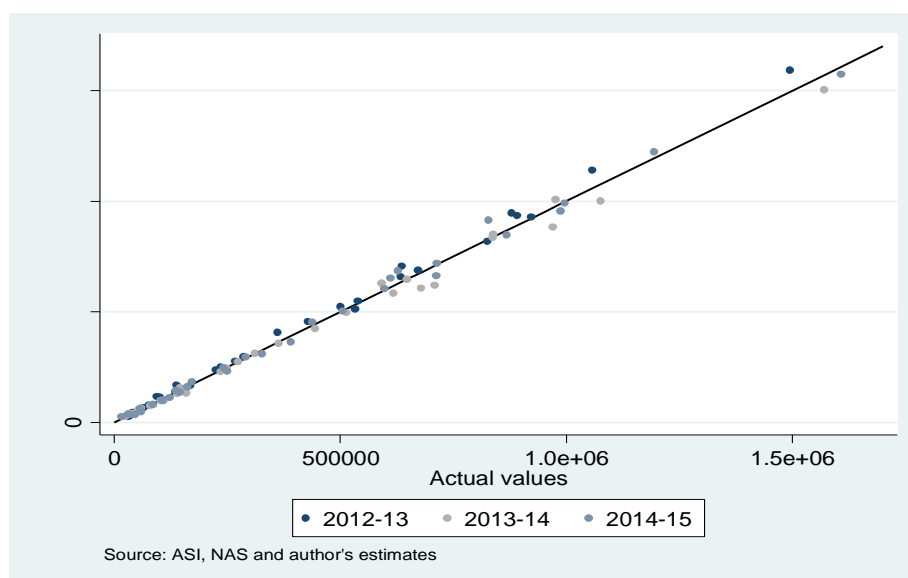
NIC 2008	NAS	ASI
101 to 104	-6.04	-9.35
105	3.58	7.71
106+108	-9.51	-5.71
107	16.65	5.49
11	-12.63	1.91
12	5.98	3.30
13+01632	11.86	6.62
14+14105	6.52	9.64
15	6.77	9.23
16	3.94	7.75
17	5.35	7.78
18	-3.66	-1.70
19	30.42	18.94
20	-2.02	-0.70
21	4.67	6.20
22	10.40	10.46
23	0.53	-1.03
241+2431	5.86	6.10
242+2432	4.17	11.37
25	0.01	-0.67
261+264+268	0.35	-1.58
262	10.62	20.34
263	7.29	8.91
265+266+267	3.35	4.24
27	-0.97	-1.36
28	-3.90	-1.80
29+30	4.93	4.98
31	10.11	16.11
32	14.00	12.30
33	-1.00	-1.05

Source: Author's estimates

To assess the robustness of our estimates, we also compare the predicted values of employment for the various industry groups using our elasticity methodology with those reported in the ASI database. We can do this for the years 2012-13, 2013-14 and 2014-15. Figure 1 depicts plots of predicted versus actual values for these years. Predicted values appear to be quite close to the actual values and the scatter plot lies along the 45-degree line.

On an average, the prediction errors are 1.7% of the actual values with a standard deviation of 11.01.

Figure 1: Comparison of Actual and Predicted Values of Employment across Industry Groups



Source: Author's estimates

Before concluding, it is important to reiterate that it would be difficult to use this elasticity methodology to estimate employment in the unorganized sector. Employment data for this sector is available only once in 5-6 years, and we would have to compute arc elasticity using the CAGR approach, which would not be very reliable. It is worth pointing out here that if we combine the employment data obtained from the unincorporated manufacturing enterprises for 2015-16 with the employment estimates of the private corporate manufacturing sector computed using the elasticity methodology; we find that the employment in the latter accounted for roughly 27% of employment in the manufacturing sector. This was an improvement from 2010-11, when the share of employment in the organized manufacturing sector obtained from the ASI database accounted for 21.4% of total employment in this sector (Table 20). When we compare this with data for the year 2005-06, when the previous NSS unorganized manufacturing sector survey was conducted, we find that the share of the unorganized sector has been steadily declining over time. While, this is a positive development, it needs to be interpreted with caution as a significant part of the increase in employment in the organized manufacturing sector has come through the growth of contract workers marking the informalisation of this sector⁴³.

⁴³ Data from ASI shows that between 2010-11 and 2014-15 over half of the total increase in production workers came from the growth of contract workers.

Table 20: Total Employment in the Organized and Unorganized Manufacturing Sector

		Number of Workers (in millions)				
		2005-06	2010-11	2014-15	2015-16	2016-17
Unorganised	OAMEs	23.68	20.84		22.67	
	Establishment	12.75	14.04		13.37	
	All	36.44	34.88		36.04	
Organised	All	8.77	12.23	13.25		
Private Corporate Manufacturing*				13.37	13.78	14.09

*Source: NSS's survey of Unincorporated Enterprises (2005-06, 2010-11 and 2015-16); ASI (2005-06, 2010-11 and 2014-15); *Private Corporate Manufacturing Sector- Author's Estimates using NAS*

4. Conclusion

The revision of India's employment statistics is imperative to fill in the long standing gaps in the data collection machinery. As we await this overhaul, we need to understand and analyse employment trends in the interim period. An examination of multiple data sources confirms that the lack of job growth continues to be a serious problem. Annual household surveys conducted by the Labour Bureau show a decline in total employment of 12.8 million between 2013-14 and 2015-16. A disaggregated look at this data reflects that the wholesale and retail trade sectors were the only ones which witnessed an increase in employment (4.4 million) while construction and manufacturing saw a decline of 2 million and 3.3 million respectively. Results from the ASI database indicate that the pace of job creation has been far from adequate in the organized manufacturing sector. Preliminary estimates from our analysis using the NAS suggest that total employment in the private corporate manufacturing sector increased marginally from 13.37 million in 2014-15 to 13.78 million in 2015-16. This figure stood at 14.09 million in 2016-17. For the unorganized manufacturing sector, employment has increased by 1.16 million between 2010-11 and 2015-16. This increase can be attributed entirely to own account /household enterprises. Thus, employment continues to be dominated by low wage and low productivity activities in the unorganized sector. There is an urgent need to create 'good jobs' and the greater the delay in achieving this goal, the more severe India's jobs crisis will become.

While the task force has made several suggestions on revamping the employment data architecture, there are a few key issues which merit attention. It is believed that increasing the frequency of employment statistics will not only enhance our understanding of the labour market but also allow us to use monetary and fiscal policy tools more effectively to address our employment problems. However, studies on employment trends since the seventies reflect that labour market changes in India have been very slow and gradual, and do not conform to the standard employment output relationship (Himanshu, 2011). India's employment problems are deep rooted and enduring, and appear to be largely structural. Thus, even if we have data at monthly or quarterly frequency, monetary and fiscal tools cannot be used very effectively to address employment challenges in the short run. Policies to address these would have to be more long term in scope and structural in nature. The belief

that producing monthly or annual employment estimates would be a panacea of our employment data problems is misplaced. Revisions in the employment data architecture necessitate changes in accordance with the needs and characteristics of India's labour markets. Further, it needs to be noted that it is imperative to reduce the time lag between the survey and release of data. For instance, in the case of the fourth all India census of micro, small and medium enterprises (with reference year 2006-07), data was collected till 2009 and results published in 2011-12. Such delays, aggravate the datedness of the survey.

In the context of the organized sector, greater information is required on small firms. An examination of the firm size distribution in India shows that an overwhelming majority of enterprises have less than fifty workers. This preponderance of small firms makes it essential to understand what constrains them from expanding. The ASI's establishment survey has divided the survey frame into census and sample sectors, where the census sector includes larger plants (the size threshold for this has fluctuated between 50 and 200 workers). The remaining smaller plants (less than 50 workers) are randomly sampled. They are not followed over time and their entry and exit cannot be observed. Given the problems in tracking the smaller enterprises due to the sampling design, we find it difficult to understand what holds back Indian firms from expanding and creating better paying and more productive jobs. Further, it would be helpful to have panel data on enterprises in the NSSO's enterprise survey on the unincorporated/unorganized non-agricultural sector. This would improve our understanding of the working of the informal sector and what constrains informal firms from making the transition to formality.

To enable a more informed debate on the jobs challenge, it is imperative to have greater details on the quality of jobs too, both in the organized and unorganized sector. The availability of information on worker characteristics such as education, wages, productivity, skill level, nature of tasks being performed, work conditions, flexibility and income security would significantly enhance our understanding of the employment landscape. Examining the task content of jobs and how technology and automation are altering it would help provide critical inputs in designing effective skill development programs. In addition, given the increasing contractualisation of the organized workforce, we also need information on the gender of contract workers, nature of labour contracts, the evolving relationship between the employer and employees and whether the tasks being performed by contract workers are indeed the same as those performed by regular workers. Revamping India's employment data by simply producing more frequent statistics, without providing insights on the quality of the workforce, would certainly be an incomplete exercise.

Bibliography

Central Statistics Office (Industrial Statistics Wing). 2016. “Annual Survey of Industries, 2013-14, Volume 1”. Ministry of Statistics and Programme Implementation.

Central Statistics Office. 2014. “Provisional Results of 6th Economic Census”. Ministry of Statistics and Programme Implementation. Available at: http://mospi.nic.in/sites/default/files/economic-census/sixth_economic_census/sixth_ec_prov_result_30july14.pdf (Last accessed on 11th August, 2017)

Dave, Vimukt. 2016. “Job creation under PMEGP dips as bad loans swell,” Business Standard, dated 15th January, 2016. Available at: http://www.business-standard.com/article/economy-policy/job-creation-under-pmegp-dips-as-bad-loans-swell-116011500167_1.html

Economic Times. 2017. “7.45 crore small businesses get loans under Mudra Yojana: Amit Shah,” dated 26th May, 2017. Available at: <http://economictimes.indiatimes.com/news/politics-and-nation/7-45-crore-small-businesses-get-loans-under-mudra-yojana-amit-shah/articleshow/58861023.cms>

Employees’ State Insurance Corporation. 2016. “Annual Report, 2015-16”. Available at: <http://www.esic.nic.in/attachments/publicationfile/e010e0e3f516d48224703edfc1f3a58e.pdf> (Last accessed on 11th August, 2017)

Employees’ State Insurance Corporation. 2016. “ESIC’s Last 5 Years’ Performance on Key Indicators”. Available at: http://www.esic.nic.in/attachments/files/Esics_Last_05_years_performance.pdf (Last accessed on 11th August, 2017)

Fields, Gary S. 2013. “Self-Employment in the Developing World: A Report to the High-Level Panel of Eminent Persons”. Available at: http://www.post2015hlp.org/wp-content/uploads/2013/05/Fields_Self-Employment-in-the-Developing-World.pdf

Ghose, Ajit. 2015. “Employment in a Time of High Growth in India,” Economic Policy Department, ILO

Ghose, Ajit. 2016. “India Labour and Employment Report 2016” The Institute for Human Development.

Himanshu. 2011. “Employment Trends in India: A Re-examination,” Economic & Political Weekly, Volume 46, No. 37.

Hoda, Anwarul and Rai, Durgesh K. 2017. “Labour Regulations in India: Improving the Social Security Framework,” ICRIER Working Paper no. 331. Available at: http://icrier.org/pdf/Working_Paper_331.pdf

Household Survey. Consumer Pyramid. Centre for Monitoring Indian Economy. Available at: <https://consumerpyramids.cmie.com/>

- Islam J., Nazara S. 2000.** “Estimating Employment Elasticity for the Indonesian Economy”. International Labour Office. Available at: http://oit.org/wcmstp5/groups/public/asia/ro-bangkok/ilo-jakarta/documents/publication/wcms_123743.pdf
- Kapoor, Radhicka and Krishnapriya, P.P. 2017.** “Informality in the Formal Sector: Evidence from Indian Manufacturing”. International Growth Centre. Working Paper, F-35316-INC-1. Available at: <http://www.theigc.org/wp-content/uploads/2017/05/Kapoor-and-Krishnapriya-working-paper-2017.pdf>
- Kapsos, S. 2005.** “The Employment Intensity of Growth: Trends and Macroeconomic Determinants”. ILO Employment Strategy Paper 12. International Labour Organization. Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.473.8776&rep=rep1&type=pdf>
- Labour Bureau. 2016.** “Report on 5th Annual Employment-Unemployment Survey (2015-16), Volume 1”. Ministry of Labour and Employment. Available at: http://labourbureaunew.gov.in/UserContent/EUS_5th_1.pdf
- Labour Bureau. 2017.** “Quarterly Report on Employment Scenario (New Series), 2016. Ministry of Labour and Employment. Available at: http://labourbureaunew.gov.in/UserContent/QES_Report_Jan_2017.pdf
- Lok Sabha Starred Question No. 212. 31st July, 2017.** Available at: <http://164.100.47.190/loksabhaquestions/annex/12/AS212.pdf>(Last accessed on 11th August, 2017)
- Lok Sabha Starred Question No. 218, 31st July, 2017.** Available at:<http://164.100.47.190/loksabhaquestions/annex/12/AS218.pdf>(Last accessed on 11th August, 2017)
- Manna, G.C. 2010.** “Current Status of Industrial Statistics in India: Strengths and Weaknesses,” Economic & Political Weekly, Volume 45, No. 46.
- Mehrotra, Santosh et. al. 2014.** “Why a Jobs Turnaround Despite Slow Growth?”. IAMR Occasional Paper 1/2014. Available at: <http://www.iamrindia.gov.in/writereaddata/UploadFile/turnaround.pdf>
- Mehrotra, Santosh. 2017.** “Can Budgeted Infrastructure Investment Drive Growth and Job Creation?” The Wire, dated 8th February 2017. Available at: <https://thewire.in/106895/budgeted-infrastructure-investment-job-growth/> (Last accessed on 14th August, 2017)
- Mehta, Nitin and Gupta, Pranav. 2017.** “Self-Employment and Job Creation: Tracking the Progress of Mudra Yojana under Modi”. OneIndia. Dated 15th May, 2017. Available at: <http://www.oneindia.com/india/self-employment-and-job-creation-tracking-the-progress-of-mudra-yojana-under-modi-2429301.html>

MGNREGA. 2017. “MGNREGA Dashboard.” Available at: http://mnregaweb4.nic.in/netnrega/all_lvl_details_dashboard_new.aspx

Ministry of Labour and Employment, Government of India. “Employment Exchange Statistics, 2014”. Available at: <http://talimrojgar.gujarat.gov.in/2014/PDF/17Mar2015084808PM.PDF> (Last accessed on 11th August, 2017)

Ministry of Micro, Small and Medium Enterprises, 2013. “Annual Report, 2012-13”. Available at: <http://www.dcsmse.gov.in/ANNUALREPORT-MSME-2012-13P.pdf>

Ministry of Micro, Small and Medium Enterprises.2014. “Annual Report, 2013-14.” Available at: http://msme.gov.in/sites/default/files/Advertisement_post_Director.pdf

Ministry of Rural Development. 2015. “Demand for Grants, 2014-15,” Union Budget.

Ministry of Rural Development. 2017. “Demand for Grants, 2016-17,” Union Budget.

Misra, Sangita and Suresh, Anoop K. 2014. “Estimating Employment Elasticity of Growth for the Indian Economy,” RBI Working paper Series No. 06.

Nagaraj, R. 2015. “Size and Structure of India’s Private Corporate Sector: Implications for the New GDP Series,” Economic & Political Weekly, Volume L No. 45.

Nagaraj, R. 2016. “Unorganised Sector Output in the New GDP Series: Why Has It Shrunk?” Economic & Political Weekly, Volume LI No. 14.

Nagaraj, R. 2017. “Economic Reforms and Manufacturing Sector Growth: Need for Reconfiguring the Industrialisation Model,” Economic & Political Weekly, Volume LII No. 2.

Nagaraj, R. and Srinivasan, T. N. 2016. “Measuring India’s GDP Growth: Unpacking the Analytics & Data Issues behind a Controversy that Refuses to Go Away,” NCAER India Policy Forum.

Nam, Rafael. 2016. “Survey Companies Hit the Streets to fill India’s Data Gaps”. Reuters India. Dated 21st Oct., 2016. Available at: <http://in.reuters.com/article/india-data-economy-idINKCN12L029>

National Sample Survey Office. 2013. “Employment and Unemployment, July 2011- June 2012”. Ministry of Statistics and Programme Implementation. Available at: <http://mail.mospi.gov.in/index.php/catalog/143/study-description#page=overview&tab=study-desc>

National Sample Survey Office. 2017. “Key Indicators of Unincorporated Non-Agricultural Enterprises (Excluding Construction) in India, July 2015- June 2016”. Ministry of Statistics and Programme Implementation. Dated 29th June, 2017.

National Skill Development Corporation (NSDC). 2017. “Human Resource and Skill Requirements in the Building Construction and Real Estate Sector (2013-17, 2017-2022),” Ministry of Skill Development and Entrepreneurship. Available at <https://www.nsdcindia.org/New/sites/default/files/Building-Construction-Real-Estate.pdf>

National Statistical Commission. February. 2012. “Report of the Committee on Unorganised Sector Statistics”. Government of India. Available at: <http://www.lmis.gov.in/sites/default/files/NSC-report-unorg-sector-statistics.pdf> (Last accessed on 18th August,2017)

Papola, T. S. 2014. “An Assessment of the Labour Statistics System in India,” International Labour Organization Country Office for India.

Pattanaik, Falguni and Nayak, Narayan Chandra. 2014. “Macroeconomic Determinants of Employment Intensity of Growth in India”. Margin: The Journal of Applied Economic Research. Available at: <http://journals.sagepub.com/doi/abs/10.1177/0973801013519997?journalCode=mar&>

PMMY. 2016. “Overall Performance Report, 2015-16.” Available at: <http://www.mudra.org.in/Home/ShowPDF>

PMMY. 2017. “Overall Performance Report, 2016-17.” Available at: <http://www.mudra.org.in/Home/ShowPDF>

Press Information Bureau. 2017. “Guidelines for Revised Integrated Housing Scheme for Workers”(Release ID :169780). Dated 9th August, 2017. Ministry of Labour and Employment. Available at: <http://pib.nic.in/newsite/pmreleases.aspx?mincode=21>. (Last accessed on 14th August, 2017).

Rajakumar, J Dennis. 2017. “Measuring Manufacturing: Comparing NAS and ASI,” Economic & Political Weekly, Volume LII No. 20.

Ray, Surya Sarathi. 2016. “EPFO moves to ensure PF benefits to contract workers”. Financial Express. Dated 4th April, 2016. Available at: <http://www.financialexpress.com/industry/banking-finance/epfo-moves-to-ensure-pf-benefits-to-contract-workers/232310/>

Task Force on Improving Employment Data. 2017. “Report of the Task Force on Improving Employment Data”. NITI Aayog. Available at: <http://www.labour.nic.in/sites/default/files/Task%20Force%20on%20Improving%20Employment%20Data%20-%20Report%20for%20Public%20Comments.pdf> (Last accessed on 11th August, 2017)

The Economic Weekly, Special Articles. 1953. “Factory Employment and Industrial Production,” Economic & Political Weekly.

The New Indian Express. “Survey Companies Hit the Streets to Fill India’s Data Gaps”.
Dated 21st Oct, 2016. Reuters. Available at:
<http://www.newindianexpress.com/business/2016/oct/21/survey-companies-hit-the-streets-to-fill-indias-data-gaps-1530334.html>

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