A Study by Indian Institute of Management, Bangalore & State Bank of India

Towards a Payroll Reporting in India (Full Report)

Prof. Pulak Ghosh
(Professor, IIM Bangalore)
&
Dr. Soumya Kanti Ghosh
(Group Chief Economic Adviser, SBI**)**

January 15, 2018

Objective

Surveys to Measure Employment in India is mostly misleading

- Currently, Labour Bureau has been conducting Quarterly Employment Survey (QES) to access employment situation in India

- Just a couple of days back, *Labour Bureau* published 5th round of Quarterly Employment Survey (QES). The survey has however many limitations like:

  - Information was sought from around 11,179 units as a representative sample for 8 sectors at all India level. Number of **non-respondent not disclosed** in the Survey

  - The survey result comes with a **huge lag**. In the Dec'17 month Labour Bureau has published employment situation as of Mar'17

  - This is primarily an establishment survey for collecting information on employment in the unit; therefore, **it does not provide any information on unemployment in the country**

  - The survey is based on either record or response of the unit. However, **verification of record** has not been resorted to for collection of data

  - The Collection of Statistics Act-2008, is not applied to QES. Hence, **all the information** provided by the selected unit/ establishment is **on a voluntary basis**

  - QES **does not capture the employment data** from new units which emerged **after the 6th Economic Census**

  - The Scope of QES is limited **to all establishments having 10 or more workers** and the scope & coverage is further limited to employment in Non-farm Industrial **economy covering 8 selected sectors (vis-à-vis universe of 190 industries)**

- In essence, such a survey or even other employment surveys carried out even with a larger sample miserably fails to portray the extent of job growth: We need to correct this
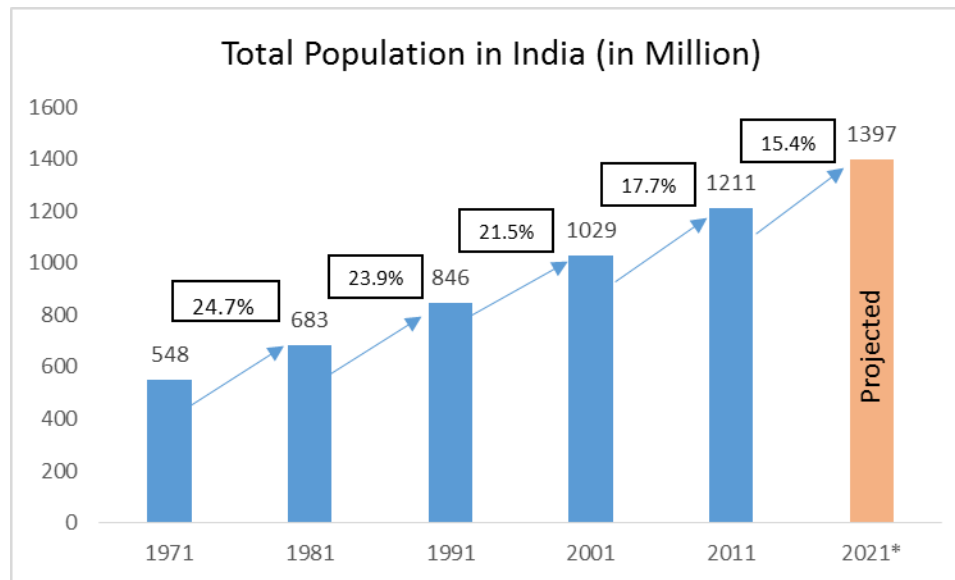
Ideally, we must move gradually to a Monthly Payroll like in US

❑ Nonfarm payroll is a term used in the US to refer to any additional job during a month with the exception of farm work, unincorporated self-employment, and employment by private households, the military and intelligence agencies. Proprietors are also excluded

❑ The total nonfarm payroll accounts for approximately 80% of the workers who produce the entire GDP of U.S.

❑ The report also contains additional items such as the average work every week and average hourly earnings. Wage growth is communicated with the report.

❑ Each month's report may include revisions to previous reports

❑ Research has revealed that the U.S. Nonfarm Payroll Numbers have the most profound impact of all high frequency economic reports on not only the US but global financial markets too

❑ We must endeavour to create a Payroll Report in India

Labour Force Dynamics in India

Dynamics of Labour Force

❑ The supply of labour in India depends on population growth, number of persons attending education, and the number of persons in exiting labour force

❑ Besides this, one should also look into the decadal population growth in India. The census data shows that the growth rate of population is continuously declining over last 50 years and as per UN estimates, the population growth may come down to 15.4% in 2021 (We believe, it could be even lower based on current population trends)

Total Population in India (in Million)

Year	Population	Growth
1971	548	
1981	683	24.7%
1991	846	23.9%
2001	1029	21.5%
2011	1211	17.7%
2021*	1397 (Projected)	15.4%

Net Yearly Babies Added to Total Population

- Given declining population, we estimate that on an average 25 million babies born per year (this has been calculated after adjusting infant morality rate from crude birth rate) has remained largely constant in the last three decades

- Out of 25 million, we expect that 15 million are added to labour force (after conservatively assuming 40% of them voluntarily remain out of labour force or are involved in domestic/agriculture work)

- With 25 million babies added to population in 2011, at least for the next 20 years, the number of people entering the work force is already accounted in the population
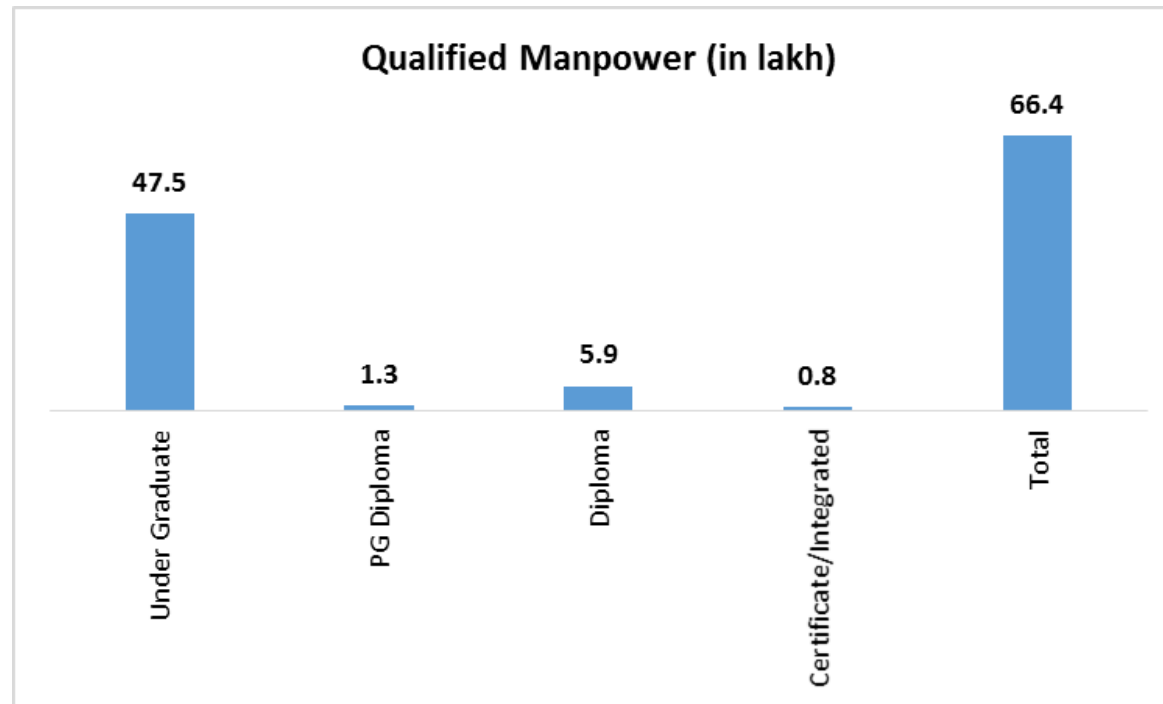
Estimation of Number of Babies born every year (in million)								
Census Year	Total Population	Birth rate	Total Live Birth	Death rate	Total Death	Infant Mortality rate	Total Infant Mortality death	Net Yearly Babies Added
1	2	3	4 = 2*3	5	6 = 2*5	7	8 = 4*7	9 = 4-8
1991	846	32.5	27.5	15.0	12.7	80	2.2	25.3
2001	1029	25.8	26.5	8.0	8.2	66	1.8	24.8
2011	1211	21.8	26.4	7.1	8.6	44	1.2	25.2
Source: Census India, BR, DR & IMR are calculated per 1000 person								

Qualified Manpower of 6.6 mn out of 15 mn is adding to Labour Force

- Out of 15 million who are joining labour force in each year, around 8.8 million students graduate in a year but not all are added to labour force. With a conservative drop-out of 25% / over 8.8 mn, we estimate that around 6.6 million are possibly qualified manpower; the rest are non-graduates/non-qualified (15 mn net of 8.8 mn~6.2 million)

- By 2040 or so, it is expected that India's demographic dividend will be conclusively over. The total fertility rate is already down to 2.2 children for every woman, and is expected to reach the replacement fertility rate of 2.1 by 2025

Qualified Manpower (in lakh)

Category	Value
Under Graduate	47.5
PG Diploma	1.3
Diploma	5.9
Certificate/Integrated	0.8
Total	66.4

Data | Assumptions | Challenges

Data Sources and Methodology (1)

❑ Unfortunately in India, we don't have any proper source either to measure the total work force or the total individuals on payroll. To make an effort in this direction, we collected primary data from three major sources, like:

❑ **EPFO:** Manages the funds contributed by the workforce engaged in the organized sector in India. EPFO manages a corpus of over Rs 11 lakh crore for its estimated **5.5 crore subscribers** across jurisdictions in **over 190 industries employing more 20+ people**

❑ **ESIC:** Is an autonomous corporation by a statutory creation under Ministry of Labour and Employment. Employees' State Insurance is a self-financing social security and health insurance scheme for Indian workers. **ESIC manages corpus for 1.2 crore subscribers for 65 industries with 10+ employees**

Data Sources and Methodology (2)

❑ **NPS:** It was launched on the 1st of Jan'04 and was aimed at individuals newly employed with the central government and state govt, but not including ones in the armed forces. **NPS currently manages corpus of 50 lakh people in state and central govt**

❑ **GPF:** The total number of **Government employees is 2 crores** (1.67 crores in State Government & Parastatal State Government Units and 33 lakh in Central Government & Parastatal Central Government Units)

❑ We use all these numbers to find the stock of organized sector payroll in India as on March 2017. We also use such data to estimate the incremental payroll in India for current fiscal (till March 2018) and compare it with like period previous year. We however, don't consider GPF in our estimate for the incremental payroll data

Key Assumptions for EPFO

- We rigorously and painfully deconstructed the EPFO data by ruminating through 8.7 crore member accounts details and contribution together

- We made some strict assumptions to ensure that our numbers were largely conservative

- For EPFO we looked at 3 year data since FY16 for employers employing more than 20 people. For employees, we estimated the numbers who joined in that particular year and made a non zero contribution to their corpus

  - We only considered Age band of 18 to 25 for first time joinees / joined in that particular year and have been making a continuous non zero contribution since then

  - This will give us a most conservative estimate of new payroll numbers. This age group also has least chance of duplication.

  - We adjusted 4.2 crore individuals data from our database of which we worked only on new joinees for our flow estimates

    - Even a singe detail missing for an account was considered as incomplete details and hence was not considered for our purpose

    - All people joined under Amnesty scheme was also not considered

Some caveats for EPFO estimates

❑ The payroll figures are gross of retirements, so net increase in annual totals would be lesser for payroll stock

❑ It is possible that during any year, existing employees less than 19 would come into EPF newly and add to payroll. However this is a normal event every year and we believe that this figure is not material on net basis as we have excluded first payments from joinees who are 25+ years and who could have also joined the payroll for the first time.

Key Assumptions for ESIC

❑ For ESIC also we used 3 year data since FY16 for employers employing less than 19 people to avoid duplication (since there could be common industries with EPFO)

  ➢ To be on the conservative side, as in EPFO, we use our calculation, new joinees in the age band 18 to 22 as new payroll.

  ➢ It is eminently possible that people in the age-group of 22-26 could also be new joinees. Hence, our estimates would have a clear downward bias

  ➢ We also used a 50% haircut to adjust for a possible overlap between ESIC and EPFO data. A higher or lower haircut can also be done

Key Assumptions for NPS

❑ Under NPS, we made the following assumptions

➢ We only consider the number of new subscribers of Central & State Government only, as it is compulsory and are Tier I accounts.

➢ We exclude Corporate accounts and such may have only Tier II account and hence considering them may lead to double counting.

➢ We also exclude those under Atal Pension Yojana.

➢ We also used the mutual exclusivity principle to only consider those Government employees who have been enrolled post 2004 in NPS

EPFO | ESIC | NPS
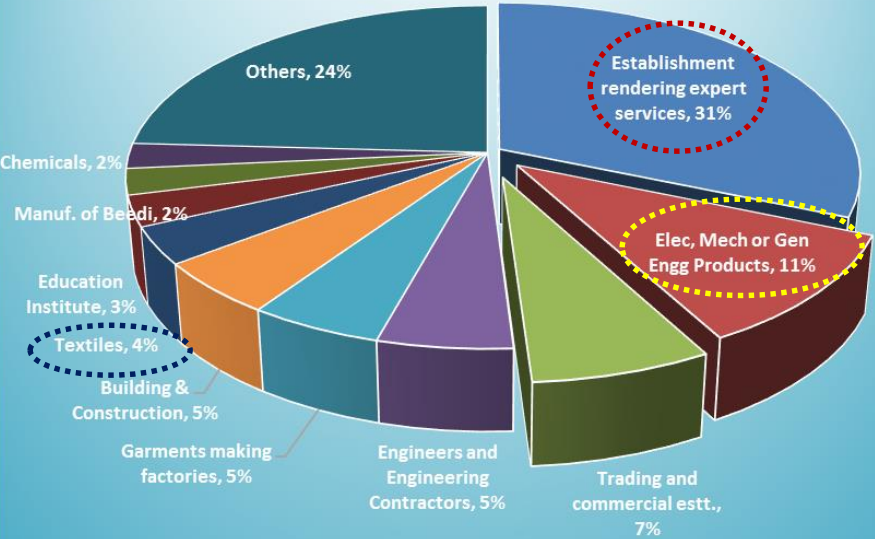
EPFO – Member's Data

- ❑ As indicated, we reasonably assumed that there is a high probability that employees between age band of 18 to 25 years are joining jobs for the first time with NON-ZERO contributions **(yellow color in table)**
  - The average age of graduates in India are 21 and post graduates are 23-24
  - In 18-21 age band, most new payroll is close to the age of 21
- ❑ FY17: **45.4 lakh / 4.5 million on new payroll across 190 industries**
- ❑ FY18 (till Nov'17): **36.8 lakh** and hence on pro-rata basis for full year: **55.2 lakh / 5.5 million on new payroll**

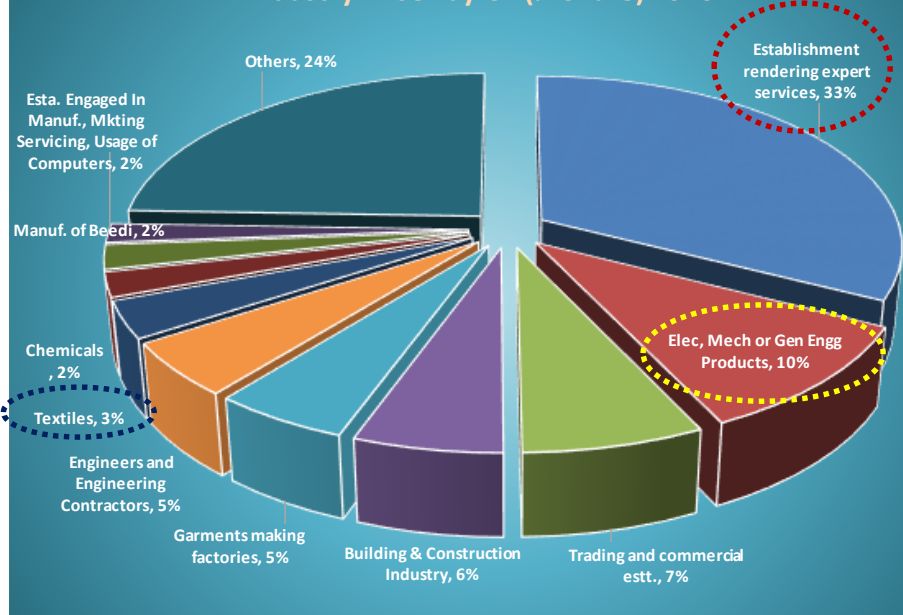| Age-Band wise Payroll				
Age-Band	2016-17		2017-18 (till Nov)	
	Unexempted	Exempted	Unexempted	Exempted
LT18	32073	638	-	-
18TO21	1809397	120880	1409999	84007
22TO25	2346999	260293	1967503	215420
26TO28	1379473	140022	1100151	117404
29TO35	1843607	158777	1480895	129002
GT35	1844327	86993	1475353	68561
Memo:				
18TO25 (in Lakh)	**41.6**	**3.8**	**33.8**	**3.0**

EPFO – Industry Wise Payroll

- There are 190 industries. The top 10 sectors contribute around 75% of the total payroll in India, as per EPFO data
- The services sector payroll gained by 2% in a year from Textiles & Engineering payroll
- Need for a holistic Skill Development programme by looking at sector-wise payroll estimates as published by EPFO

Industry-wise Payroll (% Share) 2015

Industry-wise Payroll (% Share) 2016

ESIC Payroll

❑ FY17: 6.12 lakhs/ 0.6 million on new payroll across 65 industries

Age-Band wise Payroll		
Age	FY17	FY18 (till Sep)
LT18	5649	7294
18TO22	612342	438934
22TO26	1134371	546691
26TO28	544173	230997
28TO35	1034864	422734
GT35	1023586	415596

NOTE: LT: LESS THAN ; GT: GREATER THAN

NPS Payroll

❑ The data indicates that on an average of 50,000 subscribers are joining every month

No. of new subscribers added during the month			
Month	Central Govt	State Govt	Total
As end of Mar-17	1,788,699	3,332,526	5,121,225
Apr-17	12,375	38,609	50,984
May-17	18,201	36,870	55,071
Jun-17	13,728	42,246	55,974
Jul-17	14,201	40,521	54,722
Aug-17	14,143	34,535	48,678
Sep-17	11,662	47,868	59,530
Oct-17	13,915	34,630	48,545

Estimated Payroll in India

Total payroll stock as on March 2017 & Incremental payroll as on March 2018

Sector-wise Payroll Status in India as per NSSO

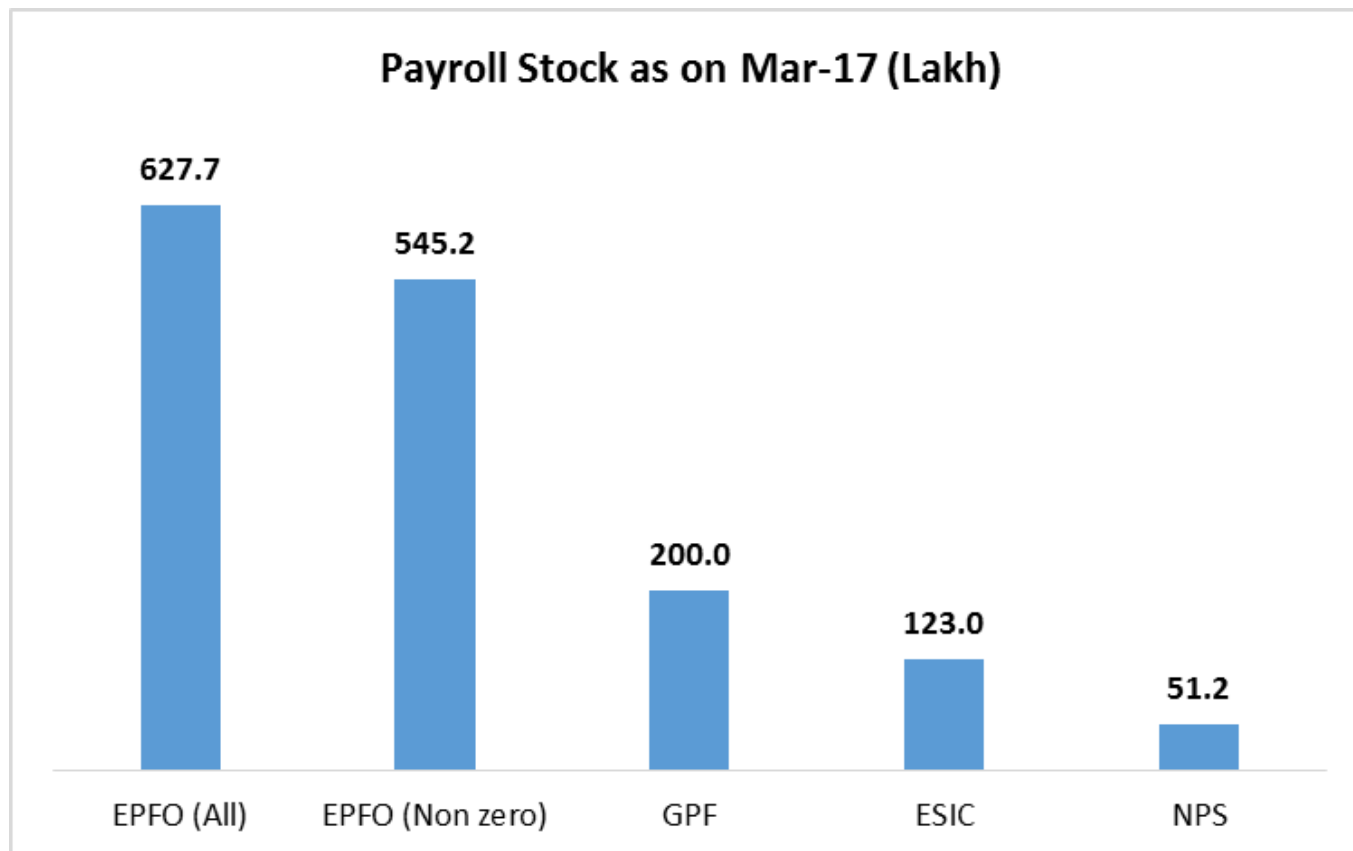- Cross country data on payroll (World Bank 2017) shows that in US, Japan and China, the stock of total payroll is 163 million, 66 million and 784 million respectively.

- The total working age stock in the country is around 500 million (estimated based on NSSO 2012), out of which around 80% are in unorganized sector

- Agriculture provides employment to nearly 50% of the total. As noted earlier, Economic survey says it is 45% & is on a declining trend

Sector-Wise Distribution of Workers (in Million)				
	Organized	Unorganized	Total	% Share
Agriculture	19	227	246	49%
Manufacturing	22	42	64	13%
Non-Manufacturing	24	35	59	12%
Services	43	92	135	27%
Total	**108**	**396**	**504**	**100%**

Source: NSSO, SBI Research

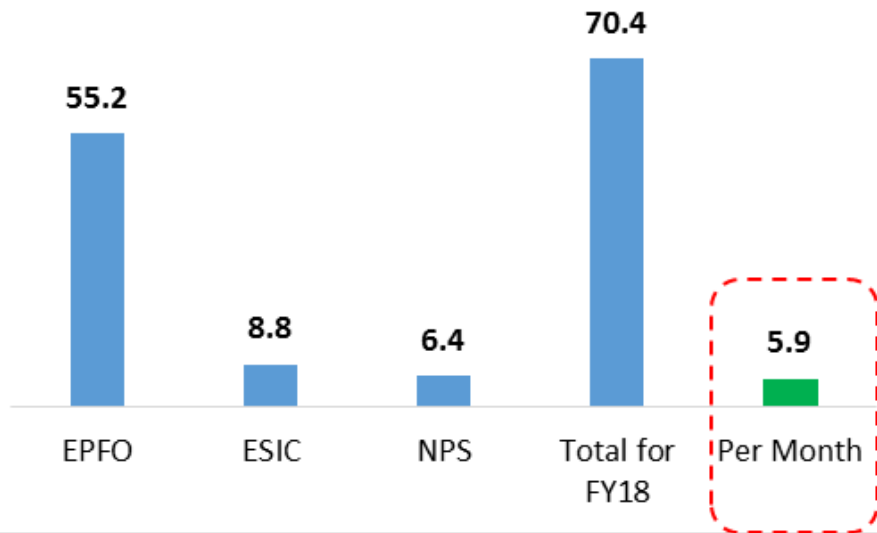# Stock of Payroll: Three Major Segments as per our estimates

❑ Total stock (old + new) of payroll for three major segment (EPFO, ESIC, GPF and NPS) was 9.19 crore (Including zero contributions **it is around 10 crore, not significantly different from NSSO data as in previous slide) as on March 2017**

Payroll Stock as on Mar-17 (Lakh)

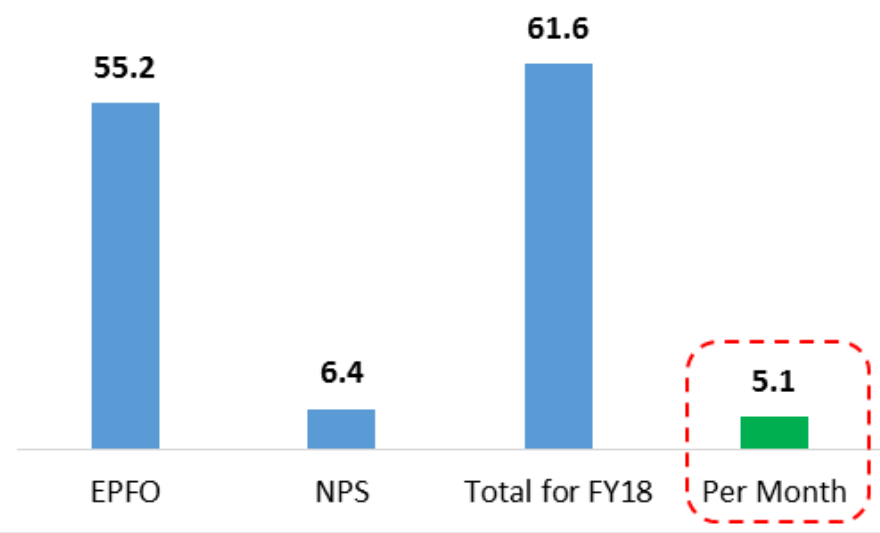| Category	Value (Lakh)
EPFO (All)	627.7
EPFO (Non zero)	545.2
GPF	200.0
ESIC	123.0
NPS	51.2

Incremental Payroll in India

- Based on all estimates, payroll of 5.9 lakh (i.e. 7 million annual) generated every month in India in current fiscal

Payroll in India - FY18 in Lakh

EPFO: 55.2, ESIC: 8.8, NPS: 6.4, Total for FY18: 70.4, Per Month: 5.9

Payroll in India - FY18 in Lakh (ex ESIC)

EPFO: 55.2, NPS: 6.4, Total for FY18: 61.6, Per Month: 5.1

Way Forward

- This is the first attempt to report the payroll situation in organised sector in India

- We have done a very conservative estimate

- EPFO, ESIC & NPS in collaboration should publish monthly report of new payroll in India who have made a first contribution to their schemes monthly with age buckets, geography, top 20 industry classification by the 25th of succeeding month for the previous month

- With a monthly frequency, this data would have various usage for policy-makers, academicians and researchers/analysts

- A trend analysis of EPFO data across 190 industries and across geographies would also help us to reorient our skill development programmes towards such industries

- A detailed analysis of labor on contract under the Contract Labor Act should be done to estimate the total number of people on contract

- A logical corollary for next step should be robust use of big data for counting informal payroll in India

Way Forward: Expanding Formal

❑ The formal sector payroll number may be enlarged further if we are able to include data from professional bodies (like ICAI, ICSI, National Bar Council, Medical Council of India, etc.) & Income Tax Payees in India. We estimate 1 crore people employed across all such professional bodies

Expanding Formal : Counting Payroll in Education/Police, etc.

- Scholl teachers and University teachers are not covered under EPFO. According to Educational Statistics at a Glance (2016), the total school teachers in India were 0.988 crore as of 2014-15. we estimate that around 1.28 crore payroll (Centre + State) engaged in Education

- Further assuming 1 police staff per 250 people, we have around 0.48 crore police force in India

- If we include municipalities, city corporations, road transport undertakings, maybe we are underestimating state payroll of 1.7 crore

Payroll in Education and Police (in Crores)	
Total Number of Teachers	0.988
in Schools	0.86
in Higher Education	0.13
Non-Teaching Staff (30%)	0.30
Total (Teacher + Non-Teaching)	**1.28**
Memo:	
Total Police Force	**0.48**

Way Forward: Expanding Informal and Counting Informal Payroll- An example

❑ Auto industry is a large employer

❑ For example based on the existing fleet, we estimate that incremental drivers in Auto sector on payroll basis was around 20 lakhs in FY17 (after adjusting for replacements)

- Interestingly, such payroll numbers for drivers are purely on a conservative basis. For example, in Commercial Vehicles, there are also helpers, while Three Wheelers run in 2 shifts during the day in metros like Mumbai

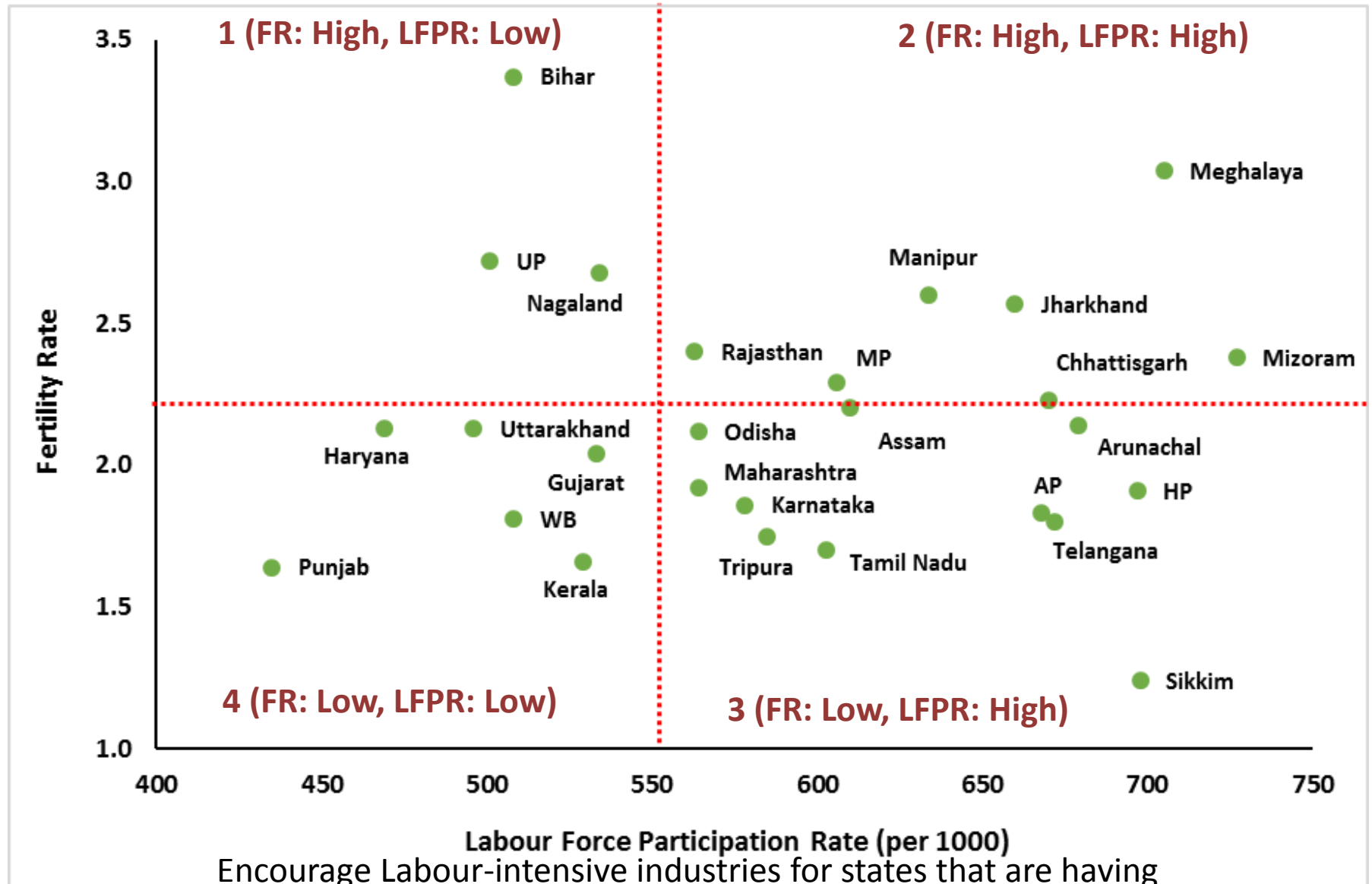| Incremental Payroll in Automobile Industry during FY17				
Category	Sales	Replacement Rate	Employment Capacity	
	in Lakh	%	%	in Lakh
Passenger Vehicles	30.5	25%	25%	5.7
Commercial Vehicles	7.1	40%	200%	8.6
Three Wheelers	5.1	25%	150%	5.8
Total	42.7	-	-	**20.0**

Way Forward: State-specific Payroll Policies (1)

- Fertility rate is quite diverse among States

- Punjab, Kerala, Tamil Nadu etc are perched at the bottom: Bihar, Uttar Pradesh perched at the top

- We have currently 950 women per 1000 men

- Also recent data says 35 women out of 1000 may not marry/have children. Further, more girls are getting educated. A degree holder thus today has average of 1.5 children

State-wise data related to Total fertility rate (TFR)			
States	Total fertility Rate (2016)	States	Total fertility Rate (2016)
Punjab	1.6	Assam	2.2
Kerala	1.7	Chhattisgarh	2.2
Tamil Nadu	1.7	Madhya Pradesh	2.3
Telangana	1.8	Mizoram	2.4
West Bengal	1.8	Rajasthan	2.4
Andhra Pradesh	1.8	Jharkhand	2.6
Karnataka	1.9	Manipur	2.6
Himachal Pradesh	1.9	Nagaland	2.7
Maharashtra	1.9	Uttar Pradesh	2.7
Jammu and Kashmir	2.0	Meghalaya	3.0
Gujarat	2.0	Bihar	3.4
Odisha	2.1	**India : 2.2**	
Haryana	2.1		
Uttarakhand	2.1		
Source: SBI Research			

- The population growth trend indicates that incremental population growth was stagnant in the decade ending 2011 as in 2011 (18.2 crores). On this basis, we should look separately at population change across states. For example, southern states like Kerala and Karnataka are having declining attendance at Government schools

Encourage Labour-intensive industries for states that are having high fertility rates

Way Forward: Incentivizing Payroll Data Capture

❑ It should be mandatory for the professional bodies, hospitals, nursing homes etc. to submit the details of new joinees every 3 month to the local Government offices

❑ From April 1, 2018 Government should ask every GST filer for giving total number of permanent employees on payroll and total no of contract employees on payroll

❑ Some tax deduction (per person) may be given for domestic help, if their name and details are registered with tax authorities by the household employing them

❑ Currently NPS give extra tax deductions of Rs 50,000 p.a. Government should continue this incentive and provide new incentives also to encourage people to join NPS