

# Dynamics of Employment Generation in Indian Manufacturing

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## Objectives

- Linking the reasons of low employment in manufacturing discussed so far in literature to the plant level heterogeneity
- Identify who creates jobs and who destroys jobs within narrowly defined sectors
- Measure concentration and persistence of jobs created and destroyed.
- What fraction of worker reallocation is due to job reallocation?
- Identifying the reasons behind simultaneous job creation and destruction

## Introduction

The share, as well as the growth rate of employment in Indian manufacturing, is dismal. Various reasons have been put forward for this low performance. However, all these reasons have been analysed by net employment changes at the aggregate industry level that doesn't capture the plant heterogeneity. In this study, we believe that the fundamental cause of the changes in employment are the plant heterogeneity and make an attempt to link these reasons pointed out so far in the literature with the dynamics of job creation and job destruction of heterogeneous plants. Is job creation low? Or along with job creation, job destruction is taking place?

## Mathematical Section

$$JC = \sum_{e \in E_{st}} \left( \frac{x_{et}}{X_{st}} \right) g_{est}, \quad g_{est} > 0 \quad (1)$$

$$JD = \sum_{e \in E_{st}} \left( \frac{x_{et}}{X_{st}} \right) |g_{est}|, \quad g_{est} < 0 \quad (2)$$

$$g_{et} = \left( \frac{E_{et} - E_{et-1}}{x_{et}} \right) \quad (3)$$

$$x_{et} = \left( \frac{E_{et} + E_{et-1}}{2} \right) \quad (4)$$

e - Plants, s - Sectors, g lies in [-2,2]

$$\text{Job Reallocation} = JC + JD \quad (5)$$

$$\text{Net job growth} = JC - JD \quad (6)$$

## Findings

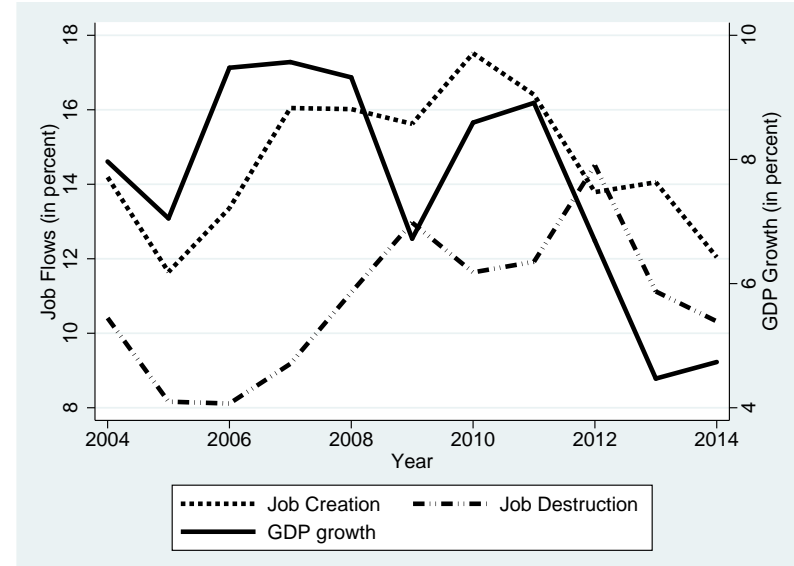


Figure 1: Simultaneous job creation and destruction over the years. Annual Survey of Industries and National Accounts Statistics of India (2003-04 to 2014-15)

## Job flows by age of the plant

Age	JC	JD	Share(%)
Birth year	66.49	21.71	0.66
1	42.23	12.56	3.15
2	27.03	15.06	4.36
3	21.44	13.55	4.46
4-5	19.96	14.05	8.29
6-10	16.46	12.29	18.06
11-15	16.20	11.71	14.57
16-20	13.34	10.79	11.82
21-30	12.16	10.82	16.02
Above 30	10.07	8.86	18.7

Table 1: Source: Annual survey of industries (2004-05 to 20014-15)

## Important Result

High simultaneous job creation and job destruction within most of the sectors that affect workers to a large extent

## Job flows among Indian states

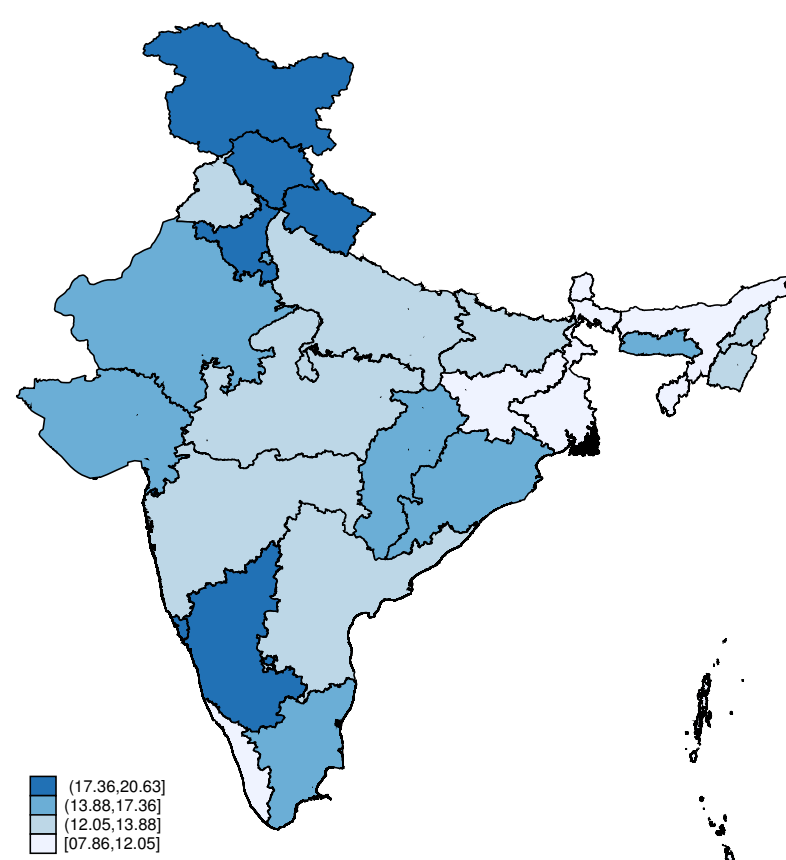


Figure 2: Job Creation among Indian States. Source: Annual Survey of Industries

## Job flows by size of the plant

Size(workers)	JC	JD	Share(%)
1-10	33.14	46.72	9.72
11-20	32.77	36.81	11.21
21-50	41.26	38.10	12.57
51-100	33.76	31.26	9.89
101-250	14.52	12.96	26.76
251-500	13.92	10.77	16
Above 500	13.19	8.81	13.85

Table 2: Source: ASI panel data (2004-05 to 20014-15)

## Worker reallocation due to job reallocation

	JR	WR	CR	JR/WR
2004-05	25.80	40.62	14.82	63.51
2005-06	20.95	36.75	15.80	57.00
2006-07	22.66	39.05	16.39	58.02
2007-08	25.73	34.56	8.83	74.46
2008-09	25.29	33.23	7.94	76.11
2009-10	27.56	36.38	8.82	75.75
2010-11	29.82	35.06	5.24	85.05
2011-12	28.48	33.08	4.60	86.09
Average	25.79	36.09	10.31	72.00

Table 3: JR is job reallocation, WR is worker reallocation CR is churning rate. Source: Own calculation from ASI panel data (2004-2012) and ASI Reports

## Conclusion

- High rates of simultaneous job creation and job destruction.
- This simultaneous job creation and destruction are **high for a large number of plants** and also **occupies a significant portion of worker reallocation**.
- However, the **persistence of these created and destroyed jobs are low**.
- Theories like **passive learning and between sector employment shifts partially explain** this phenomenon of high job reallocation

## Policy Implication

Help in linking the various existing reasons of low employment with plant level dynamics:

- Reason: Low share of labour intensive goods in exports →Policy: Increase job creation and decrease job destruction
- Reason: Low employment in small scale industries due to difficulties faced by them →Policy: Reduce job destruction
- Reason: Low employment due to strict labour regulations →Policy: Making changes in labour regulation that help in reducing job destruction

## References

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- Sean M Dougherty. Labour regulation and employment dynamics at the state level in india. *Review of Market Integration*, 1(3):295-337, 2009.

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