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Between Strikes and Precarity

Workers Agency and
Productivity in Industrial India

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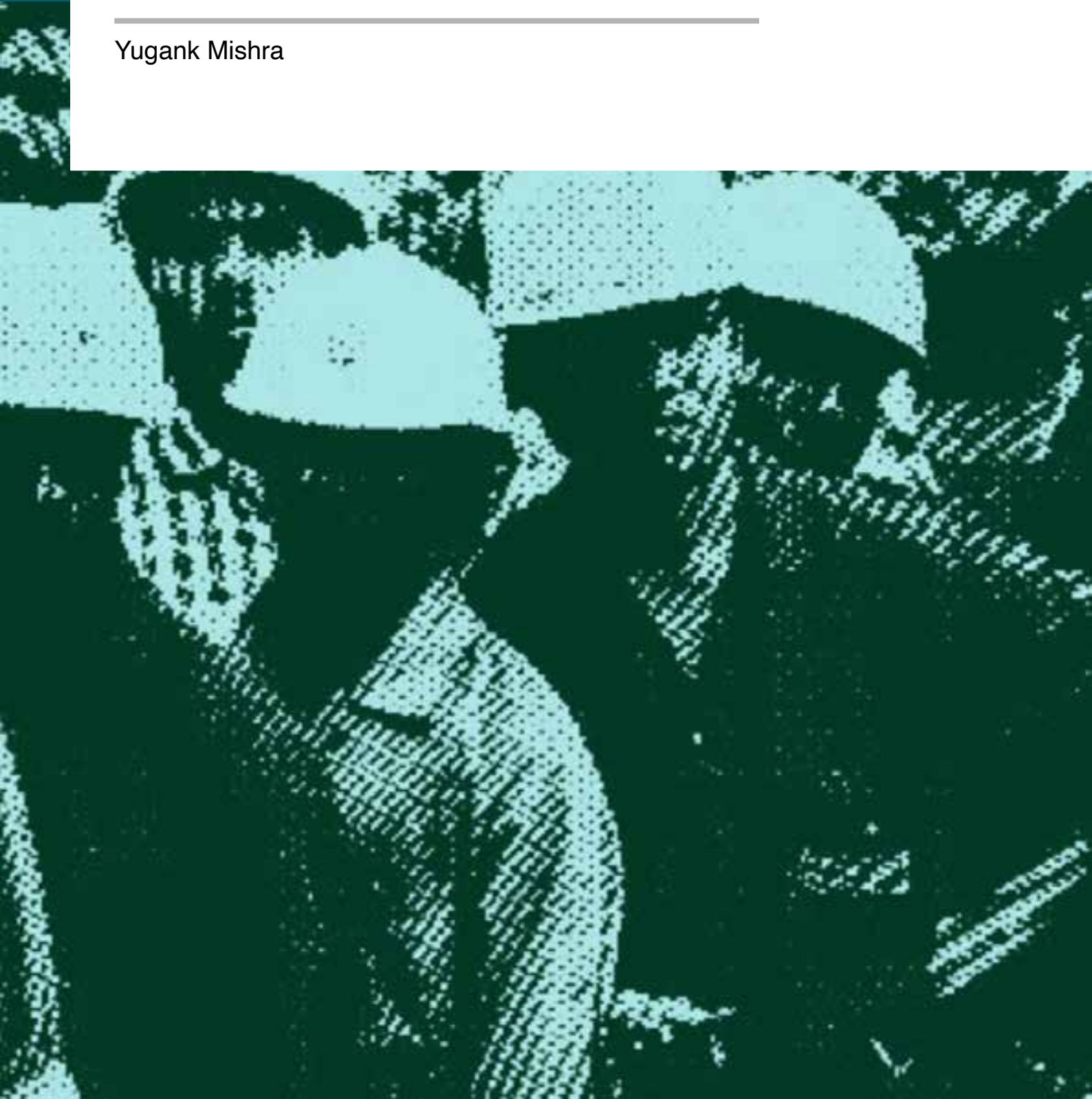


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Issue Brief

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II INTRODUCTION

As India witnessed another major general strike in July, allegedly consisting of 25 crore workers, called by the leading central trade unions in pursuance of a number of demands against the central and state governments, a concern over their 'presence', and more so of the efficacy of their 'tactics' is renewed (The Wire Staff, 2025). The ritualized annual strikes of the politically oriented trade unions that hardly puts any pressure on the governments, combined with their feeble presence amongst the informal sector and segment (which has been over 90% of the total Indian workforce for some time now) gives an opportunity to raise some questions on workers agency in India (Bhowmick, 2013; Sundar, 2017). If the strike is adjudged substantive of the workers right to associate, work and dignity, and adequately representative of the workforce, then the implication is either that the government is apathetic or the tactics pursued are ineffective¹. Whereas the former is difficult to approximate concretely without slipping into ideological biases, the latter is something that concerns us in this paper. Alternatively, if the strike is not representative, the problem of the penetration of the trade unions within various sectors and geographies is raised or, conversely, a more far-fetched implication which one can hint gaining grounds in India today: that there is no incentive for the workers to associate with the trade unions and their strikes, further implying that there may not be enough discontent. Let us begin with this last implication, first.

Commentators have highlighted several reasons for the Indian worker's discontent. Real wages have been effectively stagnating for over five to ten years depending on the sector. In the industrial sector, there remains a serious gender gap in wages, and the divergence between the wages of supervisors and managers is increasing (Dreze & Das, 2024; Singh, 2024). Then, there is a marked informalization of employment, and the total number of people in the workforce who do not have a written job contract, are not eligible for paid leaves and have no coverage under any social security benefits has increased from 2017-18 to 2023-24 (Kapoor & Krishnapriya, 2023; NSO, MoSPI, 2019, pp. A-250; NSSO, MoSPI, 2024, pp. A-220)[2]². Further, though 'employment' may be increasing, the definitions our national database uses are internationally non-compliant, a methodological detail that many claim hides that the employment rise is amongst the worst forms, of 'unpaid family labour'; high rates of unemployment and a discouraged worker effect is noticeable where the working age population, especially the Indian youth, have stopped actively looking for jobs (Ghosh, 2025; Mehrotra, 2025).

Partly constitutive of this precarity and its expression, is the decline of trade unionism in India (Sundar K. S., 2008; Sundar K. , 2011). Though adequate data on this front is lacking in India, this decline is argued for across a number of writings (Singh, Das, Kumar, & Kukreja, 2019). Trade unions have been waging a war of 'survival' in India since the advent of the macroeconomic reforms of the 80s and 90s (Mishra, 2025; Bhattacharjee, 1999). Going by the broad economic contours, it is plausible that though the ingredients of discontent exist amongst the workforce, the strikes, integral to trade unionism and a direct form of workers resistance, is not the expression that is easily taken recourse to. In such a case, another natural question follows: can one read this conjectural discontent in more indirect forms of resistance?

Across disciplinary boundaries, scholars have drawn attention to the indirect forms of workers resistances, termed variously as sabotage, soldiering, slumping, shirking, absenteeism, resignation, quality compromise, and any other means through which workers influence production in antagonism to their super-ordinates will and direction (Goodrich, 1920; Tucker, 1993; Carswell & De Neve, 2013; Linden; Parry, 1999; Taylor & Rioux, 2018, pp. 189-208; Braverman, 1998). The inadvertent casualty of such forms is productivity or the lack of a sustainable regime. For India, productivity

has seldom taken the center stage of our labour representatives but, amongst the economists, has been one of the most important aspects to study the health of our economy. In fact, one can write the historiography of the Indian economy through the lens of productivity—from Bhramananda’s Productivity in the Indian Economy and Isher J. Ahluwalia’s Stagnation since the Mid-Sixties, and the debate on whether the macroeconomic reforms of the 90s led to a growth or decline of total factor productivity growth in the Indian manufacturing sector, to the persistent concerns over the trend of industrial productivity growth (Brahmananda, 1982; Ahluwalia, 1992; Unel, 2003; Goldar, 2004; Krishna, et al., 2022; RBI, 2004, p. 97; Mishra, 2025). Within this vast literature, one of the most persistent issues in the growth of labour productivity of the Indian manufacturing sector has been capital-deepening or increasing capital intensity, which we explore, in this paper, for a specific segment of our economy—the organized manufacturing sector. However, before we begin, some qualifications are in order.

CAPITAL-LED PRODUCTIVITY GROWTH IN INDIAN MANUFACTURING SECTOR

Labour productivity, the key concept of this paper, is one of the most common yet partial indicators of productivity measurement, defined simply as the ratio of a quantity index of gross output (x) to a quantity index of labour input (y). For (x), a number of values such as gross output, gross value added, tonnage or other volume-based output measure, etc. can be used whereas for (y), one may use total workers, quantity of work put in as days or hours, etc. (Balakrishnan, 2004; OECD, 2001). In this paper, we use GVA for (x) and man-days for (y). Theoretically speaking, labour productivity gains have a positive effect on per capita income growth or, at least, on the capacity of a productive unit to reward its participants, if the ratio between the population and the workforce is constant (Balakrishnan P. , 2004, p. 1466; Dieppe, 2021)

Given that the labour productivity is a partial or a single factor reading of productivity changes, it is usually used comparatively. In a gross value-added framework, there may be one of the three sources of rising labour productivity—firstly, changes in labour composition, or labour quality; secondly, capital intensity which can either be technology-led, or organizational changes or adoption of more efficient forms of production; and thirdly, total factor productivity (TFP) growth (Krishna, et al., 2022). Now, the sectoral record of India for labour productivity, specifically the manufacturing sector, has often been a cause of concern (Journard, Sila, & Morgavi, 2015; IMF, 2025, p. 107). The table below gives the relative position of India vis-à-vis some other national economies on labour productivity by ILO, in which India ranks rather low:

Country	GDP per hour worked in 2025 (GDP constant at 2021 international \$ at PPP)
United States	81.8
United Kingdom	69.5
China	19.8
Japan	53.7
Vietnam	12.4
Bangladesh	8.7
India	10.7
Brazil	22
Russia	44.3

Country	GDP per hour worked in 2025 (GDP constant at 2021 international \$ at PPP)
Germany	80.5

Source: (ILOSTAT, 2025)

Notwithstanding the international comparisons, there has been a general consensus that labour productivity in India has been on the rise for some time now, irrespective of whether it is adjudged adequate or not, and this trend is also observed for the manufacturing sector (Krishna, et al., 2022, pp. 134-38; Balakrishnan & Babu, 2003). However, within this tendency, one of the most concerning aspects since over three decades now has been that of the source of this growth—capital deepening or rising capital intensity. The problem in this tendency is that it may be an unsustainable pattern of economic growth based on factor accumulation rather than productivity gains, and transform labour enhancing developments into labour-displacing developments, which sets in motion what is known as job-less, or worse, job-loss growth. In India, this has been a major concern over the years and many have studied its reasons and ill-effects upon the economy as a whole (Mishra, 2025; Krishna, et al., 2022)³. Of late, the specific puzzle has been that despite the relative price of capital in this sector being the highest amongst the broad sectors of the economy, it continues to see high growth in capital per worker, a phenomenon which may have a bearing on how competitive effects within a broad industry may inhibit the lack of entry of new firms (an aspect which is often talked about in terms of improving India’s rank in the ease of doing business index and consequent deregulation or ease of administrative accesses). Notwithstanding that tenuous implication, this paper argues that this capital intensification of manufacturing labour productivity gains hides, beneath the aggregation of data in terms of time-period (annualized returns) and broad industry groups, a moment of class struggle amongst workers and, for the lack of a better word, capitalists. Is it a response by the latter to the indirect forms of resistance that workers employ to diminish the workers control over production?

One may take the organicity between the trends that were observed in the early years of this century due to the macroeconomic reforms of the 80s and 90s as our point of departure. These were increased labour productivity (yet a decrease in total factor productivity in the 90s vis-à-vis 80s), declining real wages, increased contractualization, along with a massively hiked Incremental Capital-Output Ratio within the manufacturing sector, increased output growth, and a decline in trade unionism (Mishra, 2025; Balakrishnan & Babu, 2003). As the 10th Planning Commission report had observed, ‘capital substituted labour’ in the Indian economy (Planning Commission, 2002, p. 141).

Borrowing from the Marxian method, one can read this capital-intensification of labour productivity as a shift in the organic composition of capital towards an increase of constant capital against the variable part of capital⁴. The change of this composition of capital in the favor of constant capital may or may not increase the demand for labour, ‘attracting’ it; but it, inadvertently, ‘repulses’ labour towards the creation of a relative surplus population or industrial reserve army, which is rendered superfluous (Jha & Yeros, 2021). Beneath such general tendencies, however, this process functionally simplifies the labour process, resulting in what some have called ‘deskilling’ (Braverman, 1998, pp. 294-311) or decreasing the relative autonomy of the workers in the production process (Linden, p. 4). In other words, the worker as an individual is made dispensable and a marginal stakeholder in the production process. This renders the production process a fertile ground for the indirect resistances that we mention above. Of these indirect forms of workers resistance, Marx claims rather strongly that mechanical and technological improvements are, “the most powerful weapon for suppressing strikes, those periodic revolts of the working class against the autocracy of capital... [and] that it would be possible to write a whole history of the inventions made since 1830 for the sole purpose of

providing capital with weapons against working class revolt” (Marx, 1990, pp. 562-3).

Whereas it is empirically difficult to establish the specific direction of relation that the Marxian method claims for our specific sector in focus; I take a more modest aim in this paper to highlight the tendencies of productivity in 11 sub-sectors of the formal manufacturing sector in India, from 2012-13 to 2022-23. The intent, through this empirical exercise, is merely to open the space to further enquire into the relation of productivity tendencies in the Indian economy in this sector in the time-period in focus and the indirect forms of workers resistances. In a growing economy as India, one would have to posit rigorously the counter-factuality of opportunities lost; for there are many roads to progress.

METHODOLOGY

In the present paper we draw our primary data from the Annual Survey of Industries which collects the data annually on the formal or organized manufacturing sector in India, 2012-13, 2017-18 and 2022-23. In this, we look at the following sectors through the NIC-2008 2-Digit Code:

NIC Code (2 digit)	Sector
10	Manufacture of food products
13	Manufacture of textiles
14	Manufacture of Wearing Apparels
15	Manufacture of leather and related products
16	Manufacture of wood and products of
20	Manufacture of chemical and chemical products
21	Manufacture of pharma
24	Manufacture of basic metals
26	Manufacture of computer, electronics and optical products
29	Manufacture of motor vehicles
31	Manufacture of furniture

In what follows, I take different variables for different indicators. For the labour input, I take man-days employed for labour productivity; total workers (and not total persons engaged) for employment elasticity and share of contractualization; and emoluments (for total persons engaged) for regressions and correlations with output. For output, I uniformly take gross value added (GVA), and for capital input, I take capital invested, defined as the total of fixed capital and physical working capital in Annual Survey of Industries.

It must be noted that though the paper focuses only on single-factor productivity, its results are similar to the studies which employ multi-factor productivity analyses. Moreover, I treat the data insulated from the policy shifts that occur from 2012-13 to 2022-23 which included major events such as demonetization, GST, COVID-19 recession, etc. Treating the data for these controls is beyond the purview of this paper.

Finally, a note on emoluments as labour input. In the spirit of the Marxian method which categorically treats not labour but labour-power as the commodity sold by the workers whose price is set before

the wages are received upon the conclusion of the production process, I 'flirt' with the idea of emoluments as not returns but inputs for GVA for linear regressions below, along with treating it as returns on GVA.

II EMPLOYMENT ELASTICITY & INFORMALIZATION OF THE WORKFORCE

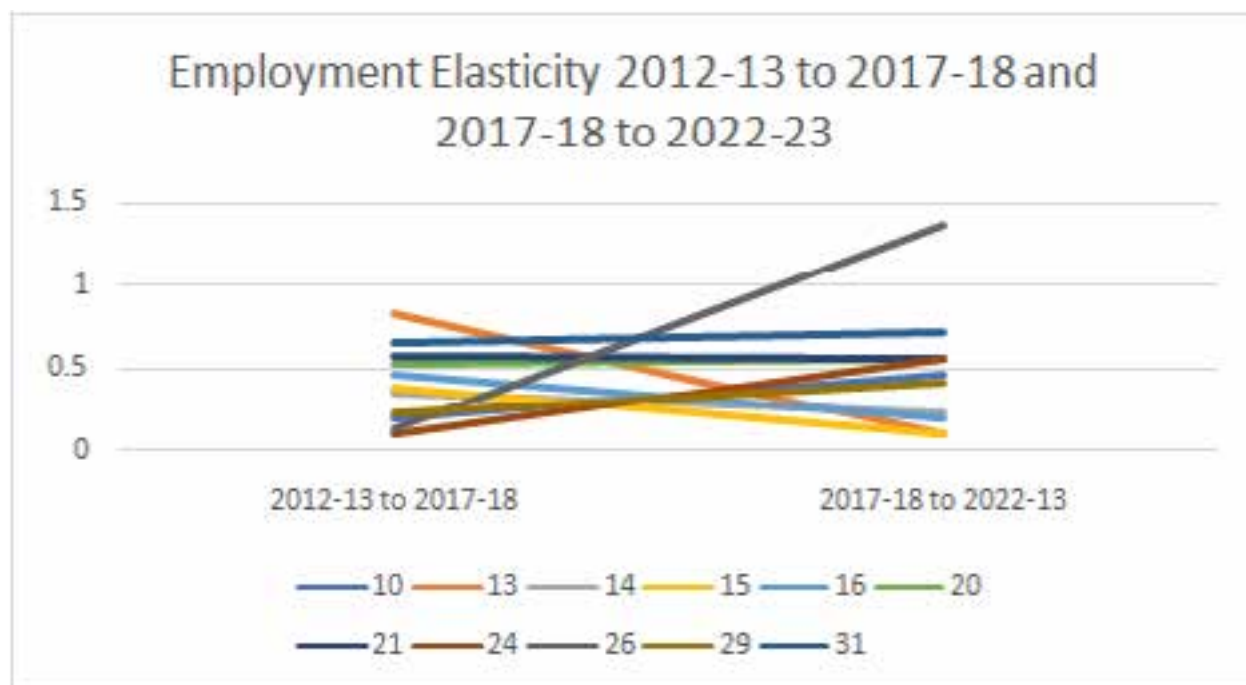
The two indicators of employment elasticity, which broadly reflects the responsiveness of employment growth to the degree of economic growth (here, as the %change in employment of total workers within an industry group in a 5 year period/ % change in the GVA of an industry group in a 5 year period), and the changing percentage of contract workers to the total workers of an industry group are taken to understand the nature of socio-economic change in an industry group, from the vantage point of the workers.

Considering the former, employment elasticity is an adequate marker to adjudge the broad correspondence between its two variables, with an elasticity of 1 suggesting that employment growth is occurring in sync with the economic growth, <1 suggesting that economic growth may be outstripping employment growth suggesting rising productivity but equally 'jobless growth' and >1 suggesting that employment may be over economic growth, suggesting a falling productivity and/or also inefficient resource allocation. Read in tandem with the % of 'workers employed through contractors' to the total workers engaged in an industry group, these indicators can point us towards productivity trends and patterns for the various industry groups. Below are the findings for the 11 industry groups over the periods 2012-13 to 2017-18 and 2017-18 to 2022-23:

TABLE 2.1: EMPLOYMENT ELASTICITY, 2012-13 TO 2017-18 & 2017-18 TO 2022-23

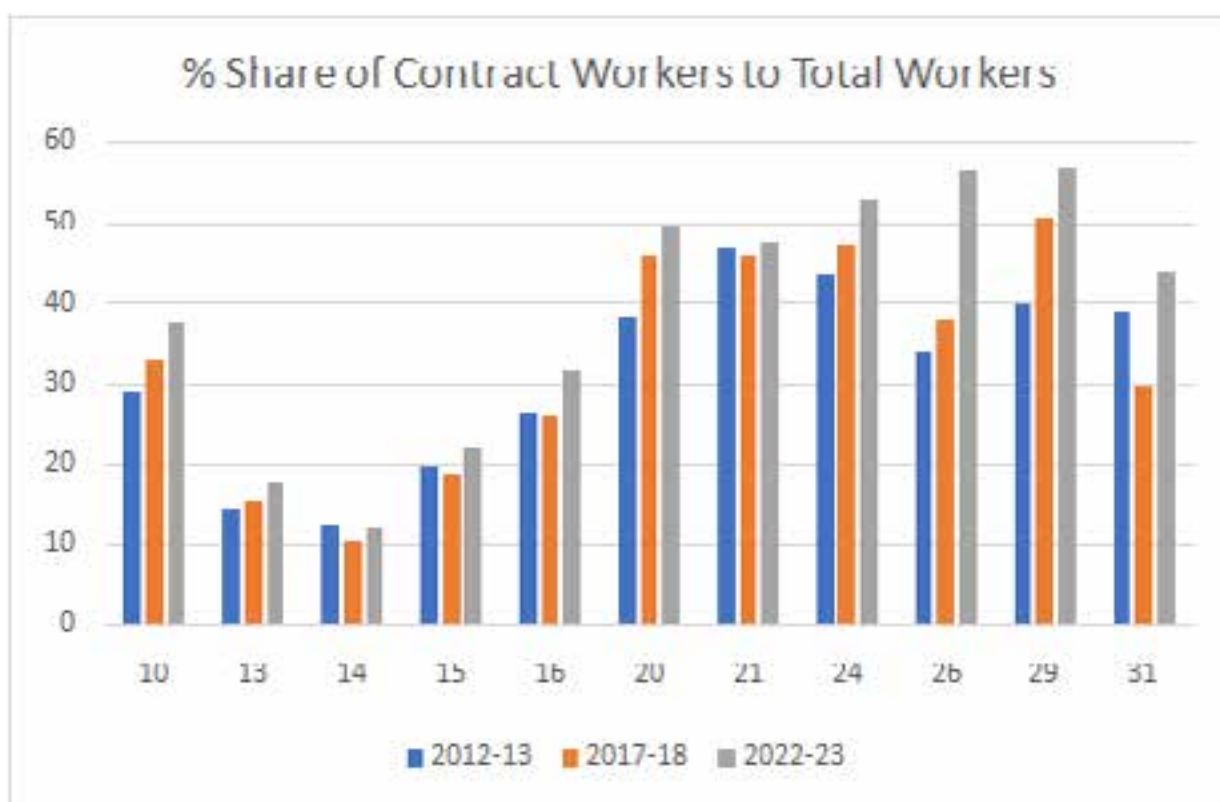
Sector (NIC 2-digit Code)	Employment Elasticity 2012-13 to 2017-18	Employment Elasticity 2017-18 to 2022-23	EE (2022-23 to 2017-18) – EE (2017-18 to 2012-13)
10	0.2	0.46	0.266096
13	0.83	0.09	-0.73954
14	0.35	0.21	-0.13334
15	0.38	0.09	-0.28166
16	0.46	0.18	-0.27262
20	0.53	0.55	0.028097
21	0.57	0.55	-0.01738
24	0.09	0.56	0.474015
26	0.13	1.37	1.247675
29	0.22	0.41	0.192854
31	0.65	0.72	0.074803

Source: Annual Survey of Industry, Various Editions. Calculations authors own.

FIGURE 2.1: EMPLOYMENT ELASTICITY, 2012-13 TO 2017-18 & 2017-18 TO 2022-23**TABLE 2.2: % SHARE OF CONTRACT WORKERS TO TOTAL WORKERS, 2012-13 TO 2022-23**

Sector (NIC 2-digit Code)	% of Contract Workers to Total Workers, 2012-13	% of Contract Workers to Total Workers, 2017-18	% of Contract Workers to Total Workers, 2022-23
10	28.75565	32.84095	37.64695
13	14.06987	15.11593	17.77075
14	12.3478	10.40533	11.91591
15	19.65543	18.78892	22.0417
16	26.33344	25.81623	31.60364
20	38.22925	45.63624	49.6526
21	46.80654	45.9033	47.41311
24	43.44496	47.14728	52.61707
26	33.85852	37.87154	56.39434
29	39.7896	50.40942	56.70215
31	38.69373	29.76975	43.84477

Source: Annual Survey of Industries, various editions. Calculations authors own.

FIGURE 2.2: % SHARE OF CONTRACT WORKERS TO TOTAL WORKERS

On the basis of the above findings, some general remarks can be made about the worrying aspects of the pattern of growth in the formal manufacturing sector:

1. Firstly, between 2012-13 and 2017-18, to begin with, the employment elasticity was low suggesting that output value growth was occurring in somewhat disjunction with employment growth. This could be attributed to a host of reasons such as workers working longer than usual hours, or becoming more productive or a certain efficiency in resource allocation and management or either due to a rising capital intensity of production at the cost of more jobs. What must be borne in mind is that although none of the sectors grew negatively in terms of either GVA or total workers employed across any of the 5-year term, there is a distinct mismatch between their growth rate correspondence. At the least, a 1%-point increase in output for the period 2012-13 to 2017-18 is INR 26 cr. which is unable to generate even one job in the 'manufacture of wood and the products thereof'! At the other end of the spectrum, we have the example of basic metals where a percentage increase of GVA amounts to over a thousand crore rupees which is unable to create even a single job!
2. Then, over the period of 2017-18 and 2022-23, employment elasticity decreased for five industry groups of textiles, garments, leather, wood products, and pharmaceuticals suggesting a further resource rationalization or capital intensification. In the industry groups in which there is an increase, it hovers at ~ 0.5 with the exception of manufacture of furniture where it is closest to ~ 1 suggesting a growing correspondence between the two variables and of the manufacture of computer, electronics and optical products where employment elasticity sees an increase of 1.23 from 2012-13 to 2022-23 suggesting a distorted labour intensity.

In tandem with the share of contractual workers, the trend reflects the broader pattern of the

Indian economy of informalization between 2012-13 and 2022-23 with the exception of garment manufacturing⁵. There is a strong suggestion that the economic value growth is due to over-burdening of the workers or an increase in their marginalization if the informalization is also increasing. This further reinforces longer working hours or harsher production rhythms.

Even if 'precarity' may seem a strong word for the workers engaged in the formal sector manufacturing, from 2012-13 to 2022-23, the evidence above established a certain 'relative marginalization'. Within these broad contours of working conditions, it would be adequate to posit the labour productivity trends for these broad industry groups, now.

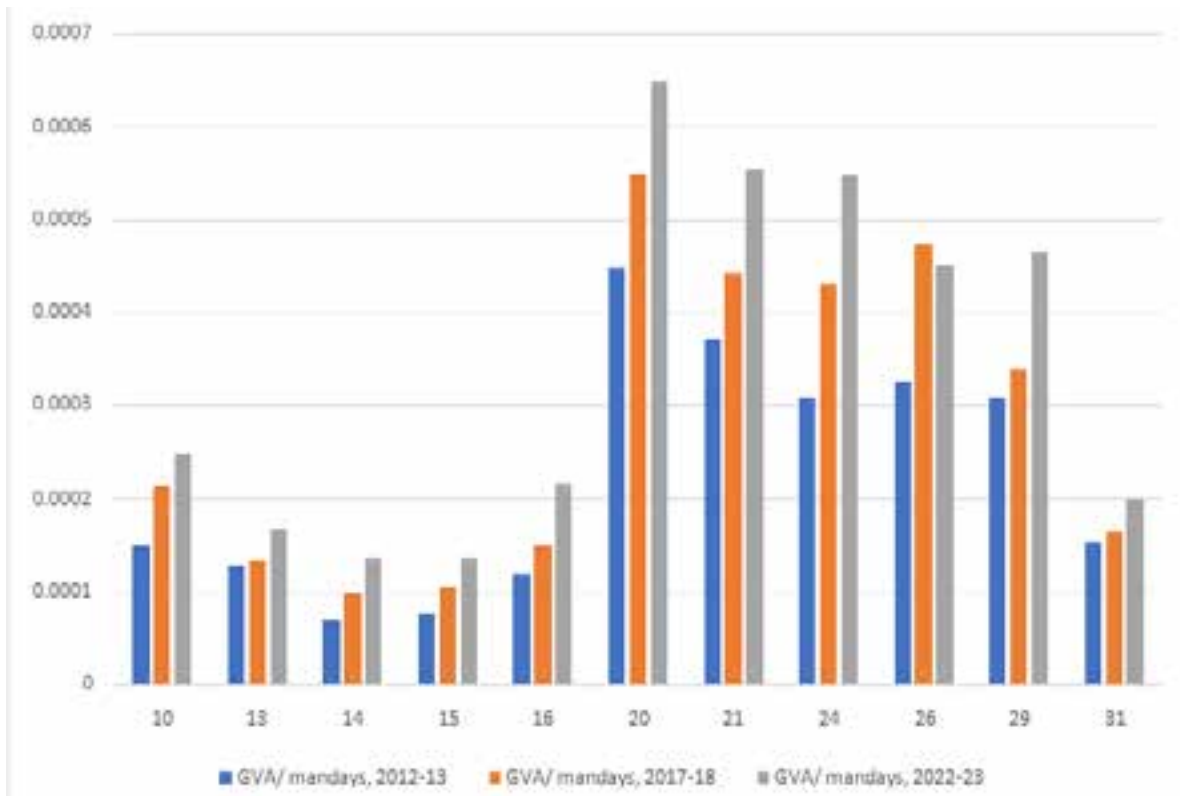
II LABOUR PRODUCTIVITY & ITS TENDENCIES

Labour productivity gives another closer approximation to understand the trend of economic growth in terms of resource allocation and efficiency, in sync with employment elasticity. If the labour productivity is rising and employment elasticity is decreasing or adjudged low, under conditions of economic growth, it strongly indicates capital intensification. Similarly, if labour productivity increase is accompanied with employment elasticity increases, it means a more sustainable form of economic growth than factor accumulation. Below, we present the labour productivity for the 11 industry groups across 2012-13, 2017-18 and 2022-23:

TABLE 3.1. LABOUR PRODUCTIVITY, 2012-13 TO 2022-23 (IN INR CR)

Sector	GVA/ man-days, 2012-13	GVA/ man-days, 2017-18	GVA/ man-days, 2022-23
10	0.00014	0.00021	0.00024
13	0.00012	0.00013	0.00016
14	0.00006	0.00009	0.00013
15	0.00007	0.0001	0.00013
16	0.00011	0.00015	0.00021
20	0.00044	0.00054	0.00064
21	0.00037	0.00044	0.00055
24	0.0003	0.00042	0.00054
26	0.00032	0.00047	0.00044
29	0.0003	0.00033	0.00046
31	0.00015	0.00016	0.00019

Source: Annual Survey of Industries, various editions (calculations authors own)

FIGURE 3.1: LABOUR PRODUCTIVITY, 2012-13 TO 2022-23

From the above, it becomes clear that between 2012-13 to 2022-23, labour productivity has been continuously increasing with a ~50% increase across the seven sectors of food processing, garments, leather, wood and its products, pharmaceuticals, basic metals, and automotive manufacturing. The least increases are of ~30% in furniture, computers and electronics, chemical and its products, and textiles.

The sharpest increases are in garments, leather, and woods and its product manufacturing where there is a declining employment elasticity, as we saw above, indicating a strong tendency of capital intensification. This may be attributable to the fact of their de-reservation from the SSI schemes and attendant tendency towards scale (Martin, Nataraj, & Harrison, 2017).

Then, of the manufacture of basic metals, we see labour productivity rising along with employment elasticity, indicating a more favorable pattern of growth. Food processing and automotive manufacturing may also be clubbed as indicating a favorable tendency, whereas electronics and computers show that employment elasticity is not yielding as high productivity as one would expect, indicating an under-utilization of labour. Furniture and chemical manufacturing shows both employment elasticity increases and labour productivity increases, indicating a stability of sorts in comparison with other sectors; and textiles and pharmaceuticals seem to be highlighting capital intensification and factor accumulation led growth. To further support these readings, we can see the % change in invested capital in these sectors from 2012-13 to 2022-23.

Sector	Invested Capital, 2012-13	Invested Capital, 2022-23	% change
10	279610.2	571373.69	104.346512
13	177042.64	285388.37	61.1975341
14	43846.89	79688.26	81.742103
15	15529.58	30532.05	96.6057678
16	9246.43	19333.63	109.092915
20	210563.56	567511.15	169.520115
21	106740.56	279584.74	161.929242
24	629618.42	1008143.93	60.1198278
26	42100.89	128294.11	204.730161
29	168413.82	343558.28	103.996489
31	8840.33	21615.43	144.509311

Thus, the picture that emerges is that though there is an all-round increase in capital invested, the sharpest increases are in the manufacturing of chemicals and its products, pharmaceuticals, electronics and computers and furniture of ~150%! The sharpest spike of 204% in computers and electronics, read in tandem with above findings, opens serious questions about this sector. Then, as above, in leather and wood and its product manufacturing there is almost a 100% increase in capital investments during 2012-13 and 2022-23 indicating the capital intensification issue, whereas in automotive and food processing, capital investment, employment elasticity and productivity seem to be rising concomitantly. The case of garment and textiles is curious, for without comparatively substantial investments; it has a reasonable correspondence with productivity gains yet a declining employment elasticity.

On a trend level, however, it stands to reason that the tendency of capital intensification is present all-around and this gets highlighted by correlation between the three variables of emoluments (as labour input), capital invested (as capital input) and GVA across the aggregate of all these sectors as proxy for the manufacturing sector as a whole, through 2012-13 and 2022-23. Thus, we see that through the decade, the correlation between GVA and emoluments is 0.94 and between GVA and invested capital, 0.86 in 2012-13; the latter increases to 0.91 in 2022-23 and the former decreases to 0.92. Further evidence is provided through a simple linear regression between the three variables above, from which the following interpretations can be drawn (see appendix):

1. There is a growing dependency of GVA on capital invested with r values, coefficient value and decreasing p-value, between 2012-13 and 2022-23.
2. Over time, since 2012-13 to 2022-23, there is weakening relationship between the emoluments and GVA, though the statistical significance is still rather high. Interestingly, every 1% increase in emoluments was associated with a higher increase in GVA 2012-13 but that is declining by 2022-23; and every 1% increase in GVA is stagnantly associated with ¼ % increase in emoluments, from 2012-13 to 2022-23.

II CONCLUSION

From the above analysis, it is clear that the tendency of increasing capital intensification of production holds true for the sectors in question, along with the fact of relative marginalization of the workers, across various indicators. To talk specifically about the rising capital intensification as ‘labour-saving’ or labour displacing tendency, that holds true for a bulk of the sectors chosen above in the period in focus, specifically the labour intensive sector such as manufacturing of textiles, apparel, leather, and wood related products. This, however, need not always be the case, as was captured by the firm level study by Das & Kalita (2009). It must be borne in mind that this was also coincident with what has been called as ‘India’s dream run’, prior to 2010s, when other conditions of industrial India were favourable and the 90s reforms were paying off (Nagaraj, 2013). Going by the question thus asked—whether this tendency of rising productivity due to capital intensification can be considered a moment of class struggle, an attempt to curb the actuality or potentiality of workers’ indirect forms of resistance—there is a strong case for an affirmative implication. More empirical research on these aspects will be rewarding, though a number of sector specific case studies have also hinted towards the same (Parry & Ajay, 2020; Barnes, 2018; and Mezzadri, 2016).

Productivity in the Indian Industrial sector has been a point which has majorly occupied the economists rather than labour stakeholders, and that has had a bearing on how one talks and addresses the issue. What the current paper began with positing—one can make the argument that the labour stakeholders, along with trade unions, would be better off staking a claim to improve the condition of workers by alluding to the issues of productivity rather than ‘direct’ and confrontational forms of struggle, seems tenable and something which other commentators have also highlighted before (Sundar, 2017). Reckoning with that ‘hidden abode of production’ within capitalism, as Marx calls it, seems timely, prudent and recommended, today, for our worker representatives.

ENDNOTES

- 1 For a reading on the substantivity of the right to strike in India, see Dhyani, 1989; Prakash, 2004
- 2 This trend was first noticed in (National Commission for Enterprises in the Unorganised Sector, 2009, pp. 13-15)
- 3 See, for example, (Chandrasekhar, 2008; Felipe, 2010; Felipe & Hasan, 2006; Unni, 2015).
- 4 Organic composition is defined by Marx as,

“The composition of capital is to be understood in a two-fold sense. As value, it is determined by the proportion in which it is divided into constant capital, or the value of the means of production, and variable capital, or the value of the labour-power, the sum total of wages. As material, as it functions in the process of production, all capital is divided into means of production (building and plant, machinery, raw materials, etc.), and living labour-power. This latter composition is determined by the relation between the mass of the means of production employed on the one hand, and the mass of labour-power necessary for their employment, on the other. I call the former the value-composition, the latter the technical composition of capital. There is a close correlation between the two. To express this, I call the value-composition of capital, insofar as it is determined by its technical composition and mirrors the changes in the latter, the organic composition of capital” (Marx, 1990, p. 762). (Brackets mine; I have reproduced the definition used by Marx in order for the reader to note that this definition is contingent upon the difference between prices and value within the Marxian method.

- 5 This decrease, however, in ‘workers employed through contractors’ could be due to the use of ‘fixed term contracts’ in this sector where although the ‘middleman’ is eliminated, the ills of the temporary contractual engagement or informalization against the interests of the workers are preserved (Fair Wear Foundation, 2018; Sethuram, 2018).

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APPENDIX

1. CORRELATION

2012-13

	GVA (cr)	Emoluments (in cr)	Invested Capital
GVA (cr)	1		
Emoluments (in cr)	0.946615696	1	
Invested Capital (in cr)	0.864261849	0.860575684	1

2012-13

	Emoluments (in cr)	Invested Capital (cr)	GVA (cr)
Emoluments (in cr)	1		
Invested Capital	0.819722748	1	
GVA (cr)	0.929652059	0.916204992	1

2. LINEAR REGRESSION

A. 2012-13

1. REG., EMOL2GVA

SUMMARY OUTPUT - EMOLUMENTS AS IND.; GVA AS DEP. 2012-13

Regression Statistics	
Multiple R	0.946615696
R Square	0.896081276
Adjusted R Square	0.883091436
Standard Error	12926.83519
Observations	10

ANOVA

	df	SS	MS	F	Significance F
Regression	1	11527310940	11527310940	68.9832394	3.33E-05
Residual	8	1336824544	167103067.9		
Total	9	12864135483			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-4839.87916	7156.408122	-0.676300048	0.517921068	-21342.58588	11662.82756	-21342.58588	11662.82756
Emoluments (cr)	3.492422398	0.420489323	8.305614932	0.00003	2.522772281	4.462072515	2.522772281	4.462072515

2. REG. GVA2EMOL. SUMMARY OUTPUT (GVA AS INDE.; EMOL AS DEP.), 2012-13

Regression Statistics	
Multiple R	0.946615696
R Square	0.896081276
Adjusted R Square	0.883091436
Standard Error	3503.798709
Observations	10

ANOVA

	df	SS	MS	F	Significance F
Regression	1	846880008.7	846880008.7	68.9832394	3.33E-05
Residual	8	98212843.13	12276605.39		
Total	9	945092851.8			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	2693.496181	1752.374511	1.537055101	0.162834837	-1347.486689	6734.47905	-1347.486689	6734.47905
GVA (cr)	0.256578722	0.030892201	8.305614932	0.00003	0.18534118	0.327816264	0.18534118	0.327816264

2. Reg., IC2GVA

SUMMARY OUTPUT (GVA as dep.; IC as inde.), 2012-13

Regression Statistics	
Multiple R	0.864261849
R Square	0.746948544
Adjusted R Square	0.715317112
Standard Error	20172.03577
Observations	10

ANOVA

	df	SS	MS	F	Significance F
Regression	1	9608847267	9608847267	23.61412355	0.001257
Residual	8	3255288216	406911027		
Total	9	12864135483			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	16968.78835	8456.555829	2.00658385	0.079699037	-2532.06	36469.64106	-2532.064362	36469.64106
Invested Capital (cr)	0.170231534	0.035031126	4.859436547	0.001256701	0.08945	0.251013455	0.089449612	0.251013455

B. 2022-23

1. Reg., Emol2GVA

SUMMARY OUTPUT (emol as X; GVA as Y) 2022-23

Regression Statistics	
Multiple R	0.929652059
R Square	0.864252952
Adjusted R Square	0.849169946
Standard Error	34171.19376
Observations	11

ANOVA

	df	SS	MS	F	Significance F
Regression	1	66907266615	66907266615	57.29978415	3.43E-05
Residual	9	10509034345	1167670483		
Total	10	77416300960			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-19477.65071	19860.66316	-0.980715022	0.352359279	-64405.59214	25450.29072	-64405.59214	25450.29072
Emoluments (in cr)	3.352351328	0.442866708	7.569662089	0.00003	2.350517233	4.354185422	2.350517233	4.354185422

2. Reg., GVA2Emol

SUMMARY OUTPUT (emol as Y; GVA as X) 2022-23

Regression Statistics	
Multiple R	0.929652059
R Square	0.864252952
Adjusted R Square	0.849169946
Standard Error	9476.131093
Observations	11

ANOVA

	df	SS	MS	F	Significance F
Regression	1	5145352183	5145352183	57.29978415	3.43E-05
Residual	9	808173544.5	89797060.5		
Total	10	5953525728			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	10225.89043	4685.820293	2.182305293	0.056960119	-374.1715123	20825.95237	-374.1715123	20825.95237
GVA (cr)	0.257805005	0.034057664	7.569662089	0.00003	0.180761218	0.334848793	0.180761218	0.334848793

3. Reg., IC2GVA SUMMARY OUTPUT (IC as X, GVA as Y), 2022-23

Regression Statistics	
Multiple R	0.916204992
R Square	0.839431588
Adjusted R Square	0.821590653
Standard Error	37164.21897
Observations	11

ANOVA

	df	SS	MS	F	Significance F
Regression	1	64985688415	64985688415	47.05087489	7.40E-05
Residual	9	12430612545	1381179172		
Total	10	77416300960			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	30001.98154	16073.72058	1.86652377	0.094822613	-6359.300608	66363.26369	-6359.300608	66363.26369
Invested Capital (in cr)	0.260724087	0.03800995	6.85936403	0.00007	0.174739605	0.346708568	0.174739605	0.346708568



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