



The Persistence of Contract Labour: Evidence from Indian Manufacturing [?]

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Abstract

Contract labour in India is increasingly evolving from an instrument of labour cost arbitrage into a mechanism for labour intermediation and workforce management. Using establishment-level data spanning 2001–2023, we document a broad-based rise in contract labour, with contract workers accounting for more than 40 percent of manufacturing employment. Contrary to the traditional view of contract labour as low-wage and precarious employment, we find a substantial narrowing of the wage gap between contract and regular workers, together with improvements in minimum wage compliance. The expansion of contract labour is concentrated among larger, technologically advanced, more productive, and capital-intensive establishments. Reforms that increased flexibility in direct hiring did not reduce firms' reliance on contract workers. Instead, districts with a stronger pre-existing staffing industry experienced larger increases in contract labour following reforms to the hiring of contract labour. Firms more exposed to higher formalisation and compliance requirements also experienced larger increases in contract worker shares. Overall, the evidence suggests that the continued growth of contract labour reflects the expansion of organised labour intermediation and has important implications for labour market policy.

Keywords: Contract Labour, Staffing Firms, Labour Intermediation, Minimum Wages, Manufacturing, Formalization, India.

JEL Codes: J41, J42, J31, J88, O14.

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Abstract

Contract labour in India is increasingly evolving from an instrument of labour cost arbitrage into a mechanism for labour intermediation and workforce management. Using establishment-level data spanning 2001–2023, we document a broad-based rise in contract labour, with contract workers accounting for more than 40 percent of manufacturing employment. Contrary to the traditional view of contract labour as low-wage and precarious employment, we find a substantial narrowing of the wage gap between contract and regular workers, together with improvements in minimum wage compliance. The expansion of contract labour is concentrated among larger, technologically advanced, more productive, and capital-intensive establishments. Reforms that increased flexibility in direct hiring did not reduce firms' reliance on contract workers. Instead, districts with a stronger pre-existing staffing industry experienced larger increases in contract labour following reforms to the hiring of contract labour. Firms more exposed to higher formalisation and compliance requirements also experienced larger increases in contract worker shares. Overall, the evidence suggests that the continued growth of contract labour reflects the expansion of organised labour intermediation and has important implications for labour market policy.

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1 Introduction

Contract labour has become an integral feature of organised manufacturing in India. Over the past two decades, the share of workers employed through labour contractors has increased steadily and today accounts for more than 40 percent of manufacturing employment. This transformation has attracted considerable attention because contract labour lies at the intersection of several important policy debates, including labour market flexibility, worker protection, productivity, and industrial competitiveness.

Existing research has largely interpreted the rise of contract labour through the lens of labour regulation, arguing that firms increasingly rely on contract workers to reduce labour costs and circumvent the rigidities associated with direct employment. Several studies have shown that firms rely more heavily on contract workers in response to labour-market rigidities, demand shocks, and trade shocks (Bertrand et al., 2025; Chakraborty et al., 2024; Chaurey, 2015). While this explanation remains important, it may not fully account for the more recent evolution of contract labour in India. Contract labour share in employment has continued to increase in the last decade despite the rollout of reforms that increased flexibility in direct employment, including state-level amendments to the Industrial Disputes Act to increase the threshold at which the IDA applies stringently and the introduction of fixed-term employment contracts.

In this paper, we argue that contract labour has evolved from a narrow instrument for circumventing labour regulations into a broader system of organised labour intermediation. Rather than merely supplying labour, staffing firms increasingly provide recruitment, worker screening, payroll administration, statutory compliance, training, workforce deployment, and other human resource management services. These services generate value independently of labour market flexibility by reducing firms' administrative and compliance costs while enabling them to adjust their workforce efficiently. Contract labour may also remain attractive if it lowers the effective cost of labour relative to regular or fixed-term employment. Thus, even when firms receive greater flexibility in direct hiring, they may continue to use contract

labour if contractors provide wage-cost advantages or organisational services.

To support our hypotheses, we document several stylized facts and present corresponding analyses. Using establishment-level data from the Annual Survey of Industries, we document a substantial increase in the use of contract labour over the past two decades, with particularly rapid growth after 2016. The expansion is broad-based across manufacturing industries but is concentrated among larger establishments. At the same time, the wage gap between contract and regular workers has narrowed considerably, while compliance with statutory minimum wages among contract workers has improved despite a marked decline in physical labour inspections. Taken together, these patterns suggest that contract labour is increasingly integrated into the formal manufacturing sector and can no longer be viewed solely as a low-wage, precarious segment of employment.

While these stylized facts are consistent with our hypothesis, they do not by themselves rule out the traditional view that firms continue to rely on contract labour primarily to circumvent stringent employment protection. We therefore turn to analyzing the impact of two policy reforms that substantially reduced firing costs for directly employed workers. If higher firing costs were the principal reason firms relied on contract labour, these reforms should have reduced firms' dependence on contractor-mediated employment.

First, we examine the 2016 introduction of fixed-term employment (FTEs) in the apparel sector.¹ The reform allowed firms to directly hire workers on fixed-term contracts that expire automatically unless renewed, while requiring wage and benefit parity with comparable regular workers. We find no evidence that the reform induced establishments to substitute away from contract labour. Contract employment and the contract worker share do not decline after the reform. Further, there are no differential effects for medium and large establishments with more than 50 regular workers, for whom the costs of adjusting regular employment are likely to be higher under the provisions of the IDA.

Second, we examine state-level Industrial Disputes Act threshold amendments. These

¹In 2018, the FTE reform was introduced in the remaining manufacturing sectors.

reforms raised the employment threshold above which prior government permission is required for retrenchment, layoff, and closure, thereby reducing firing costs for establishments below the new threshold of 300 workers. We estimate stacked difference-in-differences specifications comparing treated reform cohorts to states that had not implemented threshold reforms during the sample period. The reform did not affect employment and the share of contract workers. Further, there was no differential impact of the reform on establishments with 100–299 workers, which were most directly exposed to the threshold changes, relative to other firms. These results further weaken the view that contract labour continued to grow mainly because of high firing costs applicable for regular employment.

Having shown that reforms increasing flexibility in direct employment did not induce substitution away from contract labour, we next examine mechanisms consistent with a labour-intermediation interpretation. We begin by studying the emergence of organised staffing firms, which increasingly provide services extending well beyond the supply of labour, including recruitment, payroll administration, statutory compliance, workforce deployment, and training. If firms value these services, the continued expansion of contract labour may reflect the growth of organised labour intermediation rather than the persistence of labour market rigidities. We first document the rapid growth of the organised staffing industry over the past decade. We then examine whether districts with greater pre-existing access to staffing firms responded differently to state-level amendments to the Contract Labour (Regulation and Abolition) Act (CLA) that increased the applicability threshold from 20 to 50 contract workers. We find that districts with stronger staffing ecosystems experienced significantly larger increases in contract labour following these reforms, suggesting that regulatory relaxation was more effective where organised labour intermediaries were already present.

We next examine the demand for labour intermediation arising from the broader formalisation of the economy. The introduction of the Goods and Services Tax (GST) increased the importance of formal transactions, documentation, and statutory compliance for firms. If organised staffing firms reduce these administrative and compliance costs, establishments

more exposed to GST-induced formalisation should rely more heavily on contract labour. Consistent with this prediction, firms with greater pre-GST exposure experienced larger post-2017 increases in contract worker shares. Together, these findings suggest that the recent growth of contract labour reflects not only firms' demand for employment flexibility but also the expanding role of organised labour intermediaries in an increasingly formal and compliance-intensive economy.

These results have implications for policy. As the organised staffing firms increasingly provide specialised workforce management services while contract workers experience improving wages and compliance, the policy debate shifts from regulating contract labour to regulating labour intermediaries and ensuring competitive staffing markets.

We contribute to three different literatures. First, we contribute to the broad literature examining the consequences of labour regulations and employment protection on the manufacturing sector in India (Adhvaryu et al., 2013; Besley & Burgess, 2004), particularly studies examining the role of contract workers in India for manufacturing firm growth and adjustments to shocks (Bertrand et al., 2025; Chakraborty et al., 2024; Chaurey, 2015; Saha et al., 2013). We show that contract labour continued to expand despite reforms easing direct employment adjustment, with its growth increasingly concentrated among larger, more productive, and more capital-intensive establishments. These findings suggest that the role of contract labour has evolved beyond its traditional interpretation as a mechanism for avoiding labour regulations.

Second, we contribute to the emerging literature on organised labour intermediation and staffing firms. Recent work has highlighted the growing role of labour intermediaries in shaping firms' employment choices. The rapid expansion of the staffing industry has created specialised intermediaries capable of recruiting, deploying, and managing workers across firms and locations, while recent evidence shows that reforms easing the regulation of contract labour or expanding access to labour intermediaries increase firms' use of contract workers (Bertrand et al., 2025; Goldar, 2024). We build on this literature by documenting the rapid

growth of the organised staffing industry and by showing that districts with stronger staffing ecosystems experienced larger increases in contract labour following state-level amendments to the Contract Labour (Regulation and Abolition) Act. Beyond demonstrating the importance of staffing firms, our findings suggest that organised labour intermediaries increasingly provide services extending beyond labour supply, including recruitment, payroll administration, statutory compliance, workforce deployment, and training, which have become an important determinant of firms' employment decisions.

Finally, we contribute to the literature on formalisation, which has examined how policy changes and demand shocks affect firm registration, informal employment, and the allocation of workers between informal and formal firms (McCaig & Pavcnik, 2018; Rocha et al., 2018; Ulyssea, 2018). We extend this literature by examining the interaction of formalization with organised labour intermediation. Exploiting variation in firms' exposure to GST-induced formalisation, we find that establishments more exposed to GST experienced larger post-2017 increases in contract worker shares. Together, these findings suggest that firms increasingly rely on organised staffing firms not only to obtain labour market flexibility but also to outsource recruitment, payroll administration, statutory compliance, and workforce management.

The paper is organized as follows. Section 2 presents institutional details regarding labour in India. Section 3 lists the data sources. Section 4 presents stylized facts on contract labour in India. Section 5 further explores these facts and trends using an analytical view. Section 6 concludes.

2 Institutional Background

2.1 Forms of Employment

Manufacturing establishments in India employ workers either directly or through labour contractors. Workers employed directly by the establishment are referred to as regular workers,

while contract workers are employed by a contractor but deployed to work for a principal employer. Although contract workers perform work at the premises of the principal employer and under its operational supervision, the contractual employment relationship is with the labour contractor. The contractor is responsible for recruitment, wage payments, and compliance with statutory labour regulations, while the principal employer bears certain obligations under labour legislation relating to welfare, working conditions, and compliance. Historically, contract labour has been used for seasonal, intermittent, or ancillary activities, although over time its use has expanded to a much broader range of manufacturing operations.

2.2 Labour Regulation

Three labour laws are particularly relevant for understanding the use of contract labour in India.

The Industrial Disputes Act (IDA), 1947 governs industrial relations between employers and workers employed directly by establishments. The Act lays down the legal framework for layoffs, retrenchment, closure of establishments, dispute resolution, and collective bargaining. It also specifies the circumstances under which employers are required to obtain prior government approval before retrenching workers or closing establishments above a prescribed employment threshold.

The Contract Labour (Regulation and Abolition) Act (CLA), 1970 regulates the employment of workers engaged through labour contractors. The Act governs both principal employers and contractors. Principal employers engaging contract labour above the prescribed threshold are required to register with the appropriate government, while contractors supplying contract labour above the threshold must obtain licences. The Act also prescribes provisions relating to wage payments, welfare amenities, health and safety, and working conditions, while empowering governments to prohibit the use of contract labour in specified occupations or processes where considered appropriate.

The Minimum Wages Act, 1948, empowers the Central and State Governments to notify

statutory minimum wages for scheduled employments. Minimum wages vary across states, industries, occupations, and skill categories and are revised periodically. The Act applies irrespective of the employment arrangement: regular workers, contract workers employed through labour contractors, and casual workers are all legally entitled to receive at least the applicable statutory minimum wage. Employers are required to maintain prescribed wage records and comply with notified wage rates, while enforcement is undertaken primarily through labour inspections conducted by state labour departments.

Beginning in 2019, the Government of India consolidated 29 central labour laws into four labour Codes covering wages, industrial relations, occupational safety and health, and social security. Although the Codes are intended to simplify and modernise India's labour regulatory framework, most of the analysis in this paper relates to the earlier legislative regime, since the reforms studied here predate the implementation of the Labour Codes.

2.3 Recent Labour Reforms

Since 2014, several states have introduced reforms aimed at increasing labour market flexibility. Several states amended the Industrial Disputes Act by increasing the employment threshold requiring prior government approval for retrenchment and closure from 100 to 300 workers.² These state-level reforms were subsequently incorporated into the Industrial Relations Code, 2020, which finally came into force in 2025.

Several states also amended the Contract Labour (Regulation and Abolition) Act by increasing the applicability threshold from establishments employing 20 or more contract workers to those employing 50 or more contract workers.³ The Occupational Safety, Health

²Several states amended the Industrial Disputes Act (IDA) to increase the employment threshold requiring prior government approval for retrenchment, layoffs, and closure. Rajasthan was the first to implement the reform in 2014, followed by Andhra Pradesh and Madhya Pradesh in 2015; Haryana and Jharkhand in 2016; Assam in 2018; Bihar, Odisha, and Punjab in 2020; Arunachal Pradesh and Gujarat in 2021; Himachal Pradesh in 2022; and Uttarakhand in 2024.

³Beginning with Rajasthan in 2014, several states progressively relaxed the applicability threshold of the Contract Labour (Regulation and Abolition) Act (CLA) by increasing the minimum establishment size covered by the Act from 20 to 50 workers. The reform subsequently spread across states in a staggered manner. Andhra Pradesh, Jharkhand, and Maharashtra adopted the amendment in 2015, followed by Haryana in 2016, Delhi in 2017, Uttar Pradesh in 2018, and Chhattisgarh, Uttarakhand, and West Bengal in 2019. A much

and Working Conditions (OSH) Code, 2020 (which subsumes the CLA) raises the threshold from 20 to 50 contract workers for the applicability of the contract labour provisions; this finally came into force in 2025.

Another important change was the introduction of Fixed-Term Employment (FTE). Fixed-term employment contracts were initially permitted in the apparel sector in 2016 and subsequently extended to all sectors in 2018. Under these provisions, employers may hire workers directly for a fixed duration while providing wages and statutory benefits equivalent to those received by permanent workers. Among other changes, the Industrial Relations Code formally incorporated fixed-term employment into India's labour law framework.

2.4 The Growth of the Staffing Industry

Alongside these regulatory developments, India has witnessed the rapid growth of an organised staffing industry. Unlike traditional labour contractors, organised staffing firms increasingly provide a broader range of workforce management services. These include recruitment and placement, payroll administration, statutory compliance relating to provident fund and employee state insurance contributions, apprenticeship management, training, and human resource management services. Large firms such as TeamLease and Quess now operate nationally and serve manufacturing as well as service-sector establishments. The expansion of these organised labour intermediaries has coincided with the increasing use of contract labour in Indian manufacturing.

2.5 Minimum Wages and Enforcement

The Minimum Wages Act, 1948 empowers both the Central and State Governments to fix and periodically revise statutory minimum wages for workers employed in scheduled employments. Minimum wages vary across states, industries, occupations, and skill categories,

larger set of states—including Assam, Bihar, Goa, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Manipur, Meghalaya, Nagaland, Odisha, Punjab, and Telangana—implemented the reform in 2020 (Goldar, 2024).

resulting in substantial heterogeneity in applicable wage rates across manufacturing establishments. The Act applies irrespective of the employment arrangement: regular workers, contract workers employed through labour contractors, and casual workers are all legally entitled to receive at least the notified minimum wage applicable to their occupation and location. Employers are required to pay wages no lower than the statutory minimum and to maintain prescribed wage registers and employment records. State governments are responsible for revising minimum wages, typically at intervals not exceeding five years, although revisions are often more frequent through adjustments for changes in the cost of living.

Compliance with minimum wage regulations is monitored primarily by state labour departments through inspections conducted under the Act. Labour inspectors are empowered to examine wage records, verify payments, inspect registers, investigate complaints, and initiate proceedings against employers found to violate the Act. The Labour Bureau annually publishes state-level information on inspections conducted, irregularities detected, prosecutions launched, and claims filed under the Minimum Wages Act, providing one of the few systematic indicators of labour law enforcement across states.

3 Data

Our primary data source is the Annual Survey of Industries (ASI), India's annual survey of registered manufacturing establishments conducted by the Ministry of Statistics and Programme Implementation (MoSPI). The ASI covers factories registered under the Factories Act, 1948, and provides establishment-level information on employment, labour costs, wages, output, inputs, capital, ownership, and location. The survey consists of a Census Sector and a Sample Sector. The Census Sector includes all factories above a specified employment threshold, while the Sample Sector covers smaller establishments selected using a stratified random sampling design.⁴ We use annual rounds spanning 2001–2023 and employ the ASI

⁴In most states, the census threshold is 100 workers, although lower thresholds (75 workers) apply in several states and union territories, and all units are enumerated in the northeastern states, Ladakh, and the Andaman & Nicobar Islands. The threshold has evolved, being at 200 workers in 1997-98 and 1998-99,

sampling weights throughout to obtain nationally representative estimates.

The ASI distinguishes between workers employed directly by the establishment (regular workers) and those employed through contractors (contract workers). We construct the contract worker share as the ratio of contract workers to total employment. The survey separately reports wage payments and mandays worked for regular and contract workers, allowing us to construct average daily wages for both groups, wage gaps, and measures of minimum wage compliance. We also use information on output, fixed capital, working capital, and employment to construct measures of productivity and capital intensity.

To measure statutory minimum wages, we compile state-, industry-, and employment-specific minimum wages from the annual reports published by the Labour Bureau, Ministry of Labour and Employment (Ministry of Labour and Employment, Government of India, 1948). We then map the minimum wages from these reports to the NIC 2-digit sector codes and states. We also obtain state-year information on inspections conducted under the Minimum Wages Act from the annual reports of the Labour Bureau.

To measure the local availability of organised labour intermediaries, we use establishment-level employment from the Economic Census 2013. We identify staffing firms using NIC-2008 industry codes 781 (employment placement agencies), 782 (temporary employment agencies), and 783 (human resource provision and management).

Finally, to understand the changing role of labour intermediaries, we compile information from annual reports of major staffing firms, including TeamLease and Qness, as well as publications of the Indian Staffing Federation (ISF). These sources provide descriptive evidence on the evolution of organised staffing firms, including their activities in recruitment, payroll management, statutory compliance, apprenticeship programmes, and worker training, complementing the establishment-level evidence from the ASI.

and was at 100 workers from 1999–2000 onward. Beginning in 2016–17, the ASI adopted the differentiated state-specific design described above.

4 Stylized Facts: The Transformation of Contract Labour

4.1 The Rise of Contract Labour

The share rises steadily over time (Figure 1). The share of establishments employing contract workers also increases sharply.

4.2 The Growth is Concentrated among Larger Establishments

Figure 2 reveals substantial heterogeneity in the expansion of contract labour across establishment sizes. Contract worker shares remained largely stable among establishments employing fewer than 100 workers, although firms with fewer than 50 workers exhibited a modest increase after 2019. In contrast, medium and large establishments experienced a pronounced rise in contract labour intensity after 2018. Factories employing more than 300 workers increased their contract worker ratio from around 40 percent to nearly 47 percent. The concentration of growth among larger establishments suggests that contract labour increasingly reflects workforce management strategies and the growing role of organised staffing intermediaries rather than regulatory evasion.

4.3 Broad-based Adoption Across Manufacturing

The rise in contract labour was widespread across many industries. This pattern is also evident in the industry heat map presented in Figure 3. The industries are arranged on the vertical axis in ascending order of their average contract worker share in 2023, and the horizontal axis tracks the evolution of contract labour intensity over time. Although industries such as non-metallic minerals, motor vehicles, and pharmaceuticals consistently exhibit relatively high contract labour intensity, the heat map reveals that virtually every manufacturing industry experienced an increase in contract worker shares over the sample period. Even traditionally low-contract-intensity industries, such as textiles, leather products, printing, and machinery, display a noticeable upward shift in contract labour use. The rise of

contract labour was a broad-based phenomenon that permeated the entire manufacturing sector rather than being driven by a handful of contract-intensive industries.

To examine this formally, we decompose the change in the aggregate contract worker share between 2011 and 2023 into within- and between-industry components. The decomposition exercise is as follows: Let θ_{jt} denote the share of contract workers in formal manufacturing employment in industry j at time t , and let s_{jt} denote industry j 's share of total formal manufacturing employment. The aggregate contract share can be written as $\theta_t = \sum_j s_{jt} \theta_{jt}$, so that the change between any two periods satisfies the exact decomposition

$$\Delta\theta = \underbrace{\sum_j \bar{s}_j \Delta\theta_j}_{\text{Within}} + \underbrace{\sum_j \bar{\theta}_j \Delta s_j}_{\text{Between}} \quad (1)$$

where $\bar{s}_j = (s_{jt_1} + s_{jt_2})/2$ and $\bar{\theta}_j = (\theta_{jt_1} + \theta_{jt_2})/2$ are period averages. The within component captures the contribution of industries deepening their reliance on contract labour, holding industry's employment share fixed at its average; the between component captures the contribution of employment shifting towards industries that already use contract labour more intensively, holding that intensity fixed at its average. By construction, the two components sum exactly to the observed total change.

We implement equation (1) using data from the Annual Survey of Industries (ASI) for three sub-periods that span our sample: 2011–2015, 2015–2020, and 2020–2023. All employment figures are weighted by the ASI multiplier to recover population-level estimates. Table 1 reports the results. Almost the entire increase in contract labour is accounted for by the within component in each period, while the between component remains economically negligible. This suggests that the rise in contract labour is not driven by a shift of manufacturing activity towards traditionally contract-intensive industries. Rather, industries across the manufacturing sector have themselves become increasingly reliant on contract labour, pointing to a broad-based change in employment practices within Indian manufacturing.

4.4 Narrowing Wage Gap

The wage distributions of contract and regular workers increasingly overlap over time. Wage convergence is visible across establishments of all sizes.

Figure 4 documents a striking change in the relative wage position of contract workers. In the mid-2000s, the wage distribution of contract workers was substantially left-shifted relative to that of regular workers across establishments of all sizes (Panel (a)). Contract workers were concentrated at lower wage levels and earned considerably less than regular workers employed in similar establishments. By 2015 (Panel (b)), however, the wage distributions of contract and regular workers overlap substantially, especially for small (< 50) and medium (50-100) firms. By 2023 (Panel (c)), the wage convergence is visible across all establishment-size categories except very large firms (> 300). While regular workers continue to earn somewhat higher wages on average, the magnitude of the gap is considerably smaller than it was two decades earlier.

These patterns suggest that contract workers today may differ substantially from those employed in the early 2000s. Contract labour appears to be increasingly utilised in occupations and activities that command higher wages than the traditional low-skilled contract work that dominated earlier periods. More broadly, the evidence suggests that the conventional view of contract labour as an inherently low-wage segment of the workforce is becoming increasingly difficult to reconcile with the observed wage patterns in manufacturing.

4.5 Improved Minimum-Wage Compliance

Compliance with minimum wage regulations improves substantially for contract workers. Contract workers increasingly resemble regular workers in terms of wage outcomes.

We measure compliance in two ways: (i) a binary indicator equal to one if the average wage exceeds the applicable minimum wage and (ii) the Kaitz index, defined as the ratio of the difference between the factory-level average wage and the minimum wage to the minimum wage. Figure 5 shows that compliance for contract workers was low in the 2000s, but increased

for both contract and regular workers in the 2010s, and it peaked in 2020. However, post-pandemic, there was a steep drop in compliance for contract workers. The Kaitz index across the years is presented in Figure 6. The pattern shows that the depth is higher for regular workers than for contract workers in general. The index has been increasing for both contract and regular workers, with a much steeper rise in the 2010s.

4.6 Fall in Physical Inspections

The improvement in minimum wage compliance happens at a time when labour inspections per worker under the Minimum Wages Act declined sharply over time (Figure 7). Both the absolute number of inspections and inspection intensity normalised by the number of factories also fell substantially after the early 2010s (Figure A.1 and A.2). This decline coincided with a broader shift in labour administration towards simplified compliance procedures, greater reliance on self-certification and risk-based inspections, and the increasing use of electronic payroll systems, online statutory filings, and digital record-keeping, although it cannot be attributed to any single policy reform.

5 Analysis

5.1 Minimum Wage, Inspections, Wages, and Compliance

The narrowing of the wage gap between contract and regular workers raises an important question: to what extent has the improvement in contract worker wages been driven by statutory minimum wages? Since minimum wage legislation applies to both regular and contract workers, differences in wage responses across the two groups provide useful evidence on the role of minimum wage policy and labour market institutions. We therefore examine the relationship between statutory minimum wages and establishment-level wages overall at the factory level, and separately for regular and contract workers, using the following specification:

$$\log(Wage_{it}^k) = \alpha_i + \delta_{jt} + \beta^k \log(MW_{jst}) + \varepsilon_{it}, \quad (2)$$

where $Wage_{it}^k$ denotes the average daily wage in establishment i in year t , with k represents all workers, and contract or regular workers. MW_{jst} denotes the applicable minimum wage in state s , industry j , and year t . α_i and δ_{jt} represent establishment and industry-year fixed effects, respectively. We conduct the analysis for small and medium firms (below size 100), and larger firms (above size 100). Regressions are weighted by unit sampling weights, and standard errors are clustered at the state level.

Table 2 examines whether the relationship between minimum wages and wages differs by establishment size. A clear pattern emerges. Among establishments employing more than 100 workers, minimum wage revisions are transmitted primarily through contract worker wages (column 3), while the response of regular worker wages is small and statistically insignificant (column 2). In contrast, among establishments with fewer than 100 workers, minimum wage increases lead to comparable wage growth for both regular and contract workers (columns 5 and 6). These findings are consistent with the broader evidence presented in the paper. Larger establishments rely more extensively on organised contract labour and staffing in-termediaries, making contract worker wages more closely tied to statutory wage revisions. Regular worker wages in these establishments are likely to reflect a wider range of factors, in-cluding seniority, skill premia, allowances, and firm-specific pay policies, and therefore adjust less to changes in statutory minimum wages. In smaller establishments, where wage struc-tures are relatively compressed, and regular workers are also paid closer to the statutory minimum, minimum wage revisions have similar effects on both categories of workers.

Taken together, these findings suggest that the rapid expansion of contract labour has not been accompanied by deteriorating labour standards. On the contrary, contract workers have experienced significant improvements in minimum-wage compliance and have become increasingly similar to regular workers in wage outcomes.

The stronger transmission of statutory minimum wages into contract worker wages raises

a related question: Does enforcement of the Minimum Wages Act contribute to higher compliance? Statutory wage floors influence wages only to the extent that employers comply with the law, and labour inspections constitute the primary mechanism through which compliance is monitored and enforced. We therefore examine whether states with greater inspection intensity exhibit higher levels of minimum wage compliance among manufacturing establishments. Specifically, we estimate:

$$Compliance_{ist}^k = \alpha_i + \lambda_t + \beta^k Inspect_{st} + \varepsilon_{ist}, \quad (3)$$

where $Compliance_{ist}^k$ denotes the minimum wage compliance measure for worker category $k \in \{\text{Regular, Contract}\}$ in establishment i , state s , and year t . We consider both the binary measure of compliance and the Kaitz index. $Inspect_{st}$ denotes the intensity of minimum wage inspections in state s and year t , measured as inspections per worker (or per factory). The coefficient β^k captures the association between enforcement intensity and minimum wage compliance for regular and contract workers. Regressions are weighted by unit sampling weights, and standard errors are clustered at the state level.

Table 3 examines whether labour inspections are associated with minimum wage compliance. We find that greater inspection intensity is associated with higher compliance among regular workers, particularly during the post-2013 period. In contrast, the corresponding estimates for contract workers are positive but generally imprecisely estimated. These results suggest that while inspections remain an important enforcement mechanism, improvements in compliance among contract workers are unlikely to have been driven solely by greater inspection activity.

This is not surprising because, as shown earlier in Figure 7, inspection intensity under the Minimum Wages Act declined substantially over the same period. The simultaneous improvement in compliance therefore points to the role of other forces, including changes in workforce composition, increasing formalisation of employment, and the growing use of organised staffing intermediaries that facilitate payroll administration and statutory compli-

ance. We investigate these potential mechanisms in the following sections.

5.2 Skill Upgrading

A common view of contract labour in India is that it is concentrated in low-skill, labour-intensive activities and is primarily used to reduce labour costs. However, the substantial narrowing of the wage gap between contract and regular workers documented above raises the possibility that the nature of contract labour has itself changed. Higher wages may reflect not only improved compliance with labour regulations but also changes in the composition of contract workers, with firms increasingly employing more skilled workers through contract arrangements. We therefore examine whether the observed increase in contract labour has been accompanied by skill upgrading.

First, we test if the contract share has increased in technologically dominant industries. For this, we follow the OECD classification (low, medium-low, medium-high, and high-technology), and depict the share of contract workers across these groups over time in a heat map (Figure 8). Medium-low, medium-high, and high-technology industries exhibit substantial increases in contract worker shares over time. While contract employment has also increased in low-technology industries, the pace of growth has generally been slower.⁵

Industry-level evidence, however, does not necessarily imply that contract workers are increasingly employed by more technologically advanced establishments within those industries. We therefore turn to establishment-level measures of capital intensity and productivity to examine whether the relationship between contract labour and firm characteristics has changed over time. Historically, contract workers have been concentrated in relatively labour-intensive and less productive establishments, giving rise to a negative association between contract worker shares and measures of capital intensity and productivity. To assess whether this relationship has evolved, we estimate the following specification:

⁵This mirrors some industry-specific results we saw earlier in Figure 3 where the rise in contract share was broad-based but the increase has been particularly pronounced in technologically advanced sectors such as motor vehicles, pharmaceuticals, chemicals, electrical equipment, and non-metallic minerals, all of which are relatively capital-intensive industries.

$$CWShare_{it} = \alpha_i + \sum_{\tau=2001}^{2023} \beta_{\tau} (\log X_{it} \times \mathbf{1}\{t = \tau\}) + \varepsilon_{it}, \quad (4)$$

where $CWShare_{it}$ is the contract worker share of establishment i in year t , and X_{it} is alternatively plant and machinery per worker, total capital excluding land and working capital per worker, total capital per worker, or output per worker. Regressions are weighted by unit sampling weights, and standard errors are clustered at the factory level. Figure 9 plots the year-specific coefficients, β_{τ} . Historically, establishments with higher contract worker shares tended to be less capital-intensive, as reflected in the strongly negative coefficients during the early 2000s. Over time, however, this relationship weakens markedly. The association between contract worker shares and plant and machinery per worker (Panel A), total capital excluding land and working capital per worker (Panel B), and total capital per worker (Panel C) becomes progressively less negative, indicating that contract labour has increasingly been employed by more capital-intensive establishments. A similar pattern is observed for labour productivity. The relationship between contract worker shares and output per worker strengthens steadily over time (Panel D), suggesting that contract labour has become increasingly concentrated in more productive firms. Together with the evidence from technologically advanced industries, these results indicate that the expansion of contract labour has increasingly occurred in establishments characterised by higher capital intensity, greater productivity, and more advanced production technologies.

The regression evidence in Table 4 also corroborates these patterns. We now interact measures of capital intensity and time trends based on the following equation. Regressions are weighted by unit sampling weights, and standard errors are clustered at the factory level.

$$CWShare_{it} = \alpha_i + \lambda_t + \sum_{\tau=2001}^{2023} \beta (\log X_{it} \times t) + \varepsilon_{it}, \quad (5)$$

β is positive and statistically significant across all specifications. The estimates indicate that establishments with higher levels of capital intensity and productivity have experienced

disproportionately larger increases in contract worker shares over time.

The preceding results suggest that contract labour is increasingly concentrated in more technologically advanced, capital-intensive, and productive establishments. If this reflects a genuine upgrading in the nature of contract employment, establishments that rely more heavily on contract workers should also exhibit smaller wage differentials between contract and regular workers. We therefore examine the relationship between contract worker intensity and within-establishment wage gaps using the following specification:

$$\log(WageGap_{it}) = \alpha_i + \lambda_t + \delta_{jt} + \beta CWShare_{it} + \varepsilon_{it}, \quad (6)$$

where $WageGap_{it}$ is the ratio of average regular worker wages to average contract worker wages in establishment i and year t . Regressions are weighted by unit sampling weights, and standard errors are clustered at the firm level. The results are in Table 5. The estimated coefficient on contract worker share is negative, indicating that establishments relying more heavily on contract labour exhibit significantly smaller wage differentials between regular and contract workers. These results hold even after controlling for industry-year fixed effects. This finding is consistent with the view that contract workers are increasingly employed in more skill-intensive and productive activities, resulting in greater wage parity with regular workers.

The preceding evidence is consistent with the evolving role of organised staffing firms in India. Rather than merely supplying temporary labour, staffing firms increasingly provide recruitment, matching, payroll administration, statutory compliance, apprenticeship management, and workforce management services. They also play an expanding role in skill formation and worker upgrading. Evidence from the annual reports of leading staffing firms supports this view.⁶

⁶Annual reports are available for multiple years. For example, TeamLease annual reports include *TeamLease Annual Report 2022–2023*, *TeamLease Annual Report 2023–2024*, and *TeamLease Annual Report 2024–2025*; Quess annual reports include *Quess Corp Annual Report 2021–2022*, *Quess Corp Annual Report 2022–2023*, and *Quess Corp Annual Report 2023–2024*. TeamLease’s National Employability through Apprenticeship Program (NETAP) has expanded steadily over time, while Quess reports a substantial increase

5.3 Labour Reforms

5.3.1 Fixed Term Employment Reforms

One reason contract labour may have continued to expand is that firms had few legal alternatives for hiring temporary workers. Fixed-term employment (FTE) provisions weakened this constraint. The reform allowed establishments to hire workers directly for a fixed duration and reduced separation costs by allowing the employment relationship to end at the expiry of the contract. At the same time, fixed-term workers were entitled to wages and statutory benefits at par with comparable permanent workers. The reform therefore, relaxed one margin of rigidity, the cost of adjustment and termination, but did not create a lower-wage employment category. If contract labour was primarily a response to firing costs and the difficulty of adjusting regular employment, the introduction of FTE should have reduced firms' reliance on contract workers, particularly among establishments for whom workforce adjustment costs were more likely to bind. If, however, contract labour was also attractive because it lowered the effective wage bill or because contractors provided labour-market intermediation services, the reform may not induce substitution away from contract labour.

We examine the impact of sector-specific introduction of FTE in apparel on employment outcomes. The reform was first introduced for the apparel sector in 2016 before being extended broadly to the entire manufacturing sector in 2018. We therefore compare establishments in apparel, corresponding to NIC-2008 code 14, with establishments in other manufacturing industries before and after the reform using variants of the following specifications:

$$Y_{ijt} = \alpha_i + \lambda_t + \beta_1 FTE_{jt} + \varepsilon_{ijt}. \quad (7)$$

in average employee training hours. Figures A.5 and A.6 summarise these trends

$$Y_{ijt} = \alpha_i + \lambda_t + \beta_1 FTE_{jt} + \beta_2 (FTE_{jt} \times Medium_i) + \beta_3 (FTE_{jt} \times Large_i) + \varepsilon_{ijt}. \quad (8)$$

Here, Y_{ijt} is alternatively log of total workers, log of regular workers, log of contract workers, or the contract worker share in establishment i , industry j , and year t . FTE_{jt} is equal to one for apparel establishments in the post-reform period. The sample is restricted to the survey year 2017-18 as the FTE reform was expanded to all sectors in 2018. $Medium_i$ denotes establishments with 50–99 regular workers in the pre-reform period, while $Large_i$ denotes establishments with at least 100 regular workers in the pre-reform period. The establishment fixed effect α_i absorbs time-invariant differences across factories, while λ_t absorbs unobserved annual macroeconomic shocks common to all firms. We also include size-specific year effects to control for differential time-varying shocks to establishments of different pre-period sizes. In the more demanding specification, we also include sector-by-year fixed effects, so that identification comes from differential changes between medium and large apparel establishments relative to similarly sized establishments in other manufacturing industries. Regressions are weighted by the unit-level sampling weights, and standard errors are clustered at the industry (NIC 4-digit) level.

Table 6 reports the results. In the baseline specification, the apparel sector exhibits an increase in total employment (column 1) and regular employment (column 2) after the introduction of FTE. There is, however, no corresponding increase in contract employment or decline in the contract worker share (columns 3 and 4, respectively). The coefficient on log contract workers is small and statistically insignificant, and the coefficient on the contract worker share is essentially zero.

The size-specific estimates are more directly informative about whether FTE relaxed employment adjustment constraints for establishments most likely to be affected by labour regulation. Across both specifications, the interactions of FTE with medium and large estab-

lishments are small and statistically indistinguishable from zero for all employment outcomes (columns 5 to 6). Given that the restrictions on firing workers apply to the medium and large firms, this suggests that the positive effects on overall and regular employment in columns (1) and (2) were likely driven by differential trends in employment for the apparel sector and not due to the FTE reform. Further, the point estimates for contract labour outcomes are negative but small in magnitude and statistically insignificant, suggesting no evidence of a meaningful shift away from contractor-mediated employment in response to FTE reforms.

These results are important for interpreting the post-2016 rise in contract labour. FTE reduced firing and adjustment costs for direct employment by allowing firms to use time-bound contracts. If contract labour was used only because regular employment was difficult to terminate, the reform should have reduced contract worker shares in apparel for the medium and large firms. We do not find such an effect.

One potential explanation for these results is that FTE and contract labour relax different constraints. FTE reduces separation costs but preserves parity in wages and statutory benefits with comparable regular workers. Contract labour, by contrast, may remain attractive when it lowers the effective labour cost per worker, either through lower pay relative to regular workers or through the outsourcing of non-wage costs associated with recruitment, payroll, compliance, and workforce management. The absence of substitution, therefore, suggests that the demand for contract labour cannot be explained solely by firing costs. Contract labour appears to combine adjustment flexibility, wage-cost advantages, and organisational services. These margins need not be replicated by FTE contracts.

5.3.2 IDA

We next examine state-level amendments to the Industrial Disputes Act (IDA). Prior government permission for retrenchment, layoff, and closure historically applied to establishments above the statutory employment threshold of 100 workers. Several states amended the IDA by raising the relevant threshold, thereby reducing firing costs and employment adjustment

constraints for establishments below the new cutoff of 300 workers. These reforms should have made regular employment less costly to adjust. If the growth of contract labour was driven by firms' attempts to avoid the firing costs associated with regular employment, as it is understood traditionally, IDA threshold reforms should have increased regular employment and reduced contract worker shares, particularly among establishments in the size range newly exempted from the prior-permission requirement.

We estimate the effect of IDA reforms using a stacked difference-in-differences design. For each reform cohort g , we construct a stack containing states that implemented the reform in year g and states that had not implemented an IDA threshold reform during the sample period. We then append these cohort-specific stacks. The main specification is

$$Y_{isjtg} = \alpha_{ig} + \delta_{jtg} + \beta IDA_{sgt} + \varepsilon_{isjtg}, \quad (9)$$

where Y_{isjtg} is an employment outcome for establishment i , in state s , industry j , year t , and reform stack g . The variable IDA_{sgt} is equal to one for treated states in the post-reform period of stack g . The term α_{ig} denotes establishment-by-stack fixed effects, and δ_{jtg} denotes industry-by-year-by-stack fixed effects. These fixed effects compare establishments within the same reform stack while allowing each industry to have its own time path within that stack. We also include state-by-stack linear time trends. Regressions are weighted by the unit-level sampling weights, and standard errors are clustered at the state level.

Table 7 reports the results. The coefficients are close to zero across all outcomes and statistically insignificant. These results suggest that IDA threshold reforms did not increase regular employment or reduced reliance on contract workers. The point estimate for the contract worker share is negative, as the firing-cost channel would predict, but it is also economically small and statistically insignificant, suggesting no significant decline in contract share of employment due to these amendments.

The absence of an average effect could mask heterogeneity by establishment size. The IDA threshold changes are most directly relevant for establishments whose employment lies

between the old and new thresholds. We therefore estimate a size-specific specification:

$$Y_{isjtg} = \alpha_{ig} + \delta_{jtg} + \beta_1 IDA_{sgt} + \beta_2 (IDA_{sgt} \times Workers(100-299)_i) + \varepsilon_{isjtg}, \quad (10)$$

where $Workers(100-299)_i$ is an indicator for establishments with 100–299 regular workers in the pre-period. We also estimate a more saturated version that replaces state-by-stack linear trends with state-by-year-by-stack fixed effects. In that specification, the main state-level IDA effect is absorbed, and identification comes from differential changes among establishments in the 100–299 worker range within the same state-year-reform stack. Apart from stack-firm and stack-industry-year fixed effects, the specifications also control for time-varying shocks to firms with pre-reform employment between 100-299 by interacting $Workers(100-299)_i$ with year fixed effects.

Table 8 shows no evidence of a differential response among establishments in the 100–299 worker range. The interaction between IDA reform and the 100–299 worker category is small and statistically insignificant across outcomes and specifications. Thus, even among establishments for whom the reform most directly reduced firing costs, we do not observe a shift towards regular employment or away from contract labour.

While these results report the average effect of the threshold amendments, but they leave two issues unresolved. First, the absence of an average effect in response to the amendments may conceal adjustment dynamics. Firms may respond gradually if employment contracts, production plans, or hiring adjust with a lag. Alternatively, firms may anticipate reforms and change employment before the formal reform year. Second, the credibility of the stacked difference-in-differences design depends on the treated and control establishments following similar trajectories in outcomes before the amendment, after conditioning on the fixed effects and state-specific trends. We therefore estimate event-study specifications that replace the post-reform treatment indicator with a set of leads and lags around the reform year. These estimates provide both a pre-trend diagnostic and a description of the timing of any employment response.

First, we estimate the event study specification corresponding to Equation (9) as follows:

$$Y_{isjtg} = \alpha_{ig} + \delta_{jtg} + \sum_{\tau=-6, \tau \neq -1}^4 \beta_{\tau} D_{sgt}^{\tau} + \varepsilon_{isjtg}, \quad (11)$$

where D_{sgt}^{τ} is an indicator equal to one for treated states in reform stack g when year t is τ years from the reform year. The omitted period is $\tau = -1$, the year immediately preceding the reform. The event window runs from six years before the reform to four years after the reform. As in the main specification, the model includes establishment-by-stack fixed effects, industry-by-year-by-stack fixed effects, and state-by-stack linear trends.

Figure 10 reports the estimates from equation (11). The dynamic patterns do not indicate a break at the reform date. For both log total workers and log regular workers, the post-reform coefficients are close to zero and imprecisely estimated. There is no sustained expansion of direct employment after the reduction in firing costs. The contract worker share also does not fall after the reform. The coefficients fluctuate around zero, with a small positive movement in later post-reform years, but the confidence intervals are wide. The pre-reform coefficients are also imprecisely estimated and do not point to pre-trends that would explain the null post-reform result. Overall, the event-study evidence is consistent with the findings in Table 7 that IDA threshold amendments do not generate a detectable increase in regular workers or substitution away from contract labour for firms.

We then examine whether the dynamic response is concentrated among establishments for whom the IDA threshold change should be most relevant. The threshold amendments reduce firing costs most directly for establishments with 100–299 regular workers in the pre-period. The average event-study specification may miss this response if smaller and larger establishments are less exposed to the change in the statutory prior-permission requirement. To isolate this margin, we interact the event-time indicators with the indicator for establish-

ments in the 100–299 worker range and estimate

$$Y_{isjtg} = \alpha_{ig} + \delta_{jtg} + \lambda_{sgt} + \sum_{\tau=-6, \tau \neq -1}^4 \theta_{\tau} (D_{sgt}^{\tau} \times Workers(100-299)_i) + \varepsilon_{isjtg}, \quad (12)$$

Here, λ_{sgt} denotes state-by-year-by-stack fixed effects. This specification is therefore identified from within-state-year comparisons between establishments in the newly exempted size range, i.e., 100-299 regular workers and other establishments in the same state, year, and reform stack.

Figure 11 reports the event-study estimates. The figure again shows no sharp change at the reform date. For log workers and log regular workers, the coefficients remain negative or close to zero in the first post-reform years and do not indicate an expansion of direct employment among establishments in the 100–299 worker range. The contract worker share also does not display the decline that would be expected if the newly exempted establishments substituted regular workers for contract workers after firing costs fell. There is some positive movement in later post-reform years, but the estimates are noisy and the pattern is not consistent with a sustained reduction in contract labour. The dynamic evidence therefore reinforces the findings in Table 8 that the establishments most directly affected by the threshold amendments do not differentially move away from contractor-mediated employment or increase regular employment.

Taken together, the findings from the analysis of FTE and IDA amendments suggest that the often cited firing-cost channel is unlikely to explain the recent growth of contract labour. Both reforms reduced the cost of adjusting direct employment. FTE allowed firms to hire workers on fixed-duration contracts, while IDA threshold amendments reduced the firing costs associated with retrenchment, layoff, and closure for establishments below the revised thresholds. Yet neither reform generated a detectable decline in contract worker shares. This pattern suggests that contract labour is not used only because regular employment is difficult to terminate. It may also remain attractive because contract workers are paid less

than comparable regular workers, because contractors absorb parts of the administrative and compliance burden, and because staffing firms provide recruitment, payroll, deployment, and workforce management services. The evidence therefore points to a broader interpretation that contract labour has become embedded in a labour intermediation system that combines lower adjustment costs, potential wage-cost advantages, and organisational services.

5.4 The Labour Intermediation Market

The previous section showed that reforms that increased flexibility in direct hiring, including amendments to the Industrial Disputes Act and the introduction of fixed-term employment, did not reduce firms' reliance on contract labour. This suggests that the continued expansion of contract employment cannot be explained solely by firms' demand for labour flexibility. Instead, the growing role of organised labour intermediaries may have become an increasingly important driver of contract employment. If staffing firms now provide recruitment, payroll administration, statutory compliance, training, and workforce management services in addition to labour supply, firms may continue to rely on contract workers even as direct hiring becomes more flexible.

We first document the rapid growth of the organised staffing industry using data from the Indian Staffing Federation (ISF). Figure A.3 shows that the formal contract workforce increased from 1.56 million workers in 2013 to 6.83 million workers in 2025. Over the same period, annual salaries paid through staffing firms increased from INR 180 billion to INR 1,470 billion (Figure A.4). Annual reports also show a steady increase in social security and fiscal contributions as a share of salaries, particularly after 2018, consistent with the increasing formalisation of organised staffing employment.

The rapid expansion of the staffing industry, however, does not by itself establish that organised labour intermediaries contributed to the growth of contract labour. To examine this more directly, we exploit state-level amendments to the Contract Labour (Regulation and Abolition) Act (CLA). Unlike the Industrial Disputes Act, which governs the hiring

and retrenchment of regular workers, the CLA regulates the operation of labour contractors through registration and licensing requirements for both principal employers and contractors. Reforms to the Act therefore provide a useful setting to test whether reducing regulatory frictions faced by labour intermediaries facilitated the expansion of contract labour, particularly in areas where organised staffing firms were already present. Beginning with Rajasthan in 2014, several states progressively relaxed the applicability threshold of the Contract Labour (Regulation and Abolition) Act (CLA) by increasing the minimum establishment size covered by the Act from 20 to 50 workers. The reform subsequently spread across states in a staggered manner, with most states adopting the amendment by 2020 (Goldar, 2024).

We examine whether districts with greater pre-existing access to the staffing industry responded differently to these reforms. To capture the local availability of labour intermediation services, we construct a district-level measure of staffing exposure using employment in staffing industries (NIC-2008 codes: 781, 782, and 783) from the Economic Census 2013.⁷ Following Bertrand et al., 2025, we aggregate staffing employment into a distance-weighted district-level measure of staffing exposure, capturing firms' access to nearby labour intermediaries. This helps isolate the supply of staffing plants, uncorrelated with demand-side forces that may have spurred the growth of the sector. The measure is as follows:

$$StaffingExposure_d = \sum_{k \neq d} e^{-\kappa dist_{kd}} L_{k,2013}^{Staffing}, \quad (13)$$

where $dist_{kd}$ denotes the distance between district centroids and $L_{k,2013}^{Staffing}$ is staffing employment in district k .

We estimate the following equation at the district - industry - year level:

$$Y_{djt} = \alpha_s + \delta_{jt} + \beta(\log(StaffingExposure_d) \times CLA_{st}) + \varepsilon_{djt}, \quad (14)$$

⁷The NIC 2008 codes refer to the following: 781 – “Activities of employment placement agencies”; 782 – “Temporary employment agency activities”; 783 – “Human resources provision and management of human resources functions”

where Y_{djt} are contract labour related outcomes at district d , industry j and time t . CLA_{st} is a state-time varying dummy variable that takes the value 1 if a state s implemented the amendment in time t . α_s indicates state fixed effects. Standard errors are clustered at the district level.

Table 9 presents the results. Districts with greater staffing exposure in the baseline experienced larger increases in contract worker shares following the reforms (columns 1 and 5). The effects are economically meaningful and extend to the extensive margin: establishments in high-exposure districts were significantly more likely to employ contract workers for more than 25, 50, and 75 percent of their workforce (columns 2–4 and 6–8).

The CLA regulates not only principal employers but also the licensing and operation of labour contractors. Raising the applicability threshold, therefore, reduced compliance costs for both manufacturing establishments and labour intermediaries. The stronger response in districts with a larger pre-existing staffing presence suggests that organised staffing firms were particularly well positioned to expand contract labour supply once these regulatory frictions were relaxed. Viewed together with the evidence on rising wages, improving compliance, and increasing skill intensity among contract workers, the findings point to an important role for labour intermediaries in shaping the growth of contract labour in Indian manufacturing.

5.5 Formalization and Contract Labour

Figure 1 shows that the share of contract workers increased particularly rapidly after 2016. This period also coincided with several labour market reforms aimed at increasing flexibility in direct employment, including the introduction of Fixed-Term Employment (FTE) contracts and state-level amendments to the Industrial Disputes Act that relaxed retrenchment and closure provisions for regular workers. If firms relied on contract labour primarily to circumvent rigid employment protection, these reforms should have reduced the relative attractiveness of contract hiring. Yet contract labour continued to expand rapidly.

The persistence of this trend suggests that factors beyond labour market flexibility con-

tributed to the growing use of contract workers. We hypothesize that the increasing formalisation of the Indian economy raised the demand for organised labour intermediation. Over the past decade, firms have faced progressively greater requirements relating to payroll administration, statutory compliance, record-keeping, digital reporting, and social security contributions. Developments such as the introduction of GST, the expansion of EPFO and ESI coverage, greater use of digital wage payments, and the rollout of e-Shram are all part of a broader shift towards a more compliance-intensive business environment. Rather than managing these administrative and regulatory responsibilities in-house, firms may increasingly outsource workforce management to organised staffing firms that specialise in recruitment, payroll administration, statutory compliance, and human resource management. Such outsourcing is likely to be particularly valuable for larger establishments, where the scale and complexity of workforce management are substantially greater.

To examine this hypothesis, we exploit variation in firms' exposure to GST-induced formalisation following Patnaik (2026). Under the pre-GST regime, firms differed substantially in the extent to which cascading indirect taxes were embedded in their production costs because many taxes were not creditable across jurisdictions and stages of production. Following Patnaik (2026), we measure this exposure as the ratio of indirect taxes paid to raw material expenditures during the pre-reform period (2011–2016). Firms with higher exposure stood to benefit more from GST's unified input tax credit system and therefore faced stronger incentives to formalise transactions, maintain documentation, and transact with registered suppliers. We classify firms according to their pre-GST exposure and examine whether firms with greater exposure experienced larger post-2017 increases in contract worker shares. If formalisation increased the demand for organised labour intermediation, these firms should exhibit a stronger increase in the use of contract labour following the introduction of GST

$$GSTExposure_i = \frac{1}{6} \sum_{t=2011}^{2016} \frac{IndirectTaxes_{it}}{RawMaterials_{it}}, \quad (15)$$

where $IndirectTaxes_{it}$ denotes indirect taxes paid by establishment i in year t , and

$RawMaterials_{it}$ denotes expenditures on raw materials. The measure is constructed as the average ratio of indirect taxes to raw material expenditures over the pre-GST period, 2011–2016. Following Patnaik (2026), this measure captures the extent of tax cascading faced by establishments prior to GST. Establishments with higher values of $GSTExposure_i$ were more exposed to the distortions of the pre-GST indirect tax system and therefore stood to benefit more from GST’s unified input tax credit mechanism.

We estimate the following equation:

$$Y_{it} = \alpha_i + \delta_{st} + \mu_{jt} + \rho_{b(i)t} + \sum_{\tau=2011, \tau \neq 2016}^{2023} \beta_{\tau} (HighGSTExposure_i \times \mathbf{1}\{t = \tau\}) + \varepsilon_{it}, \quad (16)$$

where Y_{it} is the contract worker share for establishment i in year t . $HighGSTExposure_i$ is an indicator equal to one if the establishment’s pre-GST exposure lies above the median of the exposure distribution and zero otherwise. The omitted year is 2016, the last pre-GST year. α_i denote establishment fixed effects. δ_{st} denotes state-by-year fixed effects, μ_{jt} denotes four-digit industry-by-year fixed effects, and $\rho_{b(i)t}$ denotes baseline (pre-2017) firm-size-bin-by-year fixed effects, where baseline firm size is measured before the introduction of GST. Regressions are weighted by the unit-level sampling weights, and standard errors are clustered at the factory level. The coefficients β_{τ} trace the evolution of differences in outcomes between high- and low-exposure establishments in each year between 2011 and 2023, relative to the baseline year 2016.

Figure 12 presents the estimated event-study coefficients. There is little evidence of differential pre-trends prior to the introduction of GST, supporting the identifying assumption. Following GST implementation in 2017, establishments with greater pre-GST exposure experienced a discrete and persistent increase in contract worker shares of approximately 2–3 percentage points relative to less exposed establishments.

While GST did not directly change labour regulations, it substantially increased firms’ incentives to formalise transactions, maintain documentation, and comply with tax and re-

porting requirements. The results are consistent with the hypothesis that these changes increased the value of organised labour intermediaries capable of managing payroll administration, statutory deductions, regulatory compliance, and other workforce management functions. Viewed alongside the earlier evidence on staffing firms and the Contract Labour Act reforms, the findings suggest that the continued expansion of contract labour reflects not only labour market flexibility but also firms' increasing demand for specialised labour intermediation in a more formal and compliance-intensive economic environment.

6 Conclusion

We document a substantial change in the role of contract labour in Indian manufacturing. Contract workers now account for a large and rising share of employment in organised manufacturing. This increase is not driven by a shift of activity toward traditionally contract-intensive industries. It is instead a broad within-industry change in the organisation of employment. The rise of contract labour is concentrated among larger, more productive, and more capital-intensive establishments and increasingly in technologically advanced industries. At the same time, the wage gap between regular and contract workers has narrowed, and minimum-wage compliance among contract workers has improved. These facts suggest that contract labour has moved beyond its traditional characterization as a peripheral and purely low-wage segment of manufacturing employment.

The earlier expansion of contract labour was shaped by the costs of adjusting regular employment, and firing restrictions remain an important feature of the institutional environment. However, the evidence from analyzing two major policy changes that reduced firing costs for firms points to a different conclusion: firing costs are not sufficient to explain the continued growth of contract labour in the recent period. Even when firms received more flexible instruments for direct employment, they did not move away from contractor-mediated labour. Contract labour may lower effective labour costs relative to regular or fixed-term

employment, and staffing firms may provide recruitment, payroll, compliance, deployment, and workforce-management services that are valuable in their own right.

The evidence on staffing firms and formalization supports this interpretation. Districts with stronger pre-existing staffing ecosystems experienced larger increases in contract labour following reforms to the Contract Labour Act. Firms more exposed to GST-induced formalization also increased their use of contract labour after 2017. These patterns suggest that organised labour intermediation and formalization can be complementary. As firms face greater compliance requirements and more complex workforce-management needs, intermediaries can become more valuable.

As contract labour is increasingly embedded in an organised intermediation system, policy must distinguish between the productive services provided by intermediaries and the risks borne by workers. The relevant regulatory challenge is to preserve worker protections while improving transparency and accountability in staffing arrangements. This includes enforcing wage and benefit obligations, clarifying liability across principal employers and contractors, and ensuring that the growth of organised staffing does not depend on evasion of statutory protections.

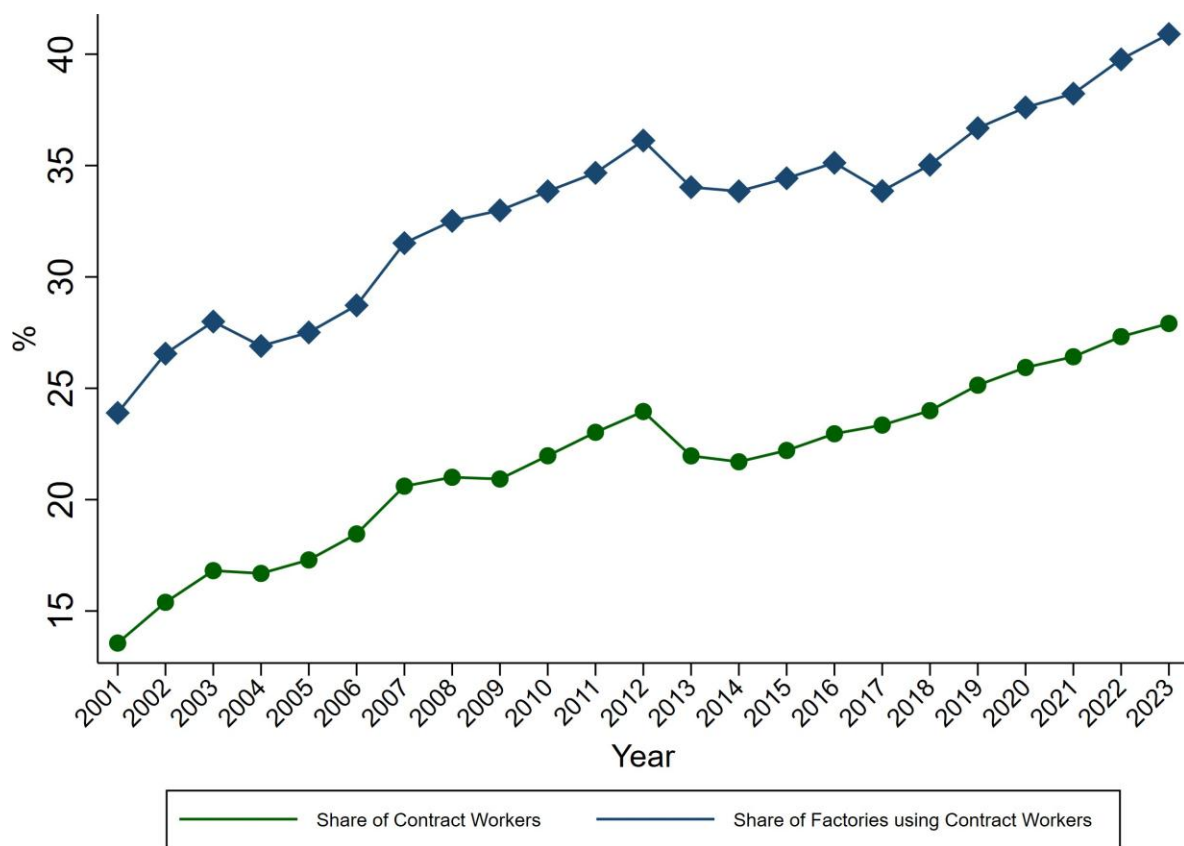
Contract labour in Indian manufacturing has become part of a wider reorganization of work, in which firms combine flexibility, cost management, compliance, and intermediation. Understanding this transformation is essential for designing labour regulation that protects workers without ignoring the organisational functions that intermediaries now perform.

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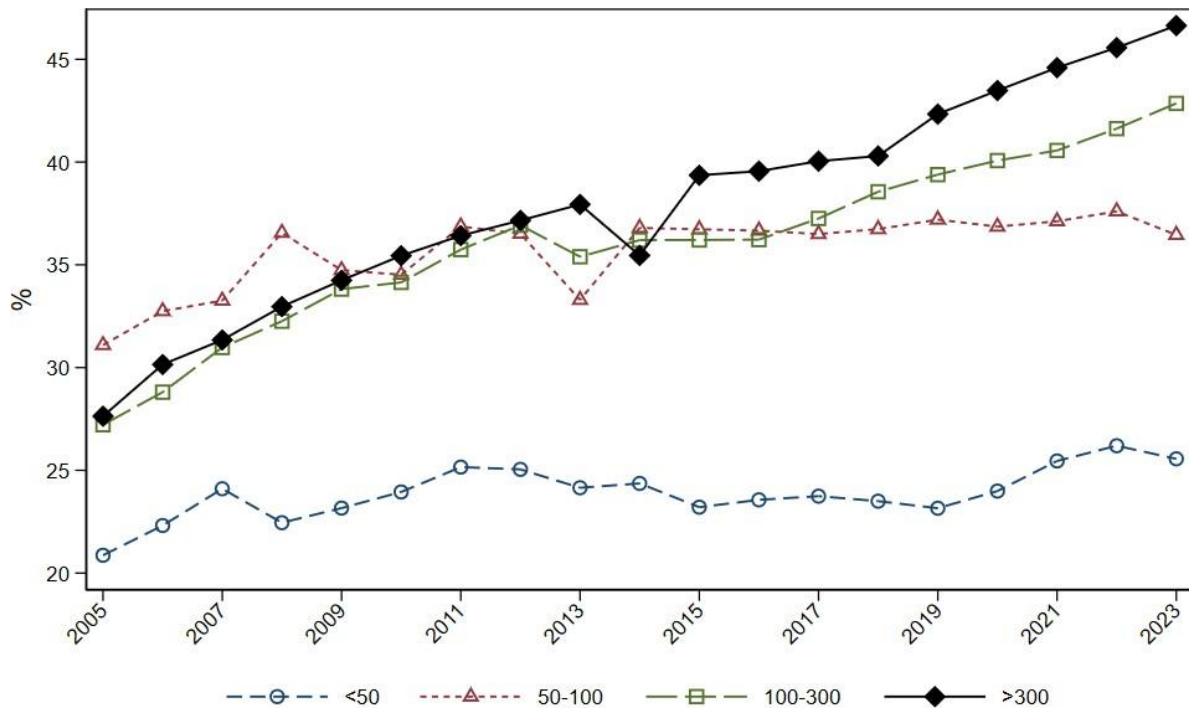
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Figure 1: Contract Workers Share Over Time



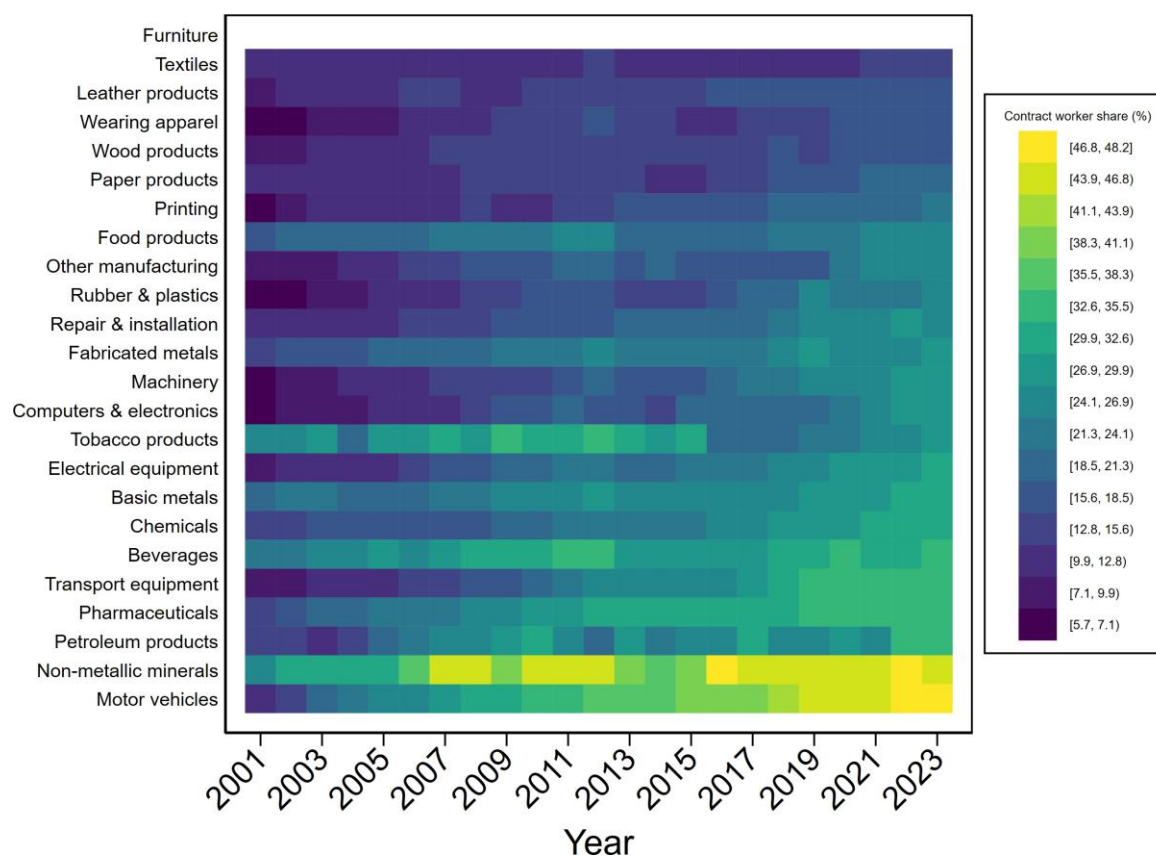
Notes: The figure plots the share of contract workers in total employment, and the proportion of factories using contract labour. Data source: Annual Survey of Industries (ASI).

Figure 2: Contract Workers Share, by Size



Note: The figure plots the share of contract workers in total employment separately for four establishment size categories, defined by total number of workers in the factory: fewer than 50, 50–100, 100–300, and more than 300. Data source: Annual Survey of Industries(ASI).

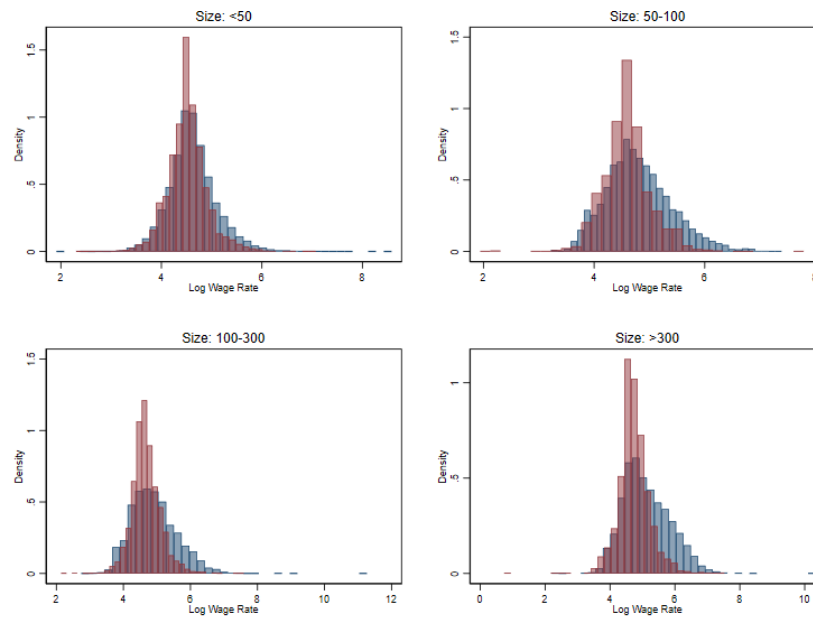
Figure 3: Contract Labour Share heatmap by Industry Classification



Notes: The figure presents a heatmap of the share of contract workers in total employment (contract and regular workers combined) across NIC-2008 two-digit manufacturing industries. The variables are constructed from the Annual Survey of Industries (ASI).

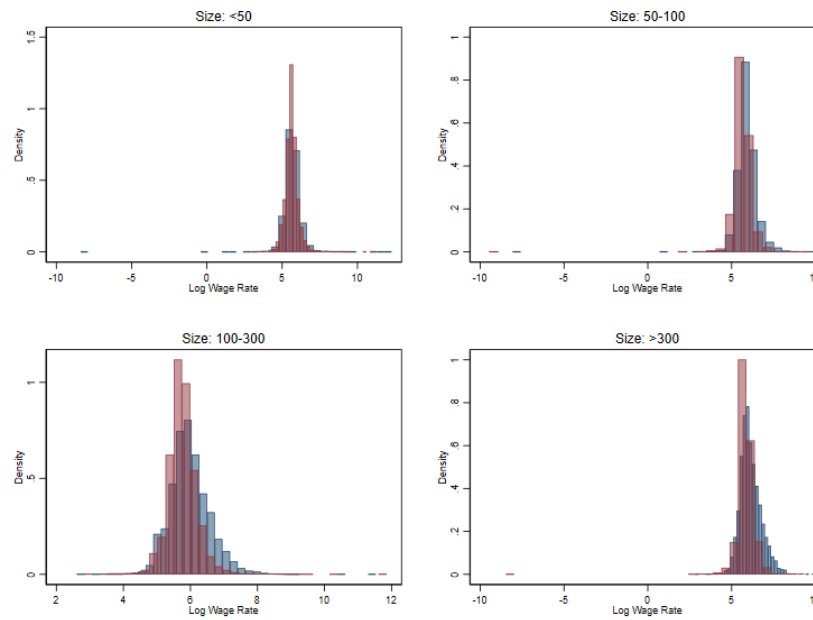
Figure 4: Distribution of Wages

(a) 2005



Navy = Regular Wages | Maroon = Contract Wages

(b) 2015

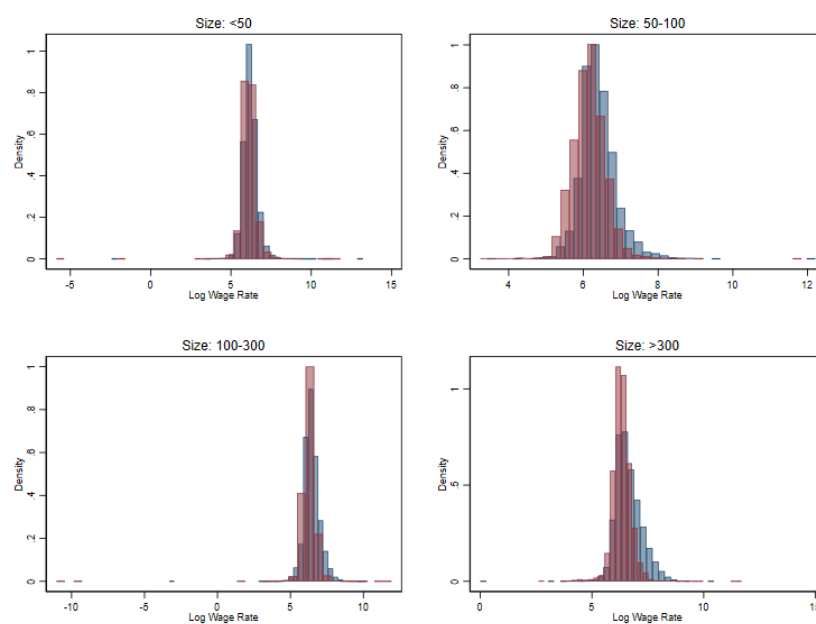


Navy = Regular Wages | Maroon = Contract Wages

Notes: Overlapping histograms of the log daily wage rate for regular and contract workers by establishment size category (fewer than 50, 50–100, 100–300, and more than 300 workers). The log daily wage rate is total wage payments divided by man-days worked, computed separately for each worker type.

Figure 4: Distribution of Wages (continued)

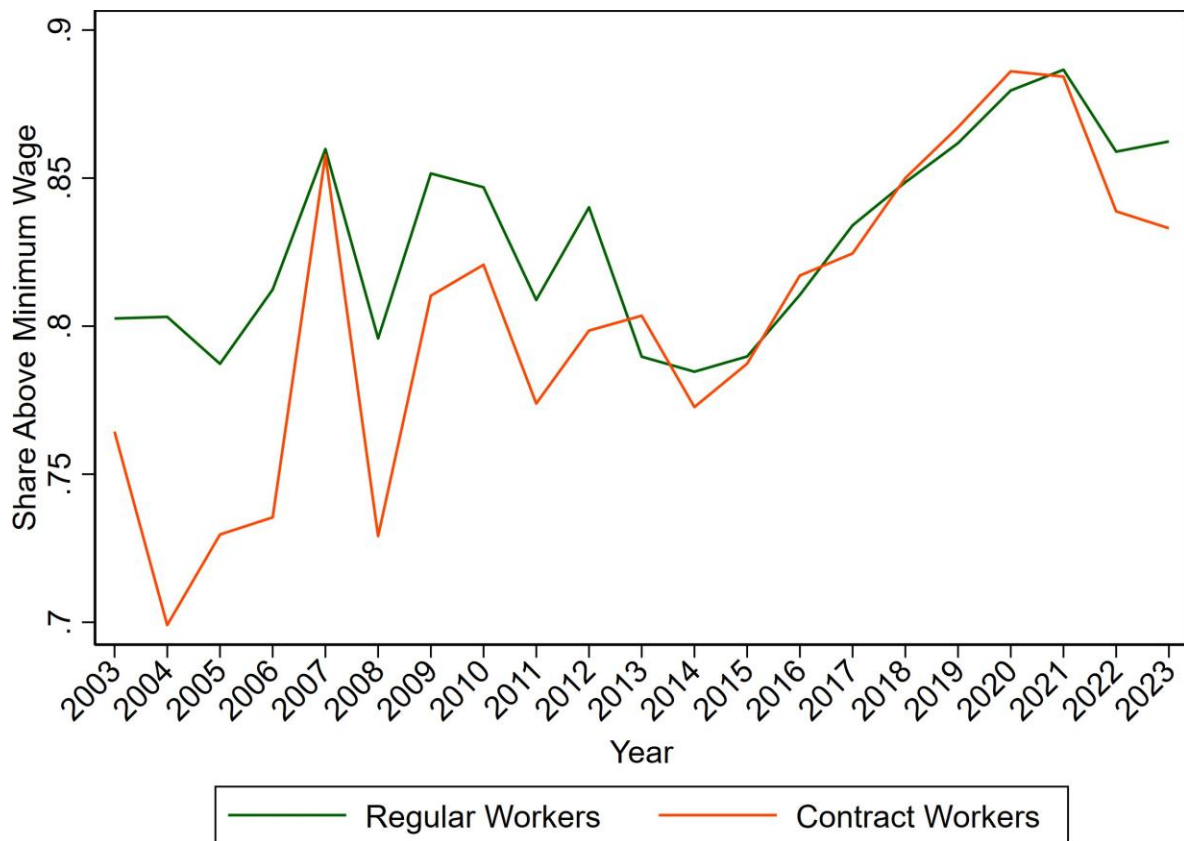
(c) 2023



Navy = Regular Wages | Maroon = Contract Wages

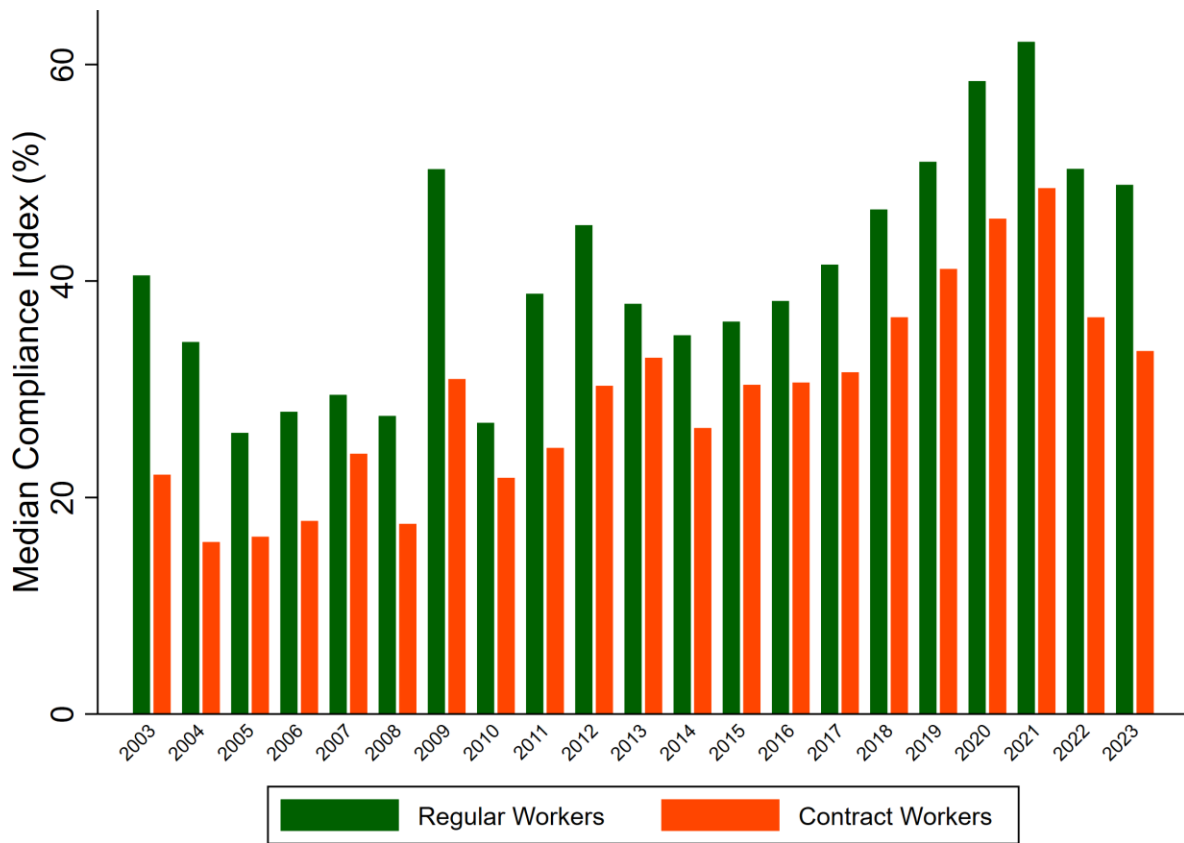
Notes: Overlapping histograms of the log daily wage rate for regular and contract workers by establishment size category (fewer than 50, 50–100, 100–300, and more than 300 workers). The log daily wage rate is total wage payments divided by man-days worked, computed separately for each worker type.

Figure 5: Compliance with Minimum Wage over time



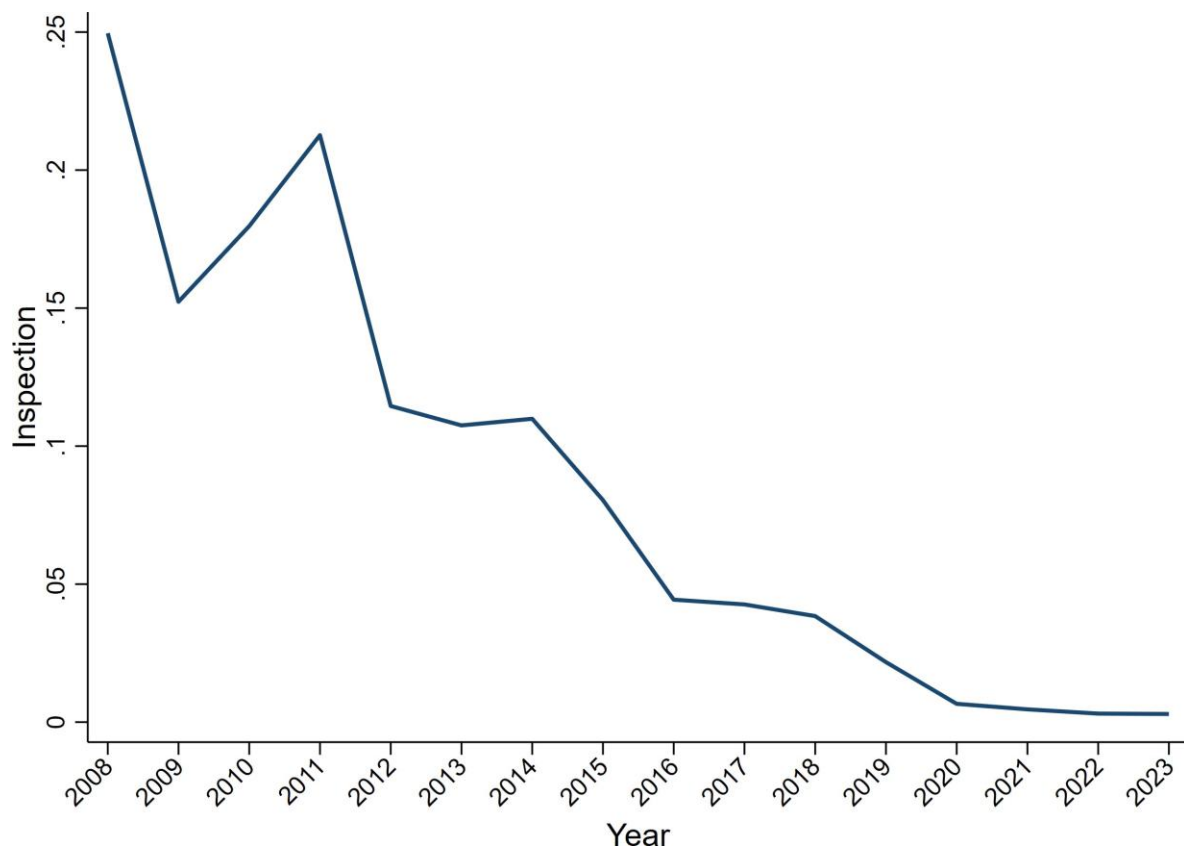
Notes: This figure illustrates annual minimum wage compliance among regular and contract workers over the period 2003–2023. Compliance is defined as the share of workers receiving wages above the applicable statutory minimum wage. The minimum wage data is taken from the Minimum Wage reports published by the Labour Bureau, Ministry of Labour and Employment. The Regular and Contract workers wages data are from Annual Survey of Industries (ASI).

Figure 6: Median Kaitz Index by year



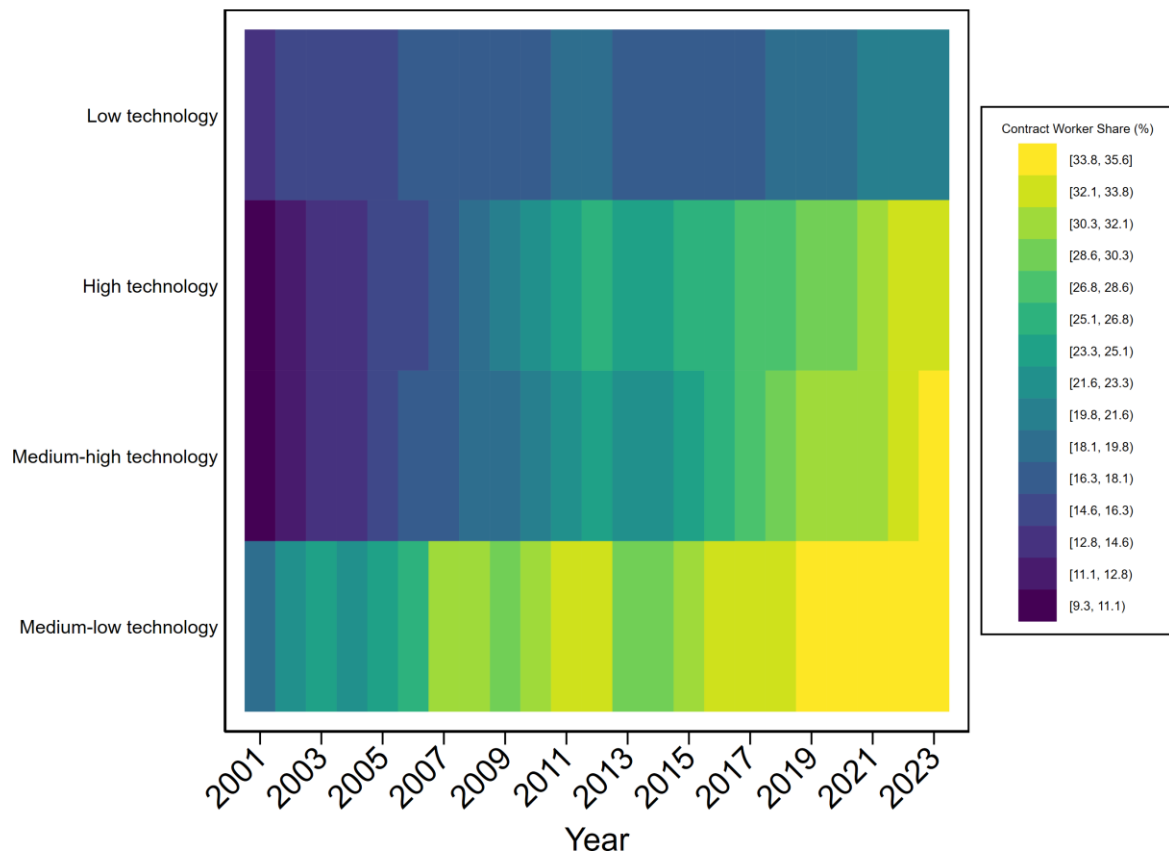
Notes: This figure plots Median Kaitz Index among regular and contract workers over the period 2003–2023. The Kaitz Index is measured as the ratio of the difference between a worker's wage and the applicable statutory minimum wage to the statutory minimum wage. The minimum wage data is taken from the Minimum Wage reports published by the Labour Bureau, Ministry of Labour and Employment. The Regular and Contract workers wages data are from Annual Survey of Industries (ASI).

Figure 7: Inspection Normalised by Total Workers



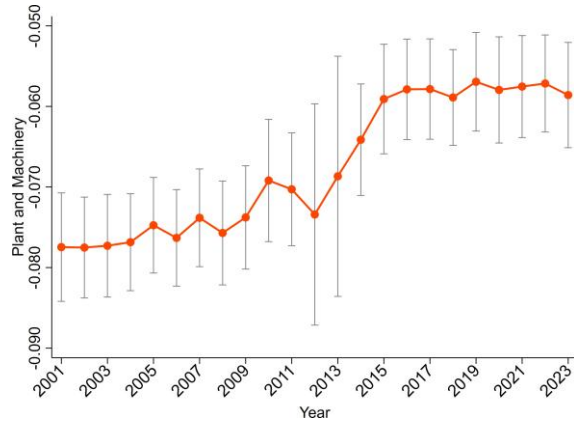
Notes: The figure plots the number of inspections made for minimum wage compliance, normalized by total number of workers (contract and regular workers combined) over the period 2003–2023. The inspection data is taken from the Minimum Wage reports published by the Labour Bureau, Ministry of Labour and Employment. The total workers data are from Annual Survey of Industries (ASI).

Figure 8: Contract Labour Share Heatmap for Manufacturing Industries

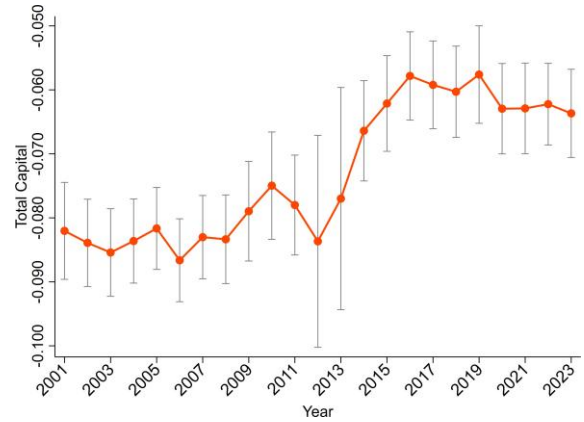


Notes: The figure presents a heatmap of the share of contract workers in total employment (contract and regular workers combined) across NIC-2008 two-digit manufacturing industries. Industries are grouped into four technology classes: low technology, medium-low technology, medium-high technology, and high technology. Higher color intensity denotes a greater reliance on contract labour. The variables are constructed from the Annual Survey of Industries (ASI).

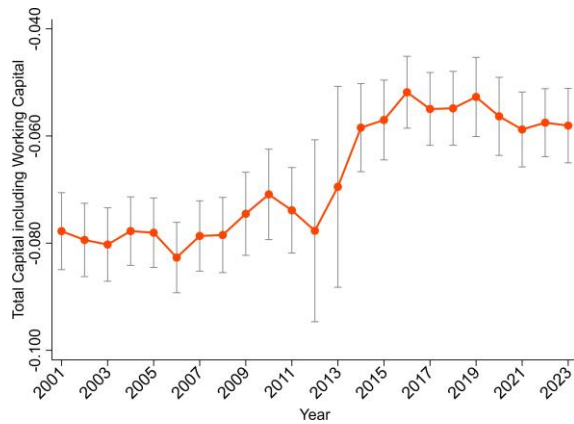
Figure 9: Association between Contract Worker Share and Capital Intensity/Productivity over Time



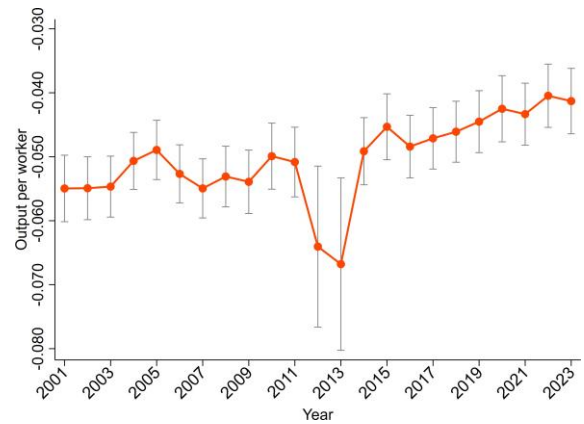
(a) Plant and Machinery per Worker



(b) Total Capital (excl. Land & Working Capital) per Worker



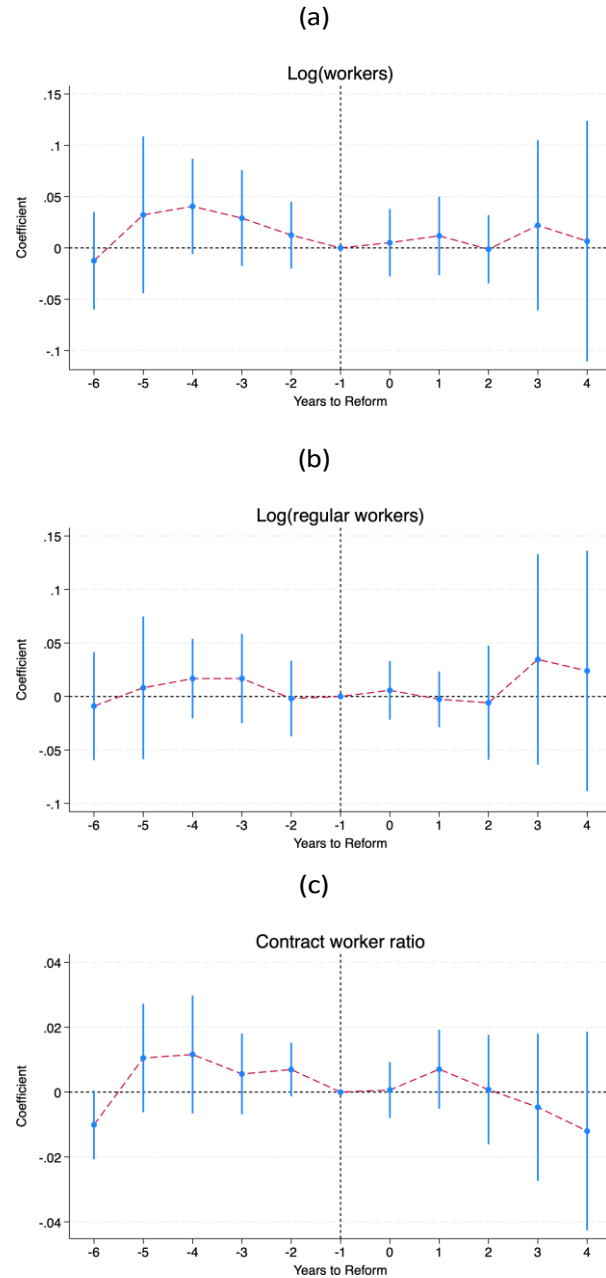
(c) Total Capital per Worker



(d) Output per Worker

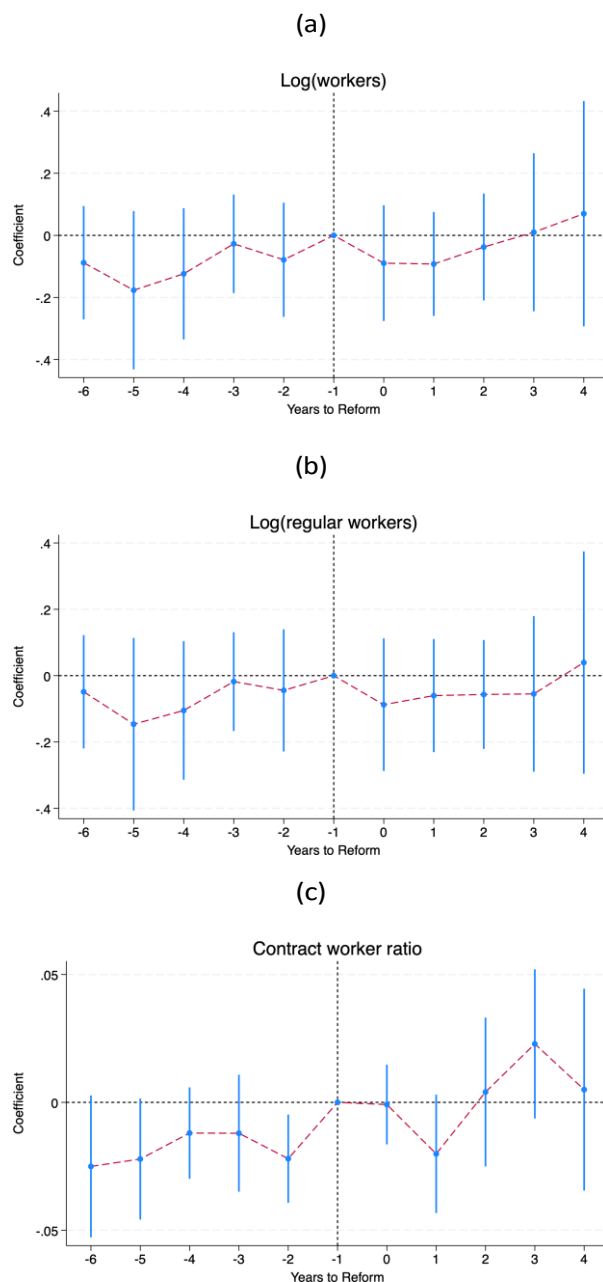
Notes: Each panel plots the year-specific association between the contract worker share and a measure of capital intensity or productivity estimated from the equation 4. The coefficients are obtained by interacting the corresponding measure with year indicators while controlling for establishment and year fixed effects. ASI multipliers are used in the regressions. Error bars denote 95% confidence intervals.

Figure 10: Event Study: Impact of IDA Reforms on Employment Outcomes



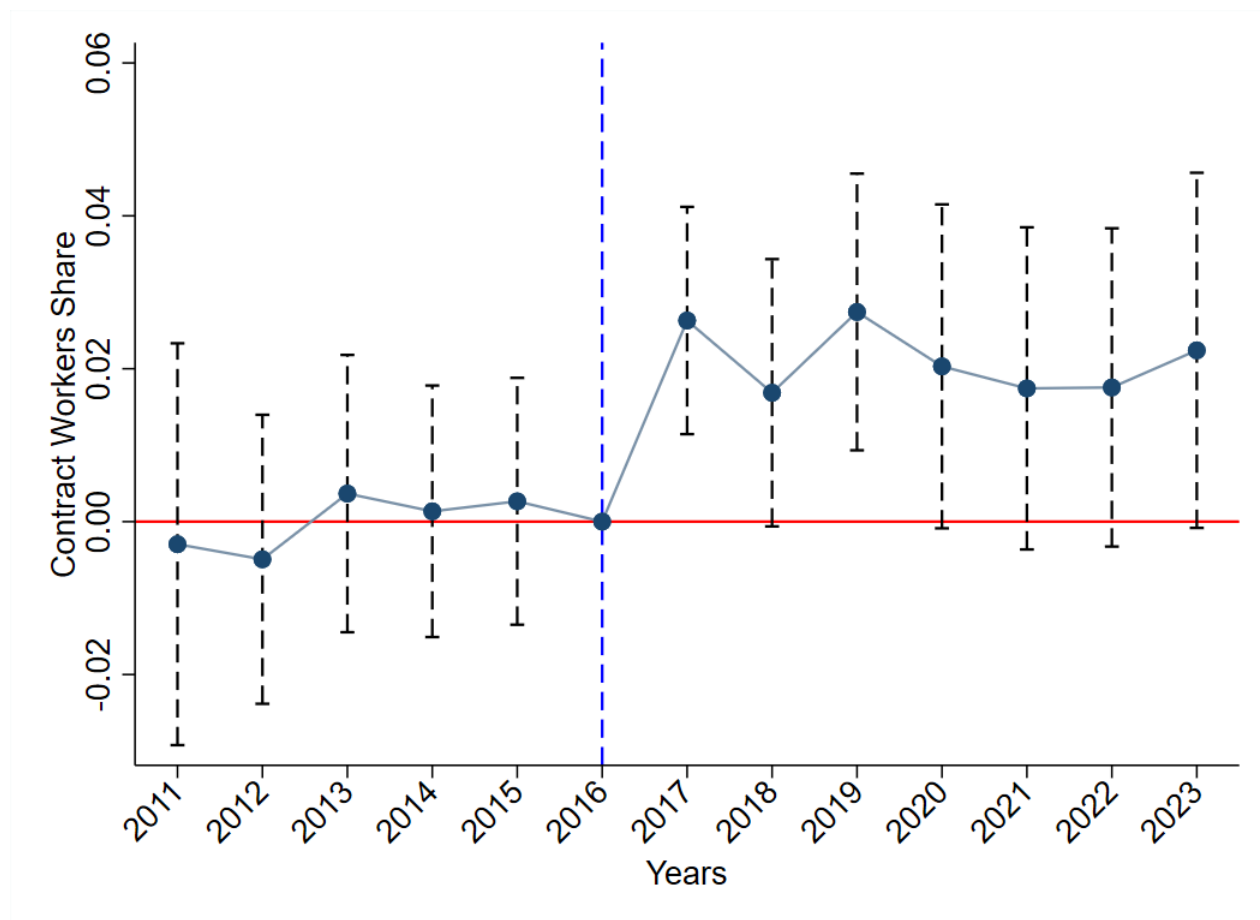
Notes: The figure plots event-study coefficients for the effect of state-level Industrial Disputes Act threshold amendments on employment outcomes. Vertical bars denote 95 percent confidence intervals. Regressions are weighted using the ASI multiplier. Standard errors are clustered at the state level.

Figure 11: Event Study: Differential Impact of IDA Reforms by Size



Notes: The figure plots event-study coefficients from specifications that interact event-time indicators for state-level Industrial Disputes Act threshold amendments with an indicator for establishments with 100–299 workers in the pre-period. Vertical bars denote 95 percent confidence intervals. Regressions are weighted using the ASI multiplier. Standard errors are clustered at the state level.

Figure 12: Contract Worker Share and GST exposure



Notes: The figure plots event-study coefficients for the effect of GST exposure on contract workers share. Vertical bars denote 95 percent confidence intervals. Regression is weighted using the ASI multiplier. Standard errors are clustered at the firm level.

Table 1: Decomposition of Labour Growth

(a) Panel A: 2011–2015

	Share 2011	Share 2015	Change	Within	Between
Contract Share	0.3414	0.3536	0.0122	0.0117	0.0005
Regular Share	0.6586	0.6464	-0.0122	-0.0117	-0.0005

(b) Panel B: 2015–2020

	Share 2015	Share 2020	Change	Within	Between
Contract Share	0.3536	0.3864	0.0328	0.0332	-0.0005
Regular Share	0.6464	0.6136	-0.0328	-0.0332	0.0005

(c) Panel C: 2020–2023

	Share 2020	Share 2023	Change	Within	Between
Contract Share	0.3864	0.4101	0.0238	0.0219	0.0019
Regular Share	0.6136	0.5899	-0.0238	-0.0219	-0.0019

Notes: Each panel reports a within-between decomposition of changes in the contract and regular labour shares of manufacturing employment over the corresponding period. The sample covers all registered manufacturing establishments from the Annual Survey of Industries (ASI). The contract (regular) share in each year is the ratio of the weighted contract (regular) employment to total weighted employment in the formal manufacturing sector. By construction, the within and between sum exactly to the total change in the aggregate share. A positive between-term indicates that employment shifted towards industries with an above-average reliance on contract labour.

Table 2: Minimum Wages and Log Wages

	Large Firms			Small Firms		
	(1)	(2)	(3)	(4)	(5)	(6)
	Overall Wage	Regular Wage	Contract Wage	Overall Wage	Regular Wage	Contract Wage
Log Minimum Wage	0.0659*** (0.0187)	0.0361 (0.0221)	0.0866** (0.0329)	0.0898*** (0.0318)	0.0874** (0.0343)	0.0875 (0.0546)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	73061	69964	49724	1625673	1539908	465061
R-squared	0.899	0.883	0.769	0.956	0.959	0.968

Notes: Standard errors enclosed in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. This table describes the impact of log minimum wage on Log Overall, Regular and Contract workers wage for the period 2003-2023 for Large firms and Small firms separately. Firms are classified as large if they employ more than 100 workers and as small if they employ fewer than 100 workers. Small firms regressions are weighted using the ASI multiplier. The minimum wage data is taken from the Minimum Wage reports published by the Labour Bureau, Ministry of Labour and Employment. The wage data is from the Annual Survey of Industries (ASI). All the variables are in logs. Standard errors are clustered at the state level.

Table 3: Minimum wage Inspection (Normalised by Total Workers) and Minimum Wage Compliance

Panel A: 2008–2023								
	Regular Workers				Contract Workers			
	(1) Compliance	(2) Compliance	(3) Kaitz Index	(4) Kaitz Index	(5) Compliance	(6) Compliance	(7) Kaitz Index	(8) Kaitz Index
Inspection	0.00122 (0.00134)	0.00109 (0.00143)	18.18 (14.23)	4.304 (5.517)	0.00112 (0.00282)	0.00280* (0.00161)	-0.0105 (0.907)	0.0528 (0.889)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Year FE	Yes	No	Yes	No	Yes	No	Yes	No
Industry Year Trends	No	Yes	No	Yes	No	Yes	No	Yes
Observations	1776263	1776283	1776263	1776283	737853	737889	737853	737889
R-squared	0.886	0.877	0.585	0.569	0.924	0.915	0.963	0.961
Panel B: 2013–2023								
	Regular Workers				Contract Workers			
	(1) Compliance	(2) Compliance	(3) Kaitz Index	(4) Kaitz Index	(5) Compliance	(6) Compliance	(7) Kaitz Index	(8) Kaitz Index
Inspection	0.00466*** (0.00166)	0.00323*** (0.000856)	14.51 (11.86)	7.950 (10.57)	0.00465 (0.00357)	0.00472 (0.00348)	1.024 (0.765)	1.130 (0.675)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Year FE	Yes	No	Yes	No	Yes	No	Yes	No
Industry Year Trends	No	Yes	No	Yes	No	Yes	No	Yes
Observations	1051793	1051805	1051793	1051805	418403	418423	418403	418423
R-squared	0.908	0.906	0.580	0.563	0.940	0.937	0.966	0.966

Notes: Standard errors enclosed in the parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. This table describes the impact of minimum wage inspection (normalised by total number of workers) on regular and contract workers wage compliance index and compliance dummy. Panel A reports the results for the period 2008-2023 and panel B reports the results for the period 2013-2023. The minimum wage inspection data is taken from the Minimum Wage reports published by the Labour Bureau, Ministry of Labour and Employment. The Regular and Contract workers wage data are from Annual Survey of Industries (ASI). Regressions are weighted using the ASI multiplier. Standard errors are clustered at the state level.

Table 4: Association between Contract Worker Share and Capital/Productivity

	(1)	(2)	(3)	(4)
	Contract Worker Share	Contract Worker Share	Contract Worker Share	Contract Worker Share
Plant & Machinery	-0.0824*** (0.00406)			
Plant & Machinery $\times$ Trend	0.00121*** (0.000127)			
Total Capital excl. Land & Working Capital		-0.0913*** (0.00460)		
Total Capital excl. Land & Working Capital $\times$ Trend		0.00149*** (0.000153)		
Total Capital			-0.0862*** (0.00472)	
Total Capital $\times$ Trend			0.00154*** (0.000149)	
Output				-0.0604*** (0.00306)
Output $\times$ Trend				0.000647*** (0.0000934)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	3587637	3611610	3615332	6816270
R-squared	0.928	0.929	0.928	0.919

Notes: Standard errors enclosed in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. This table describes the impact of capital and productivity on the share of contract workers in total employment (contract and regular workers combined) for the period 2001-23. The variables data are from the Annual Survey of Industries (ASI). All the independent variables are in log(per worker) form. Regressions are weighted using ASI multipliers. Standard errors are clustered at the factory level.

Table 5: Contract Workers Share and Wage Gap

	(1)	(2)	(3)
	Wage Gap	Wage Gap	Wage Gap
Contract Worker Share	-0.0851** (0.0394)	-0.0940*** (0.0335)	-0.472*** (0.0894)
Firm FE	No	No	Yes
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	No
Industry Year FE	No	Yes	No
Observations	2122098	2122040	2101489
R-squared	0.110	0.164	0.877

Notes: Standard errors enclosed in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. This table describes the relationship between the share of contract workers in total employment (contract and regular workers combined) and the log of wage gap for the period 2001-23. Wage Gap is defined as the ratio of contract workers wages to regular workers wages. The variables data are from the Annual Survey of Industries (ASI). Regressions are weighted using ASI multipliers. Standard errors are clustered at the factory level.

Table 6: Impact of Fixed Term Employment Reform in Apparel Sector

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Workers	Regular Worker	Contract Worker	Contract Worker Share	Workers	Regular Worker	Contract Worker	Contract Worker Share
FTE	0.128*** (0.023)	0.114*** (0.016)	0.022 (0.027)	0.003 (0.010)				
FTE × Medium	0.051 (0.134)	0.031 (0.093)	-0.019 (0.056)	-0.025 (0.017)	0.055 (0.120)	0.042 (0.087)	-0.034 (0.050)	-0.026 (0.017)
FTE × Large	-0.015 (0.044)	0.005 (0.049)	-0.055 (0.049)	-0.015 (0.016)	0.010 (0.045)	0.019 (0.053)	-0.041 (0.049)	-0.014 (0.016)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector × Year FE	No	No	No	No	Yes	Yes	Yes	Yes
Medium × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Large × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	311828	311828	311828	306330	311828	311828	311828	306330

Notes: The table reports establishment-level difference-in-differences estimates of the impact of the fixed-term employment reform in the apparel sector. FTE is an indicator for apparel establishments in the post-reform period. Medium and Large refer to establishments with pre-reform employment between 50–99 workers and at least 100 workers, respectively. Dependent variables Workers, Regular Workers and Contract Workers are in logarithmic form. Sector × Year FE are at NIC 2008 2-digit level. Regressions are weighted using the sample weights from ASI. Standard errors are clustered at the NIC-2008 four-digit industry level and reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Impact of IDA Threshold Reforms on Employment Outcomes

	(1) Workers	(2) Regular Workers	(3) Contract Worker Share
IDA	-0.011 (0.035)	0.005 (0.031)	-0.008 (0.009)
Stack $\times$ Firm FE	Yes	Yes	Yes
Stack $\times$ Industry $\times$ Year FE	Yes	Yes	Yes
Stack $\times$ State $\times$ Time Trend	Yes	Yes	Yes
Observations	1225115	1225115	1225115

Notes: The table reports stacked difference-in-differences estimates of the impact of state-level Industrial Disputes Act threshold amendments. IDA is an indicator equal to one for treated states in the post-reform period within each reform-vintage stack. Dependent variables Workers and Regular Workers are in logarithmic form. Regressions are weighted using the ASI sampling weights. Standard errors are clustered at the state level and reported in the parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 8: Impact of IDA Threshold Reforms on Employment Outcomes by Size

	(1) Workers	(2) Regular Workers	(3) Contract Worker Share	(4) Workers	(5) Regular Workers	(6) Contract Worker Share
IDA	-0.010 (0.036)		0.008 (0.031)		-0.009 (0.009)	
IDA × Workers(100 – 299)	-0.007 (0.073)	-0.013 (0.074)	-0.027 (0.071)	-0.034 (0.071)	0.008 (0.008)	0.008 (0.008)
Stack × Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Stack × Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Stack × State × Time Trend	Yes	No	Yes	No	Yes	No
Stack × State × Year FE	No	Yes	No	Yes	No	Yes
Workers(100 – 299) × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1225115	1225115	1225115	1225115	1225115	1225115

Notes: The table reports heterogeneous impact of state-level Industrial Disputes Act threshold amendments by size. IDA is an indicator equal to one for treated states in the post-reform period within each reform-vintage stack. IDA × Workers(100–299) interacts the reform indicator with an indicator for establishments in the 100–299 worker size group. Dependent variables Workers and Regular Workers are in logarithmic form. Regressions are weighted using the ASI multiplier. Standard errors are clustered at the state level and reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

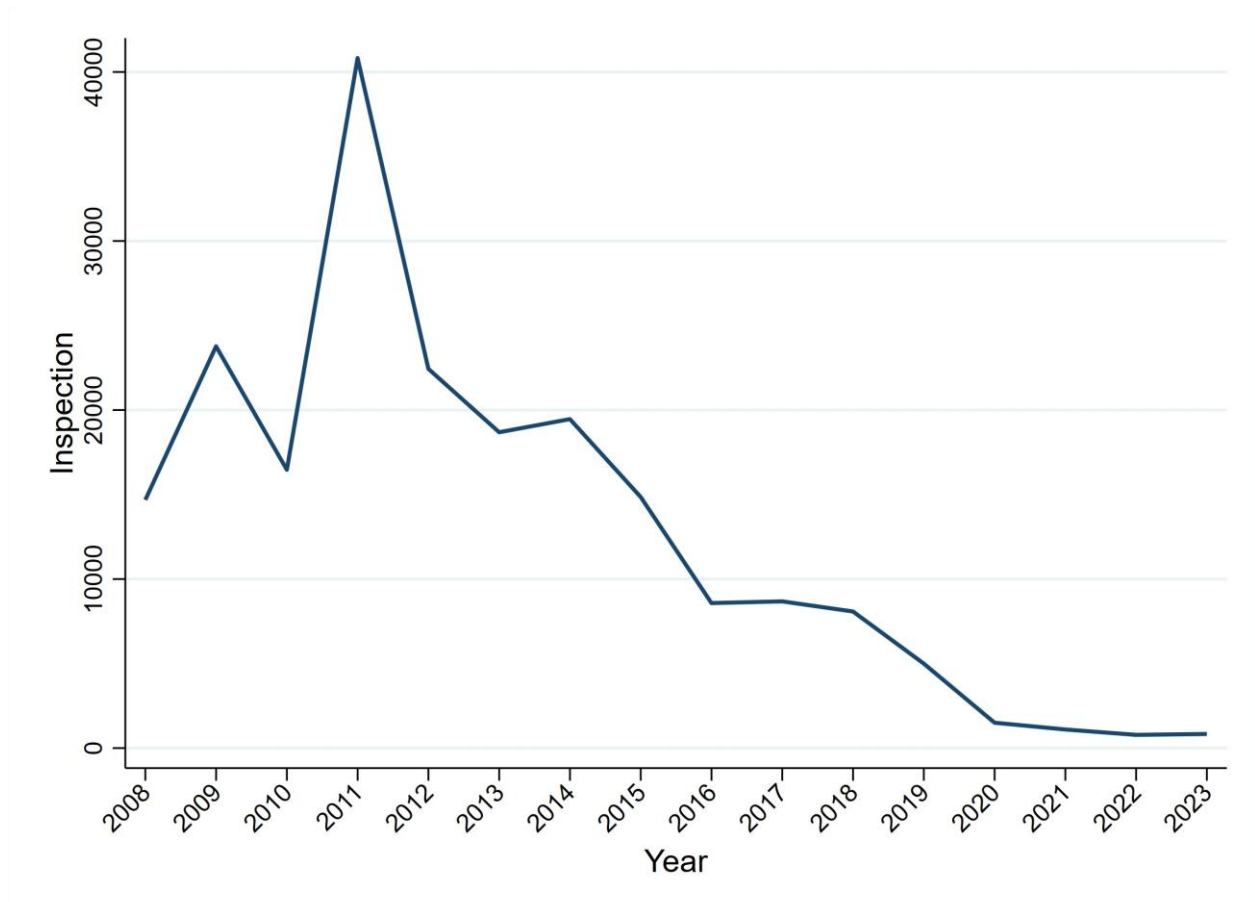
Table 9: Contract labour, Baseline Staffing Firms, and Contract Labour Act (1970) Reforms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CW Share	P(Hire>25%)	P(Hire>50%)	P(Hire>75%)	CW Share	P(Hire>25%)	P(Hire>50%)	P(Hire>75%)
Staffing Presence x CLA	0.0352*** (0.0114)	0.0438*** (0.0129)	0.0345*** (0.0106)	0.0223*** (0.00764)	0.0205** (0.00899)	0.0258** (0.0105)	0.0171** (0.00840)	0.00736 (0.00554)
Industry x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	No	No	No	No	Yes	Yes	Yes	Yes
Observations	174485	174485	174485	174485	174485	174485	174485	174485
R-squared	0.101	0.0907	0.0886	0.0874	0.139	0.124	0.120	0.116

Notes: Standard errors enclosed in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Dependent variables are the district level share of contract workers in total employment (contract and regular workers combined), and dummies for whether the plant hires more than 25%, 50%, and 75% of its workers through contract labour. The employment data is sourced from ASI for the period 2013-2023. Standard errors are clustered at the district level.

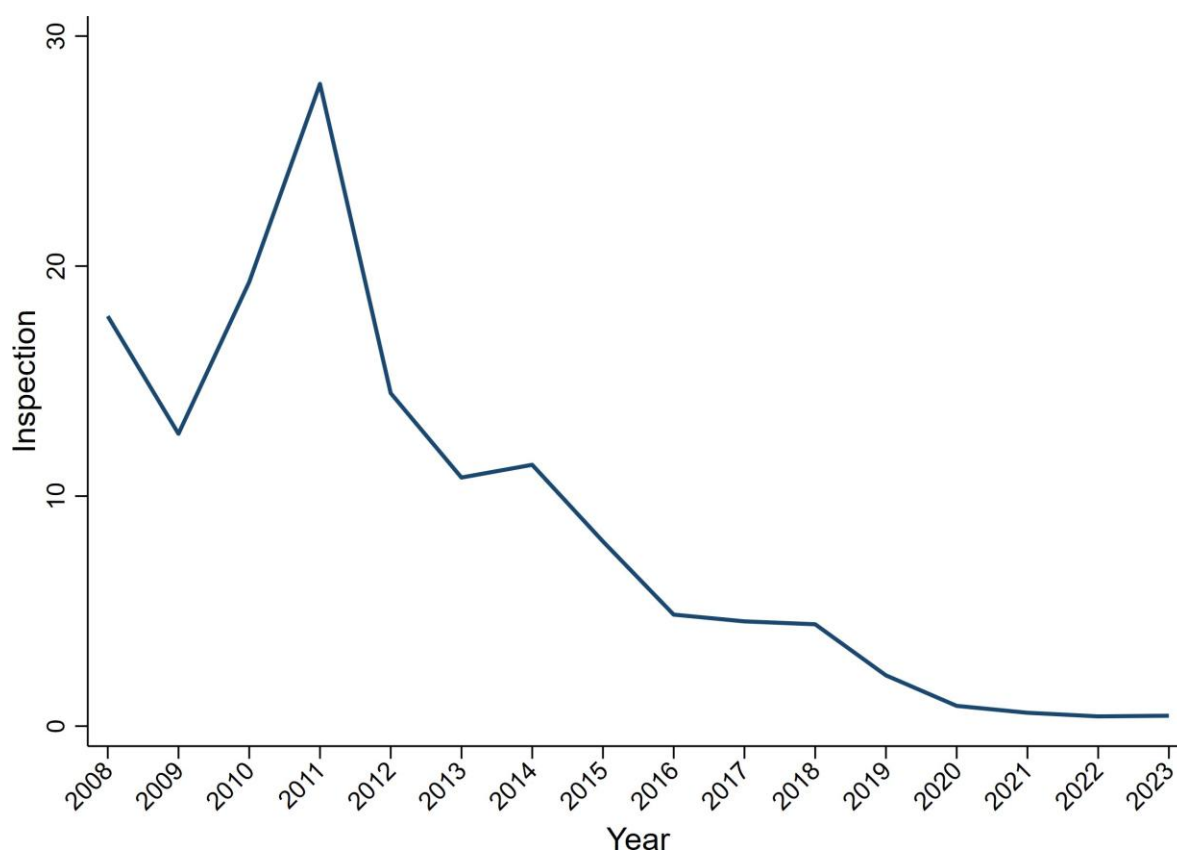
Appendix

Figure A.1: Number of Inspections by Year



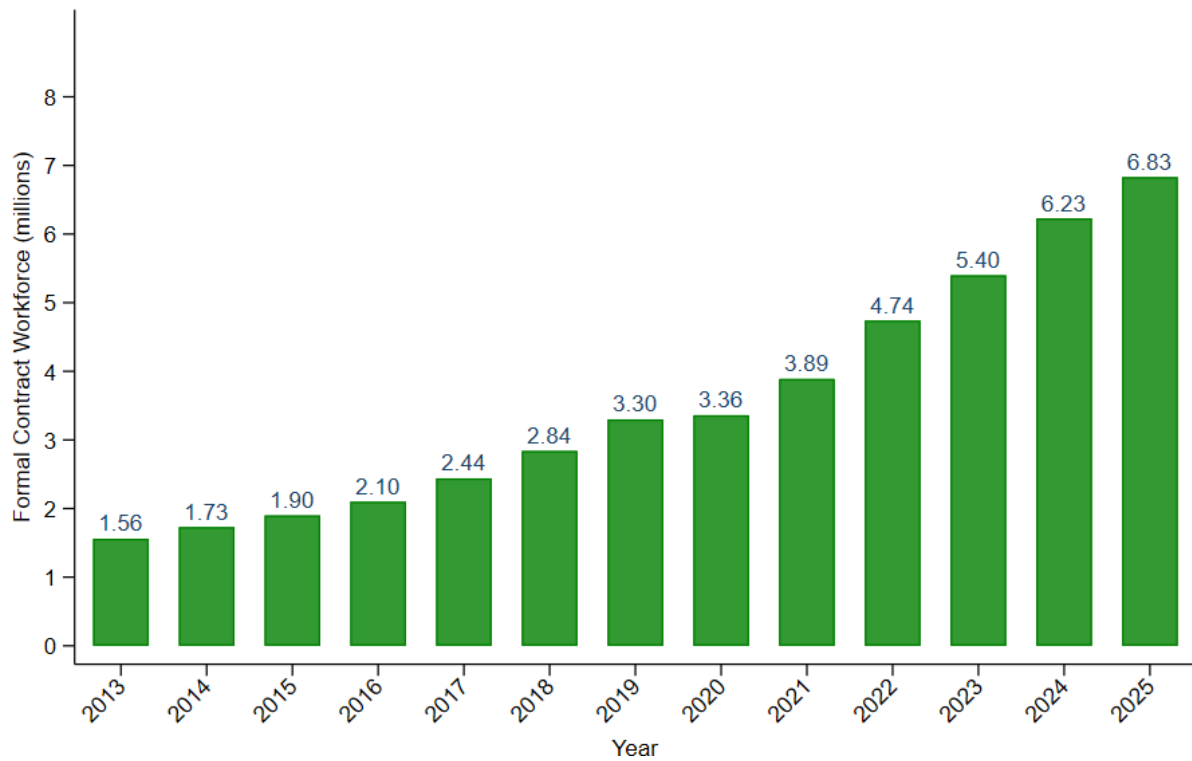
Notes: The figure plots the number of inspections made for minimum wage compliance over the period 2003–2023. The inspection data is taken from the Minimum Wage reports published by the Labour Bureau, Ministry of Labour and Employment. The total workers data are from Annual Survey of Industries (ASI).

Figure A.2: Inspection Normalised by Total Factories



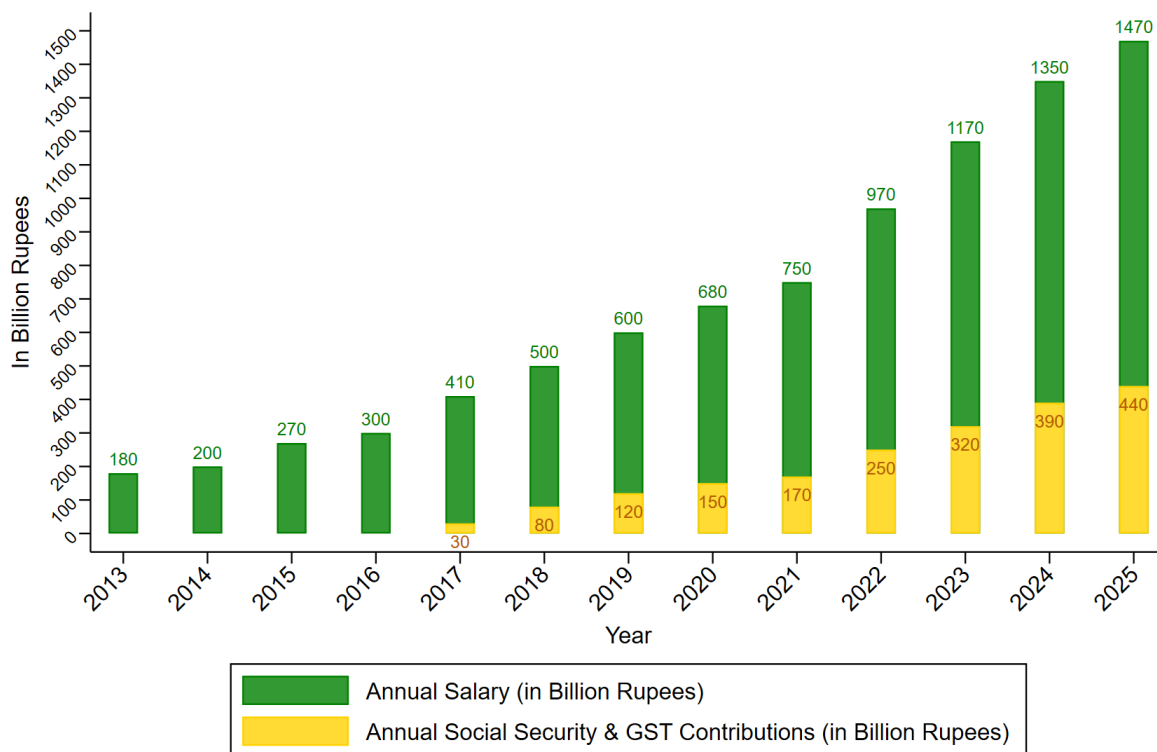
Notes: The figure plots the number of inspections made for minimum wage compliance, normalized by total number of factories over the period 2003–2023. The inspection data is taken from the Minimum Wage reports published by the Labour Bureau, Ministry of Labour and Employment. The total workers data are from Annual Survey of Industries (ASI).

Figure A.3: Growth of Formal Employment through Contract Staffing Firms in India



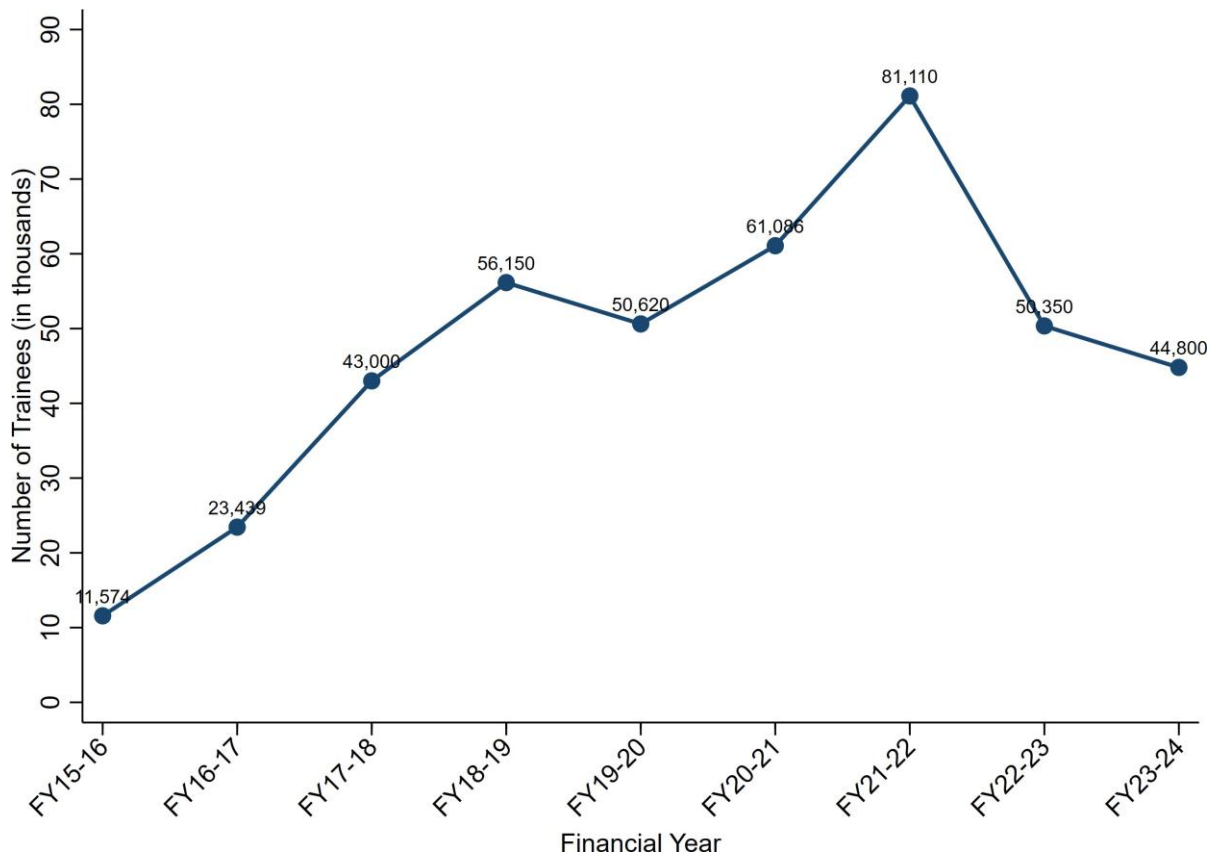
Source: Indian Staffing Federation Annual Report: Flexi Staffing Industry 2025.

Figure A.4: Wages and Social Security Contributions in Contract Staffing in India



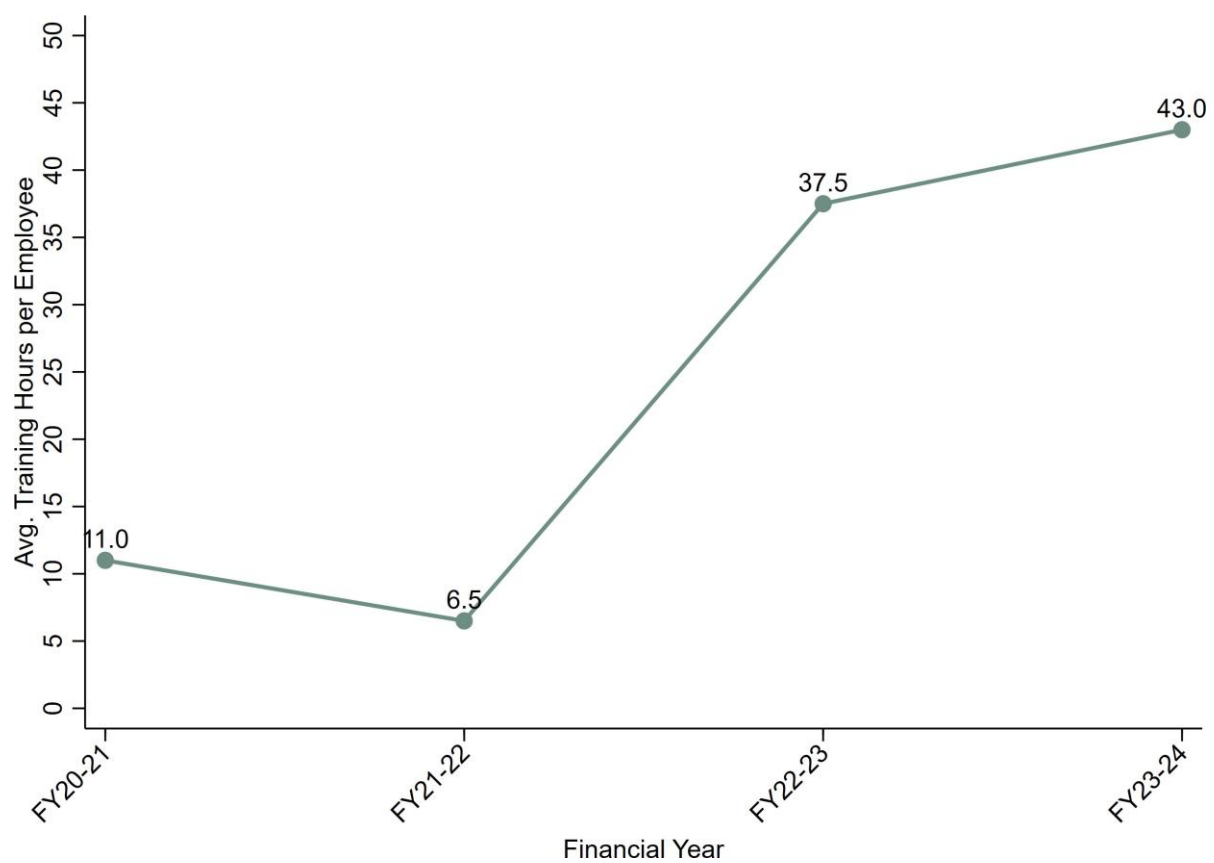
Source: Indian Staffing Federation Annual Report: Flexi Staffing Industry 2025.

Figure A.5: TeamLease NETAP Trainee Headcount



Source: TeamLease Annual Reports (2015-2016 to 2023-2024)

Figure A.6: Average Training Hours per Employee at Qess Corporation



Source: Qess Corp Annual Reports (2020-2021 to 2023-2024)

Table A.1: Minimum wage Inspection (Normalised by Total Factories) and Minimum Wage Compliance

Panel A: 2008–2023								
	Regular Workers				Contract Workers			
	(1) Compliance	(2) Compliance	(3) Kaitz Index	(4) Kaitz Index	(5) Compliance	(6) Compliance	(7) Kaitz Index	(8) Kaitz Index
Inspection	0.0000894 (0.0000844)	0.0000442 (0.0000562)	0.580 (0.462)	0.193 (0.253)	0.0000655 (0.000238)	0.000126 (0.000240)	0.0158 (0.0928)	0.0264 (0.0972)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Year FE	Yes	No	Yes	No	Yes	No	Yes	No
Industry Year Trends	No	Yes	No	Yes	No	Yes	No	Yes
Observations	1776263	1776283	1776263	1776283	737853	737889	737853	737889
R-squared	0.886	0.877	0.585	0.569	0.924	0.915	0.963	0.961
Panel B: 2013–2023								
	Regular Workers				Contract Workers			
	(1) Compliance	(2) Compliance	(3) Kaitz Index	(4) Kaitz Index	(5) Compliance	(6) Compliance	(7) Kaitz Index	(8) Kaitz Index
Inspection	0.000181 (0.000122)	0.0000923 (0.000119)	1.462 (1.260)	0.922 (1.034)	0.000149 (0.000144)	0.000121 (0.000134)	0.0429 (0.0426)	0.0508 (0.0448)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Year FE	Yes	No	Yes	No	Yes	No	Yes	No
Industry Year Trends	No	Yes	No	Yes	No	Yes	No	Yes
Observations	1051793	1051805	1051793	1051805	418403	418423	418403	418423
R-squared	0.908	0.906	0.580	0.563	0.940	0.937	0.966	0.966

Notes: Standard errors enclosed in the parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. This table describes the impact of minimum wage inspection (normalised by number of factories) on regular and contract workers wage compliance index and compliance dummy. Panel A reports the results for the period 2008-2023 and panel B reports the results for the period 2013-2023. The minimum wage inspection data is taken from the Minimum Wage reports published by the Labour Bureau, Ministry of Labour and Employment. The Regular and Contract workers wage data are from Annual Survey of Industries (ASI). Regressions are weighted using the ASI multiplier. Standard errors are clustered at the state level.