Wage Compression and Contract Structure in Informal Labor Markets *

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October 27, 2026

Abstract

Whether a labor market is characterized by wage compression or wage competition determines how it adjusts to excess labor supply: under wage competition, workers bid wages down, whereas under wage compression, wages stay at the prevailing level and jobs are rationed instead. This paper argues that contract structure is an important determinant of wage compression. We study an informal labor market in India, where workers negotiate publicly over jobs offered on time-based contracts, which pay for a fixed workday, and task-based contracts, which pay for task completion. We measure wage competition by undercutting: offering to do the same job for less than another worker has quoted. Across about 1,400 negotiations, workers undercut in 40% of task-based negotiations, compared with 21% of time-based negotiations. This gap suggests that contract structure shapes wage competition. In a separate survey of 843 workers, stated minimum acceptable wages and beliefs about the prevailing wage are also more compressed for time-based jobs, indicating that the lower rate of undercutting under time-based contracts accompanies wage compression. We develop a model in which time-based contracts require every worker to stay for the full workday, whereas task-based contracts let more productive workers finish sooner and retain valuable time. Under task-based contracts, minimum acceptable wages therefore differ across workers. Consistent with this mechanism, workers who report longer completion times for a task state higher minimum acceptable wages for it. Vignette evidence shows that workers view wages for time-based jobs as more fixed and more often invoke the prevailing wage when objecting to lower bids. Workers also expect more undercutting when they differ in completion times for the same task. These results indicate that contract structure can be an important determinant of wage compression, and that the mix of time- and task-based contracts in a market may matter for how it adjusts to excess labor supply.

*I am grateful to Emily Breza, Christina Brown, Supreet Kaur, Michael Dinerstein and Chinmaya Kumar for valuable comments. Jay Prasad provided excellent research assistance. I am deeply indebted to the field team in Patna led by Gufran Ahmad and Neeraj Kumar. This work would not have been possible without helpful discussions with Gufran Ahmad, Karan Jain, Neeraj Kumar, Randhir Kumar, Rakesh Kumar, Madan Paswan, Jay Prasad, Manoj Yadav and Rebecca Wu. The project was funded by the Development Economics Research Fund at the University of Chicago. The IRB approval for this project was provided by the University of Chicago and Harvard University. A previous version of this paper was circulated under the title "Negotiations and Undercutting in Low Wage Labor Markets".
First version: December 2, 2024.

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1 Introduction

What determines whether labor markets are characterized by wage compression or wage competition? This question is central to understanding labor markets in low-income economies, where many workers supply labor in settings with weak or absent formal wage-setting institutions. In these settings, excess labor supply creates incentives for workers to compete by accepting lower wages (Breza et al., 2021), yet implicit cooperation is common (Osmani, 1990; Breza et al., 2025). The balance between wage compression and wage competition shapes how these markets respond to excess labor supply and changes in demand. Wage compression around a common prevailing rate can provide workers with a benchmark which can lead to rationing where as competition would lead to undercutting and higher employment (Kaur, 2019; Breza et al., 2021).

We ask what determines the extent of wage compression and the scope for wage competition within a labor market and how contract structure helps explain this variation. The proposed mechanism is that contracts affect whether productivity differences change workers' costs of accepting a job and therefore the wages they are willing to accept. Consider two common contract structures in labor markets: time-based and task-based (piece-rate) contracts. We refer to time-based contracts as *Fixed Hour* contracts and task-completion contracts as *Fixed Work* contracts. Under *Fixed Hour* contracts, compensation is tied to a fixed amount of work time, whereas in *Fixed Work* contracts, compensation is tied to completion of a specified task. Under *Fixed Hour* contracts, faster and slower workers work for the same amount of time. Under *Fixed Work* contracts, faster workers can finish sooner and retain more time for rest or leisure. More generally, a contract that lets workers retain the benefits of higher productivity can generate differences in reservation wages and expand the scope for competing bids. A contract that closes that margin limits this source of wage dispersion.

We study this empirically in informal construction labor markets in India. Wages for different jobs are determined through public bargaining: employers negotiate with several workers, who observe the job description including the contract structure offered, and can make offers and counter-offers. Firms offer jobs on both kinds of contract structures allowing us to compare wage-setting under the two contract structures while holding the worker pool, bargaining environment, and institutional context approximately fixed.

We use *wage compression* in the standard sense that wages vary less across workers than their productivity (Frank, 1984; Acemoglu and Pischke, 1999; Breza et al., 2018). Our argument connects this compression to restraint in wage competition. When workers agree on what a job should pay, the prevailing rate provides a benchmark for resisting lower offers (Breza et al., 2025). When contract structure instead creates differences in acceptable payments, agreement on this benchmark becomes harder to sustain, giving workers greater scope to compete by offering to work for less.

Our primary empirical object is *undercutting*: a worker offers to perform the same job for less than another worker has quoted in the negotiation. This directly observed bidding behavior allows us to examine the wage competition that our mechanism predicts. We collect real-time data on around 1,400 job negotiations, recording job descriptions, contract structures, and wage offers

and counteroffers. Workers undercut in around 40% of negotiations for *Fixed Work* jobs, compared with 21% for *Fixed Hour* jobs. The gap persists with labor-stand, enumerator, and survey-day fixed effects and controls for contract value, time of day, the number of participating workers, and negotiation success. It also persists when we exploit within-job variation in the contract offered at the labor stand.

Next, we examine the dispersion of stated wages and wage beliefs. Dispersion in stated wages is central to the mechanism which drives wage competition and thereby undercutting. We survey 843 workers and elicit beliefs about prevailing wages for common jobs at the labor stand offered on different types of contracts. Beliefs about wages are much more dispersed for *Fixed Work* jobs than for *Fixed Hour* jobs as measured by standard deviation, entropy and coefficient of variation. Worker-side selection is unlikely to explain the pattern as survey data show substantial overlap in the worker pool for both types of jobs and the belief patterns reported above are common to all groups of workers. However, stated wage beliefs may not be incentive compatible in the same way as behavior in an actual negotiation and for this reason, we treat undercutting as the primary behavioral outcome and wage dispersion as the distributional object that explains when such behavior should arise.

Together, these results suggest that wage compression and wage competition vary systematically across contracts within the same labor market. A common prevailing wage can be focal for some transactions even where workers make competing offers for others.

We use a simple model to lay out the main argument and the mechanisms through which contract structure can affect wage compression. The mechanism is summarized in Figure 1. Contract structure shapes whether productivity differences enter workers' reservation wages. In the model, a worker's reservation wage depends on the value of market participation, the effort cost of the job, and the value of leisure remaining in the workday, a margin that workers value in other settings (Mas and Pallais, 2019). Firms cannot pay workers their individual marginal products because ability is imperfectly observed and effort is subject to moral hazard. Under *Fixed Hour* contracts, workers sell a fixed workday. Faster and slower workers therefore give up the same amount of time, which limits the extent to which productivity differences translate into different reservation wages. Under *Fixed Work* contracts, workers sell completion of a task. Faster workers can complete the task sooner and preserve valuable within-day time, making them willing to accept lower wages than slower workers for the same job. The model therefore predicts that reservation wages should be more compressed under *Fixed Hour* contracts and more dispersed under *Fixed Work* contracts.

The distribution of reservation wages then shapes agreement over the prevailing wage and, through that agreement, the strength of the norm against undercutting. When reservation wages are compressed, workers are more likely to share a common benchmark for what the job should pay. This agreement gives wage norms a clear object: a lower offer can be identified as a deviation from the prevailing wage and can therefore be sanctioned. When reservation wages are dispersed, workers are less likely to agree on a single benchmark. Wage norms become harder to apply, be-

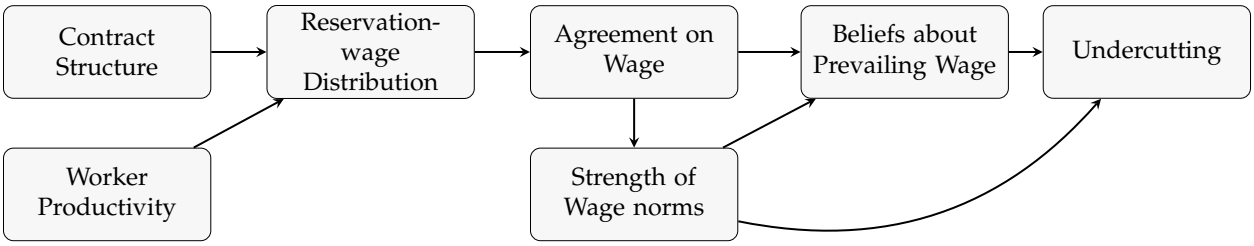


Figure 1: How contract structure and worker productivity influence wage compression

liefs about the prevailing wage become less focal, and workers have greater scope to justify or engage in undercutting. In this mechanism, weaker norm enforcement is not the primitive; it is partly generated by contract structure itself. This interpretation is consistent with evidence that social sanctions help sustain wage floors in decentralized labor markets (Breza et al., 2025). Because reservation wages are not directly observed, the model yields predictions for the empirical objects we measure: stated wages, beliefs about the prevailing wage, the perceived strength of the norm against undercutting, and undercutting itself.

We test the predictions on the mechanism link by link. The first implication concerns the relationship between productivity and stated wages. If faster workers accept lower wages under *Fixed Work* to trade off leisure, then workers who need more time to complete a task should state higher wages for that task. The data support this prediction. Workers who report longer completion times for a *Fixed Work* job also report higher reservation wages for that job. This relationship holds within worker: the same worker reports a higher wage for the task she expects to complete more slowly, with an elasticity of about 0.18. Age provides a second proxy for productivity. Older workers, who are typically more experienced in manual construction tasks, report lower wages for *Fixed Work* jobs, while wages remain flat with age for *Fixed Hour* jobs. These patterns are correlational, but they appear precisely where the model predicts productivity should matter and disappear where the contract fixes the worker's time.

The next implications concern agreement over the prevailing wage and the social norm around it. We measure these objects in a vignette survey of 196 workers at the same labor stands. Each worker evaluated hypothetical hiring scenarios under *Fixed Hour* and *Fixed Work* contracts. Workers overwhelmingly describe the *Fixed Hour* job as having a common prevailing wage, indicating that strong wage norms are present for this contract, but far fewer describe the *Fixed Work* job as having one: 92 percent versus 9 percent of workers say the rate for the job is fixed. This supports the prediction that agreement over the prevailing wage is stronger under *Fixed Hour*. Workers are opposed to undercutting under both contracts, but the stated basis of the norm differs across them. Under *Fixed Hour*, workers object that undercutting violates the prevailing wage norm. Under *Fixed Work*, where the prevailing wage is less focal, they object more generally that undercutting another worker is wrong. The vignette evidence also supports how productivity dispersion affects undercutting. When we hold a single task and contract fixed and vary only whether workers differ in completion times, workers expect more undercutting when completion times differ.

Finally, undercutting rises under both contracts during the monsoon, when construction demand and outside options weaken, and negotiations succeed more often. This seasonal association supports interpreting undercutting as a measure of competitive pressure in bargaining.

These findings suggest that how contracts are structured can help workers sustain common wage standards even without formal wage-setting institutions. The reach of these standards matters at the labor-market level: a common daily rate can coexist with wage competition over task payments. If employers can hire comparable work under either contract, adjustment can also occur through the form of hiring rather than through the daily wage alone. The composition of contracts may therefore matter for how labor-market pressure is absorbed through payments and access to employment. Our analysis examines the wage compression and wage competition underlying these possible adjustment margins.

Literature and Contributions Explanations of wage compression emphasize preferences for relative wage rank (Frank, 1984), firms' incentives to limit harmful rivalry among workers (Lazear, 1989), labor-market frictions that make wages less responsive to productivity (Acemoglu and Pischke, 1999), and union wage standardization (Freeman, 1980). For low-income labor markets, Breza and Kaur (2025) hypothesize that wage compression is more likely under flat wages than under piece rates. We provide direct field evidence on the role of contract structure within a single labor market. In public negotiations at the same labor stands, we compare undercutting for *Fixed Hour* and *Fixed Work* jobs. Workers undercut more often under *Fixed Work*, and when undercutting occurs, quoted wages fall by a larger proportion. This gap suggests that contract structure shapes wage competition within the same market.

Research on contract structure has established several links between productivity and compensation. Foster and Rosenzweig (1993) document employer learning and statistical discrimination in the wages paid under time-based contracts. Foster and Rosenzweig (1994) find greater effort under piece-rate than time-based contracts, while Foster and Rosenzweig (1996) show how comparative advantage and imperfect employer information shape workers' allocation across tasks. Related performance-pay research studies effort, worker selection, and earnings dispersion (Lazear, 2000; Lemieux et al., 2009). Baland et al. (1999) derive a sorting pattern in which workers with intermediate ability choose daily-wage contracts, while those with high or low ability prefer piece-rate contracts that allow them to choose their work intensity. Their discussion of employment rationing takes daily-wage rigidity as given. Matutes et al. (1994) examine how contract choice reduces competition between employers through worker selection. We instead study how contract structure can lead to an equilibrium where competition and compression is prevalent among workers bidding for the same job. Our model traces this link in steps: the contract determines whether productivity differences enter workers' reservation wages; the dispersion of reservation wages determines how far workers agree on a prevailing wage; and that agreement shapes undercutting. A general version of the model (Appendix B) extends the argument from completion time to any contractual margin through which productivity changes a worker's cost

of accepting a job. We test the link from productivity to stated wages and undercutting using detailed negotiation data between firms and workers along with surveys with workers.

Research on wage floors emphasizes implicit cooperation (Osmani, 1990) and the role of observability and social sanctions in discouraging workers from accepting jobs below the prevailing wage (Breza et al., 2025). We examine why restraint on undercutting differs across contracts within the same market. In our model, the cost of undercutting rises with workers' agreement on the prevailing wage. Because *Fixed Work* lowers that agreement, the model implies that contract structure affects undercutting through a weaker norm as well as through more dispersed reservation wages. We test this link with vignettes in which each worker evaluates both a *Fixed Hour* and a *Fixed Work* hiring scenario. Workers oppose undercutting under both contracts, but they ground the objection differently. Under *Fixed Hour*, workers more often regard the rate as fixed and object that undercutting violates it; they also expect more peers to sanction the undercutter. Under *Fixed Work*, workers more often say that undercutting is wrong whatever the rate. Breza et al. (2018) show that visible productivity differences mitigate the morale effects of employer-assigned pay inequality. Our vignettes ask a different question: whether greater productivity justifies one worker's offer to do the same job for less than another worker has quoted. Workers largely reject that justification under both contracts. The norm against undercutting is thus common to both contracts, but a clear prevailing-wage benchmark reinforces it under *Fixed Hour*.

These findings have a bearing on how labor markets adjust to changes in demand. Lemieux et al. (2012) and Pischke (2018) examine how wages and employment respond to demand under different contract structures. Baland et al. (1999) also discuss piece-rate employment as an alternative for workers rationed out of rigid daily-wage jobs. We study the wage competition at the point of hiring that precedes these outcomes. Where workers bid below the prevailing wage less often, as under *Fixed Hour*, excess labor supply is more likely to be absorbed through rationing; where workers undercut more often, as under *Fixed Work*, wages can adjust. The mix of *Fixed Hour* and *Fixed Work* contracts may therefore matter for how a labor market adjusts to excess labor supply.

The paper proceeds as follows. Section 2 describes the Patna labor stands and the construction jobs hired through them. Section 2.1 defines job types, contract types, and our measures of undercutting. Section 3 develops the model and states its predictions. Section 4 describes the negotiation, belief, and vignette data, presents summary statistics, and documents the mapping between job types and contract forms. Section 5 tests the central prediction on undercutting. Section 6 tests the prediction on the dispersion of stated wages. Section 7 tests the mechanism connecting them. Section 8 concludes.

2 Setting and Definitions

We study wage-setting in urban spot labor markets for construction work in Patna, Bihar. Workers gather each morning at public hiring locations, locally called *labor stands*, where employers arrive to hire workers for short-term jobs. Hiring is decentralized, contracts are oral, and wages are

negotiated in public. Workers observe the job description, hear wage offers, and can enter ongoing negotiations. This environment allows us to observe the bargaining behavior through which wage compression is either sustained or challenged.

The setting is useful for three reasons. First, employment relationships are short-lived, so wage-setting occurs repeatedly in spot negotiations rather than through long-term contracts or internal firm wage policies. Second, the same labor stands host negotiations under different contract structures, allowing us to compare wage-setting across contracts while holding fixed much of the local market environment. Third, bargaining is public: other workers can observe offers and can compete for the same job. This makes it possible to measure wage competition directly.

Workers. Workers at the stands are primarily manual construction laborers. Their tasks include carrying sand, bricks, cement, or ballast; mixing and transporting concrete; assisting masons; and digging. The work requires limited formal education, and skills are acquired largely through experience. Many workers move between construction and agricultural labor, with agricultural day labor serving as an important outside option. Workers may also obtain jobs through contractors, masons, or prior employer relationships, but the stand is the main hiring channel for workers without such ties. The relevant feature for our analysis is that workers at a stand form a common pool from which employers hire under both contract structures.

Employers. Employers are primarily private contractors and individual builders who hire labor regularly for small construction projects. Employers decide the contract structure to be offered for a particular job, and bargain with workers at the stand, and the terms of the job are usually described before the wage is settled.

Jobs and contracts. Jobs hired through the stands fall into two broad categories. *Multiple-task* jobs require workers to assist a mason or contractor across a sequence of tasks, such as carrying materials, mixing cement, cleaning the site, and supporting plastering or bricklaying. These jobs are typically hired on *Fixed Hour* contracts where the worker is paid a daily wage for a fixed workday, usually eight hours. *Single-task* jobs require completion of a well-defined task, such as lifting a specified quantity of sand or bricks or digging a ditch. These jobs are typically hired on *Fixed Work* contracts where the worker is paid for completing the task, and the time required for completion is not fixed.

The mapping between job type and contract structure is consistent with standard incentive-contract logic (Holmstrom and Milgrom, 1991). When output is difficult to measure because the worker performs multiple subtasks, time-based pay is more natural. When the task is well defined and completion is verifiable, task-based pay is offered. We document the empirical mapping between job types and contract forms in Section 4.4. Because job type and contract structure are closely related, a concern is that differences in wage compression may reflect the type of job rather than the contract itself. We address this concern by exploiting within-job variation in contract

structure.

Bargaining environment. Wage negotiations take place orally and in public. When an employer arrives, workers gather around, ask about the job, and bargain over the wage. One worker may state a wage, another may counter, and other workers may enter the negotiation. This process is central to the empirical design. Because workers observe one another's offers, we can measure whether a worker challenges a stated wage by offering to perform the same job for less. The same bargaining protocol applies to both Fixed Hour and Fixed Work negotiations, so differences in undercutting across contract structures are not driven by differences in the visibility of negotiation itself.

2.1 Definitions

This subsection defines the job types, contract structures, and bargaining outcomes used in the analysis. Job type refers to the physical work required; contract structure refers to the payment rule attached to that work.

2.1.1 Jobs and contracts

Definition 1. *A* multiple-task *job requires the worker to perform several tasks, often in sequence.*

Definition 2. *A* single-task *job requires the worker to complete one well-defined task.*

Definition 3. *A* Fixed Hour *contract pays the worker for a fixed workday. The set of tasks performed during those hours may vary.*

Definition 4. *A* Fixed Work *contract pays the worker for completing a specified task. The time required to complete the task is not fixed.*

2.1.2 Undercutting and related outcomes

Our primary measure of wage competition is undercutting on wage.

Definition 5. Undercutting on wage *occurs when a worker offers to perform the same job for less than another worker has stated in the same negotiation.*

Undercutting on wage is the bargaining behavior through which a common wage benchmark is challenged.

We also use a broader measure of entry into an ongoing negotiation.

Definition 6. Interference *occurs when a worker enters an ongoing negotiation between an employer and another worker and expresses interest in the job, regardless of whether the entering worker quotes a lower wage.*

Interference captures a weaker form of competitive pressure. We use undercutting on wage as the primary outcome and interference as a complementary measure.

Definition 7. *The* value of a contract *is the per-worker amount associated with the job in the negotiation. For jobs involving multiple workers, it is the total contract amount divided by the number of workers required for the task.*

3 Theoretical Framework

This section develops a model which explains how contract structure and wage compression may be related. The model follows the chain in Figure 1. The model separates latent objects from measured ones. Reservation wages, market participation values, and productivity are latent. Contract structure, stated beliefs about the prevailing wage, agreement on the wage, norm measures, and undercutting in negotiations are observed.

3.1 Worker preferences and reservation wages

Preliminaries. Worker i has type or productivity θ_i and negotiates for contract $j \in \{0, 1\}$, where $j = 0$ denotes Fixed Hour and $j = 1$ denotes Fixed Work. The worker exerts effort e_j^i and retains $L_j(\theta_i, e_j^i)$ hours of leisure after the job is complete. The reservation wage of worker i for contract j is

$$w_j^i = \underbrace{C^i}_{\text{market participation value}} + \underbrace{c(e_j^i)}_{\text{effort cost}} - \underbrace{g\Big(L_j(\theta_i, e_j^i)\Big)}_{\text{value of leisure}}, \tag{3.1}$$

where C^i is a worker-level participation value, separable from effort cost and leisure.

Leisure hours. Leisure is the residual of an eight-hour workday,

$$L_j(\theta_i, e) = \bar{H} - H_j(\theta_i, e), \tag{3.2}$$

where $H_j(\theta_i, e_j^i)$ is the time required to complete the job. Effort counts active exertion and may differ from elapsed job time.

Assumption 1 (Fixed Hour clamps time)**.** *In a Fixed Hour job, the contract requires presence for the full workday: $H_0(\theta_i, e) = \bar{H}$ for all i and all feasible e. Payment requires effort at least $\underline{e}_0$.*

Assumption 2 (Fixed Work frees completion time)**.** *In a Fixed Work job, payment is made only on task completion. Completion time is differentiable and decreasing in productivity and effort: $\partial H_1(\theta_i, e)/\partial\theta < 0$ and $\partial H_1(\theta_i, e)/\partial e < 0$. Equivalently, $L_{1\theta}(\theta_i, e) > 0$ and $L_{1e}(\theta_i, e) > 0$. For the completion-time comparative static, assume additionally that H_1 is twice continuously differentiable and satisfies*

$$H_{1\theta}H_{1ee} - H_{1e}H_{1e\theta} < 0$$

on the relevant domain. At a common target completion time, higher productivity reduces the marginal effort required to finish sooner.

Assumption 3 (Effort and non-work time)**.** *The effort cost c is increasing and convex. The value of non-work time g is increasing. For Fixed Work jobs, the worker's effort problem has an interior solution and satisfies the strict second-order condition for a maximum of $g(L_1(\theta, e)) - c(e)$.*

Assumption 4. *The participation value C^i is independent of type θ_i.*

Effort choice.

Lemma 1 (Fixed Hour)**.** *All workers exert the minimum effort in Fixed Hour jobs: $e_0^i = \underline{e}_0$. The reservation wage is*

$$w_0^i = C^i + c(\underline{e}_0).$$

Lemma 2 (Fixed Work)**.** *In Fixed Work jobs, the worker's optimal effort satisfies*

$$c'(e_1^i) = g'(L)\frac{\partial L}{\partial e_1^i},$$

equating marginal effort cost to the marginal value of the leisure generated by effort. The reservation wage is

$$w_1^i = C^i + f(\theta_i),$$

where $f(\theta_i)$ is the type-dependent component induced by the effort–leisure trade-off.

Under the additional technology restriction, higher-productivity workers finish sooner after optimally adjusting effort.

Fixed Hour therefore removes productivity from reservation wages, while Fixed Work allows productivity to enter through completion time.

Proposition 1. *In Fixed Work jobs, higher-type workers have weakly lower reservation wages.*

Theorem 1. *Let F_j denote the reservation-wage distribution under contract $j \in \{0, 1\}$, with probability mass function $p_j(w)$ on the wage grid. The Fixed Work reservation-wage distribution is more dispersed than the Fixed Hour distribution, in both variance and Rényi entropy of order 2 (Renyi, 1961):*

$$\mathrm{Var}(w_1^i) > \mathrm{Var}(w_0^i) \qquad \textit{and} \qquad E_2(F_1) > E_2(F_0),$$

where $E_2(F_j) = -\ln(\sum_w p_j(w)^2)$. The inequalities are strict when productivity pass-through under Fixed Work is non-degenerate.

All formal proofs are in Appendix A.

3.2 Agreement, wage norms, and stated beliefs

The next step maps latent reservation wages into the objects measured in the surveys. A worker's private assessment of the prevailing wage is

$$\widetilde{b}_j^i = w_j^i + \eta_i, \tag{3.3}$$

where $\eta_i \geq 0$ is an idiosyncratic markup, independent of w_j^i and θ_i, drawn from a distribution Q that is common across contracts. The markup captures the gap between the least wage the worker would accept and the wage she expects bargaining to deliver.

Let $\widetilde{q}_j(b)$ denote the probability mass function of $\widetilde{b}_j^i$. Define pre-norm agreement as the probability that two independently drawn workers have the same private assessment:

$$\widetilde{A}_j = \sum_b \widetilde{q}_j(b)^2. \tag{3.4}$$

Higher Rényi entropy is equivalent to lower agreement.

Corollary 1. *Fixed Work lowers pre-norm agreement:* $\widetilde{A}_1 < \widetilde{A}_0$.

The norm against undercutting depends on whether workers can identify a common benchmark. Let $\kappa_j > 0$ denote the cost of deviating below the prevailing wage. This cost includes bargaining costs, moral costs, reputational costs, and expected peer sanctions.

Assumption 5. *The undercutting friction is increasing in pre-norm agreement:*

$$\kappa_j = \kappa(\widetilde{A}_j), \qquad \kappa'(\cdot) > 0.$$

Proposition 2 (Endogenous norm strength)**.** *Under Assumption 5, the wage norm is weaker under Fixed Work:* $\kappa_1 < \kappa_0$.

Norms also influence stated beliefs. When a benchmark is defended, the wage quotes workers hear and report are pulled toward that benchmark. Let $\bar{b}_j$ denote the benchmark under contract j, and let $\lambda_j \in (0, 1]$ denote the pass-through from the private assessment to the stated belief. The *bridge equation* links the latent assessment to the belief we observe:

$$b_j^i = \bar{b}_j + \lambda_j \left(\widetilde{b}_j^i - \bar{b}_j\right), \qquad \lambda_j = \lambda(\kappa_j), \qquad \lambda'(\cdot) < 0. \tag{3.5}$$

A stronger norm therefore compresses stated beliefs toward the benchmark. The maintained measurement restriction is that this contraction is monotone on the wage grid: a stronger contraction lowers variance and Rényi entropy and cannot reverse a strict dispersion ranking in private assessments.

Let $q_j(b)$ denote the probability mass function of stated beliefs. Define observed agreement as

$$A_j = \sum_b q_j(b)^2 \in (0, 1]. \tag{3.6}$$

Corollary 2. *Stated beliefs about the prevailing wage are more dispersed under Fixed Work than under Fixed Hour, in both variance and Rényi entropy of order 2.*

Corollary 3. *Observed agreement on the prevailing wage is lower under Fixed Work:* $A_1 < A_0$.

High agreement gives the prevailing wage a focal benchmark. Corollary 3 therefore predicts that the benchmark is more focal under Fixed Hour and less focal under Fixed Work, an implication measured by the vignette questions on whether the rate is fixed and how many workers would name the same rate.

3.3 Bargaining and undercutting

A firm arrives at the stand, announces a job and contract j, and faces $m \geq 2$ workers. One worker states a wage B_j drawn from the stated-belief distribution q_j; this quote becomes the standing offer. The remaining $m-1$ workers then decide whether to undercut. Wages lie on a discrete grid with tick size $\tau > 0$, and an undercutting attempt incurs the cost of norm violation κ_j.

A worker with reservation wage w_j^i profitably undercuts a standing offer $B_j = b$ when

$$w_j^i \leq b - \tau - \kappa_j,$$

in which case she offers $b - \tau$. If no worker can profitably undercut, the standing offer remains.

Conditional on $B_j = b$, the probability that at least one of the remaining workers undercuts is

$$U_j = \mathbb{E}_{B \sim q_j}\left[1 - (1 - F_j(B - \tau - \kappa_j))^{m-1}\right]. \tag{3.7}$$

The undercutting probability rises with the number of competing workers and with the mass of reservation wages below the standing offer. It falls with the norm friction κ_j.

3.4 Undercutting under Fixed Work and Fixed Hour

Two channels raise undercutting under Fixed Work.

Beliefs channel. Dispersion creates a wider gap between high standing offers and low reservation wages. Holding the norm friction fixed, this increases the chance that some worker can profitably cut the standing offer.

Proposition 3 (Dispersion and undercutting)**.** *Fix* $m \geq 2$, $\tau > 0$, $\kappa > 0$, *and* $\eta \in [0, \bar{\eta}]$ *with* $\bar{\eta} < \tau + \kappa$. *Suppose latent reservation wages take the location–scale form*

$$w_j^{*,i} = \mu_j + \sigma_j Z_i,$$

where $\sigma_j > 0$ *and* Z_i *are i.i.d. draws from a continuous distribution with cdf* Φ. *Suppose the benchmark*

satisfies $\bar{b}_j = \mu_j + a$, with the same offset a across contracts, and

$$\lambda\eta + (1-\lambda)a < \tau + \kappa \quad \textit{almost surely}, \qquad \lambda = \lambda(\kappa).$$

For this proposition, wages are unrounded and τ is interpreted as the minimum size of an undercut. Then the undercutting probability in equation (3.7), holding κ fixed, is weakly increasing in σ_j. Hence $\sigma_1 > \sigma_0$ implies $U_1 \geq U_0$. The inequality is strict if the scale increase raises the conditional probability of a profitable cut for a positive-probability set of opening-worker draws and markups.

Agreement also matters mechanically: when workers name the same wage, one cannot undercut the other, so greater agreement over the prevailing wage limits the scope for rate-cutting.

Norm channel. Fixed Work lowers pre-norm agreement, which weakens the undercutting friction by Proposition 2. Since U_j is decreasing in κ_j, the weaker norm raises undercutting beyond the dispersion effect alone.

Proposition 4 (Contract structure and undercutting)**.** *Suppose reservation wages take the location–scale form of Proposition 3 with $\sigma_1 > \sigma_0$, and let Assumption 5 hold. Write $U_j = U(\sigma_j, \kappa_j)$. Then*

$$U_1 - U_0 = \underbrace{[U(\sigma_1, \kappa_0) - U(\sigma_0, \kappa_0)]}_{\textit{beliefs channel}} + \underbrace{[U(\sigma_1, \kappa_1) - U(\sigma_1, \kappa_0)]}_{\textit{norm channel}},$$

and both terms are strictly positive.

The model also explains why undercutting remains below the frictionless benchmark. A profitable cut must clear both the wage tick τ and the friction κ_j, and firms typically query only a few workers. The contract gap arises because Fixed Work both disperses stated beliefs and weakens the benchmark that the norm can defend.

The model that we have outlined here is particular to the functioning of contracts in informal labor markets. The argument is, however, more general. Appendix B generalizes the argument to a general notion of ability pass-through: any contract that leaves the worker a margin through which ability lowers the cost of accepting the job disperses reservation wages, with completion time under Fixed Work the leading case.

3.5 From the model to the data

The model delivers six empirical implications, listed in the order tested in the paper.

1. **Undercutting.** Proposition 4 predicts more undercutting under Fixed Work than under Fixed Hour. Section 5 tests this prediction in the negotiation data.

2. **Stated-wage dispersion.** Corollary 2 predicts that stated wages are more dispersed under Fixed Work. Section 6 tests this prediction in the belief data.

3. **Productivity pass-through.** Proposition 1 predicts that productivity lowers reservation wages under Fixed Work, where faster workers preserve more within-day time, but not under Fixed Hour, where all workers sell the same workday. Section 7 tests this using completion-time and age gradients.

4. **Agreement on the prevailing wage.** Corollary 3 predicts lower agreement under Fixed Work. The vignette survey tests whether workers are less likely to view Fixed Work wages as fixed and less likely to expect other workers to name the same rate.

5. **Norm enforcement.** Assumption 5 and Proposition 2 predict that the norm against undercutting is harder to apply when workers disagree about the rate being violated. The vignette survey tests whether objections to undercutting are more strongly anchored in a fixed prevailing wage under Fixed Hour.

6. **Within-contract dispersion.** Holding the job and contract fixed, undercutting should be more likely when workers differ in completion times. The completion-time vignette tests whether productivity heterogeneity itself raises expected undercutting.

Figure 2 summarizes the mapping: it repeats the chain in Figure 1 and distinguishes the latent objects from the measured ones.

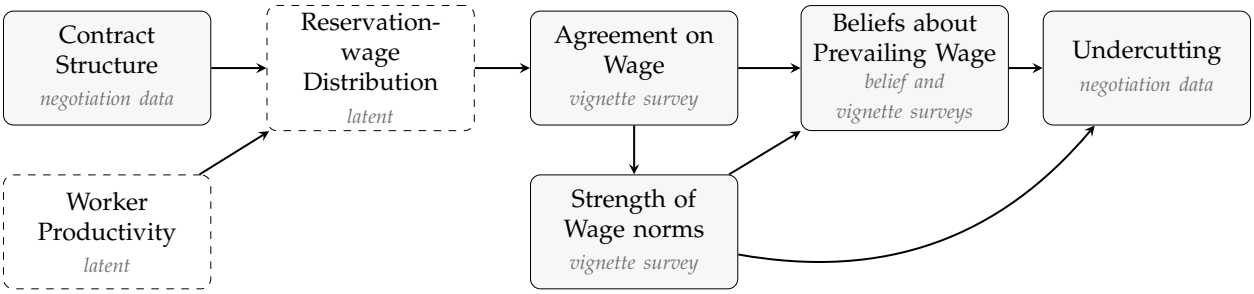


Figure 2: The mechanism and its empirical counterparts

Notes: The figure repeats the mechanism of Figure 1. Dashed boxes are latent objects that the data never measure directly: reservation wages reach the data as stated reservation wages through the bridge equation (3.5), and productivity is proxied by self-reported completion time and age. The text inside each solid box names the data source that measures the object.

4 Data

We collected three sources of data at 22 spot labor markets in Patna. Between January and September 2024, we recorded firm-worker negotiations and surveyed workers about wage beliefs. In June 2026, we administered a vignette survey at the same labor stands. The negotiation data measure undercutting in actual bargaining, the belief data measure the dispersion of stated wages, and the vignette survey tests the mechanism linking contract structure, agreement over the prevailing wage, norms, and undercutting.

4.1 Negotiation Data

Enumerator placement. We embedded enumerators within the worker pool at each stand. Three enumerators were typically assigned to a stand; smaller stands hosted two and larger stands up to five. Enumerators arrived before the start of the hiring window, around 7am, and remained until the market closed at the end of the morning. When an employer arrived at the stand enumerators positioned themselves within the cluster of workers surrounding the employer.

Recording the negotiation. For each negotiation, enumerators recorded the description of the job, the contract structure offered, the number of workers participating, and the sequence of offers and counter-offers from the employer and from each worker. A negotiation is coded as successful if the employer and at least one worker reach an agreement on wage and terms. If a negotiation moved faster than the enumerator could record, the enumerator followed up with one of the participating workers after the negotiation concluded. Appendix E contains two examples of recorded negotiations.

Coverage. Each labor stand was staffed by three enumerators and one Field Manager. The Field Manager coordinated coverage by assigning enumerators to employers as they arrived. When multiple employers arrived at once, the Field Manager ensured that each enumerator was assigned to a different employer. Once an enumerator finished documenting a conversation, the Field Manager immediately reassigned them to the next employer. If the number of employers exceeded the number of available enumerators, the Field Manager acted as an additional enumerator. This system substantially reduced, though did not entirely eliminate, the risk of missed negotiations.

Data Coding and Variables After the negotiation data were collected, each negotiation was coded for job type (single task or multiple task), contract structure (Fixed Hour or Fixed Work), the occurrence of undercutting, and whether the negotiation resulted in a hire. This was done by the research team and senior field staff against the definitions in Section 2.1. We directly observe: i) the type of job, such as lifting sand, lifting bricks, or helping a mason with plastering; ii) the quantity of material to be carried and the distance, where applicable; iii) the starting offer of the employer and of each participating worker; iv) the last offer of the employer and of each participating worker; v) the number of workers the firm is hiring for the job; vi) whether the negotiation results in a hiring agreement; vii) the agreed amount, conditional on agreement.[1]

4.2 Belief Data

The belief survey measures workers' stated wage beliefs for common jobs at the labor stand. For each job, we elicit two responses: the wage the worker believes currently prevails in the market,

[1]Some variables may be missing for a few observations.

and the minimum wage at which the worker says they would accept the job. We interpret both as stated wage beliefs rather than direct observations of latent reservation wages as they are likely influenced by prevailing wage norms. We use both responses to study how focal or dispersed wage beliefs are across contract structures.

Sampling and protocol. Enumerators randomly selected workers from the pool present at the stand, including workers not actively engaged in a negotiation. Each selected worker was taken to a private location 15–20 meters from the main stand. This distance reduced the influence of nearby conversations on reported beliefs and limited concerns about peer sanctions, which Breza et al. (2025) show can affect what workers are willing to say about wages in informal labor markets.

Questions. We asked workers about several common jobs: daily-wage plastering, lifting a trailer of sand to floor two, and lifting a trailer of bricks to floor two. For each job, the first question elicited the perceived prevailing wage: *What is the prevailing wage for X?* The second elicited the stated reservation wage: *What is the minimum wage at which you would agree to perform X?* These responses provide job-level distributions of stated wages.

4.3 Vignette Survey

We administered a vignette survey to 196 workers at the labor stands in June 2026. Each worker first evaluated, in random order, a Fixed Hour scenario (a day of masonry or plastering on a daily wage) and a Fixed Work scenario (carrying one trailer of sand to the second floor), reporting the prevailing wage, whether that wage is fixed, and whether and why undercutting that wage would be wrong. Two further blocks were administered between workers, each holding a single Fixed Work task and contract fixed: one varied how much the workers differ in the time they need to finish the task, and the other varied how fully the job was described, from full detail (quantity, distance, access, a helper upstairs) to a bare outline. Appendix E.2 gives the list of questions.

4.4 Sample Description

Panel A of Table 1 summarizes the negotiation sample. 69% of contracts are Fixed Hour and the remaining 31 percent are Fixed Work, reflecting the predominance of multi-task daily-wage hiring in this market. Workers undercut one another on wage in 27 percent of negotiations and interfere in an ongoing negotiation in 52 percent.[2] Eighty-four percent of negotiations end in a hiring agreement.

The overall undercutting rate provides a useful benchmark. Workers face excess labor supply and bear the cost of coming to the stand, so a frictionless market would generate much more

[2]The absence of interference in a particular negotiation does not imply that other workers are uninterested or unaware. When an employer arrives at the stand, they are typically surrounded by a cluster of workers who listen to the terms of the job. Even in negotiations where no interference is observed, many workers gather around the employer's representative and follow the negotiation. The interference measure captures only the cases in which a worker verbally enters the conversation.

frequent undercutting. The observed rate is well below that benchmark, indicating that wage competition is present but constrained. The main empirical question is whether this constraint is equally strong across contract structures.

Table 1: Descriptive summary of data

	Mean	SD	N
Panel A: Negotiation Data			
Fixed Hour contracts	0.69	0.46	1,430
Undercutting on wage	0.27	0.44	1,417
Undercutting - interference	0.52	0.50	1,422
Successful Negotiations	0.84	0.37	1,411
Panel B: Belief Data			
Age	32.07	8.55	843
Education (in years)	3.52	3.86	843
Worker works on Fixed Work contracts	0.35	0.48	843
Worker works on Fixed Hour contracts	0.39	0.49	843
Worker works on both types of jobs	0.26	0.44	843

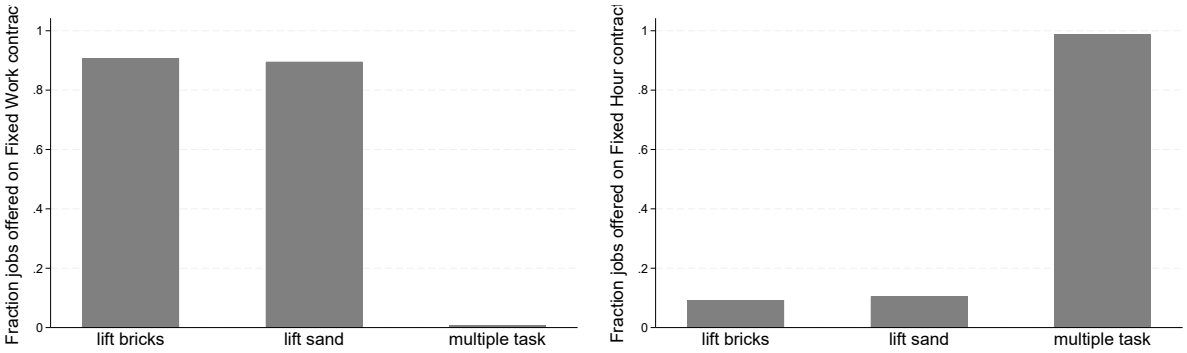
The number of observations in Panel A may vary due to missing data.

Panel B describes the belief-survey sample. 35% of workers report usually working on Fixed Work jobs, 39% report usually working on Fixed Hour jobs, and 26 percent report working on both. This overlap matters for interpretation. The two contract structures are not served by separate worker populations; many workers participate in both types of work and hold beliefs about wages under both contract forms. The contract comparisons below therefore come from a market in which the worker pool substantially overlaps across contract structures.

Job types and contract structures Figure 3 documents the empirical mapping between job types and contract structures. Multiple-task jobs are almost always offered on Fixed Hour contracts, while single-task lifting jobs are offered on Fixed Work contracts in about 90 percent of cases. Because job type and contract structure are closely related, Section 5.2.1 separately uses single-task jobs observed under both contracts to compare contract structures while holding the physical task fixed.

Data Checks Appendix C.1 reports basic data checks. Undercutting varies across labor stands, motivating labor-stand fixed effects in the main specifications. Enumerator-level variation is smaller, apart from one outlier; the results are robust to enumerator fixed effects and to excluding that enumerator. Undercutting rises modestly over the morning, but negotiation times are similarly distributed across Fixed Hour and Fixed Work contracts, and the main estimates are robust to controlling for time of day.

Figure 3: Relationship between job type and contracts



(a) Jobs offered on *Fixed Work* contracts

(b) Jobs offered on *Fixed Hour* contracts

Notes: The figure shows data collected at the spot market in which firms offer jobs and contracts to workers.

5 Undercutting Across Contracts

This section examines how wage competition differs across contract structures within the same labor market. Our mechanism predicts greater wage compression under Fixed Hour, where productivity differences have less scope to generate differences in reservation wages, and consequently less undercutting than under Fixed Work. We measure this competition directly from the offers of workers bidding for the same job. The comparison asks whether workers sustain greater restraint in wage competition under some contracts than others, even within a shared bargaining and institutional environment.

5.1 Main result

We estimate

$$Y_{jd} = \alpha + \beta FixedWork_{jd} + \mu_d + \lambda_{\ell(j)} + \rho Success_j + \epsilon_{jd}, \tag{5.1}$$

where Y_{jd} is an indicator for whether undercutting on wage occurred in negotiation j on date d. $FixedWork_{jd}$ equals one if the job was offered under a Fixed Work contract and zero if it was offered under a Fixed Hour contract. The term μ_d denotes survey-date fixed effects, $\lambda_{\ell(j)}$ denotes labor-stand fixed effects, and $Success_j$ is an indicator for whether the negotiation ended in a hiring agreement. Standard errors are clustered by survey date. The coefficient β is the contract-structure gradient in undercutting: it compares Fixed Work and Fixed Hour negotiations within the same survey date and labor stand, conditional on whether the negotiation succeeded.

Table 2 reports the results. The contrast between the two contract structures is sharp. Workers undercut one another on wage in 21 percent of Fixed Hour negotiations. Under Fixed Work contracts, the rate rises to 39.8 percent. The gap is large and robust to day fixed effects (column 2). Columns 3 and 4 restrict the sample to successful negotiations and yield a similar pattern. Column

Table 2: Undercutting in *Fixed Work* contracts

	Undercutting					Percent undercut
	All		Successful		All	
Fixed Work contract	0.186***	0.180***	0.180***	0.179***	0.165***	0.059***
	(0.027)	(0.027)	(0.031)	(0.031)	(0.026)	(0.019)
Observations	1,396	1,395	1,170	1,168	1,415	357
Mean for Fixed Hour	0.21	0.21	0.24	0.24	0.21	0.15
Day Fixed Effect	No	Yes	No	Yes	No	No

The dependent variable *undercutting* captures whether any worker tried to undercut another worker on price. *Successful* includes those observations in which the firm and worker were able to complete the negotiation. *Percent undercut* captures the difference between any worker's first offer and the final offer of any other worker. Percent undercut includes only those observations in which undercutting occurred and for which we observe both the first and the last offer. Standard errors, clustered by date, are in parentheses. All specifications include fixed effects for labor stand. Columns 1–4 and 6 also include a fixed effect for negotiation success. Column 5 does not include the negotiation-success fixed effect. Column 6 controls for the first offer of the worker. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

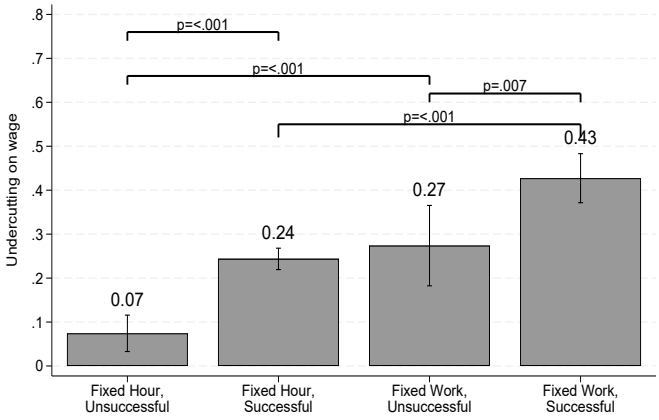
5 drops the fixed effect for negotiation success, which is itself determined within the negotiation, and the coefficient is essentially unchanged. Column 6 measures the extent of the undercutting rather than its incidence, defined as the difference between any worker's first offer and the final offer of any other worker (which must be lower), divided by the first offer. The mean is 15 percent for Fixed Hour negotiations, and the coefficient on Fixed Work is 5.9 percentage points. This indicates that workers cut wages by a larger fraction under Fixed Work.

Figure 4 plots coefficients from a regression of undercutting on the interaction of contract structure with negotiation success, after removing labor-stand fixed effects. The contract gap is present among both successful and unsuccessful negotiations, and the level of undercutting is higher among successful negotiations within each contract structure.

Unsuccessful negotiations. Failed negotiations provide another way to see whether wage compression is sustained in bargaining. In Fixed Hour negotiations that do not result in a hire, workers almost never respond by offering to work below another worker's stated wage: in 92.6 percent of failed Fixed Hour negotiations, no undercutting occurs. This pattern suggests that, when agreement is not reached, workers often reject the job rather than compete against one another by cutting the stated rate. Wage compression therefore appears more durable under Fixed Hour contracts, even in negotiations where no agreement is reached.

The pattern differs under Fixed Work. Among failed Fixed Work negotiations, 27 percent involve an attempted undercut. These attempts do not ultimately produce an agreement, but they show that workers are more willing to challenge another worker's stated wage under Fixed Work contracts. The contrast reinforces the main result: wage-setting is more compressed under Fixed Hour contracts, while Fixed Work contracts create greater scope for downward wage competition even when the negotiation fails.

Figure 4: Undercutting on wage



Notes: The figure plots coefficients from a regression where the dependent variable is undercutting, and the independent variables are the interaction of contract structure (*Fixed Hour* or *Fixed Work*) with an indicator for the success of the negotiation. We use fixed effects for labor stand. Standard errors are clustered at the day level.

5.2 Robustness of Undercutting to alternate explanations

In this subsection we check whether the difference in undercutting across contract structures could be explained by factors other than the features of the contract. This is especially important because we observe these negotiations in a natural setting and not an experimental setting.

Contract value. Undercutting may be more valuable for workers when the stakes are higher. If Fixed Work contracts are systematically more valuable per worker than Fixed Hour contracts, the higher rate of undercutting could reflect competition for higher-stakes jobs rather than the structure of the contract. Appendix Table D-1 controls for the per-worker value of the contract. In the subsample where contract value is observed, controlling for per-worker contract value leaves the Fixed Work coefficient positive and statistically significant.

Enumerator effects. Section 4.4 documented that one enumerator is an outlier in the level of undercutting recorded. Appendix Table D-2 adds enumerator fixed effects and re-estimates the specification excluding observations from this enumerator. The coefficient on Fixed Work is essentially unchanged.

Number of workers actively negotiating. A negotiation with more active workers mechanically creates more opportunities for undercutting. We therefore check whether the Fixed Work gap is explained only by the number of workers who actively negotiate. This variable captures the number of workers who speak, quote, or otherwise enter the bargaining conversation. It is not a measure of how many workers are physically present or aware of the negotiation. When an employer arrives at the stand, other workers often gather around and observe the exchange. A

negotiation coded as involving one active worker therefore need not be a one-to-one conversation between the employer and that worker.

Appendix Table D-3 addresses this in two ways. First, we control for the number of active negotiating workers. Second, we restrict the sample to negotiations with at least two active workers, where undercutting is mechanically possible. The coefficient on Fixed Work remains positive and statistically significant in both specifications. The coefficient falls when the number of active workers is included, but we interpret this reduction as informative rather than as evidence against the mechanism. Contract structure can affect not only whether a worker undercuts conditional on entering, but also whether other workers enter the bargaining conversation at all. Under Fixed Hour contracts, a stated prevailing wage gives other workers less scope to enter and quote a lower rate. Under Fixed Work contracts, where the appropriate rate is less focal and worker-specific completion costs are more salient, other workers have greater scope to enter and compete. Consistent with this interpretation, interference is 17 percentage points more common under Fixed Work contracts (Appendix Table D-7). The remaining gap after conditioning on active participation captures differences in undercutting among workers who enter the negotiation.

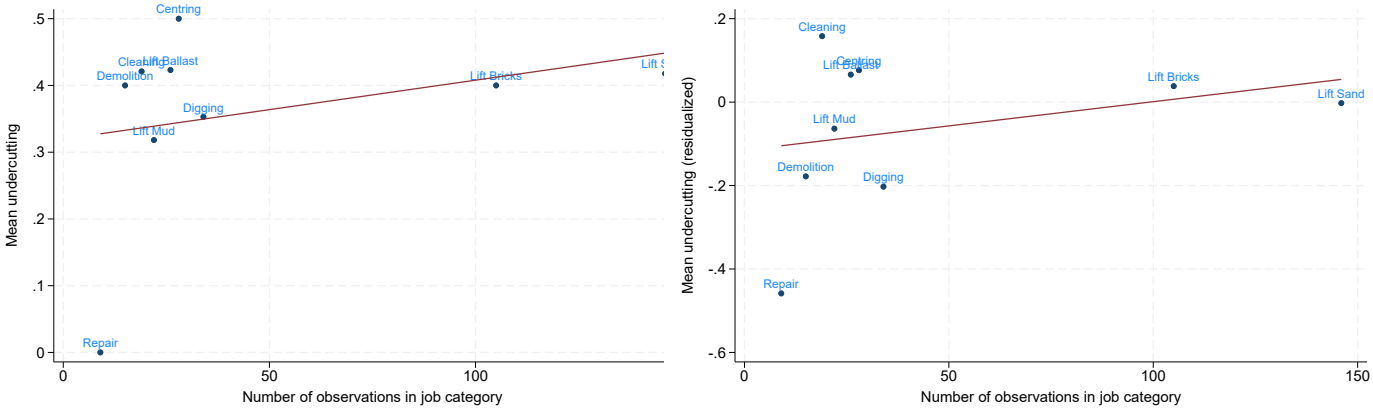
Time of day. The rate of undercutting rises gradually over the morning (Figure C-2a), but the distribution of negotiation times is similar across contract structures (Figure C-2b). Appendix Table D-4 includes the time of negotiation as a control. The coefficient on Fixed Work is essentially unchanged. The contract gap is not driven by Fixed Work negotiations occurring later in the hiring window, when remaining outside options are fewer.

Worker selection. Different workers may compete for the two contract structures, in which case the contract gap could reflect who bids rather than how the contract shapes bidding. In order to test whether this is the case, we use data from the belief survey, which asked each of the 843 workers which type of job they typically perform (Panel B of Table 1). We find substantial overlap between the two pools: 35 percent of workers report typically working on Fixed Work jobs, 39 percent on Fixed Hour jobs, and 26 percent report working on both. This makes it unlikely that the contract gap is driven entirely by two separate worker populations. While it does not rule out selection into particular negotiations, it weakens the concern that Fixed Hour and Fixed Work jobs are served by distinct labor pools.

Imprecise beliefs A natural alternative interpretation of the higher undercutting under Fixed Work is that workers' beliefs about appropriate wage levels are still evolving, particularly for job types that occur infrequently. Fixed Work jobs are less common than Fixed Hour jobs (Table 1), and if workers have limited exposure to a particular Fixed Work job, their reservation wages for it may be noisier, leading to more undercutting. The model interprets dispersion as productivity-driven. The alternative interprets it as belief imprecision.

If unfamiliarity with rare Fixed Work jobs were the main reason for higher undercutting, rarer

jobs should exhibit more undercutting. We do not find this pattern. The relationship between job frequency and undercutting is positive rather than negative, both in raw means and after residualizing for labor-stand, enumerator, and month fixed effects. This check does not support the simple account that undercutting is high because workers are unfamiliar with rare Fixed Work jobs.



(a) Mean undercutting

(b) Residualized mean of undercutting

Figure 5: Correlation between number of observations in a job and undercutting.

Notes: Figure shows the correlation between the number of observations for job types within Fixed Work contracts and the rate of undercutting. The line plots the linear fit of a regression of undercutting on the number of observations. Panel (a) shows the relation for raw means; Panel (b) shows the relation after residualizing for labor-stand, enumerator, and month fixed effects.

5.2.1 Is undercutting driven by job type or contract structure?

There is almost a one to one mapping between job type and contract structure (Figure 3). A natural concern with the results so far is whether this is driven by the nature of the job or the structure of the contract. To address this concern, we exploit cases in which the same job type is offered under both contract structures. Approximately 10 percent of lifting-sand and lifting-bricks jobs — both single-task in nature — are offered on Fixed Hour contracts rather than the typical Fixed Work. This variation allows us to compare undercutting across contract structures while holding the physical task fixed.

Table 3 restricts the sample to single-task lifting jobs and re-estimates equation (5.1). Within single-task jobs, undercutting is substantially higher on Fixed Work contracts than on Fixed Hour contracts, and the point estimate is close to the baseline. The finding suggests that the relevant margin is not the nature of the job, but the way the wage is tied to the worker's effort and time.

Employers choose the contract form, so the within-task comparison should not be interpreted as random assignment of Fixed Work and Fixed Hour contracts to otherwise identical jobs. A remaining concern is that employers may offer a single-task job on a Fixed Work contract when they expect greater worker competition or when the job is likely to attract more bidders. The evidence limits, but does not eliminate, this interpretation. The Fixed Work gap remains when we restrict

Table 3: Undercutting across contract structure in single-task jobs

	Undercutting		Percent undercut
	All	Successful	
Fixed Work contract	0.2392**	0.2254**	0.0445
	(0.0942)	(0.1052)	(0.0551)
Observations	277	224	106
Mean for Fixed Hour	0.19	0.22	0.19
Day Fixed Effect	No	No	No

The sample consists of jobs that involved lifting bricks or sand and no other type of work. The dependent variable *undercutting* captures whether any worker tried to undercut another worker on price. *Successful* includes those observations in which the firm and worker were able to complete the negotiation. *Percent undercut* captures the percent difference between any worker's first offer and the final offer of any other worker, and includes only those observations in which undercutting occurred and for which we observe both offers. Standard errors, clustered by date, are in parentheses. All specifications include fixed effects for negotiation success. Column 3 controls for the first offer of the worker. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

the sample to the same broad physical tasks, lifting sand and lifting bricks, and Appendix Table D-6 shows that Fixed Hour and Fixed Work single-task negotiations are broadly similar on observed characteristics, including the material being lifted, destination floor, negotiation success, and time of day. We therefore interpret the within-task comparison as evidence that the contract gap is not explained by broad job type alone, while recognizing that employer selection into contract form prevents this exercise from isolating the causal effect of contract structure under random assignment.

5.3 Seasonal variation

If undercutting measures wage competition, it should rise when competitive pressure rises. We check whether this is the case using the onset of monsoon as a test. Construction demand falls sharply from mid-July through September, outside options weaken, and workers face stronger pressure to accept less. In order to test whether undercutting responds, we regress it on an indicator for lean-season negotiations, with fixed effects for the labor stand, the success of the negotiation, and the contract structure. Undercutting rises under both contracts — by 7 percentage points from a peak-season base of 17 percent under Fixed Hour, and by 11 points from a base of 34 percent under Fixed Work, both statistically significant (Appendix Table D-5, column 2) — and negotiations succeed more often during the lean season (columns 7–8). The pattern is similar when we restrict to labor stands surveyed in both seasons and when we date the lean season from July 15 rather than August 1 (columns 3–6).

The seasonal increase shows that wage competition becomes more common when outside options weaken, while remaining more prevalent under Fixed Work. This connects the contract

comparison to the broader question of labor-market adjustment. Where wage compression sustains a common wage and restrains lower competing bids, a fall in labor demand may be reflected more in labor rationing. Where workers have greater scope to compete through lower bids, payments may adjust more readily. The mix of Fixed Hour and Fixed Work contracts may therefore matter for how a labor market absorbs excess labor supply. Our evidence documents the wage competition underlying these potential adjustment margins.

6 Dispersion of Wages Across Contracts

Our mechanism links wage compression and wage competition through the extent to which productivity differences generate differences in reservation wages. This section examines the distributional implication: stated minimum acceptable wages and beliefs about prevailing wages should be more concentrated under Fixed Hour than under Fixed Work. We first examine the belief survey and then compare its patterns with quoted wages in actual negotiations and responses to the vignette survey. Section 7 examines the relationship between stated wages and productivity proxies.

6.1 Dispersion in the belief survey

Figure 6 presents the wage-belief distributions for Fixed Hour jobs. Both the stated prevailing-wage and minimum-acceptable-wage distributions are tightly concentrated, with most responses clustering at a small number of wage points.[3] The dispersion is correspondingly limited: the standard deviation of stated reservation wages is 40.85 INR, and the entropy is 1.06 (Table 4). The prevailing-wage distribution displays the same focality. This pattern is consistent with the model's prediction for Fixed Hour contracts: stated wages compress around a common benchmark, leaving limited scope for worker heterogeneity to generate dispersed wage beliefs.

Table 4: Dispersion of Stated Reservation Wages by Contract Structure and Task

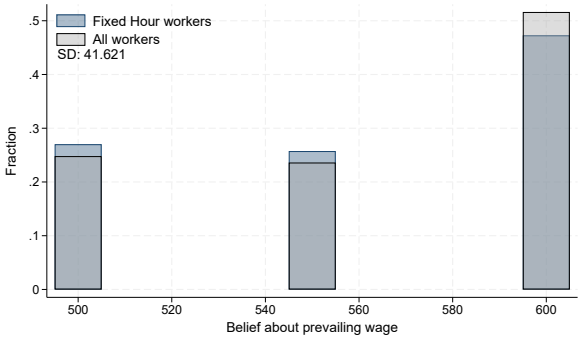
Contract / Task	Std. Dev.	CV	Entropy
Fixed Hour	40.85	0.08	1.06
Fixed Work (Lifting Sand)	306.62	0.21	1.88
Fixed Work (Lifting Bricks)	315.94	0.19	1.83

Notes: CV is the standard deviation divided by the mean. $E_2 = -\ln\left(\sum_w p(w)^2\right)$. Estimates are based on survey responses to the question: *What is the minimum amount of money you would accept for X work?*

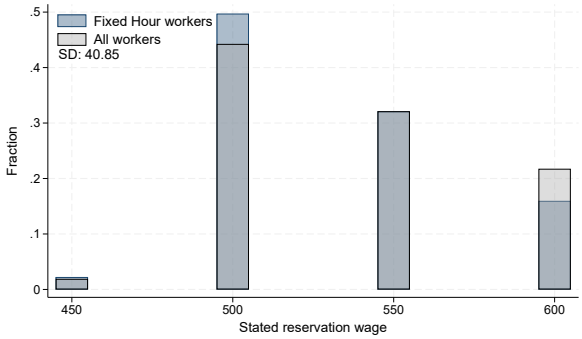
Stated wages for Fixed Hour work do not vary much between workers who report doing Fixed Hour jobs regularly (39 percent of the sample) and the full set of workers. This indicates that workers who do not typically work on a particular contract structure still hold informed beliefs about its prevailing wage, so the dispersion we observe is not a feature of inexperience.

[3] Histograms use 10 INR bins.

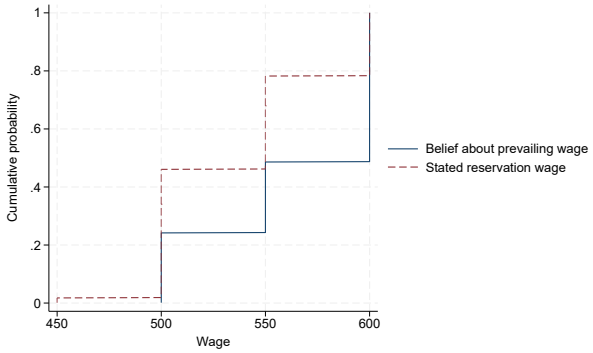
Figure 6: Distribution of stated wages for *Fixed Hour* work



(a) Prevailing wage



(b) Stated reservation wage



(c) Cumulative distribution

Notes: The figure shows data from a survey of workers conducted from January to September 2024. Panel (a) captures the response to: *What is the prevailing wage in the market for daily wage work?* Panel (b) captures the response to: *What is the minimum amount of money you would accept for daily wage work?* Each bar captures responses within a width of 10 INR. In panels (a) and (b), navy bars restrict to workers who report typically working on Fixed Hour jobs; gray bars are all workers. Data are winsorized at 1%.

Figure 7 shows the corresponding distributions for two Fixed Work jobs — lifting sand and lifting bricks. In both cases, the distributions of stated prevailing and minimum wages are much more spread out, with substantial mass across a wider range.[4] The standard deviation of stated reservation wages is approximately 307 for lifting sand and 316 for lifting bricks. Because Fixed Work jobs pay several times the Fixed Hour daily wage, raw standard deviations partly reflect the difference in wage levels. The coefficient of variation nets out the level: dispersion per rupee of the mean wage is 0.21 for lifting sand and 0.19 for lifting bricks, against 0.08 for Fixed Hour work (Table 4). Entropy values are also higher (1.88 and 1.83), indicating that workers' responses spread across more grid points and that collisions are less frequent. Under Fixed Work, responses are not concentrated around a single benchmark to the same extent as under Fixed Hour.

Taken together, these patterns support the model's distributional prediction. The prevailing-wage distributions directly show weaker focality under Fixed Work, and the stated reservation wages display the same contrast. Fixed Hour responses cluster around a small number of wage points, while Fixed Work responses are spread across a wider support and have lower collision rates. In the model, this dispersion is the distributional condition that makes undercutting more likely: workers are less likely to agree on a single prevailing-wage benchmark, and lower offers become harder to identify and sanction as deviations from that benchmark.

Corroboration in the vignette survey and the negotiation data Stated wages come from a survey, so the dispersion we document could reflect how workers answer questions rather than how they bargain. In order to test whether this is the case, we use the wages workers quote during actual negotiations. Appendix Figure D-3 shows the distribution of these quoted wages. The pattern mirrors the belief data, including the contract-structure gap in variance. This corroborates the survey evidence using actual wage offers.

The vignette survey elicits prevailing-wage beliefs for a Fixed Hour and a Fixed Work job from the same workers. These beliefs are again far more dispersed for the Fixed Work job (Appendix Figure C-6 and Table C-1).

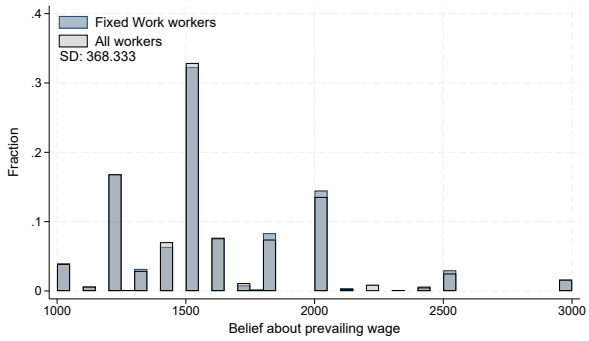
6.2 Robustness to Alternative explanations

Labor stand Beliefs about wages may vary across labor stands, raising the concern that observed dispersion reflects stand-level differences rather than individual workers. Appendix Figures C-4 and C-3 show the distributions after demeaning labor-stand effects. The distributions and standard deviations are similar to the main figures.

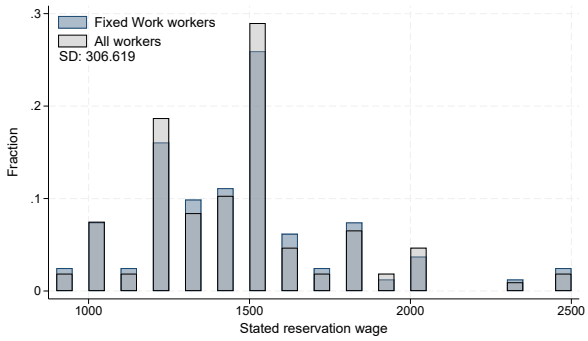
Worker Experience A second concern is that dispersion reflects experience rather than the productivity channel. More experienced workers may hold more precise beliefs about the prevailing wage, with norm enforcement weaker among less experienced workers. We plot the distributions separately for experienced and inexperienced workers in Appendix Figure D-1, using age below

[4] Histograms use 50 INR bins.

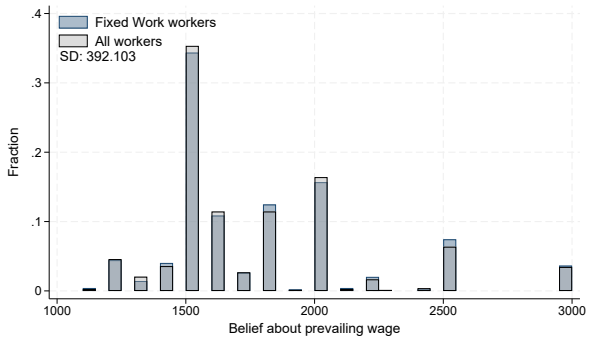
Figure 7: Distribution of stated wages for *Fixed Work* contracts



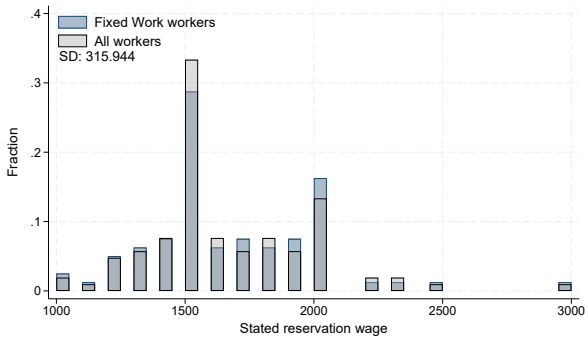
(a) Lifting sand — prevailing wage



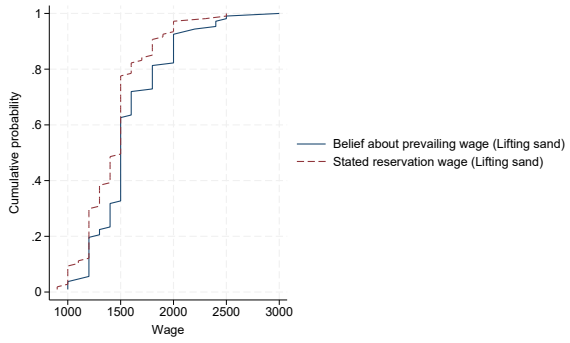
(b) Lifting sand — stated reservation wage



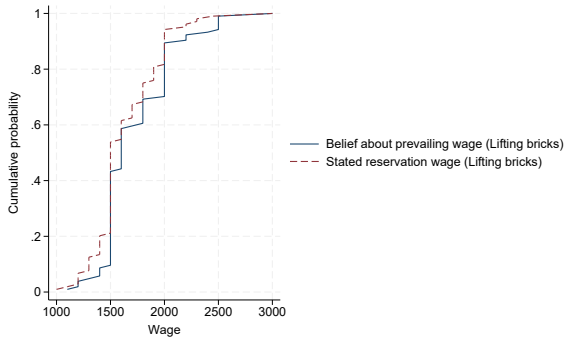
(c) Lifting bricks — prevailing wage



(d) Lifting bricks — stated reservation wage



(e) Lifting sand — cumulative distribution



(f) Lifting bricks — cumulative distribution

Notes: The figure shows data from a survey of workers conducted from January to September 2024. Panels (a), (b) capture the response to: *What is the prevailing wage / reservation wage for lifting one trailer of sand to floor two?* Panels (c), (d) capture the response to: *What is the prevailing wage / reservation wage for lifting one trailer of bricks to floor two?* Each bar captures responses within a width of 50 INR. Navy bars restrict to workers who report typically working on Fixed Work jobs; gray bars are all workers. Data are winsorized at 1%.

25 as a marker of less experience. Variance is somewhat higher for less experienced workers, but in absolute terms standard deviations are similar across the experience groups. Appendix Figure D-2 reinforces this: the standard deviation of stated reservation wages declines slightly with age, but the decline is small relative to the gap between Fixed Hour and Fixed Work distributions.

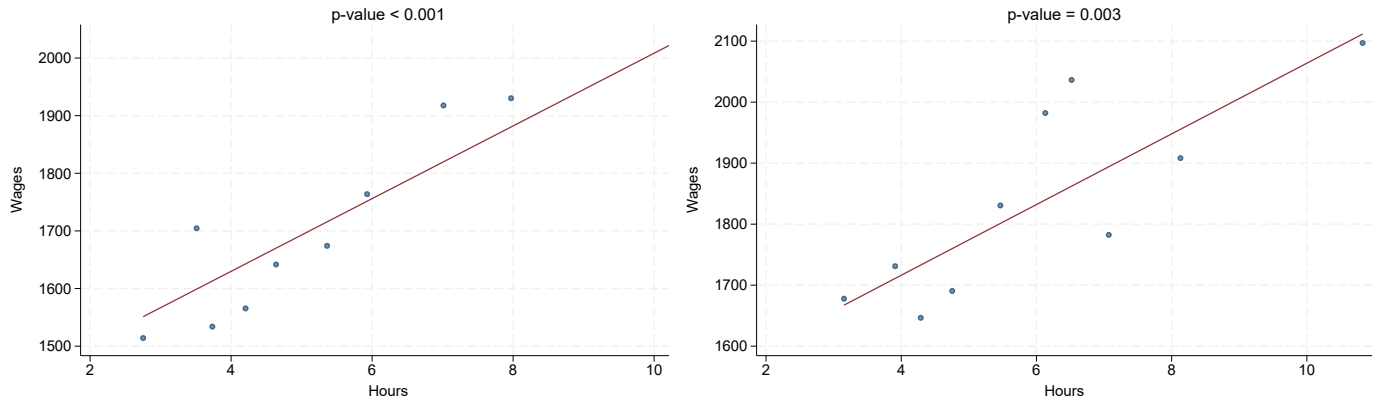
7 Testing the Mechanism

Sections 5 and 6 document the model's two main outcome patterns: workers undercut more often under Fixed Work, and stated wages are more dispersed under Fixed Work. These facts, however, do not by themselves identify the mechanism in Figure 1. This section tests the links in that mechanism directly, following the mapping from model objects to data in Figure 2. We examine four links: (i) whether productivity predicts stated wages when the contract makes completion time payoff-relevant; (ii) whether agreement on the prevailing wage is weaker under Fixed Work; (iii) whether the norm against undercutting depends on the focality of the prevailing-wage benchmark; and (iv) whether heterogeneity in completion times raises expected undercutting when the job and contract are held fixed. We test these links using the belief data and the vignette survey described in Section 4.3.

7.1 Productivity and stated wages (Proposition 1)

The first step in the mechanism is that productivity enters the latent reservation wage under Fixed Work but has limited scope to do so under Fixed Hour (Proposition 1). Through the bridge equation (3.5), this yields an observable implication: productivity proxies should predict stated wages for Fixed Work jobs, where faster completion preserves within-day time, but should have little systematic relationship with stated wages for Fixed Hour jobs, where the worker sells the same workday regardless of speed.

Self-reported completion time. We do not observe worker type directly, so we use the worker's self-reported time to complete a given Fixed Work job as a proxy for productivity. Workers who expect to finish faster should require less compensation for the task because they preserve more within-day time. Reported completion time should therefore be positively related to the stated reservation wage. Figure 8 plots binned scatterplots of stated reservation wages against self-reported completion time for two Fixed Work jobs—lifting sand and lifting bricks. In both cases the relationship is positive: workers who report needing more time also state higher reservation wages. The relationships are statistically significant ($p < 0.001$ for sand, $p = 0.003$ for bricks). This pattern is consistent with the prediction that, under Fixed Work, productivity affects stated wages through expected completion time.



(a) Lifting sand

(b) Lifting bricks

Figure 8: Correlation between self-reported hours of completion and stated reservation wage

Notes: The figure shows the correlation between self-reported hours to complete a job and the stated reservation wage, for two Fixed Work jobs. The hours figure responds to: *What is the time it would take two workers to lift 1 trailer of sand/bricks to floor 2?* Each panel shows a binned scatterplot of wages against hours, netting out market fixed effects. The sample is divided into 10 equal-sized bins of the residualized regressor; the mean wage within each bin is plotted. Total observations: 134. Circle markers correspond to binned means; the solid line shows the best-fit linear relationship. Reported p-values are from the underlying regression of wages on hours with market fixed effects. Wages and reported times are winsorized at 1%.

However, the figure alone cannot distinguish this mechanism from two alternative explanations. First, some workers may systematically report higher numbers for both completion times and wages, generating a positive cross-worker correlation without a job-specific link between speed and stated wages. Second, a cross-worker slope does not show whether the relationship holds within the same worker across different Fixed Work jobs.

Table 5 estimates the relationship within worker, across the two Fixed Work jobs, with a worker fixed effect. The same worker believes the job she is slower at pays more: a one percent increase in her reported completion time raises her belief about the prevailing wage by 0.18 percent ($p = 0.026$). The worker fixed effect absorbs any worker who reports high numbers across the board, so the result is specific to the job rather than to how the worker reports.

Table 5: Prevailing-wage beliefs and own completion time

	Prevailing-wage belief (log)
Elasticity w.r.t. own completion time (β)	0.181
	(0.080)
p-value	0.026
Within-R^2	0.101
Workers	133
Observations	266

Notes: The table reports a within-worker regression of the log belief about the prevailing wage on the log of own self-reported completion time, with worker and job fixed effects, pooling two Fixed Work jobs (lifting one trailer of sand and one trailer of bricks to floor two). Standard errors clustered by worker in parentheses. Within-R^2 is the share of variation in beliefs, net of both fixed effects, explained by own completion time. Beliefs are winsorized at 1%.

Age as a proxy for ability across contract types. Self-reported completion time is available only for Fixed Work jobs, so the previous test cannot distinguish the productivity channel from any alternative that operates similarly under both contract structures. To test whether the gradient is specific to Fixed Work — as the model predicts — we use worker age as an alternative proxy and examine stated reservation wages across both contract structures. In manual construction labor, older workers are more experienced and tend to complete tasks more efficiently. Under the model, this should matter for Fixed Work, where faster completion translates into more leisure and a lower reservation wage. For Fixed Hour, where workers commit to the same number of hours regardless of ability, age should have no systematic relationship with stated wages.

Figure 9 is consistent with this prediction. Standardized stated reservation wages for Fixed Hour contracts are approximately flat across age groups, while stated reservation wages for both Fixed Work jobs decline with age. Younger workers state substantially higher minimums than workers aged 30 and above for Fixed Work, but not for Fixed Hour. Because age may proxy for experience, physical capacity, outside options, and selection into tasks, this evidence is suggestive rather than definitive. The contract-specific pattern is nevertheless informative: the age gradient appears where completion time is payoff-relevant and is absent where the contract fixes the worker's time.

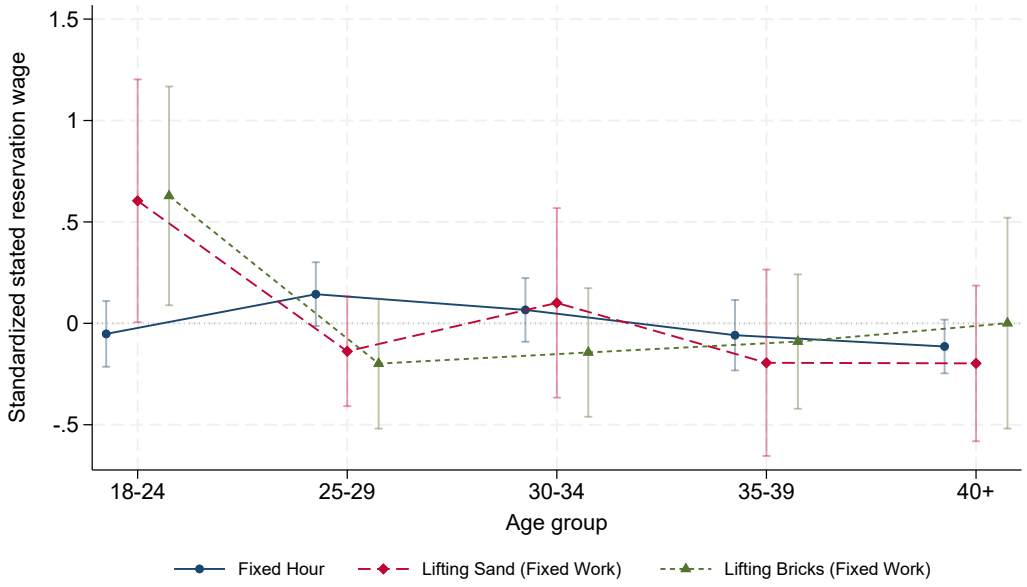


Figure 9: Stated reservation wage by age and contract type

Notes: The figure plots mean standardized stated reservation wages by age group, separately for Fixed Hour contracts and two Fixed Work jobs (lifting sand and lifting bricks to floor 2). Stated wages are residualized for market fixed effects and standardized to place all three job types on a comparable scale. Vertical bars show 95% confidence intervals based on standard errors of the bin means. Data are winsorized at 1%.

7.2 Agreement on the prevailing wage

Corollary 3 predicts that agreement on the prevailing wage falls under Fixed Work. The vignette survey measures this object directly. Each worker evaluated a Fixed Hour job and a Fixed Work job in random order, reported the prevailing wage, stated whether that wage was fixed, and reported how many of ten workers would quote the same rate. Table 6 reports the within-worker contrasts. Workers are much more likely to describe the Fixed Hour rate as fixed: 92 percent do so for Fixed Hour, compared with 9 percent for Fixed Work ($p < 0.001$). Expected agreement also falls, from 8.00 to 6.16 of ten workers naming the same rate ($p < 0.001$). The Fixed Hour job therefore has a much more focal prevailing-wage benchmark. For the Fixed Work job, workers can still state a rate, but that rate is less likely to be viewed as fixed and less widely shared. Enumerator fixed effects leave these contrasts essentially unchanged (Appendix Table C-3).

7.3 The norm: basis, enforcement, and endogeneity

The norm holds under both contracts, but Fixed Hour anchors it more clearly to a focal wage. *In each scenario, workers were told that one worker quoted the prevailing rate and another offered to do the same job for less. They then reported whether the second worker had done something wrong, why, and how many peers would sanction him.* The norm against undercutting remains strong even when the wage is less focal: the share saying that the lower offer is "not wrong" is low under both contracts

Table 6: Beliefs, the prevailing wage, and the norm: Fixed Hour vs. Fixed Work

	Fixed Hour	Fixed Work	Difference	p
Panel A: Focal wage and agreement				
Rate is fixed (share)	0.92	0.09	-0.84	<0.001
Agreement on rate (0–10)	8.00	6.16	-1.84	<0.001
Panel B: The wage norm				
Undercutting not wrong (share)	0.06	0.10	0.04	0.071
wrong: rate is fixed (share)	0.69	0.06	-0.63	<0.001
wrong: undercutting always wrong (share)	0.25	0.84	0.59	<0.001
not wrong: rate not fixed (share)	0.00	0.02	0.02	0.084
not wrong: everyone wants work (share)	0.06	0.08	0.02	0.250
Peer consequences (0–10)	6.14	5.76	-0.39	0.006
Panel C: Productivity justification				
Justification rating (1 valid–4 wrong)	3.31	3.21	-0.10	0.039
Justification accepted (share)	0.08	0.11	0.04	0.090
Respondents		196		

Notes: Within-worker comparison of 196 workers' responses to a Fixed Hour and a Fixed Work scenario (seen in random order), from a vignette survey conducted in June 2026. Each row is a separate regression of the outcome on a Fixed-Work indicator with standard errors clustered by respondent; the Difference column is the Fixed-Work minus Fixed-Hour coefficient. "Rate is fixed" is the share answering yes; "Agreement" is how many of ten workers would name the same rate; the norm rows are the shares choosing each option of the wrongness question; "Peer consequences" is how many of ten would sanction the undercutter; the productivity-justification rows use the 1–4 rating of a faster worker's lower bid. The p column reports the two-sided p-value of the difference. Exact wording in Appendix E.2.

(0.06 and 0.10, $p = 0.071$). What changes is the basis of the objection. Under Fixed Hour, workers object because *the rate is fixed* (0.69 versus 0.06, $p < 0.001$). Under Fixed Work, where the rate is less focal as a benchmark, they instead object that *undercutting is wrong whatever the rate* (0.25 versus 0.84, $p < 0.001$). Enforcement follows the same pattern of focality: workers expect more peers to sanction the undercutter under Fixed Hour than under Fixed Work (6.1 versus 5.8 of ten, $p = 0.006$), as in Assumption 5. The norm is therefore present under both contracts, but Fixed Hour provides a more focal prevailing-wage benchmark that gives the norm a concrete object to defend and makes peer enforcement more likely.

Workers reject the productivity justification under both contracts. A natural defense of a lower bid is that a faster worker has lower completion costs, so his lower rate reflects a cost difference rather than a norm violation. Workers largely reject this defense. When asked to rate a faster worker's lower bid from 1 (a fully valid justification) to 4 (completely wrong), they place it close to the wrong end of the scale under both contracts (3.31 under Fixed Hour and 3.21 under Fixed Work). Only 8 percent of workers under Fixed Hour and 11 percent under Fixed Work accept the justification outright. The defense receives slightly more support under Fixed Work: it is rated as somewhat more valid and is accepted somewhat more often ($p = 0.039$ and $p = 0.090$ for the two differences). This pattern is in the direction predicted by the productivity channel, but the level of rejection remains high under both contracts. We therefore interpret the Fixed Work difference as weak evidence that productivity can partly rationalize a lower bid, not as evidence that workers

generally view such bids as acceptable. The productivity mechanism appears to affect workers' expectations about undercutting (Table 7) more strongly than their normative approval of it.

These findings relate to Breza et al. (2018), who find that pay inequality has no discernible effect on output, attendance, or group cohesion when workers can clearly perceive that their higher-paid peers are more productive. Their experiment studies responses to employer-assigned pay differences, whereas our vignette asks whether greater productivity justifies offering to work for less than another worker. A productivity difference that mitigates adverse responses to unequal pay need not make a lower competing bid acceptable. One possible explanation is that respondents object to the competitive act of undercutting, even when they recognize the underlying cost difference. This interpretation is consistent with the broader objection to undercutting documented above.

Distinguishing the prevailing-wage norm from the norm against undercutting. Social norms are present in this setting, but they operate on two related margins that should be kept distinct. The first is a norm around the prevailing wage: workers recognize a common wage for a job and treat deviations below that wage as violations. This norm requires a focal benchmark. The second is a norm against undercutting: workers disapprove of one worker cutting another worker's stated rate, even when there is less agreement about what the job should pay. Breza et al. (2025) document sanctions against workers who publicly accept below-floor wages, and our overall undercutting rate of 27 percent—low relative to the competitive pressure in these markets—is consistent with some norm-based restraint. The relevant question is whether the contract gap reflects contract-specific norms taken as primitives, or whether contract structure first changes the focality of the prevailing wage and thereby changes the basis and expected enforcement of the norm.

The vignette evidence supports the latter interpretation. The norm against undercutting is present under both contracts: few workers say that a lower offer is "not wrong." What differs is the benchmark workers use to justify the objection. Under Fixed Hour, workers overwhelmingly invoke the prevailing-wage norm. Under Fixed Work, where agreement on a fixed rate is weaker, they instead invoke a more general norm against undercutting. Expected enforcement follows the same distinction. Workers expect more peer sanctions under Fixed Hour, where agreement over the prevailing wage is stronger, than under Fixed Work, where the benchmark is less focal. Thus, the contract does not appear to switch the norm against undercutting on or off. Rather, it changes whether that norm is reinforced by a clear prevailing-wage benchmark that peers can identify and defend.

This distinction also clarifies the alternative explanation based on contract-specific norms. One version of that explanation is that different worker pools compete for the two contracts and differ in cohesion or sanctioning capacity. The overlap in worker pools documented in Section 4.4 makes this unlikely, although it cannot rule out all selection into particular negotiations. A stronger version is that the same workers apply intrinsically different norms to Fixed Hour and Fixed Work contracts. That account would need to explain why the stated basis of the norm changes with the

focality of the prevailing wage, and why expected sanctions are stronger where agreement on the rate is higher.

We therefore interpret the evidence as follows. The evidence is consistent with a general norm against undercutting under both contracts. Fixed Hour contracts additionally support a prevailing-wage norm because they standardize the unit of exchange around a day of labor, sustain agreement on the rate, and give peers a concrete benchmark to defend. Fixed Work contracts weaken this prevailing-wage norm because completion time and productivity differences disperse stated wages and reduce agreement over the benchmark. The contract gap in undercutting arises not because one contract has a norm and the other does not, but because contract structure shapes whether the norm against undercutting is reinforced by a focal prevailing-wage benchmark.

7.4 Completion-time heterogeneity and expected undercutting (Proposition 3)

The final link connects the distributional mechanism to undercutting. In the model, dispersion in acceptable wages makes workers less likely to share a single prevailing-wage benchmark and increases the scope for a lower offer. In the field data, however, stated-wage dispersion moves closely with contract structure and job type. We therefore use a vignette that holds the job and contract fixed and varies only whether workers are expected to differ in completion times. This test does not directly manipulate stated-wage dispersion; it asks whether workers expect productivity-relevant heterogeneity—the source of dispersion in the model—to make undercutting more likely.

Holding the job fixed, dispersion in completion times raises rate-cutting. We isolate dispersion from the contract gap using data from the vignette survey. *Workers were asked about a task — three workers carrying about 1,500 bricks to the second floor — under one of two versions: either all three expect to finish in about three hours (similar times), or they expect two, three, and four hours respectively (different times). The workers were then asked about undercutting in each scenario.* Because the task and the contract are identical across the two versions, any difference isolates dispersion in completion times, holding job fixed. In the direct comparison, 0.96 of the 189 workers who took a side say undercutting is likelier when completion times differ ($p < 0.001$, exact binomial test), as Panel A of Table 7 shows. Their reasons track the mechanism (Panel B): 0.87 say the work finishes faster, freeing time or effort, 0.22 that workers simply differ in their estimates, and 0.18 that a worker bids low to win the job, while just 0.09 say the amount of work is the same or are unsure.

Job standardizability does not explain expected undercutting. One concern is that Fixed Work jobs may generate dispersion for reasons unrelated to productivity. Because these jobs require completion of a specific task, workers may disagree about the appropriate rate simply because the task is hard to describe or price. To test this, *we described the same Fixed Work job—two workers carrying a trailer of sand to the second floor—to one group in full detail, including the quantity, distance to the building, stair width, and stair condition, and to another group in bare outline. Each worker stated the*

Table 7: Which situation invites undercutting, and why (same task, same contract)

Panel A: Undercutting is likelier in which situation?		
	Share	N
Different completion times	0.93	195
Similar completion times	0.04	195
Same in both	0.03	195
Different vs. similar, exact binomial p<0.001		
Panel B: Reasons for the response (share of all respondents; multiple allowed)		
	Share	
Work finishes faster, freeing time or effort	0.87	
A worker bids low to win the job	0.18	
Workers differ in their estimates	0.22	
Same amount of work, or unclear	0.09	
Respondents	187	

Notes: From a vignette survey conducted in June 2026, in which each worker saw the brick-carrying task with either similar completion times (Situation A) or different completion times (Situation B). Panel A reports the direct comparison, asked of every worker after both situations were described together — in which situation is a worker likelier to quote a lower rate — as the share of all respondents naming each option, with an exact binomial test comparing the different- and similar-times cases. Panel B groups the reasons workers gave for that choice into four categories and reports the share of respondents giving each reason, among those who gave one; it is a multiple-response item, so shares need not sum to one. Exact wording in Appendix E.2.

prevailing rate, reported how many of ten workers would name the same rate, and rated how likely a worker was to undercut it.

Because the underlying task is held fixed, any difference between the two groups comes from how completely the job is specified. If Fixed Work generates expected undercutting because its tasks are vague and difficult to price, the bare-outline description should produce more dispersed stated prevailing rates, lower agreement, and higher expected undercutting. We find no such pattern. Workers rate undercutting as equally likely under the full and partial descriptions (2.61 and 2.69 on a 1–5 scale, $p = 0.678$), and agreement is, if anything, higher under the bare-outline description (6.99 versus 6.58 of ten name the same rate, $p = 0.109$). The fully specified job produces greater dispersion in stated prevailing rates, whether measured by the standard deviation, the coefficient of variation, or entropy ($p = 0.003$ for the standard deviation).

This pattern is inconsistent with the simple view that Fixed Work dispersion is mainly a byproduct of vague task descriptions. One interpretation, consistent with the productivity mechanism, is that detailed task information allows workers to price the job against their own expected completion costs. Once the load, distance, and access are specified, faster and slower workers can form different valuations of the same task. A bare description, by contrast, may elicit a recalled prevailing rate. On this reading, the additional dispersion under the full description is more consistent with productivity-relevant valuation than with a simple vagueness account. What changes workers' expectations about undercutting is not how fully the task is described, but whether workers differ in the time they need to complete it (Table 7).

Table 8: Job standardizability and undercutting (same task, same contract)

Fixed Work (sand); job fully vs. partially specified				
	Full spec.	Partial	Difference	p
Prevailing-rate SD	463.3	362.7	-100.6	0.003
Prevailing-rate CV	0.266	0.224	-0.042	
Prevailing-rate entropy (E_2)	2.210	1.656	-0.555	
Consensus (of 10, 0–10)	6.58	6.99	0.41	0.109
Undercut possibility (1–5)	2.61	2.69	0.08	0.678
Respondents	99	97		

Notes: Between-respondent comparison from a vignette survey conducted in June 2026: each worker saw the same Fixed Work job—two workers carrying a trailer of sand to the second floor—described either with full detail (quantity, distance, stair condition, a helper upstairs, payment on completion; "Full spec.") or with that detail removed ("Partial"). The Difference column is the partial minus full-specification value. The first three rows summarize the dispersion of the stated prevailing rate, winsorized at the top 1%: its standard deviation, coefficient of variation, and Rényi-2 entropy, $-\ln(\sum_w p(w)^2)$. The p on the SD row tests the dispersion difference by a Brown–Forsythe test on the stated rate (both arms describe the same job, so no log rescaling is needed), robust to a Levene test. "Consensus" is how many of ten workers would name the same rate and "Undercut possibility" is the 1–5 rating of how likely a worker is to undercut; these two rows are regressions of the outcome on a partial-specification indicator with robust standard errors, and the p column gives the two-sided p-value of the difference. Exact wording in Appendix E.2.

8 Conclusion

This paper provides evidence that contract structure is an important determinant of wage compression and the scope for wage competition in informal labor markets. In public negotiations at construction labor stands in Patna, workers undercut one another in about 40% of *Fixed Work* (piece-rate) negotiations, compared with 21% of *Fixed Hour* negotiations. This difference remains after controlling for observed negotiation characteristics and comparing broad job categories offered under both contract types. Workers also report greater dispersion in minimum acceptable wages and beliefs about prevailing wages under *Fixed Work*. Together, these findings link contract structure to both the extent of agreement around prevailing wages and the frequency of competition through lower bids.

The proposed mechanism is that contract structure determines how differences in worker productivity affect the minimum wages workers are willing to accept. Under *Fixed Hour* contracts, faster and slower workers give up the same workday, limiting the effect of differences in completion speed on their reservation wages. Under *Fixed Work* contracts, faster workers can finish sooner and retain more time for rest or leisure. They may therefore be willing to accept lower payments for the same task. In the model, these differences lead to greater dispersion in reservation wages, creating more opportunities for workers to compete through lower bids and weakening agreement around a common prevailing wage.

The mechanism tests provide evidence consistent with this explanation. Workers who report longer completion times for *Fixed Work* tasks also state higher minimum acceptable payments for those tasks. In a vignette that holds the task and contract fixed, workers expect more undercutting

when completion times differ across workers. These findings suggest that differences in the time required to complete a job affect the payments workers are willing to accept and create greater scope for wage competition.

The findings also show how contract structure may interact with informal wage-setting norms. Workers disapprove of undercutting under both contract types. Under *Fixed Hour*, however, they are more likely to describe the prevailing wage as fixed, refer to that rate when objecting to undercutting, and expect other workers to sanction those who undercut. Under *Fixed Work*, objections are more often based on a general norm against offering to work for less than another worker has quoted. These patterns suggest that agreement around a common prevailing wage can strengthen opposition to undercutting. Contract structure may therefore help sustain wage compression by reinforcing the shared wage benchmark around which such norms operate.

Appendix B extends the argument to other markets where speed is not the central source of heterogeneity. Consider fixed-price repair work, such as sealing a roof or wiring a panel, where an employer invites several workers to quote a price for completing the job. Workers may differ not mainly in how quickly they work, but in how reliably they can deliver the required outcome. A more skilled worker faces a lower risk that the repair will fail and require unpaid rework. Because they bear a smaller risk of doing the job twice for a single payment, they can quote a lower price for the same expected return. Reservation prices therefore disperse by skill, and the worker with the lowest expected completion cost has greater scope to undercut others. The mechanism is the same as under *Fixed Work*, but the relevant margin is reliability rather than time. If the same workers were hired by the hour, and the employer bore the cost of failed work or rework, this reliability difference would have less scope to enter the wage through the worker's reservation price. More generally, whenever a contract leaves workers a margin through which ability lowers the private cost of delivering the job, competitive wage-setting can disperse wages and create scope for undercutting. When the contract closes those margins, a common wage is easier to sustain.

The findings also have implications for how labor markets adjust to changes in labor supply. When a common prevailing wage limits undercutting, excess labor supply may lead to greater rationing of jobs rather than lower wages. When workers compete through lower bids, payments may adjust more readily. Changes in the types of contracts offered by employers may provide another margin of adjustment. Although we do not directly estimate these employment or contract-choice responses, it shows how contract structure can shape wage-setting behavior and, through it, the ways in which informal labor markets adjust.

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Part I

Appendix

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A Proofs

Proof of Lemma 1.

Proof. Under Fixed Hour, Assumption 1 gives $H_0(\theta, e) = \bar{H}$ and therefore $L_0(\theta, e) = 0$. With the normalization $g(0) = 0$, the worker's nonwage cost conditional on being paid is $C_i + c(e)$. Payment requires $e \geq \underline{e}_0$. Since c is increasing, the cost-minimizing paid effort is $e_0^i = \underline{e}_0$. Hence $w_0^i = C_i + c(\underline{e}_0)$. □

Proof of Lemma 2.

Proof. Under Fixed Work, payment requires task completion and completion time is endogenous. Conditional on accepting the job, the worker chooses effort to minimize $c(e) - g(L_1(\theta_i, e))$, equivalently to maximize $g(L_1(\theta_i, e)) - c(e)$. By Assumption 3, the optimum is interior and satisfies

$$c'(e_1^i) = g'(L_1(\theta_i, e_1^i))L_{1e}(\theta_i, e_1^i).$$

Substituting the optimized value into (3.1) gives $w_1^i = C_i + r_1(\theta_i)$. At a regular interior optimum, differentiating the effort first-order condition gives

$$\frac{dH_1(\theta, e_1^*(\theta))}{d\theta} = \frac{H_{1\theta}c'' + g'(L_1)(H_{1\theta}H_{1ee} - H_{1e}H_{1e\theta})}{c'' + g'(L_1)H_{1ee} - g''(L_1)H_{1e}^2} < 0.$$

All derivatives are evaluated at the optimum. The denominator is positive by the strict second-order condition, while the numerator is negative by Assumption 2, convex effort cost, and $g' > 0$. □

Proof of Proposition 1.

Proof. Fix a worker i in a Fixed Work job. The reservation wage is

$$w_1^i = C^i + c(e_1^i) - g(L(\theta_i, e_1^i)).$$

At an interior optimum, effort satisfies

$$c'(e_1^i) = g'(L)\frac{\partial L}{\partial e}(\theta_i, e_1^i). \tag{A.1}$$

Differentiate the optimized reservation wage with respect to θ_i:

$$\frac{dw_1^i}{d\theta_i} = c'(e_1^i)\frac{de_1^i}{d\theta_i} - \left[g'(L)\frac{\partial L}{\partial \theta} + g'(L)\frac{\partial L}{\partial e}\frac{de_1^i}{d\theta_i}\right].$$

Using (A.1), the terms multiplying $de_1^i/d\theta_i$ cancel, so

$$\frac{dw_1^i}{d\theta_i} = -g'(L)\frac{\partial L}{\partial \theta}(\theta_i, e_1^i).$$

Assumption 2 implies $\partial L/\partial\theta > 0$, and $g'(L) > 0$ because leisure is valuable. Therefore $dw_1^i/d\theta_i < 0$ whenever the leisure gain from type is strict, and weakly below zero otherwise. □

Proof of Theorem 1.

Proof. By Lemma 1, Fixed Hour reservation wages are

$$w_0^i = C^i + c(\underline{e}_0).$$

By Lemma 2, Fixed Work reservation wages are

$$w_1^i = C^i + f(\theta_i).$$

Under Assumption 4, C^i is independent of θ_i, so

$$\mathrm{Var}(w_1^i) = \mathrm{Var}(C^i) + \mathrm{Var}(f(\theta_i)) > \mathrm{Var}(C^i) = \mathrm{Var}(w_0^i),$$

where strictness requires non-degenerate productivity pass-through, $\mathrm{Var}(f(\theta_i)) > 0$.

For Rényi entropy, let C and C' be independent draws of the participation component and let $X = f(\theta)$ and $X' = f(\theta')$ be independent draws of the type component. The collision probability under Fixed Hour is $\mathrm{P}(C - C' = 0)$. Under Fixed Work it is

$$\mathrm{P}\big((C - C') + (X - X') = 0\big) = \sum_z \mathrm{P}(X - X' = z)\mathrm{P}(C - C' = -z).$$

For any probability mass function, the autocorrelation $\mathrm{P}(C - C' = z)$ is maximized at $z = 0$ by Cauchy–Schwarz. Hence the weighted average above is no larger than $\mathrm{P}(C - C' = 0)$, and it is strictly smaller when X is non-degenerate and the relevant wage grid does not place all mass on equal-collision points. Since $E_2(F) = -\ln \mathrm{P}(W = W')$, the lower collision probability under Fixed Work implies $E_2(F_1) > E_2(F_0)$. □

Proof of Corollary 1.

Proof. The raw assessment is $\widetilde{b}_j^i = w_j^i + \eta_i$, with the same independent markup distribution under both contracts. The variance ranking follows immediately from Theorem 1:

$$\mathrm{Var}(\widetilde{b}_j^i) = \mathrm{Var}(w_j^i) + \mathrm{Var}(\eta_i).$$

The entropy ranking follows from the same collision argument used in the proof of Theorem 1, because both contracts are convolved with the same independent markup. Since pre-norm agreement is the collision probability of $\widetilde{b}_j^i$, $\widetilde{A}_j = e^{-E_2(\widetilde{q}_j)}$, higher entropy under Fixed Work implies $\widetilde{A}_1 < \widetilde{A}_0$. □

Proof of Proposition 2.

Proof. By Corollary 1, $\widetilde{A}_1 < \widetilde{A}_0$. Assumption 5 gives $\kappa_j = \kappa(\widetilde{A}_j)$ with $\kappa'(\cdot) > 0$. Therefore

$$\kappa_1 = \kappa(\widetilde{A}_1) < \kappa(\widetilde{A}_0) = \kappa_0.$$

□

Proof of Corollaries 2 and 3.

Proof. From Proposition 2, $\kappa_1 < \kappa_0$. Since $\lambda'(\cdot) < 0$ in equation (3.5), $\lambda_1 > \lambda_0$: private assessments pass through more strongly to stated beliefs under Fixed Work. For variance,

$$\mathrm{Var}(b_j^i) = \lambda_j^2 \mathrm{Var}(\widetilde{b}_j^i).$$

The raw assessment is more dispersed under Fixed Work by Corollary 1, and the pass-through parameter is also larger under Fixed Work. Hence $\mathrm{Var}(b_1^i) > \mathrm{Var}(b_0^i)$.

For Rényi entropy, use the maintained monotonicity of the contraction in equation (3.5): stronger contraction toward the benchmark raises collision probabilities on the wage grid, while weaker contraction preserves more of the raw dispersion. Since raw assessments are more dispersed and the contraction is weaker under Fixed Work, $E_2(q_1) > E_2(q_0)$. Observed agreement is $A_j = \sum_b q_j(b)^2 = e^{-E_2(q_j)}$, so $E_2(q_1) > E_2(q_0)$ implies $A_1 < A_0$. □

Proof of Proposition 3.

Proof. Hold κ fixed. Let $\lambda = \lambda(\kappa)$ and $\delta = \lambda\eta + (1-\lambda)a - (\tau + \kappa) < 0$. Ignoring grid rounding first, the latent cdf is

$$F_j^*(x) = \Phi\left(\frac{x - \mu_j}{\sigma_j}\right),$$

and a standing offer generated by a worker with draw Z is $B_j^* = \mu_j + \lambda\sigma_j Z + \lambda\eta + (1-\lambda)a$. The probability that a competing worker has a reservation wage below the profitable-undercutting threshold is

$$F_j^*(B_j^* - \tau - \kappa) = \Phi\left(\lambda Z + \frac{\delta}{\sigma_j}\right).$$

Because $\delta < 0$, increasing σ_j raises the argument of Φ, so the conditional cut probability weakly increases. The function $h(s) = 1-(1-s)^{m-1}$ is strictly increasing. Applying h and averaging therefore preserves the weak comparison, with strict inequality when the conditional cut probability increases on a positive-probability set of opening-worker draws and markups. This comparison concerns unrounded wages; rounding to a wage grid need not preserve the ordering. □

Proof of Proposition 5.

Proposition 5 (Agreement and undercutting)**.** *Let stated wages under contract j have probability mass function $\{q_j(b)\}_{b\in\mathcal{W}}$ on a finite wage grid $\mathcal{W}$, with agreement $A_j = \sum_b q_j(b)^2$. In a two-stage protocol in which one worker states the first wage and the remaining $m-1$ workers undercut whenever their stated wage is lower, the probability U_j that at least one undercut occurs satisfies*

$$U_j \le 1 - \left(\frac{1+A_j}{2}\right)^{m-1},$$

and the bound is strictly decreasing in A_j.

This proposition shows the role of collisions: two workers who name the same wage cannot undercut one another, so higher agreement limits the scope for rate-cutting.

Proof. Let B_j be the first stated wage and let B_j' be an independent stated wage drawn from the same probability mass function. Define

$$S_j = \mathrm{P}(B_j' < B_j \mid B_j).$$

Given B_j, the probability that none of the remaining $m-1$ workers undercuts is $(1-S_j)^{m-1}$, so

$$U_j = 1 - \mathbb{E}\left[(1-S_j)^{m-1}\right].$$

For $m \ge 2$, $\varphi(s) = (1-s)^{m-1}$ is convex on $[0,1]$. Jensen's inequality gives

$$\mathbb{E}\left[(1-S_j)^{m-1}\right] \ge (1-\mathbb{E}[S_j])^{m-1}.$$

By exchangeability,

$$\mathbb{E}[S_j] = \mathrm{P}(B_j' < B_j) = \frac{1-\mathrm{P}(B_j'=B_j)}{2} = \frac{1-A_j}{2}.$$

Substitution yields

$$U_j \le 1 - \left(\frac{1+A_j}{2}\right)^{m-1}.$$

The right-hand side is strictly decreasing in A_j. □

Proof of Proposition 4.

Proof. The decomposition is an identity:

$$U_1 - U_0 = [U(\sigma_1,\kappa_0) - U(\sigma_0,\kappa_0)] + [U(\sigma_1,\kappa_1) - U(\sigma_1,\kappa_0)].$$

The first term is nonnegative under the conditions of Proposition 3 at κ_0, and is strictly positive when its threshold-mass condition holds. The second term is strictly positive because Proposition 2 gives $\kappa_1 < \kappa_0$, and equation (3.7) is decreasing in κ: a larger friction lowers the threshold $B-\tau-\kappa$ and therefore weakly lowers $F_j(B-\tau-\kappa)$ for every B. □

B A General Model of Contract Structure and Ability Pass-Through

The model in Section 3 works through a single margin: completion time. A Fixed Hour contract fixes this margin for every worker, because everyone must stay for the full workday. A Fixed Work contract leaves the margin to the worker, because a faster worker can finish the task and leave. This appendix shows that the argument does not rest on completion time. What matters is whether the contract leaves workers control over some margin through which ability changes the cost of accepting the job. We call this property *ability pass-through*. Ability here is the worker type θ, which plays the role of productivity in Section 3.

We begin by defining the cost of accepting a job under a contract and the pass-through of ability into reservation wages. Subsections B.2 and B.3 then state when pass-through disperses reservation wages and where pass-through comes from. Subsection B.4 gives a sufficient condition under which the contract raises undercutting. The next two subsections recover the model of Section 3 as a special case and list other labor markets in which the same margin operates. The final subsection sets out the limits of the generalization.

B.1 The cost of accepting a job

A worker has ability θ and a market-participation value C, as in Section 3. A job is a deliverable: a task to complete or a service to provide. A contract j states what the worker must do to be paid. It specifies which actions are admissible, which margins are fixed for every worker, and what triggers payment. Let $\mathcal{X}_j(\theta)$ denote the set of actions with which a worker of ability θ can satisfy contract j. An action x can include hours on site, pace, effort, completion time, quality, tools, the risk the worker bears, and the use of any time freed by finishing early.

Let $\psi(x, \theta)$ denote the money value of the worker's nonwage cost of action x. This cost includes effort and any risk premium the worker requires, net of the value of non-work time and of any side earnings in that time. The cost function is the same under every contract; a contract matters only through the actions it admits. The cost of accepting the job under contract j is the lowest cost at which the worker can satisfy the contract,

$$r_j(\theta) = \inf_{x \in \mathcal{X}_j(\theta)} \psi(x, \theta), \tag{B.1}$$

and the reservation wage is

$$w_j = C + r_j(\theta). \tag{B.2}$$

Definition. *The* ability pass-through *of contract j is*

$$\beta_j(\theta) = r_j'(\theta),$$

where the derivative exists. Contract j fully compresses *ability if $r_j(\theta)$ is constant on the support of θ. It* passes ability through *to reservation wages if $r_j(\theta)$ is nonconstant.*

Under standard absolute-continuity conditions, full compression is equivalent to $\beta_j(\theta) = 0$ almost everywhere. The definition generalizes the time-saving mechanism of Section 3. Fixed Hour fully compresses the time-saving channel, because every worker must remain for the full workday. Fixed Work passes ability through, because faster workers finish sooner and keep the time they save.

B.2 When pass-through disperses reservation wages

Pass-through matters for wage-setting because it changes how widely reservation wages vary across workers. Proposition 6 measures this variation in the two ways used in Section 3: the variance of reservation wages and, on a discrete wage grid, the probability that two workers share the same reservation wage.

Proposition 6 (Pass-through and dispersion)**.** *Let $w_j = C + r_j(\theta)$ for $j \in \{0, 1\}$.*

1. *Contract 1 generates more reservation-wage variance than contract 0 if and only if*

$$\mathrm{Var}(r_1(\theta)) - \mathrm{Var}(r_0(\theta)) + 2\,\mathrm{Cov}(C,\, r_1(\theta) - r_0(\theta)) > 0. \tag{B.3}$$

   If C is independent of θ, this condition reduces to $\mathrm{Var}(r_1(\theta)) > \mathrm{Var}(r_0(\theta))$.

2. *If contract 0 fully compresses ability and C is independent of θ, contract 1 generates strictly more reservation-wage variance if and only if $r_1(\theta)$ is nonconstant.*

3. *On a discrete wage grid, let p_j be the probability mass function of w_j. Contract 1 has lower agreement on the reservation wage, and higher Rényi entropy of order 2, if and only if*

$$\sum_w p_1(w)^2 < \sum_w p_0(w)^2. \tag{B.4}$$

   This holds whenever w_1 equals w_0 plus an independent pass-through component that is not almost surely constant.

Proof. For Part 1,

$$\mathrm{Var}(w_j) = \mathrm{Var}(C) + \mathrm{Var}(r_j(\theta)) + 2\,\mathrm{Cov}(C, r_j(\theta)).$$

Subtracting the expression for contract 0 from the expression for contract 1 gives (B.3). Part 2 is the special case in which $r_0(\theta)$ is constant and C is independent of θ, so the condition becomes $\mathrm{Var}(r_1(\theta)) > 0$. In Part 3, $\sum_w p_j(w)^2$ is the probability that two independently drawn workers have the same reservation wage, so the equivalence follows from the definitions of agreement and Rényi entropy. For the sufficient condition, let X be the independent pass-through component, so that $p_1 = p_0 * p_X$. Young's inequality gives $\|p_1\|_2 \le \|p_0\|_2\, \|p_X\|_1 = \|p_0\|_2$. Equality would require p_0 to be invariant to a nonzero shift in the support of X. No probability mass function has this property, so the inequality is strict. □

The leading case in Section 3 satisfies the simplest version of these conditions: Fixed Hour has a constant $r_0(\theta)$, Fixed Work has a nonconstant $r_1(\theta)$, and C is independent of θ (Assumption 4). Part 1 also shows what can overturn the variance ranking. Under Fixed Work, $r_1(\theta) - r_0(\theta)$ falls with ability. If abler workers have higher participation values, for example because they have better outside options, the covariance term in (B.3) is negative and offsets part of the dispersion that pass-through creates. The covariance term amplifies dispersion only if abler workers have lower participation values.

B.3 Where pass-through comes from

Pass-through arises when ability relaxes a requirement that the contract imposes. To see this, write the cost of accepting the job as a constrained minimization:

$$r_j(\theta) = \min_x \psi(x, \theta) \quad \text{subject to} \quad R_{kj}(x, \theta) \leq 0, \quad k = 1, \ldots, K_j, \tag{B.5}$$

where the requirements R_{kj} include the deliverable, the payment trigger, and any margin the contract fixes for every worker. Let $\nu_{kj}(\theta) \geq 0$ be the multiplier on requirement k. It measures how much the worker's cost would fall if that requirement were relaxed slightly.

Proposition 7 (Envelope condition for pass-through)**.** *Under the regularity conditions for the envelope theorem,*

$$\beta_j(\theta) = \psi_\theta(x_j^*(\theta), \theta) + \sum_{k=1}^{K_j} \nu_{kj}(\theta)\, R_{kj,\theta}(x_j^*(\theta), \theta), \tag{B.6}$$

where $x_j^*(\theta)$ is the cost-minimizing action. Contract j therefore fully compresses ability if and only if the right-hand side of (B.6) *is zero almost everywhere. If ability relaxes a binding requirement ($R_{kj,\theta} < 0$ with $\nu_{kj} > 0$) and no other term is positive, then $\beta_j(\theta) < 0$: abler workers have lower reservation wages.*

Proof. Equation (B.6) is the constrained envelope theorem (Milgrom and Segal, 2002). A binding requirement that ability relaxes has a positive multiplier and a negative derivative in θ, so it lowers the cost of accepting the job. Complete compression requires the sum of the direct and multiplier-weighted effects to vanish almost everywhere; individual terms can be nonzero and offset one another. □

Proposition 7 generalizes Proposition 1. Under Fixed Work, ability relaxes the requirement that the worker stay until the task is done, and the multiplier on that requirement is the value of the time released. Under Fixed Hour, every worker must stay for the full workday whatever their ability, so ability relaxes nothing and no time is released. Section B.5 works through this case.

B.4 From dispersion to undercutting

A contract that disperses reservation wages raises undercutting only if reservation wages can enter wage offers. Let F_j be the reservation-wage distribution under contract j and G_j the distribution

of standing offers. As in Section 3, the undercutting friction is $\kappa_j = \kappa(\widetilde{A}_j)$, where $\widetilde{A}_j = \sum_b \widetilde{q}_j(b)^2$ is pre-norm agreement. For a common number of workers m and minimum undercut τ, the probability that at least one worker undercuts the standing offer is

$$\mathcal{U}(F_j, G_j, \kappa_j) = \int \left[1 - (1 - F_j(b - \tau - \kappa_j))^{m-1}\right] dG_j(b), \tag{B.7}$$

which is equation (3.7) with its arguments written out. The contract gap in undercutting splits into two terms:

$$\begin{aligned}\mathcal{U}(F_1, G_1, \kappa_1) - \mathcal{U}(F_0, G_0, \kappa_0) = &\underbrace{\mathcal{U}(F_1, G_1, \kappa_0) - \mathcal{U}(F_0, G_0, \kappa_0)}_{\text{distribution term}} \\ &+ \underbrace{\mathcal{U}(F_1, G_1, \kappa_1) - \mathcal{U}(F_1, G_1, \kappa_0)}_{\text{direct friction term}}.\end{aligned} \tag{B.8}$$

The distribution term compares the two contracts at a common friction. The direct friction term changes only the friction, holding reservation wages and standing offers fixed.

Proposition 8 (Sufficient condition for more undercutting)**.** *Suppose the market institution is the same under both contracts: workers can make competing offers, the firm can accept a lower offer, and the job's deliverable is held fixed. If pre-norm agreement is weakly lower under contract 1, so that $\kappa_1 \leq \kappa_0$, the direct friction term in (B.8) is nonnegative. Contract 1 therefore generates more undercutting than contract 0 whenever the distribution term is strictly positive.*

Proof. A weaker friction raises the highest reservation wage at which a cut is profitable: $b - \tau - \kappa_1 \geq b - \tau - \kappa_0$ for every standing offer b. Because F_1 and $s \mapsto 1 - (1 - s)^{m-1}$ are both nondecreasing, the direct friction term is nonnegative. Adding a strictly positive distribution term gives $\mathcal{U}(F_1, G_1, \kappa_1) > \mathcal{U}(F_0, G_0, \kappa_0)$. □

Proposition 3 signs part of the distribution term. In the location–scale case, it shows that a larger scale of reservation wages weakly raises undercutting at a fixed friction and a fixed contraction of stated beliefs. A full contract comparison must also account for the change in standing offers when the contraction $\lambda(\kappa)$ differs across contracts.

The requirement that workers can make competing offers is what turns pass-through into lower bids. Pass-through does not always appear as downward wage competition. When workers bid for a fixed job, abler workers can bid lower because the job costs them less. When the firm posts a piece rate or a commission, the price per unit is fixed, and pass-through appears in output and earnings: abler workers earn more rather than bid less. The evidence on performance pay in formal labor markets documents this other side of the mechanism (Lazear, 2000; Shearer, 2004; Lemieux et al., 2009). In both settings the contract lets ability matter; the wage-setting institution determines who captures the gain.

B.5 The model of Section 3 as a special case

Let the action consist of effort e and hours on site H, so that $x = (e, H)$, and let the cost of an action be

$$\psi(x, \theta) = c(e) - g(\bar{H} - H),$$

with $g(0) = 0$. Fixed Hour requires $H = \bar{H}$ and $e \geq \underline{e}_0$ (Assumption 1), so

$$r_0(\theta) = c(\underline{e}_0),$$

which does not depend on ability. Fixed Work requires the worker to stay until the task is done, $H \geq H_1(\theta, e)$ (Assumption 2). The worker leaves as soon as the task is finished, so

$$r_1(\theta) = \min_e \{c(e) - g(L_1(\theta, e))\}, \qquad L_1(\theta, e) = \bar{H} - H_1(\theta, e).$$

The completion requirement binds with multiplier $g'(L_1)$, the value of an extra hour of non-work time, and ability relaxes it because $\partial H_1/\partial\theta < 0$. The envelope condition (B.6) gives

$$r_1'(\theta) = g'(L_1)\,\frac{\partial H_1}{\partial \theta} = -g'(L_1)\,L_{1\theta} < 0 \qquad \text{whenever } g' > 0,$$

with both derivatives evaluated at the optimal effort $e_1^*(\theta)$. Fixed Work therefore passes ability through to reservation wages, while Fixed Hour fully compresses it. Part 2 of Proposition 6 then delivers the variance ranking in Theorem 1, and Section B.4 gives the condition under which this dispersion raises undercutting.

B.6 Other labor markets

Table B-1 lists labor markets in which the same mechanism can operate. The table is organized by the margin a contract leaves to the worker, not by whether the contract is called time-based or task-based.

B.7 Limits of the generalization

The generalization does not say that task pay always produces undercutting or that time pay always compresses wages. Its claim is conditional, subject to the six qualifications below.

1. *No pass-through, no dispersion.* If the contract fixes every margin through which ability lowers costs, or if the task is machine-paced so that ability does not change the cost of accepting the job, then $r_j(\theta)$ is close to constant and the mechanism is muted.

2. *Margins that let less able workers imitate abler ones weaken pass-through.* A free margin may let a slower worker match a faster one at little cost. Unverifiable quality is the leading case: a slow worker can finish quickly by cutting corners. A verifiable quality floor closes this

Table B-1: Ability pass-through across labor-market institutions

Margin left to the worker	Example	Implication for wage-setting
Completion time	Casual construction, loading, moving, delivery tasks	Faster workers have lower costs because they keep more of the day; bids can spread downward.
Redeployment of saved time	Gig and platform tasks, thick same-day spot markets	Finishing early frees time for another job, so pass-through can be stronger than when saved time is only leisure.
Effort needed to meet a quota	Harvesting, brick kilns, warehouse jobs with daily minimums	Even with fixed hours, ability passes through if abler workers meet the quota at lower effort cost.
Completion risk	Subcontracting, repair work, fixed-price jobs	Workers better able to control risk require a lower risk premium and can bid lower.
Worker-supplied tools or capital	Trades where workers bring equipment	Ability and equipment can lower the cost of delivery; bids spread if workers compete on price.
Output per unit of time at posted piece rates	Formal performance pay	Ability raises earnings rather than lowering bids, because the firm posts the price per unit.

Notes: The same pass-through can generate downward bidding, higher earnings, or selection into employment, depending on the wage-setting institution.

margin and can therefore increase pass-through, even though it adds a requirement. This is the participation-constraint analogue of the multitask logic in Holmstrom and Milgrom (1991).

3. *Outside options can offset pass-through.* If abler workers have higher participation values, the covariance term in (B.3) offsets part of their cost advantage. The within-worker tests in Section 7 remove this component, because a worker's participation value is common to every job that worker evaluates.

4. *Wage-setting institutions decide whether pass-through becomes lower bids.* Worker-side bidding for scarce jobs turns lower costs into lower bids. Posted wages, firm wage scales, unions, binding minimum wages, and collective bargaining can prevent undercutting even when ability affects reservation wages.

5. *The norm channel requires observability.* The norm bites only if workers can observe or infer deviations from a benchmark. Private bilateral bargaining can weaken social enforcement even when agreement is high, and formal institutions can strengthen enforcement even when agreement is low.

6. *Contract choice can be endogenous.* Firms may choose a contract because tasks differ in verifiability, monitoring costs, or the scope for wage competition. The comparative statics take the contract as given. Empirically, this calls for within-task variation in contracts or controls for

task characteristics, as in the single-task comparison of Table 3.

C Additional Outcomes

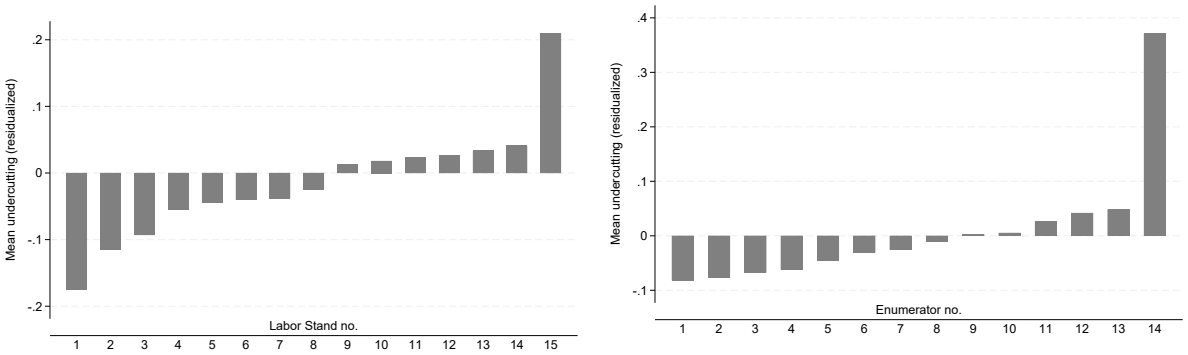
C.1 Data Checks

We perform basic sanity checks on the negotiation data. The goal is to confirm that the patterns we document later are not driven by data-entry errors, misclassification, or systematic measurement bias — and that the variation in undercutting we exploit is not concentrated in particular labor stands or particular enumerators.

Variation across labor stands and enumerators. Figure C-1(a) shows residualized mean undercutting across labor stands with at least 10 observations, after controlling for contract type, negotiation success, and month. Stand-level heterogeneity is substantial, which is why the main specifications include labor-stand fixed effects. Figure C-1(b) shows the corresponding variation across enumerators with at least 10 negotiations. Apart from one outlier enumerator, enumerator-level variation is smaller than stand-level variation. Section 5 confirms that the main results are robust to including enumerator fixed effects and to excluding observations recorded by the outlier enumerator.

Time of day. Undercutting may also vary over the course of the hiring window. As the morning progresses, workers face a narrower set of remaining outside options and may become more willing to deviate downward to secure the day's work. Figure C-2a shows that the unconditional rate of undercutting rises gradually as the day progresses, consistent with this interpretation. This time-of-day variation does not threaten the central comparison if it is similar across contract structures. Figure C-2b shows that the distribution of negotiation times is similar across Fixed Hour and Fixed Work negotiations. Time-of-day effects are therefore unlikely to explain the contract gradient documented in Section 5, though we control for them as a robustness check.

Figure C-1: Variation in undercutting at market and enumerator level

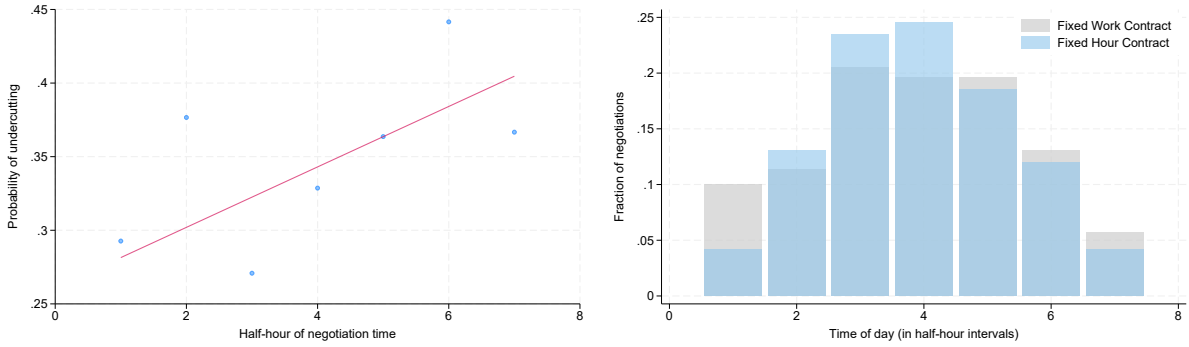


(a) Undercutting variation at different labor stands

(b) Undercutting variation for different enumerators

Notes: Residualized mean undercutting at labor stand and enumerator level after controlling for contract type, success of negotiation, and month. We restrict the sample to labor stands with at least 10 observations and enumerators who completed at least 10 negotiations.

Figure C-2: Negotiation time, undercutting, and contract type



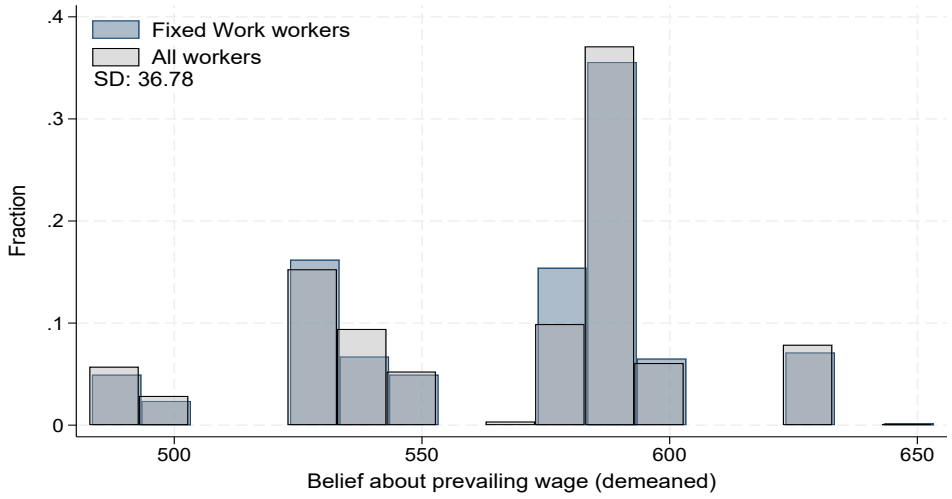
(a) Undercutting and negotiation time

(b) Negotiation time and contract type

Note: Panel (a) shows the variation in undercutting over time; the correlation has a p-value of 0.092. Panel (b) plots the distribution of negotiation times for the two contract types. The x-axis shows half-hour intervals; interval 0 corresponds to 07:00–07:30 am.

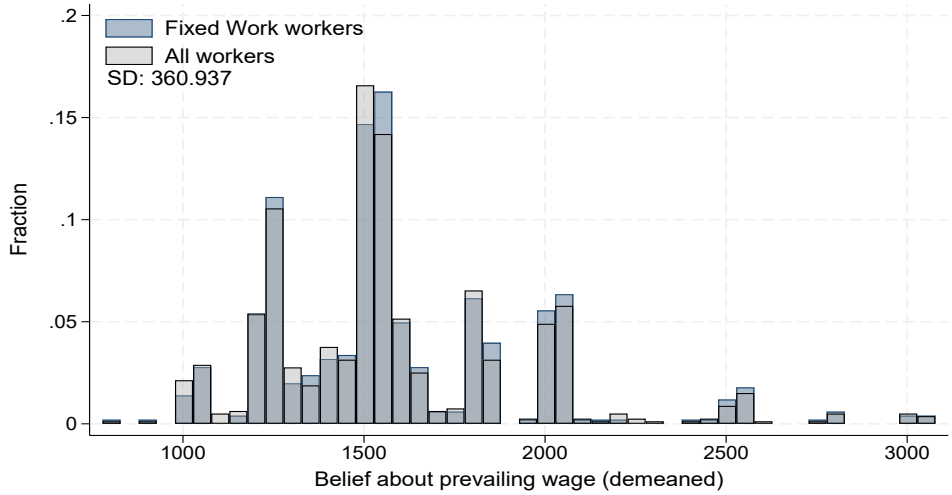
C.2 Wage-belief distributions: additional evidence

Figure C-3: Distribution of beliefs about wage floor of *Fixed Hour* work (Demeaned)

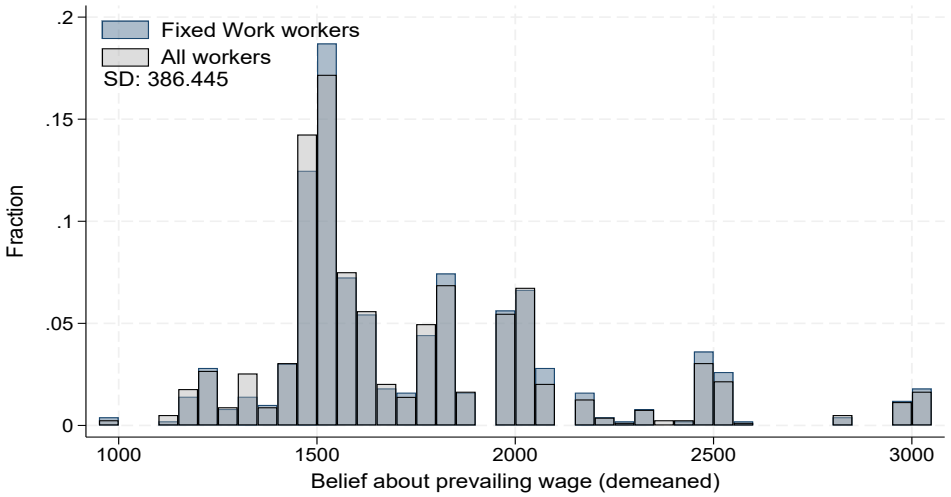


Notes: The figure shows data from a survey of workers conducted from January to September 2024. The figure captures the response to: *What is the prevailing wage in the market for daily wage work?* Each bar captures responses within a width of 10 INR. Values are demeaned for market FE. Data are winsorized at 1%.

Figure C-4: Distribution of beliefs about wage floor for *Fixed Work* jobs (Demeaned)



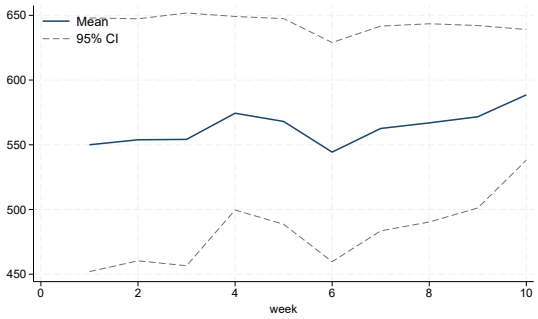
(a) Lifting sand



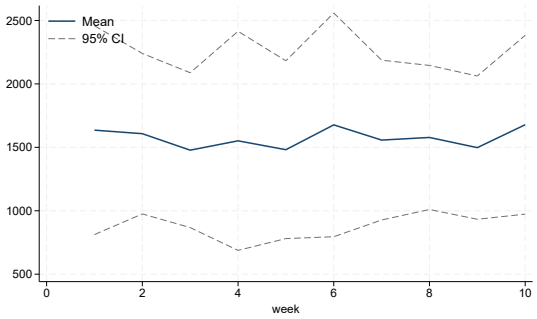
(b) Lifting bricks

Notes: The figure shows data from a survey of workers conducted from January to September 2024. Panel (a) captures the response to: *What is the prevailing wage for lifting one trailer of sand to floor 2?* Panel (b) captures the response to: *What is the prevailing wage for lifting one trailer of bricks to floor 2?* Each bar captures responses within a width of 50 INR. Values are demeaned for market FE. Data are winsorized at 1%.

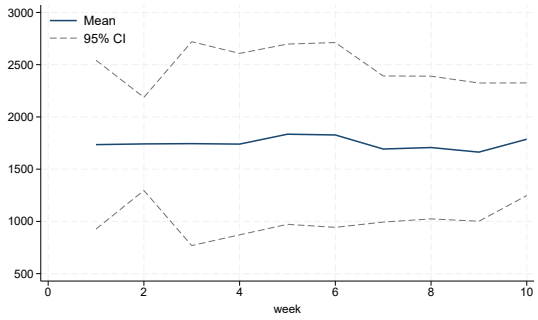
Figure C-5: Average beliefs over time



(a) Fixed Hour



(b) Fixed Work — Lifting sand

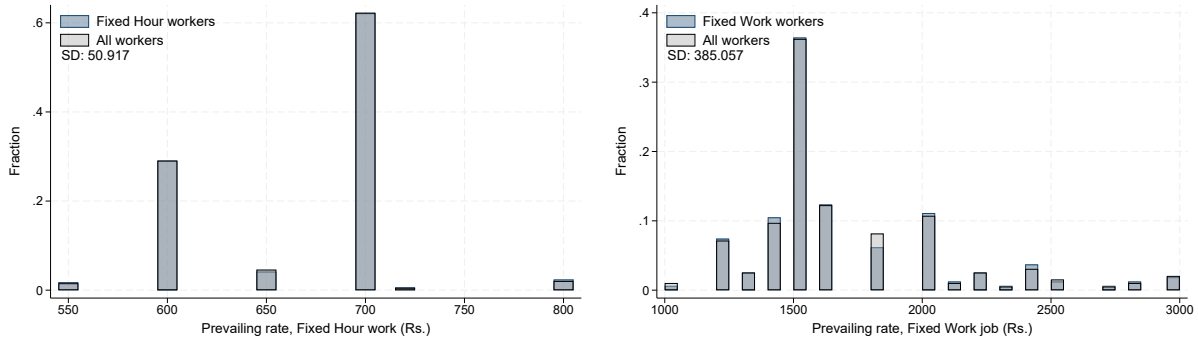


(c) Fixed Work — Lifting bricks

Notes: The figure shows data from a survey of workers conducted from January to September 2024. The figure shows weekly means and 95% confidence intervals of beliefs across job types. Data are winsorized at 1%.

C.3 Vignette survey: additional outcomes

Figure C-6: Dispersion of prevailing-rate beliefs, Fixed Hour vs. Fixed Work (vignette survey)



(a) Fixed Hour (daily wage)

(b) Fixed Work (lifting sand)

Notes: The figure shows data from a vignette survey of 196 workers conducted in June 2026. It plots the distribution of the stated prevailing rate for a Fixed Hour job (a day of masonry/plastering on a daily wage) and a Fixed Work job (carrying one trailer of sand to the second floor). Navy bars restrict to workers who do that contract type; gray bars are all workers. Bin width is 10 rupees (Fixed Hour) and 50 rupees (Fixed Work). Exact wording in Appendix E.2.

Table C-1: Dispersion of prevailing-rate beliefs in the vignette survey

	Fixed Hour	Fixed Work
Mean belief	668	1670
Standard deviation	50.9	385.1
Coefficient of variation	0.076	0.231
Entropy (E_2)	0.745	1.703
Observations	196	196
Dispersion difference (log scale), p<0.001		

Notes: Summary of the prevailing-rate beliefs plotted in Figure C-6, for the Fixed Hour job and the Fixed Work job, across 196 workers in a vignette survey conducted in June 2026. Entropy is the Rényi entropy of order 2, $-\ln(\sum_w p(w)^2)$. The dispersion difference is a Brown–Forsythe test on the log of the stated rate, which compares dispersion net of the scale difference between the two jobs.

Table C-2: Agreement on the prevailing wage and expected peer sanctions

	Expected peer sanctions (0–10)	
	(1)	(2)
Agreement (0–10)	0.371	0.115
	(0.058)	(0.045)
p-value	$<$0.001	0.011
Worker fixed effects	No	Yes
Workers	196	196
Observations	392	392

Notes: From the vignette survey of 196 workers conducted in June 2026. Each worker contributes two observations, one for the Fixed Hour scenario and one for the Fixed Work scenario. Agreement is how many of ten workers would quote the same rate for the job; expected peer sanctions is how many of ten workers would stop dealing with or quarrel with a worker who undercut the rate. Column 1 regresses expected sanctions on agreement across all observations. Column 2 adds worker fixed effects, so the coefficient compares the two scenarios within the same worker. Standard errors clustered by worker in parentheses. Exact wording in Appendix E.2.

C.4 Vignette survey: enumerator fixed effects

Three enumerators ran the vignette survey. We re-estimate the regression-based comparisons of Section 7 with an indicator for the enumerator added to every regression. Tables C-3 and C-4 repeat Tables 6 and 8 on this specification. The coefficients and their significance barely move, so enumerator-specific framing does not drive the patterns.

Table C-3: Beliefs, the prevailing wage, and the norm, with enumerator fixed effects

	Fixed Hour	Fixed Work	Difference	p
Panel A: Focal wage and agreement				
Rate is fixed (share)	0.92	0.09	-0.84	<0.001
Agreement on rate (0–10)	8.00	6.16	-1.84	<0.001
Panel B: The wage norm				
Undercutting not wrong (share)	0.06	0.10	0.04	0.072
wrong: rate is fixed (share)	0.69	0.06	-0.63	<0.001
wrong: undercutting always wrong (share)	0.25	0.84	0.59	<0.001
not wrong: rate not fixed (share)	0.00	0.02	0.02	0.084
not wrong: everyone wants work (share)	0.06	0.08	0.02	0.251
Peer consequences (0–10)	6.14	5.76	-0.39	0.006
Panel C: Productivity justification				
Justification rating (1 valid–4 wrong)	3.31	3.21	-0.10	0.040
Justification accepted (share)	0.08	0.11	0.04	0.091
Respondents		196		
Enumerator FE		Yes		

Notes: Repeats Table 6 with enumerator fixed effects added to every regression; the rows, columns, and survey questions are defined there. Each row is a separate within-worker regression of the outcome on a Fixed-Work indicator and enumerator indicators, with standard errors clustered by respondent. The Difference column is the Fixed-Work coefficient and the p column its two-sided p-value.

Table C-4: Job standardizability and undercutting, with enumerator fixed effects

Fixed Work (sand); job fully vs. partially specified				
	Full spec.	Partial	Difference	p
Consensus (of 10, 0–10)	6.58	6.99	0.35	0.169
Undercut possibility (1–5)	2.61	2.69	0.01	0.962
Respondents	99	97		
Enumerator FE		Yes		

Notes: Repeats the two regression rows of Table 8 — consensus and undercut possibility — with enumerator fixed effects and robust standard errors. The dispersion rows of Table 8 are descriptive summaries of the stated rate and do not change with controls, so they are not repeated. The p column reports the two-sided p-value of the difference.

D Robustness checks

D.1 Robustness of the undercutting gap

Table D-1: Controlling for value of the contract

	Undercutting			
	All		Successful	
Fixed Work contract	0.2541***	0.1722***	0.2478***	0.1427**
	(0.0384)	(0.0504)	(0.0413)	(0.0568)
Value of contract	-0.0000	0.0000	0.0000	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0002)
Observations	707	705	595	590
Mean for Fixed Hour	0.21	0.21	0.24	0.24
Day Fixed Effect	No	Yes	No	Yes

The dependent variable *undercutting* captures whether any worker tried to undercut another worker on price. *Successful* restricts to negotiations that ended in a hiring agreement. All specifications control for the value of the contract. Standard errors, clustered by date, are in parentheses. Fixed effects for labor stand and negotiation success are included throughout. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table D-2: Robustness to enumerator fixed effects

	Undercutting			
	All Enumerators		Excluding Outlier Enumerator	
Fixed Work contract	0.176***	0.178***	0.179***	0.181***
	(0.026)	(0.026)	(0.027)	(0.026)
Observations	1,396	1,395	1,344	1,343
Mean for Fixed Hour	0.21	0.21	0.20	0.20
Day Fixed Effect	No	Yes	No	Yes
Enumerator FE	Yes	Yes	Yes	Yes

The dependent variable *undercutting* captures whether any worker tried to undercut another worker on price. Standard errors, clustered by date, are in parentheses. Fixed effects for labor stand, enumerator, and negotiation success are included throughout. Columns 3 and 4 exclude observations recorded by the enumerator who is an outlier in undercutting (see Figure C-1). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table D-3: Robustness to number of workers negotiating

	Control for no. of workers negotiating				Sample: more than 1 worker			
	All		Successful		All		Successful	
Fixed Work contract	0.107***	0.099***	0.100***	0.089***	0.185***	0.177***	0.173***	0.162***
	(0.026)	(0.026)	(0.029)	(0.029)	(0.030)	(0.030)	(0.036)	(0.036)
Observations	1,395	1,394	1,169	1,167	1,020	1,018	874	872
Mean for Fixed Hour	0.21	0.21	0.24	0.24	0.31	0.31	0.34	0.34
Day Fixed Effect	No	Yes	No	Yes	No	Yes	No	Yes
Control for # workers	Yes	Yes	Yes	Yes	No	No	No	No

The dependent variable *undercutting* captures whether any worker tried to undercut another worker on price. *Successful* restricts to negotiations that ended in a hiring agreement. Columns 1–4 control for the number of workers negotiating with the firm. Columns 5–8 restrict to negotiations with at least two workers participating. Standard errors, clustered by date, are in parentheses. Fixed effects for labor stand and negotiation success are included throughout. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table D-4: Controlling for time of negotiation

	Undercutting			
	All		Successful	
Fixed Work contract	0.2072***	0.2016***	0.1950***	0.1887***
	(0.0391)	(0.0381)	(0.0445)	(0.0425)
Half hour of negotiation	0.0152	0.0145	0.0016	0.0015
	(0.0134)	(0.0137)	(0.0144)	(0.0149)
Observations	609	609	539	539
Mean for Fixed Hour	0.28	0.28	0.30	0.30
Day Fixed Effect	No	Yes	No	Yes

The dependent variable *undercutting* captures whether any worker tried to undercut another worker on price. *Successful* restricts to negotiations that ended in a hiring agreement. All specifications control for the half-hour of negotiation time. Standard errors, clustered by date, are in parentheses. Fixed effects for labor stand and negotiation success are included throughout. The sample is smaller than the primary results because the time of negotiation is observed for a sub-sample only. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table D-5: Undercutting across seasons

	Undercutting						Neg. Successful	
	After August 1			After July 15			August	July 15
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lean Season	0.086***		0.084***	0.049**		0.060**	0.106***	0.063**
	(0.027)		(0.027)	(0.024)		(0.028)	(0.025)	(0.026)
Peak Season - Fixed Work		0.163***			0.146***			
		(0.037)			(0.043)			
Lean Season - Fixed Hour		0.071**			0.029			
		(0.028)			(0.025)			
Lean Season - Fixed Work		0.278***			0.242***			
		(0.040)			(0.036)			
Observations	1,396	1,396	1,054	1,396	1,396	1,054	1,409	1,409
Mean: Peak Season	0.21		0.25	0.21		0.26	0.81	0.80
Mean: Peak Season X Fixed Hour		0.171			0.173			
Contract type FE	Yes		Yes	Yes		Yes	Yes	Yes
Nego. Successful FE	Yes	Yes	Yes	Yes	Yes	Yes		
Market FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample Markets	All	All	Overlapping	All	All	Overlapping	All	All
pval - Fixed Hour: Peak==Lean		.014			.239			
pval - Fixed Work: Peak==Lean		.021			.058			

The dependent variable *undercutting* captures whether any worker tried to undercut another worker on price. Columns 1–3 and 7 assume the lean season begins on August 1 and ends in late September. Columns 4–6 and 8 assume it begins on July 15. Columns 1, 3, 4, and 6 show results for all contracts; columns 2 and 5 split by contract type. Columns 3 and 6 restrict to labor stands surveyed in both seasons. Columns 7 and 8 use negotiation success as the dependent variable. All specifications include fixed effects for the labor stand, the success of the negotiation, and the contract structure. * p < 0.10, ** p < 0.05, *** p < 0.01.

D.2 The within-job sample

Table D-6: Single-task jobs by contract structure

	Fixed Hour	Fixed Work	Difference	p	N
Lifting sand (share)	0.69	0.64	-0.05	0.579	285
Floor material delivered to	2.12	2.38	0.26	0.513	102
Workers negotiating	2.04	2.41	0.37	0.058	284
Negotiation successful (share)	0.88	0.80	-0.08	0.219	277
Hour of day negotiation observed	8.29	8.21	-0.07	0.825	143
Negotiations	26	259			285

Notes: The table describes the sample of Table 3: negotiations for jobs that involve lifting bricks or sand and no other type of work. The Difference column is the Fixed Work minus the Fixed Hour mean; its p-value comes from a regression of each characteristic on a Fixed Work indicator with standard errors clustered by date. N is the number of negotiations for which the characteristic is observed; the floor and the hour of day are recorded for subsamples. The value of the contract is not compared because a daily wage and a task-completion payment are not on a common scale.

D.3 Undercutting through interference

Table D-7: Undercutting through interference in *Fixed Work* contracts

	Undercutting through interference			
	All		Successful	
Fixed Work contract	0.166***	0.159***	0.163***	0.168***
	(0.033)	(0.034)	(0.034)	(0.036)
Observations	1,401	1,400	1,172	1,170
Mean for Fixed Hour	0.46	0.46	0.47	0.47
Day Fixed Effect	No	Yes	No	Yes

The dependent variable *undercutting through interference* captures whether any worker entered an ongoing negotiation between an employer and another worker. *Successful* restricts to negotiations that ended in a hiring agreement. Standard errors, clustered by date, are in parentheses. Fixed effects for labor stand and negotiation success are included throughout. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.4 Undercutting and belief dispersion across jobs

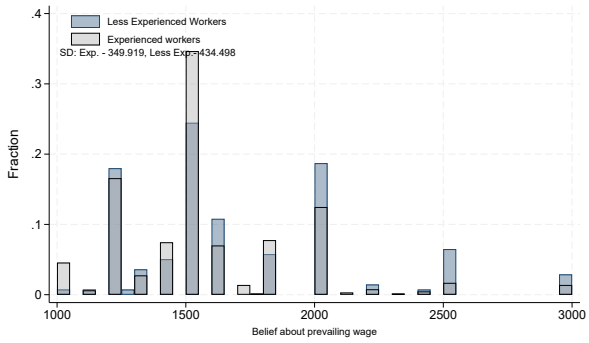
Table D-8: Undercutting and entropy of the wage distribution

	Undercutting			
	All Sample		Appropriate Floor Sample	
Entropy	0.200***	0.198***	0.140***	0.141***
	(0.042)	(0.044)	(0.045)	(0.053)
Observations	694	691	521	512
Day Fixed Effect	No	Yes	No	Yes

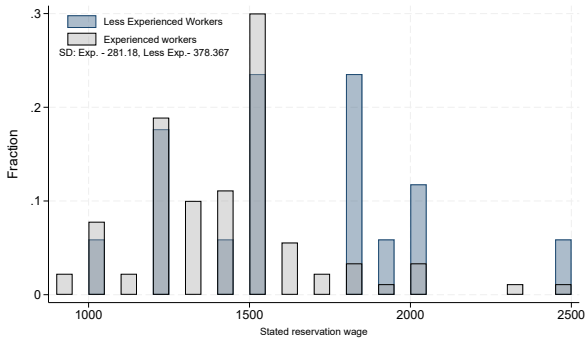
The dependent variable *undercutting* captures whether any worker tried to undercut another worker on price. The independent variable is the entropy of the prevailing-wage distribution for the job, computed from the beliefs data. Columns 1–2 use three job types: plastering, all jobs lifting sand, and all jobs lifting bricks. Columns 3–4 use five job types: plastering, lifting sand to floor 2, lifting sand to floor 4, lifting bricks to floor 2, and lifting bricks to floor 4. Standard errors, clustered by date, are in parentheses. Fixed effects for labor stand and negotiation success are included throughout. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.5 Dispersion by worker experience

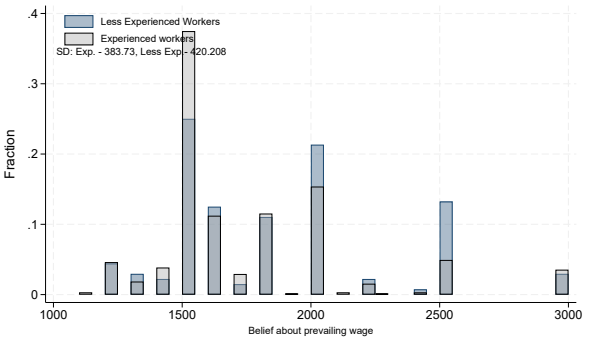
Figure D-1: Distribution of beliefs about wage by experience for *Fixed Work* contracts



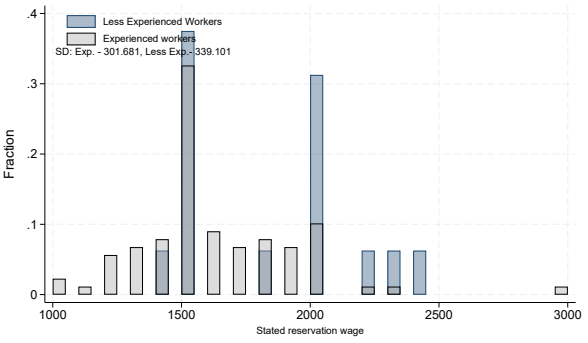
(a) Lifting sand — prevailing wage



(b) Lifting sand — stated reservation wage



(c) Lifting bricks — prevailing wage



(d) Lifting bricks — stated reservation wage

Notes: The figure shows data from a survey of workers conducted from January to September 2024. Panels (a), (b) capture the response to: *What is the prevailing wage / reservation wage for lifting one trailer of sand to floor 2?* Panels (c), (d) capture the response to: *What is the prevailing wage / reservation wage for lifting one trailer of bricks to floor 2?* Less experienced workers are those under age 25; experienced workers are 25 or older. Each bar captures responses within a width of 50 INR. Data are winsorized at 1%.

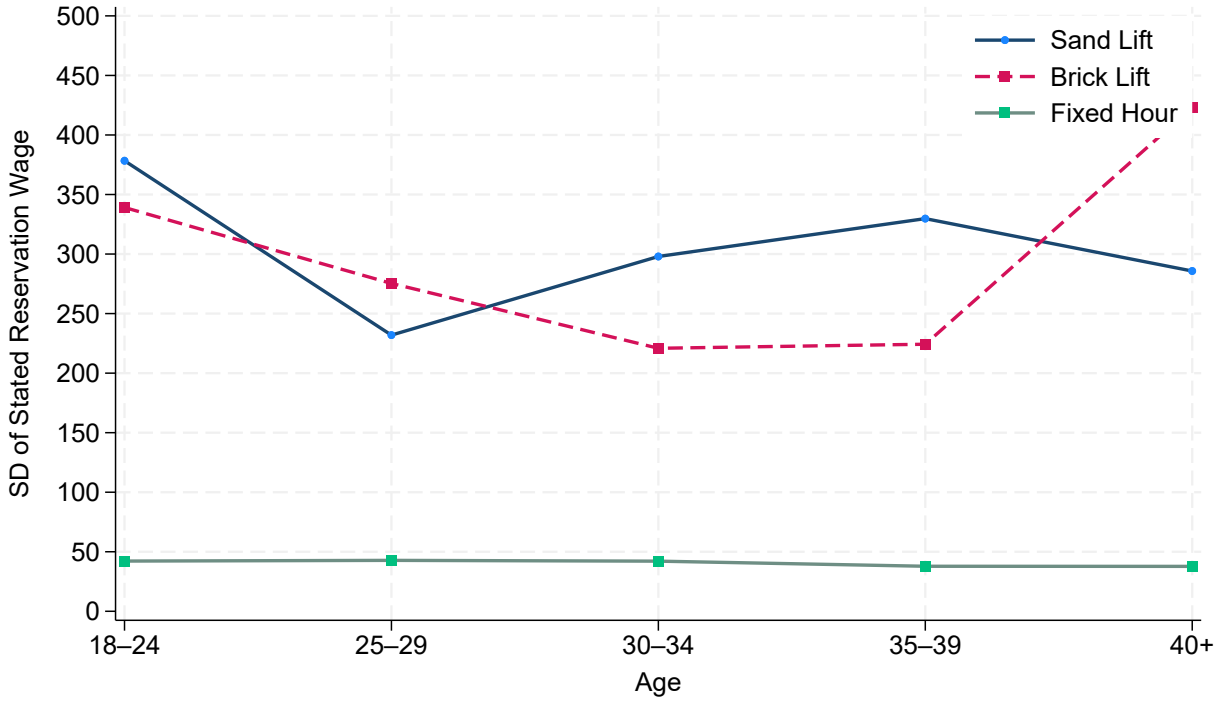
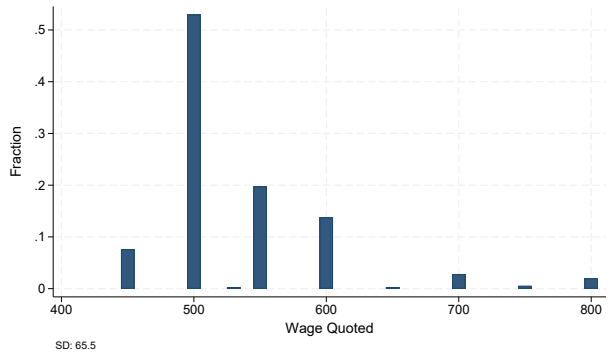


Figure D-2: Standard deviation of stated reservation wage with experience/age

Notes: The figure shows data from a survey of workers conducted from January to September 2024. The figure plots the standard deviation of the stated reservation wage for two Fixed Work jobs by the age of the respondent. Data are winsorized at 1%.

D.6 Dispersion of negotiated wages

Figure D-3: Distribution of wages quoted across contract types



(a) Fixed Hour — wages quoted in negotiations



(b) Lifting sand — wages quoted in negotiations



(c) Lifting bricks — wages quoted in negotiations

Notes: The figure shows data from negotiations between firms and workers. We use the lowest wage quoted by any worker during a negotiation as *wage quoted*. Panels (b) and (c) use a bar width of 50 INR; panel (a) uses 10 INR. Panels (b) and (c) restrict to negotiations involving lifting material to floor 2; wages are rescaled to a comparable quantity. Data are winsorized at 1%.

E Data Collection

E.1 Negotiation Examples

The records of negotiations made by the enumerators look like the following examples.

Example 1. *Party: 1 labourer is required for plastering. Worker 1–Worker 6: Where is the work and what is the work? We will go. Party: It is nearby. W1: How much money will you give? P: I will give 500. W2: I will not go for 500. W3: If you give me 600 then I will go. W4: I will go for 550. P: No, I will not give more than 500. W4: Ok, I will go for 500. 1 worker went to work.*

In this example, both undercutting on wage and undercutting through interference take the value 1. The total number of workers negotiating is 4. The contract type is Fixed Hour, and the work is plastering. The value of the contract is 500 INR per worker.

Example 2. *Contractor: There are 2 trailers of sand. Have to take it to the fourth floor. W1: Where is the location? C: Zero mile [a location in Patna]. W1: Will take 4000. C: I will pay 3000. W1: That won't work. W2: Give 3800. C: No. W3 to W4: We can ask for 3500. W3: Will work for 3500. C: Will give 3200. W4: Give 3200 + the cost of travel. C: Okay. W3, W4 agree to go.*

In this example, both undercutting on wage and undercutting through interference take the value 1. The total number of workers negotiating is 4. The contract type is Fixed Work, and the work is lifting sand to floor 4. Two workers are hired, and the value of the contract is 1600 INR per worker.

E.2 Vignette survey questions

This appendix gives the list of questions used in Section 7. The survey was administered in Hindi to 196 workers at the labor stands in June 2026. English translations are shown.

Prevailing wage and the norm. Each worker evaluated both scenarios below, in random order.

- **Fixed Hour scenario.** "The contractor is looking for workers at the labour stand for plastering work on a daily-wage basis."
- **Fixed Work scenario.** "A contractor is looking for workers at the labour stand for carrying one trailer of sand up to the second floor."

The same set of questions followed each scenario.

Prevailing rate. "What is the current rate for this type of work?"

Agreement. "If we ask 10 other workers at the labour stand about the rate for this same work, how many of them would quote the same rate?" (0–10)

Rate is fixed. "Is the rate for this work fixed?" (Yes / No / Not sure)

Undercutting wrong, with reason. After "one worker asks for [rate] and another says he is ready to do the same work for [lower rate]": "By quoting [lower rate], which was lower than the rate quoted by the first worker, did the second worker do something wrong?" Options :

1. Yes, it was wrong because the wage rate for this work is fixed.
2. Yes, it was wrong because quoting a lower rate than another worker is wrong, no matter how high that rate is.
3. No, it was not wrong because the wage rate for this work is not fixed.
4. No, it was not wrong because everyone wants work.

Peer consequences. "Because this worker undercut the rate, if we ask 10 workers at the labour stand, how many of them would stop dealing with such a worker or would quarrel with him?" (0–10)

Productivity justification. "There is another worker who works faster. He is ready to work for [lower rate] because he finishes the work quickly… and therefore needs to put in less effort. In your opinion, is it okay/correct to work at a lower rate for the reason he is giving?" Rated: 1 = a fully correct justification, 2 = partially right, 3 = wrong, 4 = completely wrong.

Completion-time dispersion. Each worker was presented with the two situations below for the same task: carrying about 1,500 bricks to the second floor, with each of three workers doing the job alongside one partner.

- **Situation A (similar times).** "All three workers think the work will be completed in around 3 hours."
- **Situation B (different times).** "Ram thinks the work will be completed in around 2 hours, Shyam in around 3 hours, and Mohan in around 4 hours."

Every worker answered a direct comparison: "In which situation is the possibility higher that a worker will quote a lower rate than the others?" (Situation A / Situation B / same in both.)

Job standardizability. Each worker saw one of the two descriptions below of the same Fixed Work job: two workers hired on contract to carry a trailer of sand up to the second floor, paid on completion.

- **Fully specified.** "… one full trailer of sand, around 100 cubic feet; the trailer is parked in front of the building; the stairs are 4 feet wide, in good condition, and without obstruction. Payment will be made as soon as the work is completed."
- **Partially specified.** "… Carry one trailer of sand up to the second floor. Payment will be made as soon as the work is completed."

Prevailing rate. "What is the current rate for 2 workers for this work?"

Consensus. "If we ask 10 other workers at the labour stand about the rate for this same work, how many of them would quote the same rate?" (0–10)

Undercut possibility. "What is the possibility that a worker will spoil/undercut the rate for this work?" (rated 1 = very low to 5 = very high)