Results

Understanding the Impact of Low-Cost Loans on Labor Trafficking Outcomes

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Economic development should include the creation of jobs and working conditions in which people can work in freedom, safety, and dignity.

In short, economic development is not undertaken for its own sake, but to improve the lives of human beings.

- International Labour Organization, 2022.

Over 27 mn people live in conditions of forced labor (ILO 2022).

- Forced labor refers to work that takes place under coercive working conditions, such that workers cannot quit due to some form of coercion.
- In 2022, the most common documented forms of coercion were non-payment of wages, abuse of vulnerabilities (such as gender, minority, or migrant status), threats, and debt bondage.
- Most forced labor takes place in developing countries, with over 15 mn documented in Asia.

- **Construction** is the second-largest employer in India (71 mn) and a third of its workforce is comprised of internal migrants.
- Over 80% of workers in the informal sector are **unskilled** and rates of forced labor prevalence are high (GFEMS 2019).
- Construction is **fragmented and informal**, with work subcontracted multiple times through independent, informal micro-contractors (MCs) who accept subcontracts from larger firms.
- This diffused and hierarchical structure allows worker exploitation to persist because higher tiers in the structure do not take responsibility for worker conditions, and enforcement against the larger, formal developer firms typically fails.

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Indian construction sector



- Micro-Contractors (MCs) are the first point of contact for many workers and exert substantial control over their workers conditions of pay and work.
- Coercive behavior of MCs are partly driven by their own economic insecurity: they are paid by the job and suffer financially when there is infrequent work, difficulty staffing sites, fraud, or low and delayed pay.
- MCs, in turn, withhold pay or rest days, assign long hours, and engage in other practices that trigger forced labor for their workers.

Research questions

- Does offering MCs financial incentives and liquidity in the form of **working capital loans** reduce worker reports of labor trafficking (using various indicators)?
- For which types of MCs are we likely to see the biggest improvements in worker welfare as a result of providing low-cost loans?

Research design

We recruit 250 MCs in two large cities in India and randomly assign 180 of them to receive access to a low-cost working capital loan. We measure the impact of treatment on forced labor outcomes for workers of these MCs.

• Outcomes are measured 6-9 months after exposure to treatment.

Preview of results

- On average, access to a working capital loan **does not reduce forced labor outcomes**; if anything, adverse worker outcomes marginally increase.
- However, workers of **more educated MCs** and **non-migrant MCs** are significantly better off as a result of treatment.
- Loan **take-up is low**, suggesting challenges in scaling this solution.

Contribution

- Very little causal evidence exists on effective interventions to decrease labor trafficking outcomes or forced labor in low-income countries.
- This paper provides the first causal estimate of a treatment that provides loans to firms to reduce labor exploitation.
- Significant implications for policy in terms of developing scalable and enforceable solutions to forced labor.



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Setting

- Construction sector is the second-largest sector in terms of employment in India (71mn workers); 35.4% of construction workers are internal migrants (NSSO 2016-17).
- High prevalence of forced labor conditions in this sector: approximately 30% of respondents experienced some form of forced labor risks, with nearly 5% experiencing critically severe forced labor conditions (GFEMS 2019).



Introduction

Intervention and study design

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In a scoping study of 520 MCs, 34% expressed interest in a low-cost loan product (GFEMS 2019):

- Top challenges faced by MCs are lack of working capital (35%); delayed payments (35%); lack of workers (31%); lack of work orders (26%).
- Liquidity is a significant challenge for MCs due to delayed payments, and payments by instalment that are conditional on work progress.
- MCs face constraints in accessing capital; interest rates on loans are very high at 3-10% per month.

Conceptual framework

- MCs control the working conditions of millions of workers.
- MCs lack **liquidity** to make payments on time and face considerable economic uncertainty due to intermittent cycle of costs, payments and new work.
- Low cost working capital allows MCs to meet short-term costs, including supplies and worker payments, and gives them the confidence to spend existing funds.
- Rates of forced labor and coercive working conditions for construction sector workers decline.

Intervention

Intervention provided low-cost working capital loans to randomly selected MCs:

- All treatment firms were offered the option to apply for the loans, provided by Gromor Finance and Kois, which allowed for multiple draw-downs over a 12-month credit line.
- Minimum rates at 1.25-1.5% per month were substantially lower than alternatives.
- Intervention was funded by the Global Fund to End Modern Slavery (GFEMS) and implemented by Labournet.

Randomization and MC data

- 250 MCs were recruited to the study by Labournet: 126 in Delhi and 124 in Bangalore.
- 180 MCs were randomly assigned to treatment and 70 to control, with randomization stratified by city.
- 240 program MCs were surveyed at baseline (June-Dec 2021) and 146 at endline (Nov 2022-Mar 2023).
- MC characteristics are balanced by treatment

MC characteristics are balanced by treatment

	Treatment (Mean)	Control (Mean)	Diff	SE
Pan	el A: Baseline			
Location				
Delhi	0.497	0.523	-0.026	0.073
Demographics				
Religion				
Muslim	0.183	0.138	0.044	0.055
Hindu	0.811	0.862	-0.050	0.055
Caste				
SC/ST	0.226	0.203	0.022	0.061
OBC	0.409	0.312	0.096	0.072
General	0.354	0.469	-0.115	0.072
Outcomes				
No. of Workorders	2.440	2.277	0.163	0.237
Monthly inc constr. ('000)	33.000	35.769	-2.769	5.644
Total Workers	43.583	36.462	7.121	6.663
Monthly Labor Bill	586.332	505.082	81.250	88.230
Mode of payment received by MCs				
Cash	0.473	0.453	0.020	0.074
MC: Digital	0.172	0.188	-0.016	0.056
Method used to pay worker's wages				
Cash	0.888	0.871	0.017	0.048
Worker: Digital	0.171	0.177	-0.007	0.056
Observations	240			
P-Value from F-test of joint significance	0.937			

Worker data

- Approximately 5-10 workers from each MC was surveyed at both baseline and endline. Due to high rates of attrition in the construction sector, the workers surveyed in each round were different.
- Main results focus on worker endline data but baseline data is also used to validate results.
- Workers in our sample are comparable to construction workers in nationally representative data.
- All surveys were done by phone to ensure privacy and security of respondents.

Worker summary statistics

	Ba	seline	Enc	lline
	(1)	(2)	(3)	(4)
	Treat	Control	Treat	Control
Demographics				
Male	0.86	0.85	0.94	0.94
	(0.34)	(0.36)	(0.25)	(0.24)
Age	29.84	29.74	27.67	28.89
	(9.40)	(8.94)	(8.37)	(9.20)
Married	0.67	0.65	0.57	0.58
	(0.47)	(0.48)	(0.50)	(0.49)
Time Worked in Construction				
Upto 3 years	0.42	0.42	0.42	0.40
	(0.49)	(0.49)	(0.49)	(0.49)
3-10 years	0.37	0.37	0.39	0.37
	(0.48)	(0.48)	(0.49)	(0.48)
More than 10 years	0.20	0.21	0.20	0.23
	(0.40)	(0.41)	(0.40)	(0.42)
Outcomes				
Monthly Income ('000)	12.47	12.36	13.07	12.84
	(5.01)	(4.67)	(22.59)	(12.07)
Hours worked per day	8.84	8.83	9.27	9.18
	(1.81)	(2.03)	(1.83)	(1.71)
Current debt with MC	0.08	0.05	0.12	0.10
	(0.27)	(0.23)	(0.32)	(0.30)
Mode of Payment	(
Cash	0.89	0.88	0.76	0.79
	(0.32)	(0.33)	(0.43)	(0.41)
Digital	0.16	0.15	0.26	0.23
	(0.37)	(0.36)	(0.44)	(0.42)
Forced Labor Indices	(,			
Wage risk	-0.01	-0.00	0.09	0.00
	(0.53)	(0.53)	(0.57)	(0.35)
Hours risk	-0.04	0.00	0.11	-0.00
	(0.52)	(0.66)	(0.83)	(0.54)
Low risk	-0.00	0.00	0.06	-0.00
	(0.75)	(0.72)	(0.56)	(0.44)
Medium risk	-0.03	0.00	0.10	-0.00
	(0.38)	(0.50)	(0.71)	(0.41)
High risk	0.00	0.00	0.04	0.00
	(0.00)	(0.00)	(0.52)	(0.32)
Obumutian	804	257	1126	(0.52)

Data and empirical strategy

Discussion

Worker data comparable to national data

	Worke	r Data	CM Oct 2 Jan 2	IE 021- 022	PL 202	.FS 1-22
	Mean	SD	Mean	SD	Mean	SD
Demographics						
Age	29.812	9.264	30.76	6.477	30.69	6.306
Male	0.859	0.348	0.969	0.174	0.939	0.239
Married	0.665	0.472	0.605	0.489	0.648	0.478
Religion						
Hindu	0.825	0.37	0.787	0.410	0.709	0.454
Muslim	0.162	0.369	0.155	0.362	0.193	0.394
Other Religion	0.012	0.107	0.059	0.235	0.098	0.297
Caste						
SC/ST	0.271	0.444	0.466	0.499	0.350	0.477
OBC	0.366	0.482	0.381	0.486	0.420	0.494
General	0.334	0.472	0.143	0.350	0.230	0.421
Other Caste	0.023	0.151				
Education						
Illiterate or No Formal School	0.163	0.369	0.003	0.05	0.175	0.380
Grade 1st to 5th	0.141	0.349	0.123	0.329	0.151	0.358
Grade 6th to 8th	0.224	0.417	0.289	0.453	0.300	0.458
Grade 9th to 12th	0.398	0.49	0.564	0.496	0.254	0.436
Some College/University	0.051	0.22	0.021	0.143	0.120	0.325
Job Characteristics						
Hours Worked	8.836	1.877			7.410	2.883
Monthly Income	12,437	4,916	11,262	4,707	8,887	8,576

Data and empirical strategy

Results

Timeline of study



Loan take-up was low

- 33% of MCs in the treatment group applied for a loan (61 MCs)
- However, only 8% of treatment group MCs opened a line of credit due to strict lender requirements (13 MCs) particularly around documentation and establishing ability to repay a loan.
- For almost half of the MCs who were denied a loan, the stated reason was lack of credit assessment or lack of documentation.

Loan take-up was low

	Mean
Applied	0.339
Approved	0.078
Took loan	0.072
Among those who took out loans (N=13)	
Credit line increased	0.154
Initial credit limit (thousands of rupee)	105.000
Number of loans	2.385
At least 1 loan now closed with history of default	0.462
At least 1 loan currently in default	0.615
Among those currently in default (N=8), days since loan due	
Less than 90 days	0.000
90-180 days	0.125
More than 180 days	0.875
Among those who applied and were rejected for loan (N=47), reasons for rejection	
Low credit score/lack of documents	0.468
MC not interested	0.319
MC exits profession	0.149
MSME registration rejected	0.043
Loan criteria not met	0.021
Observations	180

Outcomes

- The key outcomes are indicators of forced labor outcomes: "When a person uses force or physical threats, psychological coercion, abuse of the legal process, deception, or other coercive means to compel someone to work." (TIP Office, US govt).
- Accordingly, the worker level outcomes we measure in our surveys are wage withholding, intimidation and threats by MCs, abusive working conditions and debt bondage.

Outcomes

We categorise these outcomes into five different indices:

- Wage risk index: measures of wage-withholding by the MC to the worker, such as late payments, unexplained wage cuts, no payment for working overtime, fines and other wage cuts,
- Hours risk index: being made to work more than previously agreed, working on rest days, or taking less leave than previously agreed,
- Low risk index: wage withholding
- Medium risk index: working more hours than previously agreed, and manipulation of debt owed by the worker to the MC
- **High risk index**: threats of force and violence, and restrictions on worker movements.

Wage Risk Index	Hours Risk Index
Wage Risk Index	Hours Risk Index
0	

Work for less than agreed on Not paid agreed wage Not paid on time Wage withholding Not paid 2x overtime Fines

More hours than agreed upon Work on rest days Could not take leave as agreed

Low Risk Index	Medium Risk Index	High Risk Index
Not paid on time	Manipulated debt	Physical Violence
Not paid 2x for overtime	Work for less than agreed	Threat to self
Wage withholding	Not paid agreed on wage	Threat to family
	More hours than agreed	Confiscation of documents
	Work on rest days	Confinement
	Inability to quit job	No freedom of movement
	Not take leave as agreed	Threat of Police

Index construction

Each index is constructed as the standardised mean of the indicators it is comprised of, with each index standardised separately by baseline and endline around the control group mean and standard deviation in that survey (following Kling et al 2007).

Empirical strategy

$$y_{imct} = \beta Treatment_m + \phi_c + \epsilon_{imct}$$
(1)

- *y_{imct}* is outcome for worker *i*, working under MC *m* in city *c* at time *t*.
- City fixed effects ϕ_c are included since randomisation was stratified by city.
- Standard errors clustered by MC.
- β measures the ITT effect of the loans intervention.

Data and empirical strategy

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Impact of treatment on MC outcomes

	(1)	(2)	(3)	(4)	(5)
	Loans	Mode of payment	Mode of payment	Mode of payment	Mode of payment
	availed	for MCs: cash	for MCs: digital	for workers: cash	for workers: digital
Treatment	0.131***	-0.155*	0.066	-0.030	0.147**
	(0.033)	(0.089)	(0.053)	(0.070)	(0.069)
Observations	146	130	130	130	130
Control Mean	0.000	0.568	0.054	0.861	0.111
		(6)	(7)	(8)	(9)
		Total	Total monthly	Unable to	Monthly business
		workers	labour bills	pay workers	expense
Treatment		-1.505	-70.114	-0.127	138.710**
		(3.864)	(77.225)	(0.084)	(64.712)
Observations		138	107	137	129
Control Mean		24.132	400.762	0.316	157.694

Impact of treatment on MC outcomes

In the cross-sectional endline specification, treated MCs:

- Are 13 pp more likely to take up the loan.
- See significant increase in monthly business expenses.
- Experience increased formalization:
 - 16 pp less likely to receive payments in cash from clients.
 - 15 pp more likely to make digital payments to workers

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Impact of treatment on worker outcomes

	(1)	(2)	(3)	(4)	(5)
	Wage risk	Hours risk	Low risk	Medium risk	High risk
	index	index	index	index	index
Treatment	0.088***	0.109**	0.054	0.097**	0.037
	(0.032)	(0.049)	(0.038)	(0.039)	(0.023)
Observations	1,428	1,426	1,450	1,401	1,470
Control Mean	0.000	-0.000	-0.000	-0.000	0.000
	(6)	(7)	(8)	(9)	(10)
	Wage	Wage	No extra	Not paid at	Work more hours
	withholding	cut	pay	agreed frequency	than agreed
Treatment	0.015	0.016**	0.021**	-0.012	0.031
	(0.011)	(0.006)	(0.009)	(0.028)	(0.025)
Observations	1,475	1,458	1,470	1,474	1,439
Control Mean	0.023	0.005	0.018	0.088	0.097
	(11)	(12)	(13)	(14)	(15)
	Not take	Work on	Monthly	Hours	Current debt
	agreed leave	rest day	income	worked	with MC
Treatment	-0.048	0.023***	0.072	-0.043	0.011
	(0.033)	(0.007)	(0.921)	(0.204)	(0.025)
Observations	1,465	1,467	1,407	1,504	1,487
Control Mean	0.196	0.008	12.845	9.184	0.099

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Impact of treatment on worker outcomes

The main estimated ITT effects are close to 0 and in some cases even significantly positive, suggesting that treatment is correlated with an increase in forced labor outcomes for workers:

• Approx 0.1 sd increase in wage risk index, hours risk index, and medium risk index relative to the control group.

Heterogeneous treatment effects

We next examine heterogeneous treatment effects by MC characteristic by estimating the following specification:

 $y_{imct} = \beta_1 Treatment_m \times MCcharacteristic_m + \beta_2 Treatment_m + \beta_3 MCcharacteristic_m + \phi_c + \epsilon_{imct}$

- *y_{imct}* is outcome for worker *i*, working under MC *m* in city *c* at time *t*.
- City fixed effects ϕ_c are included since randomisation was stratified by city.
- Standard errors clustered by MC.
- β_1 measures the differential impact of the program by MC characteristic.
- MC characteristics that potentially mediate treatment effects: MC education, whether the MC is a migrant, MC work experience, MC caste, MC religion.

Impact of treatment on worker outcomes by MC education

	(1)	(2)	(3)	(4)	(5)
	Wage risk index	Hours risk index	Low risk index	Medium risk index	High risk index
Treatment x MC More than 10th Grade	-0.251**	-0.216	-0.152	-0.242*	0.070
	(0.122)	(0.149)	(0.104)	(0.126)	(0.055)
Treatment	0.131***	0.156**	0.136***	0.157***	0.010
	(0.042)	(0.066)	(0.050)	(0.055)	(0.030)
MC More than 10th Grade	0.203*	0.163	0.067	0.199*	-0.034
	(0.114)	(0.133)	(0.093)	(0.110)	(0.036)
Observations	1,012	1,010	1,008	1,012	1,005
Control Mean	0.017	-0.003	-0.017	0.011	-0.011

Impact of treatment on worker outcomes by MC education

	(6)	(7)	(8)	(9)	(10)
	Wage	Wage	No extra	Not paid at	Work more hours
	withholding	cut	pay	agreed frequency	than agreed
Treatment x MC More than 10th Grade	-0.066*	-0.006	-0.004	0.030	-0.108
	(0.035)	(0.021)	(0.023)	(0.057)	(0.072)
Treatment	0.030***	0.024***	0.021*	-0.002	0.054
	(0.011)	(0.008)	(0.013)	(0.038)	(0.035)
MC More than 10th Grade	0.064**	0.014	-0.002	-0.053	0.081
	(0.032)	(0.015)	(0.019)	(0.052)	(0.065)
Observations	999	988	994	997	965
Control Mean	0.021	0.007	0.017	0.087	0.096

Impact of treatment on worker outcomes by MC education

	(11)	(12)	(13)	(14)	(15)
	Not take	Work on	Monthly	Hours	Current debt
	agreed leave	rest day	income	worked	with MC
Treatment x MC More than 10th Grade	-0.002	-0.019	3659.777**	-0.997**	0.074
	(0.078)	(0.021)	(1519.182)	(0.420)	(0.052)
Treatment	-0.046	0.026**	-1200.787	0.262	0.014
	(0.041)	(0.010)	(989.501)	(0.244)	(0.037)
MC More than 10th Grade	-0.004	0.006	-2735.567**	0.819**	-0.077**
	(0.073)	(0.017)	(1296.349)	(0.349)	(0.037)
Observations	993	993	950	1,020	1,006
Control Mean	0.202	0.007	13091.351	9.142	0.099

	(1)	(2)	(3)	(4)	(5)
	Wage risk	Hours risk	Low risk	Medium risk	High risk
	index	index	index	index	index
Treatment x MC Not Migrant	-0.161*	-0.233**	-0.093	-0.248***	-0.049
	(0.084)	(0.101)	(0.100)	(0.084)	(0.056)
Treatment	0.085	0.141**	0.098*	0.131**	0.037
	(0.054)	(0.070)	(0.050)	(0.061)	(0.029)
MC Not Migrant	0.066	0.115	0.064	0.081	-0.008
	(0.078)	(0.072)	(0.080)	(0.069)	(0.049)
Observations	1,003	1,001	999	1,003	996
Control Mean	0.017	-0.003	-0.017	0.011	-0.011

	(6)	(7)	(8)	(9)	(10)
	Wage	Wage	No extra	Not paid at	Work more hours
	withholding	cut	pay	agreed frequency	than agreed
Treatment x MC Not Migrant	0.017	-0.022**	-0.068***	-0.139	-0.070
	(0.021)	(0.010)	(0.026)	(0.116)	(0.069)
Treatment	0.011	0.022**	0.030***	0.027	0.034
	(0.015)	(0.010)	(0.010)	(0.022)	(0.034)
MC Not Migrant	-0.022*	-0.012	0.021	0.162	-0.005
	(0.013)	(0.010)	(0.025)	(0.106)	(0.063)
Observations	990	979	985	988	957
Control Mean	0.021	0.007	0.017	0.087	0.096

	(11)	(12)	(13)	(14)	(15)
	Not take	Work on	Monthly	Hours	Current debt
	agreed leave	rest day	income	worked	with MC
Treatment x MC Not Migrant	-0.199*	-0.012	-1795.136	-0.800*	0.026
	(0.110)	(0.014)	(3182.988)	(0.450)	(0.048)
Treatment	-0.008	0.023**	153.765	0.173	0.016
	(0.033)	(0.011)	(487.940)	(0.300)	(0.036)
MC Not Migrant	0.238**	-0.014*	3724.612	0.699*	-0.046
	(0.100)	(0.008)	(2916.725)	(0.366)	(0.034)
Observations	984	984	942	1,011	997
Control Mean	0.202	0.007	13091.351	9.142	0.099

Substantial heterogeneity by MC education and residence: workers of more educated MCs and non-migrant MCs see larger benefits of treatment.

- For MCs who have finished grade 10, treatment reduces wage risk and medium risk indices 0.25 sd more than for MCs who have not completed grade 10.
- For MCs who are permanently resident in the city they work in: treatment reduces wage risk, hours risk, and medium risk indices by 0.16-0.25 sd more than for MCs who are migrants.

Heterogeneous treatment effects

Why do education and migrant status of MCs matter?

- Higher financial literacy.
- Improved ability to use additional funds to meet business expenses and reduce economic uncertainty.
- However, neither of these characteristics predicts increased application for loans or increased take-up of loans.
- The only characteristic that predicts loan application and approval is whether the MC has previously taken a loan from a bank, a moneylender or a social contact.

Data and empirical strategy

Characteristics of loan applicants

		Treated MCs at Baseline					
	(1)	(2)	(3)	(4)	(5)	(6)	
	Applied	Took loan	Applied	Took loan	Applied	Took loan	
More than 10th Grade	0.0728 (0.101)	-0.0391 (0.0553)	0.0752 (0.101)	-0.0388 (0.0556)	0.0685 (0.101)	-0.0433 (0.0550)	
More than 10 years	0.144	0.0163	0.143	0.0163	0.154	0.0234	
	(0.0951)	(0.0523)	(0.0954)	(0.0525)	(0.0949)	(0.0519)	
Not a migrant	-0.200	-0.0503	-0.194	-0.0496	-0.204	-0.0561	
	(0.125)	(0.0685)	(0.126)	(0.0694)	(0.125)	(0.0686)	
Muslim	-0.0636	-0.0349	-0.0649	-0.0350	-0.0555	-0.0287	
	(0.101)	(0.0554)	(0.101)	(0.0556)	(0.101)	(0.0551)	
Upper Caste	0.0716	0.0400	0.0751	0.0404	0.0702	0.0371	
	(0.0800)	(0.0440)	(0.0808)	(0.0444)	(0.0803)	(0.0439)	
Lack of Working Capital			0.0266 (0.0734)	0.00315 (0.0403)	0.0138 (0.0732)	-0.00554 (0.0401)	
Currently has/taken loan					0.152* (0.0841)	0.102** (0.0460)	
Delhi	-0.0879	-0.0917**	-0.0893	-0.0919**	-0.0877	-0.0908**	
	(0.0807)	(0.0444)	(0.0810)	(0.0446)	(0.0805)	(0.0440)	
Constant	0.310***	0.124**	0.296***	0.123**	0.184	0.0469	
	(0.100)	(0.0550)	(0.108)	(0.0592)	(0.124)	(0.0677)	
Observations	176	176	176	176	176	176	

* p < 0.1, ** p < 0.05, *** p < 0.01

Robustness

Results are robust to:

- DiD specification that uses baseline data,
- Inclusion of covariates selected using post double selection lasso method (Belloni et al 2014),
- Restricting sample to workers who completed the entire survey (to account for selective non-response).

Moreover, attrition is not differential by treatment.

DiD specification

 $y_{imct} = \beta_1 Treatment_m \times Endline_t + \beta_2 Treatment_m$ $+ \beta_3 Endline_t + \phi_c + \epsilon_{imct}$

- *y_{imct}* is outcome for worker *i*, working under MC *m* in city *c* at time *t*.
- City fixed effects ϕ_c are included since randomisation was stratified by city.
- Standard errors clustered by MC.
- β_1 measures the ITT effect of the loans intervention.

Impact of treatment on MC outcomes: DiD

	(1)	(2)	(3)	(4)	(5)
	Loans	Mode of payment	Mode of payment	Mode of payment	Mode of payment
	availed	for MCs: cash	for MCs: digital	for workers: cash	for workers: digital
Treatment x EL	0.135***	-0.211*	0.069	-0.059	0.172*
	(0.042)	(0.121)	(0.075)	(0.086)	(0.090)
Treatment	-0.000	0.020	-0.016	0.017	-0.007
	(0.026)	(0.074)	(0.057)	(0.049)	(0.057)
Endline	-0.000	0.114	-0.133**	-0.010	-0.066
	(0.035)	(0.103)	(0.062)	(0.072)	(0.072)
Observations	386	363	363	362	362
Control Mean	0.000	0.453	0.188	0.871	0.177
				(6)	(7)
				Total	Total monthly
				workers	labor bills
Treatment x EL				-8.253	-148.424
				(7.250)	(108.876)
Treatment				7.121	81.250
				(6.152)	(77.313)
Endline				-12.330**	-104.320
				(5.913)	(91.209)
Observations				378	330
Control Mean				36.462	505.082

Impact of treatment on worker outcomes: DiD

	(1)	(2)	(2)	(4)	(5)
	Wage risk	(2) Hours risk	Low risk	(+) Medium Risk	High risk
	index	index	index	index	index
Treatment x EL	0.065	0.139**	0.056	0.111**	0.037
	(0.042)	(0.064)	(0.072)	(0.045)	(0.024)
Observations	2,733	2,727	2,725	2,733	2,709
Control Mean	0.001	-0.001	-0.001	0.002	0.000
	(6)	(7)	(8)	(9)	(10)
	Wage	Wage	No extra	Not paid at	Work more hours
	withholding	cut	pay	agreed frequency	than agreed
Treatment x EL	0.005	0.012	0.038**	-0.013	0.046
	(0.016)	(0.009)	(0.016)	(0.032)	(0.029)
Observations	2,708	2,696	2,704	2,708	2,674
Control Mean	0.017	0.009	0.075	0.023	0.072
		(11)	(12)	(13)	(14)
		Not take	Monthly	Hours	Current debt
		agreed leave	income	worked	with MC
Treatment x EL		-0.051	28.342	0.028	-0.012
		(0.034)	(1041.423)	(0.208)	(0.026)
Observations		2,699	2,651	2,745	2,727
Control Mean		0.032	12361.408	8.830	0.054

Impact of treatment on worker outcomes (with covariates)

-	(1)	(2)	(3)	(4)	(5)
	Wage risk	Hours risk	Low risk	Medium risk	High risk
	index	index	index	index	index
Treatment	0.094***	0.112**	0.064*	0.095**	0.040*
	(0.032)	(0.048)	(0.035)	(0.039)	(0.024)
Observations	1,428	1,426	1,450	1,401	1,470
Control Mean	0.000	-0.000	-0.000	-0.000	0.000
	(6)	(7)	(8)	(9)	(10)
	Wage	Wage	No extra	Not paid at	Work more hours
	withholding	cut	pay	agreed frequency	than agreed
Treatment	0.012	0.016***	0.024**	0.003	0.034
	(0.011)	(0.006)	(0.010)	(0.023)	(0.025)
Observations	1,475	1,458	1,470	1,474	1,439
Control Mean	0.023	0.005	0.018	0.088	0.097
	(11)	(12)	(13)	(14)	(15)
	Not take	Work on	Monthly	Hours	Current debt
	agreed leave	rest day	income	worked	with MC
Treatment	-0.031	0.023***	97.304	-0.009	0.015
	(0.028)	(0.007)	(778.518)	(0.180)	(0.025)
Observations	1,465	1,467	1,407	1,504	1,487
Control Mean	0.196	0.008	12844.738	9.184	0.099

Impact of treatment on worker outcomes by MC education (with covariates)

	(1) Waga rick	(2)	(3)	(4)	(5) High rick
	index	Hours risk index	Low risk index	Medium risk index	index
Treatment x MC More than 10th Grade	-0.251**	-0.216	-0.152	-0.242*	0.070
	(0.122)	(0.149)	(0.104)	(0.126)	(0.055)
Observations	1,012	1,010	1,008	1,012	1,005
Control Mean	0.017	-0.003	-0.017	0.011	-0.011
	(6)	(7)	(8)	(9)	(10)
	Wage	Wage	No extra	Not paid at	Work more hours
	withinoiding	cui	pay	agreed frequency	than agreed
Treatment x MC More than 10th Grade	-0.066*	-0.006	-0.004	0.030	-0.108
	(0.035)	(0.021)	(0.023)	(0.057)	(0.072)
Observations	999	988	994	997	965
Control Mean	0.021	0.007	0.017	0.087	0.096
	(11)	(12)	(13)	(14)	(15)
	Not take	Work on	Monthly	Hours	Current debt
	agreed leave	rest day	income	worked	with MC
Treatment x MC More than 10th Grade	-0.002	-0.019	3659.777**	-0.997**	0.074
	(0.078)	(0.021)	(1519.182)	(0.420)	(0.052)
Observations	993	993	950	1,020	1,006
Control Mean	0.202	0.007	13091.351	9.142	0.099

Impact of treatment on worker outcomes by MC migrant status (with covariates)

	(1)	(2)	(3)	(4)	(5)
	Wage risk	Hours risk	Low risk	Medium risk	High risk
	index	index	Index	index	index
Treatment x MC Not Migrant	-0.175**	-0.236**	-0.067	-0.299***	-0.062
	(0.085)	(0.105)	(0.098)	(0.088)	(0.057)
Observations	1,003	1,001	999	1,003	996
Control Mean	0.017	-0.003	-0.017	0.011	-0.011
	(6)	(7)	(8)	(9)	(10)
	Wage	Wage	No extra	Not paid at	Work more hours
	withholding	cut	pay	agreed frequency	than agreed
Treatment x MC Not Migrant	0.009	-0.032***	-0.080***	-0.085	-0.073
	(0.021)	(0.012)	(0.025)	(0.101)	(0.068)
Observations	990	979	985	988	957
Control Mean	0.021	0.007	0.017	0.087	0.096
	(11)	(12)	(13)	(14)	(15)
	Not take	Work on	Monthly	Hours	Current debt
	agreed leave	rest day	income	worked	with MC
Treatment x MC Not Migrant	-0.138	-0.016	-1030.376	-0.669*	0.037
_	(0.102)	(0.017)	(3002.499)	(0.378)	(0.050)
Observations	984	984	942	1,011	997
Control Mean	0.202	0.007	13091.351	9.142	0.099

Introd	ucti		
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ervention and study design

Data and empirical strategy

Attrition

	(1)	(2)
	MC attrited in EL	MC attrited in EL
Treat	-0.0411 (-0.28)	0.317 (1.12)
Treat x Delhi	0.0691 (0.46)	0.197 (0.94)
Treat x Muslim	0.0286 (0.13)	-0.0663 (-0.29)
Treat x SC/ST	0.177 (0.96)	0.0884 (0.41)
Treat x OBC	0.00889 (0.05)	-0.0814 (-0.45)
Treat x No. of Workorders		0.00386 (0.07)
Treat x Monthly Income from Construction		1.026 (0.27)
Treat x Total Workers		-0.0159 (-1.26)
Treat x Total Labour Expenses		0.000960 (1.18)
Treat x MC Mode of Payment:Cash		-0.209 (-1.06)
Treat x MC Mode of Payment:Digital		0.222 (1.09)
Treat x Workers Mode of Payment:Cash		-0.346 (-1.55)
Treat x Workers Mode of Payment:Digital		0.207 (0.87)
Control Mean	0.359	0.375
Observations P-value from F test of joint significance of interacted variables	228 0.853	205 0.853

Impact of treatment on worker outcomes by other sources of heterogeneity



Discussion

Results suggest:

- Low-cost loans to MCs do not by themselves lead to an improvement in worker conditions. Worker conditions are slightly worse off among treated MCs, with 3 out of 5 indices rising by 0.1 sd.
- MCs who are **better educated** and have **firm ties** to the city in which they work see better improvements in worker conditions after receiving the loan.
 - Among more educated MCs, 2 out of 5 indices of forced labor decline by 0.25 sd relative to less educated MCs; incomes rise significantly while hours worked fall.
 - Among non-migrant MCs, 3 out of 5 indices fall by 0.16-0.25 sd more relative to migrant MCs.

Discussion

- Loan take-up rates are low, suggesting that this policy solution is not scalable unless lender requirements are made more flexible and less onerous (documents; financial reporting).
- However, solutions targeted at MCs are relatively promising given the informal and diffuse structure of the construction sector, which makes it difficult to take action against developers.
- Type of MC matters: MCs who have previously taken loans are more likely to apply and be approved.
- MCs who are educated and are long-term residents of the cities in which they work are able to increase business expenses and reduce forced labor outcomes among workers.