Employment Protection Legislation and Informality
Theory and Evidence from India

REPLICATION OF RESULTS

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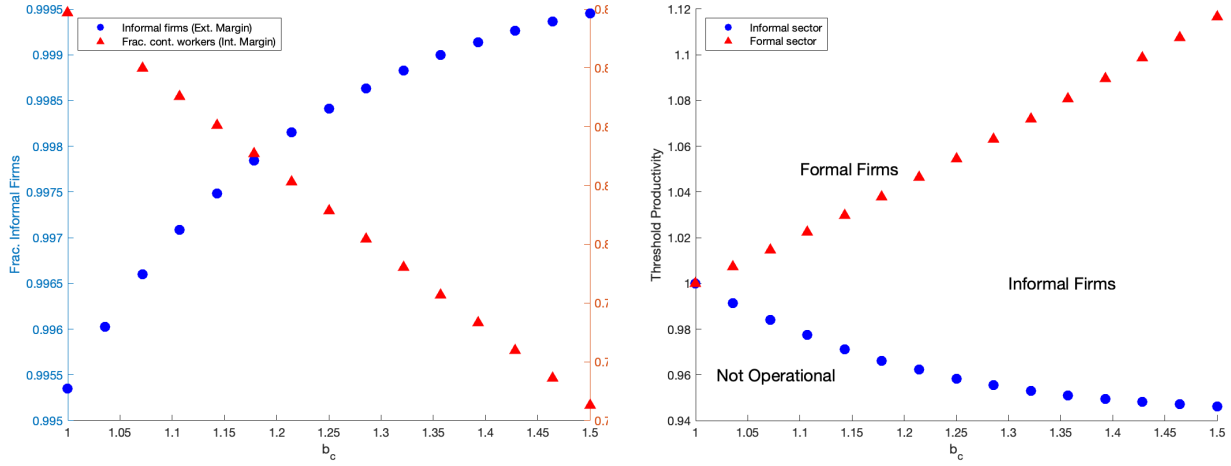
1 Figures in the Main Paper

Figure 1: Theoretical Implications of Penalizing Hiring Contract Workers



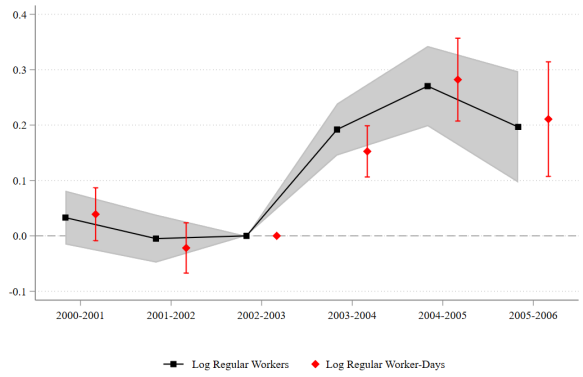
(a) Margins of Informality

(b) Productivity Thresholds

Note: The above figure examines the impact of penalizing the hiring of contract workers on the intensive and extensive margins of informality (Graph A) and on the productivity of the marginal firm, which is indifferent between entering the informal and formal sectors (Graph B). We start with a baseline scenario of $b_c = 1$, and examine the impact of gradually increasing b_c. We use the following parameter values for the simulation: $b_p = 1$; $E_I = 0.5$; $E_R = 50$; $\tau = 0.05$; $\sigma_x = \sigma_\varepsilon = 0.2$; $\nu = 3$; $\phi = 1$; $\rho = 0.74$; $\theta = 1.15$; $N = L = 5m$.

Figure 2: Impact of the Policy on the Use of Contract and Regular Workers

(a) Log Contract Workers



(b) Log Regular Workers

(c) Frac. Contract Workers

Notes: The above figure uses establishment-level data from the Annual Survey of Industries between 1999-2005. The graphs plot the regression coefficients from a difference-in-differences specification presented in Table A2. The black squares report the results for workers, while the red diamonds report the results for worker-days. All regressions contain firm and 2-digit industry-year fixed effects, along with a state-time trend. 90% confidence intervals, clustered at the state level are indicated around the point estimate. The coefficient for 2002-2003, the year before the reform, has been normalized to zero. The outcome variables are winsorized at the top and the bottom 1% of the distribution.

2 Tables in the Main Paper

Table 1: Summary Statistics from the ASI Data

	(1) Andhra Pradesh			(2) All Other States		
	N	Mean	SD	N	Mean	SD
Contract Workers	5759	39.03	96.31	77667	22.91	66.49
Regular Workers	5759	117.66	219.41	77667	113.90	207.60
Total Workers	5759	174.61	310.54	77667	140.90	247.71
Contract Worker-days ('000)	5759	11.30	28.62	77667	6.60	19.76
Regular Worker-days ('000)	5759	33.39	64.02	77667	32.57	60.52
Frac. Contract Workers	5759	0.22	0.34	77667	0.15	0.30
Frac. Contract Worker-days	5759	0.23	0.34	77667	0.15	0.30

Notes: The above table uses data from the Annual Survey of Industries between 1999-2002. Each row reports an outcome variable. Columns (1)-(3) report the total number of observations, mean, and standard deviation for the variable in Andhra Pradesh, while Columns (4)-(6) report the same for all other Indian states. All variables have been windsorized at the top and bottom 1%.

Table 2: Overlap Across Measures of Informality

	Informal Contract	Informal Firm	Casual Work
	(1)	(2)	(3)
Panel A: Informal Contract = 1			
Constant	1.00	0.79	0.88
Panel B: Informal Firm = 1			
Constant	0.70	1.00	0.82
Panel C: Casual Workers = 1			
Constant	0.87	0.91	1.00

Notes: The above table uses data rounds of the National Sample Survey between 1999-2005. Each outcome variable takes the value 1 if an individual reports working on an informal contract (Column 1), in an informal firm (Column 2), or in casual work (Column 3). Each panel reports the fraction of individuals in each of the above categories if a worker is on an informal contract (Row 1), informal firm (Row 2), and casual work (Row 3). See Appendix Table A1 for detailed definitions for each variable.

Table 3: Impact of the Policy on Contract, Payroll and Total Workers in Formal Sector Firms

	Workers		Worker-Days	
	(1) Log Contract	(2) Frac. Contract	(3) Log Contract	(4) Frac. Contract
Panel A: Impact on Usage of Contract Workers				
Post X Treat	-0.38***	-0.03***	-0.41***	-0.03***
	(0.06)	(0.00)	(0.06)	(0.00)
R2	0.80	0.81	0.79	0.81
Panel B: Impact on Payroll Workers and Firm Size				
Post X Treat	0.21***	0.05***	0.18***	0.03
	(0.03)	(0.02)	(0.03)	(0.02)
R2	0.85	0.94	0.86	0.93
N	161552	161552	161552	161552

Notes: The above table uses establishment-level data from the Annual Survey of Industries between 1999-2005. It reports the impact of the policy reform on Workers in Columns (1) and (2) and Worker-Days in Columns (3) and (4). Panel A reports the impact of the policy on the usage of contract workers, while Panel B reports the impact on the usage of regular payroll workers and total workers. Frac. Contract is the number of contract workers (or worker-days) as a fraction of total workers (worker-days) in a firm. Post is defined as 1 for years after 2003, and 0 before that. Treat is defined as 1 for Andhra Pradesh and 0 for other states. The outcome variables are winsorized from the top and bottom at 1%. All regressions contain firm and 2-digit industry-year fixed effects, a state-time trend, and control for age and age-square of the firm. Robust standard errors clustered at the state level in parentheses. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

Table 4: Impact of the Policy on the Probability of Working in the Informal Sector and Daily Wages

	Probability of Working In			Log
	(1) Informal Contract	(2) Informal Firm	(3) Casual Work	(4) Daily Wage
Post X Treat	0.055***	0.062***	0.027***	-0.046**
	(0.009)	(0.012)	(0.009)	(0.017)
Control, 1991 Mean	0.39	0.67	0.73	3.94
R2	0.43	0.34	0.41	0.50
N	90260	144035	216558	91510

Notes: The above table uses data from all rounds of the National Sample Survey (NSS) between 1999-2005. Each outcome variable takes the value 1 if an individual reports working on an informal contract (Column 1), informal firm (Column 2), and casual work (Column 3). Daily log wages are reported in Column (4) and windsorized at the top and bottom 1% of the distribution. Table A1 provides detailed definitions for all outcome variables. Post is a binary variable that takes the value 1 for years after 2003, while Treat is a binary variable that takes the value 1 for Andhra Pradesh and 0 otherwise. All regressions contain state-2 digit industry and 2-digit industry-year fixed effects along with a state-time trend. They also control for individual characteristics such as age, age-squared, gender, literacy, caste group, and marital status. Control, Pre Mean reports the mean of the outcome variable among the control states in the years before the policy reform. We use sample weights for the estimation and report robust standard errors clustered at the state level in parentheses below. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$. The sample size varies depending on the coverage of the underlying variable across rounds as well as whether a worker reports it.

Table 5: Impact of the Probability of Firms Remaining Unregistered

	Large	Small	All
	(1)	(2)	(3)
Post × Treat	0.276***	0.169***	0.170***
	(0.028)	(0.035)	(0.035)
Control, Pre Mean	0.84	0.97	0.97
R2	0.37	0.27	0.27
N (millions)	1.36	66.94	68.29

Notes: The above table uses data from the 1998 and 2005 rounds of the Economic Census. The outcome variable is a binary variable that takes the value 1 if a firm is unregistered and 0 otherwise. We classify firms as Large (Column 1) if they employ more than 10 workers, and Small (Column 2) if they employ less than 10 workers. Column 3 includes all firms. All regressions contain district, year, and state-2-digit industry fixed effects and control for firm characteristics like whether the firm is owned by a female, whether the owner is from a lower-caste, and whether the firm uses electrical power. Control, Pre Mean reports the mean of the outcome variable among the control states in the years before the policy reform. Robust standard errors are clustered at the state level and reported in parentheses below. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

Table 6: Entry-Exit into the Formal Sector

	Fraction of firms	
	(1) Inactive	(2) New Entrants
Post X Treat	0.025***	-0.067**
	(0.006)	(0.031)
Control, Pre Mean	0.05	0.11
R2	0.17	0.08
N	7991	7991

Notes: Data are from the repeated cross-section of the Annual Survey of Industries between 1999-2005 that have been aggregated to the state-3-digit industry level. Column (1) reports the fraction of firms from year $t-1$ that become inactive in year t, while Column (2) reports the number of firms that enter the ASI sample in year t as a fraction of firms in $t-1$. Post is defined as 1 for years after 2003, and 0 before that. Treat is defined as 1 for Andhra Pradesh, and 0 for other states. Robust standard errors are clustered at the state level and reported in parentheses. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

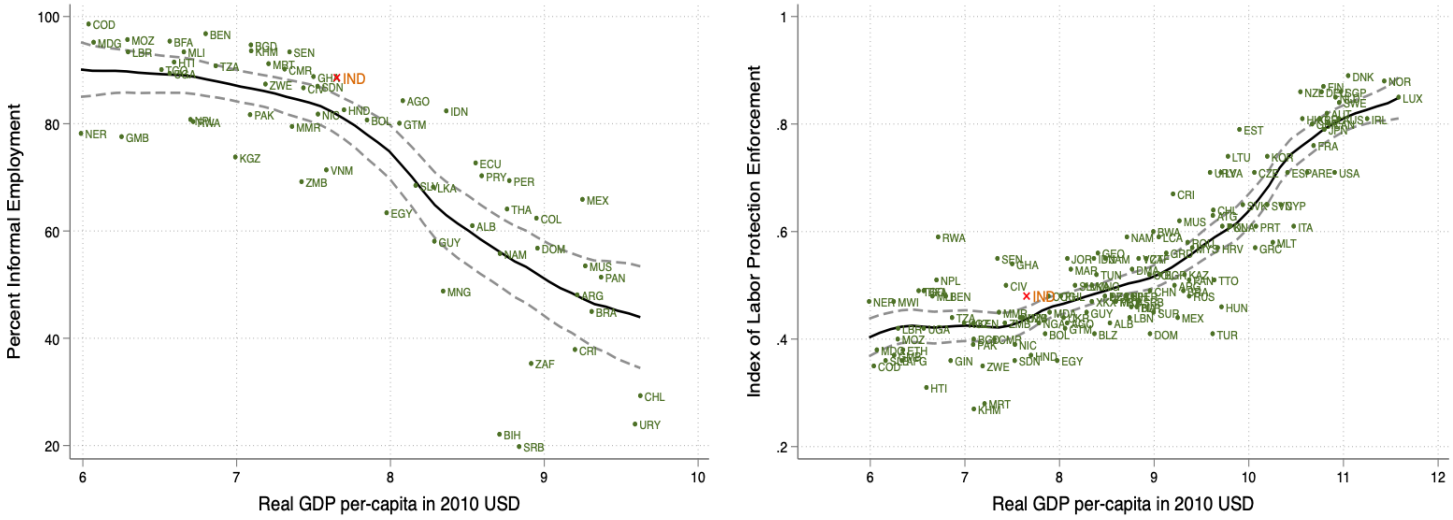
Table 7: Impact of Employment Protection Policies

	Baseline	Penalizing Contract Workers	Subsidizing Payroll Workers
Policy change	0.00	1.19	0.88
Frac. Contract Workers	1.00	0.82	0.82
Frac. Informal Firms	1.00	1.00	1.00
Frac. Informal Labor	1.00	1.29	0.95
Informal Sector	1.00	0.97	1.01
Formal Sector	1.59	1.64	1.55
TFP	1.00	0.98	1.00
Real Wages	1.00	0.95	1.01
Real Income (Welfare)	1.00	0.91	1.08

Notes: Notes: The above table reports the impact of two labor laws on the margins of informality. The baseline values in Column (1) have been normalized to 1, except for the productivity of the marginal firm in the formal sector, which in the baseline has been normalized to 1 for the productivity of the marginal firm in the informal sector. Columns (2) and (3) report the impact of a 19% (12%) increase (decrease) in b_c (b_r) relative to its baseline value. The change in b_r has been calibrated to achieve the same reduction in the fraction of contract workers as in Columns (2).

A Appendix Figures and Tables

Figure A1: Fraction of Informal Workers and EPL Enforcement

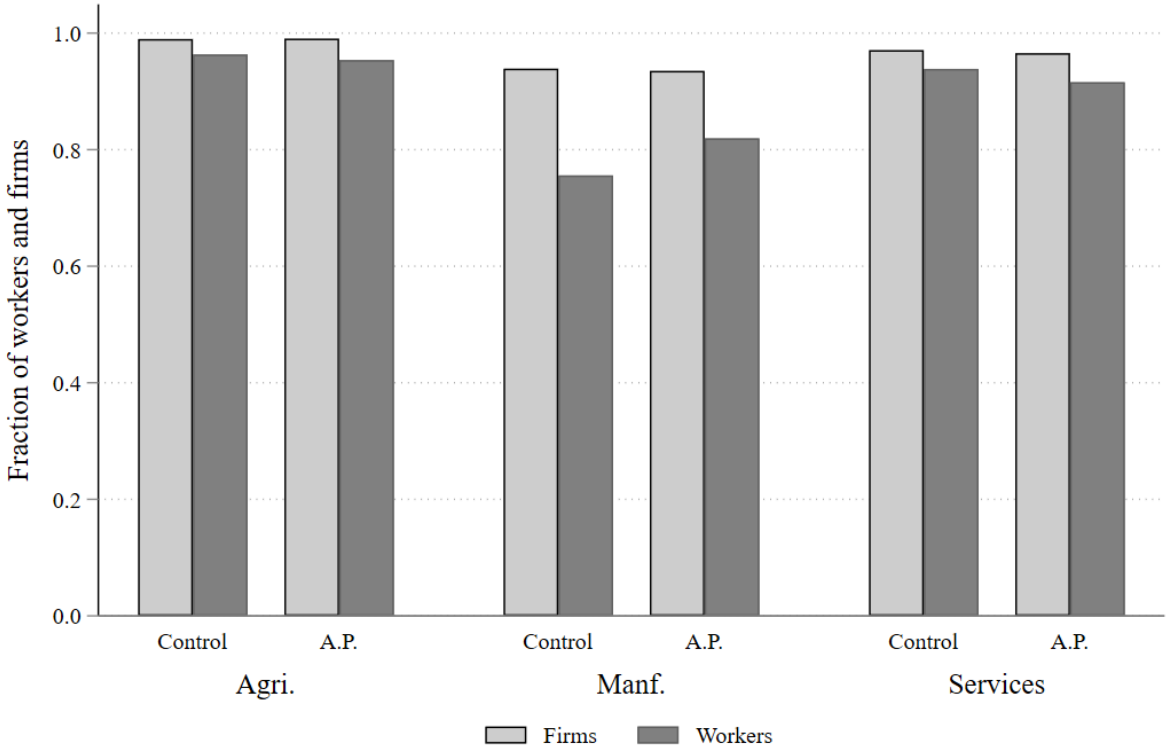


(a) Fraction of Informal Workers

(b) EPL Enforcement

Note: Data on informality is taken from Elgin, Kose, Ohnsorge, and Yu (2021). Data on enforcement of labor regulation is taken from Botero et al. (2004). We use 2018 values across all countries. Data on Real GDP per-capita is taken from the World Bank.

Figure A2: Fraction of Workers and Firms in the Informal Sector

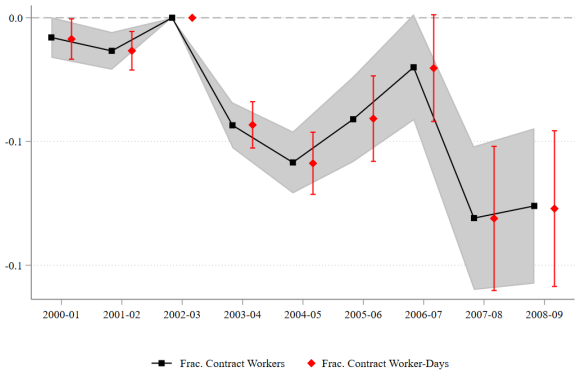


Note: The above figure uses data from the 1998 round of the Economic Census. The blue bars plot the fraction of unregistered firms in each industry, while the red bars are the fraction of workers who work in them. A.P. = Andhra Pradesh; Control = Other states in India excluding Andhra Pradesh.

Figure A3: Impact of the Policy on the Use of Contract and Regular Workers

(a) Log Contract Workers

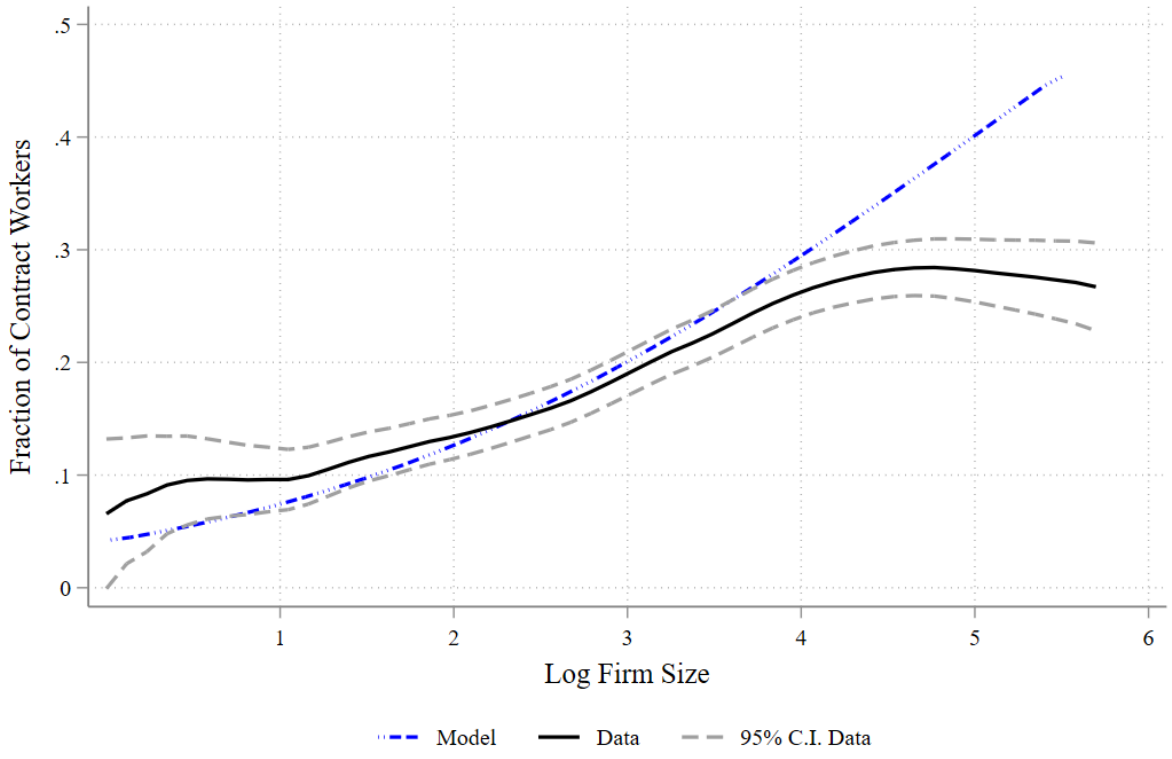
(b) Log Regular Workers



(c) Frac. Contract Workers

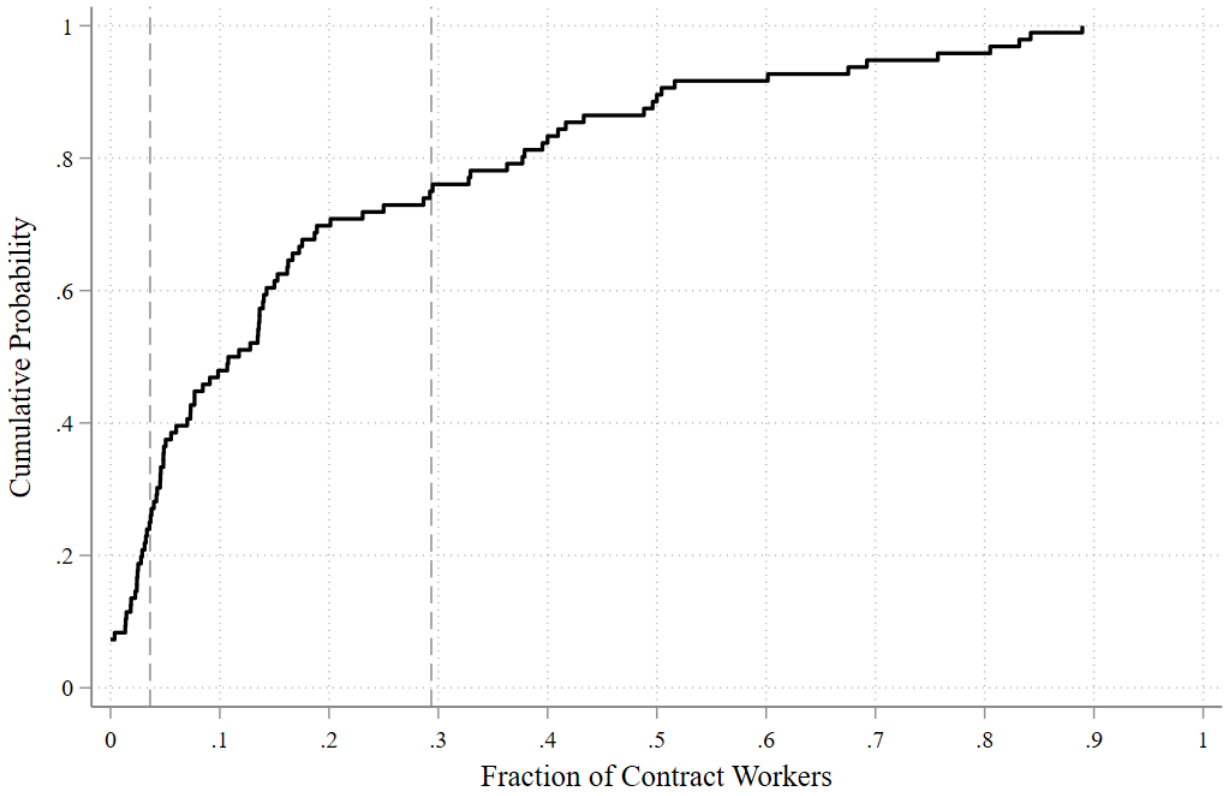
Notes: The above graphs plot the regression coefficients from a difference-in-differences specification using data from the Annual Survey of Industries between 1999-2008. The black squares report the results for workers, while the red diamonds report the results for worker-days. 90% confidence intervals, clustered at the state level are indicated around the point estimate. The coefficient for 2002-2003, the year before the reform, has been normalized to zero. The outcome variables are winsorized at the 1% levels at the top and the bottom of the distribution.

Figure A4: Correlation between the Fraction of Contract Workers and Firm-Size in Andhra Pradesh



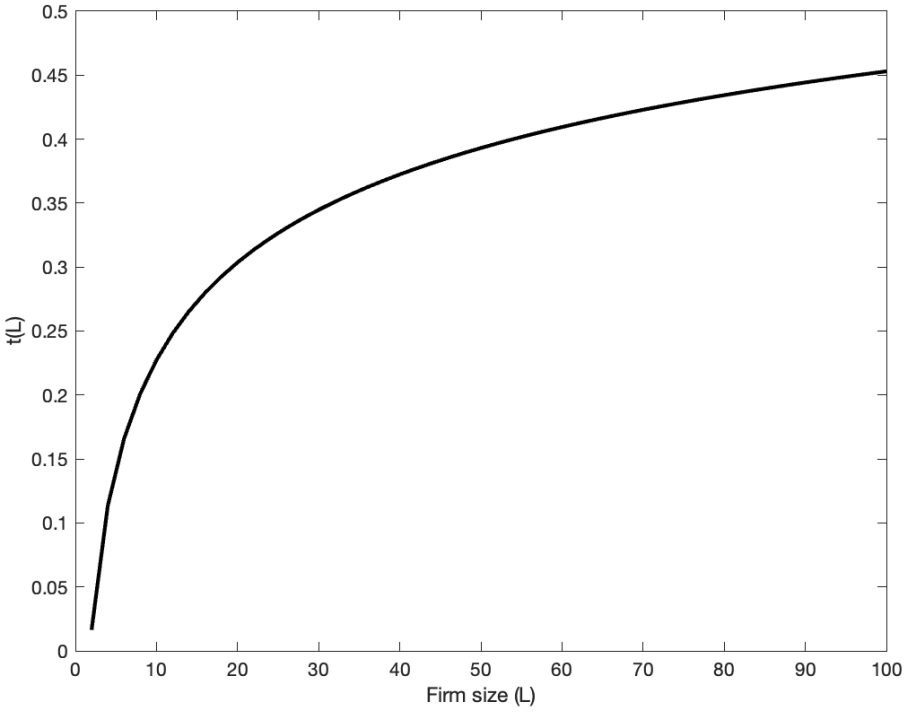
Notes: The above figure uses establishment-level data from the Annual Survey of Industries for Andhra Pradesh in 2002 (before the policy) and plots a non-parameteric correlation (solid black line) between log firm-size on the horizontal axis and the fraction of contract workers on the vertical axis. The dotted gray lines are the 95% confidence intervals. The dash-dotted blue line is the fit simulated from the model.

Figure C1: Distribution of Contract Workers Across Occupations in Formal Firms



Note: The above figure pools the sample of workers working in the formal sector across multiple rounds of the NSS between 1999-00 and 2009-10. The figure plots the fraction of contract workers across occupations. The dotted gray lines report the 25th and 75th percentiles.

Figure C2: Size-based Penalty Function



Notes: The above graph plots the size-based penalty function of operating in the informal sector, as a function of firm size.

Table A1: Definition of Variables, Coverage of Data Over Time

	Variable	Coverage	Definition
	(1)	(2)	(3)
ASI	Contract workers	1999-2009	Number of contract workers employed by the firm
	Frac. contract workers	1999-2009	Contract Workers/Total Workers employed in the firm
	Regular workers	1999-2009	Number of regular workers employed in the firm
	Contract worker-days	1999-2009	Person-days worked by contract workers
	Regular worker-days	1999-2009	Person-days worked by regular workers
	Total workers	1999-2009	Total number of workers employed by the firm
NSS	Informal worker	1999, 2004, 2009	Individuals paid on a daily or weekly basis; provide unpaid labor in a household enterprise
	Informal firm	1999, 2004, 2009	Individuals working in a firm less than 10 workers, less than 20 workers without electricity; working in an owner-operated enterprise; or provide unpaid labor in a household enterprise
	Casual worker	1993, 1999, 2003, 2004, 2009	Individuals employed in casual work, working in an owner-operated enterprise; or provide unpaid labor in a household enterprise
	Daily wages	1993, 1999, 2003, 2004, 2009	Daily wages earned in INR, calculated as the ratio of total weekly earnings divided by the number of days worked
EC	Firm size	1991, 1999, 2005, 2013	Number of workers employed in a firm
	Registration status	1999, 2005	Whether a firm is registered with any government agency or not

Table A2: Event Study Regression

	Log Contract		Log Regular		Frac. Contract	
	(1) Workers	(2) Worker-Days	(3) Workers	(4) Worker-Days	(5) Workers	(6) Worker-Days
2000-2001	-0.009	-0.003	0.033	0.039	-0.002	-0.000
	(0.055)	(0.057)	(0.029)	(0.028)	(0.006)	(0.006)
2001-2002	0.026	0.010	-0.005	-0.022	-0.007*	-0.006
	(0.042)	(0.041)	(0.026)	(0.027)	(0.004)	(0.004)
2003-2004	-0.343***	-0.382***	0.192***	0.152***	-0.033***	-0.033***
	(0.061)	(0.062)	(0.028)	(0.027)	(0.005)	(0.005)
2004-2005	-0.708***	-0.696***	0.270***	0.282***	-0.055***	-0.057***
	(0.080)	(0.080)	(0.043)	(0.044)	(0.008)	(0.008)
2005-2006	-0.643***	-0.629***	0.197***	0.211***	-0.042***	-0.043***
	(0.117)	(0.119)	(0.059)	(0.061)	(0.011)	(0.011)
p-val:	0.74	0.96	0.38	0.11	0.12	0.11
R2	0.80	0.79	0.85	0.86	0.81	0.81
N	161552	161552	161552	161552	161552	161552

Notes: Data are from the Annual Survey of Industries between 1999-2005. Columns (1)-(6) report underlying coefficients in Figure 2 for sub-figures (a)-(c) respectively. The coefficient for 2002-2003, the year before the reform, has been normalized to zero. The outcome variables are winsorized at the 1% levels at the top and the bottom of the distribution. Following Borusyak et al. (2024), the p-value of a F-test that jointly tests for the pre-policy $\widehat{\beta}_t$ to be equal to 0 are reported. Robust standard errors clustered at the state level in parentheses; *** is $p < 0.01$, ** is $p < 0.05$ and * is $p < 0.1$.

Table A3: Impact on Core and Non-Core Activities

	(1) Log Contract Workers	(2) Log Regular Workers	(3) Frac. Contract Workers
Panel A: Impact on Core Activities			
Post X Treat	-0.41***	0.14***	-0.03***
	(0.05)	(0.03)	(0.00)
R2	0.79	0.85	0.81
Panel B: Impact on Non-Core Activities			
Post X Treat	-0.01	-0.09***	0.00
	(0.01)	(0.03)	(0.00)
R2	0.61	0.80	0.62
N	165676	165676	165676

Notes: Data are from the Annual Survey of Industries between 1999-2005. Core activity (Panel A) is any activity for which the establishment is set up, and other activities essential for these core activities. Non-core activities (Panel B) are the remaining peripheral activities (listed in the Appendix Section B). Column (1)-(3) reports the results for contract workers, regular workers, and the fraction of contract workers respectively. Frac. Contract is the number of contract workers (or worker-days) as a fraction of total workers (worker-days) in a firm. Post is defined as 1 for years after 2003, and 0 before that. Treat is defined as 1 for Andhra Pradesh, and 0 for other states. The outcome variables are winsorized from the top and bottom at 1%. Robust standard errors are clustered at the state level and reported in parentheses. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

Table A4: Results After Restricting the Control States to Neighboring States Only

	Workers		Worker-Days	
	(1) Log Contract	(2) Frac. Contract	(3) Log Contract	(4) Frac. Contract
Panel A: Impact on Usage of Contract Workers				
Post X Treat	-0.46***	-0.04***	-0.48***	-0.04***
	(0.09)	(0.01)	(0.09)	(0.01)
R2	0.78	0.79	0.78	0.79
Panel B: Impact on Payroll Workers and Firm Size				
Post X Treat	0.22***	0.05*	0.20***	0.03
	(0.03)	(0.02)	(0.03)	(0.02)
R2	0.85	0.94	0.85	0.93
N	67046	67046	67046	67046

Notes: The above table uses data from the Annual Survey of Industries between 1999-2005. The sample is constrained to neighboring states of Andhra Pradesh, which are Chhattisgarh, Karnataka, Maharashtra, and Odisha. It reports the impact of the policy reform on workers in Columns (1) and (2) and worker-Days in Columns (3) and (4). Panel A reports the impact of the policy on the usage of contract workers, while Panel B reports the impact on the usage of regular payroll workers and total workers. Frac. Contract is the number of contract workers (or worker-days) as a fraction of total workers (worker-days) in a firm. Post is defined as 1 for years after 2003, and 0 before that. Treat is defined as 1 for Andhra Pradesh, and 0 for other states. The outcome variables are winsorized from the top and bottom at 1%. Robust standard errors are clustered at the state level and reported in parentheses. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

Table A5: Results After Excluding Neighboring States

	Workers		Worker-Days	
	(1) Log Contract	(2) Frac. Contract	(3) Log Contract	(4) Frac. Contract
Panel A: Impact on Usage of Contract Workers				
Post X Treat	-0.31***	-0.03***	-0.34***	-0.03***
	(0.08)	(0.01)	(0.08)	(0.01)
R2	0.80	0.81	0.79	0.81
Panel B: Impact on Payroll Workers and Firm Size				
Post X Treat	0.20***	0.06**	0.17***	0.03
	(0.03)	(0.02)	(0.03)	(0.02)
R2	0.84	0.94	0.85	0.93
N	105692	105692	105692	105692

Notes: The above table uses data from the Annual Survey of Industries between 1999-2005. The sample excludes neighboring states of Andhra Pradesh, which are Chhattisgarh, Karnataka, Maharashtra, and Odisha. It reports the impact of the policy reform on workers in Columns (1) and (2) and worker-Days in Columns (3) and (4). Panel A reports the impact of the policy on the usage of contract workers, while Panel B reports the impact on the usage of regular payroll workers and total workers. Frac. Contract is the number of contract workers (or worker-days) as a fraction of total workers (worker-days) in a firm. Post is defined as 1 for years after 2003, and 0 before that. Treat is defined as 1 for Andhra Pradesh, and 0 for other states. The outcome variables are winsorized from the top and bottom at 1%. Robust standard errors are clustered at the state level and reported in parentheses. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

Table A6: Impact of the Policy Using Synthetic Control Weights

	Workers		Worker-Days	
	(1)	(2)	(3)	(4)
	Log Contract	Frac. Contract	Log Contract	Frac. Contract
Panel A: Impact on Usage of Contract Workers				
Post X Treat	-0.114**	-0.017***	-0.128**	-0.017***
	(0.054)	(0.004)	(0.055)	(0.004)
R2	0.747	0.755	0.747	0.755
N	191956	191956	191956	191956
	Log Regular	Log Total	Log Regular	Log Total
Panel B: Impact on Payroll Workers and Firm Size				
Post X Treat	0.126***	0.016	0.113***	0.004
	(0.039)	(0.018)	(0.038)	(0.019)
R2	0.831	0.945	0.837	0.942
N	191956	191956	191956	191956

Notes: The above table uses establishment-level data from the Annual Survey of Industries from 2000-2006. Regressions are weighted by synthetic control weights generated by matching the treated unit with a weighted combination of control units by matching on regular workers, non-literate population, scheduled caste population, and cultivators population in the years 2000 and 2001. The above table reports the impact of the policy reform on Workers in Columns (1) and (2) and Worker-Days in Columns (3) and (4). Panel A reports the impact of the policy on the usage of contract workers, while Panel B reports the impact on the usage of regular payroll workers and total workers. Frac. Contract is the number of contract workers (or worker-days) as a fraction of total workers (worker-days) in a firm. Post is defined as 1 for years after 2003, and 0 before that. Treat is defined as 1 for Andhra Pradesh, and 0 for other states. Source of the data is the Annual Survey of Industries between 2000-2007. The outcome variables are winsorized from the bottom at 1% and from the top at 99%. Robust standard errors clustered at the state level in parentheses. All regressions contain firm and 2-digit industry-year fixed effects, a state-time trend, and control for age and age-square of the firm. Robust standard errors clustered at the state level in parentheses. * is $p<0.1$, ** is $p<0.05$, *** is $p<0.01$.

Table A7: Robustness of ASI Results to Alternate Fixed Effects

	Log Contract		Log Regular		Fraction of Contract	
	(1) Workers	(2) Worker-Days	(3) Workers	(4) Worker-Days	(5) Workers	(6) Worker-Days
Panel A: Without Additional Fixed Effects						
Post X Treat	-0.51***	-0.50***	0.17***	0.17***	-0.05***	-0.05***
	(0.04)	(0.04)	(0.03)	(0.03)	(0.00)	(0.00)
R2	0.04	0.04	0.04	0.04	0.04	0.04
Panel B: 2-digit Industry-Year Fixed Effects						
Post X Treat	-0.44***	-0.44***	0.21***	0.21***	-0.05***	-0.05***
	(0.08)	(0.08)	(0.03)	(0.02)	(0.01)	(0.01)
R2	0.08	0.08	0.09	0.10	0.09	0.09
Panel C: State-2-digit Industry Fixed Effects						
Post X Treat	-0.55***	-0.53***	0.20***	0.21***	-0.05***	-0.05***
	(0.05)	(0.05)	(0.03)	(0.03)	(0.00)	(0.00)
R2	0.15	0.14	0.14	0.15	0.16	0.16
Panel D: 2-digit Industry-Year and State-2-digit Industry Fixed Effects						
Post X Treat	-0.47***	-0.45***	0.22***	0.22***	-0.05***	-0.05***
	(0.08)	(0.08)	(0.03)	(0.03)	(0.01)	(0.01)
R2	0.15	0.14	0.14	0.15	0.16	0.16
Panel E: Preferred Specification in the Main Paper						
Post X Treat	-0.38***	-0.40***	0.21***	0.17***	-0.03***	-0.03***
	(0.06)	(0.06)	(0.03)	(0.03)	(0.00)	(0.00)
R2	0.80	0.79	0.85	0.86	0.81	0.81
N	161552	161666	161552	161666	161552	161666

Notes: The above table uses data from the Annual Survey of Industries between 1999-2005. The outcome variables in Columns (1)-(2) are log contract worker and worker-days respectively; Columns (3)-(4) are log regular workers and worker-days respectively, and Columns (5)-(6) are the fraction of contract workers and worker-days respectively. Regressions in Panel A include year fixed effects and a state-time trend. Panels B and C additionally include 2-digit industry-year fixed effects, and state-2-digit industry fixed effects respectively. Panel D includes both state-2-digit-industry and 2-digit industry-year fixed effects. Lastly, Panel E includes firm fixed effects and 2-digit industry-year fixed effects, as in the specification in the paper. Post is defined as 1 for years after 2003, and 0 before that. Treat is defined as 1 for Andhra Pradesh, and 0 for other states. The outcome variables are winsorized from the top and bottom at 1%. Robust standard errors are clustered at the state level and reported in parentheses. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

Table A8: Robustness of Results to Not Using Sampling Weights

	Probability of Working In			
	(1) Informal Contract	(2) Informal Firm	(3) Casual Work	(4) Wage
Post X Treat	0.024***	0.042***	0.014**	-0.092***
	(0.008)	(0.010)	(0.007)	(0.016)
Control, 1991 Mean	0.39	0.67	0.59	4.60
R2	0.43	0.38	0.44	0.52
N	90260	144035	216558	91510

Notes: The above table uses data from all rounds of the National Sample Survey between 1999-2005. Each outcome variable takes the value 1 if an individual reports working on an informal contract (Column 1), informal firm (Column 2), and casual work (Column 3). Daily log wages are reported in Column (4). Post is a binary variable that takes the value 1 for years after 2003, while Treat is a binary variable that takes the value 1 for Andhra Pradesh and 0 otherwise. All regressions contain state-2 digit industry and 2-digit industry-year fixed effects along with a state-time trend. Control, Pre Mean reports the mean of the outcome variable among the control states in the years before the policy reform. Robust standard errors are clustered at the state level and reported in parentheses below. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$. The sample size varies depending on the coverage of the underlying variable across rounds as well as whether a worker reports it. We do not use sampling weights.

Table A9: Excluding Self-Employed Individuals from the NSS Analysis

	Probability of Working In		
	(1) Informal Contract	(2) Informal Firm	(3) Casual Work
Panel A: Including Self-Employed Individuals			
Post X Treat	0.055***	0.062***	0.027***
	(0.009)	(0.012)	(0.009)
Control, Pre Mean	0.39	0.67	0.73
R2	0.43	0.34	0.41
N	90260	144035	216558
Panel B: Excluding Self-Employed Individuals			
Post X Treat	0.051***	0.070***	0.027**
	(0.009)	(0.018)	(0.011)
Control, Pre Mean	0.48	0.70	0.62
R2	0.44	0.37	0.47
N	87823	84031	140173

Notes: The above table uses data from all rounds of the National Sample Survey (NSS) between 1999-2005. Each outcome variable takes the value 1 if an individual reports working on an informal contract (Column 1), informal firm (Column 2), and casual work (Column 3). Table A1 provides detailed definitions for each outcome variable. Panel A includes self-employed individuals, who are classified as informal firms, and casual workers. Panel B excludes them. Post is a binary variable that takes the value 1 for years after 2003, while Treat is a binary variable that takes the value 1 for Andhra Pradesh and 0 otherwise. All regressions contain state-2 digit industry and 2-digit industry-year fixed effects along with a state-time trend. Control, Pre Mean reports the mean of the outcome variable among the control states in the years before the policy reform. Robust standard errors are clustered at the state level and reported in parentheses below. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$. The sample size varies depending on the coverage of the underlying variable across rounds as well as whether a worker reports it. The regressions include the NSS sample weights.

Table A10: Alternate Definitions of Informal Workers

	Prob. of Working on Informal Contract			
	(1) Daily/Weekly	(2) Daily	(3) Daily/Weekly	(4) Daily
Post X Treat	0.055***	0.058***	0.113***	0.106***
	(0.009)	(0.012)	(0.012)	(0.012)
Sample	Main	Main	All	All
Control, Pre Mean	0.65	0.57	0.65	0.57
R2	0.43	0.32	0.48	0.37
N	90260	90260	150989	150989

Notes: The above table uses data from multiple rounds of the National Sample Survey. Columns (1) and (2) restrict the sample to the main sample years between 1999-2005, whereas Columns (3) and (4) include all available years. The outcome variable takes the value 1 if an individual reports working on an informal contract, which is defined to be wages received on a daily or weekly basis in Columns (1) and (3), and daily basis in Columns (2) and (4). Post is a binary variable that takes the value 1 for years after 2003, while Treat is a binary variable that takes the value 1 for Andhra Pradesh and 0 otherwise. All regressions contain state-2 digit industry and 2-digit industry-year fixed effects, and a state-time trend. Control, Pre Mean reports the mean of the outcome variable among the control states in the years before the policy reform. Robust standard errors are clustered at the state level and reported in parentheses below. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

Table A11: Event Study using the NSS

	Log Wages	Casual Workers
	(1)	(2)
	none	model_all_cas
1993-94	0.017	0.051***
	(0.020)	(0.012)
1999-00	0.000	0.000
	(.)	(.)
2003-04	-0.103***	-0.001
	(0.012)	(0.006)
2004-05	-0.163***	0.040***
	(0.014)	(0.005)
R2	0.60	0.44
N	170781	377636

Notes: The above table uses data from multiple rounds of the National Sample Survey between 1993-2009. The outcome variable in daily log wages are reported in Column (1), and takes the value 1 if an individual reports working in casual work in Column (2). Treat is a binary variable that takes the value 1 for Andhra Pradesh and 0 otherwise. All regressions contain state-2 digit industry and 2-digit industry-year fixed effects, along with a state-time trend. Robust standard errors are clustered at the state level and reported in parentheses below. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$. The sample size varies depending on the coverage of the underlying variable across rounds as well as whether a worker reports it.

Table A12: Heterogeneity by Manufacturing and All Sectors

	Probability of Working In			
	(1) Informal Contract	(2) Informal Firm	(3) Casual Work	(4) Wage
Panel A: Manufacturing Sector (Main Sample)				
Post X Treat	0.034	0.124***	0.075***	-0.073
	(0.022)	(0.015)	(0.021)	(0.046)
Control, Pre Mean	0.48	0.70	0.64	4.37
R2	0.34	0.21	0.27	0.46
N	21679	39644	49268	18822
Panel B: All Sectors (Main Sample)				
Post X Treat	0.055***	0.062***	0.027***	-0.046**
	(0.009)	(0.012)	(0.009)	(0.017)
Control, Pre Mean	0.39	0.67	0.59	4.60
R2	0.43	0.34	0.41	0.50
N	90260	144035	216558	91510
Panel C: Manufacturing Sector (All Years)				
Post X Treat	0.027*	0.116***	0.061*	-0.239***
	(0.014)	(0.027)	(0.030)	(0.047)
Control, Pre Mean	0.48	0.70	0.62	4.08
R2	0.39	0.29	0.32	0.60
N	32281	57756	83409	34384
Panel D: All Sectors (All Years)				
Post X Treat	0.113***	0.115***	0.029***	-0.191***
	(0.012)	(0.018)	(0.009)	(0.020)
Control, Pre Mean	0.39	0.67	0.73	3.94
R2	0.48	0.35	0.44	0.60
N	150989	239663	377636	170781

Notes: The above table uses data from multiple rounds of the National Sample Survey between 1999-2005 for the main sample, and between 1993-2009 for the "all years" sample. Each outcome variable takes the value 1 if an individual reports working on an informal contract (Column 1), informal firm (Column 2), and casual work (Column 3). Daily log wages are reported in Column (4). Panels A and B restrict the sample to the manufacturing and all sectors for the main sample years, while Panels C and D use all years available. Post is a binary variable that takes the value 1 for years after 2003, while Treat is a binary variable that takes the value 1 for Andhra Pradesh and 0 otherwise. All regressions contain state-2 digit industry and 2-digit industry-year fixed effects. Panels C and D additionally include a state-time trend. Control, Pre Mean reports the mean of the outcome variable among the control states in the years before the policy reform. Robust standard errors are clustered at the state level and reported in parentheses below. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$. The sample size varies depending on the coverage of the underlying variable across rounds as well as whether a worker reports it.

Table A13: Impact on LFP, Unemployment, and Agricultural Work

	LFP	Unemployed	Agri. Worker
	(1)	(2)	(3)
Post X Treat	-0.003	-0.002	-0.005
	(0.006)	(0.003)	(0.008)
Control, Pre Mean	0.46	0.02	0.17
R2	0.37	0.03	0.17
N	1444107	1444107	1444107

Notes: The above table uses data from multiple rounds of the National Sample Survey between 1999-2005. Each outcome variable takes the value 1 if an individual reports working in the labor force (Column 1), is unemployed (Column 2), or works in agriculture (Column 3). Post is a binary variable that takes the value 1 for years after 2003, while Treat is a binary variable that takes the value 1 for Andhra Pradesh and 0 otherwise. All regressions contain state-2 digit industry and 2-digit industry-year fixed effects, and a state-time trend. Control, Pre Mean reports the mean of the outcome variable among the control states in the years before the policy reform. Robust standard errors are clustered at the state level and reported in parentheses below. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

Table A14: Robustness to Alternate Definitions of Large Firms

	Probability of Remaining Unregistered				
	(1)	(2)	(3)	(4)	(5)
Large Firm:	= 10	= 20	= 30	= 50	= 100
Post × Treat	0.276***	0.318***	0.365***	0.422***	0.385***
	(0.028)	(0.029)	(0.030)	(0.034)	(0.038)
Control, Pre- Mean	0.84	0.80	0.78	0.75	0.72
R2	0.37	0.38	0.38	0.38	0.40
N (millions)	1.36	0.54	0.32	0.18	0.08

Notes: The above table uses data from the 1998 and 2005 rounds of the Economic Census. The outcome variable is a binary variable that takes the value 1 if a firm is unregistered and 0 otherwise. We classify firms as Large if they employ more than 10 workers (Column 1), 20 workers (Column 2), 30 workers (Column 3), 50 workers (Column 4), and 100 workers (Column 5). All regressions include district, 2-digit industry, state-industry, and year fixed effects, along with controls for firm characteristics like whether the firm is owned by a female, whether the owner is from a lower-caste, and whether the firm uses electrical power. Control, Pre Mean reports the mean of the outcome variable among the control states in the years before the policy reform. Robust standard errors are clustered at the state level and reported in parentheses below. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

Table A15: Robustness to Restricting Results to the Manufacturing Sector Only

	Large	Small	All
	(1)	(2)	(3)
Post × Treat	0.292***	0.125***	0.127***
	(0.031)	(0.028)	(0.028)
Control, Pre Mean	0.71	0.95	0.94
R2	0.35	0.22	0.22
N (millions)	0.40	12.44	12.84

Notes: The above table uses data from the 1998 and 2005 rounds of the Economic Census. We restrict the firms to the manufacturing sector only. The outcome variable is a binary variable that takes the value 1 if a firm is unregistered and 0 otherwise. We classify firms as Large (Column 1) if they employ more than 10 workers, and Small (Column 2) if they employ less than 10 workers. Column 3 includes all firms. All regressions contain district, year, and state-2-digit industry fixed effects and control for firm characteristics like whether the firm is owned by a female, whether the owner is from a lower-caste, and whether the firm uses electrical power. Control, Pre Mean reports the mean of the outcome variable among the control states in the years before the policy reform. Robust standard errors are clustered at the state level and reported in parentheses below. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

Table A16: Correlation between Firm-Size and Fraction of Contract Workers

	Fraction of Contract Workers	
	(1) Without F.E.	(2) Ind. F.E.
Log Firm Size	0.123***	0.119***
	(0.027)	(0.027)
Log Firm Size^2	-0.010***	-0.009**
	(0.004)	(0.004)
R2	0.05	0.12
N	2170	2170

Notes: The above data is at from the Annual Survey of Industries for Andhra Pradesh in 2002. Column (1) reports the regression estimates without any fixed effects, while Column (2) adds 2-digit industry fixed effects. Robust standard errors are reported in parentheses. * is $p < 0.1$, ** is $p < 0.05$, *** is $p < 0.01$.

Table A17: Model Fit

	Model	Data
No. of informal firms ('000), Targeted	1,608.01	1,606.23
No. of formal firms ('000), Targeted	16.37	16.34
Firm size in informal firms, Targeted	1.63	2.77
Firm size in formal firms, Targeted	152.46	112.08
Variance in log-firm size (Informal), Targeted	0.58	0.58
Variance in log-firm size (Formal), Targeted	1.33	1.33
Coefficient, Targeted	-0.01	-0.01
Frac. Informal labor, Untargeted	0.63	0.79
Frac. Informal firms, Untargeted	0.99	0.99

Notes: The above table reports the moments in the model (Column 1) with those in the data (Column 2).

Table A18: Derivatives of Moments to Parameter Changes

	σ, x	σ, ε	θ	ϕ	bc	br
Var. Firm-size (Informal)	0.08	1.58	5.34	0.13	0.16	0.05
Var. Firm-size (Formal)	0.40	1.84	0.09	0.97	0.51	0.62
Avg. Firm-size (Informal)	0.53	0.48	3.05	0.34	0.42	0.03
Avg. Firm-size (Formal)	0.69	0.38	0.86	0.59	1.40	1.49
Coeff. On Ln(FirmSize) Sq.	0.10	0.02	0.07	0.97	0.20	0.37
Frac. Contract Workers	0.12	0.03	0.10	0.26	0.31	0.43

Notes: This table reports the derivatives of each moment with respect to each parameter. Each row is a moment calculated from the model simulation. Each number in the table indexed by row R and column C, is the percent change in the moment in row R, when a parameter in column C is increased by 1 percentage.