General equilibrium effects of (improving) public employment programs: experimental evidence from India

Supplementary Materials

Table C.1: Robustness of (SECC) income effects to model specifications

(a) Probit and ordered probit

	Lowest bracket (< Rs. 5,000)		Middle bracket (Rs. 5,000 - 10,000)		Highest bracket (> Rs. 10,000)		Income bracket 3 levels	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment	-.04***	-.039***	.025**	.024**	.013**	.012**	-.04***	-.039***
	(.014)	(.014)	(.011)	(.011)	(.0065)	(.0061)	(.014)	(.014)
Control Variables	No	Yes	No	Yes	No	Yes	No	Yes
Control mean	0.83	0.83	0.13	0.13	0.04	0.04		
Adjusted R^2	.01	.028	.014	.024	.015	.041	.0073	.023
Observations	1.8 M	1.8 M	1.8 M	1.8 M	1.8 M	1.8 M	1.8 M	1.8 M

(b) Linear probability model

	Lowest bracket		Middle bracket		Highest bracket	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-.041***	-.04***	.027**	.026**	.015**	.014*
	(.015)	(.015)	(.012)	(.012)	(.0072)	(.0071)
Control Variables	No	Yes	No	Yes	No	Yes
Control Mean	0.83	0.83	0.13	0.13	0.04	0.04
Adjusted R^2	.01	.028	.012	.02	.0062	.016
Observations	1.8M	1.8 M	1.8M	1.8 M	1.8M	1.8 M

This table examines the robustness of treatment effects on measures of income from the SECC reported in Panel (a) of Table 1 to the choice of specification, and specifically to estimation using probit (Panel (a)) and linear probability (Panel (b)) models. Each cell reports marginal effects from the underlying regression, i.e. the change in the predicted probability of being in the respective income bracket associated with a change in the treatment indicator from 0 to 1. In columns 7-8 of Panel (a), we show the marginal effects on the predicted probability of being in the lowest income category. Control variables are: the age of the household head, an indicator for whether the head is illiterate, and an indicator for whether the household belongs to a Scheduled Caste or Tribe. All regressions include district fixed effects and the first principal component of a vector of mandal characteristics used to stratify randomization. Standard errors clustered at the mandal level in parentheses, and statistical significance based on these is denoted as: $^{*}p < .10,^{**} p < .05,^{***} p < .01$.

Table C.2: Effects on income (survey data), no truncation

	Total income		NREGA	Agricultural labor	Other labor	Farm	Business	Miscellaneous
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment	9594**	10308**	905	3675**	4471***	1738	-773	293
	(4642)	(4638)	(589)	(1485)	(1585)	(2704)	(1359)	(2437)
Baseline lag	Yes	No	No	No	No	No	No	No
Control mean	71935	71935	4743	14784	9315	21708	6620	14765
Adjusted R^2	.029	.028	.015	.038	.025	.012	.0063	.0058
Observations	4898	4932	4931	4932	4932	4932	4932	4932

This table examines the robustness of the estimated effects on earnings reported in Panel (b) of Table 1 to including all observations, as opposed to truncating the top 0.5%. Standard errors clustered at the mandal level in parentheses, and statistical significance based on these is denoted as: $^{*}p < .10,^{**} p < .05,^{***} p < .01$.

Table C.3: Robustness to alternative construction of spatial exposure indicator

	Wages		Employment		
	(1) Wage realization	(2) Reservation wage	(3) Days idle or unpaid	(4) Days worked in NREGS	(5) Days worked in private sector
Adjusted TE	11*	9.1**	-2.2**	.93	1.4
	(6.3)	(4.4)	(.92)	(.57)	(.96)
Naive ITT	7.2*	5.2*	-1.1*	.53	.47
	(3.7)	(2.9)	(.58)	(.37)	(.57)
Spillover onto control	4.1	4	-1.1	.41	.93
	(5.2)	(3.1)	(.71)	(.46)	(.69)
β_T	7.7**	5.8*	-1.3**	.59	.61
	(3.8)	(3)	(.59)	(.38)	(.59)
β_N	5.1	4.9	-1.4	.5	1.1
	(6.4)	(3.8)	(.87)	(.56)	(.84)
Control mean	124	93	18	3.2	7
Adjusted R^2	.067	.048	.072	.039	.018
Observations	6625	11983	13153	16982	13460

This table examines the robustness of the estimated effects on labor market outcomes in Table 2 to an alternative definition of the neighborhood exposure measure $\tilde{N}_p^R$ that excludes gram panchayats from "Wave 2" mandals from the denominator. Standard errors clustered at the mandal level in parentheses, and statistical significance based on these is denoted as: $^{*}p < .10,^{**}p < .05,^{***}p < .01$.

Table C.4: Robustness to sample definition in effects on employment outcomes

	Restricting to common sample			Restricting sample to working age (18-65)		
	(1) Days idle or unpaid	(2) Days worked in NREGS	(3) Days worked in private sector	(4) Days idle or unpaid	(5) Days worked in NREGS	(6) Days worked in private sector
Adjusted TE	-2.5***	1.1**	1.1	-2.3***	1.1**	1.1
	(.8)	(.55)	(.81)	(.8)	(.52)	(.82)
Naive ITT	-1.3**	.64	.39	-1.2**	.71	.38
	(.58)	(.46)	(.56)	(.58)	(.44)	(.56)
Spillover onto control	-1.1**	.43	.66	-1*	.38	.65
	(.53)	(.33)	(.5)	(.52)	(.31)	(.51)
β_T	-1.5**	.74	.53	-1.5**	.79*	.52
	(.59)	(.46)	(.57)	(.59)	(.44)	(.58)
β_N	-2.5**	.96	1.5	-2.2*	.84	1.5
	(1.2)	(.72)	(1.1)	(1.2)	(.69)	(1.1)
Control mean	18	4.3	7.5	18	4.1	7.8
Adjusted R^2	.071	.077	.025	.065	.061	.022
Observations	13711	13711	13711	12984	13934	13007

This table examines the robustness of the estimated effects on employment outcomes in Table 2 to two sample restrictions: restricting to respondents for whom we observe all three outcomes (Columns 1-3), and restricting to adults aged 18-65 (Columns 4-6). Standard errors clustered at the mandal level in parentheses, and statistical significance based on these is denoted as: $^{*}p < .10,^{**} p < .05,^{***} p < .01$.

Table C.5: Robustness to truncation and sample definition in effects on wage outcomes

	No censoring		Restricting sample to working age (18-65)		Restricting sample to those who worked on NREGS in June	
	(1) Wage realization (in Rs.)	(2) Reservation wage (in Rs.)	(3) Wage realization (in Rs.)	(4) Reservation wage (in Rs.)	(5) Wage realization (in Rs.)	(6) Reservation wage (in Rs.)
Adjusted TE	13***	7**	13***	7**	21***	9.3**
	(4.5)	(3.4)	(4.4)	(3.3)	(4.9)	(3.8)
Naive ITT	6.8*	5.7*	7.9**	5.6*	13***	9.8**
	(4.1)	(3.2)	(3.8)	(2.9)	(4.2)	(3.8)
Spillover onto control	6.1*	1.3	4.9	1.3	7.5**	-.45
	(3.4)	(2.5)	(3)	(2.2)	(3.6)	(2.5)
β_T	7.9**	5.9*	8.8**	5.9**	15***	9.7***
	(4)	(3)	(3.7)	(2.8)	(4.1)	(3.6)
β_N	14*	2.9	11	2.8	17**	-1
	(7.5)	(5.6)	(6.7)	(4.8)	(8)	(5.6)
Control mean	124	98	124	96	111	90
Adjusted R^2	.053	.03	.075	.056	.14	.097
Observations	7036	12724	6711	12013	3311	6434

This table examines the robustness of the estimated effects on wage outcomes in Table 2 to alternative truncation and sample restriction procedures. Specifically, Columns 1-2 includes all observations as opposed to truncating the top .5% percentile of the respective wage outcome in treatment and control; Columns 3-4 restrict the sample to respondents aged 18 to 65; and Columns 5-6 drop respondents who did not reporting working on the NREGS in June. Standard errors clustered at the mandal level in parentheses, and statistical significance based on these is denoted as: $^{*}p < .10,^{**} p < .05,^{***} p < .01$.

Table C.6: Heterogeneous effects on wage outcomes by land concentration

(a) Absolute values of normalized Herfindahl index

	Full sample		Restricted to above 1 acre	
	(1) Wage realization	(2) Reservation wage	(3) Wage realization	(4) Reservation wage
Treatment	7.7*	6*	7.4	5.7*
	(4.6)	(3.4)	(4.6)	(3.4)
H^*	32**	6	31	-2.5
	(15)	(6.7)	(26)	(6.4)
Treatment $\times$ H^*	-29	-17	-15	-1.8
	(22)	(16)	(33)	(20)
Control Mean	131	99	131	99
Adjusted R^2	.052	.029	.051	.029
Observations	6769	12308	6751	12280

(b) Standardized values of normalized Herfindahl index

	Full sample		Restricted to above 1 acre	
	(1) Wage realization	(2) Reservation wage	(3) Wage realization	(4) Reservation wage
Treatment	6.8	5.5*	7	5.7*
	(4.4)	(3.3)	(4.4)	(3.3)
H^*	3.8**	.71	3.2	-.26
	(1.8)	(.8)	(2.7)	(.66)
Treatment $\times$ H^*	-3.5	-1.9	-1.6	-.16
	(2.5)	(1.8)	(3.3)	(2)
Control Mean	131	99	131	99
Adjusted R^2	.052	.029	.051	.029
Observations	6769	12308	6751	12280

This table reports treatment effects on wage outcomes in June 2012 differentiated by measures "H^*" of land ownership concentration. In Panel (a) the measure is the normalized Herfindahl index constructed at the village level, while in Panel (b) it is the normalized Herfindahl index standardized separately for treatment and control areas. "Wage realization (Rs.)" the average daily wage (in Rs.) an individual received while working for someone else in June 2012. "Reservation wage (Rs.)" is an individual's reservation wage (in Rs.) at which he or she would have been willing to work for someone else. All regressions include (the village mean of) the baseline lag, district fixed effects, and the first principal component of a vector of mandal characteristics used to stratify randomization. Standard errors clustered at the mandal level are in parentheses and statistical significance based on these is denoted as: $^{*}p < .10,^{**}p < .05,^{***}p < .01$.

Table C.7: Heterogeneity by gender in effects on wage and employment outcomes

	Wages		Employment		
	(1) Wage realization	(2) Reservation wage	(3) Days idle or unpaid	(4) Days worked in NREGS	(5) Days worked in private sector
Treatment	9.6*	6.9*	-1.9***	.8**	1.1*
	(5.1)	(3.9)	(.68)	(.39)	(.67)
Spatial exposure	13	2.7	-2*	.6	1.1
	(9.4)	(6.4)	(1.1)	(.61)	(1.1)
Female	-58***	-36***	1.6**	.63**	-2.3***
	(6.2)	(4.2)	(.6)	(.29)	(.59)
Treatment × Female	-3.3	-2	.84	-.38	-.8
	(5.4)	(3.6)	(.57)	(.27)	(.55)
Spatial exposure × Female	-1.2	.22	-.95	.49	1.4
	(9.7)	(5.8)	(.93)	(.54)	(.87)
Control mean	181	132	17	2.4	9.1
Adjusted R^2	.32	.24	.08	.041	.035
Observations	7009	12666	13940	17957	14265

This table reports estimated treatment effects on labor market outcomes as in in Table 2 but differentially by the gender of the respondent. Standard errors clustered at the mandal level in parentheses, and statistical significance based on these is denoted as: $^{*}p < .10,^{**}p < .05,^{***}p < .01$.

Table C.8: Predictors of differential response composition

	Missing response to				Days worked > 0	Average wage > reservation wage
	(1) Wage realization (Rs.)	(2) Reservation wage (Rs.)	(3) Days worked private sector	(4) Days idle or unpaid	(5)	(6)
Member is female	-.0051	-.0032	-.0016	.0069	-.022	.0069
	(.0047)	(.017)	(.015)	(.015)	(.021)	(.0063)
Above median HH income	-.0047	.018	.033*	.011	.05	-.0045
	(.0055)	(.017)	(.019)	(.016)	(.033)	(.0094)
HH is ST, SC or OBC	.023	.022	.031	.012	-.0042	-.011
	(.016)	(.03)	(.025)	(.025)	(.045)	(.012)
BPL HH	-.012	.024	.045	.022	.091**	-.0029
	(.012)	(.033)	(.031)	(.029)	(.043)	(.0084)
Any HH member can read	.024**	-.012	.018	-.0056	.013	.0069
	(.011)	(.023)	(.021)	(.019)	(.04)	(.017)
Head of HH is widow	-.0017	.013	.012	.011	-.022	-.0071
	(.0069)	(.028)	(.024)	(.021)	(.035)	(.014)
Carded village	.0031	.0054	.019	.0062	.034*	-.0038
	(.0036)	(.013)	(.014)	(.011)	(.019)	(.0056)
Control mean	.011	.39	.3	.33	.49	.99
Average observations	7385	21349	21349	21349	14456	7255

This table reports differential effects of treatment on the propensity for survey (non-)response, labor market participation, and internally consistent reporting of reservation wages, each by indicators for the characteristics listed in the rows. Specifically, each reports the estimated coefficient on the interaction between treatment and an indicator for the listed characteristic in a regression predicting the outcome described in the column header. Each regression also includes treatment and the listed characteristic separately as individual predictors, as well as district fixed effects and the first principal component of a vector of mandal characteristics used to stratify randomization. The outcome in Columns 1-4 is an indicator equal to 1 if the subject did not respond to the given question. The outcome in Column 5 is an indicator equal to 1 if the subject worked a strictly positive number of days in the private sector during June 2012, and the outcome in Column 6 is an indicator equal to one if (conditional on working) the subject reported a wage realization weakly greater than their reservation wage. Standard errors clustered at the mandal level in parentheses, and statistical significance based on these is denoted as: $^{*}p < .10,^{**}p < .05,^{***}p < .01$.

Table C.9: Robustness to work spell weighting of effects on wages

	Wage realization (in Rs.)
	(1)
Adjusted TE	10**
	(5)
Naive ITT	6.1
	(5.2)
Spillover onto control	3
	(3.6)
β_T	7.9*
	(4.1)
β_N	6.6
	(8)
Control mean	125
Adjusted R^2	.058
Observations	6969

This table examines the robustness of the estimated effects on wages reported in Table 2 to weighting work by days of work performed as opposed to by work spell. Standard errors clustered at the mandal level in parentheses, and statistical significance based on these is denoted as: $^{*}p < .10,^{**}p < .05,^{***}p < .01$.

Table C.10: Robustness to randomization strata fixed effects in income outcomes

	Total income		NREGA	Agricultural labor	Other labor	Farm	Business	Miscellaneous
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment	8513**	8908**	827	3634**	2879**	1573	-573	567
	(3763)	(3669)	(576)	(1409)	(1317)	(1981)	(1280)	(2051)
Baseline lag	Yes	No	No	No	No	No	No	No
Control mean	69470	69470	4804	14741	9665	20159	6042	14058
Adjusted R^2	.046	.047	.044	.088	.068	.025	.02	.02
Observations	4672	4706	4706	4706	4706	4706	4706	4706

This table examines the robustness of the estimated effects on income reported in Panel (b) of Table 1 to conditioning on fixed effects for randomization strata, as opposed to conditioning linearly on the variable used for stratification (which was itself the first principle component of a vector of mandal characteristics). Standard errors clustered at the mandal level in parentheses, and statistical significance based on these is denoted as: $^{*}p < .10,^{**} p < .05,^{***} p < .01$.

Table C.11: Robustness to randomization strata fixed effects in wage and employment outcomes

	Wage		Employment		
	(1) Wage realization	(2) Reservation wage	(3) Days idle or unpaid	(4) Days worked in NREGS	(5) Days worked in private sector
Adjusted TE	15***	9.6***	-2.2***	.97**	1.4*
	(4.2)	(3.3)	(.7)	(.46)	(.75)
Naive ITT	5.8*	6.1**	-1**	.35	.52
	(3.4)	(2.8)	(.5)	(.32)	(.48)
Spillover onto control	8.6***	3.3	-1.1**	.58*	.84*
	(2.9)	(2.4)	(.53)	(.31)	(.49)
β_T	7.9**	7.1***	-1.4***	.52	.77
	(3.3)	(2.6)	(.51)	(.33)	(.51)
β_N	18***	7	-2.4**	1.2*	1.8*
	(6.1)	(5.1)	(1.1)	(.66)	(1)
Control mean	120	94	18	3.1	7.2
Adjusted R^2	.1	.062	.087	.055	.04
Observations	6713	12049	13303	17094	13629

This table examines the robustness of the estimated effects on labor market outcomes reported in Table 2 to conditioning on fixed effects for randomization strata, as opposed to conditioning linearly on the variable used for stratification (which was itself the first principle component of a vector of mandal characteristics). Standard errors clustered at the mandal level in parentheses, and statistical significance based on these is denoted as: $^{*}p < .10,^{**} p < .05,^{***} p < .01$.

Table C.12: Treatment effect on HHI

	Full sample		Restricted to above 1 acre	
	(1) Absolute	(2) Standardized within treatment and control	(3) Absolute	(4) Standardized within treatment and control
Treatment	-.0016	.00051	-.0019	.0021
	(.011)	(.093)	(.008)	(.08)
Control Mean	.03	0	.023	0
Adjusted R^2	.0079	.008	.0064	.0065
Observations	841	841	839	839

This table reports estimates of treatment effects on land concentration as measured by the Herfindahl-Hirschman index (HHI). In Columns 1 and 2 we construct this index using data on all landholders, while in Columns 3-4 we restrict to landholders who own more than 1 acre. In Columns 1 and 3 we use absolute values of the HHI, while in Columns 2 and 4 we use the HHI normalized to have mean 0 and standard deviation 1 separately within treatment and control groups. All regressions include district fixed effects and the first principal component of a vector of mandal characteristics used to stratify randomization. Standard errors clustered at the mandal level in parentheses, and statistical significance based on these is denoted as: $^{*}p < .10$,** $p < .05$,*** $p < .01$.