

**Online Supplementary Materials**  
**The “Discouraged Worker Effect” in Public Works Programs:**  
**Evidence from the MGNREGA in India**

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**Appendix Table 1: Correlates of rationing and propoor rationing –District level cross section analysis to test relevance of administrative staff capacity (2011-12)**

	Rationing rate		Rationing rate among the poor	
	With state dummies	Without state dummies	With state dummies	Without state dummies
	b/t	b/t	b/t	b/t
Demand Rate	0.201*** (3.23)	-0.240*** (-3.90)	0.082 -1.58	-0.224*** (-4.18)
<b>Staff Capacity</b>				
Block level MGNREGA staff per village	-0.215*** (-2.92)	-0.128*** (-2.72)	-0.262*** (-3.16)	-0.108* (-1.78)
Proportion of MGNREGA positions at the village level that are filled	-0.0000014* (-1.96)	0.001 (0.27)	-0.019** (-2.39)	-0.007 (-1.00)
Proportion of total MGNREGA positions at the block level that are vacant	Neg. (-0.09)	0.001 (1.15)	Neg. (-0.59)	0.001 (1.1)
Elections and political party affiliation of successful candidates				
UPA victory in the district	0.019 (0.70)	-0.015 (-0.43)	0.007 (0.25)	-0.021 (-0.57)
Proportion won by UPA	0.025 (0.61)	0.118** (2.49)	0.012 (0.28)	0.115** (2.21)
Ratio of UPA votes to non-UPA votes	0.001 (-0.16)	Neg. (Neg.)	0.007 (1.00)	0.005 (0.57)
Years elapsed since previous election	0.002 (0.32)	-0.016** (-2.12)	0.005 (0.62)	-0.015* (-1.82)
Election coincides with survey year (=1 if Yes)	-0.012 (-0.56)	-0.008 (-0.37)	0.003 (0.14)	0.009 (0.42)
Proportion of electorate who votes	-0.001 (-1.01)	-0.002** (-2.23)	-0.001 (-0.78)	-0.003** (-2.32)
Share of Assembly Constituencies reserved for Scheduled Castes or Tribes	-0.093** (-2.45)	-0.142*** (-3.89)	-0.091** (-2.19)	-0.156*** (-4.01)
<b>Others</b>				
Average MPCE (Rs.`0000)	-0.106*** (-2.81)	-0.152*** (-4.87)	-0.096** (-2.28)	-0.120*** (-3.36)
Absolute negative deviation in rainfall (in standard deviation units)	0.032*** (5.46)	0.035*** (6.51)	0.037*** (5.68)	0.039*** (6.85)
Positive deviation in rainfall (in standard deviation units)	-0.003 (-0.84)	-0.007** (-1.97)	-0.002 (-0.49)	-0.005 (-1.29)
Proportion of toilets constructed relative to targets in the three years ending 2011-12	0.003 (Neg.)	-18.574 (-0.18)	-14.731 (-0.15)	0.905 (0.01)
Number of bank branches (hundred thousand)	13.160 (1.43)	31.585*** (3.06)	7.100 (0.71)	25.554** (2.21)
Number of job cards (hundred thousand)	-57.030*** (-5.19)	-33.686*** (-3.75)	-44.901*** (-3.78)	-22.851** (-2.35)
Number of blocks in the district	0.002 (0.58)	-0.001 (-0.42)	0.001 (0.40)	-0.002 (-0.73)
Number of panchayats (villages) in the district (ten thousand)	0.159 (0.28)	-0.097 (-0.21)	-0.152 (-0.25)	-0.146 (-0.28)
Number of blocks reporting data	0.006 (0.87)	-0.001 (-0.23)	Neg. (0.01)	-0.005 (-1.15)
Constant	-0.404 (-0.55)	0.761** (2.17)	0.246 (-0.31)	1.118** (-2.48)
State Dummies	Yes	No	Yes	No
Number of observations	849	868	828	846
R-squared	0.421	0.213	0.396	0.198
F-statistic	13.631	15.97	11.95	14.351

Notes: State dummies are not listed here for convenience. Neg. means negligible. Coefficients along with t-statistics are

reported in the parenthesis. . \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Appendix Table 2: The Discouraged Worker Effect: Household level IV Probit Analysis Second Stage (Model 1)**

Dependent variable is Household Demand for MGNREGA work in 2011-12

Instruments: Proportion of total block level position that lies vacant (for lagged rationing rate and proportion of payments delayed over 90 days), Bank expansion in preceding 2 years Block level MGNREGA staff per village (for delay interacted with absolute value of negative deviation in rainfall), 2011-12

	All Households		Poor households	
	All household	All households(with interaction effects)	All households	All households(with interaction effects)
Lagged Rationing Rate (2009-10)	-2.549*** (-5.59)	-2.648*** (-6.11)	-2.338*** (-4.48)	-2.467*** (-3.71)
Proportion of payments delayed over 90 days (rescaled dividing by 10)	-0.078 (-0.35)	-0.063 (-0.32)	-0.064 (-0.31)	-0.080 (-0.31)
Interaction of absolute value of negative deviation in rainfall and average delay in payments.		-0.089 (-0.36)		-0.146 (-0.37)
Delayed Payments (missing)	0.081 (0.19)	0.485 (0.64)	0.160 (0.42)	0.749 (0.59)
<b>Social Group (Ref. Upper Castes)</b>				
Scheduled Tribe	0.239*** (3.19)	0.242*** (3.39)	0.207** (2.30)	0.215*** (2.62)
Scheduled Caste	0.335*** (5.26)	0.343*** (6.11)	0.222*** (2.97)	0.240*** (3.88)
Other Backward Castes	0.089** (2.08)	0.092** (2.23)	0.023 (0.39)	0.041 (0.66)
<b>Religion (Ref. Hindus)</b>				
Muslims	0.007 (0.13)	0.023 (0.37)	-0.013 (-0.20)	0.003 (0.05)
Other religions	0.246*** (2.72)	0.267*** (2.74)	0.113 (0.99)	0.156 (0.88)
<b>Land Cultivated Groups (Ref. Big-above 1 ha)</b>				
Landless	0.147** (2.57)	0.159*** (3.16)	0.178* (1.94)	0.206*** (2.66)
Marginal (below 1 ha)	0.322*** (5.15)	0.323*** (5.22)	0.337*** (3.35)	0.347*** (3.72)
Small ( 1 ha to 2 ha)	0.231*** (4.90)	0.232*** (5.01)	0.249*** (2.72)	0.258*** (3.02)
<b>Household type (Ref. Agricultural and other labor)</b>				
Self employed in non-agriculture	-0.517*** (-8.46)	-0.517*** (-9.09)	-0.512*** (-7.27)	-0.511*** (-7.01)
Self-employed in agriculture	-0.406*** (-7.69)	-0.393*** (-7.74)	-0.377*** (-7.56)	-0.359*** (-5.19)
Others	-0.809*** (-9.43)	-0.809*** (-10.25)	-0.725*** (-7.36)	-0.724*** (-7.18)

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	All Households		Poor households	
	All households	All households (with interaction effects)	All households	All households (with interaction effects)
<b>Education of the Head (Ref. illiterate)</b>				
Below Primary	0.012 (0.32)	0.006 (0.17)	0.067 (1.24)	0.061 (1.22)
Primary & Middle	-0.014 (-0.45)	-0.018 (-0.63)	-0.057 (-1.57)	-0.058 (-1.64)
Secondary & Higher Secondary	-0.055 (-1.59)	-0.056 (-1.64)	0.006 (0.12)	0.011 (0.21)
Above Higher Secondary	-0.068 (-1.31)	-0.079* (-1.68)	-0.023 (-0.39)	-0.030 (-0.52)
<b>Other household characteristics</b>				
Age of household head (years)	0.014*** (2.67)	0.013*** (2.76)	0.018** (2.53)	0.016** (2.42)
Square of age of household head (/100)	-0.015*** (-2.91)	-0.014*** (-2.97)	-0.020*** (-2.78)	-0.018*** (-2.78)
Household head is female (=1)	-0.077** (-2.32)	-0.082*** (-2.83)	-0.079* (-1.70)	-0.088* (-1.81)
Log of Monthly per capita consumption	-0.525*** (-12.11)	-0.529*** (-12.87)	-0.398*** (-4.09)	-0.436*** (-3.72)
Number of adult earning age members	0.043*** (6.35)	0.045*** (6.01)	0.042*** (4.09)	0.046*** (2.98)
<b>District level characteristics</b>				
Proportion of people from the Scheduled Castes	0.269 (0.54)	0.177 (0.44)	0.603 (1.38)	0.576 (1.33)
Proportion of people from the Scheduled Tribes	0.062 (0.21)	-0.023 (-0.08)	0.002 (0.01)	-0.091 (-0.24)
Literacy rate	0.721** (2.28)	0.588 (1.44)	0.691** (2.01)	0.418 (0.53)
Integrated Action Plan district (=1 if yes)	-0.055 (-0.31)	-0.061 (-0.36)	0.012 (0.07)	0.009 (0.05)
MGNREGA Phase 2 district	0.065 (0.73)	0.050 (0.66)	0.065 (0.76)	0.043 (0.51)
MGNREGA Phase 3 district	0.123* (1.68)	0.128* (1.70)	0.070 (0.92)	0.068 (0.90)
Positive deviation of rainfall in 2009-10	0.018 (1.09)	0.023 (1.28)	Neg. (-0.01)	0.007 (0.27)
Absolute value of negative deviation of rainfall (2009-10)	0.056 (1.53)	0.049 (0.93)	0.043 (1.40)	0.025 (0.32)
Proportion of target achieved over the past three years	-0.037 (-0.31)	-0.018 (-0.19)	-0.404 (-1.06)	-0.294 (-0.88)
Difference between NREGA wages and top decile wages (Rs. `00) in 2011-12	-0.072 (-0.48)	-0.095 (-0.60)	-0.023 (-0.16)	-0.058 (-0.32)
Constant	2.732*** (4.26)	2.571*** (4.90)	1.975** (2.20)	2.027** (2.07)
N	47,131	47,131	15,476	15,476
Wald test of exogeneity	Chi-2(2) 4.9*	Chi-2(3) 16.08***	Chi-2(2) 3.73*	Chi-2(3) 7.63*

Notes: Neg. means negligible. Coefficients along with t-statistics are reported in the parenthesis. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Appendix Table 3: The Discouraged Worker Effect: Household level IV Probit Analysis, First Stage Estimates, All households (Model 1)**

Dependent variable is Household Demand for MGNREGA work in 2011-12 Instruments: Proportion of total block level position that lies vacant (for lagged rationing rate and proportion of payments delayed over 90 days), Bank expansion in preceding 2 years Block level MGNREGA staff per village (for delay interacted with absolute value of negative deviation in rainfall), 2011-12

	Without interaction term		With interaction term		
	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Interaction of absolute value of negative deviation in rainfall and average delay in wage payments
Proportion of total block level position that lies vacant	-0.068 (-1.04)	0.575* (1.81)	-0.069 (-1.07)	0.580* (1.84)	0.176 (0.79)
Bank expansion in 2 years preceding 2011-12	-0.003*** (-2.91)	Neg. (-0.08)	-0.004*** (-3.17)	0.002 (0.45)	0.004 (1.47)
Block level MGNREGA staff per village			-0.069 (-1.21)	0.373 (1.64)	-0.219 (-1.27)
Delayed Payments (missing)	0.026 (0.86)	-1.856*** (-13.55)	0.036 (1.14)	-1.908*** (-13.32)	4.105*** (37.15)
<b>Social Group (Ref. Upper Castes)</b>					
Scheduled Tribe	-0.037** (-2.38)	-0.087 (-1.53)	-0.030** (-1.99)	-0.126** (-2.24)	0.112** (2.38)
Scheduled Caste	-0.006 (-0.56)	-0.101** (-2.37)	-0.006 (-0.57)	-0.101** (-2.38)	0.095*** (2.64)
Other Backward Castes	-0.008 (-0.49)	-0.052 (-0.79)	-0.008 (-0.50)	-0.053 (-0.80)	0.038 (0.70)
<b>Religion (Ref. Hindus)</b>					
Muslims	0.001 (0.05)	-0.108* (-1.93)	0.005 (0.24)	-0.128** (-2.23)	0.190*** (4.38)
Other religions	0.117*** (3.53)	-0.053 (-0.34)	0.111*** (3.42)	-0.022 (-0.14)	0.089 (0.83)
<b>Land Cultivated Groups (Ref. Big-above 1 ha)</b>					
Landless	0.023 (1.31)	-0.121 (-1.53)	0.024 (1.39)	-0.126 (-1.60)	0.066 (1.23)
Marginal (below 1 ha)	-0.023 (-1.27)	-0.027 (-0.38)	-0.021 (-1.19)	-0.035 (-0.49)	0.025 (0.47)
Small ( 1 ha to 2 ha)	-0.008 (-0.66)	-0.013 (-0.25)	-0.008 (-0.69)	-0.011 (-0.21)	0.003 (0.09)
<b>Household type (Ref. Agricultural and other labour)</b>					
Self employed in non-agriculture	0.003 (0.44)	0.047 (1.29)	0.005 (0.73)	0.036 (1.00)	-0.008 (-0.31)
Self-employed in agriculture	0.021** (2.42)	-0.082** (-2.57)	0.020** (2.41)	-0.082** (-2.54)	0.086*** (3.51)
Others	0.003 (0.39)	0.045 (1.22)	0.004 (0.48)	0.041 (1.13)	-0.021 (-0.90)

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	Without interaction term		With interaction term		
	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Interaction of absolute value of negative deviation in rainfall and average delay in wage payments
<b>Education of the Head (Ref. illiterate)</b>					
Below Primary	0.003 (0.30)	0.083 (1.51)	0.005 (0.41)	0.077 (1.41)	-0.051 (-1.33)
Primary & Middle	0.003 (0.37)	0.067 (1.43)	0.006 (0.73)	0.051 (1.11)	-0.031 (-0.91)
Secondary & Higher Secondary	0.013 (1.24)	0.034 (0.82)	0.013 (1.33)	0.030 (0.73)	-0.028 (-0.85)
Above Higher Secondary	-0.000 (-0.02)	0.103 (1.64)	0.002 (0.18)	0.089 (1.45)	-0.079* (-1.81)
<b>Other household characteristics</b>					
Age of household head (years)	Neg. (-0.17)	0.016*** (2.80)	-0.000 (-0.08)	0.015*** (2.71)	-0.011*** (-2.93)
Square of age of household head (/100)	Neg. (0.10)	-0.015*** (-2.62)	v (0.01)	-0.014** (-2.54)	0.010*** (2.67)
Household head is female (=1)	-0.029*** (-3.25)	0.062 (1.31)	-0.029*** (-3.27)	0.062 (1.33)	-0.031 (-0.94)
Log of Monthly per capita consumption	-0.017 (-1.30)	-0.054 (-0.86)	-0.020 (-1.52)	-0.038 (-0.62)	-0.021 (-0.46)
Number of adult earning age members	0.008*** (4.21)	-0.002 (-0.30)	0.007*** (4.02)	Neg. (0.06)	0.014*** (2.58)
<b>District level characteristics</b>					
Proportion of people from the Scheduled Castes	-0.450** (-2.37)	1.200* (1.78)	-0.449** (-2.40)	1.192* (1.76)	-0.570 (-1.06)
Proportion of people from the Scheduled Tribes	-0.392*** (-4.82)	0.415 (1.59)	-0.378*** (-4.66)	0.337 (1.28)	-0.420** (-1.97)
Literacy rate	-0.189 (-1.37)	0.307 (0.54)	-0.149 (-1.06)	0.091 (0.16)	-0.990** (-2.38)
Integrated Action Plan district (=1 if yes)	0.064 (1.27)	0.516*** (2.75)	0.063 (1.23)	0.520*** (2.78)	-0.132 (-0.85)
MGNREGA Phase 2 district	Neg. (Neg.)	0.222 (1.40)	-0.001 (-0.04)	0.229 (1.45)	-0.176 (-1.42)
MGNREGA Phase 3 district	0.056 (1.53)	-0.017 (-0.10)	0.051 (1.41)	0.009 (0.06)	-0.105 (-0.83)
Positive deviation of rainfall in 2009-10	0.021*** (3.30)	0.023 (0.90)	0.021*** (3.35)	0.023 (0.89)	0.015 (0.82)
Absolute value of negative deviation of rainfall (2009-10)	0.027*** (3.17)	-0.132*** (-3.33)	0.028*** (3.37)	-0.139*** (-3.49)	-0.122*** (-4.17)
Proportion of target achieved over the past three years	0.051*** (2.85)	-0.036 (-0.48)	0.045*** (2.72)	-0.003 (-0.05)	-0.033 (-0.44)
Difference between NREGA wages and top decile wages (Rs. `00) in 2011-12	-0.139*** (-2.73)	-0.115 (-0.45)	-0.144*** (-2.85)	-0.089 (-0.35)	-0.165 (-0.83)
Constant	0.370** (2.11)	2.496*** (3.19)	0.375** (2.16)	2.469*** (3.19)	-1.856*** (-3.18)

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N	47,131	47,131	47,131	47,131	47,131
Bic		217088.92			294349.37
Aic		216151.52			293044.02

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Notes: State dummies are not listed here for convenience. Neg. means negligible. Coefficients along with t-statistics are reported in the parenthesis. .  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Appendix Table 4: The Discouraged Worker Effect: Household level IV Probit Analysis First Stage Estimates, Poor Households (Model 1)**

Dependent variable is Household Demand for MGNREGA work in 2011-12

Instruments: Proportion of total block level position that lies vacant (for lagged rationing rate and proportion of payments delayed over 90 days), Bank expansion in preceding 2 years Block level MGNREGA staff per village (for delay interacted with absolute value of negative deviation in rainfall), 2011-12

	Without interaction term		With interaction term		
	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Interaction of absolute value of negative deviation in rainfall and average delay in wage payments
Proportion of total block level position that lies vacant	-0.121* (-1.78)	0.832* (1.94)	-0.125* (-1.85)	0.867** (2.03)	-0.007 (-0.02)
Bank expansion in 2 years preceding 2011-12	-0.004*** (-3.28)	0.002 (0.57)	-0.004*** (-3.37)	0.004 (0.95)	0.003 (1.03)
Block level MGNREGA staff per village			-0.034 (-0.96)	0.279 (1.62)	-0.145 (-1.05)
Delayed Payments (missing)	0.047 (1.49)	-1.810*** (-11.79)	0.052 (1.63)	-1.853*** (-11.65)	4.152*** (32.86)
<b>Social Group (Ref. Upper Castes)</b>					
Scheduled Tribe	-0.005 (-0.23)	-0.156** (-2.11)	Neg. (Neg.)	-0.193*** (-2.63)	0.110* (1.77)
Scheduled Caste	0.008 (0.48)	-0.184*** (-3.24)	0.008 (0.50)	-0.185*** (-3.30)	0.147*** (3.09)
Other Backward Castes	0.019 (0.99)	-0.144** (-2.07)	0.019 (0.97)	-0.140** (-2.02)	0.119** (1.99)
<b>Religion (Ref. Hindus)</b>					
Muslims	-0.003 (-0.15)	-0.098 (-1.58)	-0.002 (-0.07)	-0.111* (-1.79)	0.147*** (3.30)
Other religions	0.115*** (2.79)	-0.067 (-0.50)	0.111*** (2.73)	-0.029 (-0.21)	0.177* (1.70)
<b>Land Cultivated Groups (Ref. Big-above 1 ha)</b>					
Landless	0.019 (0.88)	-0.274** (-2.17)	0.019 (0.88)	-0.274** (-2.18)	0.185** (2.37)
Marginal (below 1 ha)	-0.016 (-0.72)	-0.189* (-1.77)	-0.016 (-0.73)	-0.186* (-1.76)	0.105 (1.54)
Small ( 1 ha to 2 ha)	-0.025 (-1.49)	-0.139* (-1.65)	-0.026 (-1.58)	-0.128 (-1.53)	0.089* (1.78)
<b>Household type (Ref. Agricultural and other labour)</b>					
Self employed in non-agriculture	0.004 (0.37)	0.076 (1.37)	0.005 (0.54)	0.063 (1.15)	-0.026 (-0.66)
Self employed in agriculture	0.010 (0.90)	-0.098** (-2.22)	0.011 (0.92)	-0.099** (-2.26)	0.098*** (2.68)
Others	0.011 (1.02)	0.068 (1.53)	0.011 (1.02)	0.069 (1.55)	-0.045 (-1.36)

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	Without interaction term		With interaction term		
	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Interaction of absolute value of negative deviation in rainfall and average delay in wage payments
<b>Education of the Head (Ref. illiterate)</b>					
Below Primary	0.009 (0.63)	0.117 (1.49)	0.010 (0.70)	0.110 (1.43)	-0.057 (-1.02)
Primary & Middle	-0.007 (-0.68)	0.026 (0.46)	-0.005 (-0.45)	0.006 (0.11)	-0.002 (-0.05)
Secondary & Higher Secondary	0.013 (0.99)	0.021 (0.43)	0.014 (1.06)	0.014 (0.29)	0.019 (0.46)
Above Higher Secondary	-0.002 (-0.11)	0.084 (0.93)	-0.001 (-0.04)	0.073 (0.80)	-0.046 (-0.80)
<b>Other household characteristics</b>					
Age of household head (years)	0.003 (0.19)	0.025*** (3.18)	0.004 (0.23)	0.024*** (3.15)	-0.016*** (-2.92)
Square of age of household head (/100)	-0.001 (-0.43)	-0.025*** (-3.27)	-0.001 (-0.49)	-0.024*** (-3.24)	0.015*** (2.83)
Household head is female (=1)	-0.037*** (-3.32)	0.052 (0.91)	-0.036*** (-3.31)	0.049 (0.87)	-0.035 (-0.86)
Log of Monthly per capita consumption	-0.060 (-1.54)	0.108 (0.61)	-0.059 (-1.53)	0.102 (0.58)	-0.196 (-1.50)
Number of adult earning age members	0.008*** (3.81)	0.004 (0.33)	0.008*** (3.73)	0.006 (0.50)	0.020** (2.34)
<b>District level characteristics</b>					
Proportion of people from the Scheduled Castes	-0.348* (-1.74)	0.827 (1.05)	-0.346* (-1.74)	0.811 (1.03)	0.081 (0.13)
Proportion of people from the Scheduled Tribes	-0.319*** (-3.81)	0.249 (0.83)	-0.309*** (-3.67)	0.166 (0.55)	-0.294 (-1.16)
Literacy rate	-0.241 (-1.55)	0.666 (0.90)	-0.224 (-1.42)	0.523 (0.72)	-1.590*** (-2.99)
Integrated Action Plan district (=1 if yes)	0.063 (1.31)	0.502** (2.29)	0.062 (1.27)	0.514** (2.36)	-0.143 (-0.82)
MGNREGA Phase 2 district	-0.005 (-0.14)	0.204 (1.15)	-0.008 (-0.21)	0.224 (1.28)	-0.183 (-1.34)
MGNREGA Phase 3 district	0.043 (1.12)	-0.019 (-0.10)	0.040 (1.05)	0.004 (0.02)	-0.087 (-0.59)
Positive deviation of rainfall in 2009-10	0.014** (1.98)	0.007 (0.23)	0.014** (2.05)	0.004 (0.12)	0.031 (1.41)
Absolute value of negative deviation of rainfall (2009-10)	0.024*** (2.59)	-0.126*** (-2.79)	0.025*** (2.72)	-0.135*** (-2.97)	-0.129*** (-3.90)
Proportion of target achieved over the past three years	0.072 (1.55)	-0.288 (-0.88)	0.061 (1.38)	-0.199 (-0.70)	0.218 (0.73)
Difference between NREGA wages and top decile wages (Rs. `00) in 2011-12	-0.104* (-1.84)	-0.051 (-0.14)	-0.110* (-1.94)	-0.007 (-0.02)	-0.167 (-0.64)
Constant	0.741** (2.36)	1.307 (0.96)	0.724** (2.31)	1.450 (1.07)	-0.619 (-0.61)

N	15,476	15,476	15,476	15,476	15,476
Bic		74963.736			100624.199
Aic		74145.502			99484.789

Notes: State dummies are not listed here for convenience. Neg. means negligible. Coefficients along with t-statistics are reported in the parenthesis. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Appendix Table 5 : Discouraged Worker Effect: Household level Linear Probability Model, Second Stage Results (Model 1a)**

Dependent variable is Household Demand for MGNREGA work in 2011-12 Instruments: Proportion of total block level position that lies vacant (for lagged rationing rate and proportion of payments delayed over 90 days), Bank expansion in preceding 2 years Block level MGNREGA staff per village (for delay interacted with absolute value of negative deviation in rainfall), 2011-12

	All Households		Poor households	
	All households	All households(with interaction effects)	All households	All households(with interaction effects)
Lagged Rationing Rate (2009-10)	-0.891*** (-17.64)	-0.922*** (-16.91)	-0.853*** (-9.97)	-0.920*** (-7.34)
Proportion of payments delayed over 90 days (rescaled dividing by 10)	-0.043** (-2.34)	-0.040** (-2.46)	-0.029 (-1.05)	-0.038 (-1.06)
Interaction of absolute value of negative deviation in rainfall and average delay in wage payments		-0.020 (-0.88)		-0.055 (-0.82)
Delayed Payments (missing)	-0.004 (-0.10)	0.083 (1.07)	0.053 (1.08)	0.269 (1.16)
<b>Social Group (Ref. Upper Castes)</b>				
Scheduled Tribe	0.065*** (7.01)	0.066*** (7.09)	0.071*** (4.40)	0.075*** (4.62)
Scheduled Caste	0.094*** (13.51)	0.096*** (13.76)	0.076*** (5.57)	0.083*** (5.80)
Other Backward Castes	0.013*** (2.68)	0.014*** (2.79)	0.007 (0.62)	0.013 (1.08)
<b>Religion (Ref. Hindus)</b>				
Muslims	-0.008 (-1.11)	-0.004 (-0.50)	-0.010 (-0.78)	-0.003 (-0.22)
Other religions	0.088*** (9.53)	0.094*** (8.84)	0.040** (2.17)	0.058** (1.99)
<b>Land Cultivated Groups (Ref. Big-above 1 ha)</b>				
Landless	0.034*** (3.97)	0.036*** (4.33)	0.053*** (2.80)	0.062*** (3.15)
Marginal (below 1 ha)	0.085*** (10.92)	0.085*** (10.87)	0.108*** (6.11)	0.111*** (6.38)
Small ( 1 ha to 2 ha)	0.059*** (6.71)	0.059*** (6.69)	0.078*** (3.96)	0.080*** (4.09)
<b>Household type (Ref. Agricultural and other labor)</b>				
Self employed in non-agriculture	-0.183*** (-29.28)	-0.183*** (-29.37)	-0.188*** (-18.57)	-0.189*** (-18.63)
Self-employed in agriculture	-0.148*** (-20.07)	-0.145*** (-19.74)	-0.144*** (-11.69)	-0.139*** (-10.72)
Others	-0.254*** (-39.69)	-0.254*** (-39.78)	-0.252*** (-21.06)	-0.253*** (-21.01)

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	All Households		Poor households	
	All households	All households(with interaction effects)	All households	All households(with interaction effects)
<b>Education of the Head (Ref. illiterate)</b>				
Below Primary	0.006 (0.81)	0.005 (0.66)	0.025* (1.84)	0.023* (1.73)
Primary & Middle	-0.001 (-0.23)	-0.002 (-0.39)	-0.020** (-2.02)	-0.021** (-2.09)
Secondary & Higher Secondary	-0.013** (-2.00)	-0.013** (-2.04)	0.002 (0.14)	0.004 (0.29)
Above Higher Secondary	-0.012 (-1.46)	-0.014* (-1.70)	-0.008 (-0.49)	-0.010 (-0.62)
<b>Other household characteristics</b>				
Age of household head (years)	0.004*** (5.12)	0.004*** (4.83)	0.006*** (3.69)	0.005*** (3.27)
Square of age of household head (/100)	-0.005*** (-5.40)	-0.004*** (-5.13)	-0.007*** (-4.04)	-0.006*** (-3.70)
Household head is female (=1)	-0.024*** (-4.13)	-0.026*** (-4.44)	-0.027** (-2.47)	-0.031*** (-2.62)
Log of Monthly per capita consumption	-0.156*** (-27.98)	-0.157*** (-27.63)	-0.134*** (-5.54)	-0.148*** (-5.12)
Number of adult earning age members	0.013*** (9.67)	0.014*** (9.38)	0.015*** (5.74)	0.016*** (4.70)
<b>District characteristics</b>				
Proportion of people from the Scheduled Castes	0.036 (0.88)	0.007 (0.21)	0.206*** (3.38)	0.195*** (3.24)
Proportion of people from the Scheduled Tribes	-0.005 (-0.19)	-0.027 (-0.99)	-0.012 (-0.30)	-0.049 (-0.85)
Literacy rate	0.226*** (9.03)	0.197*** (5.55)	0.264*** (5.53)	0.162 (1.31)
Integrated Action Plan district (=1 if yes)	-0.003 (-0.24)	-0.005 (-0.40)	0.012 (0.52)	0.013 (0.55)
MGNREGA Phase 2 district	0.023*** (3.26)	0.019*** (2.88)	0.020* (1.78)	0.012 (0.96)
MGNREGA Phase 3 district	0.043*** (7.03)	0.043*** (7.01)	0.024** (2.24)	0.023** (2.09)
Positive deviation of rainfall in 2009-10	0.009*** (6.10)	0.010*** (5.73)	Neg. (0.13)	0.003 (0.75)
Absolute value of negative deviation of rainfall (2009-10)	0.016*** (5.50)	0.015*** (3.50)	0.013*** (3.24)	0.006 (0.54)
Proportion of target achieved over the past three years	0.002 (0.39)	0.004 (0.63)	-0.077** (-2.36)	-0.060* (-1.83)
Difference between NREGA wages and top decile wages (Rs. `00) in 2011-12	-0.034*** (-2.94)	-0.041*** (-3.06)	-0.006 (-0.30)	-0.021 (-0.78)
Constant	1.389*** (18.56)	1.356*** (19.93)	1.202*** (6.09)	1.232*** (5.87)
Kleibergen-Paaprk LM statistic	414.11***	735.44***	153.82***	98.33***
Kleibergen-Paaprk Wald F statistic	203.024	257.696	81.878	16.186
N	47,131	47,131	15,476	15,476

Notes: State dummies are not listed here for convenience. Neg. means negligible. Coefficients along with t-statistics are reported in the parenthesis. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Appendix Table 6 Discouraged Worker Effect: Household level Linear Probability Model, First Stage Results, All households (Model 1a)**

Dependent variable is Household Demand for MGNREGA work in 2011-12 Instruments: Proportion of total block level position that lies vacant (for lagged rationing rate and proportion of payments delayed over 90 days), Bank expansion in preceding 2 years Block level MGNREGA staff per village (for delay interacted with absolute value of negative deviation in rainfall), 2011-12

	Without interaction term		With interaction term		
	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Interaction of absolute value of negative deviation in rainfall and average delay in wage payments
Proportion of total block level position that lies vacant	-0.068*** (-10.57)	0.575*** (18.38)	-0.069*** (-10.79)	0.580*** (18.65)	0.176*** (7.77)
Bank expansion in 2 years preceding 2011-12	-0.003*** (-32.75)	-0.000 (-0.78)	-0.004*** (-35.41)	0.002*** (4.36)	0.004*** (12.63)
Block level MGNREGA staff per village			-0.069*** (-11.85)	0.373*** (15.84)	-0.219*** (-12.17)
Delayed Payments (missing)	0.026*** (8.82)	-1.856*** (-132.37)	0.036*** (11.81)	-1.908*** (-131.04)	4.105*** (356.53)
<b>Social Group (Ref. Upper Castes)</b>					
Scheduled Tribe	-0.037*** (-6.83)	-0.087*** (-3.73)	-0.030*** (-5.54)	-0.126*** (-5.37)	0.112*** (5.81)
Scheduled Caste	-0.006 (-1.47)	-0.101*** (-5.27)	-0.006 (-1.49)	-0.101*** (-5.30)	0.095*** (6.57)
Other Backward Castes	-0.008** (-2.32)	-0.052*** (-3.57)	-0.008** (-2.32)	-0.053*** (-3.64)	0.038*** (3.40)
<b>Religion (Ref. Hindus)</b>					
Muslims	0.001 (0.22)	-0.108*** (-6.50)	0.005 (1.10)	-0.128*** (-7.80)	0.190*** (16.91)
Other religions	0.117*** (19.95)	-0.053** (-2.16)	0.111*** (19.25)	-0.022 (-0.91)	0.089*** (5.04)
<b>Land Cultivated Groups (Ref. Big-above 1 ha)</b>					
Landless	0.023*** (3.99)	-0.121*** (-4.71)	0.024*** (4.17)	-0.126*** (-4.93)	0.066*** (3.65)
Marginal (below 1 ha)	-0.023*** (-4.28)	-0.027 (-1.15)	-0.021*** (-4.01)	-0.035 (-1.50)	0.025 (1.48)
Small ( 1 ha to 2 ha)	-0.008 (-1.25)	-0.013 (-0.47)	-0.008 (-1.32)	-0.011 (-0.39)	0.003 (0.13)
<b>Household type (Ref. Agricultural and other labour)</b>					
Self employed in non-agriculture	0.003 (0.91)	0.047*** (2.73)	0.005 (1.49)	0.036** (2.08)	-0.008 (-0.61)
Self employed in agriculture	0.021*** (4.81)	-0.082*** (-4.17)	0.020*** (4.81)	-0.082*** (-4.17)	0.086*** (5.72)
Others	0.003 (0.82)	0.045** (2.35)	0.004 (1.00)	0.041** (2.17)	-0.021 (-1.53)

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<b>Education of the Head (Ref. illiterate)</b>					
Below Primary	0.003 (0.76)	0.083*** (3.93)	0.005 (1.04)	0.077*** (3.66)	-0.051*** (-3.28)
Primary & Middle	0.003 (0.89)	0.067*** (4.17)	0.006* (1.75)	0.051*** (3.19)	-0.031*** (-2.58)
Secondary & Higher Secondary	0.013*** (3.04)	0.034* (1.92)	0.013*** (3.26)	0.030* (1.69)	-0.028** (-2.04)
Above Higher Secondary	-0.000 (-0.04)	0.103*** (4.04)	0.002 (0.43)	0.089*** (3.51)	-0.079*** (-4.24)
<b>Other household variables</b>					
Age of household head (years)	-0.000 (-0.44)	0.016*** (6.68)	-0.000 (-0.21)	0.015*** (6.46)	-0.011*** (-6.74)
Square of age of household head (/100)	0.000 (0.24)	-0.015*** (-6.11)	0.000 (0.02)	-0.014*** (-5.91)	0.010*** (6.05)
Household head is female (=1)	-0.029*** (-7.91)	0.062*** (3.47)	-0.029*** (-7.96)	0.062*** (3.49)	-0.031** (-2.36)
Log of Monthly per capita consumption	-0.017*** (-4.86)	-0.054*** (-3.30)	-0.020*** (-5.72)	-0.038** (-2.35)	-0.021* (-1.73)
Number of adult earning age members	0.008*** (8.69)	-0.002 (-0.53)	0.007*** (8.19)	0.000 (0.11)	0.014*** (4.83)
<b>District level variables</b>					
Proportion of people from the Scheduled Castes	-0.450*** (-24.04)	1.200*** (16.16)	-0.449*** (-24.27)	1.192*** (16.15)	-0.570*** (-9.79)
Proportion of people from the Scheduled Tribes	-0.392*** (-41.17)	0.415*** (11.88)	-0.378*** (-39.89)	0.337*** (9.71)	-0.420*** (-14.00)
Literacy rate	-0.189*** (-13.33)	0.307*** (5.13)	-0.149*** (-10.22)	0.091 (1.52)	-0.990*** (-22.03)
Integrated Action Plan district (=1 if yes)	0.064*** (12.30)	0.516*** (24.56)	0.063*** (11.93)	0.520*** (24.87)	-0.132*** (-7.27)
MGNREGA Phase 2 district	-0.000 (-0.02)	0.222*** (14.19)	-0.001 (-0.37)	0.229*** (14.69)	-0.176*** (-14.14)
MGNREGA Phase 3 district	0.056*** (15.35)	-0.017 (-0.99)	0.051*** (14.14)	0.009 (0.55)	-0.105*** (-8.17)
Positive deviation of rainfall in 2009-10	0.021*** (33.31)	0.023*** (8.88)	0.021*** (33.66)	0.023*** (8.87)	0.015*** (8.02)
Absolute value of negative deviation of rainfall (2009-10)	0.027*** (32.37)	-0.132*** (-30.85)	0.028*** (34.11)	-0.139*** (-32.50)	-0.122*** (-39.06)
Proportion of target achieved over the past three years	0.051*** (26.05)	-0.036*** (-4.68)	0.045*** (24.64)	-0.003 (-0.46)	-0.033*** (-4.34)
Difference between NREGA wages and top decile wages (Rs. `00) in 2011-12	-0.139*** (-26.24)	-0.115*** (-4.63)	-0.144*** (-27.43)	-0.089*** (-3.59)	-0.165*** (-8.23)
Constant	0.370*** (11.55)	2.496*** (17.14)	0.375*** (11.76)	2.469*** (17.10)	-1.856*** (-17.23)
N	47,131	47,131	47,131	47,131	47,131

Notes: State dummies are not listed here for convenience. Neg. means negligible. Coefficients along with t-statistics are reported in the parenthesis. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Appendix Table 7 :Discouraged Worker Effect: Household level Linear Probability Model, First Stage Results, Poor Households (Model 1a)**

Dependent variable is Household Demand for MGNREGA work in 2011-12 Instruments: Proportion of total block level position that lies vacant (for lagged rationing rate and proportion of payments delayed over 90 days), Bank expansion in preceding 2 years Block level MGNREGA staff per village (for delay interacted with absolute value of negative deviation in rainfall), 2011-12

	Without interaction term		With interaction term		
	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Interaction of absolute value of negative deviation in rainfall and average delay in wage payments
Proportion of total block level position that lies vacant	-0.121*** (-10.67)	0.832*** (13.33)	-0.125*** (-11.07)	0.867*** (13.95)	-0.007 (-0.16)
Bank expansion in 2 years preceding 2011-12	-0.004*** (-22.71)	0.002*** (3.60)	-0.004*** (-23.39)	0.004*** (6.05)	0.003*** (6.10)
Block level MGNREGA staff per village			-0.034*** (-7.11)	0.279*** (12.11)	-0.145*** (-7.77)
Delayed Payments (missing)	0.047*** (9.16)	-1.810*** (-73.84)	0.052*** (10.06)	-1.853*** (-74.21)	4.152*** (198.95)
<b>Social Group (Ref. Upper Castes)</b>					
Scheduled Tribe	-0.005 (-0.47)	-0.156*** (-3.77)	Neg. (Neg.)	-0.193*** (-4.68)	0.110*** (3.12)
Scheduled Caste	0.008 (0.99)	-0.184*** (-5.17)	0.008 (1.02)	-0.185*** (-5.26)	0.147*** (5.36)
Other Backward Castes	0.019*** (2.84)	-0.144*** (-4.94)	0.019*** (2.78)	-0.140*** (-4.85)	0.119*** (5.22)
<b>Religion (Ref. Hindus)</b>					
Muslims	-0.003 (-0.44)	-0.098*** (-3.23)	-0.002 (-0.22)	-0.111*** (-3.71)	0.147*** (7.25)
Other religions	0.115*** (9.89)	-0.067 (-1.56)	0.111*** (9.56)	-0.029 (-0.66)	0.177*** (5.45)
<b>Land Cultivated Groups (Ref. Big-above 1 ha)</b>					
Landless	0.019 (1.64)	-0.274*** (-4.91)	0.019 (1.64)	-0.274*** (-4.92)	0.185*** (4.82)
Marginal (below 1 ha)	-0.016 (-1.42)	-0.189*** (-3.62)	-0.016 (-1.46)	-0.186*** (-3.59)	0.105*** (2.89)
Small ( 1 ha to 2 ha)	-0.025** (-1.98)	-0.139** (-2.32)	-0.026** (-2.09)	-0.128** (-2.14)	0.089** (2.13)
<b>Household type (Ref. Agricultural and other labour)</b>					
Self employed. in non-agriculture	0.004 (0.62)	0.076*** (2.73)	0.005 (0.91)	0.063** (2.26)	-0.026 (-1.24)
Self employed in agriculture	0.010 (1.50)	-0.098*** (-2.99)	0.011 (1.53)	-0.099*** (-3.05)	0.098*** (3.82)
Others	0.011 (1.49)	0.068* (1.89)	0.011 (1.49)	0.069* (1.91)	-0.045* (-1.66)

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	Without interaction term		With interaction term		
	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Lagged Rationing Rate (2009-10)	Proportion of payments delayed over 90 days	Interaction of absolute value of negative deviation in rainfall and average delay in wage payments
<b>Education of the Head (Ref. illiterate)</b>					
Below Primary	0.009 (1.20)	0.117*** (3.08)	0.010 (1.32)	0.110*** (2.93)	-0.057** (-2.02)
Primary & Middle	-0.007 (-1.20)	0.026 (0.96)	-0.005 (-0.77)	0.006 (0.22)	-0.002 (-0.09)
Secondary & Higher Secondary	0.013* (1.83)	0.021 (0.65)	0.014* (1.95)	0.014 (0.44)	0.019 (0.77)
Above Higher Secondary	-0.002 (-0.20)	0.084* (1.78)	-0.001 (-0.06)	0.073 (1.53)	-0.046 (-1.36)
<b>Other household characteristics</b>					
Age of household head (years)	Neg. (0.33)	0.025*** (5.96)	Neg. (0.41)	0.024*** (5.87)	-0.016*** (-5.16)
Square of age of household head (/100)	-0.001 (-0.76)	-0.025*** (-5.98)	-0.001 (-0.84)	-0.024*** (-5.88)	0.015*** (4.91)
Household head is female (=1)	-0.037*** (-5.81)	0.052 (1.57)	-0.036*** (-5.77)	0.049 (1.49)	-0.035 (-1.43)
Log of Monthly per capita consumption	-0.060*** (-4.10)	0.108 (1.61)	-0.059*** (-4.07)	0.102 (1.54)	-0.196*** (-3.89)
Number of adult earning age members	0.008*** (5.63)	0.004 (0.54)	0.008*** (5.48)	0.006 (0.82)	0.020*** (3.76)
<b>District level variables</b>					
Proportion of people from the Scheduled Castes	-0.348*** (-10.51)	0.827*** (6.07)	-0.346*** (-10.49)	0.811*** (5.97)	0.081 (0.75)
Proportion of people from the Scheduled Tribes	-0.319*** (-19.85)	0.249*** (3.98)	-0.309*** (-19.23)	0.166*** (2.65)	-0.294*** (-5.27)
Literacy rate	-0.241*** (-9.37)	0.666*** (5.73)	-0.224*** (-8.60)	0.523*** (4.56)	-1.590*** (-18.26)
Integrated Action Plan district (=1 if yes)	0.063*** (8.00)	0.502*** (13.98)	0.062*** (7.75)	0.514*** (14.42)	-0.143*** (-4.83)
MGNREGA Phase 2 district	-0.005 (-0.91)	0.204*** (7.51)	-0.008 (-1.34)	0.224*** (8.32)	-0.183*** (-8.41)
MGNREGA Phase 3 district	0.043*** (6.86)	-0.019 (-0.63)	0.040*** (6.42)	0.004 (0.14)	-0.087*** (-3.77)
Positive deviation of rainfall in 2009-10	0.014*** (11.96)	0.007 (1.49)	0.014*** (12.34)	0.004 (0.78)	0.031*** (8.83)
Absolute value of negative deviation of rainfall (2009-10)	0.024*** (16.34)	-0.126*** (-16.44)	0.025*** (17.05)	-0.135*** (-17.53)	-0.129*** (-22.98)
Proportion of target achieved over the past three years	0.072*** (6.70)	-0.288*** (-3.09)	0.061*** (6.73)	-0.199*** (-2.70)	0.218** (2.20)
Difference between NREGA wages and top decile wages (Rs. `00) in 2011-12	-0.104*** (-10.94)	-0.051 (-0.99)	-0.110*** (-11.53)	-0.007 (-0.13)	-0.167*** (-4.16)
Constant	0.741*** (7.19)	1.307*** (2.78)	0.724*** (7.03)	1.450*** (3.10)	-0.619* (-1.75)
N	15,476	15,476	15,476	15,476	15,476

Notes: State dummies are not listed here for convenience. Neg. means negligible. Coefficients along with t-statistics are reported in the parenthesis. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Appendix Table 8: The Discouraged Worker Effect: District level analysis with Difference in Demand Rates**

This is a naïve least squares model. The 2SLS and Control Function Approaches (Models 2 & 3 ) are presented in Appendix 3.

	Naive Model (full sample)	Naive Model (subsample of nonmissing values)
	b/t	b/t
Lagged Rationing Rate (2009-10)	-0.260*** (-13.70)	-0.251*** (-8.97)
Percentage of payments with over 90 days delay in 2009-10 (rescaled *100)	Neg. (-1.19)	Neg. (-0.93)
Percentage of wage payments delayed (2009-10)	0.001* (1.93)	0.001** (2.37)
Approximate average delay in payment (days) in 2009-10	-0.047 (-0.27)	-0.175 (-0.92)
Interaction of absolute value of negative deviation in rainfall and average delay in wage payments (2011-12)	-2.456*** (-3.00)	-3.191*** (-3.37)
Demand Rate (2009-10)	-0.639*** (-19.79)	-0.680*** (-13.56)
Proportion of people from the Scheduled Castes	0.181*** (2.62)	0.269*** (2.73)
Proportion of people from the Scheduled Tribes	0.243*** (7.27)	0.266*** (5.64)
Literacy rate	0.273*** (5.09)	0.427*** (4.92)
Integrated Action Plan district (=1 if yes)	-0.051** (-2.51)	-0.055* (-1.87)
MGNREGA Phase 1 district	-0.017 (-1.17)	-0.015 (-0.69)
MGNREGA Phase 2 district	-0.015 (-1.15)	-0.018 (-1.07)
Absolute negative deviation of rainfall in 2011-12	0.008** (2.08)	0.004 (0.52)
Positive deviation of rainfall in 2011-12	0.004** (2.00)	0.003 (0.99)
Difference in average monthly per capita expenditure	-0.033 (-1.27)	0.014 (0.41)
Proportion of target achieved over the past three years in toilet construction	-0.106 (-1.27)	-0.121 (-1.03)
Change in the number of jobcards (in hundred thousand)	14.576* (1.82)	35.859*** (2.89)
Missing data on job cards (=1)	-0.110** (-2.41)	-0.104* (-1.84)
Change in the proportion engaged in agriculture	0.134** (2.15)	0.148* (1.85)
Change in the proportion engaged in casual farm work	0.343*** (3.66)	0.303** (2.40)
Change in the proportion engaged in non-agricultural occupations	-0.028 (-0.39)	0.019 (0.19)
Change in the proportion engaged in casual non-farm work	0.133** (2.07)	0.246*** (2.83)
Change in casual wage-MGNREGA wage differential for top decile (Rs. `000)	-0.070 (-1.38)	-0.141 (-1.43)
Change in casual wage-MGNREGA wage differential for bottom decile (Rs. `000)	0.089 (0.60)	0.222 (1.31)



Bank branches in hundred per million job cards (2011-12)	-0.004 (-1.47)	-0.001 (-0.45)
Post offices per hundredthousand job cards (2011-12)	-0.000*** (-3.04)	-0.000*** (-2.79)
Bank expansion in 2 years preceding 2011-12 (rescaled X100)	0.000*** (2.86)	0.000*** (3.63)
Bank expansion over 2009-10 to 2011-12 interacted with bank presence in 2009-10	0.065 (1.19)	-0.084 (-1.45)
Missing data dummy (=1)	0.078* (1.92)	
Constant	-0.104 (-1.55)	-0.192** (-2.02)

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Notes: State dummies are not listed here for convenience. Neg. means negligible. Coefficients along with t-statistics are reported in the parenthesis. .  $p < 0.10$ , \*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Appendix Table 9: Correlates of Administrative rationing : District Panel analysis First Stage Regressions (Model 4, 5, 6, 7)**

Dependent variable: Demand Rate	All	Poor subpopulation	Weighted by proportion below poverty line	Weighted by inverse monthly per capita expenditure
Number of days above temperature threshold 2008-09 (lagged year)	-0.004*** (-3.11)	-0.008*** (-5.19)	-0.004*** (-3.11)	-0.004*** (-3.35)
Whether UPA won any seat in the district (1=Yes)	0.019 (0.69)	0.041 (1.22)	0.019 (0.69)	0.026 (0.94)
Proportion of constituencies under UPA	-0.037 (-0.99)	-0.080* (-1.73)	-0.037 (-0.99)	-0.041 (-1.13)
Share of UPA votes	-0.002 (-0.35)	-0.003 (-0.63)	-0.002 (-0.35)	-0.002 (-0.33)
Years since election	0.007 (1.52)	0.007 (1.27)	0.007 (1.52)	0.005 (1.15)
Survey year is an election year (1=Yes)	0.042*** (4.14)	0.043*** (3.62)	0.042*** (4.14)	0.037*** (3.73)
Polling percentage	0.003 (1.53)	0.002 (0.76)	0.003 (1.53)	0.002 (1.18)
Proportion of seats reserved for SC/ST candidates	-0.090 (-0.92)	-0.177 (-1.37)	-0.090 (-0.92)	-0.101 (-1.02)
Monthly per capita expenditure (INR `000)	-0.095*** (-3.20)	-0.044 (-1.15)	-0.095*** (-3.20)	-0.097*** (-3.40)
Absolute value of negative deviation of rainfall	0.018*** (5.08)	0.022*** (5.15)	0.018*** (5.08)	0.017*** (4.83)
Positive deviation of rainfall	Neg. (-0.13)	-0.001 (-0.49)	Neg. (-0.13)	-0.001 (-0.30)
Proportion of targets achieved in sanitation	0.159*** (2.75)	0.210*** (3.03)	0.159*** (2.75)	0.151*** (2.69)
Number of commercial bank branches (`00,000)	-0.001*** (-2.74)	-0.001* (-1.94)	-0.001*** (-2.74)	-0.001*** (-2.78)
Number of job cards (`00,000)	-0.907 (-0.70)	-2.276 (-1.45)	-0.907 (-0.70)	-0.914 (-0.71)
N	1026	984	1026	1060
BIC	-1924.03	-1514.72	-1924.03	-1992.03
AIC	-1993.1	-1583.20	-1993.1	-2061.56
Centered R-squared	0.311	0.311	0.311	0.3147

Notes: State dummies are not listed here for convenience. Neg. means negligible. Coefficients along with t-statistics are reported in the parenthesis. . \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

## Appendix 1: Data Sources and Metrics Used

Variable	Years	Source	Method
Change in Demand rate	2009-10, 2011-12	Employment Unemployment schedule of the 66 <sup>th</sup> and 68 <sup>th</sup> round NSS survey	Demand Rate (D) is defined as the proportion of rural households in the district who sought work (D for 2011-12)- (D for 2009-10)
Rationing and inverse pce-weighted rationing	2009-10, 2011-12	Employment Unemployment schedule of the 66 <sup>th</sup> and 68 <sup>th</sup> round NSS survey	<p>Rationing rate (R) is the proportion of rural households in the district who sought but did not get work. <math>R=1-(P/D)</math> where P= total number of households that participated in MGNREGA in the district</p> <p>Inverse pce-weighted rationing rate (Inv. R) is derived by weighing each household by the ratio of the median per capita consumption expenditure (pce) in that district to the pce of that household. The dummy of whether the household was rationed is multiplied by this factor the pce-weighted inverse rationing rate is calculated by summing up this variable and dividing it over the total rural households that demanded work in the district.</p> $Inv.R_j = \sum[(Med_j / PCE_{ij}).RR_i] / D_j$ <p>where <math>Inv.R_j</math> = inverse pce weighted rationing rate  <math>Med_j</math> = Median of pce in district, <math>j</math>.  <math>PCE_{ij}</math> = pce of household, <math>i</math> in district, <math>j</math>  <math>RR_i = 1</math> if the household is rationed; 0 otherwise <math>D_j =</math> Total number of households demanding work in district, <math>j</math></p>
Growing Degree Days	2009-10, 2011-12	NASA	<p>GDD is the sum of excess of the mean average temperature over the base temperature specified for the crop over its growing period for the particular district</p> <ol style="list-style-type: none"> <li>DD= (Tmax-Tmin)/2- Tbase</li> <li>Cumulate the DD for the dates denoting the growth period.</li> </ol> $GDD_{base,opt} = \sum_{t=1}^N DD_t \quad DD = \begin{cases} 0 & \text{if } T_t < T_{base} \\ T - T_{base} & \text{if } T_{base} \leq T_t \leq T_{opt} \\ T_{opt} - T_{base} & \text{if } T_t > T_{opt} \end{cases}$
Days above the optimal and threshold temperatures	2009-10, 2011-12	NASA	<p>(i) Number of days in the growing period for the major crop in the district when <math>T_t &gt; T_{opt}</math>  (ii) Number of days in the growing period for the major crop in the district when <math>T_t &gt; T_{high}</math></p>
Absolute positive deviation in	2009-10,	NASA, Tropical Rainfall Measuring	A rainfall index for each month was obtained by calculating the deviation of that

rainfall (APD)  Absolute negative deviation in rainfall (AND)	2011-12	Mission Project <a href="http://mirador.gsfc.nasa.gov/collections/TRMM_3B43_007.shtml">http://mirador.gsfc.nasa.gov/collections/TRMM_3B43_007.shtml</a>	month's rainfall from the mean divided by the standard deviation for that month over the period 2001-12.  Then the rainfall variables are calculated by summing the positive and the negative rainfall indices separately. $APD_j = \sum PRI_{kj}$ $AND_j = \sum NRI_{kj}$ where $PRI_{kj}$ = sum of $RI$ of all the months (indexed by k) for a district if the rainfall indices are positive and $NRI_{kj}$ = sum of $RI$ of all the months (indexed by k) for a district if the rainfall indices are negative Here $RI_k$ = (Mean of rainfall for $kth$ month from 2001 to 2012)/standard deviation
Assembly elections	Assembly election data of the states	Election Commission of India <a href="http://eci.nic.in/eci_main1/ElectionStatistics.aspx">http://eci.nic.in/eci_main1/ElectionStatistics.aspx</a> "DETAILED RESULTS OF LATEST ELECTIONS (XLS FORMAT)"	(i) UPA victory in the district: 1 if at least one AC seat in a district is won by UPA, 0 otherwise (ii) Proportion won by UPA: The proportion of AC seats in a district won by UPA. (iii) Share of UPA votes: The ratio of votes going to UPA in all the ACs in a district to those going to non-UPA parties. (iv) Years elapsed since previous election: 2012- (election year) for 2011-12 data 2010-(election year) for 2009-10 data (v) Election coincides with survey year: 1 if election was held in 2011/2012 for 2011-12 data or if election was held in 2009/2010 for 2009-10 data 0 otherwise A number of Assembly Constituencies (AC) belong to one district but no AC straddles districts.
Elections Seat reserved for women	2004 & 2009 elections	Election Commission of India (Same as above)	At least one of the seats reserved for women (this variable is not included in the model)
Election Seat reserved for Scheduled Castes or Tribes (SC/ST)	2004 & 2009 elections	Election Commission of India (Same as above)	At least one of the seats reserved for SC/ST (this variable is not included in the model)
Provisioning of sanitation	2009-10, 2011-12	Department of Water and Sanitation, Government of India. <a href="https://data.gov.in/catalog/nirmal-bharat-abhiyan-year-wise-district-level-achievements#web_catalog_tabs_block_10">https://data.gov.in/catalog/nirmal-bharat-abhiyan-year-wise-district-level-achievements#web_catalog_tabs_block_10</a>	Proportion of project objectives achieved each year and averaged over three years preceding the survey year.
Bank branches presence	2008-2012	Reserve Bank of India (unpublished)	Number of bank branches

		sources)	
Delayed payments	2009-10, 2011-12	nrega.nic.in <a href="http://nrega.nic.in/Netnrega/stHome.aspx">http://nrega.nic.in/Netnrega/stHome.aspx</a>	(i) Proportion of wage payments delayed (ii) Proportion of muster roll payments delayed beyond 90 days (iii) Average number of days delayed
Administrative staff details	2011-12	nrega.nic.in	District level, Gram panchayat (village) level and block level posts that are filled, vacant and total posts. For a few districts we had to rely on 2012-13 data since data was unavailable for earlier years; our assumption is that these have not changed dramatically over this period.
Proportion of people from the Scheduled Castes (SC)	2001	Census 2001, Government of India	Total number of SC population/total population
Proportion of people from the Scheduled Castes (ST)	2001	Census 2001, Government of India	Total number of ST population/total population
Literacy rate	2001	Census 2001, Government of India	Total number of literate population/ total population
Integrated Action Plan (IAP) district	2010	Ministry of Rural Development, Government of India <a href="http://rural.nic.in/iapdistricts/">http://rural.nic.in/iapdistricts/</a>	IAP= 1 if the district is under the Backward Region Grant Fund (BRGF) programme
Monthly per capita expenditure (MPCE)	2009-10 & 2011-12	Consumption Expenditure Schedule of the 66 <sup>th</sup> and 68 <sup>th</sup> round NSS survey	Average MPCE of the households in a district (in Rs.). Top and bottom 5% are excluded.

## Appendix 2: Threshold temperatures for computing the Growing Degree Days (GDD)

Crop	T-base	T-low	T-opt	T-high
	Base	Optimum low	Optimum high	Highest threshold
Arhar (Tur)	10	25	35	
Bajra	10	21	33	45
Barley	10	21	33	45
Black pepper	10	23	32	40
Castor seed	15	20	28	
Coconut		21	32	
Cotton(lint)	15			40
Dry chillies	13	27	32	
Gram	2	21	30	40
Groundnut	10	16	30	32
Guar seed	15	20	28	
HorseGram	2	21	30	40
Jowar	8	21	30	33
Jute	20	24	38	
Maize	8	21	30	33
Masoor	10	25	35	
Mesta	20	24	38	
Other Kharif Pulses	10	25	35	
Peas & Beans (Pulses)	10	25	35	
Potato	10	15	20	
Ragi	10	21	33	45
Rapeseed & Mustard	5			30
Rice	10			40
Small millets	10	21	33	45
Soyabean	10			30
Sugarcane	18	25	34	38
Tapioca	10	24	32	
Urad	10	25	35	
Wheat	10	5		20

### Notes:

1. Tbase will vary for each crop but same across regions.
2. T max and Tmin will vary across districts.
3. Growth period varies across states. These were obtained from the Ministry of Agriculture, Government of India.
4. Where there was no data available for the threshold temperatures we assume those for a competing similar crop.

These data were drawn from the following sources:

Devasahayam S, John Zachariah T, Jayashree E, KandiannanK, Prasath D, Santhosh J Eapen, Sasikumar B, Srinivasan V and SuseelaBhai R (2011) Black pepper, ICAR-Indian Institute of Spices Research, Kozhikode

Khavse, Rajesh , R. Singh, N. Manikandan and J. L. Chaudhary (2014) "Influence of Temperature on Rapeseed-Mustard Yield at Selected Locations in Chhattisgarh State", *Current World Environment* Vol. 9(3), 1034-1036 <http://dx.doi.org/10.12944/CWE.9.3.59>

Krishna Kumar K. N. (2011) Coconut Phenology and Yield Response to Climate Variability and Change, PhD thesis, Faculty of Marine Sciences, Department of Atmospheric Sciences Cochin University of Science and Technology, Kochi, India.

Lofton, Josh , Brenda S. Tubana, Yumiko Kanke, Jasper Teboh, Howard Viator and Marilyn Dalen (2012) "Estimating Sugarcane Yield Potential Using an In-Season Determination of Normalized Difference Vegetative Index", *Sensors*, Vol. 12, 7529-7547; doi:10.3390/s120607529

Minhas, J.S. ,S. Rawat, P.M. Govindakrishnan1 and D. Kumar (2011) "Possibilities of Enhancing Potato Production in non-traditional areas". *Potato Journal* 38 (1): 14-17.

Rani, B. A., &Maragatham, N. (2013) "Effect of Elevated Temperature on Rice Phenology and Yield". *Indian Journal of Science and Technology*, 6(8), 5095-5097.

Severino, Liv S., and Dick L. Auld. (2014) "Study on the effect of air temperature on seed development and determination of the base temperature for seed growth in castor ('*Ricinus communis*' L.)." *Australian Journal of Crop Sciences*, 8(2): 290-295.

Singh, K.K., Ali, M. and Venkatesh, M.S. (2009). Pulses in Cropping Systems. Technical Bulletin, Indian Institute of Pulses Research, Kanpur.

Singh, ManojPratap ,Lallu, and N. B. Singh (2014) "Thermal requirement of indian mustard (*Brassica juncea*) at different phenological stages under late sown condition", *Indian Journal Plant Physiology* 19(3): 238–243. Published online Sep 3, 2014. doi: 10.1007/s40502-014-0072-0

The World Agrometeorological Information Service. Agrometeorology of some selected crops. [http://www.wamis.org/agm/gamp/GAMP\\_Chap10.pdf](http://www.wamis.org/agm/gamp/GAMP_Chap10.pdf) Accessed November, 2014.

### Appendix 3: District Level Model: 2SLS and Control Function Approach

For the district level analysis, we attempted to estimate models that address the potential endogeneity of delays in wage payments, rationing rate and demand, relying first on a Two Stage Least Squares (2SLS) model using instruments for the endogenous variables to achieve identification. We use the same set of instruments as with the household level analysis, with commercial bank branch presence and expansion in the lagged delayed payments equation, GDD for lagged demand rate and number of staff at the block level for lagged rationing rates.

We estimate the following 2SLS model (Model 2), using the same set of controls as for Model 2:

$$\Delta D_{it} = \alpha + \beta R_{it-1} + \gamma P_{it-1} + \delta D_{it-1} + \varphi_1 \Delta Z_{it} + \varphi_2 W_i + \varepsilon_i$$

where

$$P_{it-1} = \pi_{1p} + \pi_{2p} CB_{it-1} + \pi_{3p} \Delta Z_{it} + \pi_{4p} W_i + \epsilon_p$$

$$D_{it-1} = \pi_{1d} + \pi_{2d} GDD_{it-1} + \pi_{3d} \Delta Z_{it} + \pi_{4d} W_i + \epsilon_d$$

$$R_{it-1} = \pi_{1r} + \pi_{2r} BlockStaff_{it-1} + \pi_{3r} \Delta Z_{it} + \pi_{4r} W_i + \epsilon_r$$

The results are presented in Appendix Table 3.1. Tests for overidentifying restrictions suggest the model is invalid.

An alternative solution we attempted is a control function approach as describe below (Model 3)

$$\Delta D_{it} = \alpha + \beta R_{it-1} + \gamma P_{it-1} + \delta D_{it-1} + \varphi_1 \Delta Z_{it} + \varphi_2 W_i + \varepsilon_i + \widehat{\epsilon}_p + \widehat{\epsilon}_d + \widehat{\epsilon}_r$$

where

$$P_{it-1} = \pi_{1p} + \pi_{2p} CB_{it-1} + \pi_{3p} \Delta Z_{it} + \pi_{4p} W_i + \epsilon_p$$

$$D_{it-1} = \pi_{1d} + \pi_{2d} GDD_{it-1} + \pi_{3d} \Delta Z_{it} + \pi_{4d} W_i + \epsilon_d$$

$$R_{it-1} = \pi_{1r} + \pi_{2r} BlockStaff_{it-1} + \pi_{3r} \Delta Z_{it} + \pi_{4r} W_i + \epsilon_r$$

This formulation supposes that the three equations are independent that is somewhat restrictive. The results of this model are presented in Appendix Table 3.2 & 3.3.



**Appendix Table 3.1 :The Discouraged Worker Effect: District level analysis Two-Stage Least Squares model (Model 2)**

The model consists of five equations – the exogenous variables include those that proxy staff capacity, bank branch expansion and growing degree days (GDD) and days outside the window of threshold temperatures.

**Equation 1: Dependent variable: Change in the demand rate for MGNREGA work**

	Bootstrapped (full sample) b/t	Bootstrapped; subsample of nonmissing values b/t
Lagged Rationing Rate (2009-10)	-0.400*** (0.07)	-0.334*** (0.07)
Proportion of payments with over 90 days delay in 2009-10	0.077 (2.32)	1.924 (1.64)
Proportion of wage payments delayed interacted with absolute value of negative deviation in rainfall in 2009-10	-8.251 (20.13)	-33.446*** (10.30)
Demand Rate (2009-10)	-0.618*** (0.05)	-0.764*** (0.08)
Wage payments delay data are missing (=1 if Yes)	0.089*** (0.03)	
Proportion of people from the Scheduled Castes	0.186*** (0.07)	0.219** (0.09)
Proportion of people from the Scheduled Tribes	0.228*** (0.03)	0.279*** (0.05)
Literacy rate	0.177*** (0.06)	0.282*** (0.09)
Integrated Action Plan district (=1 if yes)	-0.058*** (0.02)	-0.069** (0.03)
MGNREGA Phase 1 district	-0.010 (0.01)	-0.019 (0.02)
MGNREGA Phase 2 district	-0.013 (0.01)	-0.018 (0.02)
Absolute negative deviation in rainfall in 2011-12 (in standard deviation units)	0.008** (Neg.)	0.006 (0.01)
Positive deviation in rainfall in 2011-12 (in standard deviation units)	0.004** (0.00)	0.005* (0.00)
Difference in average monthly per capita expenditure	-0.028 (0.02)	0.018 (0.03)
Proportion of target achieved over the past three years in toilet construction	-0.123* (0.07)	-0.102 (0.09)
Change in the number of jobcards (in ten thousand)	21.867** (8.66)	37.579*** (14.10)
Data missing for number of jobcards issued (=1 if Yes)	-0.074* (0.04)	-0.078* (0.04)
Change in the proportion engaged in agriculture	0.135** (0.06)	0.178** (0.08)
Change in the proportion engaged in casual farm work	0.346***	0.438***

	(0.09)	(0.12)
Change in the proportion engaged in non-agricultural occupations	-0.030 (0.06)	0.075 (0.08)
Change in the proportion engaged in casual non-farm work	0.132** (0.07)	0.330*** (0.09)
Change in casual wage-MGNREGA wage differential for bottom decile	0.200 (0.15)	0.259 (0.21)
Absolute negative deviation in rainfall in 2011-12 (in standard deviation units)	0.015** (0.01)	
Positive deviation in rainfall in 2011-12 (in standard deviation units)	0.004 (0.00)	
Constant	-0.165* (0.10)	-0.162* (0.09)

Notes: Coefficients along with t-statistics are reported in the parenthesis. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Equation 2: Dependent variable: Lagged Rationing Rate (2009-10)**

	Bootstrapped (full sample) b/t	Bootstrapped; subsample of nonmissing values b/t
Proportion of total block level positions that lies vacant	-0.0687 (0.0585)	-0.0831 (0.0859)
Block level MGNREGA staff per village	-0.0199 (0.0321)	0.0708 (0.0925)
Block level MGNREGA staff per block	-0.0058*** (0.0020)	-0.0206*** (0.0039)
Block level MGREGA staff per 1000 job cards	0.0116*** (0.0038)	0.0788*** (0.0240)
Absolute value of negative deviation of rainfall (2009-10 in standard deviation units)	-0.0029 (0.0074)	-0.0120 (0.0089)
Number of days in the cropping season above optimal higher threshold temperatures current year (2009-10)	0.0004 (0.0017)	0.0072*** (0.0024)
Number of days in the cropping season above optimal higher threshold temperatures lagged year (wrt. 2009-10)	-0.0004 (0.0019)	-0.0085*** (0.0026)
Number of days in the cropping season below optimal lower threshold temperatures current year (2009-10)	0.0039** (0.0016)	0.0019 (0.0027)
Number of days in the cropping season below optimal lower threshold temperatures lagged year (wrt. 2009-10)	-0.0040** (0.0017)	-0.0037 (0.0028)
Growing Degree Days (GDD) current year (2009-10)	-0.3554*** (0.1290)	-0.5919*** (0.1723)
Growing Degree Days (GDD) lagyear (wrt.2009-10)	0.3536*** (0.1326)	0.6027*** (0.1780)
Integrated Action Plan district (=1 if yes)	-0.0169 (0.0431)	0.0583 (0.0615)
Constant	0.6289*** (0.0998)	0.7752*** (0.1353)

**Equation 3: Dependent variable: Proportion of payments with over 90 days delay in 2009-10**

	<b>Bootstrapped (full sample)</b>	<b>Bootstrapped; subsample of nonmissing values</b>
	<b>b/t</b>	<b>b/t</b>
Bank branches in hundred per million job cards (2011-12)	-0.0004 (0.0003)	-0.0010*** (0.0004)
Proportion of total block level MGNRGEA positions that lies vacant	0.0093*** (0.0033)	0.0077 (0.0054)
Block level MGNREGA staff per village	-0.0016 (0.0018)	0.0231*** (0.0046)
Bank expansion in the two years preceding 2011-12	-0.0235 (0.0749)	0.2209** (0.1022)
Constant	0.0092*** (0.0018)	0.0074*** (0.0027)

**Equation 4: Dependent variable: Average delay interacted with negative rainfall in 2009-10**

	<b>Bootstrapped (full sample)</b>	<b>Bootstrapped; subsample of nonmissing values</b>
	<b>b/t</b>	<b>b/t</b>
Bank branches in hundred per million job cards (2011-12)	-0.0000 (0.0000)	0.0001** (0.0000)
Proportion of total block level MGNRGEA positions that lies vacant	-0.0008* (0.0005)	-0.0009** (0.0004)
Block level MGNREGA staff per village	0.0009*** (0.0002)	-0.0019*** (0.0003)
Bank expansion in the two years preceding 2011-12	0.0166 (0.0102)	-0.0121 (0.0075)
Absolute value of negative deviation of rainfall (2009-10 in standard deviation units)	-0.0003*** (0.0000)	-0.0005*** (0.0000)
Positive deviation of rainfall (2009-10 in standard deviation units)	-0.0001** (0.0000)	0.0000 (0.0000)
Constant	0.0013** (0.0005)	0.0018*** (0.0004)

**Equation 5: Dependent variable: Demand Rate (2009-10)**

	<b>Bootstrapped (full sample)</b>	<b>Bootstrapped; subsample of nonmissing values</b>
	<b>b/t</b>	<b>b/t</b>
Growing Degree Days (GDD) current year (2009-10) rescaled (/100)	0.0718 (0.0989)	-0.2180 (0.1662)
Growing Degree Days (GDD) lag year (wrt. 2009-10) rescaled(/100)	-0.0812 (0.1006)	0.2186 (0.1690)
Number of days in the cropping season above optimal higher threshold temperatures current year (2009-10)	0.0041*** (0.0012)	0.0045*** (0.0017)
Number of days in the cropping season above optimal higher threshold temperatures lagged year (wrt. 2009-10)	-0.0049*** (0.0014)	-0.0053*** (0.0019)
Number of days in the cropping season below optimal lower threshold temperatures current year (2009-10)	-0.0009 (0.0012)	-0.0009 (0.0021)
Number of days in the cropping season below optimal lower threshold temperatures lagged year (wrt. 2009-10)	0.0006 (0.0013)	0.0010 (0.0022)
Number of village level MGNREGA staff per job card	0.0017 (0.0020)	0.0042 (0.0045)
Administrative expenditure at the village level per job card (Rs. `000)	-0.0011 (0.0007)	0.0001 (0.0010)
Administrative expenditure at the village level per village (Rs. `000)	-0.0009 (0.0009)	-0.0079* (0.0042)
Number of village level MGNREGA staff per village	0.0101 (0.0072)	0.0194 (0.0126)
Proportion of people from the Scheduled Castes	0.1795 (0.1266)	-0.0342 (0.1604)
Proportion of people from the Scheduled Tribes	0.1890*** (0.0511)	0.1679** (0.0766)
Literacy rate (proportion of total adult population)	-0.3133*** (0.1015)	-0.3307** (0.1622)
Integrated Action Plan district (=1 if yes)	0.0156 (0.0297)	-0.0249 (0.0468)
MGNREGA Phase 1 district (=1 if yes)	0.0523** (0.0237)	0.0640** (0.0313)
MGNREGA Phase 2 district (=1 if yes)	0.0730*** (0.0233)	0.0594** (0.0299)
Absolute negative deviation in rainfall in 2009-10 (in standard deviation units)		0.0180** (0.0086)
Positive deviation in rainfall in 2009-10 (in standard deviation units)		-0.0052 (0.0063)
Difference between NREGA wages and bottom decile wages (2009-10; Rs. `000 )		0.0009* (0.0005)
Difference between NREGA wages and top decile wages (2009-10; Rs. `000 )		0.0387 (0.2028)
MGNREGA-casual wage in Rs. hundred in 2009-10		-0.0009 (0.0153)

Constant	0.5154*** (0.0814)	0.4129*** (0.1585)
N	551	284
df_m	62	64
chi2	709.7***	1367.7***

Notes: Coefficients along with t-statistics are reported in the parenthesis. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Appendix Table 3.2. The Discouraged Worker Effect: District level analysis with Difference in Demand Rates Control Function Approach (Model 3)**

	Control function (full sample)	Control function Model (subsample of nonmissing values)
	b/t	b/t
Lagged Rationing Rate (2009-10)	-0.234*** (0.08)	-0.223 (0.14)
Proportion of payments with over 90 days delay in 2009-10	-0.028 (1.32)	0.374 (1.91)
Data missing on wage payments delays (=1 if yes)	0.072** (0.03)	
Proportion of wage payments delayed interacted with absolute value of negative deviation in rainfall in 2009-10	-20.391** (9.91)	-33.280** (14.05)
Demand Rate (2009-10)	-0.464*** (0.09)	-0.626*** (0.15)
Residuals from equation 1	-0.025 (0.08)	-0.052 (0.14)
Residuals from equation 2	-1.000 (1.42)	-2.135 (2.19)
Residuals from equation 3	0.334 (9.13)	2.991 (15.68)
Residuals from equation 4	-0.145* (0.09)	0.032 (0.14)
Proportion of people from the Scheduled Castes	0.093 (0.10)	0.146 (0.15)
Proportion of people from the Scheduled Tribes	0.145*** (0.05)	0.194*** (0.07)
Literacy rate	0.218*** (0.06)	0.260** (0.10)
Integrated Action Plan district (=1 if yes)	-0.028 (0.02)	-0.038 (0.03)
MGNREGA Phase 1 district	-0.016 (0.02)	-0.020 (0.02)
MGNREGA Phase 2 district	-0.019 (0.01)	-0.025 (0.02)
Absolute negative deviation of rainfall in 2011-12	0.007* (0.00)	0.004 (0.01)
Positive deviation of rainfall in 2011-12	0.004* (0.00)	0.004 (0.00)
Difference in average monthly per capita expenditure (in Rs. `000)	-0.024 (0.03)	0.012 (0.04)
Proportion of target achieved over the past three years in toilet construction	-0.076 (0.09)	-0.186* (0.11)
Change in the number of jobcards	16.336* (8.34)	30.772** (12.89)
Data missing on jobcards (=1 if missing)	-0.075 (0.05)	-0.056 (0.06)

Change in the proportion engaged in agriculture	0.155** (0.06)	0.134 (0.10)
Change in the proportion engaged in casual farm work	0.352*** (0.10)	0.385*** (0.13)
Change in the proportion engaged in non-agricultural occupations	-0.029 (0.07)	0.001 (0.10)
Change in the proportion engaged in casual non-farm work	0.152** (0.07)	0.272*** (0.10)
Change in casual wage-MGNREGA wage differential for bottom decile	0.050 (0.16)	0.060 (0.24)
Constant	-0.129 (0.08)	-0.139 (0.13)
N	522	267
R-squared	0.608	0.649

Notes: Coefficients along with t-statistics are reported in the parenthesis. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Appendix Table 3.3: Control Function First Stage Results: District level Difference in Demand (Model 3)**

	Lagged Rationing Rate (2009-10)	Proportion of payments with over 90 days delay in 2009-10	Demand Rate (2009-10)
	b/t	b/t	b/t
Proportion of total block level positions that lies vacant	-0.0620 (0.0603)	0.0044 (0.0034)	
Block level MGNREGA staff per village	-0.0204 (0.0323)	-0.0015 (0.0018)	
Block level MGNREGA staff per block	-0.0053** (0.0020)	0.0003** (0.0001)	
Block level MGREGA staff per 1000 job cards	0.0113*** (0.0039)	-0.0004 (0.0002)	
Village level MGNREGA staff per village	0.0005 (0.0073)	-0.0011*** (0.0004)	0.0090* (0.0053)
Absolute value of negative deviation of rainfall (2009-10)	0.0008 (0.0018)	0.0001 (0.0001)	0.0043*** (0.0011)
Number of days in the cropping season above optimal higher threshold temperatures current year (2009-10)	-0.0015 (0.0020)	-0.0002 (0.0001)	-0.0051*** (0.0012)
Number of days in the cropping season above optimal higher threshold temperatures lagged year (wrt. 2009-10)	0.0038** (0.0017)	-0.0003*** (0.0001)	-0.0018* (0.0011)
Number of days in the cropping season below optimal lower threshold temperatures current year (2009-10)	-0.0039** (0.0017)	0.0003*** (0.0001)	0.0017 (0.0011)
Number of days in the cropping season below optimal lower threshold temperatures lagged year (wrt. 2009-10)	-0.3843*** (0.1245)	-0.0081 (0.0074)	-0.0388 (0.0840)
Growing Degree Days (GDD) current year (2009-10)	0.3841*** (0.1279)	0.0076 (0.0076)	0.0316 (0.0860)
Growing Degree Days (GDD) lagyear (2009-10)	-0.2862*** (0.0661)	-0.0117*** (0.0039)	

Demand Rate (2009-10)	-0.0022 (0.0430)	0.0063** (0.0026)	-0.0390 (0.0292)
Integrated Action Plan district (=1 if yes)		-0.0009** (0.0004)	
Bank branches in hundred per million job cards (2011-12)		Neg. (Neg.)	
Post offices per 1000 job cards (2011-12)		-0.0374 (0.0603)	
Bank expansion in the two years preceding 2011-12		0.0474*** (0.0095)	0.2514** (0.1047)
Proportion of people from the Scheduled Castes		0.0134*** (0.0040)	0.2227*** (0.0459)
Proportion of people from the Scheduled Tribes		0.0069 (0.0078)	-0.2666*** (0.0890)
Literacy rate		-0.0010 (0.0019)	0.0546*** (0.0206)
MGNREGA Phase 1 district		0.0009 (0.0019)	0.0616*** (0.0204)
MGNREGA Phase 2 district			-0.0118*** (0.0036)
Positive deviation of rainfall in 2009-10			0.0015*** (0.0003)
Difference between NREGA wages and bottom decile wages (2009-10)			0.0871 (0.1163)
Difference between NREGA wages and top decile wages (2009-10)			0.0143 (0.0087)
MGNREGA-casual wage in Rs. in 2009-10			0.0213*** (0.0049)
Constant	0.6965*** (0.0990)	0.0144* (0.0074)	0.5195*** (0.0944)
N	538	538	523
R-squared	0.1461	0.1667	0.3083

Notes: Coefficients along with t-statistics are reported in the parenthesis. . \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.001$