Risk, Insurance and Wages in General Equilibrium

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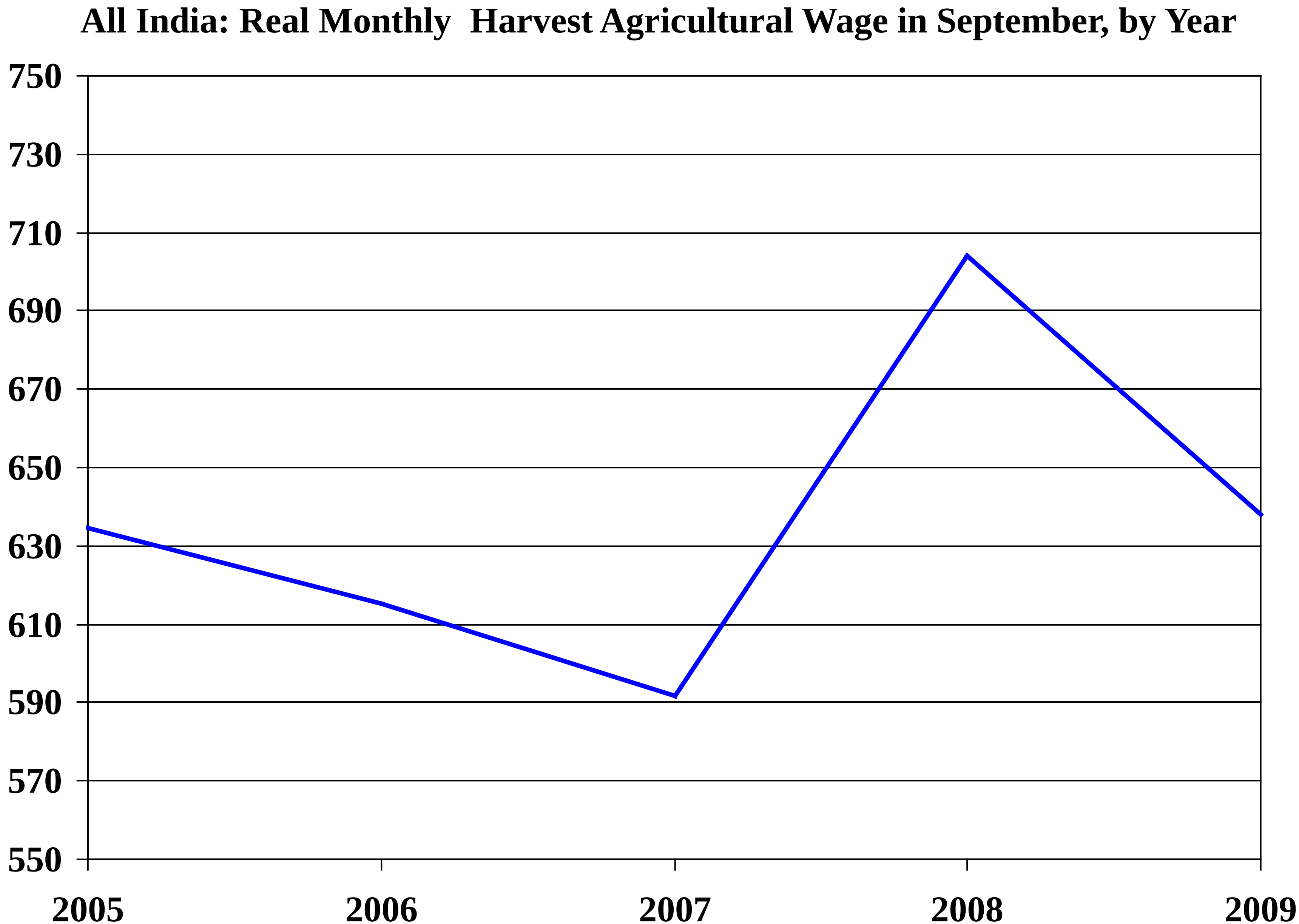

All India: Real Monthly Harvest Agricultural Wage in September, by Year
750
730
710
690
670
650
630
610
590
570
550
2005
2006
2007
2008
2009

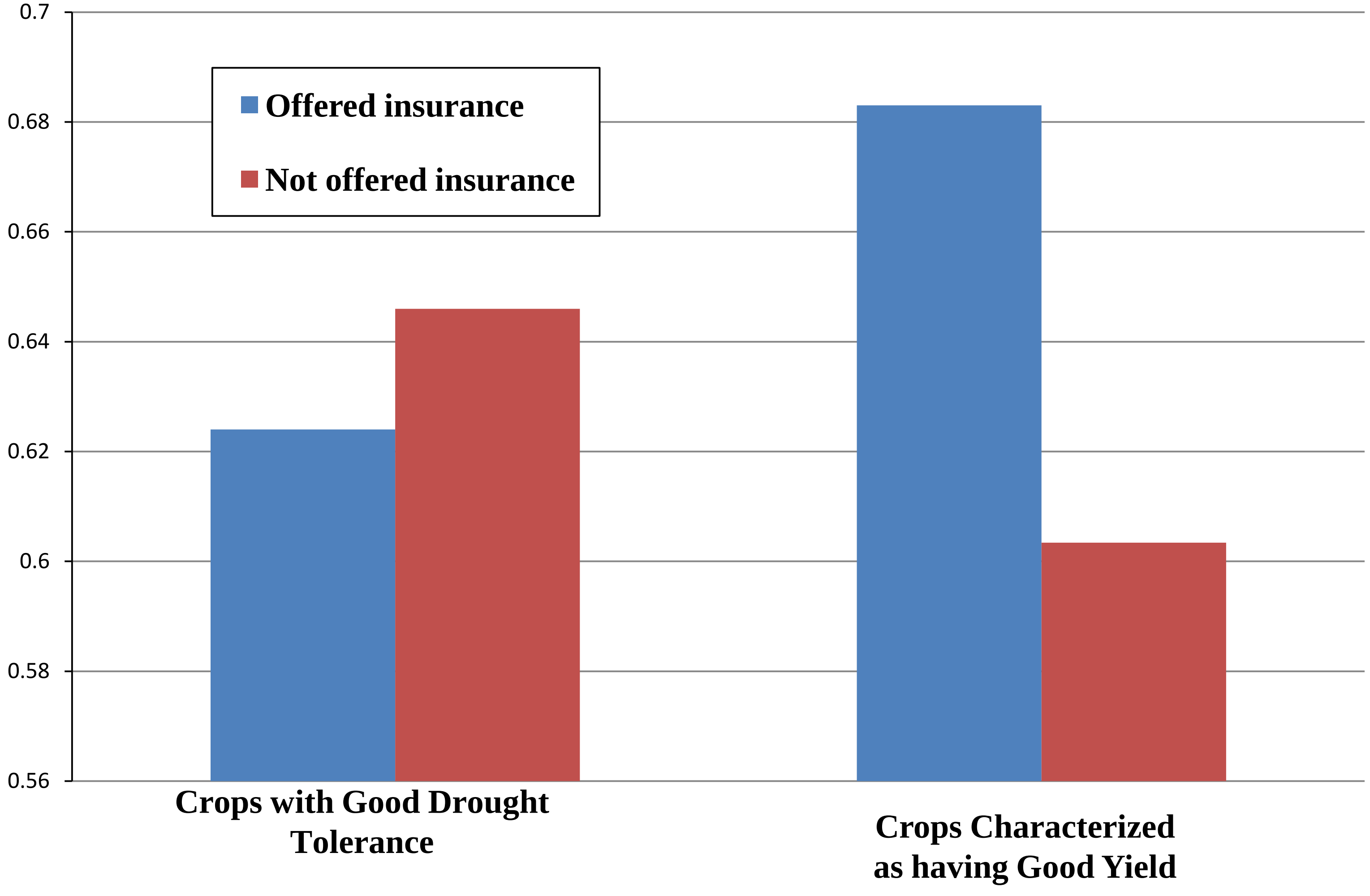
Policy Setting

- In India agricultural insurance is targeted to those who have an "insurable interest"
  - Landed, cultivator households
- Majority of rural Indians engaged in agriculture are landless or near-landless
- Raises two issues:
  - Labor demand varies with rainfall, and the landless therefore need insurance
  - If insurance allows cultivators to take more risk, then selling insurance only to cultivators *could* make the landless worse off than if insurance did not even exist!

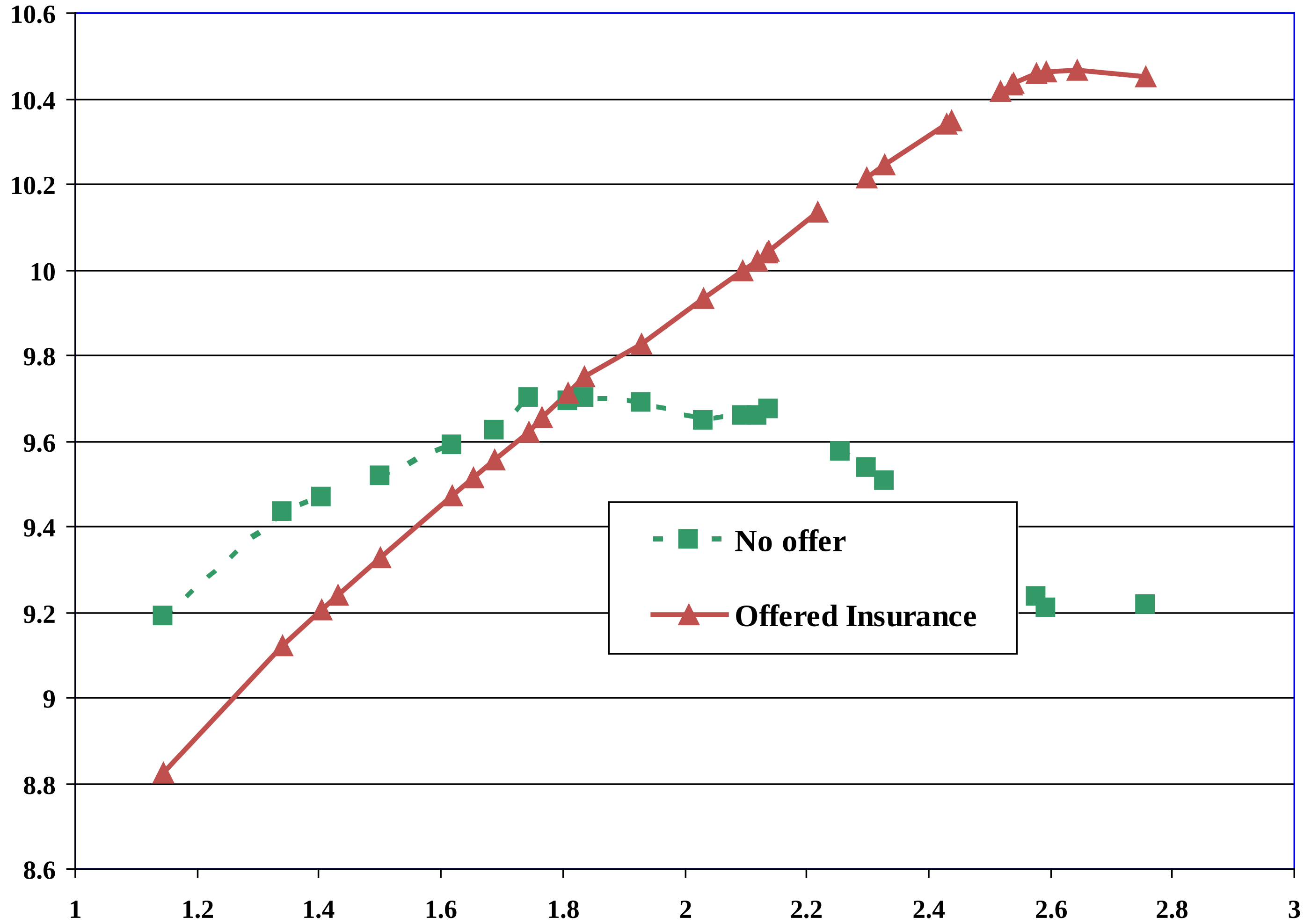
Insurance and Risk-Taking

- Lots of evidence that cultivators take more risk when insurance is offered:
  - Karlan et al 2013, Ghana;
  - Cole et al 2013, Gujarat (shift towards riskier cash crops)
  - Mobarak and Rosenzweig 2013, Tamil Nadu
- Two approaches:
  - Are the insured more likely to invest in "risky" technologies?
  - Does output become more sensitive to rainfall for the insured?

When offered Insurance (ITT from RCT experiment), farmers in Tamil Nadu switch to high-risk, high-return varieties of rice



With Insurance, Cultivator Output becomes more responsive to rainfall variation



Lowess-Smoothed Relationship Between Log Per-Acre Output Value and Log Rain per Day in the *Kharif* Season, by Insurance Type and Level

- Comprehensive evaluation requires consideration of spillover effects
  - e.g. does labor demand become more volatile?
  - Can the landless self-insure through labor supply changes?
- Welfare of the poor depends on agricultural wages, but little research on wage determination
  - Surplus labor models (wages institutionally set)
  - Nutrition based efficiency wages
  - Jayachandran 2006 – effect of imperfect credit markets
  - Kaur 2012 – wage stickiness
- Landless agricultural workers are 25-35% of the rural work force in India, and form the majority of the world's poor.
  - Mean daily harvest wage 2005-09: Rs. 77.3 = $4.50 PPP

Broader Links

- Scaling up programs may induce general equilibrium changes
  - e.g. providing education and training to large numbers of beneficiaries may change skilled wages
  - Providing access to credit may change input prices
- Many RCT's have examined spillover effects, but these are via nonmarket mechanisms:
  - e.g., contagion, learning and other peer effects, financial transfers (Miguel and Kremer 2004, Angelucci and DeGiorgi 2009, Kremer and Miguel 2007, Oster and Thornton 2012, Miller and Mobarak 2013)
- Consideration of aggregate markets effects, but not on prices or equilibrium outcomes:
  - Crepon *et al.* (2013), Muralidharan and Sundararaman (2013)

Outline 1: Theory

- *General-equilibrium* model in which both landless (supplying labor), and cultivators (hiring labor) face risk
- Theory: Labor Demand Effect
  - Subsidizing rainfall insurance for cultivators results in more risk for wage workers
  - Wages higher but more volatile across weather states
- Theory: Labor Supply
  - Subsidizing rainfall insurance to wage workers reduces wage volatility (via labor supply: uninsured work more than insured in the bad state)
  - Increases profit volatility for farmers

Outline - Empirics

- RCT offering rainfall index insurance to 5000+ cultivators and landless agricultural workers in three states in India (UP, AP, TN)
- Individual-level random variation in insurance offers, interacted with village rainfall and weather-based payouts
  - Effects on labor supply and seasonal migration for the landless, and labor demand by cultivators
- Village-level random variation in *proportions* of cultivators and wage workers offered insurance
  - Effects on wages in general equilibrium
  - Effects on demand for insurance by landless
- Estimate a labor demand equation, a labor supply equation and a general equilibrium wage equation

Landless Labor Households, Labor Supply and Rainfall Insurance

$U = h^{\gamma} c^{(1-\gamma)}$

h=leisure; *c*=consumption good traded internationally
Labor markets are local (village) during Kharif (little migration)

There are two stages of nature, L and H

The L-state occurs with probability q

Insurance costs *p* per unit and pays out I

$$c^L = w^L(1-h) + m - pI + I$$

$$c^H = w^H(1-h) + m - pI$$

where m = non-earnings income,
$1 - h = l^s$ (Labor Supply)

$$\underset{I,h}{\text{Max}}\, E(U) = qU^L + (1-q)U^H$$

$FOC: \quad q(1-p)U_c^L = p(1-q)U_c^H$ (U_c^L=U_c^H if actuarially fair.)

Table 1

Insured and Uninsured Landless Labor Supply in the *H* and *L* States		
State of nature	*L* (Payout)	*H* (No Payout)
Insured labor supply	$1 - \gamma - \frac{\gamma(m + (1-p)I)}{w^L}$	$1 - \gamma - \frac{\gamma(m - pI)}{w^H}$
Uninsured labor supply	$1 - \gamma - \frac{\gamma(m)}{w^L}$	$1 - \gamma - \frac{\gamma(m)}{w^H}$
Difference insured and uninsured	$\frac{-\gamma(1-p)I}{w^L}$	$\frac{\gamma pI}{w^H}$

Key Labor Supply Result

Proposition 1: Labor supply of insured and uninsured differs with respect to whether payouts occur:

In the bad state, insured labor supply is lower (they get payouts, and have less need for income)

In the good state, insured labor supply is higher (they have paid the premium)

Empirics: we will have variation in both insurance offers and payouts

But, insurance premiums are subsidized (small wealth effect); payouts are full payments (week's wages)

Cultivator Households, the Demand for Labor and Insurance

Production takes place in stages:

In stage 1, cultivators decide on the stage-1 technology α.

Choose between:

The most conservative, lowest-yielding technology ($\alpha = 0$) and

The most profitable and riskiest technology ($\alpha = 1$)

In stage 2, the state of nature θ^j is realized, labor is hired and profits are maximized given the technology chosen in stage 1

Stage-2 output in state $j = (1 - a) + a\theta^j$

where θ^j $=$ 0 in the L state

$=$ $\varkappa$ in the H state

and $(1- q)\varkappa > 1$

Labor demand is *Leontief*, with δ units of labor required per unit output

The stage-1 program: Cultivators choose the technology and insurance

$$\underset{a,\, I}{\text{Max}}\ E(U) = U(c_1) + b[qU(c_2^L) + (1-q)U(c_2^H)]$$

$$c_1 = m - s - pI$$

$$c_2^j = rs + [(1 + a(\theta^j - 1)][p - \delta w^j] + \iota^j I$$

where $\iota^j = 1$ if $j=H$

$\iota^j = 0$ if $j=L$

S= savings, r=savings return, p=output price

Solutions:

$\alpha = 1$ is the choice that maximizes *expected* profits

(but riskiest choice)

Standard result: $a < 1$ given risk aversion and uncertainty

*Proposition 3: a is higher the lower the cost of insurance (lower for the uninsured)

Labor Market Equilibrium in any state j

$$1 - \gamma - \gamma y^j/w^j \quad = \delta[(1 + a(\theta^j - 1)]$$

$$\text{so} \quad w^j = \gamma y^j/[1 - \gamma - \delta[(1 + a(\theta^j - 1)]$$

<u>Proposition 4</u>: Offering insurance to landless laborers dampens wage volatility.

Proof: The effect of an increase in y on the equilibrium wage is always positive:

$$dw^L/dy = \gamma/[1 - \gamma - \delta(1 - \alpha)]>0, \text{ for } w^L>0$$

$$dw^H/dy = \gamma/[1 - \gamma - \delta(1 + \alpha(\varkappa - 1))]>0, \text{ for } w^H>0$$

In state L (H), y is higher (lower) for the insured

Proposition 5: Offering insurance to cultivators increases average wages.

Proof: Insured cultivators choose a higher-α technology (Proposition 3). The effect of an increase in *a* on the *expected* equilibrium wage is positive.

$$dE(w)/da =$$

$$\delta\gamma[(1 - q)\varkappa - 1]E(y)/ [1 - \gamma - \delta[(1 + a((1 - q)\varkappa - 1)]^2 > 0$$

Proposition 6: Offering insurance to cultivators increases wage volatility (Δw) and makes the uninsured landless worse off in the L state.

Proof: The effect of an increase in *a* on wages in the H state is positive.
The effect of an increase in *a* on wages in the L state is negative.

$$dw^L/d\alpha = -\gamma\delta y/[1 - \gamma - \delta(1 - \alpha)]^2 < 0$$

$$dw^H/d\alpha = (\varkappa - 1)\gamma\delta y/[1 - \gamma - \delta(1 + \alpha(\varkappa - 1))]^2 > 0$$

Offering insurance only to cultivators may worsen the welfare of the (uninsured) landless.

Delayed Monsoon Onset Insurance Product

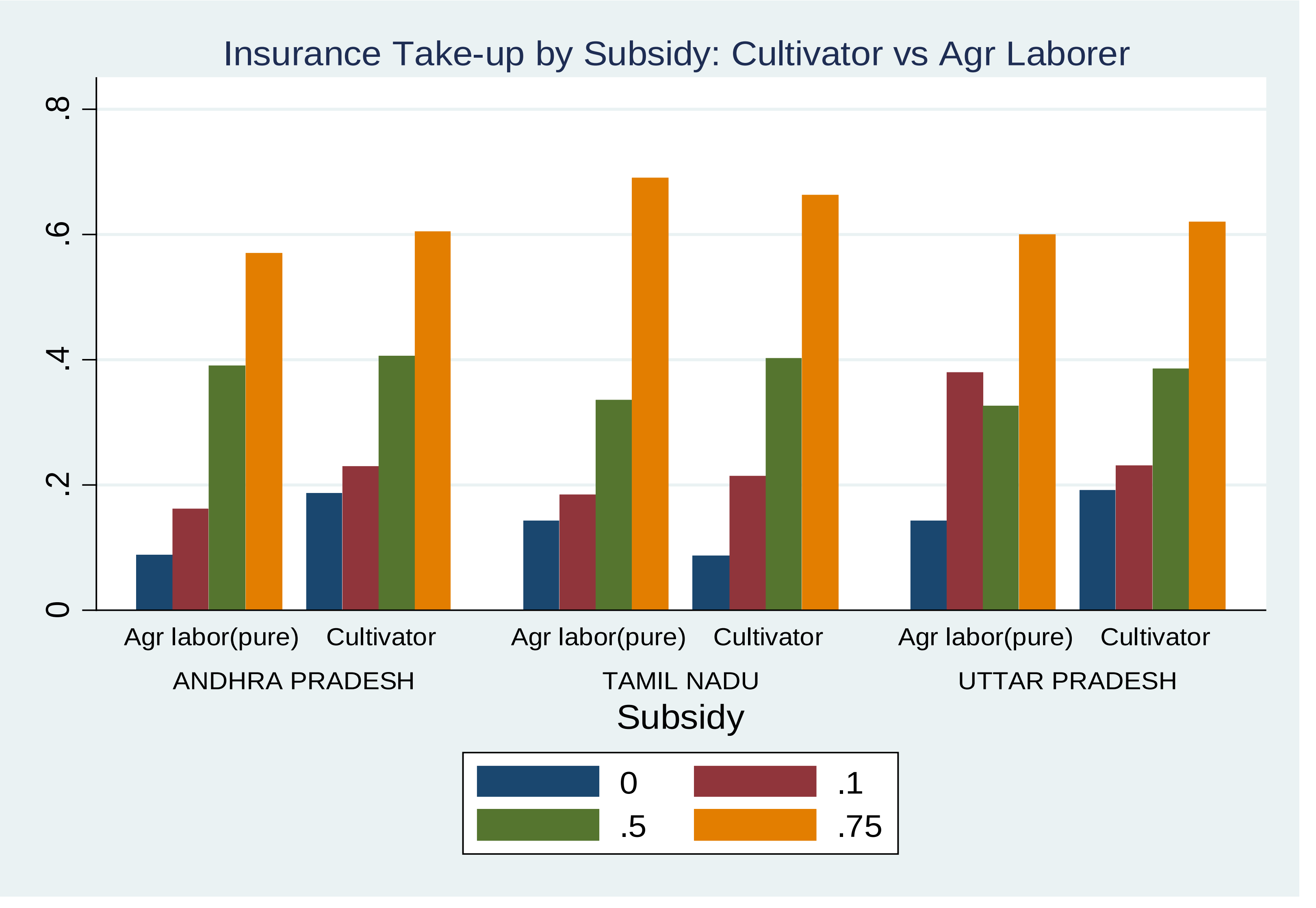
Agricultural Insurance Company of India (AICI)

AICI offers area based and weather based crop insurance programs in almost 500 districts of India, covering almost 20 million farmers, making it one of the biggest crop insurers in the world.

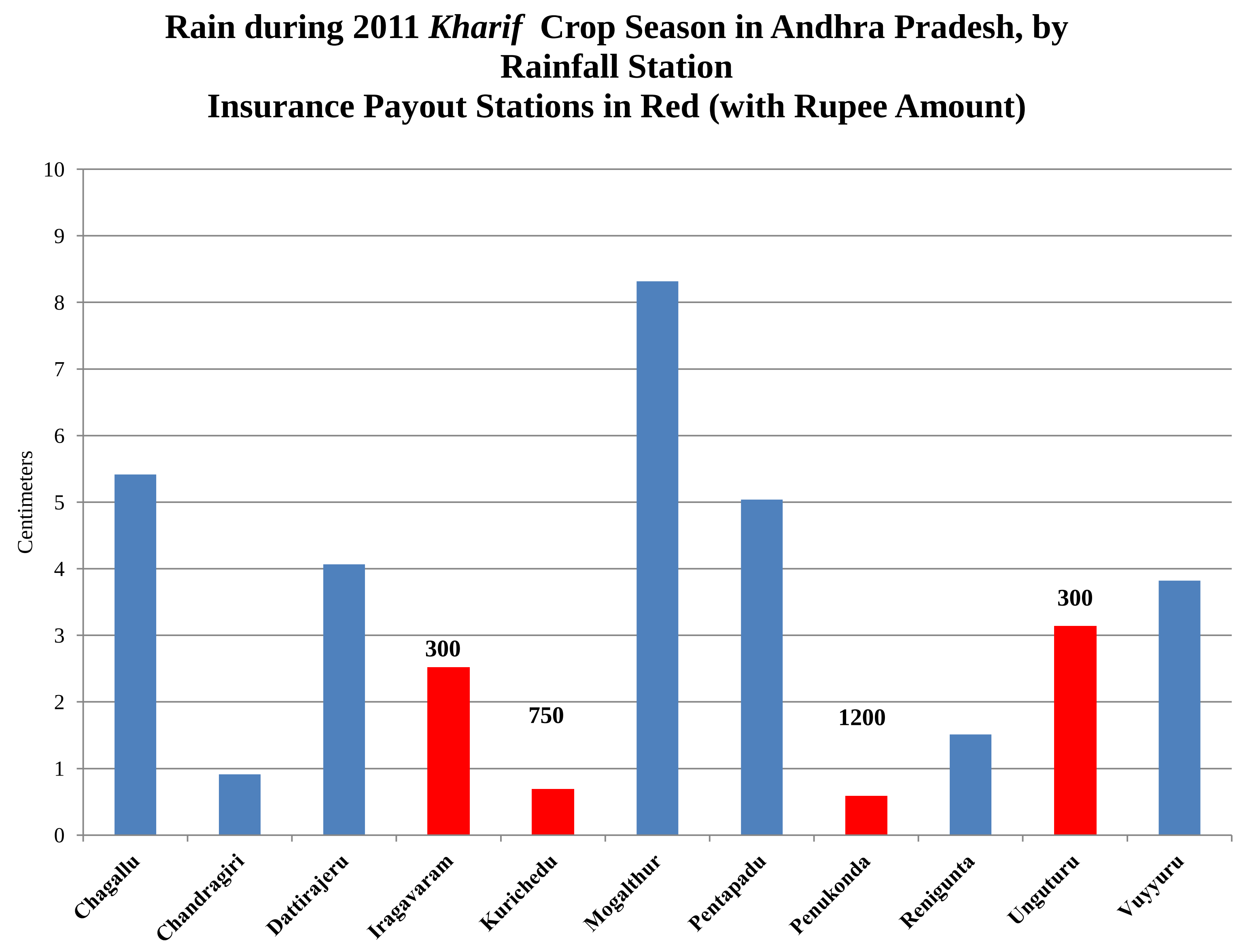
Timing and Payout Function

Trigger Number	**Range of Days Post Onset** (varied across states and villages)	**Payout** (made if less than 30-40mm (depending on state) is received at each trigger point)
1	15-20	Rs. 300
2	20-30	Rs. 750
3	25-40	Rs. 1,200

Rainfall measured at the block level from AWS (Automatic weather stations)



- We will report intent-to-treat estimates throughout
- Insurance offers randomized by design. [Calendar]


Rain during 2011 Kharif Crop Season in Andhra Pradesh, by Rainfall Station
Insurance Payout Stations in Red (with Rupee Amount)
Centimeters
0
1
2
3
4
5
6
7
8
9
10
300
750
1200
300
Chagallu
Chandragiri
Dattirajeru
Iragavaram
Kurichedu
Mogalthur
Pentapadu
Penukonda
Renigunta
Unguturu
Vuyyuru

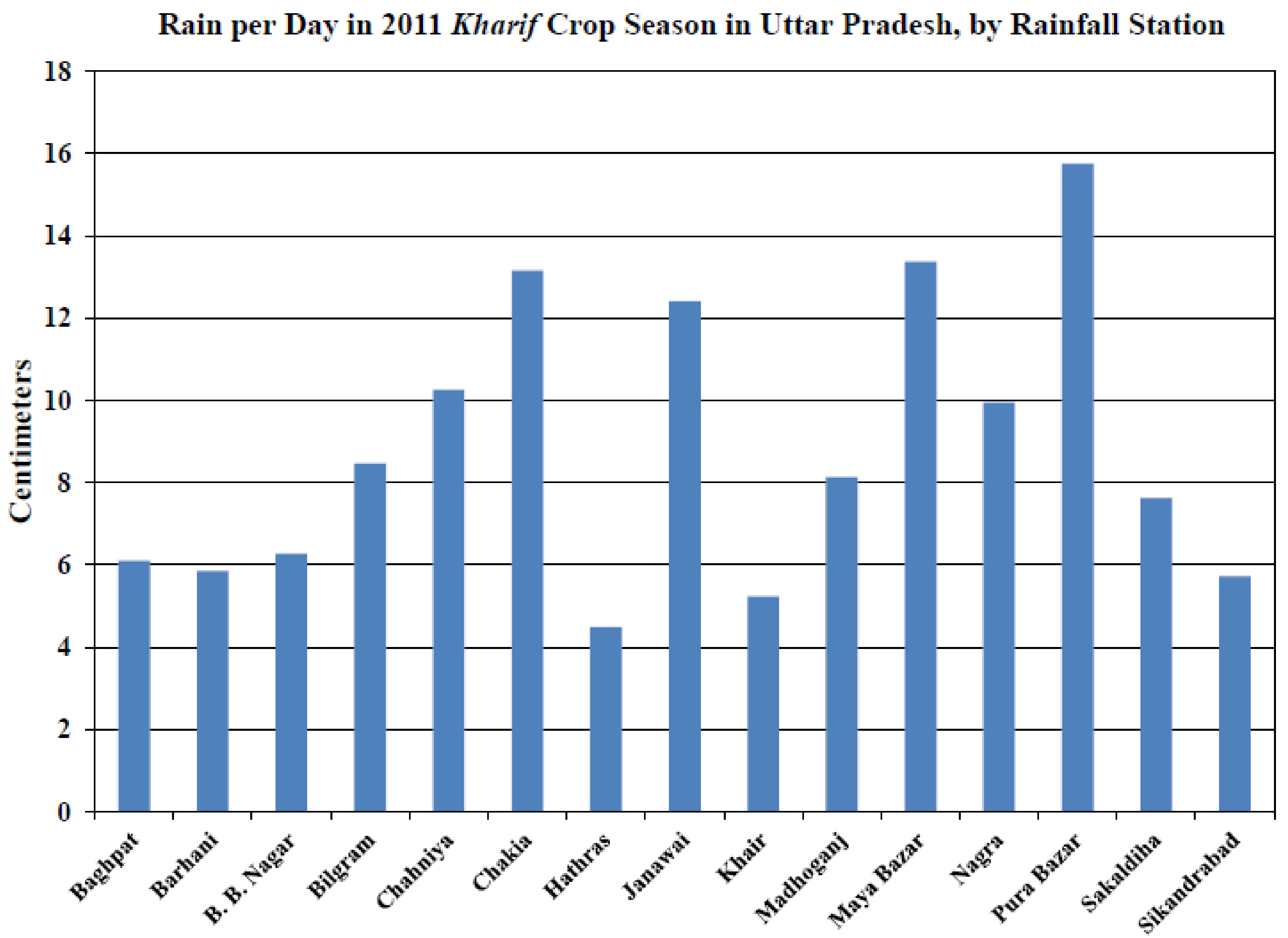

Rain per Day in 2011 *Kharif* Crop Season in Uttar Pradesh, by Rainfall Station
Centimeters
0
2
4
6
8
10
12
14
16
18
Baghpat
Barhani
B. B. Nagar
Bilgram
Chahniya
Chakia
Hathras
Janawai
Khair
Madhoganj
Maya Bazar
Nagra
Pura Bazar
Sakaldiha
Sikandrabad

Table 2: Comparison of Rainfall Characteristics of Payout and Non-Payout Villages

	Non-payout mean	Payout mean	T-stat of difference*
Dev. of Kharif 2011 Rain per day from Historical Average	4.095	-2.066	-6.10
Rain per day during 2011 Kharif season	8.217	2.056	-7.28
Mean Historical Rainfall (1999-2006)	4.178	4.123	-0.11
Coefficient of Variation of Historical Rainfall	0.868	0.845	-0.16

- Insurance product designed based on village-specific rainfall histories. Payout probabilities equal; occurrence of payout random
- Payouts in 2011 reflect a rainfall 'shock'.
- Does not appear to reflect longer-run differences in rainfall mean or variability

Table 4: Sample Characteristics

	Mean	SD	N
Sample for Labor Demand Estimates	Cultivator Households, Acreage>.5		
Offered Insurance	0.620	0.485	1,585
Acreage Cultivated	2.56	4.15	1,584
Days of Harvest Labor	15.1	23.9	1,575
Days of Planting Labor	22.5	32.7	1,575
Sample for Labor Supply Estimates	Landless Agricultural Wage Workers Aged 25 -49		
Offered Insurance	0.575	0.494	3,678
Age	35.5	6.99	3,678
Male	0.479	0.500	3,678
Deviation of Kharif 2011 Rain per Day from Historical Average	3.38	4.47	3,449
Village where Payout Occurred	0.140	0.347	3,678
Agricultural Labor Force Participation	0.345	0.475	3,676
Days of Agricultural Work conditional on Labor Force Participation	58.9	44.2	1,268
Migration during Kharif Season	0.023	0.151	4,272

Labor Demand Estimation

- Prediction: Insured cultivators will use more inputs at the planting stage that are complementary with rainfall than uninsured.
  - They therefore hire more labor for *harvesting* when rainfall is ample.
- $L_{jk}^{D} = \beta_1 I_{jk} + \beta_2 (I_{jk} \cdot R_k) + \beta_3 Acreage + \boldsymbol{K}_k + \varepsilon_{jk}^{1}$
  - *I*: insurance offer (ITT) *R*: 2011 rainfall shock
  - Village fixed effects absorb variation in input prices and historic rainfall

Labor Demand Measured at Follow-up

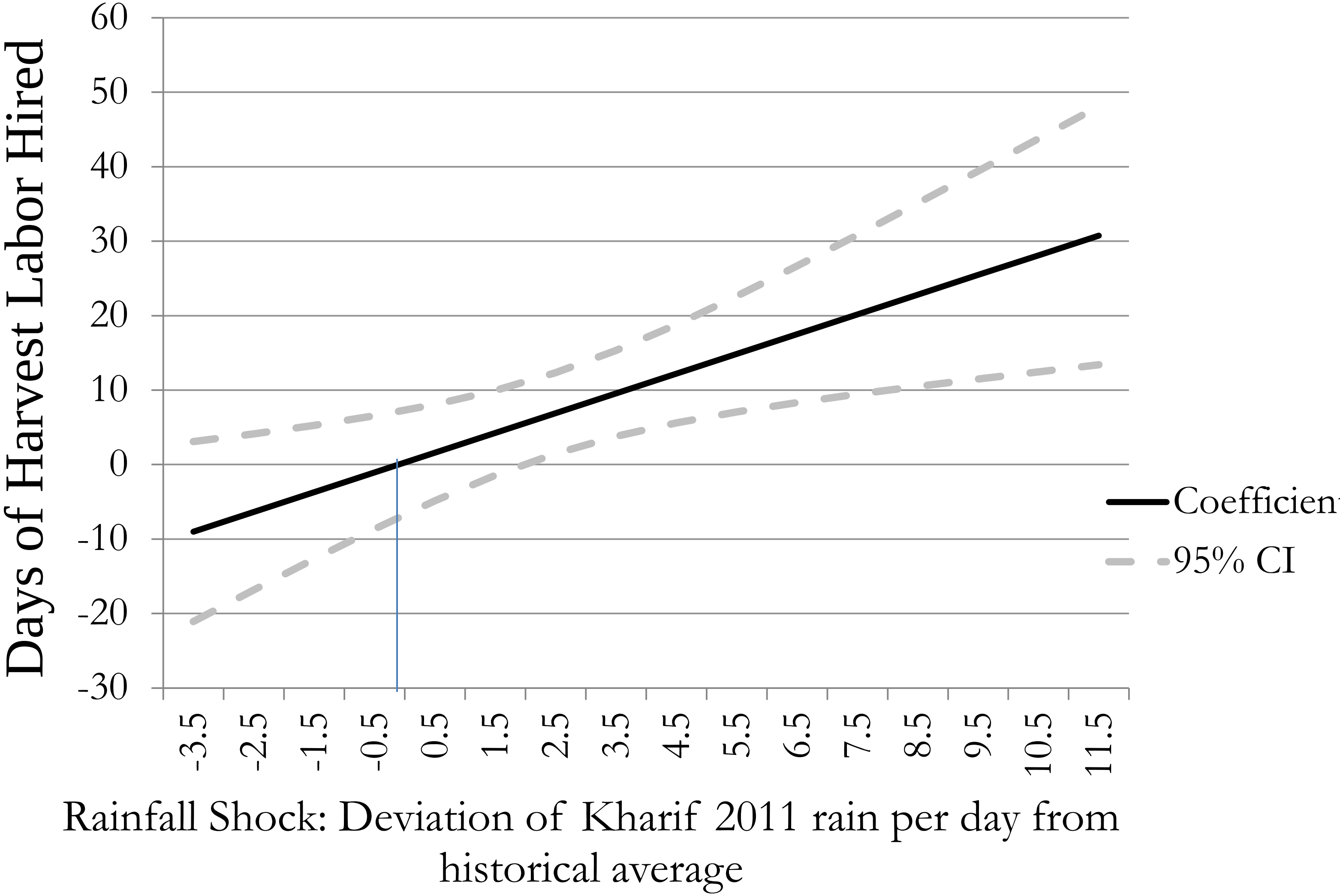
- Cultivators: Detailed information on agricultural inputs by stage of production.
  - Key for identifying *ex ante* and *ex post* investments.
  - Focus on use of harvest-stage labor, which is surely dependent on rainfall realizations and *ex ante* investments.
- We can conduct a placebo test with planting stage labor (which should be unaffected by the rainfall shock)
- Payout variation to check whether cultivators were liquidity constrained

Village and Caste Fixed Effects Estimates: Demand for Kharif Season Labor by Cultivators by Stage of Production (Cultivators with at least 2 acres)

	Days of Harvest Labor		Days of Planting Labor	
Offered Insurance in 2011	2.118 (0.83)	0.270 (0.08)	-3.160 (-1.19)	-0.867 (-0.28)
Offered Insurance x (2011 Rainfall Deviation from Historical Average	1.995 (3.00)	2.651 (2.89)	0.575 (0.83)	-0.239 (-0.27)
Offered Insurance in a Village where Payout Occurred		5.289 (0.86)		-6.564 (-1.09)
Acreage Cultivated	2.053 (2.02)	2.055 (2.01)	2.358 (2.05)	2.356 (2.05)
Observations	734	734	734	734
Predicted Effect of Insurance at Most Negative Rainfall Shock in Sample	-5.009 (-1.34)	-9.200 (-1.49)		
Predicted Effect of Insurance Offer at Most Positive Rainfall Shock in Sample	24.80 (3.27)	30.41 (3.52)		

Caste and Village FE included. t-stats based on Standard errors clustered by village-caste.

Figure 5: Predicted Effect of Insurance Offer on Days of Harvest Labor Hired, by Rainfall Shock



Labor Supply Measures

- $L_{ijk}^{S} = \alpha_1 I_{jk} + \alpha_2 (I_{jk} \cdot R_k) + \mathbf{Z}_{ijk}\pi + K_k + \varepsilon_{ijk}^{2}$

- Information for landless households:
  - Participation in the Labor Force
  - Days worked in agriculture for wages
  - Days spent working for wages outside the village (temporary out-migration) – *very low during Kharif*
- *Z*: personal characteristics (age, gender)

Table 6: Village and Caste Fixed Effects Estimates: Labor Supply during Kharif Season by Landless Agricultural Wage Workers Aged 25 – 49

Dependent Variable:	Agricultural Labor Force Participation		Number of Days of Agricultural Work	
	Payout Villages	Non-Payout Villages	Payout Villages	Non-Payout Villages
Offered Insurance	-2.175	-0.194	-338.2	-1.582
	(-4.41)	(-4.08)	(-2.04)	(-0.46)
Offered Insurance x Rainfall Deviation in 2011 from Historical	-1.084	0.0304	-167.3	0.295
	(-4.63)	(2.83)	(-2.03)	(0.21)
Male	0.195	0.114	6.745	8.334
	(5.31)	(4.02)	(1.46)	(3.59)
Observations	515	2,925	264	916
Predicted Effect of Insurance at Median Rainfall in Payout Village	-0.117		-20.33	
	(-1.75)		(-1.23)	
Predicted Effect of Insurance at Median Rain, Non-Payout Village		-0.0421		-0.107
		(-1.26)		(-0.01)

Village and Caste FE included. t-stats based on standard errors clustered by village-caste, in parentheses. Age and age-squared also included as controls.

General Equilibrium Effects on Wages

- Variation in "*proportion of cultivators in village offered insurance*", "*proportion of agricultural laborers in village offered insurance*"
- Why?
  - Randomization of insurance offers was stratified by caste. Some castes randomly chosen, then individuals within caste.
  - Caste A randomly chosen for insurance offers, but not caste B. If Caste A is relatively populous in village X, but not village Y, then *proportion* variables will have higher value in Village X.
- Two complications
  - Cultivator or laborer fractions of the population vary
  - We eliminated 'small' castes in our sampling rule

Solutions

- Control for the population shares of cultivators and laborers:
  - Rely only on variation in the subsets of those cultivators and laborers who were randomly assigned to receive insurance offers.
- Control for the proportions of cultivators and laborers eliminated by our sampling rule
  - Can show that this eliminates any correlation with variables like *number of castes in village, population concentration of castes*. Results

- Identification assumption: Variation in fraction of cultivators and laborers receiving insurance marketing is random *conditional on* these 4 share variables

General Equilibrium Effects of Insurance Provision and Rainfall on Log Wages (Landless Agricultural Wage Workers Ages 20+)		
Rain per day during 2011 Kharif season	0.145	0.804
	(1.10)	(7.03)
Rain per day during 2011 Kharif season, squared	-0.00305	-0.0133
	(-1.38)	(-5.56)
Historical Mean Rainfall	-0.125	0.0689
	(-1.98)	(1.18)
Bus Stop in Village	0.107	0.542
	(1.21)	(2.33)
Bus Stop in Village * Rain per Day in 2011	-0.0452	-0.149
	(-1.38)	(-3.76)
Paved Road to Village	0.751	0.909
	(3.37)	(4.20)
Paved Road to Village * Rain Per Day in 2011	-0.0473	-0.222
	(-1.32)	(-7.58)
Bank in Village	0.431	0.167
	(2.15)	(0.71)
Bank in Village * Rain Per Day in 2011	-0.0568	0.0230
	(-1.37)	(0.38)
Male	0.307	0.310
	(9.89)	(9.93)
Observations	2,693	2,693
R-squared	0.327	0.337

Robust t-statistics, based on standard errors clustered by village-caste, in parentheses. All specifications include state fixed effects and control for education, age of respondent and a squared term in age, and 11 variables characterizing soil type, depth and drainage characteristics. All specifications also include 6 variables controlling for the proportion of village that are agricultural laborers or cultivators, and their interactions with rain per day, and proportion village laborers or cultivators that are eligible to receive insurance marketing.

- Replicate Jayachandran (2006) results from all Indian districts in our sample of villages.
- Wages higher (and less rainfall sensitive) in villages with roads, bus stops and banks
- Stronger once insurance controls added in 2nd column
- Wages increase with rainfall, but concave

General Equilibrium Effects on Log Wages
(Landless Agricultural Wage Workers Ages 20+)

Proportion Cultivators Offered Insurance in 2011	-6.724 (-3.12)
Proportion Cultivators Offered Insurance * Rain per Day in 2011 Kharif Season	0.842 (3.96)
Proportion of Landless Labor Households Offered Insurance in 2011	4.357 (1.76)
Proportion of Landless Labor Households Offered Insurance * Rain per Day in 2011	-0.627 (-3.10)
Proportion of Households Offered Insurance in a Village where Payout Occurred	2.470 (2.66)
Rain per day during 2011 Kharif season	0.804 (7.03)
Rain per day during 2011 Kharif season, squared	-0.0133 (-5.56)
Historical Mean Rainfall	0.0689 (1.18)
Observations	2,693
R-squared	0.337

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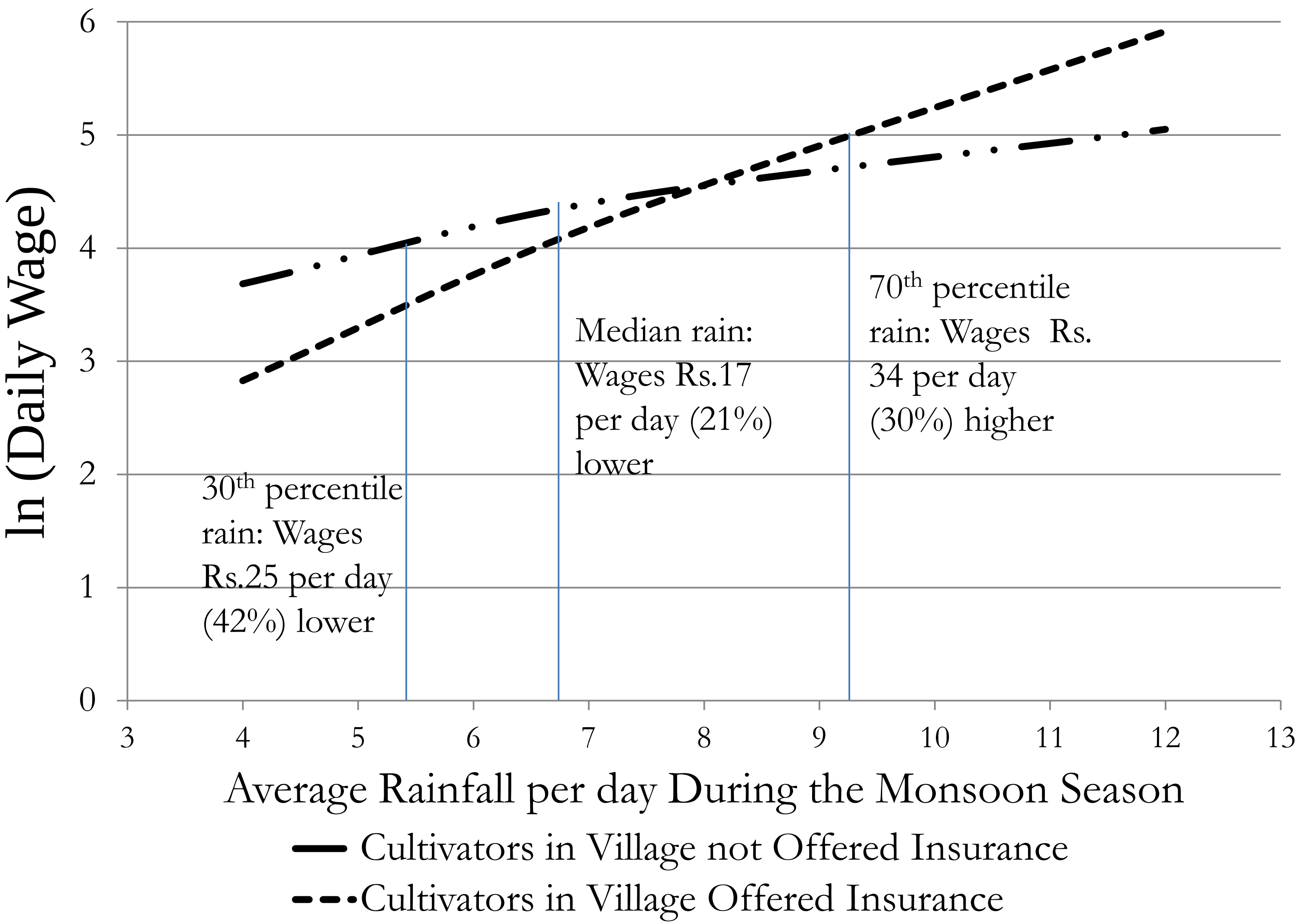
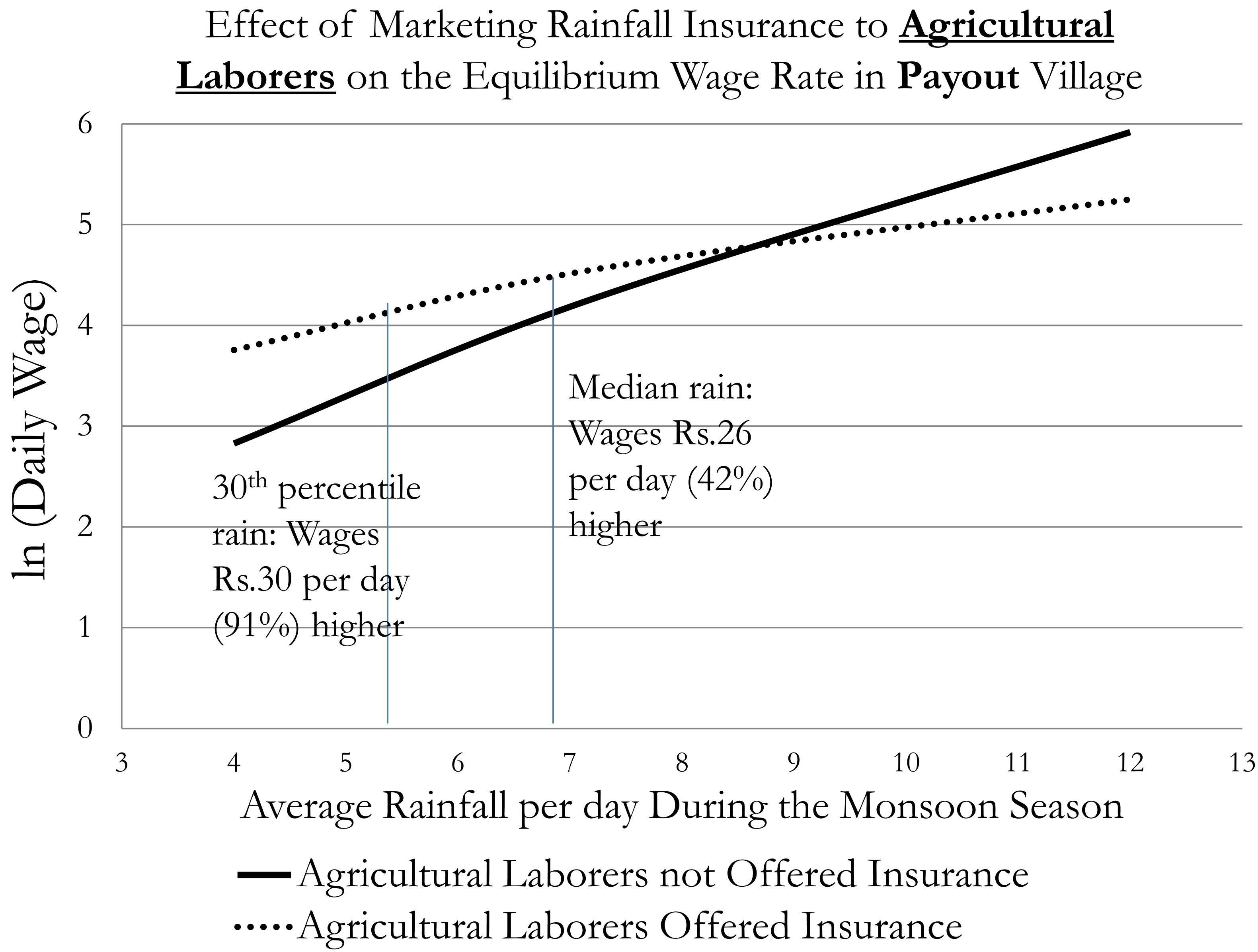
- Cultivator Insurance increases wage volatility
- Laborer insurance reduces wage volatility
- Payouts increase wages
- t-stats in parentheses

(p-values <0.001)

Effect of Marketing Rainfall Insurance to **Cultivators** on the Equilibrium Wage Rate

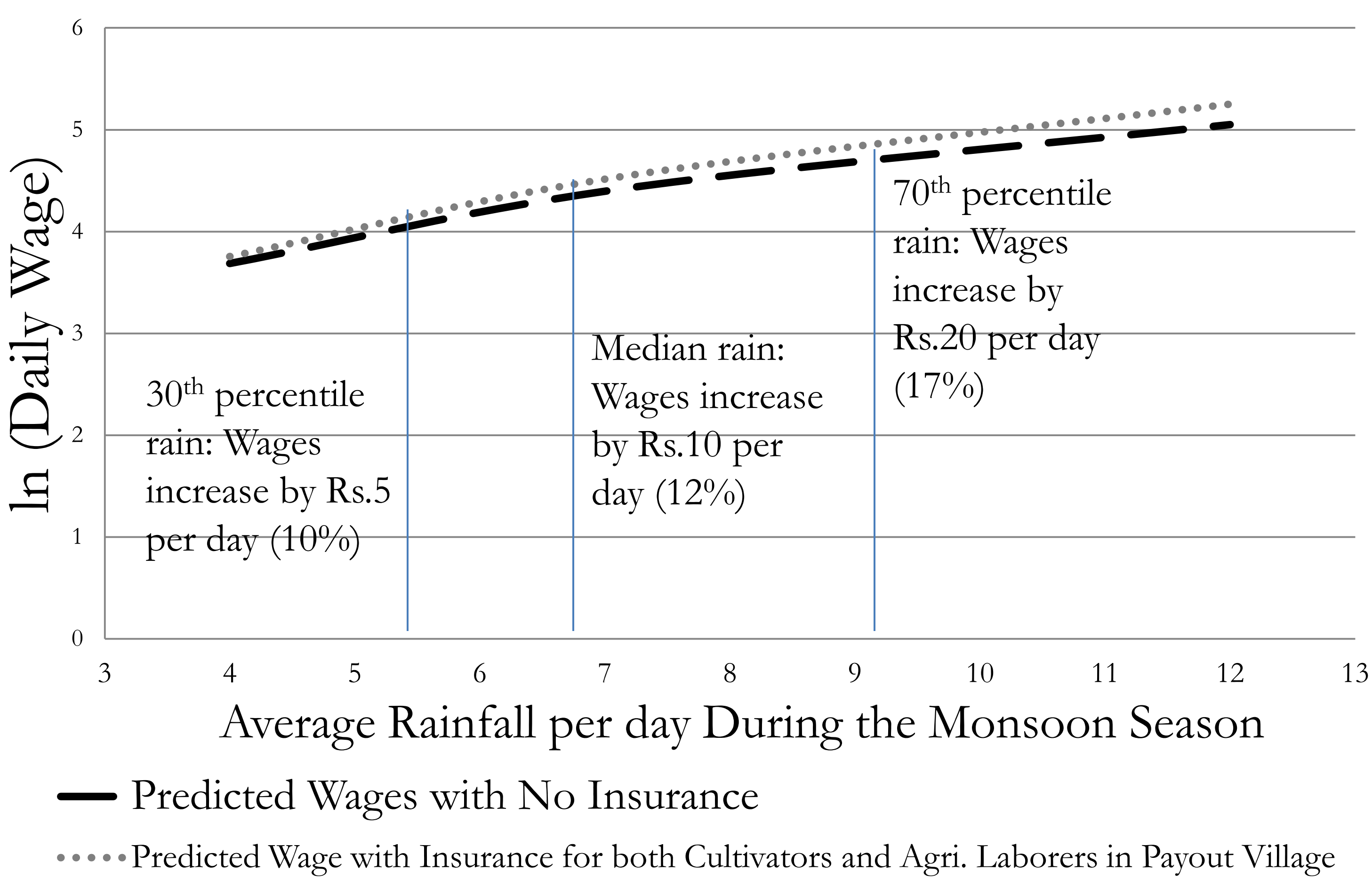


The wage rate is predicted based on the wage equation estimated in the first column of Table 4. Assumes an "average" village in terms of banks, roads, bus stops and fractions of cultivators and agricultural laborers in the populations, and that laborers do not receive insurance marketing. Graph is plotted for 2 standard deviations of rainfall per day around the mean.



The wage rate is predicted based on the wage equation estimated in the first column of Table 4. Assumes an "average" village in terms of banks, roads, bus stops and fractions of cultivators and agricultural laborers in the populations, and that cultivators receive insurance marketing. Graph is plotted for 2 standard deviations of rainfall per day around the mean.

Effect of Marketing Rainfall Insurance to **both Laborers and Cultivators** on the Equilibrium Wage Rate



The wage rate is predicted based on the wage equation estimated in the first column of Table 4. Assumes an "average" village in terms of banks, roads, bus stops and fractions of cultivators and agricultural laborers in the populations. Graph is plotted for 2 standard deviations of rainfall per day around the mean. The "insurance" line considers a case where the sample-maximum fractions of cultivators and agricultural laborers are offered insurance.

Concluding Comments: Policy

- Landless laborer households benefit from insurance and recognize the benefits.
- Current practice of designing insurance on the basis of acreage and marketing only to cultivators likely hurts the welfare of the landless.
  - Simulations also show that the problem can be addressed by expanding insurance coverage to the landless
  - Insuring some landless has spillover benefits to other landless via general equilibrium price effects

Concluding Comments: Methodology

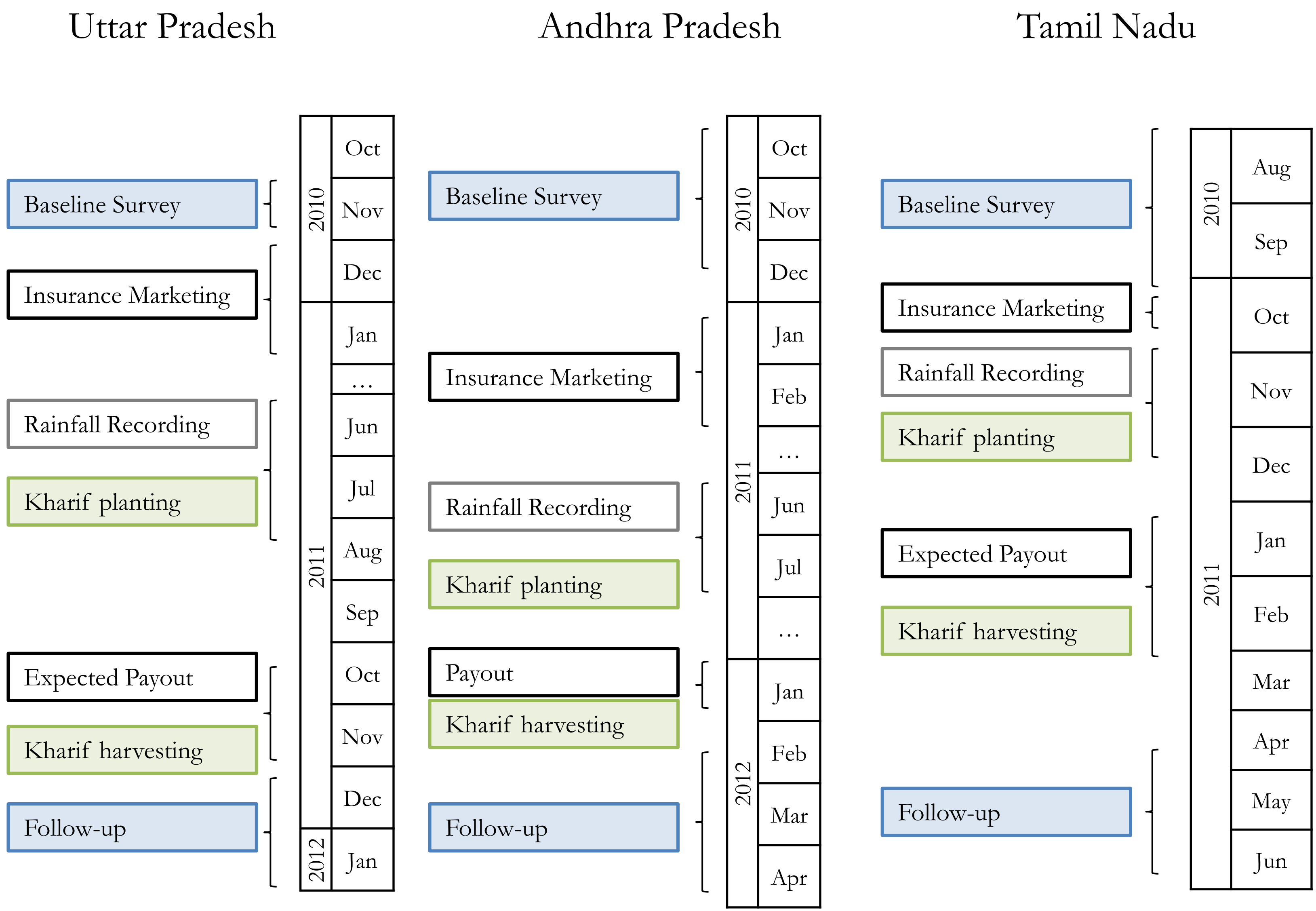
- General equilibrium analysis allows us to enumerate a more complete range of costs and benefits of insurance marketing, relative to what simpler program evaluation permits
  - Overall effect masks signficant opposing effects of labor demand and supply on volatility
  - Design challenge for RCTs: random variation at the individual level and at the market level
  - Providing sound policy advice requires us to estimate effects when programs are scaled up by government, which may induce general equilibrium changes

Table 3: Correlations between Sampling Eligibility Variables and Village and Caste Characteristics

Agricultural Labors Return	Fraction of Agri. Laborers eligible to receive insurance marketing	Fraction of agricultural labor households that received insurance marketing	Fraction of agricultural labor households that received insurance marketing	
			Conditional on: Fraction of laborers eligible to receive insurance marketing, state FEs	Conditional on: Fraction of laborers eligible to receive insurance marketing, state FEs and population share of laborers
Total # of households in village	0.125	-0.103	-0.138	-0.134
	(0.432)	(0.514)	(0.383)	(0.398)
Total # of castes in a village	0.058	-0.385	-0.207	-0.208
	(0.716)	(0.012)	(0.188)	(0.187)
Proportion of village accounted for by largest caste	-0.145	0.056	0.047	0.056
	(0.361)	(0.724)	(0.769)	(0.724)
Measure of concentration of castes 1-sum(proportion^2)	0.152	-0.033	-0.021	-0.029
	(0.336)	(0.837)	(0.896)	(0.856)

Cultivators	Fraction of Cultivators eligible to receive insurance marketing	Fraction of cultivator households that received insurance marketing	Fraction of cultivator households that received insurance marketing	
			Conditional on: Fraction of cultivators eligible to receive insurance marketing, state FEs	Conditional on: Fraction of cultivators eligible to receive insurance marketing, state FEs and population share of cultivators
Total # of households in village	0.163	-0.079	-0.153	-0.132
	(0.304)	(0.618)	(0.334)	(0.406)
Total # of castes in a village	-0.29	-0.352	-0.096	-0.077
	(0.062)	(0.022)	(0.545)	(0.630)
Proportion of village accounted for by largest caste	0.256	0.047	-0.138	-0.152
	(0.102)	(0.767)	(0.385)	(0.335)
Measure of concentration of castes 1-sum(proportion^2)	-0.291	-0.073	0.123	0.137
	(0.061)	(0.644)	(0.436)	(0.385)

P-values in parentheses.



Uttar Pradesh
Baseline Survey
Insurance Marketing
Rainfall Recording
Kharif planting
Expected Payout
Kharif harvesting
Follow-up
2010
Oct
Nov
Dec
2011
Jan
...
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2012
Jan
Andhra Pradesh
Baseline Survey
Insurance Marketing
Rainfall Recording
Kharif planting
Payout
Kharif harvesting
Follow-up
2010
Oct
Nov
Dec
2011
Jan
Feb
...
Jun
Jul
...
2012
Jan
Feb
Mar
Apr
Tamil Nadu
Baseline Survey
Insurance Marketing
Rainfall Recording
Kharif planting
Expected Payout
Kharif harvesting
Follow-up
2010
Aug
Sep
2011
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

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Demand for Rainfall Insurance

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Table 6
Conditional (State) Logit Estimates, Whole Sample:
Take-up of Insurance Product Before the *Kharif* Season in Landless Agricultural Labor Households

Actuarial price	-.00965	-.0129
	(3.39)	(4.23)
Subsidy	1.62	1.20
	(3.64)	(2.62)
Distance to rainfall station	-.0641	-.0595
	(1.078)	(1.03)
Caste indemnity coefficient	.0663	.444
	(0.14)	(0.88)
Caste indemnity coefficient x distance	.349	.234
	(1.78)	(1.27)
Fraction of cultivators in village offered insurance	-	6.32
		(4.43)
Fraction of ag laborer households offered insurance	-	-1.19
		(1.14)
N	1,789	1,789

Bootstrapped *t*-ratios in parentheses clustered at the sub-caste level.