

Voter and Politician Responses to a
Large-Scale Sanitation Intervention in
Bangladesh

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Evidence on “Voter Irrationality”

- Voters in India respond to exogenous shocks (like rainfall) in their voting behavior. (Cole et al, *JDE* 2012)
- Also true for voters and shareholders in the United States:
 - U.S. gubernatorial elections
 - CEO pay in the US responds strongly to luck (i.e. economic shocks beyond the CEO’s control) (Bertrand and Mullainathan *QJE* 2001)

Implication

- Potential Implication: development programs that we evaluate (or promote or run) may have unanticipated political economy effects that change the net benefits of the program
- Literature shows that development programs change voter attitudes, but it has not studied politician responses
- We study both politician and voter responses to a large-scale RCT on sanitation
 - Program covers an entire sub-district and is large enough to potentially affect politician behavior
 - 18,000 households report on their interactions with local leaders.

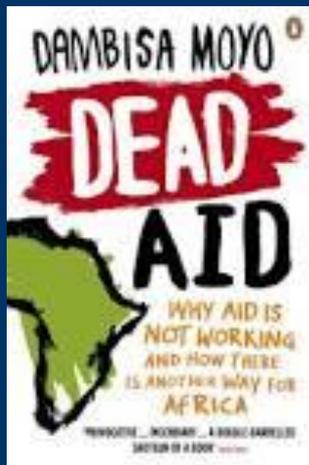
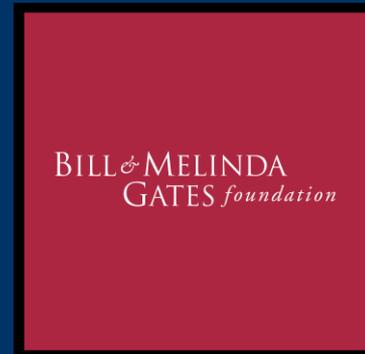
Endogenous Politician Response

- Leaders may endogenously respond to random events, and voters rationally respond to the information revealed by the leader's action:
 - Politicians reveal their type after shock occurs (e.g. Katrina vs Sandy)
 - CEOs solicit outside offers when the market does well
 - H. M. Ershad prayed for rain
- Reduced form regressions of voter behavior on random events may get mis-interpreted:
 - Non-zero coefficients not necessarily evidence of less-than-full rationality.

Links to Broader Questions



“I have identified the specific investments that are needed [to end poverty]; found ways to plan and implement them; [and] shown that they can be affordable.”



“After \$2.3 trillion over 5 decades, why are the desperate needs of the world's poor still so tragically unmet? Isn't it finally time for an end to the impunity of foreign aid?”



Links to broader questions

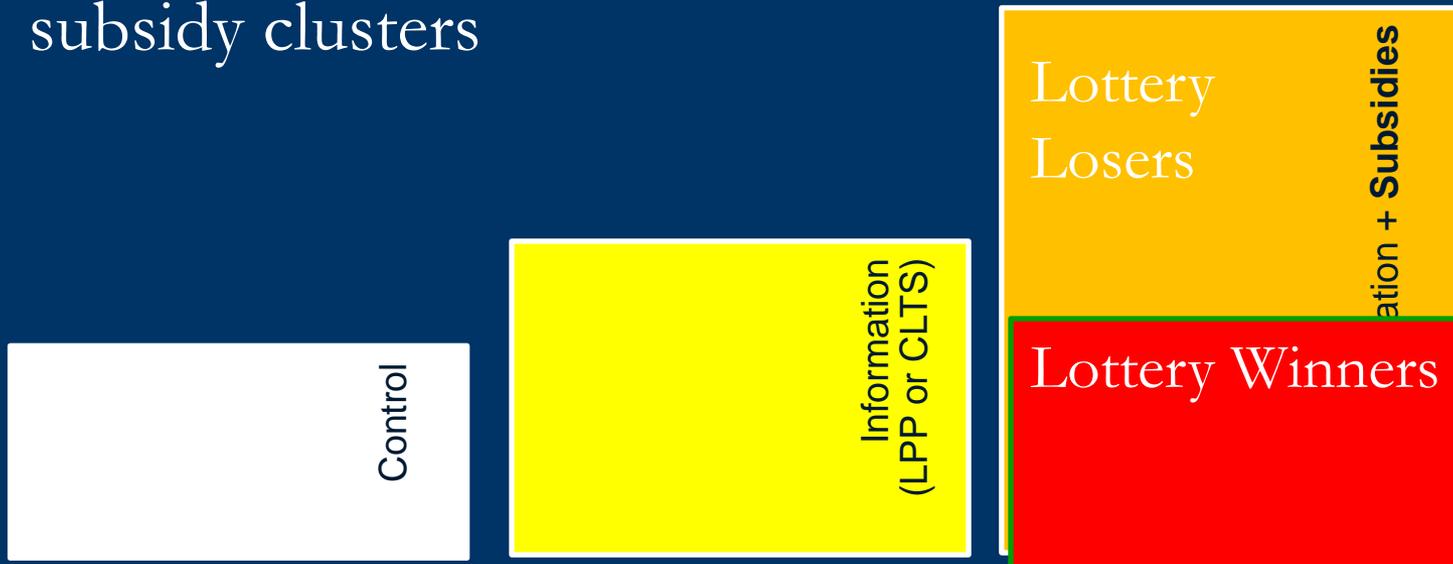
- Aid disbursement may be worse than useless if...
 - aid extends the tenure of corrupt, incapable leaders by allowing them to keep constituents happy.
 - If voters have trouble separating luck from skill, then aid money may undermine political accountability and prevent the root cause of poverty from getting diagnosed and fixed.
- Implicit assumption: voters do not know, or they can be fooled. We should explore this rigorously.

Context

- Tanore, Bangladesh. 32% of households engage in open defecation. Public health externality.
- OD rates lower overall in Bangladesh (<15%)
- However, the open defecation rate in India is 55%
 - Significantly associated with stunting

Research Design

- Cluster Level (**Non-Public**) Randomization:
 - 115 villages (372 clusters, or neighborhoods) randomly allocated to Control, Information, Subsidies
- Individual-Level (**Public**) Randomization
 - Public lotteries for toilet vouchers held only in subsidy clusters



Information Treatment (LPP)



Latrine Promotion Program, similar to
Community-Lead Total Sanitation (CLTS)

Public Subsidy Lottery



Lottery outcome and tin distribution



UP chairman present, gave a speech

Basic Program Effects

- The sanitation program works –
 - Leads to greater investments in improved sanitation by households
 - Households receiving the program report greater satisfaction with their sanitation situation

Satisfaction with UP Chairman's Performance in Providing Sanitation



- Informing villagers about an unmet need increases accountability
- We can replicate the reduced form regression

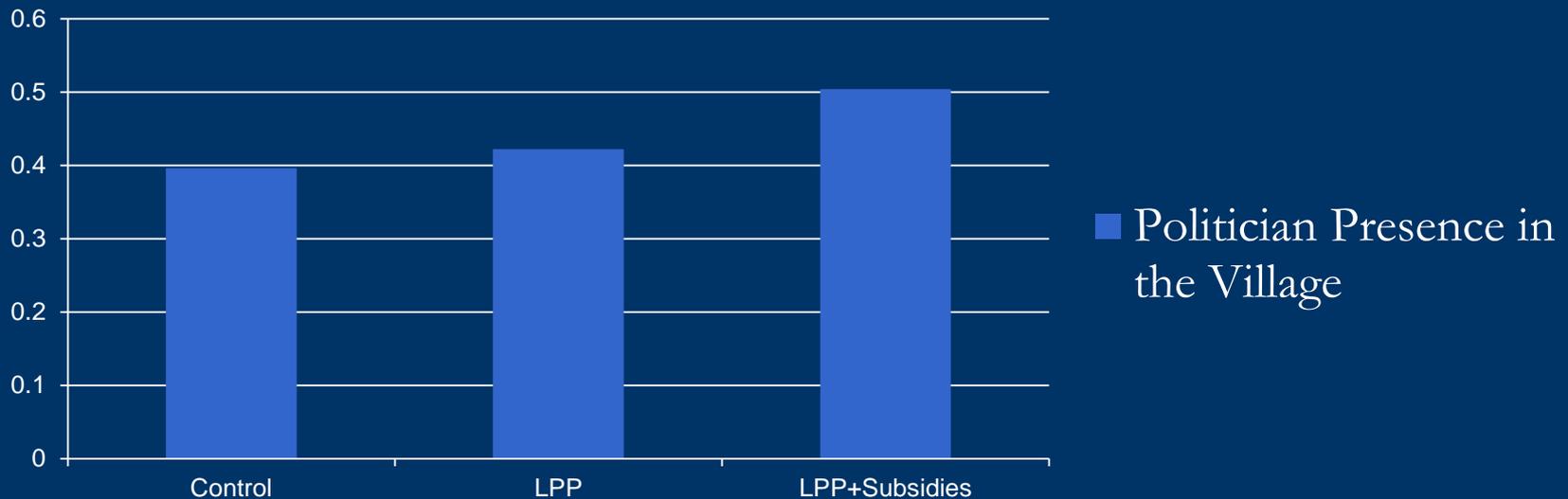
Theory of Politician Behavior

- What I just showed is not *necessarily* evidence of voter irrationality.
- In a model with the very mild set of assumptions (e.g. no complementarity between exogenous program shock and politician action), we show that:
 - When there is uncertainty about the contribution of politician skill in bringing the program, a skilled politician may *separate* from unskilled by putting in more effort in response to the program

Testable Hypotheses from Model: 1

- When voters are uncertain about the politician's true contribution to a (random) event that increases their welfare, leaders may react to take credit for the event
- Rational voters' perceptions of their leaders may change as a result.
- Voter perceptions should move in the same direction as the leader action.
- Ignoring the leader's action, we should be able to replicate the reduced-form result found in the literature on voter irrationality: that voters express greater satisfaction with a positive random shock.

Have you Seen or Interacted with the UP Chairman in the last 3 months?

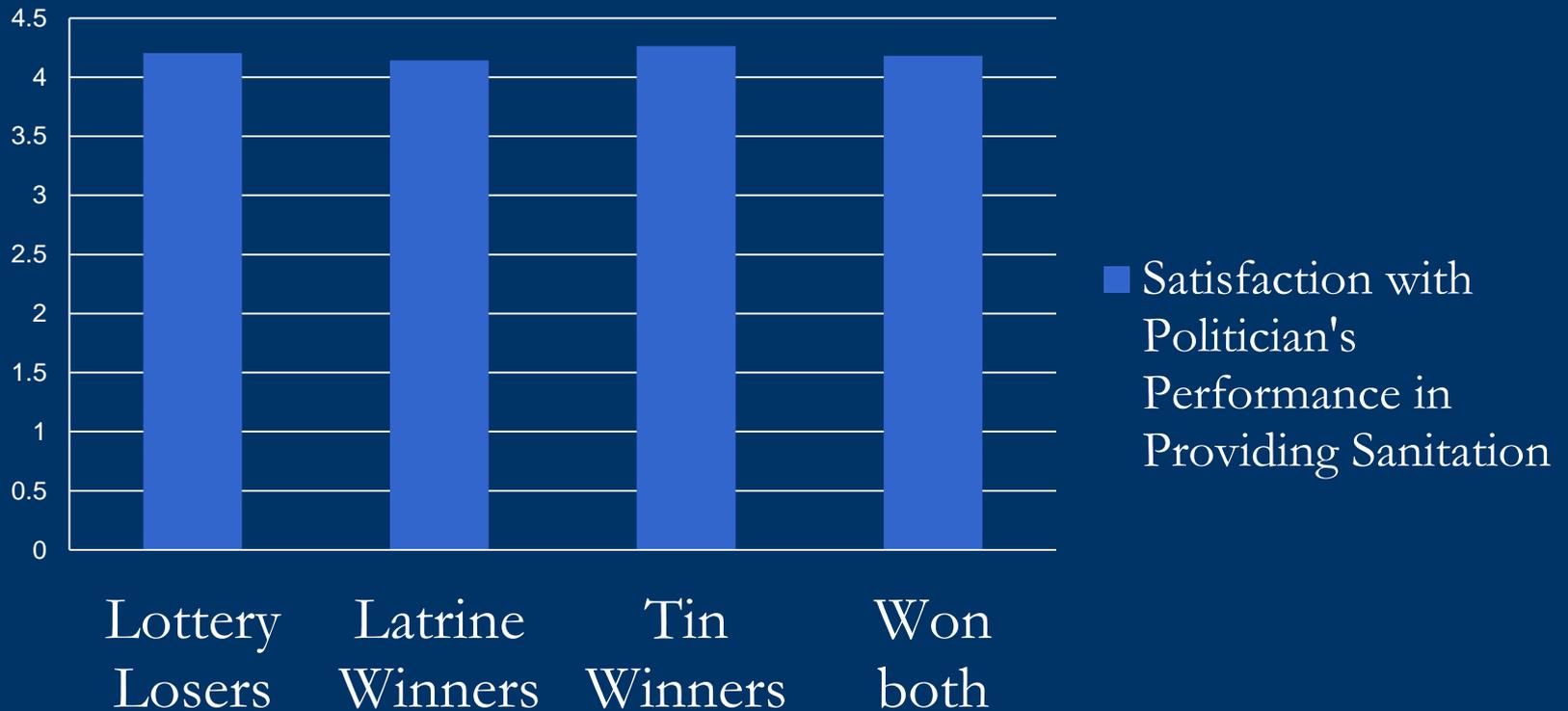


- The UP Chairman (and Ward members) spend more time in subsidy villages
- Those attending Tin distribution ceremonies are most likely to have seen UP Chairman

Testable Hypotheses: 2

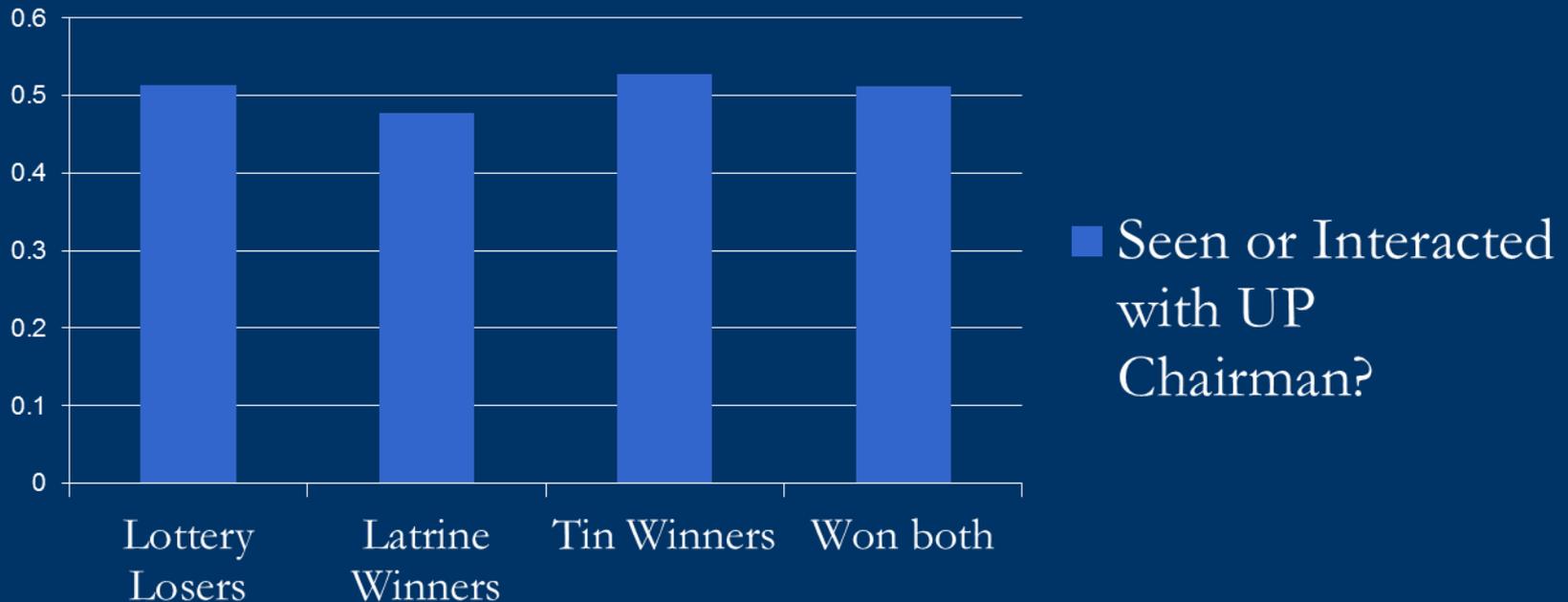
- When there is no uncertainty about the leader's contributions, rational voters should not reward (or punish) leaders for the occurrence of an event that is transparently random.
- In our empirical application, we will conduct:
 - a 'shrouded' lottery (with legitimate room for uncertainty in the voter's minds about the politician's true contribution), versus
 - a 'transparent' lottery (where voters themselves select the random draw) to provide sanitation services

Winners of Transparently Random Lotteries don't give any extra credit to politician



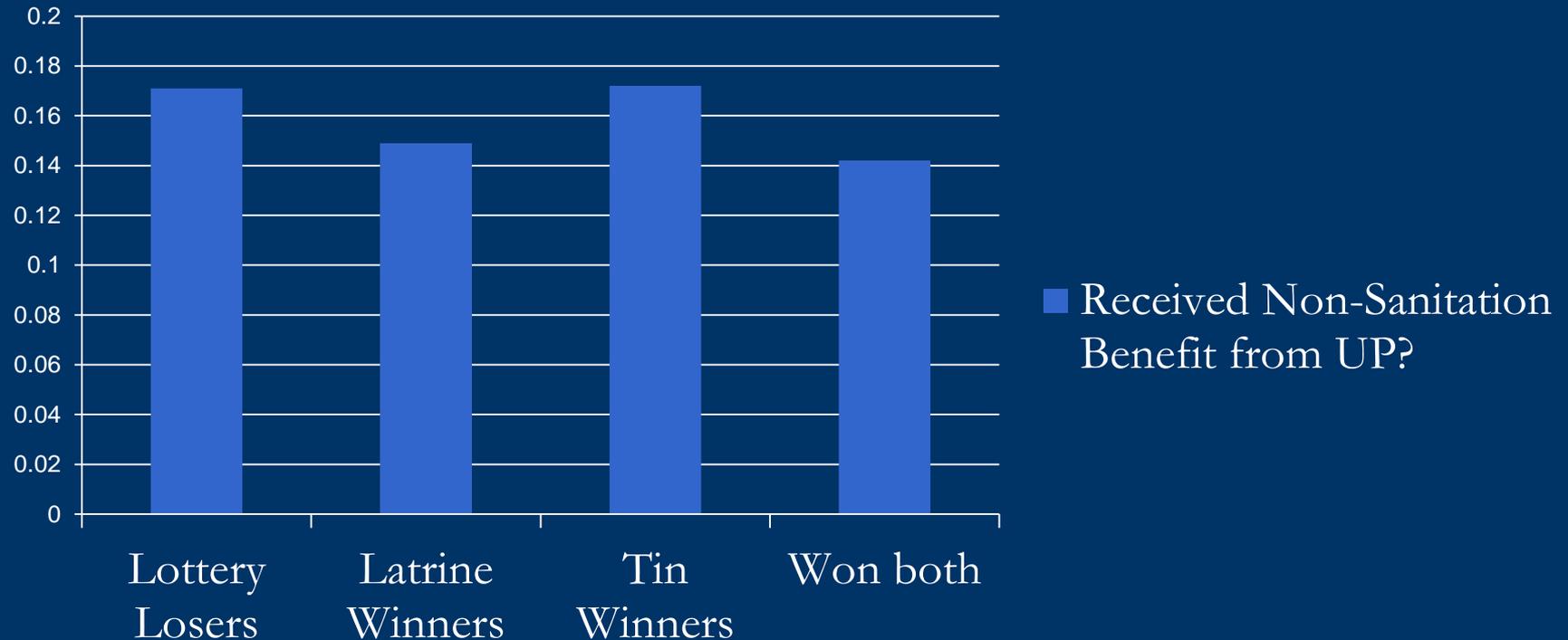
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Politicians Spend no extra time with winners over losers in subsidy villages



- Tin distribution ceremony was an efficient way for UP chairmen to interact with villagers

UP Chairmen Compensate Lottery Losers and those they interact with



- Something good comes out of the UP chairman spending more time in subsidy villages: he provides special benefits to those he sees,

Table 7: Asked UP for sanitation-related help in last 6 months (R2)

	(1) Omitted: control eligibles	(2) Omitted: lottery losers
Lost both	-0.031 (0.021)	
Latrine only	-0.045** (0.020)	-0.015 (0.012)
Tin only	-0.026 (0.021)	0.005 (0.013)
Won both	-0.060*** (0.020)	-0.029** (0.011)
Omitted category mean	0.185	0.154
Omitted category std. dev.	0.389	0.361
Number of observations	10,327	7,956

Notes: All regressions include indicators for randomization strata. Standard errors clustered at the level of the randomized treatment. For control villages, this is the village. For treatment villages, where the lottery was conducted at the household level, this is the household. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

There is no way to know whether the leader's targeting is socially efficient, but their selection of beneficiaries does reflect demand conditions. Lottery winners are less likely to request help.

Summary

- The portrait of rural Bangladeshis that emerges from our empirical work is one of rational voters.
- Both politicians and voters react to a random shock in ways predicted by a model of rational voters:
 - In an experimental environment where politicians' contributions (type) is uncertain, skilled politicians change the allocation of their time to signal their quality.
 - Voters respond to the signal in the right direction.
 - Voters do not react in this way when the experiment is designed to remove any uncertainty about the role of luck rather than politician skill.
 - An information treatment increases political accountability.

Testable Hypotheses on Heterogeneity

- In the uncertain environment, the model predicts *heterogeneity* in the reactions of different types of leaders to the arrival of a large random program.
- *Effective* politicians will spend more time with voters, and voters will update positively about that leader's performance.
- *Ineffective* leaders will spend less time, and the voters will update negatively.
- In either case, politician action and voter perceptions will move in the *same* direction.

Heterogeneity Results

- We find some support for this in the individual behaviors of the four UP chairs in 4 unions:
 - Two of the leaders increase their effort in the treatment villages, and voters reward this behavior.
 - In one union, the leaders spend less time in the subsidy villages following the RCT program implementation, and accordingly, the voters ‘punish’ these politicians.
 - 4th UP chairman shows up more in LPP-only villages, and engages in other compensatory actions

Using Social Incentives to Collect Taxes: A Field Experiment with Firms in Bangladesh

Raj Chetty, Harvard University

Ghulam Hossain, Bangladesh National Board of Revenue

Mushfiq Mobarak, Yale University

Monica Singhal, Harvard University

Aminur Rahman, IFC

Nasiruddin Ahmed, Bangladesh National Board of Revenue

Use some
psychology
and
economics
to excite
people
about the
VAT
recognition
program

VAT FILER REWARD PROGRAM* Sample Taxpayer Reward Cards

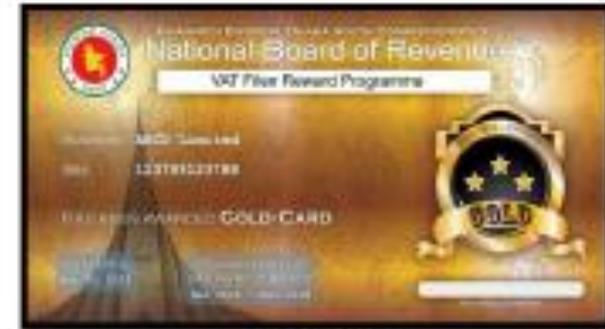
Benefits of a Taxpayer Reward Card:



You can carry the card in your wallet to your meetings with government officers and bank officers to clearly demonstrate that you are a registered business or a regular VAT payer.



You can display the card in your store using the display holder provided so that your customers recognize that their purchases are contributing to the tax base of the economy, and that you are a responsible businessman carrying out your civic duties.



GOLD CARD

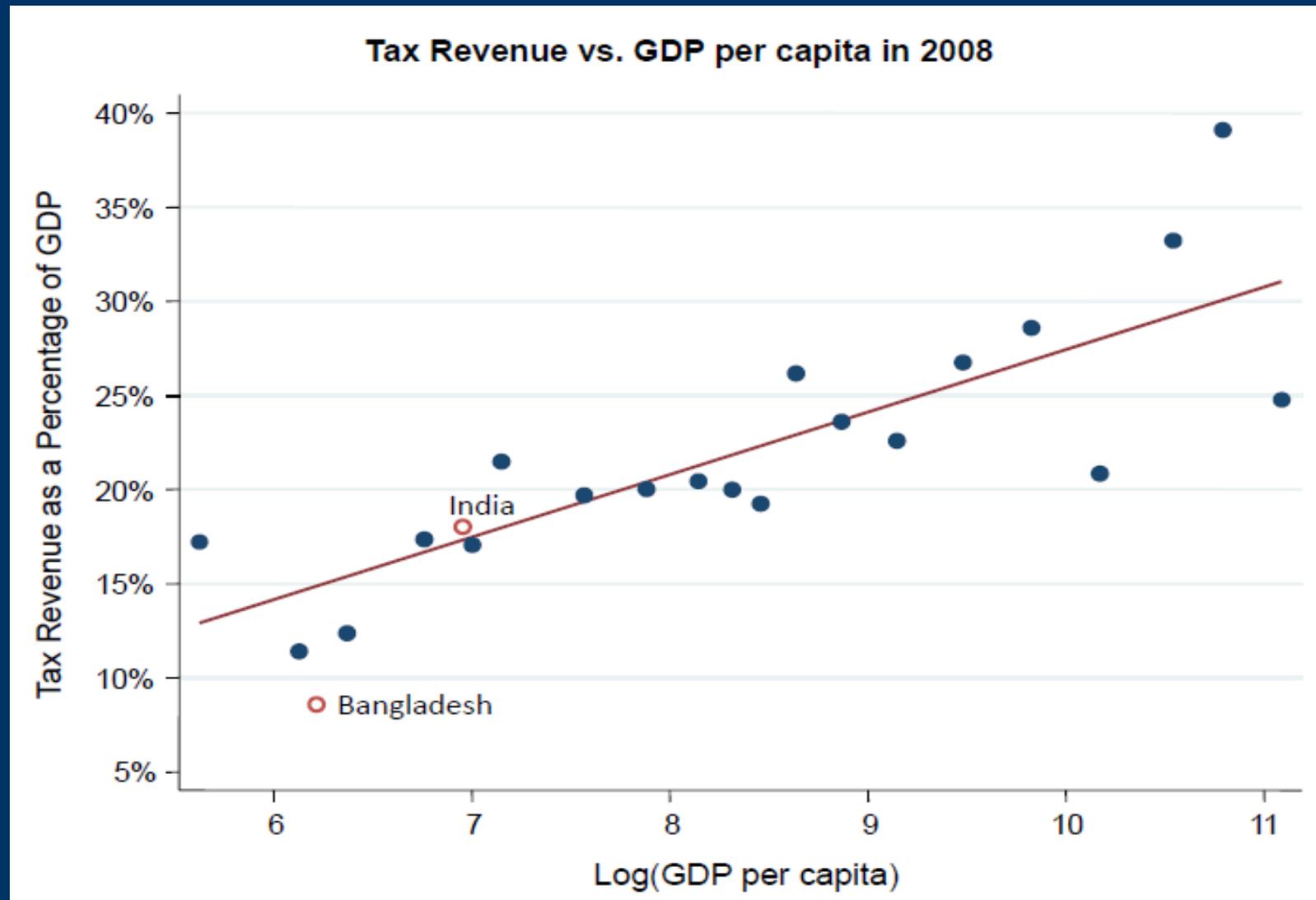


SILVER CARD



BRONZE CARD

Low Revenues in Bangladesh



Why?

- Low Capacity to enforce
 - The entire system is informal
 - Informal payments common
 - Records are not organized



The Idea

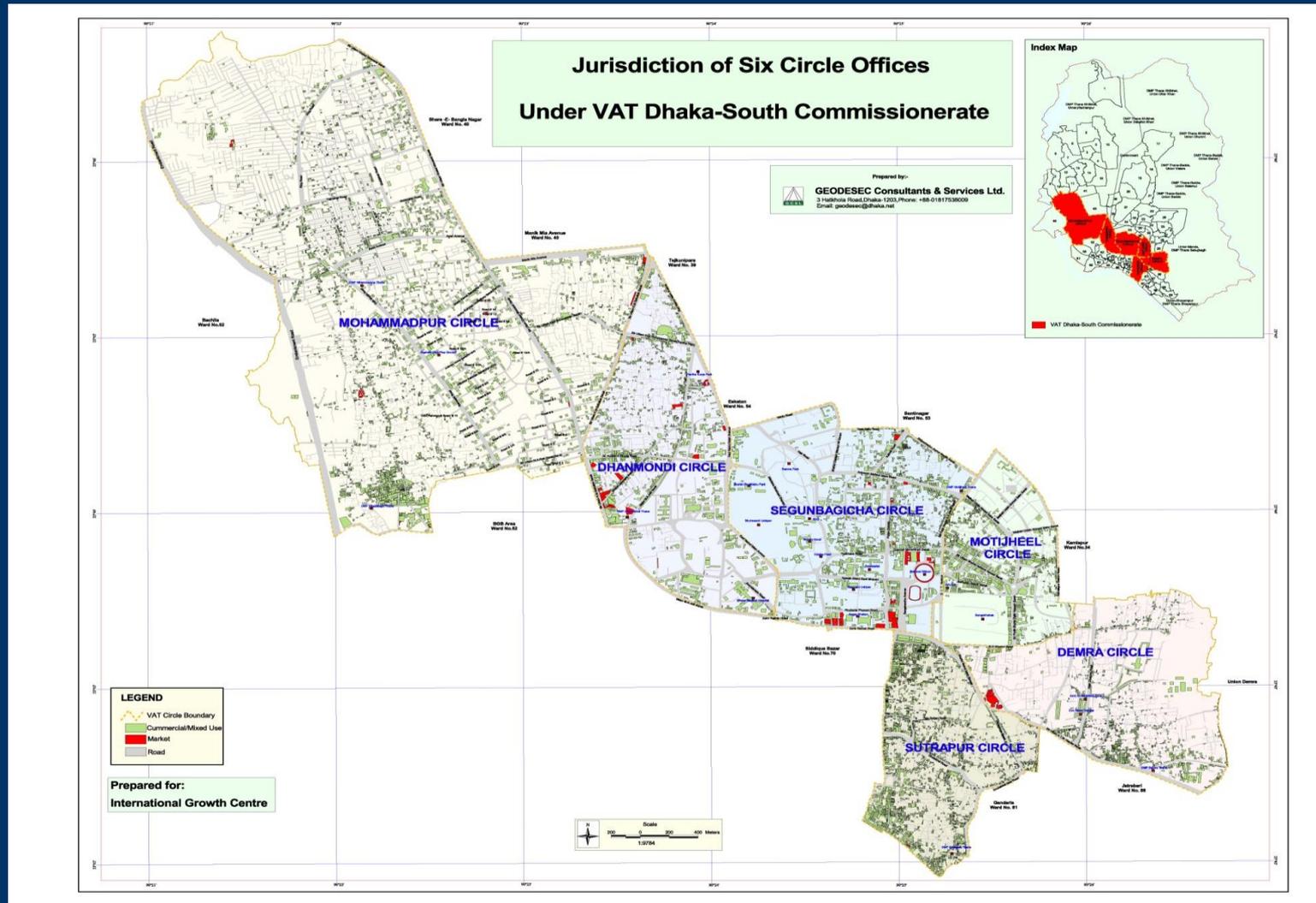
- Traditional punishment-based methods (fines, audits) to improve compliance not feasible to implement
- Can we leverage interest in social recognition to stimulate tax payments?
 - Think of things that are cheap for us to provide, but which firms may value
 - Publicize compliance information among peers
 - Reward cards that help firms establish credibility
 - Encourage peer monitoring and peer pressure (group rewards)

2 x 2 x 2 Experimental Design

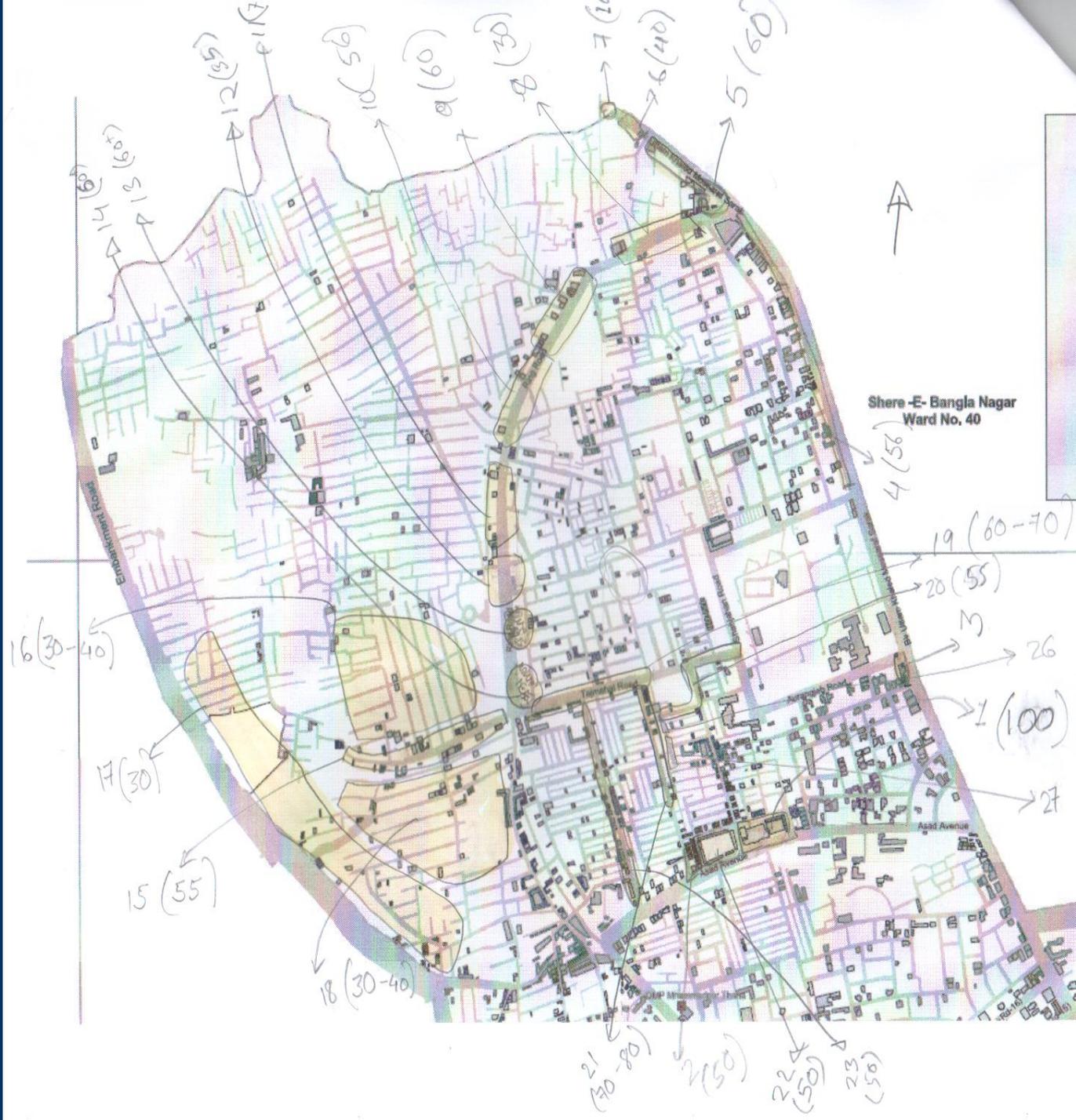
	No Recognition	Peer Recognition
No Reward	Control: Letter with information on firm's own records	Publicizing information on registration and tax payments of every firm in cluster (neighborhood)
Group Reward	Reward cards if the firm <i>and the</i> cluster behaves well, in terms of registration and payment	Publicize information + Reward Cards

- All groups receive baseline letter with information about their own registration and payment status (with an opportunity to correct info)
- Letters vary in describing subsequent treatments
- After 6 weeks, firms receive letters and rewards every 6 months
- All treatments crossed with information on average compliance

Task 1: Map Area under NBR Dhaka South, and Conduct a Census of all Firms



Canvass Area
by car,
rickshaw, foot,
identify all
firms
(regardless of
registration
status), geo-
code them,
and define
clusters.



Task 3: Digitize all NBR Records for these areas

Data Browser

bin[135] = 8

	business_name	bin	shopnum	market	plot	road	stamp_month	stamp_year	total_paym-t
135	salon	8	88		jahir...	new elephant road	September	2010	10000
136	g style	8	137-138	multiplan center	69-71	new elephant road	October	2010	6000
137	g style plus	8	137-138	multiplan center	69-71	new elephant road	October	2010	6000
138	g style plus	8	137-138	multiplan center	69-71	new elephant road	October	2010	4200
139	g style	8	137-138	multiplan center	69-71	new elephant road	October	2010	4200
140	artistic beauty shop	8		g m plaza	93	new elephant road	October	2010	6000
141	artistic beauty shop	8		g m plaza	93	new elephant road	October	2010	6000
142	lamborn	8	138/139	multiplan center	69-71	new elephant road	June	2010	4200
143	reza super market	9121084914	138-139	alpona plaza	51	new elephant road	July	2010	4200
144	is care	8	88	multiplan center	69-71	new elephant road	June	2010	4200
145	artistic care	8	88	multiplan center	69-71	new elephant road	June	2010	4200
146	Real city	8	88-89	multiplan center	69-71	new elephant road	June	2010	4200
147	reza	8	87/3	sunrise bhaban		new elephant road	July	2010	4200
148	g style	8	87/3	sunrise bhaban		new elephant road	July	2010	4200
149	arjuna collection	9121065061	139	priyangan shopping center	47	mirpur road	October	2009	4200
150	artistic fashion	9121064936	139	priyangan shopping center	47	mirpur road	September	2010	4200
151	artistic fashion	9121064936	139	priyangan shopping center	47	mirpur road	October	2009	4200
152	artistic fashion	8	24	globe shopping center		mirpur road	September	2010	4200
153	artistic fashion	8	7	globe shopping center	24	mirpur road	September	2010	4200
154	dress computers	9121170535			69-71	mirpur road	September	2010	4200
155	dress computers & technologies	9121170535			69-71	mirpur road	September	2010	4200
156	artistic clothes store	9121081285	137/38	dhanmondi hawker market	5	mirpur road	August	2010	5050
157	artistic clothes store	9121076852	137/38	dhanmondi hawkers market	5	mirpur road	August	2010	5500
158	artistic clothes store	9121081025	137	dhanmondi hawkers market	5	mirpur road	August	2010	5040
159	Real Real clothes store	9121081294	137/38	dhanmondi hawkers market	5	mirpur road	August	2010	5160
160	dress fashion	9121046886	14	minita plaza		new elephant road	August	2010	4200
161	artistic clothes fashion	9121081702	139	dhanmondi hawkers market		mirpur road	July	2010	4200
162	artistic jordan house	9121081481	1/10	dhanmondi hawkers market	5	mirpur road	August	2010	4200
163	artistic jordan house	9121081677	139	dhanmondi hawkers market	5	mirpur road	July	2010	4200
164	artistic jordan house	9121084308	1/10/13	reza super market	1/d	elephant road	August	2010	4200
165	reza rifa fabrics	9121065187	138/139	priyangan shopping center	47	mirpur road	July	2010	4200
166	artistic complex	9121065123	137/138	priyangan shopping complex		mirpur road	July	2010	4200
167	artistic fashion	9121063517	139	priyangan shopping center		mirpur road	June	2010	4200
168	artistic fashion	9121064892	139	priyangan shopping center	47	mirpur road	July	2010	4200
169	reza departmental store	9121076683			107	new elephant road	June	2010	10000
170	artistic reza traders	9121079797	137	yakub super market	3/b	elephant road	July	2010	4200
171	artistic reza traders &...	9121078048			40	kazi nazrul islam avenue	August	2011	6000
172	lamborn palace	8	79	basundhara city		panthapath	August	2011	6000
173	Best Choose	8	88	Bashundhara		Panthopath	August	2011	6000

Create Letters Populated with the Digitized Information



Issue No: DigitalVAT/NBR/June/0200/016-1343

Date: June 7, 2013

To: BABY SMILE
27 BASUNDHARA CITY
PANTHAPATH
L4

[Tx H <<- For Reference, line will be blank in letter]
From: Revenue Officer
Customs, Excise and VAT
Farmgate Circle
On behalf of the National Board of Revenue

Dear Sir/Madam,

We are writing to inform you about an exciting new initiative of the National Board of Revenue, the VAT Filer Reward Program. Paying taxes is an important civic duty and strengthens our infrastructure and our economy. This program recognizes the contributions made by firms that comply with the VAT.

Your business has been placed in a group with your neighboring firms (Annex 1).

The VAT Filer Reward Program will provide Gold, Silver, and Bronze Taxpayer Reward Cards to firms based on their tax compliance and the tax compliance of their group. These cards can be proudly displayed to customers, banks, and government officials. Sample cards are attached to this letter.

In addition, this program provides an opportunity for you to receive recognition in front of your peers for doing your civic duty by registering and paying VAT (see Highlights Box).

You will receive a card in October based on the following qualifications:

BRONZE CARD	You AND at least 25% of your group are VAT registered
SILVER CARD	Satisfy Bronze requirements + You AND at least 15% of your group pay at least 4,500 Tk. from Jan-July 15, 2013
GOLD CARD	Satisfy Silver requirements + You AND at least 5% of your group pay at least 10,000 Tk. from Jan-July 15, 2013

Your neighboring firms will receive the same letter as you, but other firms in the city may receive a different letter while the NBR is piloting this new program. We hope you will make this program a success by paying your due VAT to the NBR circle office.

Thank you.

Md. Shahidullah
(Revenue Officer, Farmgate Circle)

Highlights of VAT Filer Reward and Peer Recognition Programs

- was VAT registered as of December 31, 2012, and
- has not paid VAT in the January-March, 2013 period.

- In October, your registration status and payments up to July 15 will be shared with your neighbor firms (listed in Annex 1)

- In October, your registration status and payments up to July 15 will be used to calculate your and your neighbors' eligibility for a Taxpayer Reward Card (see letter for details).

Any new registrations or payments completed by July 15, 2013 will be counted for this program.

If your information above is not correct, please contact your circle office. Annex 4 provides guidelines for registration/payment.

...and mail
out letters to
22,000+
firms

(reached
16,500)

National Board of Revenue

Farmgate Circle

Tejgaon Division

Issue No: DigitalVAT/NBR/June/0200/016-1343

Annex 1: The following table shows the names of the firms in your group.*

17 NO SHOP	ERANEE BORKA	NEW IRANIAN BBORKA	RUPONTIKA SHAREES
AMENA SHARI BITAN	EVA SHAREES	NIGHT DREAM	S ISLAM SILK HOUSE
ARJU FASHION	FARABI	NOKSHI KATHA SALES CENTER	SALIMAR AKDAR-3
ASIAN	FARABI	NOVA JAMDANI MELA	SECRET IN
BABY SMILE	FARDIN FASHION	OVINANDAN	SHALIMAR-3
BISMILLAH BORKA HOUSE	PERSONAL CHOICE	PERSONAL FASHION BEAUTY	SHAREE EMPORIUM
BISMILLAH SHAREE	JAGORON	PARLOUR	SHAREE MELA
BURGER BITE	JANIF	PINGOLA	SHAREE SHOP
CHAITY	JESIMUN	PRANTIKA FASHION	SHAREE WORLD
CHAMELI SHAREE	JOHURA TEXTILE	PREM JOY	SHRIKA
CHARULATA SHAREES	LIKE ME	PRIYA PRIYA SHAREES	SUNFLOWER FASHION
COLOUR PAIN	MAA MONI	QUEENEE	TANGAI SHAREE KUTIR
COLOUR PAIN	MIDURI KUTIR SHILPO	RAFA	TANVEER FASHION
DHRUBO STYLE WEAR	MJD COLLECTION	RAJSHAHI SILKEN SHADOW	TAT GHAR
DHUP CHAYA	MONE REKHO SHAREES	RONJONA	TINI'S FASHION OF JOY
DOLLS HOUSE	MONJOY SHAREES	ISH KHUZEE	VERSONA
DULHAN SHAREES	MOYNA JAMDANI CORNER	RUPMOU SHAREE	WITH GARD

*This list was compiled in 2012.

Annex 2: The following table shows statistics on VAT compliance among firms in your group.

Out of the 67 businesses in your group:

- 60% - 79% of the businesses are registered for VAT
- Less than 20% of the businesses paid at least Tk. 4,500 between July-December, 2012
- Less than 20% of the businesses paid at least Tk. 10,000 between July-December, 2012

Annex 3: Peer Recognition

The following table will be filled out with actual registration and payment information for all firms in your group and sent to you and all firms in your group in October.

Business Name	VAT Status: from January 2013 – July 15 2013		
	Registered	Paid between 4500 and 10,000 Tk	Paid 10,000 Tk or more
BABY SMILE			
17 NO SHOP			
ARJU FASHION			

If your registration and payment status remains as it is, your information will be displayed to your neighbors as follows:

BABY SMILE	✓		
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If you are registered by July 15 and pay more than 10,000 Tk in taxes between January and July 15, 2013, your information will be displayed to your neighbors as follows:

BABY SMILE	✓		✓
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Use some
psychology
and
economics
to excite
people
about the
VAT
recognition
program

VAT FILER REWARD PROGRAM* Sample Taxpayer Reward Cards

Benefits of a Taxpayer Reward Card:



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GOLD CARD



SILVER CARD



BRONZE CARD

Improved Cook-stoves



Experiments



	Husband Makes Choice	Wife Makes Choice
Choice of Free Chimney or Free Efficiency Stove	1	2
Choice of Tk. 250 Chimney or Tk. 50 Efficiency Stove	3	4

Policy Implications

- Can't really market to men, or to women.
- Solution: bundle an attribute that men want with the stove.



Rainfall Insurance, Labor Markets, and Informal Risk Sharing

Mushfiq Mobarak

Mark Rosenzweig

Yale University

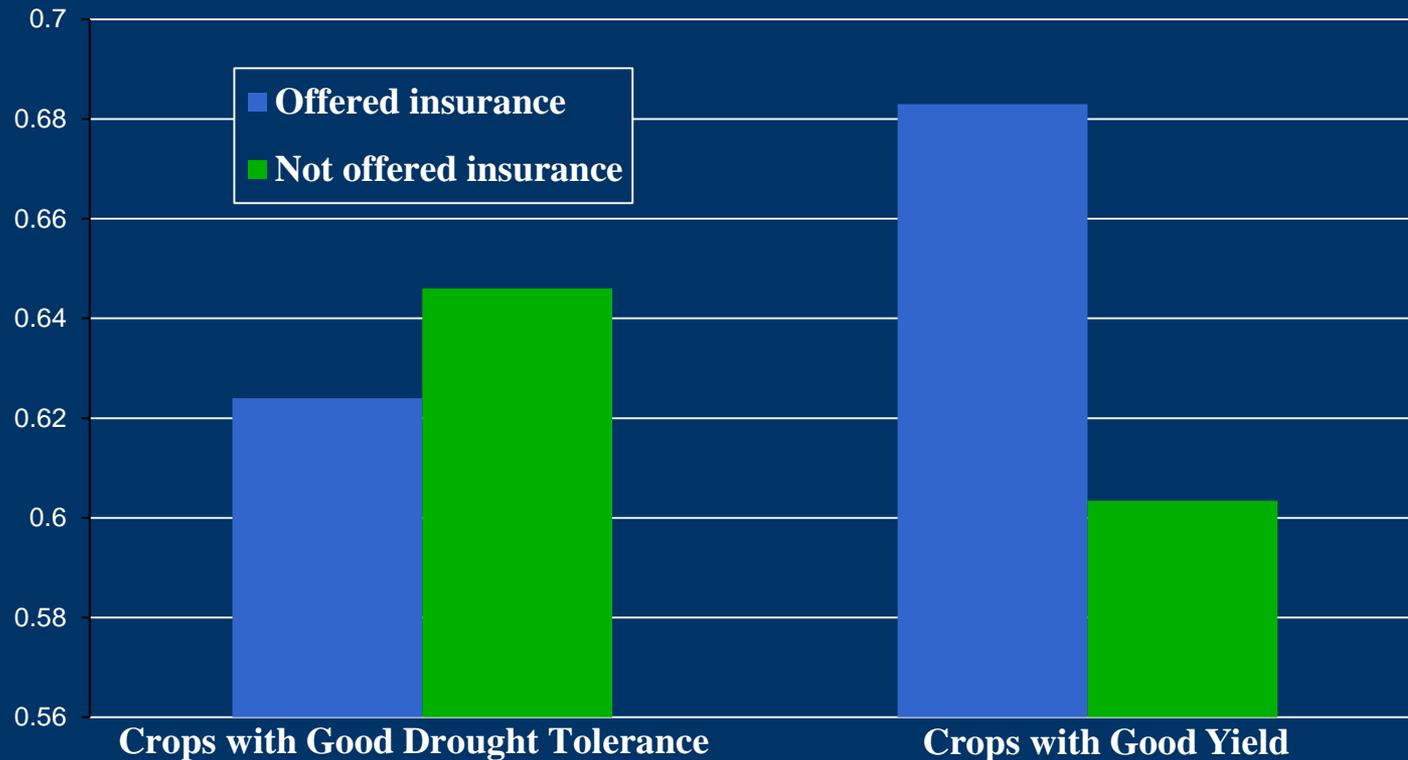
Program Design

- Marketed “index” insurance (against delays in monsoon onset) to 5000 farmers in AP, UP, TN
- Sold to both cultivators and agricultural laborers
 - Insurance traditionally only marketed to the “landed”

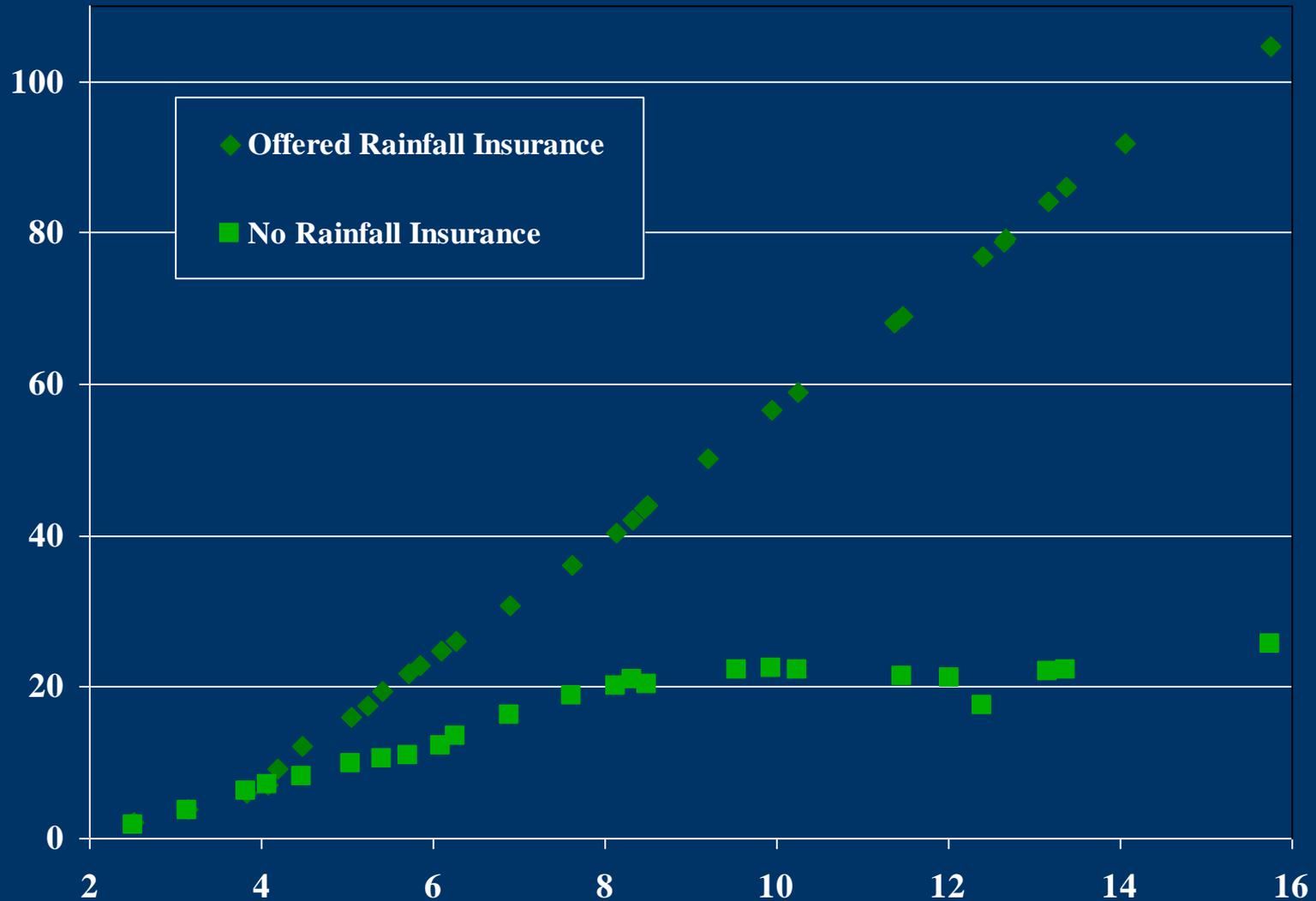
Trigger Number	Range of Days Post Onset (varied across states and villages)	Payout (made if less than 30-40mm (depending on state) is received at each trigger point)
1	15-20	Rs. 300
2	20-30	Rs. 750
3	25-40	Rs. 1,200

Results

- Landed Cultivators switch to riskier, high-return crops



Output and labor demand become more sensitive to rainfall



A clear policy mistake

- Risk *increases* for landless agricultural laborers – when insurance is sold to their landed employers and not to them.
- This is the group *least able* to handle risk
- Another key result from this project:
 - Caste-based informal risk sharing networks may be a complement to index insurance purchase, not a substitute

Wrap up

- RCTs are not only useful for evaluating the effectiveness of programs ex-post
- They can inform improvements in
 - program design
 - Program targeting
 - Cost-effectiveness
- Can test innovations in a pilot phase by studying the effects of small program variations
- Well-designed RCT coupled with careful economic theory can even inform policy