Altruism, Insurance, and Costly Solidarity Commitments

Vesall Nourani (MIT), Chris Barrett (Cornell), Eleonora Patacchini (Cornell) and Thomas Walker (World Bank)

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Motivation

- Social solidarity networks have long been observed to play a central role in village economies.
- Dominant framework: inter-household transfers driven by self-enforcing informal insurance contracts among self-interested agents. (Coate and Ravallion, 1993; Townsend, 1994...)
- Additionally, social taxation, a self-interested norm, increases incentive to hide income. (Jakiela and Ozier, 2016; Squires, 2017)
- **Key Common Assumption:** Inter-household transfers increase with public income shocks but are invariant wrt private ones. That assumption is in principle testable.

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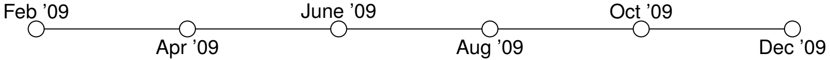
In This Paper

- Study patterns of inter-hh transfers in 4 Ghana villages
  - Experiment with public and private i.i.d. cash prizes
- Evidence goes against the dominant framework:
  1. N of transfers: private, public $>$ 0
  2. Average value of transfers: private $>$ public $>$ 0
  3. Transfers from private income directed towards needy.
  4. Giving shuts down when network gets too large.
- Implications: Altruistic motives matter. Need new model:
  - (Impurely) altruistic preferences w/ costly link maintenance explains results.
  - Social pressures from observable income shocks can crowd out progressive altruistic motives.
  - Public income only shared if hh network is small.
  - Policies aiming at transparent transfers may unintentionally erode local moral codes.

Empirical Setting Data

- Head and Spouse of 320 HHs surveyed bimonthly in 4 villages:



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- Experimental Variation: idiosyncratic lottery winnings
  - Publicly revealed winners (20 per round)
  - Privately revealed winners (20 per round)
- Gift-giving behavior and household consumption

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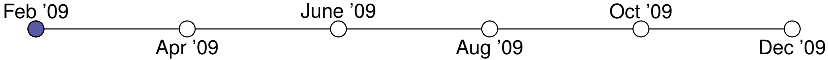

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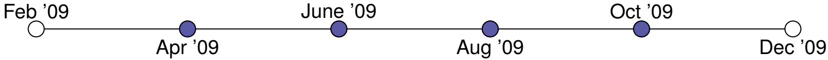

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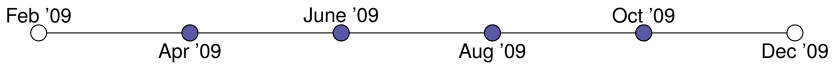
Lotteries

Private and Public



10 Cash Prizes Per Village
- 5 Private (GH¢10, 20, 35, 50, 70)
- 5 Public (GH¢10, 20, 35, 50, 70)

	N	Mean	Sd
Own Lottery Winnings (GH¢):			
Won in Private	1,251	0.06	0.24
Won in Public	1,251	0.06	0.25
Value of Private Cash Prize	1,251	0.24	1.05
Value of Public Cash Prize	1,251	0.23	1.05
Solidarity Network Average Lottery Winnings (GH¢):			
Average Value of Private Network Prize	1,251	0.23	0.52
Average Value of Public Network Prize	1,251	0.21	0.39

Gift Giving and Consumption

	N	Mean	Sd	5 p-tile	95 p-tile
Fixed Over Time:					
HH size	315	6.66	2.64	3	11
N of HH in Solidarity Network	315	11.40	10.08	0	32
Cash Gifts Given (last 2 months, GH¢):					
Number	1,561	0.74	1.22	0	3
Value (Total)	1,561	9.77	62.73	0	35
Value (Conditional on Giving)	615	24.79	98.11	1	80
Food Consumption (last month, GH¢):					
PC Food Consumption	1,568	21.51	12.47	7.13	44.28
PC Food (Conditional on Giving)	615	21.74	13.43	7.85	45.63

Gift-giving Behavior

estimation strategy

$$y_{itk} = \alpha + \beta_v \text{Private}_{it} + \beta_b \text{Public}_{it} + \text{hh}_i + \text{r}_{tk} + \epsilon_{it}$$

- Household i, Round t, Village k
- $Private_{it} = \begin{cases} 1 \text{ if won lottery} \\ 0 \text{ otherwise.} \end{cases}$
- $\mathbf{y_{itk}}$: Value (Total), Value (Average), N Gifts Given
  - Log transformation
  - Bounded below by zero $\Rightarrow$ Tobit Estimator

Private Income Increases Gift-Giving

Experimental Results

Gift-giving:		(1) Value (Total)	(2) Value (Average)	(3) Number
Won in Private	β_v	0.243***	0.195***	0.222***
		(0.084)	(0.066)	(0.074)
Won in Public	β_b	0.108	0.0289	0.158**
		(0.081)	(0.065)	(0.071)
Household FE		Yes	Yes	Yes
Round × Village FE		Yes	Yes	Yes
Test: $\beta_v = \beta_b$		0.23	0.06	0.51
Left-censored N		946	946	946
N		1,561	1,561	1,561

$^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Dependent Variable equals log total value of (cash) transfer given per adult in hh in column 1; average gift value per adult in column 2; number of gifts per adult in column 3. Won in Private/Public $\in \{0, 1\}$ Tobit estimator used in all columns.

Intensity

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Intensity

Key Takeaways

1. Strongly reject 'no giving from private' null
2. Cannot reject 'giving increases in public winnings' null
3. Each result inconsistent with informal insurance or social taxation models that rely solely on self-interested behavior.

Need a more encompassing theory!

Model

modify foster and rosenzweig (REStat 2001)

- Standard 2 agent stochastic dynamic game - i.e., insurance contract with limited commitment.
- gift requests increasing in network size and observability of income - i.e.,social taxation exists
- Maintaining solidarity link requires costly effort.
- Impurely altruistic preferences for others' utility
  - Implies giving even with private income.
  - Decreasing function in gift requests
- Observable income attracts more gift requests.
- **NEW: Shut-down hypothesis:** observable income leads households with large gift networks to default.
- **NEW: Progressive altruistic transfers:** Private income directed to least well-off hhs.

Model Predictions

U Figure τ Figure

gift-giving behavior with the shut-down effect

$$y_{itk} = \alpha + \beta_v \text{Private}_{it} + \beta_b \text{Public}_{it} + \text{hh}_i + \text{r}_{tk} + \epsilon_{it}$$

$$+ \beta_{vg} \text{Private}_{it} \times \text{Network}_i + \beta_{bg} \text{Public}_{it} \times \text{Network}_i + \text{hh}_i + \text{r}_{tk} + \epsilon_{it}$$

y_{it}: N Gifts Given, Value (Total), Value (Average)

Network: Reciprocal Gift-Network Size

Predictions			
Shutdown	Value (Average)	N Gifts Given	Total Value
	$\beta_b < \beta_v$ ✓	$\beta_b ? \beta_v$ =	$\beta_b ? \beta_v$ = (<)
$\beta_b > 0$, $\beta_{bg} < 0$		$\beta_b > \beta_v$	$\beta_b \geq \beta_v$

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Gift-giving with Shut-down Hypothesis

Interacting network size

Gift-giving:	Coef. Hyp.	(1) Value (Total)	(2) Value (Average)	(3) Number
Won in Private	$\beta_v > 0$	0.274**	0.235**	0.144
		(0.131)	(0.104)	(0.115)
Won in Private × Network	$\beta_{vg} \leq 0$	-0.003	-0.003	0.007
		(0.009)	(0.007)	(0.008)
Won in Public	$\beta_b > 0$	0.403***	0.205*	0.572***
		(0.132)	(0.105)	(0.115)
Won in Public × Network	$\beta_{bg} < 0$	-0.028***	-0.017**	-0.040***
		(0.010)	(0.008)	(0.009)
Household FE		Yes	Yes	Yes
Round × Village FE		Yes	Yes	Yes
$\beta_v = \beta_b$		0.47	0.83	0.01
$\beta_v + \beta_{vg} \times 5 = \beta_b + \beta_{bg} \times 5$		0.99	0.36	0.10
$\beta_v + \beta_{vg} \times 10 = \beta_b + \beta_{bg} \times 10$		0.27	0.07	0.69
$\beta_v + \beta_{vg} \times 20 = \beta_b + \beta_{bg} \times 20$		0.02	0.02	0.00
Left-censored N		946	946	946
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$^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Dependent Variable equals log total value of (cash) gifts given per adult in hh in column 1; average gift value per adult in column 2; number of gifts per adult in column 3. Won in Private/Public $\in \{0, 1\}$ Tobit estimator used in all columns.

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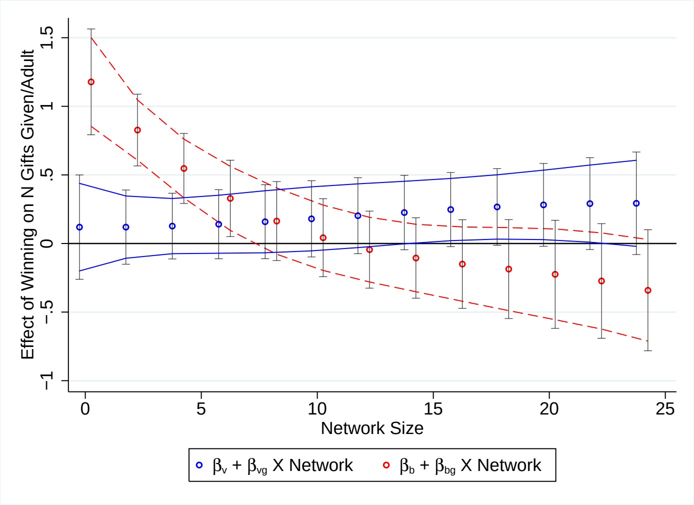
Intensity

Non-parametric shut-down hypothesis

Total Value



Note: Including 2nd and 3rd order polynomial interactions. No HH FE.

Transfers to Relatively Poor Households

dyadic analysis

Equation

		(1) Amount	(2) Number
$(Food_{it} - Food_{jt})$	γ	0.347**	1.069**
		(0.171)	(0.467)
Won in Private $\times$ $(Food_{it} - Food_{jt})$	$\beta_{v\chi}$	2.003***	2.051**
		(0.702)	(1.038)
Won in Public $\times$ $(Food_{it} - Food_{jt})$	$\beta_{b\chi}$	-0.185	-0.313
		(0.430)	(1.272)
Won in Private		Yes	Yes
Won in Public		Yes	Yes
HH FE		Yes	Yes
Round FE		Yes	Yes
Test: $\beta_{v\chi} = \beta_{b\chi}$		0.01	0.18
Left-censored N		17,349	
N		17,527	17,527

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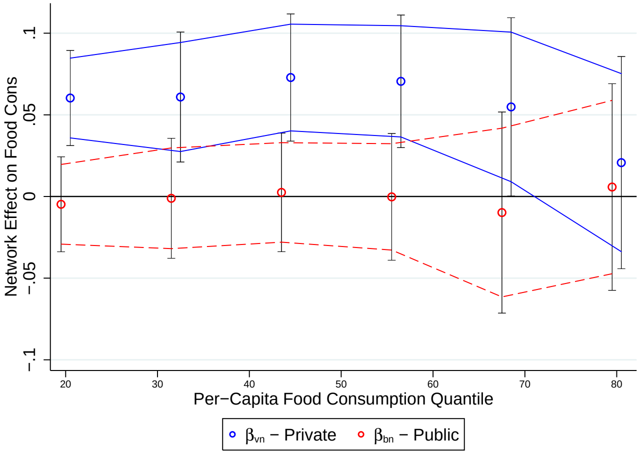
Public Income Crowds Out Altruism

quantile regression of food consumption on network winnings

Tests Equation



Conclusion

	Predictions and Results			
Variables:	All	Value (Average)	N Gifts Given	Food
No Interaction		$\beta_b < \beta_v$ ✓	$\beta_b ? \beta_v$ =	✓
Interaction	$\beta_b > 0, \quad \beta_{bg} < 0$ ✓		$\beta_b > \beta_v$ ✓	

- Results refine our understanding of motives for inter-hh transfers within networks.
  - More than self-interested informal insurance and social taxation; altruism matters.
- Voluntary redistribution towards the needy.
- Social taxation norms induce inefficient redistribution.
- Trade-off between network size and altruistic giving.
- **Policy:** Transparent cash transfers may crowd out altruistic motives that lead to efficient redistribution.

Thank you!

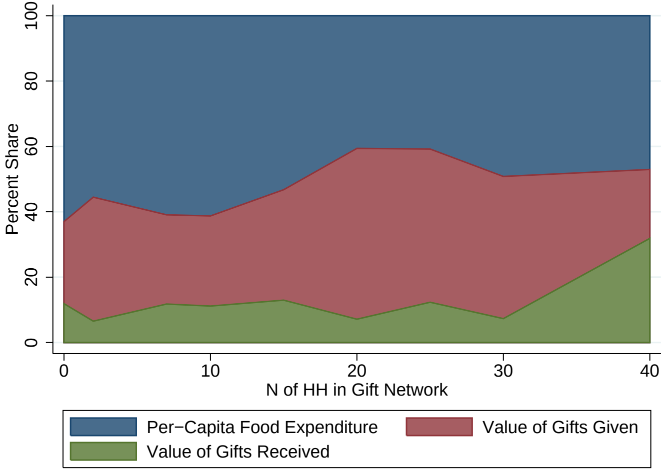
Send Comments to :

- cbb2@cornell.edu
- vnourani@mit.edu

Additional Results Back

- **Reject Full Insurance:** Using Townsend's (1994) estimation method, reject full insurance within solidarity network. Townsend Test
- **Information hypothesis:** Difference in giving to family vs. friends rejects information hypothesis. Friends & Family Table
- **Punishing Defectors:** those who shut-down do not receive gifts either. Reciprocity

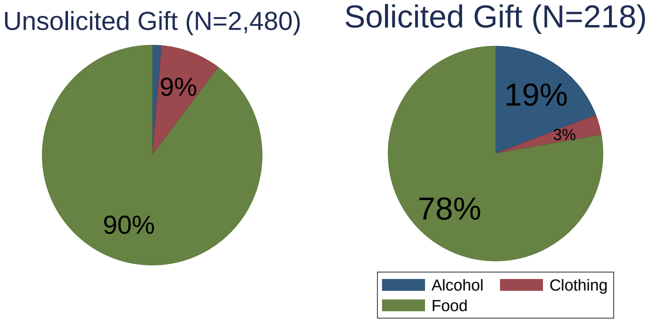
Gifts as Share of Per Capita Food Expenditure



Back

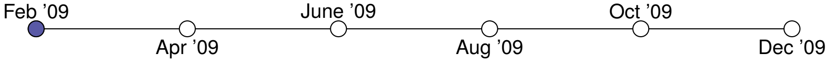
Unsolicited and Solicited Gifts in Our Data

Back

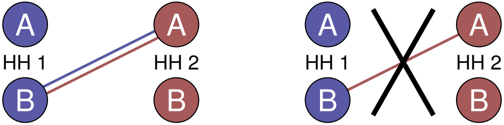


Reciprocal Gift Networks

Presentation Backup



- “Have you given gifts to XX (for all in sample)?” (receive)



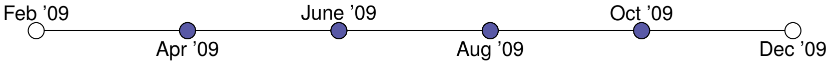
- **Reciprocal link:** both households indicate at least one reciprocal connection to someone in the other household.
    - 3,648 out of 27,303 possible links (13.4%)

Back

Lotteries

Townsend Test Presentation Backup

Private and Public



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Cash Gifts Given (last 2 months, GH¢):					
Number	1,561	0.74	1.22	0	3
Value (Total)	1,561	9.77	62.73	0	35
Value (Conditional on Giving)	615	24.79	98.11	1	80
Food Consumption (last month, GH¢):					
PC Food Consumption	1,568	21.51	12.47	7.13	44.28
PC Food (Conditional on Giving)	615	21.74	13.43	7.85	45.63

Experimental Results

Private cash prize leads to more gift-giving

Gift-giving:		(1) Value (Total)	(2) Value (Average)	(3) Number
Value in Private	β_v	0.054***	0.038**	0.058***
		(0.019)	(0.015)	(0.017)
Value in Public	β_b	0.003	-0.010	0.033*
		(0.020)	(0.016)	(0.017)
Household FE		Yes	Yes	Yes
Round × Village FE		Yes	Yes	Yes
Test: $\beta_v = \beta_b$		0.06	0.03	0.30
Left-censored N		946	946	946
N		1,561	1,561	1,561

$^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Dependent Variable equals log total value of (cash) gifts given per adult in hh in column 1; average gift value per adult in column 2; number of gifts per adult in column 3. Value in Private/Public $\in \{0, 1, 2, 3.5, 5, 7\}$ Tobit estimator used in all columns.

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Model Setup

build on foster and rosenzweig (2001)

- **Environment**
  - 2 households: 1 and 2
  - Period t state-dependent income: $y_i(s_t)$, $i \in \{1, 2\}$
    - $s_t \in S$, the set of all states
    - h_t, history of state sequences
  - HH i consumption: $c_{it}(h_t)$
- **Preferences:**
  - Concave utility in consumption: $u_i(c_{it}(h_t))$
  - $0 \leq \gamma < 1$: Altruistic preferences for other's utility
  - Maximize lifetime discounted ($\delta < 1$) utility surplus, U_i
- **Solution:**
  - Transfers from 1 to 2, $\tau(h_t)$
  - Dynamic Limited Commitment Nash Equilibrium

Model Setup

our modifications

- **Environment**
  - Gift-network size: $g_i \in \mathbb{Z}^+$
  - Three types of income for each household:
    1. No shock to income
    2. Unobservable increase in income
    3. Observable increase in income

- **Preferences**
  - $\gamma(h_t, g_i)$: altruism concave function in network size
  - $\alpha(g_i)$: cost of maintaining gift-ties
- **Assumptions:**
  1. More gift requests when income is observable
  2. Altruism decreasing in gifts-given
  3. Costly network maintenance

Formal Model Predictions

Formal Model

- Single-period utility (HH 1):

$$u_1(y_1(s_t) - (h_t)) + \gamma(h_t, g_1)u_2(y_2(s_t) + \tau(h_t))$$

$$\mathrm{U}_1^s(U_2^s) = \max_{\tau_s,(U_1^r,U_2^r)_{r=1}^S} \quad u_1(y_1(s) - \tau_s) - u_1(y_1(s))$$

$$+ \quad \gamma_1(g_1(s))u_2(y_2(s) + \tau_s) - \gamma_1(g_1(s))u_2(y_2(s))$$

$$- \quad \alpha_1(g_1) + \delta \sum \pi_{sr} U_1^r(U_2^r) \text{ subject to}$$

$$\begin{array}{rll}
\lambda: & \text{Promise keeping} & \\
\delta\pi_{sr}\mu_r: & U_1^r(U_2^r) \geq \underline{U}_1^r = 0 & \forall r \in S \\
\delta\pi_r\phi_r: & U_2^r \geq \underline{U}_2^r = 0 & \forall r \in S \\
\psi_1, \psi_2: & \mathit{Non-negativity} &
\end{array}$$

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State Space

Five States - matching the empirical context

1. *zz* - Niether household wins a cash lottery
2. *zb* - Household 1 wins a **puBlicly** revealed prize.
3. *zv* - Household 1 wins a **priVately** revealed prize.
4. *bz* - Household 2 - public
5. *vz* - Household 2 - private

When income is observable, more gifts requested

$$p_1(zb) > p_1(s') \qquad \text{for all } s' \neq \{zb\} \text{ and}$$
$$p_2(bz) > p_2(s'') \qquad \text{for all } s'' \neq \{bz\}$$

Contract Solution

- Solution: characterize contract using λ (Ligon and Worrall, 1988)

$$\frac{u_1'(y_1(s_t) - \tau(h_t)) + \gamma_1(g_1(h_t))u_2'(y_2(s_t) + \tau(h_t))}{u_2'(y_2(s_t) + \tau(h_t)) + \gamma_2(g_2(h_t))u_1'(y_1(s_t) - \tau(h_t))} = \lambda + \frac{\psi_2 - \psi_1}{u_2'(y_2(s_t) - \tau(h_t))} \quad (1)$$

$$\lambda(h_{t+1}) = \begin{cases} \underline{\lambda}_s \text{ if } \lambda(h_t) < \underline{\lambda}_s \\ \lambda(h_t) \text{ if } \underline{\lambda}_s \leq \lambda(h_t) \leq \overline{\lambda}_s \\ \overline{\lambda}_s \text{ if } \lambda(h_t) > \overline{\lambda}_s. \end{cases}$$

- Depends on nature of overlap of

$$\left[\underline{\lambda}(s), \quad \overline{\lambda}(s)\right] \text{ and } \left[\underline{\lambda}(r), \quad \overline{\lambda}(r)\right]$$

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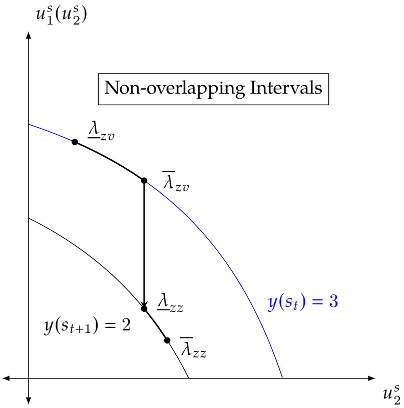
Contract Intuition

Ligon *et. al* (2002)



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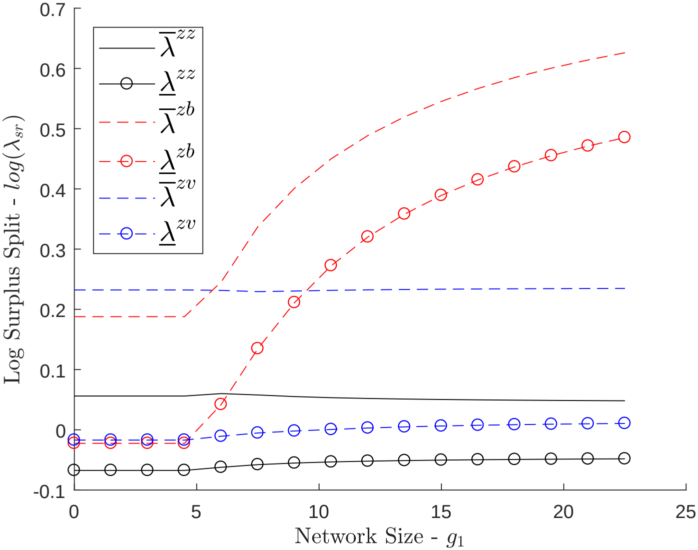
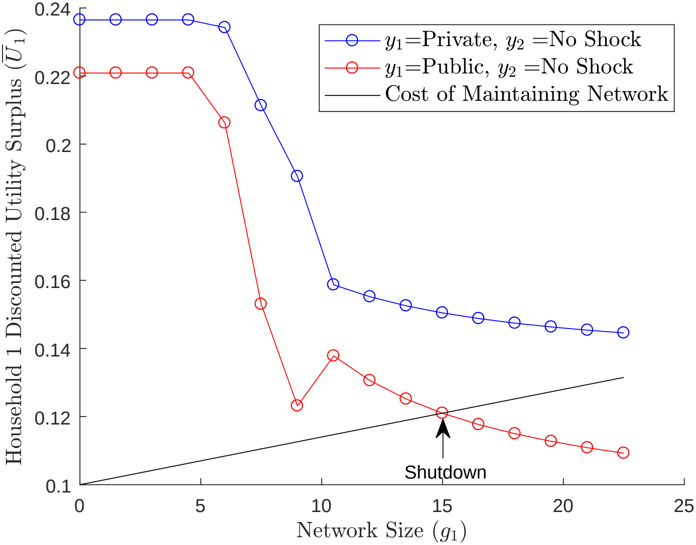
Contract Intervals



Prediction 1 - Shut-down Hypothesis



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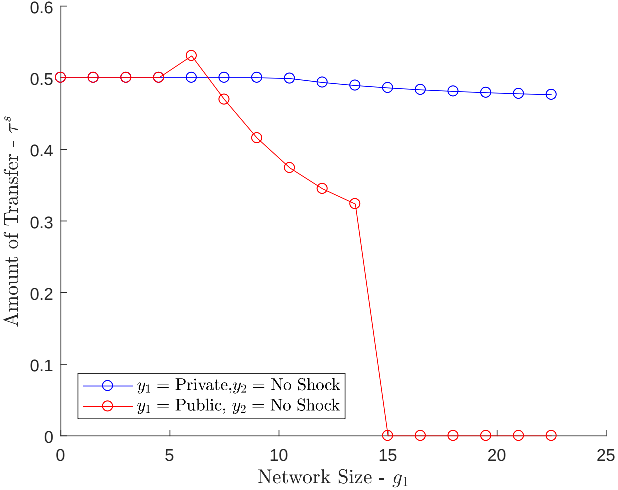
Prediction 2 and 3

Private → larger average gifts; Public → larger n gifts (before shutdown)



Predictions

Prediction 1 (The Shut-down Hypothesis) *Large gift-giving networks shut down giving especially in public winnings.*

Prediction 2 (Private = Higher Average Transfer Value) $\tau_{zv} > \tau_{bz}$ *on average.*

Prediction 3 (Public = Higher Number of Gifts Given) $\sum_{j=1}^{N} \mathbb{1}(\tau_{ij}(zb) \neq 0) > \sum_{j=1}^{N} \mathbb{1}(\tau_{ij}(zv) \neq 0)$

Prediction 4 (Public = Larger Total Transfers) *Prior to shut-down* $\sum_{j=1}^{N} \mathbb{1}\tau_{ij}(zb) > \sum_{j=1}^{N} \mathbb{1}\tau_{ij}(zv)$

Prediction 5 (Consumption Increasing in Others' Winnings) *Specifically in private winnings:* $c_1(vz) > c_1(zz)$

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Results

Shutdown hypothesis with intensity of winnings

Gift-giving:	Coef. Hyp.	(1) Value (Total)	(2) Value (Average)	(3) Number
Value of Private Cash Prize	$\beta_v > 0$	0.082**	0.057**	0.062**
		(0.032)	(0.026)	(0.028)
Value of Private Cash Prize × Network	$\beta_{vg} \leq 0$	-0.002	-0.002	-0.000
		(0.002)	(0.002)	(0.002)
Value of Public Cash Prize	$\beta_b > 0$	0.071**	0.028	0.138***
		(0.031)	(0.025)	(0.027)
Value of Public Cash Prize × Network	$\beta_{bg} < 0$	-0.008***	-0.004**	-0.012***
		(0.003)	(0.002)	(0.002)
Household FE		Yes	Yes	Yes
Round × Village FE		Yes	Yes	Yes
$\beta_v = \beta_b$		0.81	0.41	0.05
$\beta_v + \beta_{vg} \times 5 = \beta_b + \beta_{bg} \times 5$		0.25	0.10	0.53
$\beta_v + \beta_{vg} \times 10 = \beta_b + \beta_{bg} \times 10$		0.02	0.01	0.12
$\beta_v + \beta_{vg} \times 20 = \beta_b + \beta_{bg} \times 20$		0.01	0.01	0.00
Left-censored N		946	946	946
N		1,561	1,561	1,561

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Dependent Variable equals log total value of (cash) gifts given per adult in hh in column 1; average gift value per adult in column 2; number of gifts per adult in column 3. Value in Private/Public $\in \{0, 1, 2, 3.5, 5, 7\}$ Tobit estimator used in all columns.

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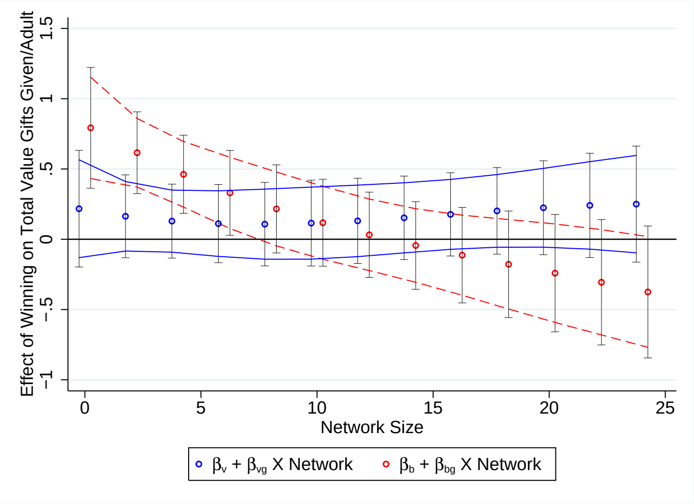
Results N Gifts Given

Non-parametric analysis of shut-down hypothesis



Note: Including 2nd and 3rd order polynomial interactions.

Estimation Strategy

own consumption as function of others' winnings

$$
\begin{aligned}
y_{it} = \alpha &+ \beta_v \text{Private}_{it} + \beta_b \text{Public}_{it} \\
&+ \beta_{vn} \overline{\text{Private}_{it}} + \beta_{bn} \overline{\text{Public}_{it}} \\
&+ \text{hh}_i + \text{r}_t + \epsilon_{it}
\end{aligned}
$$

- $\overline{\text{Private}_{it}}$ - Network Average Value of Winnings
  - $Private_{it} = \sum_{j=1}^{N} \frac{\text{Private}_j \times \mathbb{1}(g_{ij}=1)}{\sum_{j=1}^{N} \mathbb{1}(g_{ij}=1)}$
- Prediction: $\beta_{vn} > \beta_{bn}$ in lower quantiles.

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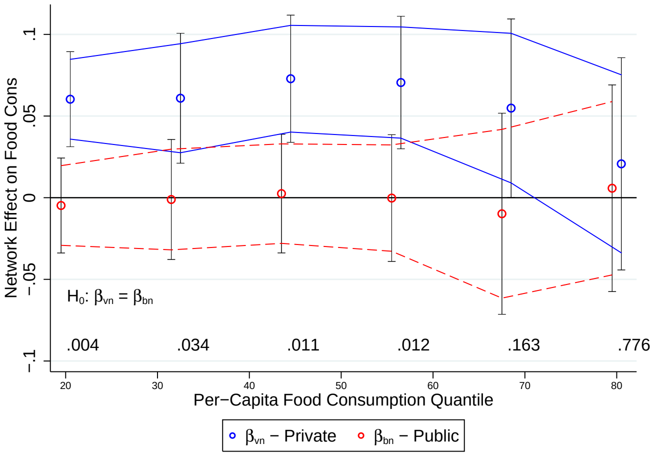
Results

food consumption increasing in private network winnings for needy



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Estimation Strategy

gift-giving within a dyad (i to j)

$$y_{ijtv} = \alpha + \beta_v \text{Private}_{it} + \beta_b \text{Public}_{it} + \text{village}_v + \text{r}_t + \epsilon_{ijt}$$
$$+ \beta_{v\chi}\text{Private}_{it} \times (Food_{it} - Food_{jt})$$
$$+ \beta_{b\chi}\text{Public}_{it} \times (Food_{it} - Food_{jt})$$
$$+ \gamma(Food_{it} - Food_{jt}) + \text{village}_v + \text{r}_t + \epsilon_{ijt}$$

- $\mathbf{y_{ijtv}}$: Log Value$_{ij}$, N Gifts $_{ij}$ (from i to j)

Predictions	
$\beta_v > \beta_b$ (Average Gift Value)	
	$\beta_{v\chi} > 0$ (Gift Amount)

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Estimation Strategy

gift-giving within a dyad (i to j)

$$
\begin{aligned}
y_{ijtv} = \alpha + \beta_v \text{Private}_{it} + \beta_b \text{Public}_{it} &+ \text{village}_v + \text{r}_t + \epsilon_{ijt} \\
&+ \beta_{v\chi} \text{Private}_{it} \times (Food_{it} - Food_{jt}) \\
&+ \beta_{b\chi} \text{Public}_{it} \times (Food_{it} - Food_{jt}) \\
&+ \gamma (Food_{it} - Food_{jt}) + \text{village}_v + \text{r}_t + \epsilon_{ijt}
\end{aligned}
$$

- $\mathbf{y_{ijtv}}$: Log Value$_{ij}$, N Gifts $_{ij}$ (from i to j)

Predictions
$\beta_v > \beta_b$ (Average Gift Value)
$\beta_{v\chi} > 0$ (Gift Amount)

Test of Full Risk Pooling

Townsend (1994)

		(1) Δ Food$_{it}$
Δ Food (Network)	β	0.267***
		(0.099)
Won in Private		0.006
		(0.012)
Won in Public		-0.002
		(0.008)
Village FE		Yes
Test of Full Insurance: $\beta = 1$		0.00
N		1,235

$^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Dependent Variable equals change in log per-capita food consumption ($log(Food_{it})$ - log($Food_{it-1}$)). Network average is of same variable averaged within solidarity network. OLS estimator clustered at household level. "Won in Private/Public" $\in \{0, 1\}$. Prize value averaged at network level.

Back-Data Back-Additional

Testing Information Hypothesis

Gifts to Family vs. Friends

		(1) All Family	(2) Direct Family	(3) Village Friends
Won Private Cash Prize	β_v	-0.003	-0.110	0.212**
		(0.132)	(0.141)	(0.086)
Won Public Cash Prize	β_b	0.173	0.287**	0.060
		(0.124)	(0.116)	(0.093)
Round $\times$ Village FE		Yes	Yes	Yes
Left-censored N		1,173	1,307	1,340
N		1,561	1,561	1,561

$^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Dependent Variable equals log average value of (cash) gifts given per adult in HH. Column 1 consists of gifts to all family, column 2 to direct family who have their own households, column 3 to other extended family, column 4 to village friends. Won in Private/Public $\in \{0, 1\}$ Tobit estimator used in all columns. Village FE does not converge. Results qualitatively similar to OLS with HH FE.

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Testing Information Hypothesis

with shutdown effect - gifts to family vs. friends

		(1) All Family	(2) Direct Family	(3) Village Friends
Won Private Cash Prize	β_v	-0.085	-0.277	0.258**
		(0.196)	(0.220)	(0.117)
Won Private Cash Prize × Network	β_{vg}	0.007	0.013	-0.005
		(0.012)	(0.013)	(0.008)
Won Public Cash Prize	β_b	0.507***	0.566***	0.332**
		(0.183)	(0.171)	(0.131)
Won Public Cash Prize × Network	β_{bg}	-0.034**	-0.028**	-0.036**
		(0.015)	(0.014)	(0.014)
Round × Village FE		Yes	Yes	Yes
Shut-down size. $X : \beta_b + \beta_{bg} X = 0$		15.0	20.0	9.1
Left-censored N		1,173	1,307	1,340
N		1,561	1,561	1,561

*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Dependent Variable equals log average value of (cash) gifts given per adult in HH. Column 1 consists of gifts to all family, column 2 to direct family who have their own households, column 3 to other extended family, column 4 to village friends. Won in Private/Public $\in \{0, 1\}$ Tobit estimator used in all columns. Network denotes network size.

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Shutdown Reciprocity

THOSE LIKELY TO SHUTDOWN DID NOT RECEIVE GIFTS

RECEIVE Gifts		(1) Value (Total)	(2) Value (Average)	(3) Number
Won Private in Past?	β_v	0.105	0.0781	0.0148
		(0.166)	(0.134)	(0.138)
Won Private in Past? × Network	β_{vg}	-0.00883	-0.00587	-0.00744
		(0.012)	(0.010)	(0.011)
Won Public in Past?	β_b	0.339^{**}	0.245^{*}	0.330^{**}
		(0.170)	(0.138)	(0.138)
Won Public in Past? × Network	β_{bg}	-0.0252^{*}	-0.0186^{*}	-0.0218^{**}
		(0.013)	(0.011)	(0.011)
Round × Village FE		Yes	Yes	Yes
Left-censored N		1,297	1,297	1,297
N		1,561	1,561	1,561

$^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Dependent Variable equals log total value of (cash) gifts received per adult in HH in column 1; log average value of (cash) gifts received per adult in column 2; number of (cash) gifts received per adult in column 3. "Won Private/Public in Past?" $\in \{0, 1\}$ indicates whether household won lottery at any point in current or up to past 2 rounds. Tobit estimator used in all columns. Network denotes network size.

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