Gender and Decision Making

Ingvild Almås (IIES & NHH)

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Joint work with Alex Armand, Orazio Attanasio, Pedro Carneiro, Pamela Jervis, Charlotte Ringdal, Vincent Somville and Lore Vandewalle

Background

- A large fraction of governmental programs and welfare arrangements for children and families make transfers to mothers rather than fathers (e.g., child allowance).
- And a large fraction of the contemporaneous big aid initiatives also target women (e.g., conditional cash transfer programs (see e.g., Fiszbein, 2009)).
- Main argument:
  - such transfers promote child investments and welfare.
- But we have limited evidence on whether targeting mothers with unconditional cash transfers leads to significantly different spending and investment decisions.

This talk

1. What happens when we target mothers?
   - Show reduced form evidence from an RCT that randomized between mother and father targeting.

2. Do men and women have different **preferences**?
   - Show suggestive evidence from a novel survey experiment,
     - Seek to further develop and validate this survey experiment, using surveys combined with lab and field studies.

3. Do men and women have different **decision making power** in the household setting?
   - Suggest a lab-game to measure power in financial decision-making,
   - Are some women excluded from financial decisions and can we identify those?

4. Do men and women have different **beliefs** (about returns to investment in children)?

What happens when we target mothers versus fathers?

- Unconditional cash transfers (UCT), weekly installments, and weekly reporting of expenditure, revenues and saving.
- It was randomized whether the woman or the man in the household was offered the UCT.
- The study is undertaken in 18 villages in Chhattisgarh.
- PAP, AEA RCT registry (2015) and Somville and Vandewalle (2018).

Some related studies on consumption shifting

- UCT: Haushofer and Shapiro, QJE, 2016.
  - Find no effect, but not high power for this dimension of the study.
- CCT, randomizing:
  - Find moderate effect on food share (Armand, Attanasio, Carneiro and Lechene, 2019), but not child education (Armand, Attanasio, Carneiro and Lechene, 2019; Benhassine, Devoto, Duflo, Dupas and Pouliquen, 2015).
- CCT, women: Attanasio and Lechene, 2015.
  - Food share larger than the estimated Engel curves would predict, but not child education.
- Natural experiments:
  - Duflo, 2003 (effect on nutrition for girls); Duflo and Udry, 2003 (effect on food); Lundberg, Pollak and Wales, 1996 (effect on clothing).

Contributions: Power

- We follow Burling et al (2019) and use simulations based on real data from control group. 1000 simulations per outcome and per hypothesized MDE.

MDE (s.d) (1)	Total expenditures (2)	Total savings (3)	Total income (4)
.10	.57	.94	.94
.15	.89	1.00	1.00
.20	**.98**	**1.00**	**1.00**

Repeated observations and potential auto-correlation, randomization blocks in design, inclusion of the pre-treatment value of the outcomes (ANCOVA), time and village fixed-effects, controls for bank account ownership and payment modality, and that the standard errors are clustered at the household level.

Contributions: Measurement and Context

- Measurement
  - We use weekly financial diaries repeated over a period of 6 months.
  - Seven days recall period minimizes the errors in recalling
  - Long period: can capture infrequent expenditures and incomes.
- Context
  - Almost a sixth of the world's population and a large fraction of its poor live in India.
  - National and regional policies as well as international aid programs aim at reducing poverty and often chooses to target one household member.

Theorethical framework

- The identity of the recipient is irrelevant if households act as one unit (Becker 1974);
- but if households are non-cooperative, or cooperative with endogeneous decision-making power, then targeting women may empower them (Woolley 2004, Basu 2006);
  - and if in addition, men and women have different preferences, then who receives transfers can affect the household's consumption.
  - How does social norms come into play? (Field, E.M., Pande, R., Rigol, N., Schaner, S.G., Moore, C.T., 2019/Forthcoming.)

Outcomes

Our main outcomes of interest are expenditure, savings and income (and sub-components of these).

- **Expenditures**: food items, health, education, investments, temptation goods.
    - from reported quantity for detailed food categories we also calculate nutrition from tables (calories, proteins, vitamin A, vitamin C, zinc and iron). Indian Food Composition Table 2017 (IFCT) produced by the National Institute of Nutrition (Indian Council of Medical Research).

- **Savings**: holding real assets (livestock, jewelry, grains), cash, with the local bank or other financial institutions, at the post office, with the cooperative (when they sell a crop but do not withdraw directly the amount that the cooperative owes them), with informal groups (typically self-help groups) and the money that they ask someone else to keep for them (typically their employer, we call it money guarded).

Outcomes cont.

- **Income**: wages, revenues from self-employment, from the sale of agricultural products, livestock or forest products, the public and private transfers received, the loans taken and the revenues from rentals.

Selection and treatment

- We selected 17 villages in rural Chhattisgarh:
  - Random selection of 32 villagers per village
  - Enroll either man or woman in each household
- February - May 2014 and July - August 2014
  - Weekly interviews & UCT of INR 150 ($\pm$ 1 day of MGNREGA wage labor).

Analysis

- Using the weekly information:

$$Y_{ikt} = \alpha_0 + \alpha_1 T_{ik} + \alpha_2 F_{ik} + \alpha_3 Y_{ik0} + V_k + W_t + \epsilon_{ikt}$$

Y_{ikt}:	Outcome of i in village k during week t
T_{ik}:	Cross-randomization dummies
F_{ik}:	Dummy indicating the respondent is a woman
V_k:	Village fixed effects
W_t:	Week fixed effects
Y_{ik0}:	Outcome of i in village k at baseline (ANCOVA)

- Standard errors are clustered at the individual level.
- P-values are corrected for multiple hypothesis testing (FDR, Benjamini & Hochberg 1995).
- We use an inverse hyperbolic sine transformation for all the continuous outcome variable.

Main results

	Total expenditures (1)	Food share (2)	Total savings (3)	Total income (4)	Nutrition: Kj (5)
Woman	-.002	-.002	.039	.072	.016
	(.059)	(.011)	(.087)	(.070)	(.071)
Mean Control	7.23	.47	8.14	6.41	-.01
R^2	.170	.070	.840	.100	.130
Obs.	5734	5734	5734	5734	5734

Standard errors are in parenthesis. Statistically significant differences between the estimates and zero are indicated by $*$ $p < 0.1$, $**$ $p < 0.05$, $***$ $p < 0.01$ when the p-values are not corrected and by $+$ $p < 0.1$, $++$ $p < 0.05$, $+++$ $p < 0.01$ when the p-values are corrected for multiple hypothesis testing.

Results: expenditures

	Frequent	Non-frequent	Temptation goods	Investments	Education	Health	All food	Perishable food	Non-perishable food
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Woman	.016	-.068	-.006	-.040	-.001	-.005	.021	.041	.104
	(.046)	(.108)	(.074)	(.133)	(.023)	(.098)	(.048)	(.050)	(.070)
Mean Control	6.19	5.09	4.32	1.69	.10	1.53	6.16	5.31	5.23
R^2	.155	.128	.265	.102	.028	.032	.161	.190	.087
Obs.	6556	6556	6556	6556	6556	6556	6556	6556	6556

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Results: savings

	Bank account	SHGs	Cooperatives	Post office and other accounts	Cash at home	Money guarded	Jewelry, grain and livestock
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Woman	.262**	-.032	-.011	-.105	-.097	.008	.047
	(.120)	(.125)	(.047)	(.135)	(.081)	(.016)	(.055)
Mean Control	4.33	1.54	1.77	1.65	3.40	.02	4.62
R^2	.753	.790	.956	.589	.784	.027	.972
Obs.	6556	6556	6556	6556	6556	6556	6556

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Results: revenues

	Income sources									
	Wage empl	Self-empl	Agri-culture	Live-stock	Forestry	Sale of goods	Rents	Public transfers	Private transfers	Loans
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Woman	.075	-.093	-.041	-.021	.011	-.009	-.028	-.001	-.034	-.186*
	(.061)	(.091)	(.071)	(.042)	(.010)	(.019)	(.020)	(.045)	(.072)	(.105)
Mean Control	6.01	.56	.52	.16	.01	.08	.06	.41	-.80	-.43
R^2	.108	.392	.041	.375	.013	.007	.144	.078	.099	.020
Obs.	6556	6556	6556	6556	6556	6556	6556	6556	6556	6556

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Results: nutrition

	Kj (1)	Proteins (2)	Iron (3)	Zinc (4)	Vitamin A (5)	Vitamin C (6)
Woman	.031	.007	-.008	-.005	.040	.005
	(.079)	(.063)	(.008)	(.007)	(.086)	(.021)
Mean Control	11.75	6.69	.26	.20	10.64	.92
R^2	.080	.098	.102	.100	.146	.296
Obs.	6556	6556	6556	6556	6556	6556

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Analysis - robustness

- Outcomes in level instead of inverse hyperbolic sine transformation.
- Without controlling for baseline values.
- With additional controls.
- With one observation per household (mean over the weeks) instead of the panel.

Impact heterogeneity

- the household lives in a house made of mud,
- there are at least two children in the household,
- the respondent is married,
- the respondent can read and write.

Summary and conclusion: Almås, Somville and Vandewalle (2021)

Using detailed weekly financial diaries of households receiving an UCT given to men or women (randomly determined), we show that:

- Men and women use the transfer similarly in this context
    - Expenditures, revenues, savings, nutrition, are NOT affected by the recipient's identity.

- Is there a role played by social norms? (Field et al, 2021)

Theoretical framework

The household's problem: mother and father optimally choose their consumption and child investment to maximize expected lifetime discounted utility:

$$U_h(c_m, c_f, h) = \lambda U_f(c_f, h) + (1 - \lambda) U_m(c_m, h)$$

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Beliefs:

$$U_h(c_m, c_f, h) = \lambda U_f(c_f, h) + (1 - \lambda) U_m(c_m, h)$$

The rest of the talk

1. Allocation preferences
2. Power in decision-making
3. Beliefs

Elicit allocation preferences

Measuring allocation preferences with dictator games

- As we know, dictator games can be useful when measuring allocation preferences.
- We apply this to the household setting (see also Ringdal and Sjursen, 2020).
- In Tanzania, we use a dictator allocation game to elicit data on parents preferences;
- Respondents were asked to allocate a hypothetical amount:
  - across different commodities;
  - across different household members.

Measuring preferences with hypothetical scenarios

- Respondents were asked to allocate a hypothetical amount, represented by a pile of beans, to different expenditure categories and household members.
    - The participants first allocate the endowment across different consumption categories such as food, clothing, education, health, luxury goods and transportation.

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  - The participants first allocate the endowment across different consumption categories such as food, clothing, education, health, luxury goods and transportation.
  - Within each consumption category, the participant makes an allocation between the family members.
  - As we randomize whether we interview the father, the mother or both, we have 3 different samples

Allocation module

- Respondents were asked to allocate a hypothetical amount, represented by a pile of beans, to different expenditure categories and household members.
- Allocation question is posed as:

  "We would now like to understand how you would prefer to spend 300,000 TSH, if we were to give this money to you. Use these 60 beans that each represents 5,000 TSH, and cardboard card with 3 different expenditure options (for mother, for father, for your child); for each question distribute the beans according to your preferences. Imagine that your child is 5 years old for this exercise. How much would you spend on .. (item) for .. (person)?"

  FOR THE COUPLE: "Please discuss the options between you in the same way you make expenditure decisions in the household."

Spending categories

- 6 possible consumption categories:
  - Clothing;
  - Food;
  - Learning materials such as books, notebooks, pens & pencils;
  - Health expenditures;
  - Transportation;
  - School expenditures.

- As we randomize whether we interview the father, the mother or the couple.

Expenditure allocations

	Mother decision (s.e.)	Father decision (s.e.)	(p-value)
To self	0.268	0.257	-0.01
	(0.008)	(0.007)	(0.348)
To spouse	0.175	0.219	0.04
	(0.009)	(0.007)	(0.000)
To child	0.558	0.524	-0.03
	(0.011)	(0.013)	(0.043)

Main messages:

- Mothers allocate more than fathers to children;

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Main messages:

- Mothers allocate more than fathers to children;
- Mothers allocate less than fathers to spouse;
- 'Couple' decisions look more like fathers'.

Allocation to the child

	Mother decision (s.e.)	Father decision (s.e.)	diff (p-value)
Clothing	6.628	5.559	-1.07
	(0.225)	(0.311)	(0.005)
Food	6.062	5.338	-0.72
	(0.302)	(0.269)	(0.076)
School exp.	7.434	7.529	0.09
	(0.353)	(0.573)	(0.886)
Learning mat.	5.503	5.213	-0.29
	(0.247)	(0.285)	(0.441)
Health exp.	5.159	5.213	0.05
	(0.207)	(0.252)	(0.866)
Transportation	2.683	2.603	-0.08
	(0.182)	(0.202)	(0.769)

Notes: This table shows the descriptive statistics of allocation of expenditure on children. The p-values refer to the test of difference between the mother and father subsample and the mother and couple subsamples.

- Mothers allocate more than fathers to clothing and food for children;

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- Mothers allocate more than fathers to clothing and food for children;
- The other allocations are similar;
- Again,'couple' decisions look more like fathers'.

Summary allocation preferences: Almås, Attanasio, Jervis and Ringdal (2021)

- Possible to measure allocation preferences using dictator games
- Hypothetical versions can be taken to scale
- Mothers seems spend somewhat more on children and less on spouse,
- Parameters from allocation game may proove useful in order to test and relax some strong assumptions in structural estimations of the collective model (Almås, Attanasio and Jervis (2022)).

Decision making power/Financial inclusion

Bargaining power within the couple

- In Almås, Armand, Attanasio and Carneiro (2018) we measured bargaining power within couples during an RCT in Macedonia.
- We had a sample of 100 villages: in 50 randomly selected villages the grant was given to wives and in the other 50 to household heads.
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  - Here are 100 Denars that we will give to your husband, how much are you willing to pay to have them paid to you?
  - An additional hypothetical question with larger stakes.
- The results:
  - Considerable variability, linked to several observables;
  - Targeting the grant to wives shifted considerably the willingness to pay.

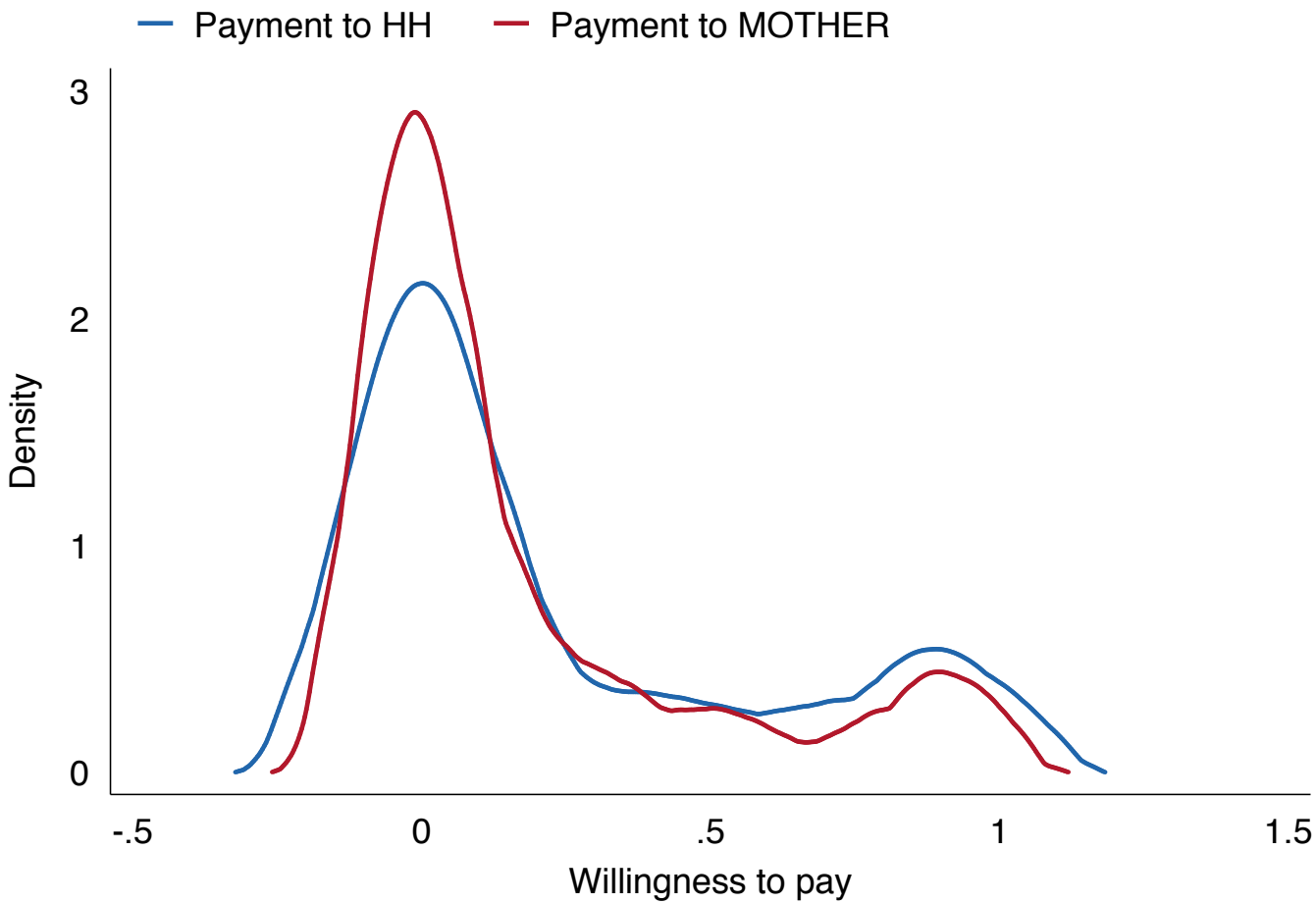
Willingness to pay

	Mean	Median	St.Dev.	Tobit	Obs.
Incentivized, all	0.195	0.047	0.336	0.144	768
	(0.016)			(0.019)	
Non incentivized, all	0.207	0.010	0.335	0.205	768
	(0.016)			(0.016)	

Validation: Willingness to pay – Macedonia

	OLS	OLS	OLS	OLS	OLS	OLS
Mother	-0.057**	-0.053**	-0.053**	-0.058***	-0.055***	-0.055***
	(0.025)	(0.024)	(0.024)	(0.021)	(0.019)	(0.020)
Demographics	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity	No	Yes	Yes	No	Yes	Yes
Stake controls	No	No	Yes	No	No	Yes
R^2	0.055	0.074	0.074	0.060	0.082	0.083
Observations	768	768	768	576	576	576

Distribution



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Average willingness to pay
(out of 6,600 TSH)

wives	husbands	difference (p-value)
2,720	660	2,060 (< 0.0001)

- Considerable difference between husbands' and wives' willingness to pay.
- ...reflecting different bargaining position within the marriage.

To sum up

- Novel lab measure validates in the context of Macedonia.
- Decision making power very skewed in Tanzania.
- Evidence from Macedonia suggest that on average targeting women empowers her, but not for all groups.
- Armand, Attanasio, Carneiro and Lechene (2020) shows that women targeted with a CCT spend more on food than men targeted, but no difference in education.

Beliefs about returns

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  - For parental investment we use items from UNICEF's *Family Care Indicators* (FCI).

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- This approach allows us to estimate:
  - Rates of return to parental investment;
  - 'Subjective production functions' to compare to 'actual production functions';
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  - Language development;
  - Socio-emotional development;
  - We randomise whether the beliefs questions are answered by the father or the mother.

Sum up: Beliefs on returns to investment (Almås, Attanasio and Jervis, 202X)

In general, mothers believe that there are higher returns to investment in low initial condition children than fathers.

- For language:
  - Mothers have a higher expected return to investment for low initial condition children than fathers (p-value=0.000).
  - No significant difference between fathers and mothers on expected returns for high initial condition children.

Concluding remarks

- Many welfare programs and transfer schemes target women.
- Claim: this is good for women empowerment and children.
- Empirical evidence is scarce. We show:
  - No difference in household consumption and saving in India,
  - Some (small) differences in consumption allocations in Tanzania,
  - Female empowerment (for some) in Macedonia.
  - Mothers believe more returns to investments in low initial condition children.