# The Efficiency Gains of Cash Transfers: Experimental Evidence from Kenya

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- Longstanding debate over if and how large capital infusions can contribute to economic development and poverty alleviation, at macro and micro levels
- Consequences of capital infusions might depend on the efficiency of markets, while capital infusions might change how markets operate

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- Natural next question: Does a capital infusion reduce distortionary effects of market frictions?

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  - Capital and labour market frictions (e.g. financial frictions and hard-to-observe worker effort)
  - Capital-labour complementarity in household production

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1. Testing for market frictions
   - In specific markets (e.g. Breza et al. 2022; Cefala et al. 2025a, b; Giné et al. 2012; Jayachandran 2006; Jones et al. 2022; Kaur 2019)
   - Using separation tests (e.g. Benjamin 1992; Dillon et al. 2019; Kebede 2022; LaFave & Thomas 2016)
   - We offer *an* approach to combining separation tests with experimental or policy variation
2. Cash / asset transfers

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1. Testing for market frictions
2. Cash / asset transfers
   - Ongoing debate: consumption/social protection policy versus a production/investment policy?
   - Substantial evidence of heterogeneous effects (e.g. Balboni et al. 2022; Banerjee et al. 2015; Blattman et al 2014; 2020; Bedoya et al. 2019)
   - Recent work exploring interactions with market structure (e.g. Baird et al. 2018; Cunha et al. 2019; Egger et al. 2022; Filmer et al. 2023; Walker et al. 2024)

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   - Recent work exploring interactions with market structure (e.g. Baird et al. 2018; Cunha et al. 2019; Egger et al. 2022; Filmer et al. 2023; Walker et al. 2024)
   - We highlight the role of market frictions as *an* approach to understanding (heterogeneous) effects of cash / asset transfers on production

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  - Structural transformation: We document *an* example of structural transformation in response to capital infusions

# Talk Outline

1. Context, Sample & Experiment
2. Motivating Evidence of Market Frictions
3. Cash Transfer Effects on Efficiency
4. Cash Transfer Effects on Household Economic Outcomes
5. Discussion & Implications

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# Context

- Study is set in 209 villages in rural Western Kenya (Homa Bay and Siaya counties)
  - Mean village size 96 households
  - Average household has 5.6 members, about half aged $\leq 16$
  - Largely agricultural
  - Not very isolated: $\leq 3$ hours drive to Kisumu, population $\approx$ 600,000

# Sample

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- Two of four arms in Orkin et al. (forthcoming), which studies psychological interventions and their relationship to cash transfers

# Cash Transfer Experiment

- Randomised cash transfers at the village level across 209 villages
- Unconditional payments from GiveDirectly of USD 2,237 PPP to eligible households
  - 55% of mean value of annual household consumption
  - 145% of mean value of non-land assets
  - $>$ 1000% of mean values of financial borrowing & saving

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  - 40% do casual/wage work outside the household, including 9% from migration
  - 95% grow crops, most often maize
  - 87% raise light livestock: mostly chickens and some goats, sheep
  - 42% raise heavy livestock: cattle
  - 44% run a non-farm enterprise, most often retail, light manufacturing, services, or fishing

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- Partial hierarchy of economic activities:

Detailed Comparison

  - Cattle & non-farm enterprises involve much more non-land capital
  - Households with cattle & enterprises have higher revenue, consumption
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Detailed Comparison

  - Cattle & non-farm enterprises involve much more non-land capital
  - Households with cattle & enterprises have higher revenue, consumption
    - Maybe also profits, but they are very hard to measure
- *One* interpretation: market frictions prevent low-capital households from borrowing to fund higher-capital activities that generate more revenue and allow more consumption

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- Household as a firm/producer
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- Household as a consumer
  - Consumes leisure and hence supplies labour
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- When markets are frictionless, production & consumption are separable (Singh et al. 1986)
  - Frictionless markets $\Rightarrow$ no missing markets, no pricing power, no information asymmetries, etc. for goods, labour, land, credit, savings, insurance, etc.
  - Result holds if at most one market has frictions

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- Focus on first testable implication in presentation: more intuitive & econometrically simpler
- Findings are consistent over both tests

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    first in control villages, then in treated villages
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- First paper to use this type of test to evaluate an intervention's impact on market efficiency?

# Evidence of Market Frictions

## In control villages, reject separation for full sample

| | Eligible HHs | |
|---|---|---|
| | All | |
| | (1) | |
| **Panel A. Total Household Size** | | |
| Log household size | 0.382*** | |
| | (0.128) | |
| *p*-value | [0.003] | |
| Households | 1,499 | |
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# Evidence of Market Frictions

In control villages, reject separation for full sample, driven by households without cattle/enterprises.

| | Eligible HHs | |
|---|---|---|
| | All | No Cattle or Enterprise |
| | (1) | (2) |
| **Panel A. Total Household Size** | | |
| Log household size | 0.382*** | 0.601*** |
| | (0.128) | (0.218) |
| *p*-value | [0.003] | [0.006] |
| **Panel B. Household Size by Sex × Age Cells** | | |
| *F*-statistic | 2.322*** | 2.278*** |
| *p*-value | [0.006] | [0.008] |
| Households | 1,499 | 635 |
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Don't reject separation for households with these high-capital, 'upgraded' activities.

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|---|---|---|---|
| | All | No Cattle or Enterprise | Cattle or Enterprise |
| | (1) | (2) | (3) |
| **Panel A. Total Household Size** | | | |
| Log household size | 0.382*** | 0.601*** | 0.157 |
| | (0.128) | (0.218) | (0.152) |
| *p*-value | [0.003] | [0.006] | [0.301] |
| **Panel B. Household Size by Sex × Age Cells** | | | |
| *F*-statistic | 2.322*** | 2.278*** | 1.365 |
| *p*-value | [0.006] | [0.008] | [0.177] |
| Households | 1,499 | 635 | 854 |
| Observations | 2,998 | 1,270 | 1,708 |

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In control villages, reject separation for full sample, driven by households without cattle/enterprises.

Don't reject separation for households with these high-capital, 'upgraded' activities.
or for ineligible, wealthier households.

| | Eligible HHs | | | Ineligible HHs |
|---|---|---|---|---|
| | All | No Cattle or Enterprise | Cattle or Enterprise | |
| | (1) | (2) | (3) | (4) |
| **Panel A. Total Household Size** | | | | |
| Log household size | 0.382*** | 0.601*** | 0.157 | 0.009 |
| | (0.128) | (0.218) | (0.152) | (0.166) |
| *p*-value | [0.003] | [0.006] | [0.301] | [0.955] |
| **Panel B. Household Size by Sex × Age Cells** | | | | |
| *F*-statistic | 2.322*** | 2.278*** | 1.365 | 1.091 |
| *p*-value | [0.006] | [0.008] | [0.177] | [0.365] |
| Households | 1,499 | 635 | 854 | 554 |
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- Crucially, same findings with different testable implication: consumption decisions are independent of production input prices, except through income effects
  - Reject separation for non-upgraded eligibles, not for upgraded eligibles or ineligibles
  - Uses entirely different assumptions & econometric methods, following LaFave et al. (2025)
  - Intuition Specification Results

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  - Some other attributes allow households to avoid market frictions and, perhaps because of that, engage in the higher-capital, 'upgraded' activities
- Natural next question: Can capital infusions allow household to
  - Upgrade their economic activities?
  - Avoid market frictions?

# Talk Outline

1. Context, Sample & Experiment
2. Motivating Evidence of Market Frictions
3. **Cash Transfer Effects on Efficiency**
4. Cash Transfer Effects on Household Economic Outcomes
5. Discussion & Implications

# Cash Transfers, Separation & Efficiency

## Don't reject separation in cash villages

| | Eligible HHs |
|---|---|
| | All |
| | (1) |
| **Panel A. Control Villages** | |
| *F*-statistic | 2.322*** |
| *p*-value | [0.006] |
| Households | 1,499 |
| Observations | 2,998 |
| **Panel B. Cash Villages** | |
| *F*-statistic | 1.157 |
| *p*-value | [0.309] |
| Households | 1,549 |
| Observations | 3,098 |

# Cash Transfers, Separation & Efficiency

Don't reject separation in cash villages, including for non-upgraded households

| | Eligible HHs | |
|---|---|---|
| | All | No Cattle or Enterprise |
| | (1) | (2) |
| **Panel A. Control Villages** | | |
| *F*-statistic | 2.322*** | 2.278*** |
| *p*-value | [0.006] | [0.008] |
| Households | 1,499 | 635 |
| Observations | 2,998 | 1,270 |
| **Panel B. Cash Villages** | | |
| *F*-statistic | 1.157 | 0.707 |
| *p*-value | [0.309] | [0.745] |
| Households | 1,549 | 584 |
| Observations | 3,098 | 1,168 |

# Cash Transfers, Separation & Efficiency

Don't reject separation in cash villages, including for non-upgraded households

Still don't reject separation for upgraded eligibles & ineligibles

| | Eligible HHs | | | Ineligible HHs |
|---|---|---|---|---|
| | All (1) | No Cattle or Enterprise (2) | Cattle or Enterprise (3) | All (3) |
| **Panel A. Control Villages** | | | | |
| *F*-statistic | 2.322*** | 2.278*** | 1.365 | 1.091 |
| *p*-value | [0.006] | [0.008] | [0.177] | [0.365] |
| Households | 1,499 | 635 | 854 | 554 |
| Observations | 2,998 | 1,270 | 1,708 | 1,108 |
| **Panel B. Cash Villages** | | | | |
| *F*-statistic | 1.157 | 0.707 | 1.534 | 0.696 |
| *p*-value | [0.309] | [0.745] | [0.106] | [0.756] |
| Households | 1,549 | 584 | 947 | 603 |
| Observations | 3,098 | 1,168 | 1,894 | 1,206 |

# Cash Transfers, Separation & Efficiency

Don't reject separation in cash villages, including for non-upgraded households

Still don't reject separation for upgraded eligibles & ineligibles

Not explained by treatment effects on household size or composition

| | Eligible HHs | | | Ineligible HHs |
|---|---|---|---|---|
| | All (1) | No Cattle or Enterprise (2) | Cattle or Enterprise (3) | All (3) |
| **Panel A. Control Villages** | | | | |
| *F*-statistic | 2.322*** | 2.278*** | 1.365 | 1.091 |
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# Cash Transfers, Separation & Efficiency

- Low-capital households that receive cash transfers have:
  - Separable labour use and labour endowments
  - Separable consumption decisions from production input prices

Results

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- Consistent with cash transfers allowing households to reduce the distortionary effects of market frictions and make more efficient production decisions

# Cash Transfers, Separation & Efficiency

- Low-capital households that receive cash transfers have:
  - Separable labour use and labour endowments
  - Separable consumption decisions from production input prices

Results

- Consistent with cash transfers allowing households to reduce the distortionary effects of market frictions and make more efficient production decisions
- Next examine which specific production decisions cash transfers change, by estimating treatment effects on different activities & investments

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1. Context, Sample & Experiment
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3. Cash Transfer Effects on Efficiency
4. **Cash Transfer Effects on Household Economic Outcomes**
5. Discussion & Implications

# Empirical Framework for Experimental Results

- Standard intention-to-treat (ITT) estimates on household economic outcomes

$$Y_{ivs} = \beta\, Cash_{vs} + Y_{ivs}^{\text{base}}\gamma + X_{ivs}\,\delta + \tau_s + \epsilon_{ivs} \tag{1}$$

  - Condition on strata FEs $\tau_s$ and covariates prespecified in Orkin et al. (forthcoming) $X_{ivs}$
  - Standard errors clustered by village (unit of treatment assignment)

# Empirical Framework for Experimental Results

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- Production outcomes
  - Choice of economic activities at the extensive margin
  - Activity-specific inputs: capital assets, labour, intermediate inputs, technology use
  - Activity-specific revenue

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  - Standard errors clustered by village (unit of treatment assignment)
- Production outcomes
  - Choice of economic activities at the extensive margin
  - Activity-specific inputs: capital assets, labour, intermediate inputs, technology use
  - Activity-specific revenue
- Consumption outcomes
- Labour supply outcomes
  - In a frictionless setting, this is a *consumption* decision: labour supply $\equiv$ inverse of leisure
  - With frictional markets and a failure of separation, labour supply is a *mix* of both production and consumption decisions

# Impacts on Household Participation in Different Economic Activities

At the extensive margin:

- No effects on crop agriculture

| | | Livestock | | | | |
|---|---|---|---|---|---|---|
| | Crops | Light | Heavy | All | Enterprise | Any |
| Cash | 0.001 | | | | | |
| | (0.005) | | | | | |
| Control mean | 0.981 | | | | | |
| Observations | 3,581 | | | | | |

# Impacts on Household Participation in Different Economic Activities

At the extensive margin:

- No effects on crop agriculture
- Households expand into livestock, mainly heavy livestock rather than light livestock

| | | Livestock | | | | |
|---|---|---|---|---|---|---|
| | Crops | Light | Heavy | All | Enterprise | Any |
| Cash | 0.001 | 0.019* | 0.110*** | 0.039*** | | |
| | (0.005) | (0.010) | (0.016) | (0.009) | | |
| Control mean | 0.981 | 0.870 | 0.424 | 0.887 | | |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | | |

# Impacts on Household Participation in Different Economic Activities

At the extensive margin:

- No effects on crop agriculture
- Households expand into livestock, mainly heavy livestock rather than light livestock
- Households start new non-farm enterprises (NFEs)

| | | Livestock | | | | |
|---|---|---|---|---|---|---|
| | Crops | Light | Heavy | All | Enterprise | Any |
| Cash | 0.001 | 0.019* | 0.110*** | 0.039*** | 0.060*** | 0.001 |
| | (0.005) | (0.010) | (0.016) | (0.009) | (0.017) | (0.002) |
| Control mean | 0.981 | 0.870 | 0.424 | 0.887 | 0.442 | 0.995 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 |

# Impacts on Household Participation in Different Economic Activities

At the extensive margin:

- No effects on crop agriculture
- Households expand into livestock, mainly heavy livestock rather than light livestock
- Households start new non-farm enterprises (NFEs)
- Households are *diversifying* their production activities, not switching

Diversification 1 & 2

| | | Livestock | | | | |
|---|---|---|---|---|---|---|
| | Crops | Light | Heavy | All | Enterprise | Any |
| Cash | 0.001 | 0.019* | 0.110*** | 0.039*** | 0.060*** | 0.001 |
| | (0.005) | (0.010) | (0.016) | (0.009) | (0.017) | (0.002) |
| Control mean | 0.981 | 0.870 | 0.424 | 0.887 | 0.442 | 0.995 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 |

# Impacts on Capital and Labour Use

- In crop agriculture, households accumulate no productive capital nor use more labour

| | | Livestock | | | | |
|---|---|---|---|---|---|---|
| | Crops | Light | Heavy | All | Enterprise | Aggregate |
| *Value of Capital Assets (USD PPP)* | | | | | | |
| Cash | 11.3 | | | | | |
| | (9.5) | | | | | |
| Control mean | 106.3 | | | | | |
| Observations | 3,581 | | | | | |
| *Days of Labour Use* | | | | | | |
| Cash | 1.4 | | | | | |
| | (4.7) | | | | | |
| Control mean | 116.2 | | | | | |
| Observations | 3,581 | | | | | |

# Impacts on Capital and Labour Use

- In crop agriculture, households accumulate no productive capital nor use more labour
- In livestock, households increase their capital assets and labour use
  - Livestock capital assets are mostly accumulated for heavy livestock

| | | Livestock | | | | |
|---|---|---|---|---|---|---|
| | Crops | Light | Heavy | All | Enterprise | Aggregate |
| *Value of Capital Assets (USD PPP)* | | | | | | |
| Cash | 11.3 | 28.7*** | 125.0*** | 153.8*** | | |
| | (9.5) | (6.3) | (26.1) | (29.5) | | |
| Control mean | 106.3 | 143.5 | 432.6 | 576.1 | | |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | | |
| *Days of Labour Use* | | | | | | |
| Cash | 1.4 | | | 29.4*** | | |
| | (4.7) | | | (10.3) | | |
| Control mean | 116.2 | | | 319.7 | | |
| Observations | 3,581 | | | 3,581 | | |

# Impacts on Capital and Labour Use

- In crop agriculture, households accumulate no productive capital nor use more labour
- In livestock, households increase their capital assets and labour use
  - Livestock capital assets are mostly accumulated for heavy livestock
- In NFEs, households increase their capital assets and labour use

| | | Livestock | | | | |
|---|---|---|---|---|---|---|
| | Crops | Light | Heavy | All | Enterprise | Aggregate |
| *Value of Capital Assets (USD PPP)* | | | | | | |
| Cash | 11.3 | 28.7*** | 125.0*** | 153.8*** | 80.5*** | 243.7*** |
| | (9.5) | (6.3) | (26.1) | (29.5) | (26.2) | (42.2) |
| Control mean | 106.3 | 143.5 | 432.6 | 576.1 | 165.0 | 840.9 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,461 | 3,581 |
| *Days of Labour Use* | | | | | | |
| Cash | 1.4 | | | 29.4*** | 21.0*** | 52.0*** |
| | (4.7) | | | (10.3) | (7.1) | (13.8) |
| Control mean | 116.2 | | | 319.7 | 115.6 | 551.4 |
| Observations | 3,581 | | | 3,581 | 3,581 | 3,581 |

# Impacts on Other Inputs

- Intermediate Input Expenditures

  Input Expenditures Results

  - Same pattern as before: no effect for crops, increases in livestock and NFEs
- Technology and Modernisation Efforts

  Technology Results

  - Same pattern as before: no effect for crops, increases in livestock and NFEs

# Impacts on Other Inputs

- Intermediate Input Expenditures — Input Expenditures Results
  - Same pattern as before: no effect for crops, increases in livestock and NFEs
- Technology and Modernisation Efforts — Technology Results
  - Same pattern as before: no effect for crops, increases in livestock and NFEs
- Land — Land Results
  - Modest positive effect on land ownership, mostly not cultivated
- Transfers and Finances — Transfers and Finances Results
  - Marginally higher savings, no effects on lending or borrowing
  - No effects on inter-household transfers made or received

# Impacts on Revenues

- Crop revenues are unchanged

| | Crops | | Livestock | | Enterprise | |
|---|---|---|---|---|---|---|
| | Home | Market | Home | Market | Market | Aggregate |
| Cash | 26.9 | 3.1 | | | | |
| | (17.7) | (4.5) | | | | |
| Control mean | 226.6 | 40.1 | | | | |
| Observations | 3,581 | 3,581 | | | | |

# Impacts on Revenues

- Crop revenues are unchanged
- Households earn higher livestock revenues from market sales; no effect on home consumption

| | Crops | | Livestock | | Enterprise | |
|---|---|---|---|---|---|---|
| | Home | Market | Home | Market | Market | Aggregate |
| Cash | 26.9 | 3.1 | -1.4 | 40.2*** | | |
| | (17.7) | (4.5) | (39.4) | (13.0) | | |
| Control mean | 226.6 | 40.1 | 343.5 | 114.5 | | |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | | |

# Impacts on Revenues

- Crop revenues are unchanged
- Households earn higher livestock revenues from market sales; no effect on home consumption
- Households earn higher NFE revenues, which are market-oriented

| | Crops | | Livestock | | Enterprise | |
|---|---|---|---|---|---|---|
| | Home | Market | Home | Market | Market | Aggregate |
| Cash | 26.9 | 3.1 | -1.4 | 40.2*** | 413.5*** | 502.1*** |
| | (17.7) | (4.5) | (39.4) | (13.0) | (128.6) | (138.2) |
| Control mean | 226.6 | 40.1 | 343.5 | 114.5 | 829.9 | 1,531.7 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,505 | 3,581 |

# Impacts on Revenues

- Crop revenues are unchanged
- Households earn higher livestock revenues from market sales; no effect on home consumption
- Households earn higher NFE revenues, which are market-oriented

| | Crops | | Livestock | | Enterprise | |
|---|---|---|---|---|---|---|
| | Home | Market | Home | Market | Market | Aggregate |
| Cash | 26.9 | 3.1 | -1.4 | 40.2*** | 413.5*** | 502.1*** |
| | (17.7) | (4.5) | (39.4) | (13.0) | (128.6) | (138.2) |
| Control mean | 226.6 | 40.1 | 343.5 | 114.5 | 829.9 | 1,531.7 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,505 | 3,581 |

- Households move towards market-oriented production from subsistence farming
- Evidence of increased market linkages and potentially structural transformation

# Impacts on Consumption

- Households achieve 7.3% higher consumption 1.5 years after the cash transfers
  - Increase of 305*** USD PPP, relative to a control mean of 4,177
  - Consumption increases are spread out across a wide range of consumption categories

Consumption Results

# Impacts on Labour Supply

# Impacts on Labour Supply

- Higher labour supply to livestock and NFE household activities, but no change in crops

| | Household Activities | | | | | |
|---|---|---|---|---|---|---|
| | Crops | Livestock | Enterprise | All Household | Outside | Aggregate |
| Cash | 0.3 | 24.2** | 18.3*** | 43.1*** | | |
| | (4.6) | (10.5) | (6.4) | (13.9) | | |
| Control mean | 110.8 | 302.0 | 109.1 | 522.0 | | |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | | |

# Impacts on Labour Supply

- Higher labour supply to livestock and NFE household activities, but no change in crops
- Reduction in labour supply to outside activities, including migration, as labour is redirected to household activities

| | Household Activities | | | | | |
|---|---|---|---|---|---|---|
| | Crops | Livestock | Enterprise | All Household | Outside | Aggregate |
| Cash | 0.3 | 24.2** | 18.3*** | 43.1*** | -13.5*** | |
| | (4.6) | (10.5) | (6.4) | (13.9) | (4.7) | |
| Control mean | 110.8 | 302.0 | 109.1 | 522.0 | 80.2 | |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 | |

# Impacts on Labour Supply

- Higher labour supply to livestock and NFE household activities, but no change in crops
- Reduction in labour supply to outside activities, including migration, as labour is redirected to household activities
- Increase in total labour supply: households are *not* buying leisure with the cash transfer
  - Inconsistent with frictionless markets

| | Household Activities | | | | | |
|---|---|---|---|---|---|---|
| | Crops | Livestock | Enterprise | All Household | Outside | Aggregate |
| Cash | 0.3 | 24.2** | 18.3*** | 43.1*** | -13.5*** | 29.6** |
| | (4.6) | (10.5) | (6.4) | (13.9) | (4.7) | (14.6) |
| Control mean | 110.8 | 302.0 | 109.1 | 522.0 | 80.2 | 602.2 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 |

# Impacts on Labour Supply

- Higher labour supply to livestock and NFE household activities, but no change in crops
- Reduction in labour supply to outside activities, including migration, as labour is redirected to household activities
- Increase in total labour supply: households are *not* buying leisure with the cash transfer
  - Inconsistent with frictionless markets
- Unlikely to be explained by wage effects

Wage Results

| | Household Activities | | | | | |
|---|---|---|---|---|---|---|
| | Crops | Livestock | Enterprise | All Household | Outside | Aggregate |
| Cash | 0.3 | 24.2** | 18.3*** | 43.1*** | -13.5*** | 29.6** |
| | (4.6) | (10.5) | (6.4) | (13.9) | (4.7) | (14.6) |
| Control mean | 110.8 | 302.0 | 109.1 | 522.0 | 80.2 | 602.2 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 |

# Heterogenous Impacts on Labour Supply

- Higher aggregate labour supply is driven:
  - mainly by baseline non-upgraded households
  - less by baseline upgraded households

| | Household Activities | | | | | |
|---|---|---|---|---|---|---|
| | Crops | Livestock | Enterprise | All Household | Outside | Aggregate |
| Cash | 1.0 | 33.9** | 21.3** | 56.7*** | -12.9 | **43.9**** |
| | (5.1) | (14.2) | (8.4) | (17.0) | (8.1) | (19.2) |
| Cash + Cash × Upgraded | -0.2 | 16.0 | 15.2* | 31.0* | -13.7** | **17.2** |
| | (5.7) | (13.1) | (8.0) | (17.7) | (6.0) | (18.8) |
| *p*-value: Cash × Upgraded = 0 | [0.835] | [0.310] | [0.557] | [0.234] | [0.941] | [0.281] |
| Control mean | 110.8 | 302.0 | 109.1 | 522.0 | 80.2 | 602.2 |
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# Heterogenous Impacts on Labour Supply

- Higher aggregate labour supply is driven:
  - mainly by baseline non-upgraded households
  - less by baseline upgraded households
- Consistent with the tests for market frictions
  - Reject separation for low-capital households, but not for high-capital households

| | Household Activities | | | | | |
|---|---|---|---|---|---|---|
| | Crops | Livestock | Enterprise | All Household | Outside | Aggregate |
| Cash | 1.0 | 33.9** | 21.3** | 56.7*** | -12.9 | **43.9**** |
| | (5.1) | (14.2) | (8.4) | (17.0) | (8.1) | (19.2) |
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| *p*-value: Cash × Upgraded = 0 | [0.835] | [0.310] | [0.557] | [0.234] | [0.941] | [0.281] |
| Control mean | 110.8 | 302.0 | 109.1 | 522.0 | 80.2 | 602.2 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 |

# Interpreting the Experimental Evidence

- Households achieve occupational upgrading by diversifying their household activities
  - Households expand production from crop agriculture and light-livestock to *additionally* include the more capital-heavy cattle and/or NFEs
  - Consistent patterns for revenues, capital assets, labour use, input expenditures and technology

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- Patterns are *not* consistent with households using cash to continue the status quo
  - Households expand what they do economically
  - Households move towards market-oriented production from subsistence farming

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  - Consistent patterns for revenues, capital assets, labour use, input expenditures and technology
- Patterns are *not* consistent with households using cash to continue the status quo
  - Households expand what they do economically
  - Households move towards market-oriented production from subsistence farming
- Why were households not previously engaging in these activities?
  - Potentially because households face market frictions & cash transfers help to reduce the distortionary effects of these frictions

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# Taking Stock

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# Taking Stock

- Households who have not upgraded to capital-heavy activities face market frictions
- Cash transfers allow households to:
  1. Reduce the distortionary effects of market frictions
  2. Upgrade their economic activities
- What can we say about specific market frictions?
  - Weakness of separation tests: they do not identify *which* markets face frictions

# Capital and Labour Market Frictions?

- Our results are *consistent with* one specific model of frictions in capital & labour markets

# Capital and Labour Market Frictions?

- Our results are *consistent with* one specific model of frictions in capital & labour markets
  - The shift in efficiency must ultimately (even if indirectly) be caused by a capital infusion, which provides a positive shock to both wealth and liquidity $\rightarrow$ a capital market friction?

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  - The shift in efficiency must ultimately (even if indirectly) be caused by a capital infusion, which provides a positive shock to both wealth and liquidity $\rightarrow$ a capital market friction?
  - Labour supply going up in response to a cash transfer (with no change in market wages) must imply that shadow wages have increased in household production $\rightarrow$ a labour market friction?

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  - Labour supply going up in response to a cash transfer (with no change in market wages) must imply that shadow wages have increased in household production $\rightarrow$ a labour market friction?
- A sketch of the model
  - Capital & labour are complements in at least some household economic activities
  - Capital accumulation is limited by some capital market friction
  - Household & hired labour are imperfect substitutes (e.g. hard-to-observe effort & moral hazard)

Additional Results

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  - Household & hired labour are imperfect substitutes (e.g. hard-to-observe effort & moral hazard)
  - These lead low-capital households to allocate labour *inefficiently* in their own production, pushing down their shadow wage resulting in an under-supply of labour

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  - Household & hired labour are imperfect substitutes (e.g. hard-to-observe effort & moral hazard)
  - These lead low-capital households to allocate labour *inefficiently* in their own production, pushing down their shadow wage resulting in an under-supply of labour
  - Cash transfers enable households to upgrade to high-capital activities, allocate labour *efficiently*, moving their shadow wage toward the market wage, resulting in an increase in labour supply

Additional Results

# Other Explanations

- Gender and Household Bargaining

  Household Bargaining Results

  - *Unlikely* that our results are driven by changes in intra-household bargaining
- Psychological Factors

  Psychological Results

  - *Unlikely* that our results are driven by changes in psychological factors
- Demand Effects
  - Cash transfers can have general equilibrium effects (Egger et al., 2022) which would affect investment by raising aggregate demand
  - *Work in progress*

# Conclusion

- Households who have not upgraded to capital-heavy activities face market frictions
- Cash transfers allow households to:
  1. Reduce the distortionary effects of market frictions
  2. Upgrade their economic activities
- What can we say about specific market frictions?

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  2. Upgrade their economic activities
- What can we say about specific market frictions?
  - Results are consistent with a model of capital and labour market frictions
- What can we take away from these findings?
  - Value of combining separation tests with policy or experimental variation
  - A framework for understanding when and how transfers can improve efficiency of production, beyond a simple wealth effect on consumption

# Appendix

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# Summary Statistics

Back

| | Mean (1) | Std. Dev. (2) | Percentiles 10th (3) | 25th (4) | 50th (5) | 75th (6) | 90th (7) | Observations (8) |
|---|---|---|---|---|---|---|---|---|
| *Panel A. Demographics* | | | | | | | | |
| Household Size | 5.6 | 2.5 | 2.0 | 4.0 | 6.0 | 7.0 | 9.0 | 1,766 |
| Number of Children | 2.8 | 1.9 | 0.0 | 1.0 | 3.0 | 4.0 | 5.0 | 1,766 |
| Number of Adults | 2.8 | 1.5 | 1.0 | 2.0 | 2.0 | 4.0 | 5.0 | 1,766 |
| Household Head Age | 40.6 | 16.5 | 23.0 | 28.0 | 36.0 | 50.0 | 65.0 | 1,764 |
| At Least Primary School Education | 0.43 | 0.49 | | | | | | 1,759 |
| *Panel B. Household and Outside Economic Activities* | | | | | | | | |
| Crop Agriculture | 0.98 | 0.15 | | | | | | 1,767 |
| Livestock | 0.89 | 0.32 | | | | | | 1,767 |
| Light Livestock | 0.87 | 0.34 | | | | | | 1,767 |
| Cattle | 0.42 | 0.49 | | | | | | 1,767 |
| Enterprise | 0.44 | 0.50 | | | | | | 1,767 |
| Causal and Salaried | 0.40 | 0.49 | | | | | | 1,767 |
| *Panel C. Economic Outcomes* | | | | | | | | |
| Labour Supply | 602 | 416 | 96 | 336 | 528 | 828 | 1,116 | 1,767 |
| Revenue | 2,101 | 3,204 | 165 | 451 | 1,175 | 2,423 | 4,708 | 1,767 |
| Consumption | 4,177 | 2,212 | 1,730 | 2,566 | 3,799 | 5,418 | 7,027 | 1,762 |
| Non-land Assets | 1,529 | 1,506 | 289 | 536 | 1,068 | 2,019 | 3,219 | 1,767 |
| *Panel D. Economic Outcomes for Households without Cattle or Enterprises* | | | | | | | | |
| Labour Supply | 432 | 395 | 36 | 132 | 384 | 612 | 852 | 582 |
| Revenue | 937 | 1,501 | 67 | 191 | 477 | 1,214 | 2,151 | 582 |
| Consumption | 3,481 | 2,021 | 1,342 | 2,001 | 3,024 | 4,534 | 6,147 | 578 |
| Non-land Assets | 719 | 668 | 174 | 301 | 538 | 917 | 1,418 | 582 |
| *Panel E. Economic Outcomes for Households with Cattle or Enterprises* | | | | | | | | |
| Labour Supply | 686 | 401 | 240 | 408 | 648 | 888 | 1,200 | 1,185 |
| Revenue | 2,672 | 3,636 | 356 | 774 | 1,679 | 3,175 | 5,902 | 1,185 |
| Consumption | 4,517 | 2,223 | 2,025 | 2,878 | 4,142 | 5,758 | 7,437 | 1,184 |
| Non-land Assets | 1,926 | 1,638 | 490 | 841 | 1,501 | 2,549 | 3,810 | 1,185 |

# Regression Specification of Production-Side Tests

- Regress household labour use on household size/composition (Benjamin, 1992; LaFave & Thomas, 2016)

$$\ln(L^D_{ivt}) = N_{ivt}\,\beta + \gamma_i + \tau_{vt} + \delta_{t'} + X_{ivt}\,\mu + \epsilon_{ivt}$$

- $N_{ist}$ measures household size, in total or by age$\times$sex groups:

$$N_{ist} = \ln(n_{ist})$$

$$N_{ist} = \sum_{k \in K^m} n^{mk}_{ist} + \sum_{k \in K^f} n^{fk}_{ist}$$

- Control for unobserved factors that might affect labour demand & household size/composition: household FEs $\gamma_i$, village$\times$wave FEs $\tau_{vt}$, month-of-survey FEs $\delta_{t'}$, production inputs $X_{ivt}$

- Households behave as if markets are frictionless if $\beta = 0$

Back

# Intuition for Consumption-Side Tests

- Consider a pair of consumption goods $\{1, 2\}$ and production inputs $\{a, b\}$
- The price of an input $p_a$ (that does not enter the utility function directly) should only affect consumption $c_1$ through its effect on profits $\pi^*$, and an income effect $\frac{\partial c_1}{\partial \pi^*}$:

$$\frac{\partial c_1}{\partial p_a} = \frac{\partial c_1}{\partial \pi^*} \frac{\partial \pi^*}{\partial p_a}$$

- The ratio of any pair of input price effects on a consumption good is independent of the consumption good itself, since the income effects cancel out:

$$\frac{\frac{\partial c_1}{\partial p_a}}{\frac{\partial c_a}{\partial p_b}} = \frac{\frac{\partial c_1}{\partial \pi^*} \frac{\partial \pi^*}{\partial p_a}}{\frac{\partial c_1}{\partial \pi^*} \frac{\partial \pi^*}{\partial p_b}} = \frac{\frac{\partial \pi^*}{\partial p_a}}{\frac{\partial \pi^*}{\partial p_b}}$$

- **Testable Implication:** The ratio of any pair of input price effects is the same for all goods:

$$\frac{\frac{\partial c_1}{\partial p_a}}{\frac{\partial c_1}{\partial p_b}} = \frac{\frac{\partial \pi^*}{\partial p_a}}{\frac{\partial \pi^*}{\partial p_b}} = \frac{\frac{\partial c_2}{\partial p_a}}{\frac{\partial c_2}{\partial p_b}}$$

Back

# Regression Specification of Consumption-Side Tests

- Regress consumption shares for each consumption good $g$ on input prices using an extension of the Almost Ideal Demand System (LaFave et al., 2025)

$$c_{ivt}^{g} = \sum_{x} \ln(p_{vt}^{x})\beta_{x}^{g} + ... + \gamma_{i} + \gamma_{t} + \epsilon_{ivt}$$

- Control for household FEs $\gamma_i$, time FEs $\gamma_t$, wages, prices of consumption goods, an aggregate price index, linear splines of per-capita household expenditure, and other household characteristics
- Use a parsimonious $4 \times 2$ system:
  - 4 consumption subaggregates: cereals, meat/dairy, other food and non-food
  - 2 production inputs: chicken feed and fertiliser
- Implement non-linear Wald tests for each pair of consumption goods $(g, g')$ and inputs $(x, x')$:

$$\beta_{x}^{g} \times \beta_{x'}^{g'} = \beta_{x}^{g'} \times \beta_{x'}^{g}$$

Back

# Results of Consumption-Side Tests for Control Villages

| | Tests of Equality for Price Effects of Chicken Feed and Fertiliser | | | |
|---|---|---|---|---|
| | Eligible HHs | | | Ineligible HHs |
| | All (1) | No Cattle or Enterprise (2) | Cattle or Enterprise (3) | All (4) |
| Cereals vs Meat/Dairy | [0.088] | [0.036] | [0.688] | [0.545] |
| Cereals vs Other Food | [0.071] | [0.060] | [0.335] | [0.634] |
| Cereals vs Non-food | [0.236] | [0.724] | [0.318] | [0.572] |
| Meat/Dairy vs Other Food | [0.540] | [0.095] | [0.736] | [0.893] |
| Meat/Dairy vs Non-food | [0.488] | [0.947] | [0.798] | [0.488] |
| Other Food vs Non-food | [0.204] | [0.831] | [0.665] | [0.643] |
| Number of Rejections at 5% | 0 | 1 | 0 | 0 |
| Number of Rejections at 10% | 2 | 3 | 0 | 0 |
| Number of Pairwise Ratios | 6 | 6 | 6 | 6 |
| Households | 1,739 | 764 | 975 | 671 |
| Observations | 3,478 | 1,528 | 1,950 | 1,342 |

Back

# Results of Consumption-Side Tests for Cash Villages

| | Tests of Equality for Price Effects of Chicken Feed and Fertiliser | | | |
|---|---|---|---|---|
| | Eligible HHs | | | Ineligible HHs |
| | All (1) | No Cattle or Enterprise (2) | Cattle or Enterprise (3) | All (4) |
| Cereals vs Meat/Dairy | [0.417] | [0.925] | [0.860] | [0.807] |
| Cereals vs Other Food | [0.909] | [0.846] | [0.745] | [0.922] |
| Cereals vs Non-food | [0.326] | [0.922] | [0.753] | [0.800] |
| Meat/Dairy vs Other Food | [0.881] | [0.841] | [0.316] | [0.255] |
| Meat/Dairy vs Non-food | [0.603] | [0.928] | [0.374] | [0.165] |
| Other Food vs Non-food | [0.720] | [0.944] | [0.311] | [0.283] |
| Number of Rejections at 5% | 0 | 0 | 0 | 0 |
| Number of Rejections at 10% | 0 | 0 | 0 | 0 |
| Number of Pairwise Ratios | 6 | 6 | 6 | 6 |
| Households | 1,798 | 741 | 1,056 | 702 |
| Observations | 3,596 | 1,482 | 2,112 | 1,404 |

Back

# Impacts on Dual Household Economic Activities

| | Crops | | | Light-Livestock | | Heavy-Livestock |
|---|---|---|---|---|---|---|
| | Light Livestock | Heavy Livestock | Enterprise | Heavy Livestock | Enterprise | Enterprise |
| *Panel A. Household Involved in Both Activities* | | | | | | |
| Cash | 0.023** | 0.112*** | 0.053*** | 0.089*** | 0.053*** | 0.086*** |
| | (0.011) | (0.017) | (0.017) | (0.016) | (0.017) | (0.014) |
| Control mean | 0.854 | 0.419 | 0.439 | 0.406 | 0.403 | 0.195 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 |
| *Panel B. Household Involved in At Least One of the Two Activities* | | | | | | |
| Cash | -0.002 | 0.003 | 0.008* | 0.039*** | 0.027*** | 0.085*** |
| | (0.003) | (0.004) | (0.004) | (0.009) | (0.009) | (0.016) |
| Control mean | 0.994 | 0.984 | 0.982 | 0.887 | 0.909 | 0.671 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 |

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# Impacts on Multiple Household Economic Activities

| | Crops<br>Light Livestock<br>Heavy Livestock<br>- | Crops<br>Light Livestock<br>-<br>Enterprise | Crops<br>-<br>Heavy Livestock<br>Enterprise | -<br>Light Livestock<br>Heavy Livestock<br>Enterprise | Crops<br>Light Livestock<br>Heavy Livestock<br>Enterprise |
|---|---|---|---|---|---|
| *Panel A. Household Involved in All Activities* | | | | | |
| Cash | 0.094*** | 0.047*** | 0.083*** | 0.077*** | 0.075*** |
| | (0.017) | (0.017) | (0.014) | (0.014) | (0.014) |
| Control mean | 0.401 | 0.400 | 0.195 | 0.189 | 0.188 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 |
| *Panel B. Household Involved in At Least One of the Activities* | | | | | |
| Cash | 0.001 | 0.000 | 0.007* | 0.036*** | 0.001 |
| | (0.002) | (0.002) | (0.003) | (0.008) | (0.002) |
| Control mean | 0.994 | 0.995 | 0.986 | 0.920 | 0.995 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 |

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# Impacts on Transfers and Finances

- Small positive effects on savings
- No effects on inter-household transfers
- No effects on lending or borrowing

| | | Transfers | | Loans | |
|---|---|---|---|---|---|
| | Savings | Received | Given | Received | Given |
| | (1) | (2) | (3) | (4) | (5) |
| Cash | 25.3*** | -20.1 | -4.1 | -5.9 | 5.1 |
| | (9.7) | (17.7) | (8.7) | (12.8) | (4.2) |
| Control mean | 122.3 | 232.8 | 120.1 | 133.3 | 28.9 |
| Observations | 3,580 | 3,539 | 3,553 | 3,581 | 3,581 |

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# Impacts on Land

- Positive effects on both compound and other land ownership and acreage

| | Land Ownership | | | Acreage Owned | | | Cultivated Land | |
|---|---|---|---|---|---|---|---|---|
| | All (1) | Compound (2) | Other (3) | All (4) | Compound (5) | Other (6) | Any (7) | Acres (8) |
| Cash | 0.036*** | 0.049*** | 0.035** | 0.279*** | 0.134*** | 0.143*** | -0.001 | 0.110** |
| | (0.010) | (0.014) | (0.016) | (0.064) | (0.049) | (0.039) | (0.010) | (0.055) |
| Control mean | 0.876 | 0.800 | 0.297 | 1.459 | 1.055 | 0.402 | 0.942 | 1.285 |
| Observations | 3,581 | 3,581 | 3,581 | 3,547 | 3,549 | 3,577 | 3,576 | 3,576 |

- Small increase in cultivated land relative to land purchased
  - Only *some* new land is being purchased for agriculture
- Livestock generally doesn't have dedicated land
  - They overnight in the compound (even cows) and graze in communal land
- NFEs generally don't have separate premises
  - Retail NFEs are run in a rented space near the village centre
  - Other types of NFEs (e.g. welding, producing baskets) are run out of the compound

Back

# Impacts on Technology and Input Expenditures

- Households do not adopt any new technologies in agriculture, but do for livestock rearing
- Households expand their NFEs into new products and markets
- Households increase their input expenditures for livestock and NFEs

| | Crops | Livestock | Enterprise | Aggregate |
|---|---|---|---|---|
| *Technology Adoption* | | | | |
| Cash | 0.10 | 0.17*** | 0.11*** | 0.40*** |
| | (0.07) | (0.04) | (0.04) | (0.12) |
| Control mean | 2.11 | 0.79 | 0.35 | 3.57 |
| Observations | 3,580 | 3,580 | 3,581 | 3,581 |
| *Intermediate Input Expenditures* | | | | |
| Cash | 10.5*** | 9.4*** | 294.2*** | 302.8*** |
| | (3.7) | (2.4) | (81.8) | (79.9) |
| Control mean | 63.0 | 25.9 | 478.4 | 554.4 |
| Observations | 3,581 | 3,555 | 3,499 | 3,581 |

Technology Adoption and Modernisation Definitions

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# Technology Adoption and Modernisation Definitions

- **Technology adoption in crop agriculture:** (a) saved water for irrigation or used a pump; (b) improved soil e.g. using compost, fertiliser, lime, or ash; (c) used insecticide, fungicide, herbicide, or pesticide; (d) used improved or high yield seeds or seedlings; (e) terraced land or install a fence; (f) tried out a new crop; (g) used lime or ash for the soil, or had the soil tested; (h) engaged in intercropping, row planting, or crop rotation; (i) used a new crop storage solution or greenhouse; (j) used new machine or new farming tool.
- **Technology adoption in livestock related activities:** (a) vaccinated livestock, used a vet, purchased livestock medicine, or inseminated livestock; (b) sprayed or dipped livestock; (c) built or used a livestock enclosure; (d) tried out any new animal not previously tended to.
- **Enterprise expansion activities:** (a) introduced new or significantly improved products or services; (b) went into a new market or accessed new customers. Note this value may be more than two if there are multiple enterprises in a household.

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# Impacts on Consumption

| | | Consumption Subcomponents | | | | |
|---|---|---|---|---|---|---|
| | Aggregate | Food | Non-Food Non-Durable | Durable | Social | Education |
| Cash | 305.1*** | 101.2* | 80.2*** | 58.2** | 28.1*** | 25.5 |
| | (88.7) | (54.8) | (10.6) | (27.4) | (9.3) | (19.9) |
| Control mean | 4,177.0 | 2,727.3 | 140.8 | 823.6 | 109.9 | 383.8 |
| Observations | 3,573 | 3,566 | 3,568 | 3,573 | 3,573 | 3,573 |

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# Impacts on Mixed Income from Household Economic Activities

| | Crops (1) | Livestock (2) | Enterprise (3) | Aggregate (4) |
|---|---|---|---|---|
| Cash | 8.0 | 19.9 | 168.5** | 197.5** |
| | (19.1) | (43.8) | (69.1) | (80.5) |
| Control mean | 172.4 | 363.7 | 319.9 | 841.9 |
| Control std. dev. | 590.7 | 1,263.2 | 1,468.1 | 2,072.6 |
| Observations | 3,573 | 3,555 | 3,474 | 3,581 |

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# Impacts on Wages

| | Wages | | | | | | |
|---|---|---|---|---|---|---|---|
| | Crops | Livestock | Forestry | Fishing | Mining | Construction | Casual |
| Cash | 0.44* | -0.17 | 0.91* | -0.37 | 1.17 | 0.12 | -0.03 |
| | (0.24) | (0.38) | (0.46) | (0.41) | (1.18) | (0.23) | (0.33) |
| Control mean | 6.14 | 3.59 | 6.25 | 11.28 | 19.85 | 9.64 | 5.08 |
| Observations | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 | 3,581 |

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# Impacts on Labour Demand and Supply for Ineligible Households

| | Household Activities | | | | | |
|---|---|---|---|---|---|---|
| | Crops | Livestock | Enterprise | All Household | Outside | Aggregate |
| *Panel A. Labour Demand* | | | | | | |
| Cash | 0.7 | -13.9 | 8.1 | -8.3 | -1.3 | |
| | (6.8) | (22.9) | (9.0) | (31.0) | (5.5) | |
| Control mean | 103.0 | 345.9 | 122.1 | 606.1 | 50.3 | |
| Observations | 1,394 | 1,394 | 1,394 | 1,394 | 1,394 | |
| *Panel B. Labour Supply* | | | | | | |
| Cash | 2.0 | -13.9 | 4.6 | -7.6 | -1.6 | -8.9 |
| | (6.4) | (22.9) | (8.2) | (29.7) | (7.6) | (32.2) |
| Control mean | 94.2 | 345.9 | 115.8 | 555.8 | 73.9 | 629.7 |
| Observations | 1,394 | 1,394 | 1,394 | 1,394 | 1,394 | 1,394 |

Back

# Cash Transfers and Intrahousehold Bargaining

- Transfers are labelled as “for the household” but 80% of HHs receive their payments via women, which might shift intrahousehold bargaining.
- Mahmud, Orkin and Riley (2025) find no effects of cash on typical survey measures of bargaining power (same sample and intervention):
  - Who owns assets
  - Consumption shares for women’s clothes, items typically seen as women’s goods
  - “Soft” measures of bargaining power: women’s say in a range of decisions affecting the household

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# Cash Transfers and Psychological Factors

- Literature shows cash can affect psychology: ↓ financial stress, ↑ motivation (Banerjee et al. 2020, Kaur et al. 2025)
- We find evidence consistent with this: Improvements in mental health and aspirations for income/wealth.
- We find no change in preferences, self-efficacy, or locus of control
- Mental health and aspirations can't *explain activity shifts*
  - Little heterogeneity in psychological effects. So psych channels can't explain why only some households upgrade
  - Studies which vary these channels don't find strong evidence of activity shifts
    - Studies of **mental health treatments** don't find effects on investment or activity shifts (Lund et al. 2024)
    - Another arm **varying aspirations** via role model videos finds activity shifts, but not as large as for cash. Suggests psych alone is insufficient – households receiving this treatment still face constraints
    - Psych households don't purchase much livestock or increase investments
    - Psych households increase inputs, revenue, labor supply in NFEs – but effects are ∼50% of cash. They also don't form new enterprises, vs 4.8 pp increase in new enterprises for cash

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# Additional Results on Capital Assets

- Capital distributions are bimodal at baseline for control and treated households
  - Baseline non-upgraded households are at the low mode
  - Baseline already-upgraded households are at the high mode
  - Gap between low and high mode is approximately 1,000 USD PPP (45% of cash transfer)

- Treatment induces a shift from the low mode to the high mode at endline

Capital Distributions of Eligible Households

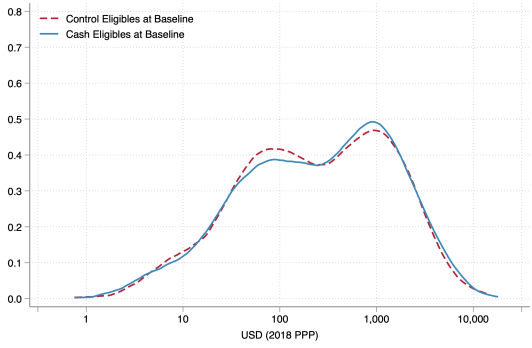
- Treated households have similar endline distributions to ineligible households

Capital Distributions of Ineligible Households

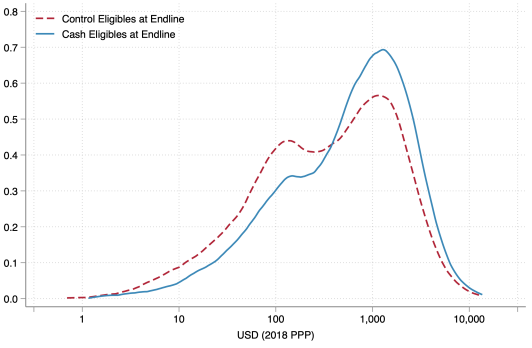
Back

# Capital Distributions of Eligible Households

**A.** Baseline

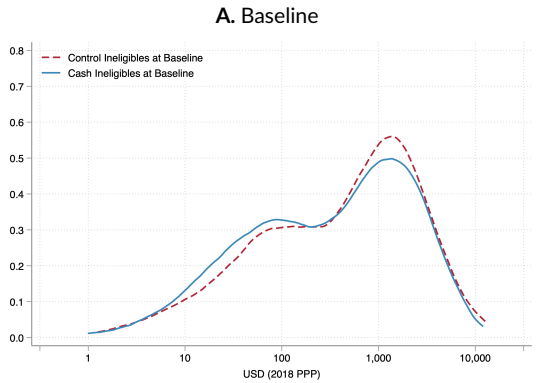


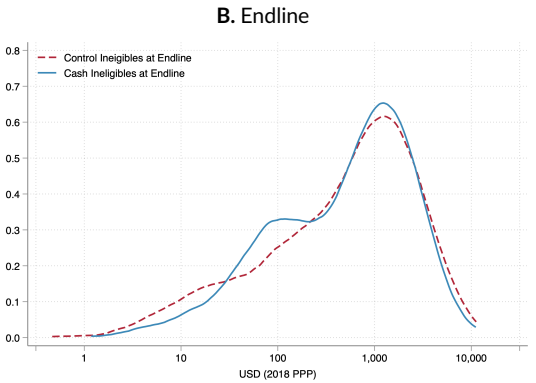

**B.** Endline




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# Capital Distributions of Ineligible Households




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