

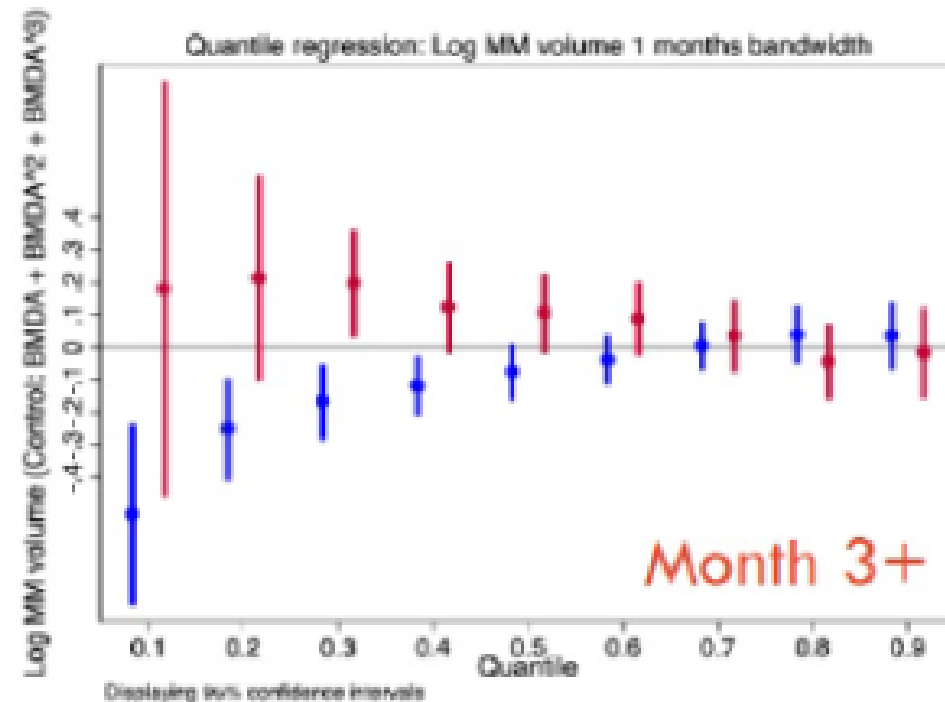
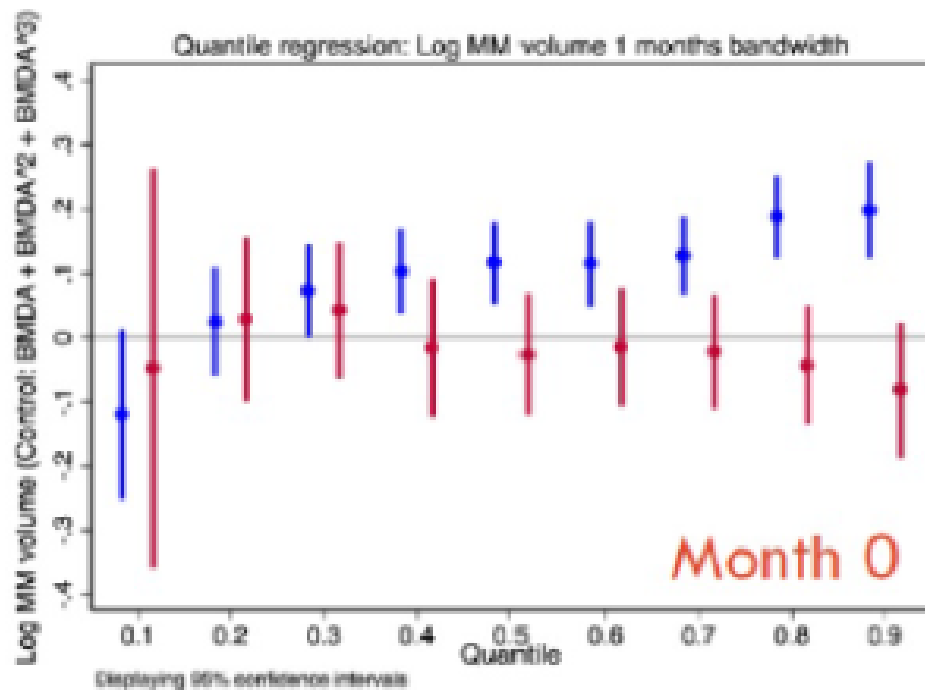
# Discussion of “The Impacts of Automated Loans on Mobile Money Agents”

Miriam Bruhn  
(DECRG, World Bank)

EBRD, We-Fi, CEPR Research Conference  
“Financing Women-led SMEs”  
October 23, 2023

# Summary

- Use a policy change to measure the effect of digital loans on mobile money agents
  - Loans offered based on minimum mobile money (MM) transaction volume
    - 2019: Doubling in loan size; lower eligibility minimum



**Men:** High-volume agents increase MM volume only at first. Low-volume agents seem to invest elsewhere.

**Women:** Low-volume agents increase MM volume after a couple of months.

# Identification strategy I: Before and after

- Compare agents who received a loan one month before vs. one month after the policy change AND propensity score matching
  - Transactions in treatment group are smaller by design (drop in eligibility threshold)
- What is the average loan maturity? Do agents pay off the smaller loans quickly and get the new larger loans?
  - Plot outcomes for treatment and control agents separately over time

Table 1: Covariate Balance Prior to Propensity Score Matching

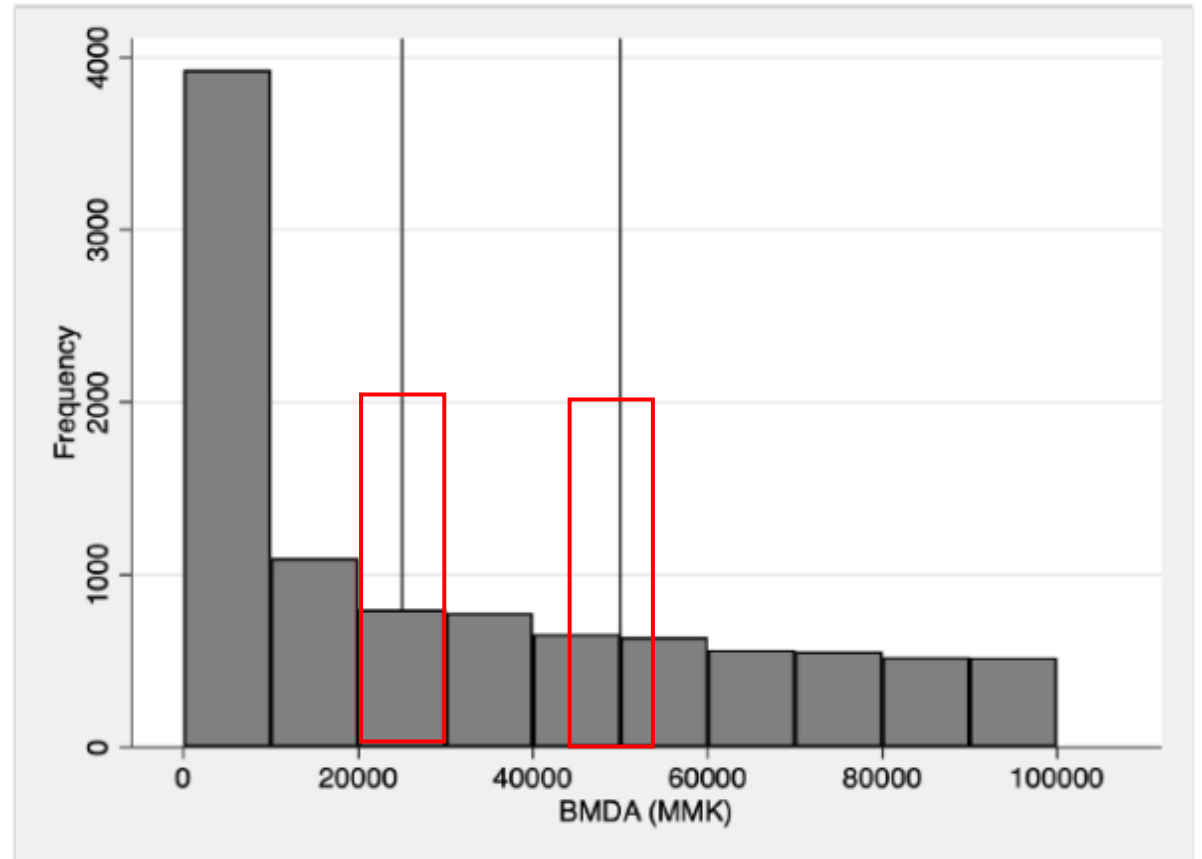
	(1) Control	(2) Treatment	(3) (2) - (1)	(4) Observations
BMDA	1696046.0 (2154207.0)	871131.8 (867554.1)	-824914.2*** (82038.2)	1414
Age	38.2372 (9.2512)	37.4365 (9.2568)	-0.8007 (0.5052)	1414
Female	0.5182 (0.5001)	0.5219 (0.4998)	0.0037 (0.0273)	1414
Dependents in HH	2.4235 (1.5767)	2.3265 (1.5078)	-0.0970 (0.1062)	856
Income sources in HH	2.5492 (1.1920)	2.5714 (1.2532)	0.0222 (0.0848)	856
Monthly HH income	1497049.12 (1678093.88)	1491926.50 (1609913.25)	-5122.65 (113261.79)	856
Gross Monthly Sales	1236147.50 (1414108.00)	1207789.75 (1434702.50)	-28357.74 (98397.11)	856
Agents	548	866	1414	

Note: \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Standard deviations in parentheses.

HH is used to denote household, and the Female variable is equal to one if the agent is female.

# Identification strategy II: Transaction volume

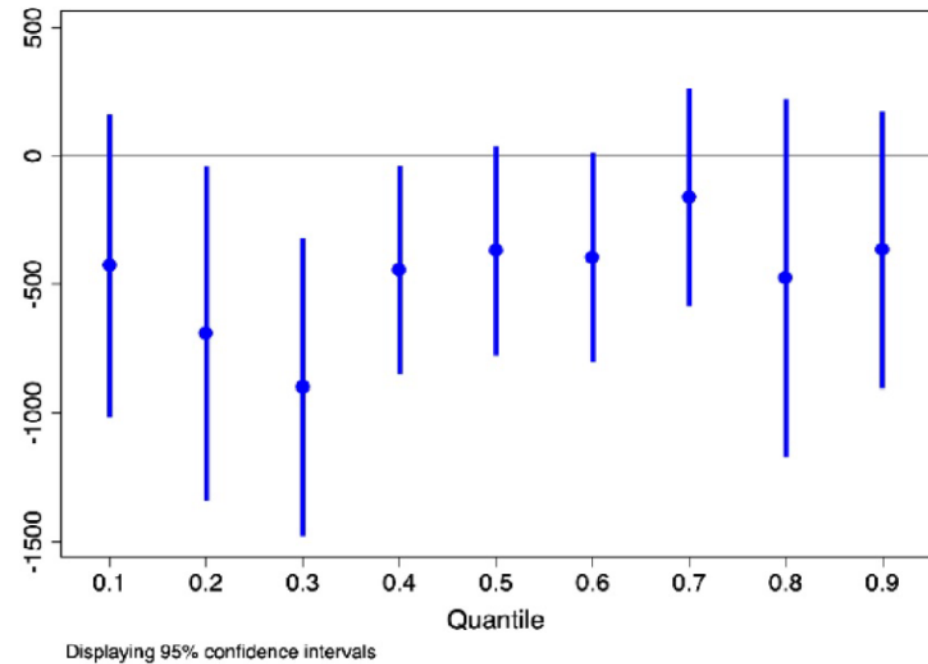
- Compare agents with 25,000-50,000 MMK transaction volume (treatment) to agents with 50,000-75,000 MMK (control)
  - Why not use agents below 25,000 as the control group?
- Why not use a regression discontinuity design (RDD) based on the transaction volume eligibility thresholds?



# Follow-up phone survey

- Response rate was 65% as many agents did not respond to calls
- Results for asset purchases look counterintuitive
  - Could they be driven by differential response rates/selection in the control and treatment group?
    - Treatment agents may be busier and less able to answer the phone

Figure 8: Asset purchases



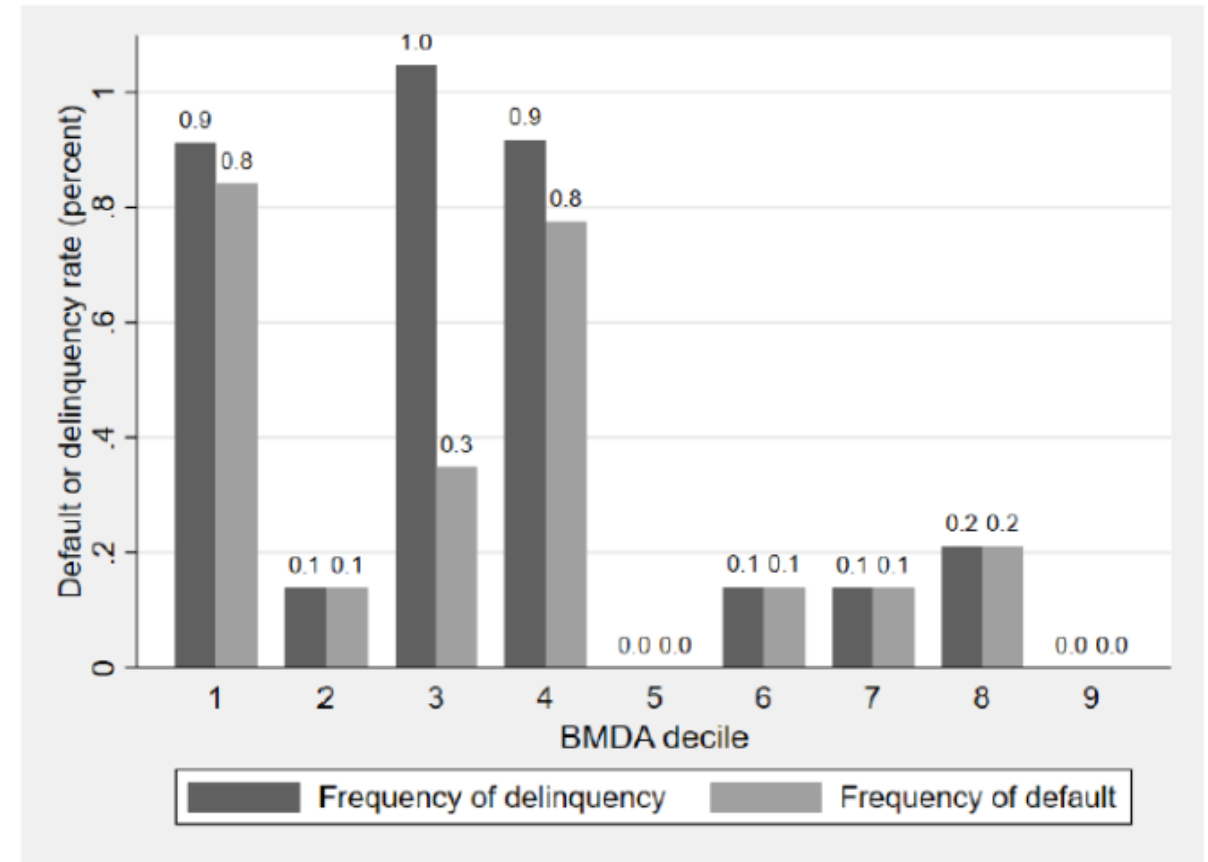
# Which problem are digital loans solving?

- Agents often run out of float (e-money or cash)
  - This paper: 73% of agents report struggling with liquidity occasionally
  - Tanzania: Agents stock out on 49% of observed days (Acimovic et al. 2022)
- Loans are deposited into bank account and can be moved to mobile wallet
  - Helps with providing more e-money
    - May allow low-volume women to establish a reputation for reliably having e-money
  - What about cash?
- Loans may serve a different purpose for dedicated agents vs. stores
  - Here, only 20% are dedicated mobile money agents (breakdown by sex?)
    - Are the effects different for dedicated agents?

# Why are digital loans a good option here?

- Administrative data allows screening based on MM transaction volume
- Here: 1% default and late payments
  - Mexico: 27% default (Burlando, Prina, and Kuhn 2023)
  - Malawi: 47% late payments (Brailovskaya, Dupas, and Robinson 2021)
- Does digital collateral play a role?
  - Lenders can disable flow value without physical repossession (Gertler, Green, and Wolfram 2023 - locking solar panels)

Figure 10: Delinquency and default rates by BMDA decile



# Advantage of digital loans for women

- Receiving digital loans instead of cash can enable women to overcome intra-household sharing pressure (Riley 2022)
  - This paper: “We also find an increase in decision-making power over household loan proceeds, on the part of the recipient.”
    - Is this effect larger for women than for men?
- Objective decision rule can benefit women if there is discrimination
  - Women received same loan terms as men when approved based solely on an alternative credit score, but worse terms when approved via a loan officer (Arráiz et al. 2023)



# Policy implications

- Digital loans can benefit women for at least two reasons
  - More privacy than cash
  - Objective decision rules limit loan officer discrimination
- Lenders can avoid high default and late payment rates by using
  - Administrative data to determine eligibility
  - Digital collateral