

DISCUSSION:  
CASH: A BLESSING OR A CURSE?  
BY: AAJL

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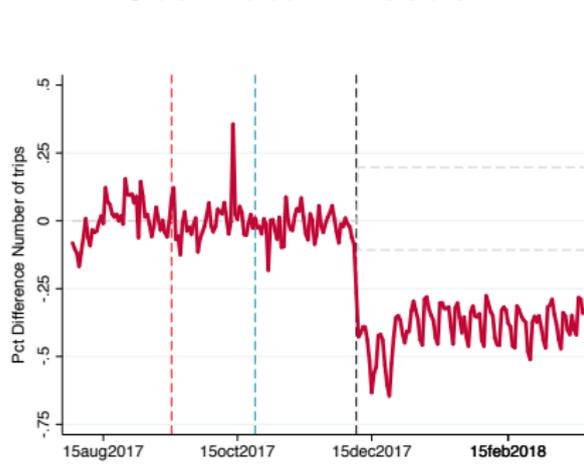
# CASH DEBATE

- Benefits of going cashless:
  - ① Discourage organized crime.
  - ② Discourage petty crime.
  - ③ Discourage tax evasion.
  - ④ Mitigate effective lower bound on nominal interest rates.
  - ⑤ Convenience.
  
- Costs:
  - ① Transition costs.
  - ② Convenience.

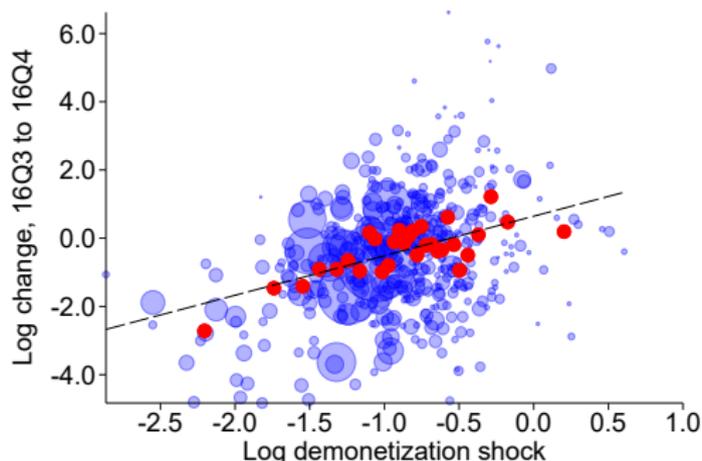
Note: slide from discussion of Alvarez and Argente, EFG, 2019.

# TRANSITION COSTS ARE REAL

Uber rides in Puebla



Nightlights in India



- Left panel: Uber rides in Puebla fall after cash ban (Alvarez, Argente, 2021).
- Right panel: districts in India that had larger decline in cash during demonetization had lower nightlight activity (Chodorow-Reich, Gopinath, Mishra, Naryanan, QJE, 2020).

Note: slide from discussion of Alvarez and Argente, EFG, 2019.

# SUMMARY OF AAJL

- 1 Introduction of Progresa electronic debt cards or ATM-sharing:
  - ▶ More ATM transactions ( $\Rightarrow$  less cash-on-hand).
  - ▶ Reduction in theft.
  - ▶ No effect on violent crime or informal worker share.
  - ▶ No increase in local taxes paid.
- 2 Cost of cash reduction from payment preference model calibrated to:
  - ▶ Cash-versus-credit elasticity of substitution from AA analysis of Uber.
  - ▶ Survey evidence of mixed user share and cash share of mixed users.
  - ▶ Conservative elasticity of substitution across cash-intensity of goods.
- 3 Benefit of cash reduction from eliminating cash-related theft, using estimates of deadweight loss from crime literature.
- 4 Welfare cost: 40% tax  $\Rightarrow$  6% of GDP, ban  $\Rightarrow$  10% of GDP.
- 5 Welfare benefit of ban: 0.5%-1.3% of GDP.

# SUMMARY OF COMMENTS

- 1 This is good science.
- 2 10% of GDP is large.
- 3 Why people like cash and transitory versus permanent phaseout costs:
  - ▶ Evidence from Mexico on why people prefer cash.
  - ▶ International perspective.
  - ▶ Importance of individual heterogeneity.
  - ▶ Why this matters.
- 4 Other benefits and costs.
- 5 Staggered Difference-in-Difference.

Magnitude

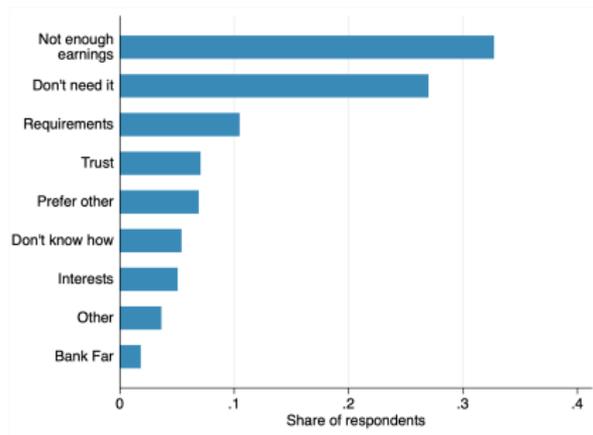
# MAGNITUDE IS LARGE

- Indian demonetization:
  - ▶ November 8, 2016: 87% of currency removed from circulation.
  - ▶ Stated purpose: remove “black” money.
  - ▶ New notes gradually introduced but took several months.
  - ▶ Large notes removed — different from uniform tax.
- Chodorow-Reich, Gopinath, Mishra, Naryanan, (QJE, 2020): roughly 2% of GDP contraction.
- Temporary policy and we didn't measure welfare (e.g. costs of switching to electronic payments).
- Still, very far from 10+% of GDP.

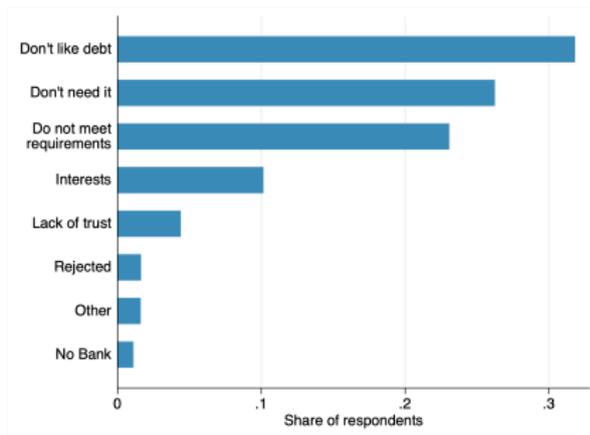
Why do (some) people  
prefer cash?

# MOST CASH-ONLY USERS DON'T WANT CARDS

Figure A4: Cash Users That Do Not Own an Account or a Card



(a) Reason Not to Have an Account

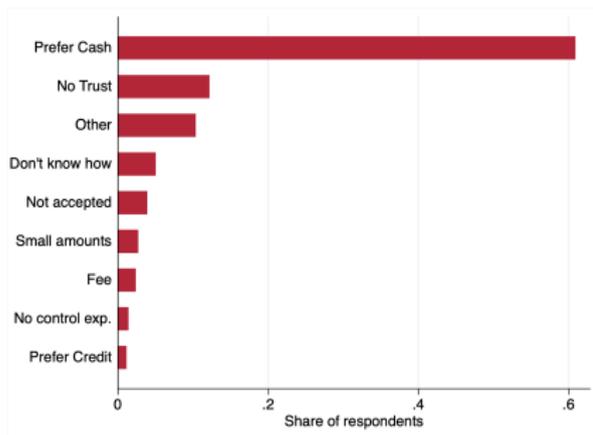


(b) Reason Not to Have a Card

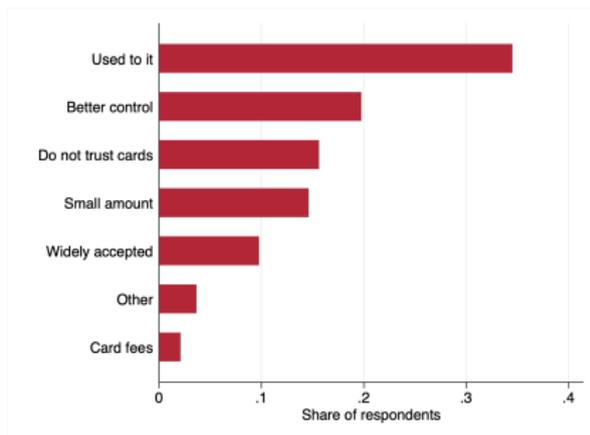
- Pecuniary and time take-up costs (requirements, nearby bank) minority reason.

# MIXED USERS PREFER CASH

Figure 3: Mixed Users: Why Do You Prefer Cash



(a) Why Don't You Use It?



(b) Why Do You Prefer Cash?

Note: Panel (a) shows the responses of households to the question “why don’t you use your debit card?”. Panel (b) shows the responses of households to the question “Why do you prefer cash?”. The sample of households report owning a debit or a credit card. The data comes from the 2018 National Survey of Financial Inclusion (ENIF).

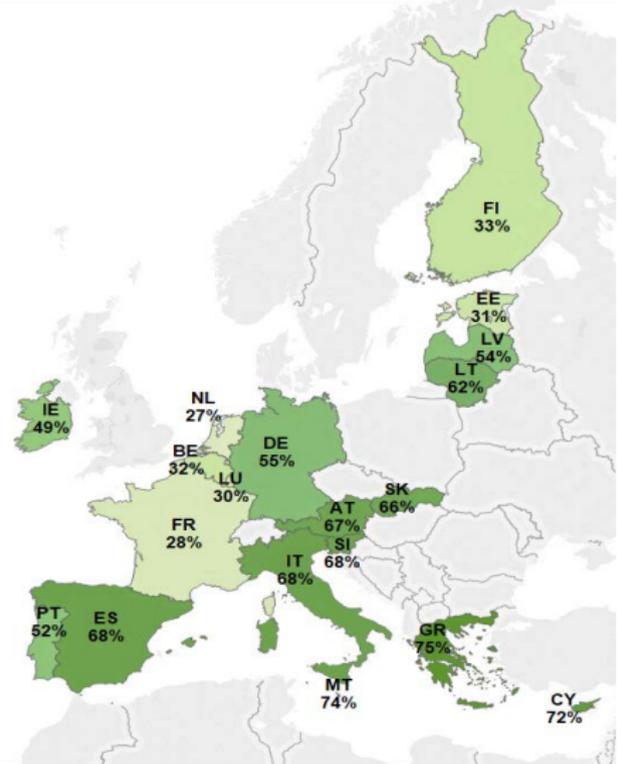
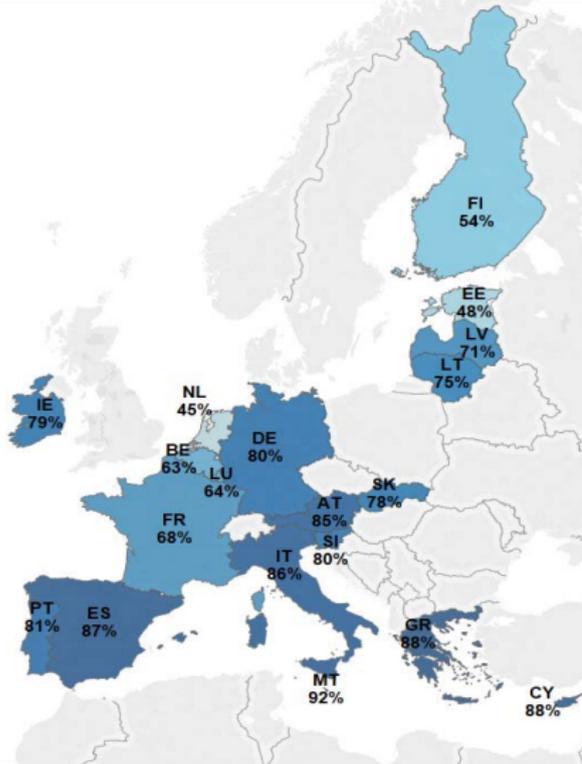
# WIDE HETEROGENEITY AROUND THE WORLD IN CASH

Share of cash transactions per country at points of sale

Share of cash transactions per country at points of sale

(number of transactions)

(value of transactions)



## HETEROGENEITY ACROSS GROUPS

### Mean share of payments in cash

	Age			Total
	18-39	40-59	60+	
Education				
Less than HS	55.7	50.5	59.6	55.2
HS diploma	34.4	42.2	36.1	37.8
Some college	26.0	32.7	34.0	30.9
BA	14.8	18.5	30.0	18.9
Advanced degree	12.9	18.1	26.0	17.8
Total	25.2	32.4	35.1	30.6

Source: 2019 Survey of Consumer Payment Choice.

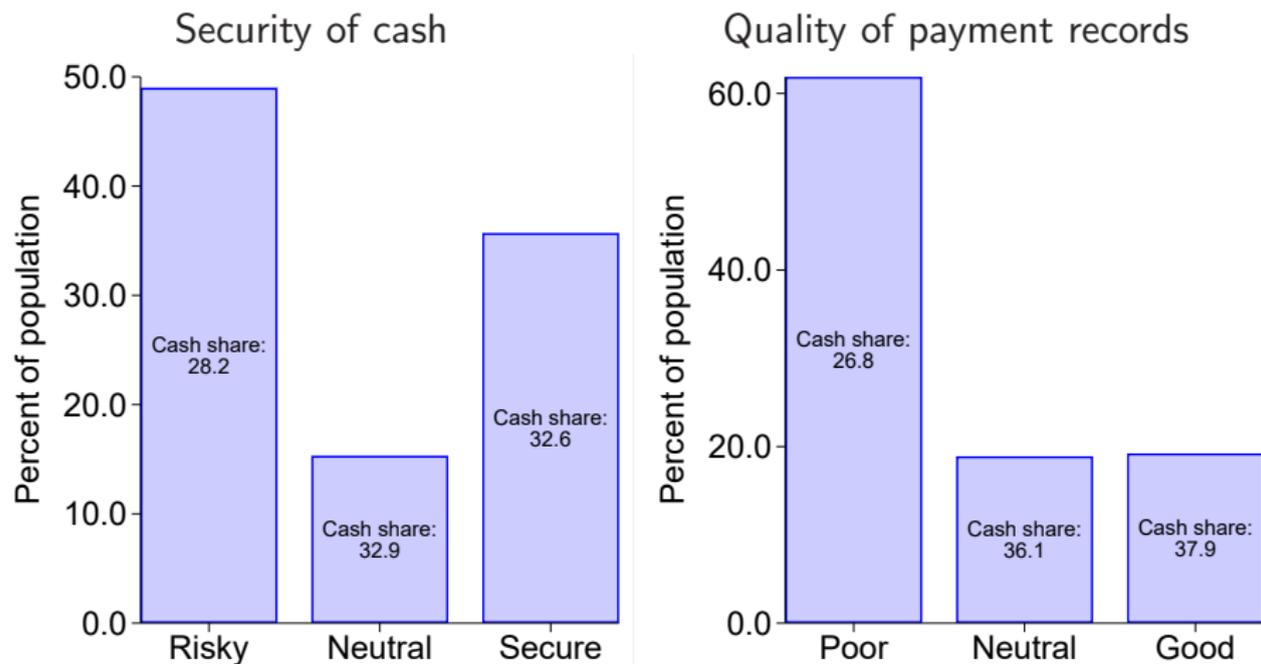
## HETEROGENEITY WITHIN GROUPS

### IQR of share of payments in cash

	Age			Total
	18-39	40-59	60+	
Education				
Less than HS	[15.6,98.4]	[24.2,76.3]	[20.4,100.0]	[20.2,98.4]
HS diploma	[13.8,46.5]	[14.3,56.5]	[10.5,52.9]	[13.8,53.8]
Some college	[5.5,33.3]	[9.7,47.9]	[12.0,47.5]	[9.1,45.5]
BA	[4.3,18.8]	[5.4,25.0]	[10.1,44.9]	[5.2,27.5]
Advanced degree	[1.2,17.3]	[4.9,27.3]	[8.3,36.4]	[2.7,25.5]
Total	[4.3,33.3]	[8.5,49.1]	[10.7,50.8]	[7.2,45.8]

Source: 2019 Survey of Consumer Payment Choice.

## PERCEPTIONS OF CASH VARY AND PREDICT CASH USE



Source: 2019 Survey of Consumer Payment Choice.

See also Koulayev, Rysman, Schuh, Stavins (RAND 2016), "Explaining Adoption and use of Payment Instruments by US Consumers."

# WHY?

- Partly explained by education. But not that much.
- Partly explained by age. But not that much.
- True individual preference heterogeneity?
- Immutable preference heterogeneity?
- Matters a lot for interpreting the AAJL welfare exercise:
  - ▶ Benefits from crime reduction: 0.5-1.3% of GDP per year.
  - ▶ Costs from convenience loss: 10% of GDP per year or one-time?

Other benefits

# POTENTIAL BENEFITS NOT CAPTURED BY LOCAL EVENT STUDIES

- Reduce organized crime.
- Reduce evasion of national taxes.
- Remove lower bound on nominal interest rates.
- These are largely achievable with phase-out of large notes only.

# Econometrics

# STAGGERED DID

- Empirical specification for impact of Progresa card rollout:  
$$Y_{mt} = \alpha + \sum_{k=-\infty}^{\infty} \gamma_k 1\{K_{mt} = k\} + \theta_m + \lambda_t + \zeta X_{mt} + \varepsilon_{mt}.$$
- Example of *staggered difference-in-difference*: different areas become treated at different times.
- Large recent literature about this design: Borusyak and Jaravel (2018), Callaway and Sant'anna (2020), Chaisemartin and d'Haultfoeuille (2020), Goodman-Bacon (2019), Sun and Abraham (2020), Roth and Sant'anna (2021).
- Issue: areas treated at date  $t + h$  in “control” set for areas treated at  $t$  and vice versa. Heterogeneous treatment effects across time  $\Rightarrow$  DiD coefficient need not lie in convex hull of individual treatments.
- Random assignment of timing not sufficient if treatment effect varies over time, e.g. due to changing macroeconomic conditions.
- Similar issues in simple before/after comparison and in ATM roll out.
- Useful to clarify these issues and what AAJL estimator does. Maybe consider Roth and Sant'anna (2021) as alternative.