BANKING THE UNBANKED: WHAT DO 255 MILLION NEW BANK ACCOUNTS REVEAL ABOUT FINANCIAL ACCESS

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Background

- Debate on impact of financial markets on consumer welfare:
  - Developed Countries: Financial markets too large/complex?
  - Developing Countries: Significant push for financial inclusion
    - Over 60 countries include financial inclusion as a key reform agenda
    - Mentioned in 7 of the United Nations Sustainable Development Goals
    - G20 Financial Inclusion Action Plan
      - "Access to finance provides stability and progress to families, businesses, and the economy as a whole._"
- Key Facts:
  - Two billion adults worldwide lacked financial access in 2013
  - 450 million in India

What Do We Know?

➢ Large literature on financial development and growth

   ➢ King and Levine (1995); Rajan and Zingales (1996)

      ➢ Primarily focus on real effects for firms

      ➢ Broad measures of financial development

      ➢ Examine firm-level or macroeconomic outcomes

      ➢ Mainly focus on developed economies

➢ Limited evidence on impact of financial inclusion programs on households and broader economy

   ➢ Some work on expanding access to credit (microfinance)

   ➢ Less on access to formal banking services and savings products

      ➢ E.g., Dupas et al. (2016)

➢ Our paper takes a step in this direction

What Do We Do?

➢ **Evaluation of the Largest Financial Inclusion Program**

  ➢ **First**, using micro-level data we assess the program's impact on initial uptake (extensive margin) and subsequent usage (intensive margin) of banking services by the poor

  ➢ **Second**, we examine the determinants of accounts usage, and credit access

  ➢ **Third**, we exploit regional variation in program exposure to evaluate JDY's impact on economic outcomes such as, lending, and consumption expenditure

  ➢ Note: No Welfare Analysis

The Pradhan Mantri Jan Dhan Yojna

➢ The largest financial inclusion program to provide universal access to banking services (launched Aug 2014):

1. Universal access to basic banking services
2. Bank accounts with overdraft facility of INR 5,000 (USD 73) after six months use
3. Accidental insurance to all account holders and life insurance to those who opened by Jan 2015
4. Mobile banking
5. Micro insurance and pension schemes in the second phase

The Pradhan Mantri Jan Dhan Yojna

➢ Heated debate on long-term impact

  ➢ Limited uptake of past initiatives ("no-frills" accounts by RBI)

➢ 255 million JDY accounts have been opened as of Nov 2016, with INR 456,000 million ($7 billion) total deposits

➢ Useful laboratory to study importance of large-scale policy giving access to financial products for the poor

  ➢ Extensive Margin – Initial uptake

  ➢ Intensive Margin - Subsequent usage of banking services: savings accounts, overdraft facilities, insurance benefits, debit cards, and mobile banking

  ➢ Broader Regional Outcomes

Related Literature

➢ **Financial Inclusion**

  ➢ Theory: Aghion and Bolton (1997); Banerjee and Newman (1993)

  ➢ Empirical: Dupas et al (2016) – Multi country analysis

  ➢ Chopra, Prabhala, and Tantri (2017); Chopra and Prasanna (2017), Singh (2017) – evaluate JDY using data from specific branches

➢ **Financial Development and Growth**

  ➢ E.g., King and Levine (1995); Rajan and Zingales (1996)

➢ **Evaluation of Large-Scale Programs Focused on Consumer Credit and Mortgage Markets**

  ➢ Mayer et al. (2014); Agarwal et al. (2015a), (2015b), (2017)

  ➢ Johnson et al. (2006); Mian and Sufi (2010)

Key Findings

➤ **Extensive Margin**
- ➤ 255 million new bank account openings as of Nov 2016
- ➤ 77% of new accounts maintain a positive balance
- ➤ 190 Million debit cards issued

➤ **Intensive Margin**
- ➤ Average initial banking usage is infrequent
- ➤ Inward/outward remittances are most common transaction
- ➤ Account usage higher for married, older, and those who own mobiles
- ➤ Accounts used for better liquidity management
- ➤ Gradually converges to non-jdy who self-select to open bank accounts
- ➤ Credit access for liquidity needs

➤ **Regional Outcomes in More Program Exposed Regions**
- ➤ Increase in lending and defaults on new loans
- ➤ Drop in borrowing from non-bank sources
- ➤ Increase in health related borrowing and spending
- ➤ Reduction in consumption volatility
- ➤ Other results: No immediate effect on GDP and inflation

Data: Micro Level Analysis

- **Proprietary Data from one of the largest banks**
  1. **1.5 million JDY accounts** opened in Aug 2014-May 2015
  2. **50K non-JDY accounts** opened during the same period

- **Precise account level monthly information**

  - Average balance; cash deposits, cash withdrawals, remittances, debit cards use…

- **Demographic account holder info**

  - Age, gender, marital status, mobile ownership, education, district of residence…

Data: Regional Analysis

- **Regional economic data**

  - GDP data (Indicus Analytics), literacy rate and population (2011 Census of India), district level lending (Reserve Bank of India), consumer price indices (the Ministry of Statistics), house price index (the National Housing Bank of India)

- **Household Survey Panel – CMIE Consumer Pyramids**

  - Consumption, Sources and Purpose of Borrowings

Summary Statistics (National Level)

Pre Jan-Dhan Yojana Statistics

	(1) USD	(2) INR
Minimum wage per day	1.3	89
Average wage per day	3.7	256.52
Poverty Line (Avg monthly per capita expenditure) - Rural	12	816
Poverty Line (Avg monthly per capita expenditure) - Urban	15	1000
Balance of payments in billions	15	1,000
Aggregate household deposits in the Indian banking sector in billions	110	7,500
Overall banking assets in trillion	1.7	115
India GDP per capita	1,431	97,500

Jan-Dhan Yojana Progress Statistics

|	
Number of accounts opened under JDY in millions	255
Number of Debit Cards issues in millions	190
Number of individuals provided accident insurance in millions	93
Number of individuals provided health insurance in millions	29
Total deposits in JDY accounts in INR (in millions)	456,000

Summary Statistics (Micro Evidence)

Cash Amounts

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	JDY Accounts			Non-JDY Accounts			Pre-JDY Accounts		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Average Monthly Balance	6,656,783	482	4,913	216,937	2,729	13,717	13,239,990	715	3,832
Cash Deposit Amount	6,656,783	136	2,049	216,937	1,707	13,448	13,239,990	164	2,145
Cash Withdrawal Amount	6,656,783	141	2,591	216,937	4,666	24,373	13,239,990	233	2,828
Inward Remittance Amount	6,656,783	258	4,046	216,937	4,413	32,234	13,239,990	443	3,939
Outward Remittance Amount	6,656,783	145	3,862	216,937	1,320	23,999	13,239,990	325	3,138

Usage Dummy

|	JDY Accounts			Non-JDY Accounts			Pre-JDY Accounts		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Positive Balance Dummy	6,656,783	0.36	0.48	216,937	0.94	0.24	13,239,990	0.47	0.50
Cash Deposit Dummy	6,656,783	0.04	0.20	216,937	0.15	0.36	13,239,990	0.02	0.15
Cash Withdrawal Dummy	6,656,783	0.03	0.17	216,937	0.38	0.49	13,239,990	0.04	0.19
Inward Remittance Dummy	6,656,783	0.12	0.33	216,937	0.31	0.46	13,239,990	0.11	0.31
Inward Remittance Dummy	6,656,783	0.12	0.33	216,937	0.31	0.46	13,239,990	0.07	0.26
Overall Usage Dummy	6,656,783	0.18	0.39	216,937	0.60	0.49	13,239,990	0.07	0.26

Program Reach (Extensive Margin)

➢ Number of accounts expanding at a monthly rate of 14%
  ➢ 54 million (Sept 2014) to 255 million (Nov 2016)

➢ Number of debit cards expanding at a monthly rate of 35%
  ➢ 19 million (Sept 2014) to 190 million (Nov 2016)

➢ Fraction of accounts with positive balance has grown over time
  ➢ Highest for rural banks, then state-owned and private banks
  ➢ Approximately 36% of individuals maintain some balance
  ➢ This fraction is higher (44%) for older (10 months) accounts – comparable to national average for JDY at that time
  ➢ Since then, the fraction has increased to 77%
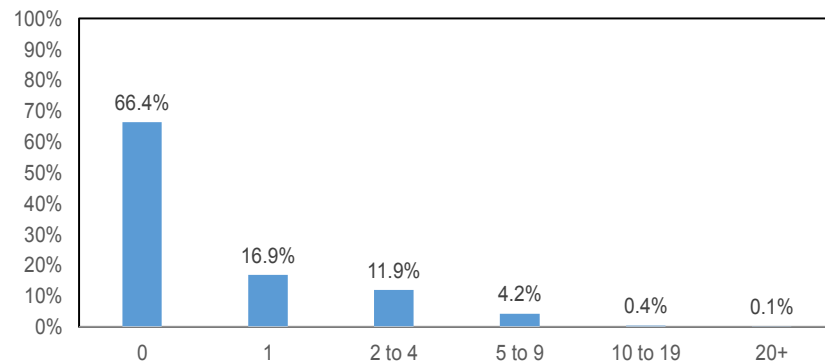
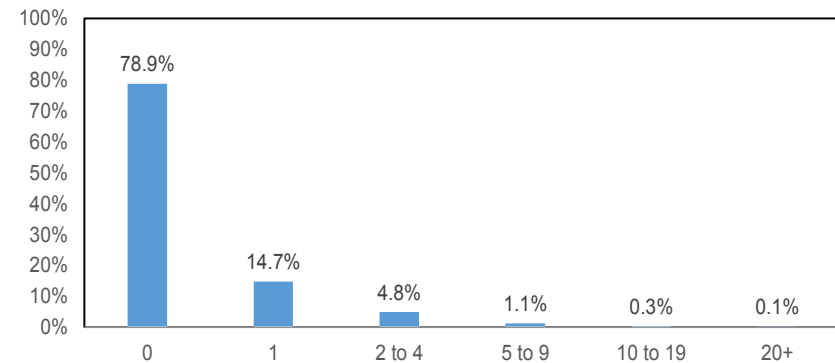# Program Reach (Intensive Margin)
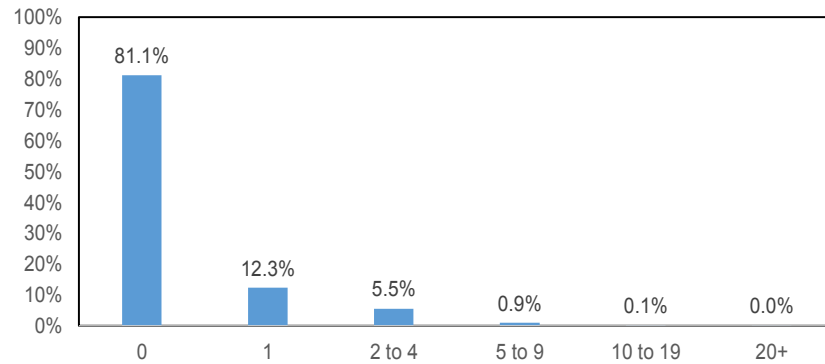
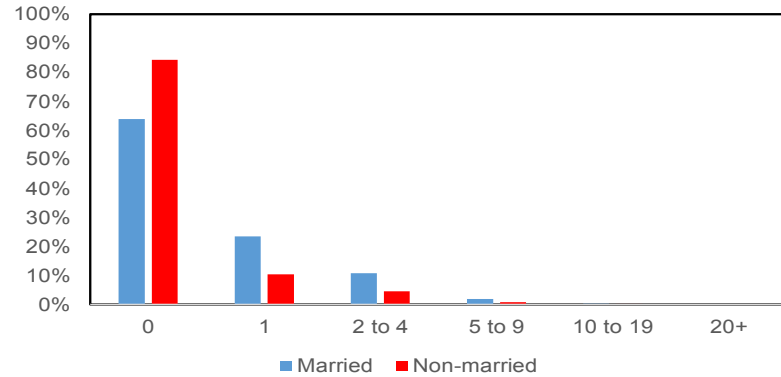
Cash Deposits
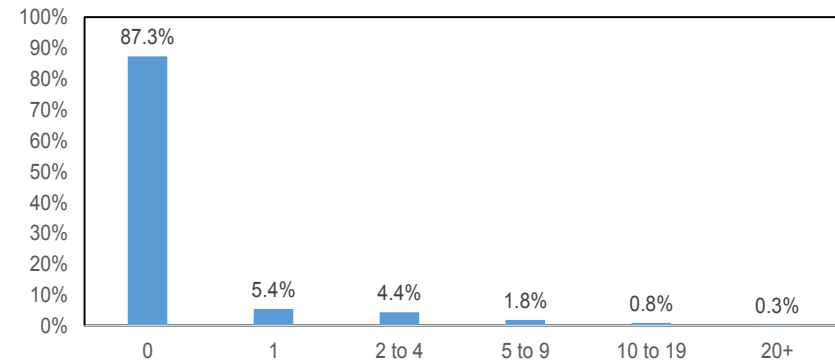
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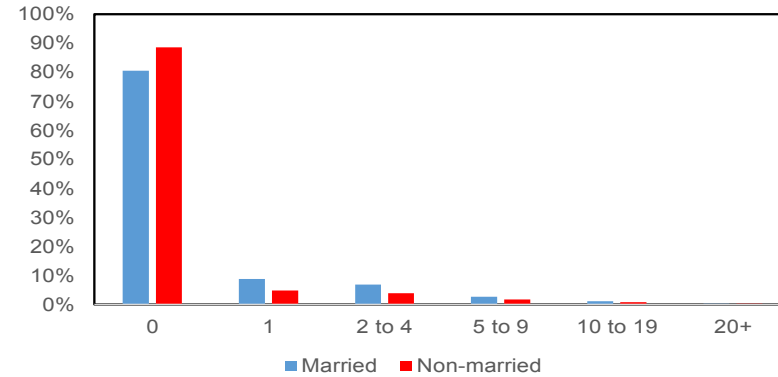

Inward Remittances

Outward Remittances

➢ Remittances are important for low-income individuals
➢ Workers migrate to other states

Intensive Margin Heterogeneity

Cash Deposits

Cash Withdrawals
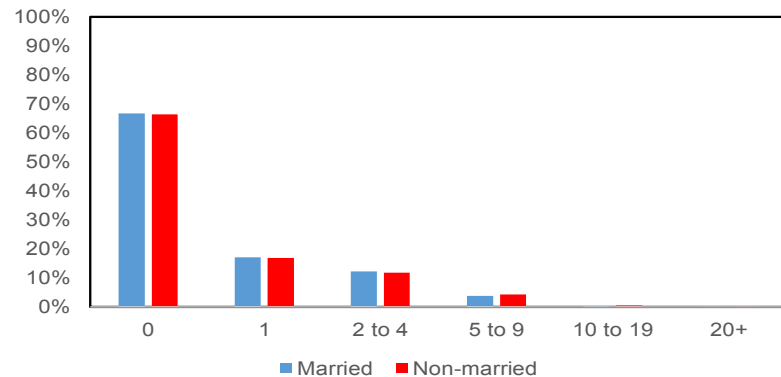
Inward Remittances
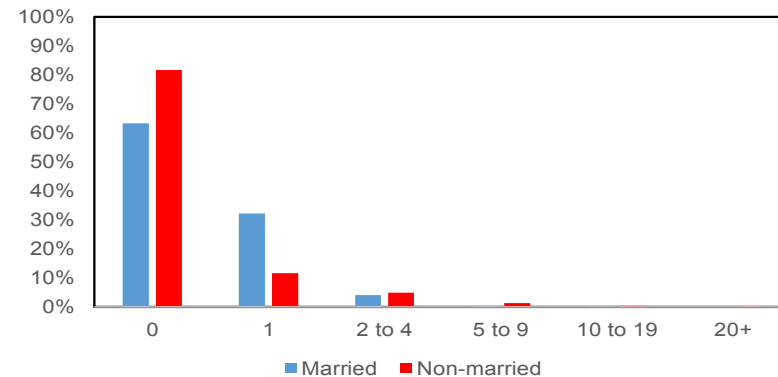
Outward Remittances

➢ Frequency higher for married, and older individuals

Empirical Methodology: Micro Level

Regression examining usage of JDY account holders:

$Y_{it} = \beta_0 + \beta_1\, Char_{it} + \beta_2\, Age_{it} + \beta_3\, Char_{it} \times Age_{it} + X_{it} + Account\ Opening\ Month_t + \varepsilon_{it,}$

- ➤ **Y_{it} is a bank account related outcome** for individual *i* at time *t*
- ➤ **$Char_{it}$ is refers to an individual or region specific characteristic** for JDY accounts
  - ➤ Age, Marital Status, Mobile ownership, Regions with higher crime
  - ➤ β_1 is the time-invariant difference between JDY and non-JDY accounts
- ➤ **Age_{it} is the number of months since account opening**
  - ➤ β_2 captures the differences in account usage over time
- ➤ **X_{it} is** regional per capita GDP
- ➤ Account opening month fixed effects to control for potential seasonality

Account Usage Increases Over Time

	Panel A: Account Usage and Balance		
VARIABLES	Avg monthly balance	Positive balance Dummy	Anyusage
	(1)	(2)	(3)
Account Age	120.635***	0.065***	0.013***
	(1.22)	(0.00)	(0.00)
Observations	7,892,132	7,892,132	7,892,132
R-squared	0.518	0.736	0.391
Customer FE	Y	Y	Y
Account Open Month FE	Y	Y	Y

➤ Fraction of accounts with positive balance grows at the rate of 6.5% per month

Who Uses – Account Holder Characteristics

	Panel A: Account Usage and Balance											
VARIABLES	Avg monthly balance				Positive balance Dummy				Anyusage			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Account Age	112.904***	101.873***	108.891***	98.197***	0.064***	0.057***	0.066***	0.066***	0.009***	-0.001***	0.016***	0.017***
	(1.95)	(3.99)	(0.90)	(0.78)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Male	8.136				0.003***				0.004***			
	(7.16)				(0.00)				(0.00)			
Account Age X Male Dummy	14.633***				0.002***				0.009***			
	(2.70)				(0.00)				(0.00)			
Age		0.695*				0.000***				0.000***		
		(0.36)				(0.00)				(0.00)		
Account Age X Age		0.448***				0.000***				0.000***		
		(0.11)				(0.00)				(0.00)		
Married Dummy			157.942***				0.153***				0.125***	
			(24.37)				(0.00)				(0.00)	
Account Age X Married Dummy			79.837***				-0.008***				-0.016***	
			(6.82)				(0.00)				(0.00)	
Mobile Dummy				226.580***				0.192***				0.155***
				(15.99)				(0.00)				(0.00)
Account Age X Mobile Dummy				95.008***				-0.006***				-0.016***
				(4.67)				(0.00)				(0.00)
District Per Capita GDP	3.488***	3.457***	1.44	-2.115*	0.002***	0.002***	0.001***	0	0.001***	0.001***	0.001***	0
	(1.27)	(1.28)	(1.28)	(1.28)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Observations	7685277	7686661	7686661	7686661	7685277	7686661	7686661	7686661	7685277	7686661	7686661	7686661
R-squared	0.005	0.005	0.006	0.007	0.106	0.107	0.113	0.121	0.028	0.029	0.031	0.036
District FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Account Open Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

➤ Married, Older, and mobile phone owners people have significantly higher usage
➤ Suggest, that the average usage may mask the true effects on some sub-samples

Who Uses – Impact of Crime

| VARIABLES	Avg monthly balance	Positive balance dummy	Anyusage
	(1)	(2)	(3)
Theft Per Capita	-39.898	0.086***	0.073***
	(56.344)	(0.028)	(0.022)
Account Age	90.792***	0.057***	0.011***
	(8.654)	(0.003)	(0.002)
Account Age X Theft per Capita	75.597***	0.020***	0.006
	(21.397)	(0.007)	(0.004)
Observations	7,684,375	7,684,375	7,684,375
R-squared	0.005	0.106	0.031
State FE	Y	Y	Y
Account Open Month FE	Y	Y	Y
Controls	Y	Y	Y
Per capita GDP	Y	Y	Y

➢ Account usage is higher in regions that are more prone to robberies and theft

Are the accounts being used to manage liquidity?

VARIABLES	Avg monthly balance					Positive balance Dummy					Anyusage				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Two month Before Hindu Marriage Month	25.110***					0.035***					0.012***				
	(3.725)					(0.003)					(0.003)				
One month Before Hindu Marriage Month		2.582					0.007***					-0.016***			
		(4.244)					(0.003)					(0.003)			
Hindu Marriage Months			-32.127***					-0.040***					-0.024***		
			(4.790)					(0.002)					(0.003)		
One month After Hindu Marriage Month				-25.926***					-0.032***					-0.002	
				(3.838)					(0.003)					(0.003)	
Two month After Hindu Marriage Month					33.563***					0.016***					0.029***
					(6.923)					(0.003)					(0.003)
Observations	6,353,392	6,353,392	6,353,392	6,353,392	6,353,392	6,353,392	6,353,392	6,353,392	6,353,392	6,353,392	6,353,392	6,353,392	6,353,392	6,353,392	6,353,392
R-squared	0.005	0.005	0.005	0.005	0.005	0.106	0.107	0.108	0.107	0.106	0.032	0.031	0.032	0.031	0.032
State FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Account Open Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Per capita GDP	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Panel A: Account Usage and Marriage Shocks

➢ Account balance falls during hindu marriage months and one month after, picks up subsequently

Benchmarking to Non-JDY accounts
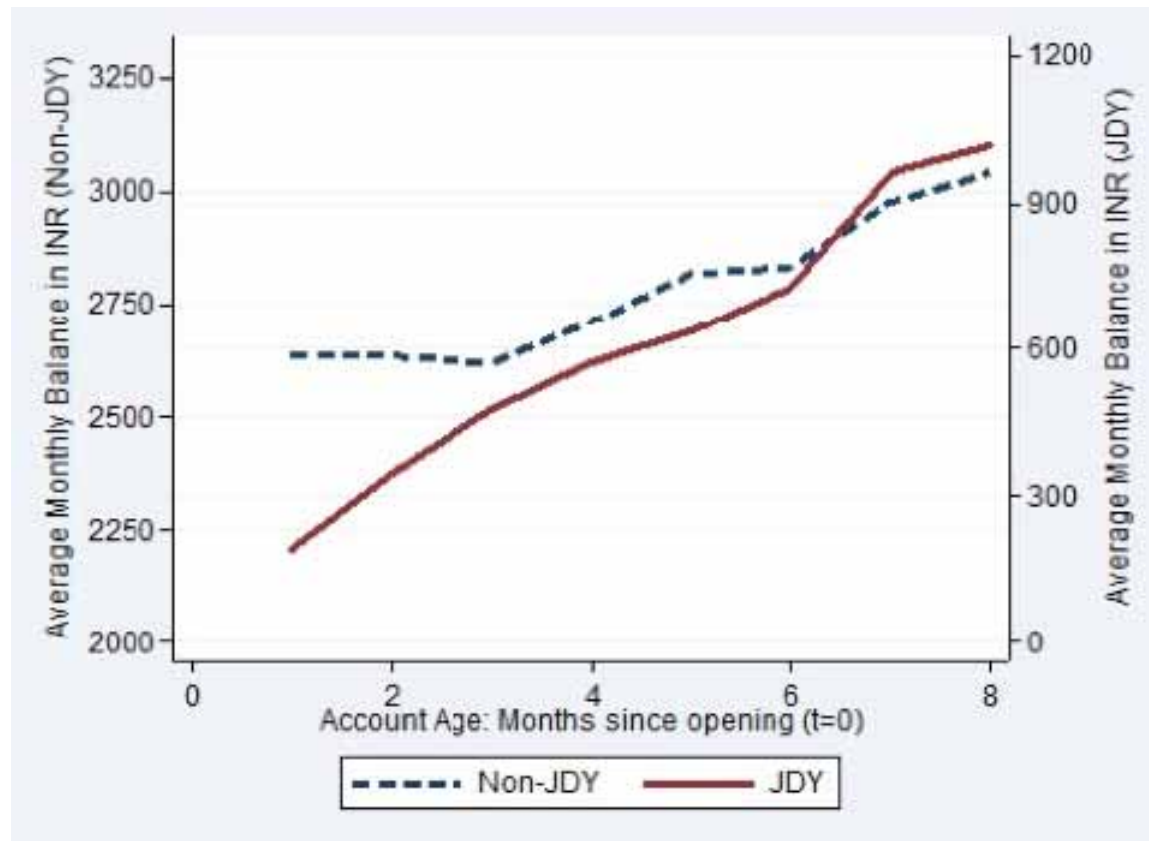
- ➢ How does usage compare to individuals who self-select to open accounts?
- ➢ JDY account usage gradually converges to that of non-JDY individuals who self-select to bank and are outside the program
- ➢ Relative increase over time of average monthly balances for JDY accounts (convergence in about 6 months on average)

Does JDY account result in Credit Access?

- As of 2015, about 0.4% of the JDY account holders received a loan with an average loan size of approximately INR 126,000.
- Who gets the credit?
  - Gender, marital status, age, and mobile ownership is correlated with the likelihood of getting credit

VARIABLES	Loan Dummy
	(1)
Male	0.003***
	(0.000)
Age	0.000***
	(0.000)
Married status	0.004***
	(0.000)
Mobile status	0.004***
	(0.000)
District Per capita GDP	-0.000***
	(0.000)
Observations	1203446
R-squared	0.006
District FE	Y
Account Open Month FE	Y

Credit Access Around Liquidity Shocks

Panel A: Loans and Rainfall shocks			
VARIABLES		Loan Opt	
	(1)	(2)	(3)
Positive rainfall shock	-0.008***		
	(0.002)		
One month After Positive rainfall shock		-0.006***	
		(0.002)	
Two months After Positive rainfall shock			-0.001
			(0.002)
Observations	151,676	151,676	151,676
State FE	Y	Y	Y
Account Open Month FE	Y	Y	Y
Controls	Y	Y	Y
Per capita GDP	Y	Y	Y

➢ Conditional on getting a loan, loan demand is lower in the months immediately after a positive rainfall shock

➢ Consistent with the idea that positive rainfall shock is associated with increase in income

Credit Access Around Liquidity Shocks

Panel B: Loans and Marriage Shocks					
VARIABLES	Loan Opt				
	(1)	(2)	(3)	(4)	(5)
Two months Before Hindu Marriage Month	0.007***				
	(0.001)				
One month Before Hindu Marriage Month		0.007***			
		(0.001)			
Hindu Marriage Months Dummy			0.002**		
			(0.001)		
One month After Hindu Marriage Month				-0.003**	
				(0.001)	
Two months After Hindu Marriage Month					-0.008***
					(0.001)
Observations	151,676	151,676	151,676	151,676	151,676
State FE	Y	Y	Y	Y	Y
Account Open Month FE	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y
Per capita GDP	Y	Y	Y	Y	Y

➢ Conditional on getting a loan, loan demand is higher in the months leading upto hindu marriage months
➢ Loan demand falls subsequently!
➢ Consistent with loans being used to meet marriage expenditure

Regional Analysis

➢ Our goal is to analyze the association of a large financial inclusion program (JDY) with changes in the real economic outcomes

➢ It is challenging to infer JDY's effect on the economy, since it may be confounded by other policy changes or time trends

➢ We exploit regional (pre-program) heterogeneity in the level of financial inclusion and state bank penetration

   ➢ Difference-in-difference analysis (requires "parallel" trends)

      ➢ Similar to Mian and Sufi (2010 QJE) and Agarwal et al. (2017 JPE)

   ➢ Synthetic control method

      ➢ To address concerns of differential "pre-trends" among regions

Regional Analysis

➤ Ex-ante regional program exposure measures:

  ➤ **First Measure:** Number of adults per bank branch in an area

  ➤ **Second Measure:** Percentage of state owned branches

  ➤ **Third Measure:** Fraction of households without bank accounts

  ➤ **Fourth Measure:** Financial inclusion index released by CRISIL capturing branch, deposit, and credit penetration

  ➤ Higher values indicate lower degree of financial inclusion

Exposure Measures:
Without Bank Account Share

	0.00 - 0.23
	0.23 - 0.31
	0.31 - 0.37
	0.37 - 0.45
	0.45 - 0.52
	0.52 - 0.61
	0.61 - 0.89
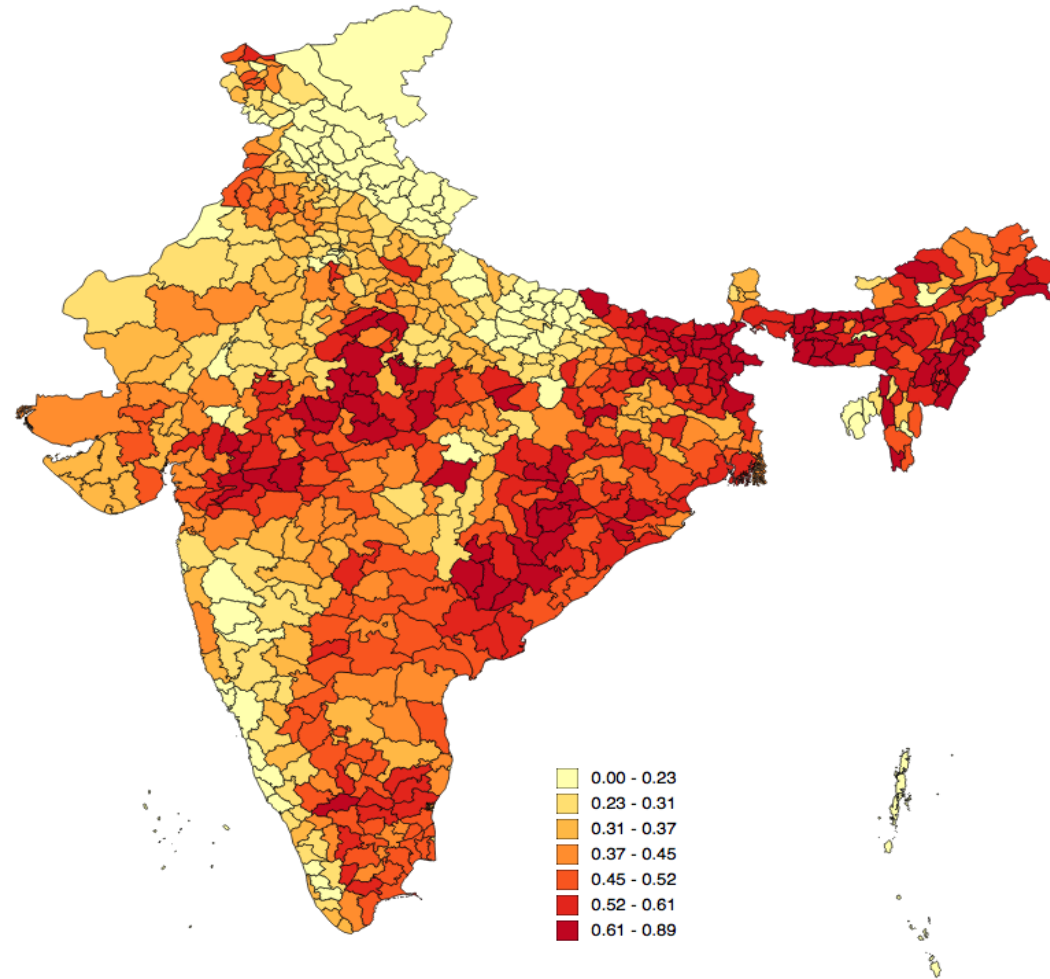
Regional Analysis

➤ $Y_i = \beta_0 + \beta_1 \textit{ Exposure Measure} + \varepsilon_i$

➤ Y_i is the change in growth rate in outcome variables

   ➤ Post-JDY minus Pre-JDY

➤ β_1 is the difference-in-differences estimate

   ➤ Compares the change in outcome in areas with greater exposure to JDY relative to areas with less exposure

➤ Identification assumption: parallel trends in growth rates (not levels!)

JDY Exposure and Program Intensity

	Log(# of JDY Accounts)			
	(1)	(2)	(3)	(4)
Adults Per Unit Bank Branch	0.573*** (0.098)			
% State-Owned Branches		0.357** (0.137)		
% Households Without Bank Accounts			0.410*** (0.122)	
Financial Inclusion Index				0.512*** (0.107)
N	32	32	32	32
R^2	0.929	0.874	0.888	0.913

➢ One standard deviation increase in adults per branch (50% relative increase) is associated with a 77% absolute increase accounts opened
➢ 43%-77% increase across all measures

JDY Exposure and Program Intensity

	Log(Total JDY Deposits)			
	(1)	(2)	(3)	(4)
Adults Per unit Bank Branch	0.390*** (0.109)			
% State-Owned Branches		0.224** (0.131)		
% Households Without Bank Accounts			0.140*** (0.127)	
Financial Inclusion Index				0.315*** (0.115)
N	32	32	32	32
R^2	0.898	0.866	0.859	0.883

➢ One standard deviation increase in adults per branch (50% relative increase) is associated with a 47% absolute increase in JDY deposits

JDY Exposure and Bank Lending

Annual Growth in Total Loan Amount

	(1)	(2)	(3)	(4)
Adults Per unit Bank Branch	0.023*** (0.0045)			
% State-Owned Branches		0.026*** (0.0045)		
% Households Without Bank Accounts			0.011* (0.0046)	
Financial Inclusion Index				0.018*** (0.0045)
N	600	600	600	600
R^2	0.043	0.055	0.011	0.026

➢ One standard deviation increase in the exposure measure is associated with a 1.1 to 2.3% increase in bank lending

JDY and Defaults

Default Rate – 60-day delinquency

	(1)	(2)	(3)	(4)
Adults Per Unit Bank Branch	0.004*** (0.001)			
% State-Owned Branches		0.001 (0.001)		
% Households Without Bank Accounts			0.004*** (0.001)	
Financial Inclusion Index				0.002* (0.001)
N	439	439	439	438
R^2	0.030	0.003	0.026	0.006

➢ 0.2 to 0.4% increase in 60-day delinquencies
➢ Economically significant – the average 60-day delinquency rate is 2.1%
➢ Can't differentiate between lending to low and high income households

JDY & Increased Lending: Interpretation

1. Capital Constraints: Banks increase lending due to additional capital from new deposits
   - Unlikely: INR 460,000 million deposited in these accounts are a small fraction (0.06%) of pre-JDY deposits

2. Unmet demand for formal credit
   - Pre-JDY: Frictions/costs affecting access to consumers
   - Post-JDY: New customers in the banking system

- Our findings suggest that JDY allowed banks to meet unmet demand for forma credit from previously unbanked

JDY & Increased Lending: Plausibility

- Proprietary data regarding the loans granted to JDY account holders. We
  - About 0.4% of the JDY account holders received a loan
  - The average loan size is approximately INR 126,000.
  - Back of the envelope loan size estimates
    - Imputed using data on the total lending by our bank during the year 2013 and the OLS estimates
    - We confirm that the average loan size of INR 126,000 lies within the 95% confidence interval band for the imputed loan size estimates.
    - the 95% confidence interval range for the average loan size is INR 97,000 to INR 640,000

Plausibility: Borrowing by Low-Income Households (Using Survey Data)

Growth in Fraction of Households Borrowing From Banks

	(1)	(2)	(3)	(4)
Adults Per unit Bank Branch	0.00160*			
	(0.00090)			
% State-Owned Branches		0.00150*		
		(0.00088)		
% Households Without Bank Accounts			0.00260***	
			(0.00088)	
Financial Inclusion Index				0.00197**
				(0.00090)
N	416	416	416	416
R^2	0.008	0.007	0.021	0.011

- 0.16 to 0.26% increase in households that borrow from banks
- Annualized 2-3% (similar to estimates from bank and RBI data)
- Reassuringly no effect for high-income individuals

Borrowing from Non-Bank Sources by Low-Income Households (Survey Data)

Growth in Fraction of Households Borrowing From Other Sources

	(1)	(2)	(3)	(4)
Adults Per unit Bank Branch	-0.00744**			
	(0.00311)			
% State-Owned Branches		-0.00701**		
		(0.00304)		
% Households Without Bank Accounts			-0.00128	
			(0.00308)	
Financial Inclusion Index				-0.00834***
				(0.00312)
N	416	416	416	416
R²	0.014	0.013	0.000	0.017

➢ 0.12 to 0.7% decrease in number of households that borrow from non-banking sources: Moneylenders, chit funds etc.

➢ Typically higher cost of borrowing and predatory loan terms

Purpose of Borrowing from Banks by Low-Income Households (Survey Data)

Growth in Fraction of Households Borrowing from Bank for Medical Expenditure

	(1)	(2)	(3)	(4)
Adults Per unit Bank Branch	0.00039*** (0.00011)			
% State-Owned Branches		0.00012 (0.00011)		
% Households Without Bank Accounts			0.00023** (0.00011)	
Financial Inclusion Index				0.00018* (0.00011)
N	416	416	416	416
R^2	0.031	0.003	0.012	0.007

➢ Individuals seem to be borrow to fund their medical expenditures
➢ Expanding access to banking services seems to allow consumers to better cope with uncertain health shocks

Health and Medical Expenditure by Low-Income Households (Survey Data)

	Expense on Health			
	(1)	(2)	(3)	(4)
Adults Per unit Bank Branch	0.034***			
	(0.007)			
% State-Owned Branches		0.024***		
		(0.007)		
% Households Without Bank Accounts			0.018***	
			(0.007)	
Financial Inclusion Index				0.030***
				(0.007)
N	419	419	419	419
R^2	0.060	0.031	0.017	0.044

Consumption Smoothing

Standard Deviation of Food Expenditure

	(1)	(2)	(3)	(4)
Adults Per unit Bank Branch	-28.315**			
	(11.304)			
% State-Owned Branches		-20.052*		
		(11.352)		
% Households Without Bank Accounts			-5.646	
			(11.426)	
Financial Inclusion Index				-44.553***
				(11.498)
N	418	418	418	418
R^2	0.015	0.007	0.001	0.035

➢ Relative decline in consumption vol in more program exposed areas

Other Regional Outcomes

➢ No tangible changes in:
  ➢ GDP (at regional level)
  ➢ Inflation (at regional level)
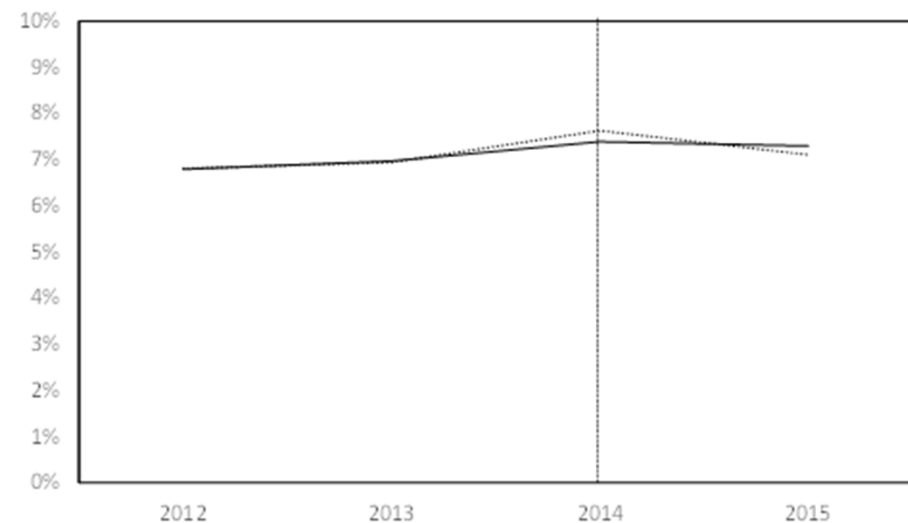
Robustness: Synthetic Control

➤ Synthetic Control Method

   ➤ Addresses concern about differential regional "pre-trends"

   ➤ Construct a synthetic control region with similar evolution of key outcomes in pre-JDY period as the aggregated treatment region

➤ We obtain very similar inference

Bank Lending Growth Rate

GDP Growth Rate

Note: Treatment group is represented by the solid line

Concluding Remarks

➢ The program led to a large increase in bank accounts

   ➢ 255 million, 77% maintain positive balance

➢ Overall banking usage initially quite infrequent

   ➢ JDY accounts are most commonly used for remittances

➢ Usage grows over time, consistent with learning as individuals gain familiarity with banking services

   ➢ The direct benefits may be modest in the short run

   ➢ The full impact can manifest itself over the long-term as more individuals start using banking services

   ➢ While overall usage maybe modest – effects may be significant for significant fraction of the population

➢ At the **regional level:** an increase in risky lending and increased borrowing/spending for health-related reasons

Concluding Remarks

➢ Broader implications for financial inclusion polices

  ➢ 40% of the world's population is unbanked and several governments are considering similar programs

    ➢ Indonesia, Malaysia, Philippines, Brazil etc…

  ➢ Full-effects can manifest over longer period

➢ Need more work to assess welfare effects