The Political Impact of Monetary Shocks:
Evidence From India’s 2016 Demonetization

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Motivations

• How do economic shocks affect domestic politics and voting behavior?
  – How do incumbents fare in the aftermath?

• Vast literatures on political behavior
  – Economic voting (e.g., Duch and Stevenson 2008, Key 1966); non-material and psychological factors (e.g., Achen and Bartels 2016, Healy and Malhotra 2013)
  – Large trade literature in IPE (half of you on each side, see Kuo and Naoi 2017)

• Growing money/finance literature on political effects of shocks and crises
  (e.g., Walter et. al. 2018; Nelson and Steinberg 2018, Ahlquist, Copelovitch, and Walter 2017; Bearce and Tuxhorn 2017; Bechtel, Hainmueller, and Margalit, 2014; Broz and Ansell 2014; Curtis, Leblang, and Jupille 2014; Fernández-Albertos and Kuo 2016)

• Our focus: the political impact of India’s 2016 demonetization
Demonetization in India, November 8, 2016

- PM Narendra Modi: “From 8 November midnight, Rs 500 and Rs 1000 notes will no longer be valid”

- Sudden announcement, removes 86% of cash from circulation

- India massively cash dependent:
  - 80-90% of workers (40-50% of GDP) in the informal sector
  - 98% of transactions (68% of value) in cash

- 99% of notes exchanged for new legal tender by August 2017
Why Demonetization? “Black Money” and Other Stories...

The Multi-dimensional Success of Demonetisation

- India’s highest ever unearthing of black money
- Decisive blow to terrorism & naxalism
- India’s financial system being cleansed
- Great increase in formalisation leading to better jobs for the poor
- Unprecedented increase in tax compliance
- Digital Payments receive significant boost
- Multiple benefits like loans getting cheaper, increased revenues to municipalities, etc

India’s highest ever unearthing of black money

0.00011% of India’s population deposited almost 33% of the total cash in the country.

The estimated value of high denomination notes at the end of September 2017 is approx Rs 12 lakh crore. Without demonetisation, the values of HDN would have been around Rs 18 lakh crore today.

Thus, the high denomination notes have been effectively brought down by about 6 lakh crore – which is 50% of the current value of high denomination notes in circulation.

Decreased proportion of HDN in the economy helps thwart corruption & funding of terrorism
Demonetization in India and Elsewhere


- But, India 2016 unique
  - Sudden and not linked to political or economic unrest (war, hyperinflation, regime change)
  - Subramanian: “Only sudden demonetization under normal circumstances”
  - Unlike 1946 or 1978, affected vast majority of population

- Advantage:
  - In past cases, difficult to isolate effect of demonetization from broader unrest
  - India 2016: Modi/BJP take clear ownership/blame for shock and effects
The Political Impact of Demonetization

• Substantial and immediate negative economic shock (MoF 2017)
  – Money supply halved: large cash shortages/ATM queues
  – Sharp drop in economic activity (credit growth, auto sales)
  – Millions of enterprises closed
  – Acceleration of India’s decline in GDP growth

• How did voters react to the negative economic shock?

• Focus on 2017 state elections in five states
  – Uttar Pradesh, Uttarakhand, Punjab, Manipur, Goa (241MM, 20% population)
Possible Political Effects of Demonetization

• Economic voting:
  – BJP performs worst in areas hit hardest economically by demonetization

• Psychological/non-material voting:
  – Voters might fail to penalize (or even reward) BJP, despite adverse economic effects of demonetization
Empirical Strategy

• Difference-in-differences: estimate economic and political effects of demonetization across districts

\[ Y_{it} = \alpha + \beta TREAT_{it} + \gamma POST_{it} + \delta TREAT \times POST_{it} + \eta_i + \lambda_t + \varepsilon_{it} \]

• \( Y \) = district-level investment activity (CMIE CapEx data), BJP vote share (Bhavnani 2017)

• \( TREAT = \) policy-induced district-level variation in number of bank branches

• \( POST = 1 \) after demonetization

• Data: 2009-2017; district and year FEs, SEs clustered at state level
Effect of Demonetization on Project Announcements by Bank Branches

Demonetization caused a 12% drop in number of projects announced; +1 SD increase in banks attenuates this effect to 8%
Effect of Demonetization on BJP Vote Share by Bank Branches

Demonetization caused a 1.6 p.p. decrease in the BJP vote share; +1 SD increase in banks exacerbates this effect by 9 p.p.

Notes: The solid line is the predicted effect of demonetization on the % of the BJP vote share as the number of bank branches varies, calculated using the coefficients in regression 5 of Table 1. Dashed lines are for the 95% confidence intervals. The rug plot depicts the distribution of the standardized value of ln number of bank branches per capita.
Policy-Induced Variation in Bank Branches

- Indian government used “branch licensing policies” (BLPs) to address problem of “unbanked” areas, 1979-1990 (Kochar 2011)
  - 1979: rural areas with >20K/bank branch get more branches;
    1982/1985: >17K bank/branch

- Number of banks per district in 2009
  - Exposure to BLPs: 18-48% more banks/person today

- Good instrument for district exposure to shock
  - Arbitrary cutoffs, positive correlated with branches today, exogenous to current BJP vote share
  - First stage $F$-stat in 2SLS > 10
Effect of Bank Branch Licensing Policies, 1979-1990

Figure 1: Kernel density plots for the rural population per bank across India’s districts in 1979, 1982 and 1985

Notes: This plot shows the effects of the bank Branch Licensing Policies of 1979 and 1982. Banks were forced to open branches in relatively underbanked districts.
Robustness: Agricultural Population

Figure 5: The effect of demonetization on the % of the BJP vote as the proportion of people employed in agriculture varies

Notes: The solid line is the predicted effect of demonetization on the % of the BJP vote as the proportion of people employed in agriculture varies, calculated using the coefficients in model X, Table Y. Dashed lines are for the 95% confidence intervals. The rug plot depicts the distribution of the proportion of people employed in agriculture.
Implications and Next Steps

• Demonetization had substantial economic and political effects

• Evidence that voter behavior was driven by both material and other factors in the 2017 Indian state elections
  – Financial intermediation/dependence as mediating factor

• Why did those most hurt economically not reduce support for the BJP?
  • Possible mechanisms: voters endorsing anti-corruption drive, duty/nationalism and/or “working through the pain”
  • Parallels to public opinion under structural adjustment programs?
Thank You
Political Impact of Demonetization: BJP Vote Share

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<th>OLS 1</th>
<th>OLS 2</th>
<th>OLS 3</th>
<th>2SLS 4</th>
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<tbody>
<tr>
<td>After demonetization</td>
<td>-1.631</td>
<td>-1.631</td>
<td>-1.631</td>
<td>-1.631</td>
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<tr>
<td></td>
<td>(3.096)</td>
<td>(4.044)</td>
<td>(1.536)</td>
<td>(1.295)</td>
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<tr>
<td>Ln bank branches per capita (standardized)</td>
<td>8.661**</td>
<td></td>
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<td></td>
<td>(2.649)</td>
<td></td>
<td></td>
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<tr>
<td>Ln bank branches per capita (standardized) x After demonetization</td>
<td>-6.941**</td>
<td>-6.941***</td>
<td>-8.747***</td>
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<tr>
<td></td>
<td>(1.463)</td>
<td>(1.311)</td>
<td>(1.371)</td>
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State fixed effects   | Y   | Y   |
District fixed effects | Y   | Y   | Y   | Y   |
Year fixed effects     | Y   | Y   | Y   | Y   |
Observations            | 225 | 225 | 225 | 225 |
Adjusted R-squared      | 0.66| 0.74| 0.80| 0.80|
First stage F-stat. for interaction term | 14 |

Notes: Observations are for 75 districts for three election years. The dependent variable is the % of the BJP vote. Standard errors are clustered by state. * p < 0.10, ** p < 0.05, *** p < 0.01. See text for details.

Average BJP share:
- 2012 state elections: 15.4%
- 2014 national election: 36.3%
- 2017 state elections: 34.7%
Robustness: Were Banks Correlated With BJP Vote % in 2012/14 Elections?

Table 4: The effect of demonetization on the % of the BJP vote as the number of bank branches varies. placebo text

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<td>1</td>
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<tr>
<td>After demonetization</td>
<td>-1.631</td>
<td>(3.613)</td>
</tr>
<tr>
<td>Ln bank branches per capita (standardized)</td>
<td>10.88**</td>
<td>(1.909)</td>
</tr>
<tr>
<td>Ln bank branches per capita (standardized) x After demonetization</td>
<td>-9.156**</td>
<td>(2.075)</td>
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<tr>
<td>Ln bank branches per capita (standardized) x Pre-treatment placebo</td>
<td>-4.429</td>
<td>(3.955)</td>
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<tr>
<td>District fixed effects</td>
<td>Y</td>
<td></td>
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<td>Year fixed effects</td>
<td>Y</td>
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</tr>
<tr>
<td>Observations</td>
<td>225</td>
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<tr>
<td>Adjusted R-squared</td>
<td>0.75</td>
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Notes: Standard errors clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. See text for details.
Figure 4: The effect of demonetization on the % of the BJP vote as the proportion of the population that is rural varies.

Notes: The solid line is the predicted effect of demonetization on the % of the BJP vote for model X, proportion of the population that is rural varies, calculated using the coefficients in model X. Dashed lines are for the 95% confidence intervals. The rug plot depicts the distribution of the proportion of rural residents.
Robustness: Rural/Agricultural Population

Table 5: The effect of demonetization on the % of the BJP vote as proportion of the population that is rural and agricultural various.

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<tbody>
<tr>
<td>After demonetization</td>
<td>-15.75**</td>
<td>-15.31***</td>
</tr>
<tr>
<td></td>
<td>(6.671)</td>
<td>(4.316)</td>
</tr>
<tr>
<td>Proportion rural x After demonetization</td>
<td>18.53**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(9.018)</td>
<td></td>
</tr>
<tr>
<td>Proportion employed in agriculture x After demonstration</td>
<td>24.21***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(7.281)</td>
<td></td>
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<tr>
<td>State fixed effects</td>
<td></td>
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<tr>
<td>Year fixed effects</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Observations</td>
<td>225</td>
<td>225</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.76</td>
<td>0.77</td>
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Standard errors clustered by district. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. See text for details.
Economic Impact of Demonetization

• Substantial and immediate negative economic shock (MoF 2017)
  – Money supply halved: large cash shortages/ATM queues
  – Sharp drop in economic activity (credit growth, auto sales)
  – Millions of enterprises closed

• Acceleration of India’s decline in GDP growth
  – First three months of 2016: 9.1%; April-June 2017: 5.7%

• *Our argument*: economic impact should vary across India based on cash dependence of individuals/businesses
  – “Unbanked” areas hit hardest --> financial intermediation as transmission channel for shock