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Short-term effects of India's demonetization on the rural poor[☆]

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HIGHLIGHTS

- We estimate the short-term effects of India's demonetization on the rural poor.
- Household income reduced by about USD 20.6 over the two months post demonetization.
- Local incomes and remittances were affected heterogeneously by the shock.
- Households with female heads and higher levels of unemployment were hit harder.

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ABSTRACT

This paper analyzes the short-run responses of poor rural households to India's demonetization in 2016. We estimate an economic loss of 15.5% over the two months post demonetization and discuss a range of strategies that the households adopted to exchange their banned currency-denominations.

1. Introduction

On November 8, 2016, the Government of India declared a ban on all 500 and 1000-rupee notes. The Prime Minister described this as a "surgical strike" on the black economy, aiming to restrain counterfeit currency and bring a larger fraction of the population into a cashless economy. This unexpected announcement, referred to as demonetization, affected 86% of all currency (by value) in circulation. People had seven weeks, until end of 2016, to exchange old currency for newer 500- and 2000-rupee notes. The resulting exchange process was chaotic, leaving the population with insufficient cash for their daily activities (BBC, 2016). Particularly stricken were the poor households for whom cash is the primary mode of transaction.

Research on transitions into cashless economies and their short-term impacts is rare. Existing empirical research into the effects of large-scale macroeconomic shocks on the livelihoods of households (Alem and Söderbom, 2012; Glewwe and Hall, 1998) often use annual aggregate data, which masks short-term time-sensitive responses. In a similar paper, Krishnan and Siegel (2017) surveyed households in urban slums in Mumbai, one month after

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Table 1
Descriptive statistics.

Panel (a): Household characteristics

Number of households-weeks	Household size	Education of HH head	Female headed households	Dependency ratio (<17)	Annual HH Income Per Capita (INR)	
					Remittances	Local income
782	5.16 (1.69)	4.21 (3.76)	0.08 (0.27)	0.25 (0.19)	7186 (5494)	21,315 (14,625)

Panel (b): Extent of shock

Impacted savings (in INR)	Proportion of households with impacted savings	Proportion of savings exchanged through bank	Proportion lost job	Proportion working unpaid
3,459.8 (6,344.7)	0.70 (0.46)	0.35 (0.48)	0.12 (0.33)	0.27 (0.45)

demonetization, and found that household incomes fell by about 10%.

This paper adds to our understanding of the impacts that demonetization had on household behavior in a rural region of India, where households rely on subsistence agriculture, have poor access to banks and transact exclusively in cash. We utilize a high-frequency dataset, collecting data from one month before and two months after demonetization, to estimate its effects on households' expenditure patterns. The data come from a survey, originally intended for auxiliary reasons, which had already been in the field for a month prior to demonetization. Demonetization came as a complete surprise. Taking advantage of this situation, we extended data collection to create a panel dataset, pre- and post-demonetization. By analyzing household daily expenditures and livelihood activities, we estimate economic losses incurred during a two-month window after demonetization to be roughly 15.5% of household income over this period.[1]

2. Data

We originally collected data from four villages in the Sundarbans region of West Bengal to study the relationship between migrant income flows and household consumption. We gave weekly financial diaries to 90 households to collect information on income flows, consumption patterns, expenditures and financial activities, obtaining 782 household-week entries.[2,3]

Households were randomly selected subject to having a literate member in the household and having a migrant.[4] Our survey periods spanned roughly 2–4 weeks before and 5–7 weeks after the demonetization announcement.

Panel (a) in Table 1 gives household characteristics, while panel (b) summarizes the extent of the shock from demonetization. The average household has about five members, with a quarter of them being less than 17 years old. On a person-day basis, average income is around INR 80 (USD 1.2), well below India's poverty line of USD 1.90. In our sample, 88% of households fall below the poverty line, with 66% below the extreme poverty line of USD 1.25 per-person-per-day. We estimate that an average household held around INR 3,460 (USD 50.6) in demonetized notes. Three weeks after the ban, 35% of households had exchanged their demonetized notes through formal channels, while another 43% exchanged them through informal channels, often paying a fee or penalty of approximately 10%.[5] Around 12% of households reported that a member had become unemployed as a direct consequence of demonetization and another 27% reported working for credit without any immediate financial compensation.

Table 2
Exposure to shock.

Exposure value	Impacted savings in old currency (INR)	% in each group
0	0	30.4
1	<1,000	12.5
2	1,000–2,500	23.8
3	2,500–5,000	16.5
4	5,000–10,000	9.0
5	>10,000	7.8

After demonetization, a follow-up survey gathered information on households' exposure to the shock and pathways they used to exchange old currency following demonetization. We constructed "exposure to shock" as a categorical variable, by asking households to indicate which bracket reflected the amount they possessed of household savings in demonetized currency (Table 2).

Fig. 1 presents an event study of household outcomes. Both consumption and non-consumption expenditures fell immediately post demonetization. Consumption expenditures gradually declined, while non-consumption expenditures increased slightly post shock. Somewhat contradicting the consumption expenditures results, a count of food varieties consumed weekly indicated an increase in consumption diversity. Income remained largely unchanged post demonetization. Results from a difference in means test are presented in Appendix Table A2 (a). While informative, the event study does not account for the presence of two major festivals, *Diwali* and *Bhai-Phonta* happening a week prior to demonetization, which potentially bias pre-announcement outcomes upwards. To address the potential bias due to festivals, an econometric approach is adopted in the next section.

3. Impacts of demonetization

To control for the festivals a week before demonetization, we constructed a dummy variable for any financial diary-entry whose last seven days include a celebration-day as a control.[6] The following specification is used to estimate the impact of demonetization

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1 Economic losses include loss of savings in demonetized currency, imputed losses due to wait time in bank ques, loss of employment post demonetization and losses in income due to receiving old currency notes (which required exchange at a discounted rate). We do not account for any non-economic channels of losses for households like those from a social or psychological point of view. We convert losses into a percentage of the total income households earned in the two months after demonetization was announced.

2 Enumerators performed at least two rounds of training for each household and followed up with weekly phone call assistance and reminders.

3 Detailed description of data collection and summary statistics appear in Appendix A1.

4 More than 80% of the households in this region have a migrant worker and few households do not have a literate member.

5 The 10% figure is a rough estimate at the average exchange costs, enumerators reported fees ranging anywhere between 6%–15% of the exchanged sum, with 10% being the reported median.

6 Two distinct celebrations occurred one right after the other, so the dummies were combined in the case of two festivals. Separating the two celebration dummies does not significantly alter the regression results.