

# Has NREGA helped in reducing debt burden in rural india?

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## Introduction

- We have analyzed impact of National Rural Employment Guarantee Act (NREGA) on credit behavior.
- Farm credit is also a major public policy issue in India, as seen from the recent program of Pradhan Mantri Jan Dhan Yojana (Prime Ministerial People Wealth Plan) started in August, 2014.
- There exists a political election cyclic pattern on farm credit disbursement in India, and followed by debt crises.

## Objectives

- To analyze impact of NREGA on rural credit of the households participating in the program, using counterfactual analyses.

## Methodology and Data

- VDSA farm household survey data in 14 VDSA villages across five states of SAT India.
- Counterfactual based analysis
- The average treatment effect on the program participant households is obtained through Difference-in-Differences method.
- The marginal effect of the NREGA program on credit level has been analyzed using Tobit model with bootstrap technique to minimize standard errors.

## Results and Discussion

- Despite high public policy thrust, the rural households still depended upon high interest rate of informal source of credit (Fig 1).
- Debt-Asset ratio of NREGA participants declined significantly within two years of participation, especially more for non-institutional sources (Fig 2 & 3)
- Marginal impact of NREGA
  - Results from Tobit model suggest that every increase of Rs.100 per household per year from NREGA participation, there is a ₹ 81 decrease in the household debt (Table 2).

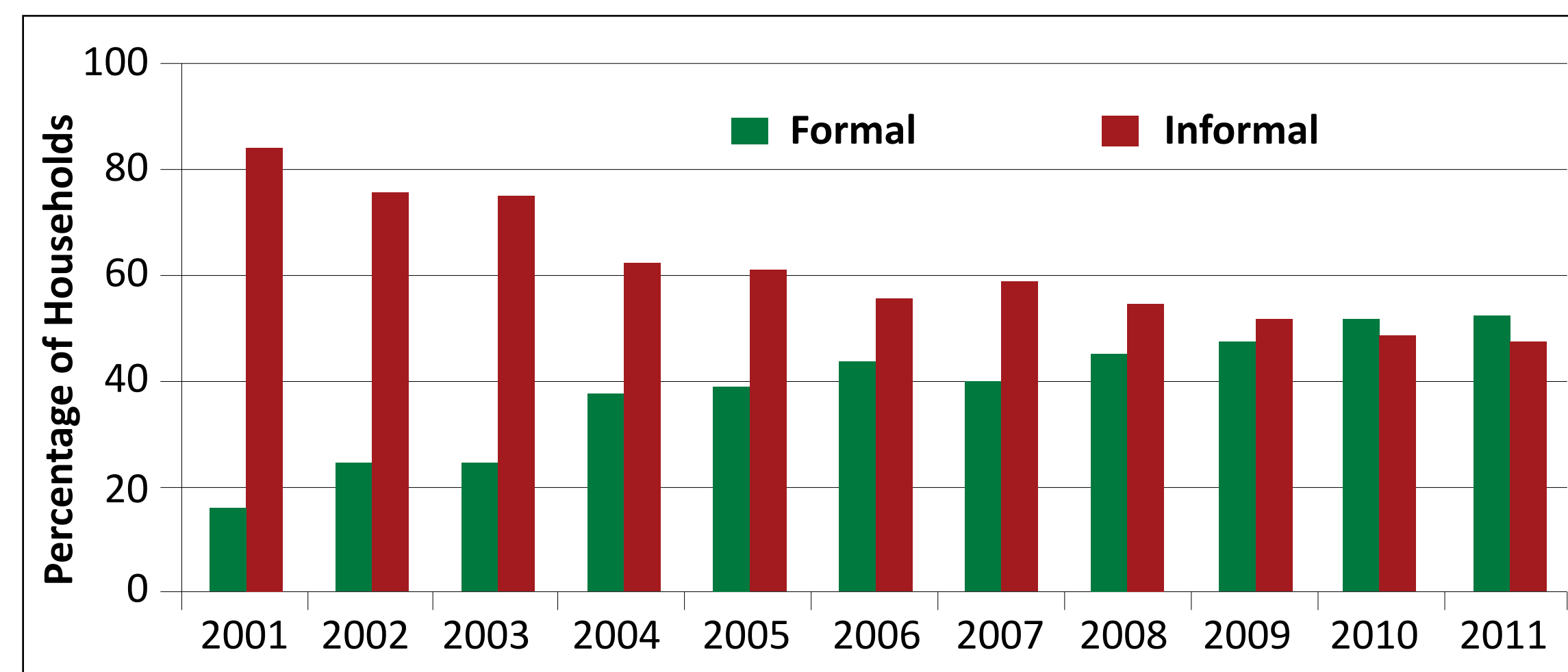


Fig 1. Households (%) borrowed money from formal and informal sources in two VDSA villages in Mahabubnagar, Telangana.

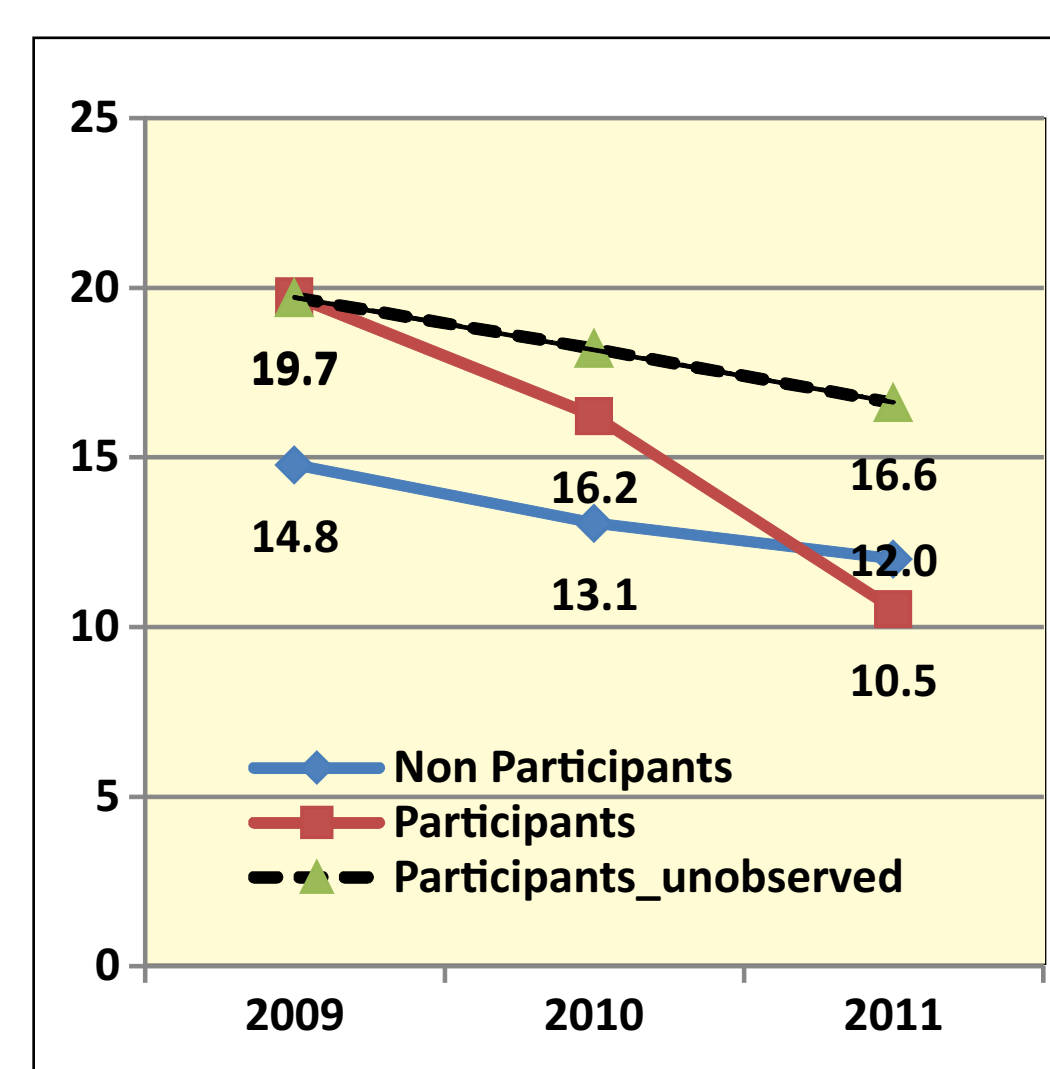


Fig 2. Debt-Asset Ratio in case of Participants and Non-Participants.

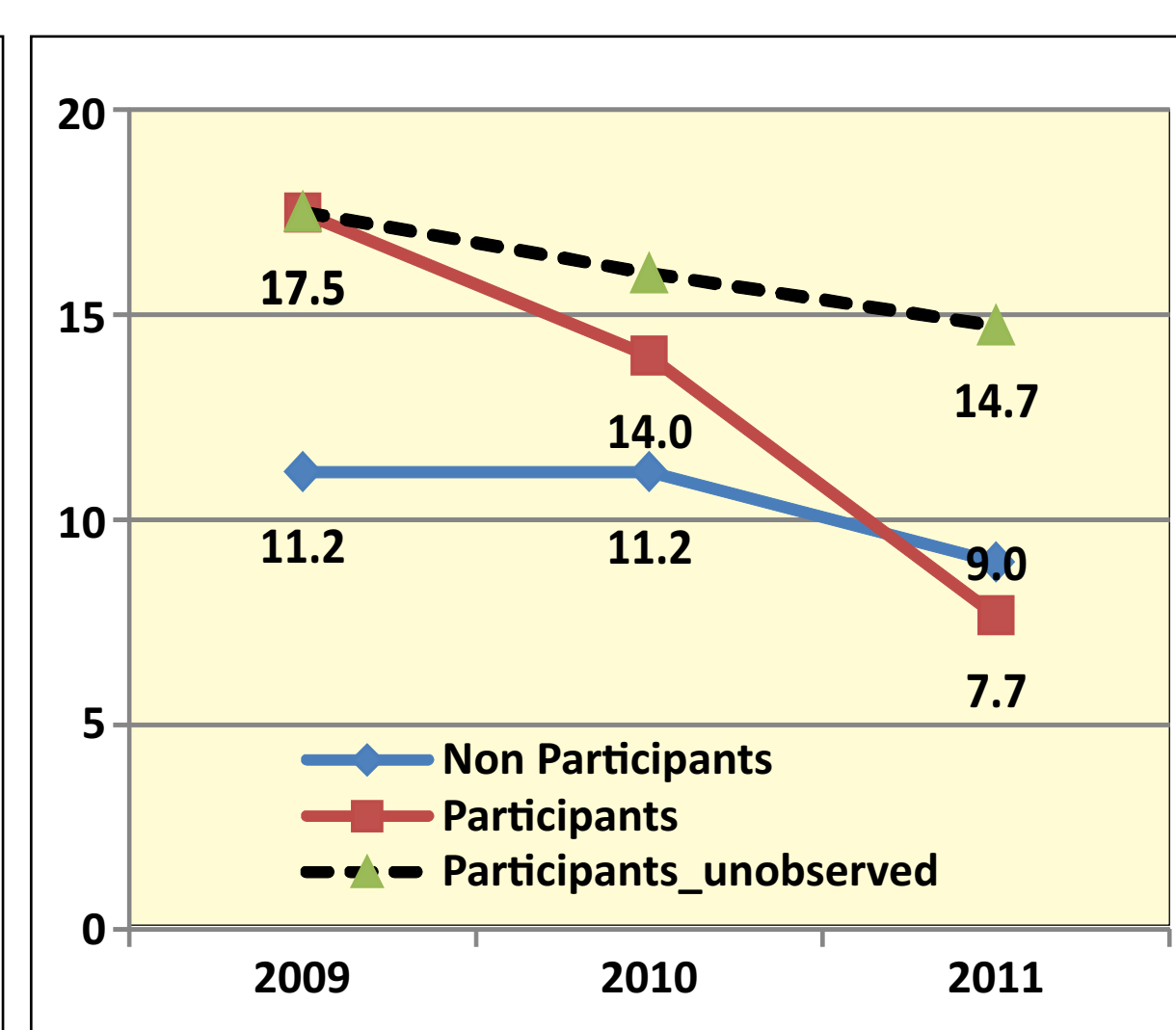


Fig 3. Debt-Asset Ratio in case of Participants and Non-Participants (Informal Credit).

Table 1. Impact of NREGA on Rural Debt using Difference-in-Differences (Informal Credit) (Dept. Var. : Debt-Asset Ratio).

Outcome Variable	Baseline (2009)			Follow-up (2011)			Diff in Diff
	Control (NP)	Treated (P)	Diff (BL)	Control (NP)	Treated (P)	Diff (FU)	
Debt ratio	16.35	21.14	4.79	13.83	11.6	-2.23	-7.02
Standard Error	4.07	4.06	1.81	4.04	4.16	1.75	2.50
t-value	4.02	17.53	2.64	15.73	16.93	0.77	-2.81
p-value	0	0	0.008***	0.001	0.005	0.202	0.005***
R-Square	0.097						

NP= Non-Participants, P= Participants, BL= Base-Line, FU= Follow-up

- There is a concave relationship between area operated and loan amount taken, indicating that small holding farmers have more debt than large farmers (Table 2).
- Irrigated farmers borrowed more than rain-fed farmers.
- Farmers in Andhra Pradesh and Karnataka are more indebted than that of Madhya Pradesh and Gujarat .

Table 2. Tobit Random Effects model Dept Var: Amount borrowed (2009-10 constant ₹).

Factors\Variables	Marginal Effect	Elasticity
Benefits from NREGA (₹)	-0.81 <sup>c</sup>	-0.05 <sup>c</sup>
Operated area (acre)	6028 <sup>a</sup>	0.83 <sup>a</sup>
Operated area <sup>2</sup> (acre)	-64 <sup>b</sup>	-0.15 <sup>b</sup>
Leased-in area (acre)	-221 <sup>c</sup>	-0.06 <sup>c</sup>
% of irrigated area (%)	291 <sup>a</sup>	0.23 <sup>a</sup>
Non-cereal area (%)	63 <sup>ns</sup>	0.10 <sup>ns</sup>
Age of household head (no)	-134 <sup>ns</sup>	-0.15 <sup>ns</sup>
Education (no. of yrs)	-530 <sup>ns</sup>	-0.06 <sup>ns</sup>
Dummy Variables:		
Female headed households	-11967 <sup>a</sup>	-0.01 <sup>ns</sup>
State Dummies:		
Andhra Pradesh	39771 <sup>a</sup>	0.33 <sup>a</sup>
Gujarat	-31175 <sup>a</sup>	-0.18 <sup>a</sup>
Karnataka	20421 <sup>c</sup>	0.1 <sup>c</sup>
Caste Dummies:		
BC and OBC	-15340 <sup>ns</sup>	-0.23 <sup>ns</sup>
SC and ST	-10313 <sup>ns</sup>	-0.05 <sup>ns</sup>
Main Occupation Dummies:		
Farm Labour	-487 <sup>ns</sup>	-0.001 <sup>ns</sup>
Non-Farm Labour	6279 <sup>ns</sup>	-0.01 <sup>ns</sup>
Caste Occupation	-5653 <sup>ns</sup>	0.005 <sup>ns</sup>
Business	-12368 <sup>ns</sup>	
Other Occupation	1808 <sup>ns</sup>	
Constant	15317 <sup>ns</sup>	
Log likelihood	-8923	
Number of observations	823	
Number of groups	365	
Wald Chi <sup>2</sup> statistics	105	

Note: Results from bootstrap regression model <sup>a, b, c</sup> means values are significant at 1, 5, 10% significance level respectively. <sup>ns</sup> means non-significant.

## Conclusions

- NREGA has helped poor households in reducing their dependency on local money lender, and also empower them.
- NREGA has reduced debt burden of rural poor and helped also in improving credit worthiness of poor households.
- Annual income and wealth are two major factors determining credit level of the households than social factors or household characteristics.



Fig 4. Women self-help group meeting.



Fig 6. Informal money lending in India.