

Comments on “Roads and Loans”

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Research Question

- Research Question: How do rural roads help facilitate bank financing?
- Overall impression
 - Very important question
 - Clever and well-implemented empirical design
 - Amazing data

Important question

- Finance flows: highly understudied relative to existing literature on infrastructure on
 - Trade flows
 - Flows of people: commuting/migration
- Rural roads, (micro-)finance and development
 - Public infrastructure and microfinance are usually considered two "golden bullets" to development
 - Are there any interactive effects?
 - Rural roads are documented to have significant effects on non-agricultural employment and school enrolment (Mukherjee 2011, Asher and Novosad (2017))
 - Less obvious effects of microfinance (Banerjee et al. 2015)
 - Do roads increase the demand for microfinance (and vice versa)?

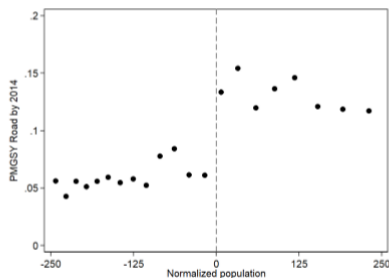
Amazing data

- Proprietary rural-bank-account level dataset from one of India's largest publicly traded banks
 - Information on individual accounts and transactions in loans over 2009-2014
 - Detailed demographic information
 - Purpose and default status of each loan
 - Individual heterogeneity and distributional effects

Context and findings

- PMGSY: Nationwide program aims at providing all-weather road connectivity to unconnected villages
 - Target at villages with populations greater than 1000, 500 and 250, as ordered
 - Nice regression discontinuity design
 - Bank lending jumps by over 60% after roads, effects almost purely driven by productive loans, and favors villages with lower assets

Figure 5: First stage: effect of road prioritization on probability of PMGSY road by 2014



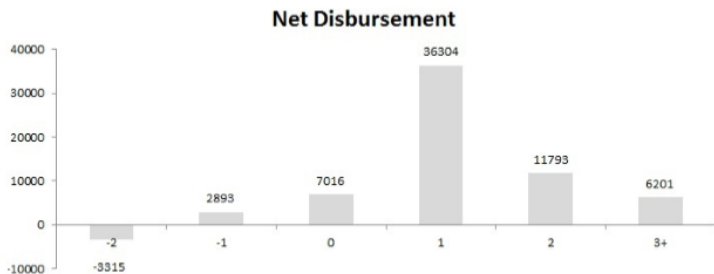
CommentL Empirical design

- Bandwidth of RD
 - 200-250 seems to be a bit wide compared to the 500/1000 threshold
 - Asher and Novosad (2017) picks 80 for the same treatment
 - Loan data do not cover the universe of villages: only 12 within the bandwidth of 200, might lose power when restricting bandwidth
 - The paper shows a convincing placebo test on connected villages
- Another possibility is to use a DID+RD design
 - Relaxes the identification assumption: villages with a population of 300 can be very different from one with 700, but we only need their trends in loan growth to be similar
 - Test for pretrends
 - The papers has a section 4.10 Timing of road construction that conducts a similar test

DID+RD Result

- A nice dynamic figure

Figure 8: Timing of road construction and lending activity



(a)

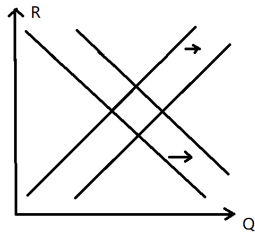
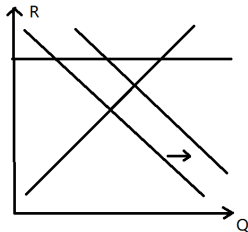
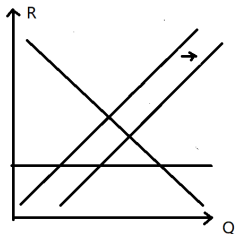
Notes: The figure shows the lending activity of the bank relative to the year of road construction. The horizontal axis plots time relative to road completion while the vertical axis present net disbursement by end of each calendar year in rupees. *Net Disbursement* is the average net loan amount disbursed. For each borrower, we compute the net loan amount disbursed as the average of loan amount disbursed minus any repayment made by the end of each calendar year 2014.

Comment 2: Mechanisms

- Demand-side story: villagers discover new business opportunities thanks to road (they are able to exploit comparative advantage by exporting etc.)
- Supply-side story: roads help banks to access their consumers, reduction in the cost of obtaining information and risks
- Anecdotal evidence seems to suggest a demand-side story because
 - Bank branches are set up where villagers from surrounding villages come to take loans
 - People come to banks, not the other way around
- Other suggestive evidence: higher financing to productive purposes and lower to consumption purposes

Mechanisms

- Basic findings: large increases in loan quantities at both the extensive and intensive margins, no effects on interest rate
- One of the three scenarios



- Oversupply of loans?
- Different policy implications
 - Should road investments accompanying expansion of credit?

Mechanisms

- Other suggestive evidence
 - Effects are largest to low-caste borrowers lack collateralized assets (jewellery and land) but with basic education
 - Roads allow them to seek better work opportunities
 - Could it also be that roads make loan officials more capable of evaluating productive projects of these people?
- Would be helpful to check other facts
 - How is interest rate set and adjusted?
 - Do roads connect banks and villagers directly?
 - Heterogeneity at the extensive margin (supply side factors might be more relevant at the extensive margin: the cost of establishing new lender-borrower relationship)

Location of bank branches

- What is the distribution of distance from villages to branches
 - Do villages farther away experience larger effects?

Macro-evidence

- What is the distribution of distance from villages to branches
 - Do villages farther away experience larger effects?

Other Comments

- Spillovers to non-connected villages
- Figure 7: what does "Sample" mean? within bandwidth?
- Eq (2) $Y_{i,v}$: borrower level outcomes of interest: is it the average/sum across years? how to treat years with missing values
- : might be able to construct RHS using same RD variation
 - Total length of new roads assigned to villages just above the threshold