Career Concerns and Distortion in Credit Uptake : Evidence from India's Lead Bank Scheme

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- Each state assigned a commercial bank (Convenor Bank) to monitor Lead Banks across districts;

  18 Convenor Banks for states. *Eg; BoB for UP*

- 44% districts with identical lead and convenor banks (**Aligned Districts**)

Preview of Results

1. Career concerns (Holmstrom 1999) and low within-firm transaction costs (Williamson 1984) imply
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   - Credit lending by CSBs increases by 15.7% after a district becomes aligned.
   - Higher saving depletion in non-aligned districts after negative income shocks (scanty monsoon).

Outline

1. **Institutional Background**
2. Theoretical Framework
3. Data & Empirical Results
    - Identification Checks
4. Discussion & Next Steps

Lead Bank Scheme (LBS)—Organization Structure

- Lead (for districts) and Convenors (for states) appointed by RBI.
  - *Number of branches, asset in district, regional orientation, contiguity, avoiding concentration*
- Chief Manager of Lead Bank with dedicated charge of Lead Bank activities
  - *Mid-level employee with 6-7 years of tenure, No lateral hiring in PSBs*
- Convenor Chairman monitors Leads through quarterly meetings.

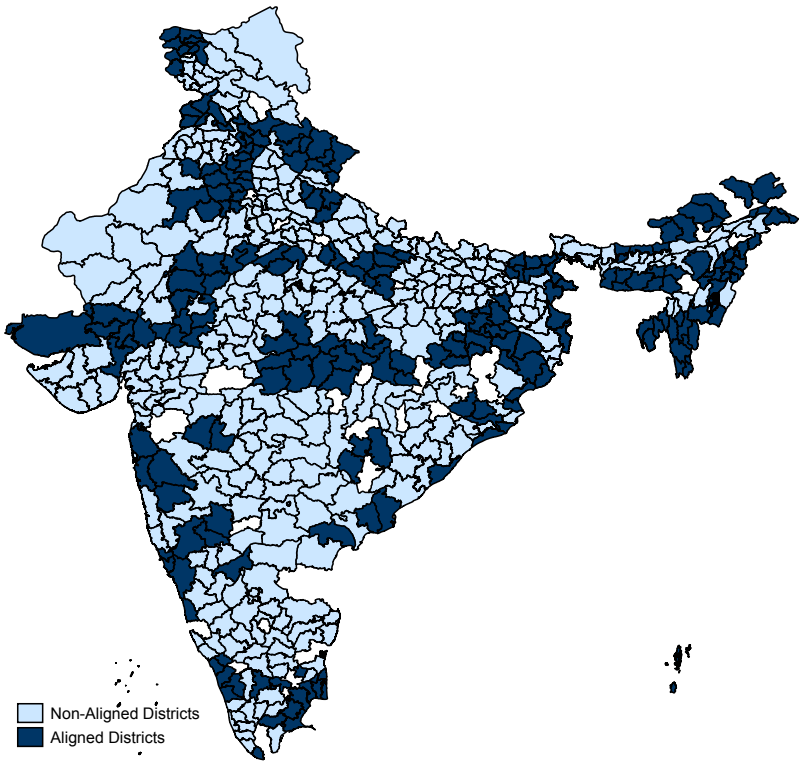
Activities of LB—Reduce Bottlenecks in Financial Services

- Coordination with local financial institutions
  - *Reports on bottlenecks and dark/grey areas for financial inclusion*
- Interaction with government agencies
- Public Outreach
  - *Financial Literacy Camps, Centres*
- Meeting Priority Sector Lending

Alignment

- **Aligned Districts**: Districts with same Lead and Convenor Banks
- Change in Alignment:
  - Formation of new state: Telangana
  - Bank mergers: SBI and its associates
  - Change in Convenorship: Manipur and Jharkhand

Aligned and Non-Aligned Districts



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Game between Lead Bank and Convenor

2 Players- Lead Bank (L) and Convenor (C)
Strategy Set for L, $s_L \in \{E, NE\}$
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	M	NM
E	$V - C_E, b_M - c_M$	$-C_E, b_{NM}$
NE	$-C_{NE}, v$	$-\delta C_{NE}, -\delta c$

Payoffs for L

V- Value of recognition to LDMs; C_E- costs of effort
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Payoffs for C

$b_M(b_{NM})$- benefit to C from M(NM); c_M- costs of monitoring
v—value to C for catching a lazy banker

δ is discount factor

Equilibrium: When does Lead Bank put effort?

	M (β)	NM ($1-\beta$)
E (α)	$V - C_E, b_M - c_M$	$-C_E, b_{NM}$
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Let L play E with α and C play M with β;

$$\alpha = \frac{v + \delta c}{v + \delta c + b_{NM} - (b_M - c_M)}$$

If $v \uparrow$, $b_M \uparrow$ and $c_M \downarrow$, $\alpha \to 1$

Incentives for Lead and Convenor Banks

- Convenor headed by Chairman of the bank; government employees answerable to the regulator, RBI

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Higher credit lending in aligned districts

Model

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Data

- District-wise Quarterly Credit and Deposits by Commercial Sector Banks from 2003:Q4-2018-Q4 from RBI DBIE
- District-wise Branches opened by Commercial Sector Branches from 2006:Q1-2018:Q1 from RBI DBIE
- District-wise Lead Banks and Convenor Banks
- Seasonal rainfall from IMD from 2012-2016

Credit	Deposit	Lead Banks	Convenor Banks	Aligned Districts
58356.61	77905.16	28	18	0.44
(413105)	(431492.7)			

Credit Decomposition

Credit Disbursement and Aligned Districts

Table: Credit Disbursement and Aligned Districts

	(1)	(2)	(3)
$\mathbb{1}\{align\}$	0.315^{***}	0.099^{***}	0.099^{**}
	(0.049)	(0.020)	(0.047)
Observations	38320	37781	37781
Model	RE	DVR (FE)	DVR (FE)
Clustering	No	No	District Level

Model 3 corrects standard errors for heteroscedasticity within districts.

Credit Disbursement and Change in Alignment

38 districts undergo change in alignment

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	(1)	(2)	(3)
$\mathbb{1}\{Align\}$	0.504^{***}	0.159^{***}	0.159^{***}
	(0.052)	(0.027)	(0.061)
Observations	2253	2253	2253
Model	RE	DVR (FE)	DVR (FE)

Model 3 corrects standard errors for heteroscedasticity and auto-correlation (Newey-West).

Impact of Higher Credit on Deposits

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- Deposit function of local income shocks and credit allows consumption smoothening during negative income shocks (Eswaran and Kotwal 1990)
- Scanty monsoons a negative income shock
- **Hypothesis**: Long-term deposits in Q3 in non-aligned districts deplete more after scanty monsoon compared to aligned districts.

Deposits post-Monsoon Shock

Table: Log of Term Deposit after a negative income shock

	(1)	(2)	(3)	(4)
$\mathbb{1}\{Scanty\}$	-0.118	-0.011	-0.207**	-0.262**
	(0.097)	(0.179)	(0.100)	(0.106)
$\mathbb{1}\{Align\}$				0.079
				(0.246)
$\mathbb{1}\{Align\}$*$\mathbb{1}\{Scanty\}$				0.364*
				(0.206)
Observations	1854	684	1170	1854
Sample	Pooled	Aligned	Non-Aligned	Pooled

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Long term savings in non-aligned districts deplete more after negative income shocks.

Rainfall Distribution

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Identification Checks

- Alignment Status not randomly assigned; varies over districts and jointly at lead-convenor level.
- District-level Demand-side and other supply-side factors may bias the results.

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- District-level Demand-side and other supply-side factors may bias the results.
- Demand-side: Size of economic enterprises; urban density (Binswanger et al 1993)
- Supply-side: Entry of Bank Branches by Lead Bank; Targets of Annual Credit Plans (Peek and Rosengren 2005)

Demand from Economic Enterprises

Table: Enterprises in Aligned and Non-Aligned Districts

	Log(Average Size of Enterprise)	Share of Agricultural Enterprises
$\mathbb{1}\{Align\}$	-0.087	-0.001
	(0.059)	(0.003)
Observations	618	618

Dependent variables computed from Economic Census 2013-14. State level fixed effects are included in both models.

Demand from Households

Demand for credit likely to be higher in urban areas.

Table: Rural Density

	Rural Density
$\mathbb{1}\{Align\}$	-0.00005
	(0.016)
Observations	622

Dependent variables computed from Population Census 2011. State level fixed effects are included.

Demand from Households

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	Rural Density
$\mathbb{1}\{Align\}$	-0.00005
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Dependent variables computed from Population Census 2011. State level fixed effects are included.

Aligned districts are not more rural.

Supply-side Factor: Entry of Bank Branches

Lead Banks appointed on operational and physical presence of branch network.

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Possible Source of Bias: Bank HQ allocates more resources (Weinerfelt 1984)
Eg; PNB HQ opens more branches in Saharanpur

Supply-side Factor: Entry of Bank Branches

	$I\{BankBranch\}_{dslcyq}$
$\mathbb{1}\{Align\}$	-0.011
	(0.014)
Observations	30960

where $I\{BankBranch\}_{dslcyq}$ is 1 if lead bank opens a branch; 0 o.w.

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Banks do not open more branches in aligned districts

Supply-side Factor: ACP Targets

- Annual Credit Plans for districts set by NABARD.
- If NABARD internalizes the organization structure, then higher credit targets (higher supply) set for aligned districts.

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- If NABARD internalizes the organization structure, then higher credit targets (higher supply) set for aligned districts.
- **Source of Bias**: Aligned districts have higher annual credit targets.

Annual Credit Targets and Alignment

Table: Annual Credit Targets

	log(Annual Credit Targets)
$\mathbb{1}\{Align\}$	-0.084
	(0.130)
Observations	294

Dependent variable is log of annual credit targets set by NABARD for districts in 2018-19. District-wise credit targets for priority sector were available only for 11 states. These states are Bihar, Chattisgarh, Gujarat, Harayana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra and West Bengal.

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- Significant inter-district variation in lending due to alignment of lead banks and convenor

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- Savings deplete more in non-aligned districts after negative income shock, proxied by scanty monsoon.

  High credit availability allows consumption smoothening.

Key Takeaways

- Resource misallocation due to organization constraints.

  Firms involved in many welfare schemes: LPG, Fertilizers, UDAN, PMBY

- **Future Work**: PSL for agriculture, housing, education. Sectoral misallocation of credit within district

Comments and Questions?

Variance Decomposition of Deposits

Table: Decomposing Variation in Log of Deposit

	(1)	(2)	(3)	(4)	(5)
Quarter-Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Lead Bank Fixed Effects	No	Yes	Yes	Yes	Yes
Convenor Bank Fixed Effects	No	No	Yes	Yes	Yes
State Fixed Effects	No	No	No	Yes	Yes
District Fixed Effects	No	No	No	No	Yes
Observations	38322	37781	37781	37781	37781
R^2	0.163	0.358	0.472	0.607	0.992
Adjusted R^2	0.162	0.357	0.471	0.606	0.992

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Intuition: Easier to get rid of a lazy banker if in the same firm; More benefit if efficient banker in the same firm.

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Testable Implication-1

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Intuition: Easier to get rid of a lazy banker if in the same firm; More benefit if efficient banker in the same firm.

Across firm boundaries, transaction costs are higher as property rights are not well defined. This imposes a constraint on convenor bank to discipline lead bank manager if she belongs to the other firm.

Back

Credit Variance Decomposition

Table: Decomposing Variation in Log of Credit (2004:Q4 to 2018:Q4)

	(1)	(2)	(3)	(4)	(5)
Quarter-Year Dummies	Yes	No	No	No	No
Lead Bank Dummies	No	Yes	No	No	No
Convenor Bank Dummies	No	No	Yes	No	No
State Fixed Dummies	No	No	No	Yes	No
District Fixed Dummies	No	No	No	No	Yes
Observations	38320	37781	37781	37781	37781
No. of Dummies	60	27	17	36	666
R^2	0.146	0.219	0.324	0.478	0.834
Adjusted R^2	0.144	0.219	0.324	0.477	0.831

Lead and Convenor Banks explain credit uptake

Back

Rainfall Distribution in Aligned and Non-Aligned Districts

Test valid if aligned and non-aligned districts similar in rainfall received.

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Table: Difference of Mean in District-wise Departure of Monsoon Rainfall

Group	Observations	Mean	Standard Error
Non-Aligned	1803	-0.085	0.007
Aligned	1072	-0.088	0.011
Difference		0.003	0.012

Dependent variable is district-wise departure from normal monsoon in percentage points.

Back

Change in Alignment Status

- Convenor Bank changed from UBI to SBI in Manipur in 2004
- Convenor Bank changed from Allahabad Bank to Bank of India in Jharkhand in 2013
- Districts in Telangana assigned new convenor banks on formation of Telangana in 2014

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