Financial intermediation and economic development in the state of Bihar, India: A district-level analysis

Very preliminary

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Economic Development and Finance

- As an economy develops, the importance of outside financing grows.
- It reduces risk of an individual forced to invest own wealth and welfare enhancing.
- As business activities grow (a) borrowers get outside funding close to actual NPV of the project and (b) borrowing rate reflects the true costs of funding including default rate. Azariadis (1994)
- Caveat: Information Frictions.

Development and Banking

- Many aspects but focus is on financial deepening, which is:
- As economy grows, per capita income increases.
- Rise in savings and bank deposits.
- Deposits are converted to loans in large number of projects. (Law of large number holds)
- Better screening of projects lead to higher incomes also lead to safer investment , higher disposable income and savings + investment through intermediated banking.

CD Ratio

- An Operational indicator is the Credit Deposit ratio which measures ‘’financial deepening’’.
- A low CD ratio would mean that for every Rs. deposited, less credit flow implying lower investments in the state.
- An increase in the total (per capita) deposits in Bihar in 2008-09 (Rs 1437) by over Rs 18,000 cr. while credit expanded by only Rs. 3251 cr. (Rs. 246, i.e., 17%).
- The CD ratio in Bihar is behind the national average of 72.6% and other states like Tamil Nadu (108.9%), Maharashtra (90.8%), Rajasthan (80.2%), West Bengal (60.8%), MP (57.4%).
- Shows remarkable stability at the low level.

State Average of CD Ratio

CD Ratio				
Year	**Mean**	**Median**	**Max**	**Min**
2001	-	-	-	-
2002	-	-	-	-
2003	-	-	-	-
2004	33.20	31.35	69.48	17.35
2005	34.07	31.34	59.85	20.10
2006	35.24	32.28	58.19	22.07
2007	33.91	31.58	55.59	20.68
2008	30.86	28.31	49.10	18.78
2009	33.41	31.57	49.85	20.08
2010	33.16	30.59	52.01	18.54
Total	**33.41**	**31.12**	**69.48**	**17.35**

Low Credit/Deposit (CD) ratios in Bihar across districts

- Low CD ratios indicates failure of mobilization of resources.
- Why? Demand or supply based arguments?
- High default risk or lack of credible projects?
- Is it due to inefficiency?
- Political Economy of loan waving?
- High NPAs in the case of state-owned commercial banks and cooperatives do suggest that default risk is high, while in case of private banks there is limited non-performing assets.

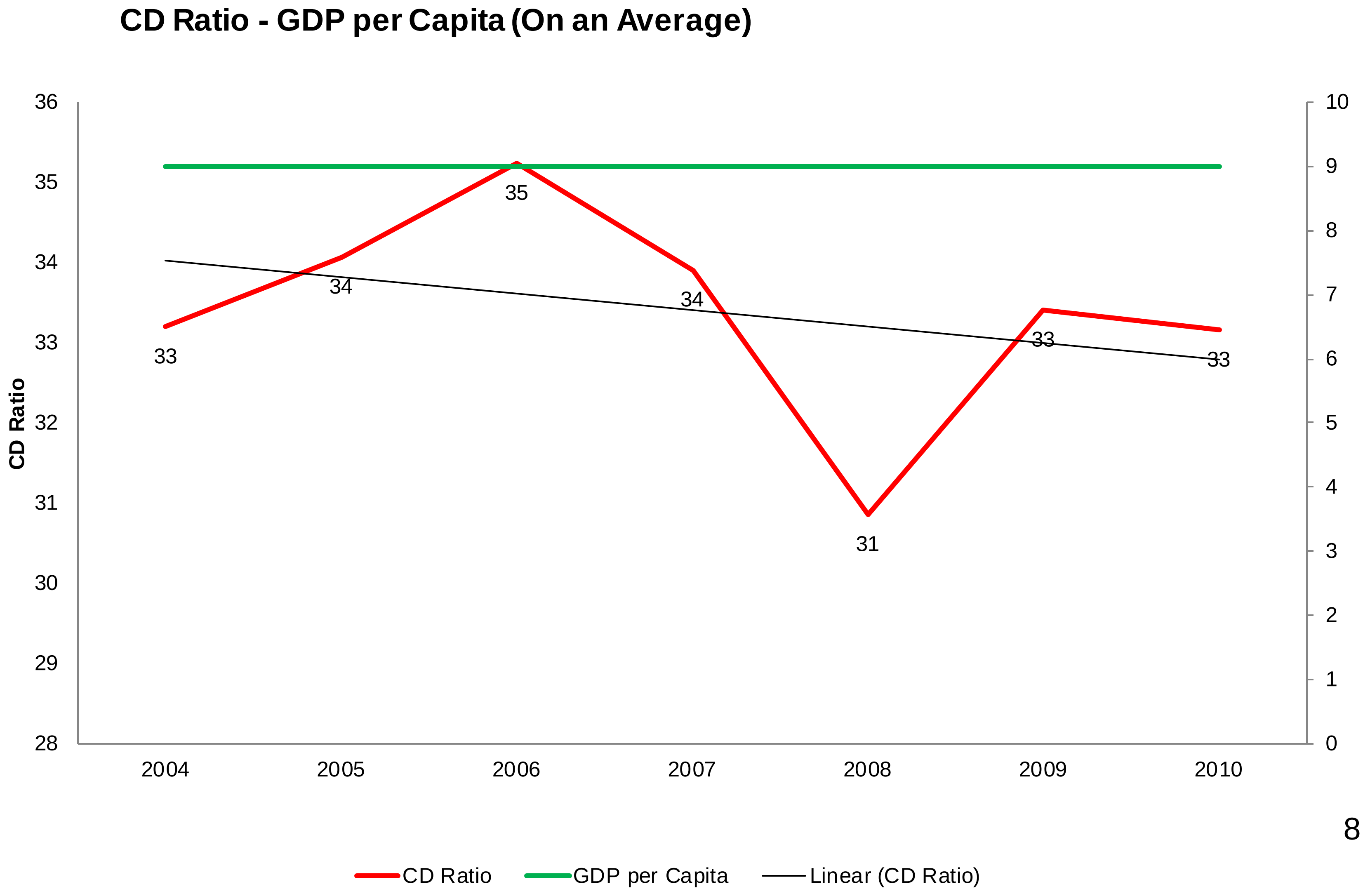
Some Facts: Bank-wise NPAs, CD Ratio and Market Share by end-fiscal year 2009-10

	Loans (INR Mn.)	NPAs (%)	Written off (%)	CD Ratio (%)	M-Share (%)
Lead Commercial Banks	196288.0	7.9	2.3	30.2	67.6
Other State-owned banks	43503.6	8.7	4.9	26.1	15.5
Private banks	5102.5	1.4	0.0	18.9	2.4
Co-operative banks	6314.5	50.2	0.0	41.4	1.6
Regional Rural Banks	48231.8	6.1	2.7	37.6	13.0
Total for Bihar	299440.4	8.5	2.6	30.3	100.0

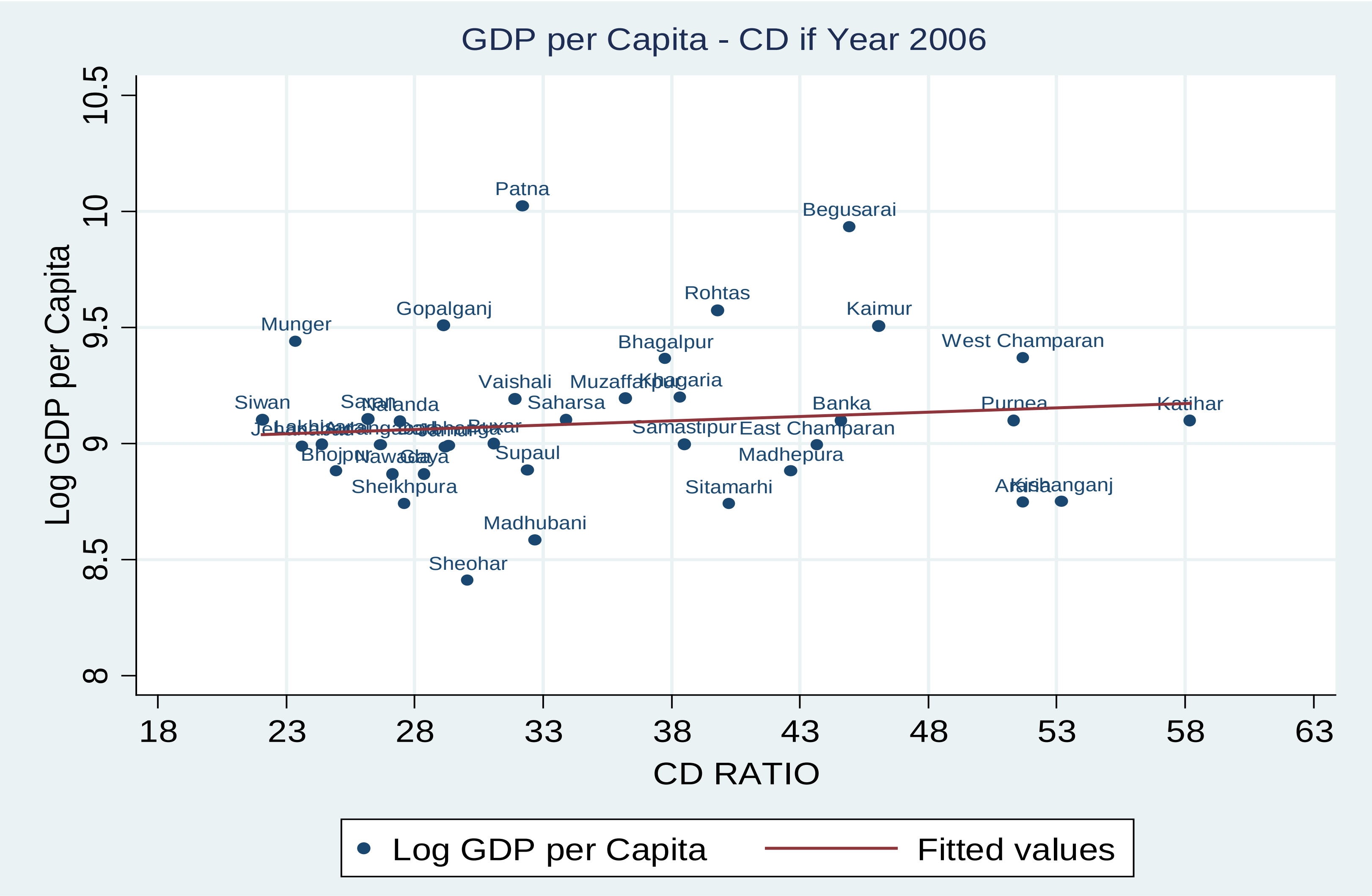
Source: Calculated with data from SLBC, Bihar, 2009-10.

Due to advances being written off every year, CD ratio could be remaining unchanged for major state-owned commercial banks

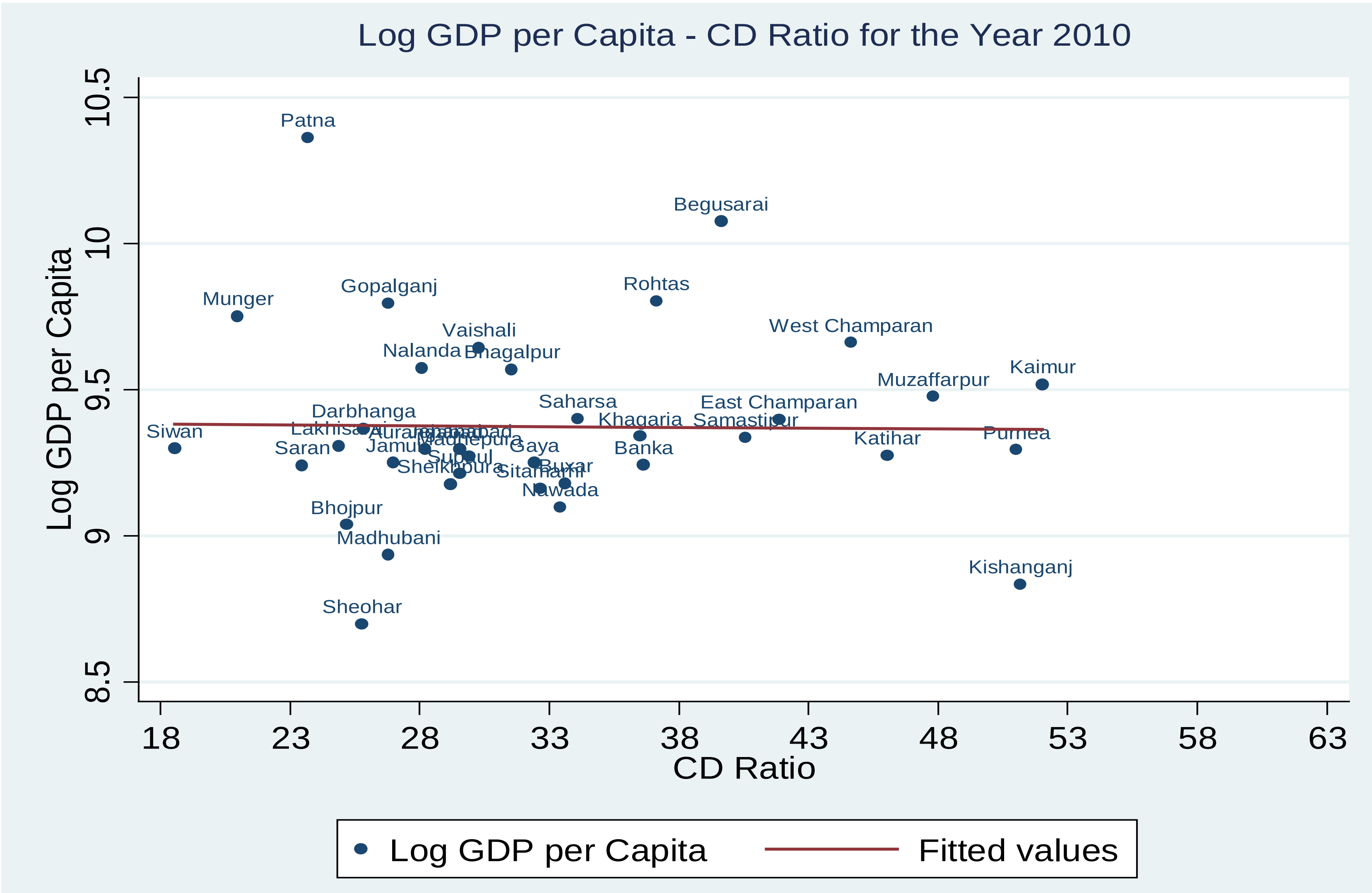
State Wide Correlation



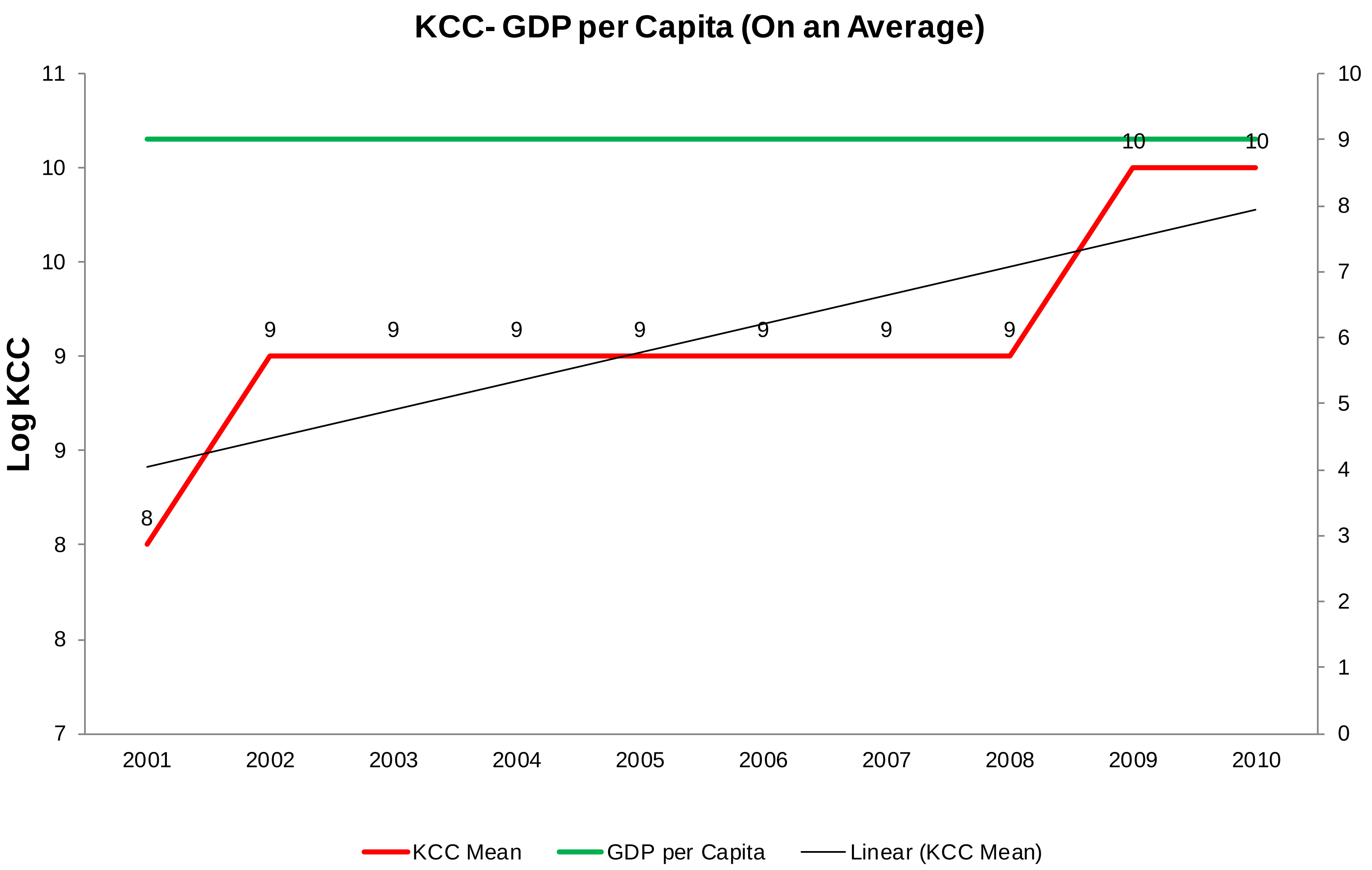
Regional Heterogeneity -Little correlation between per capita income and CD-ratio in 2006



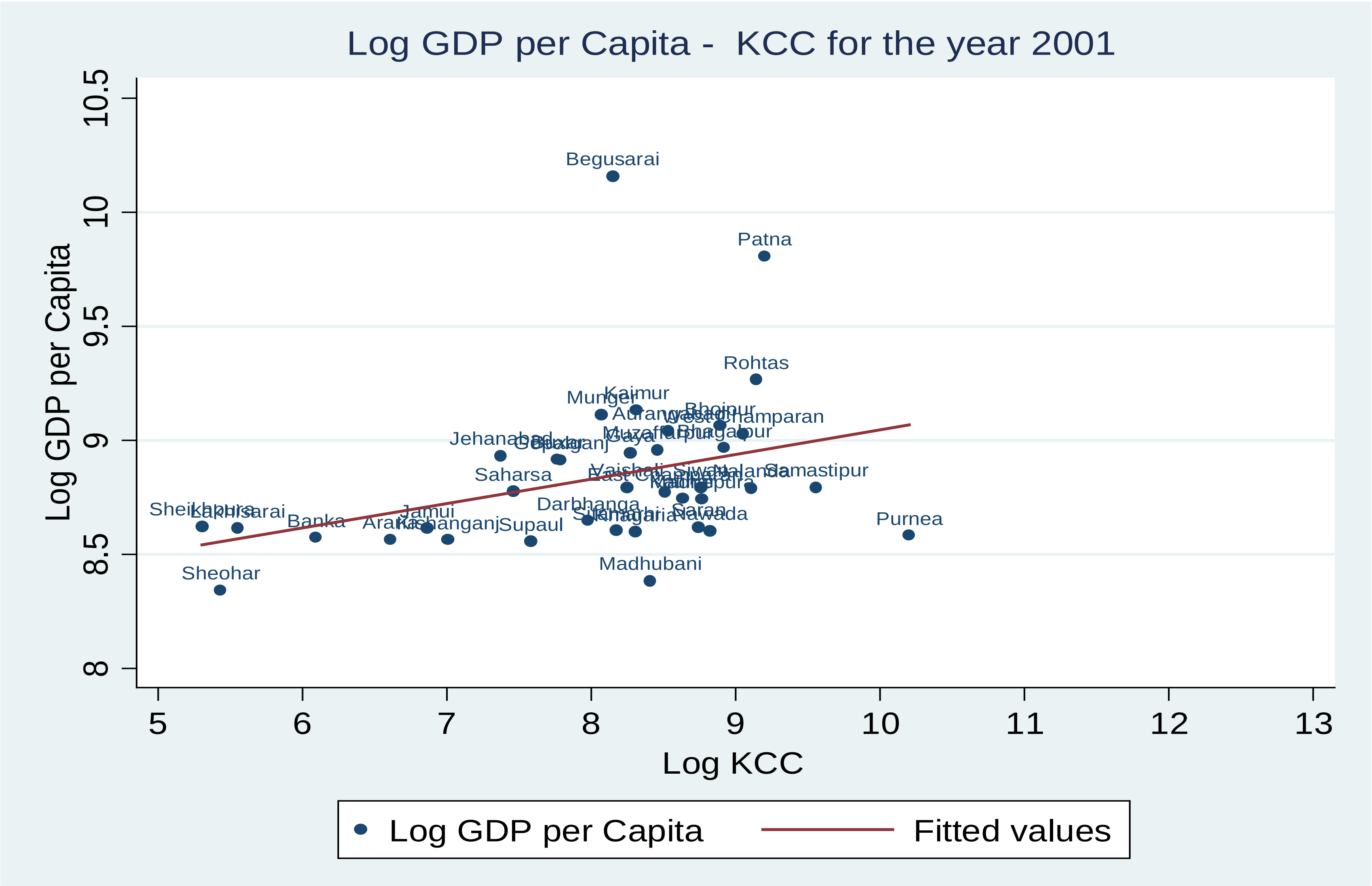
Districts with higher CD ratio do not appear to have higher pc income



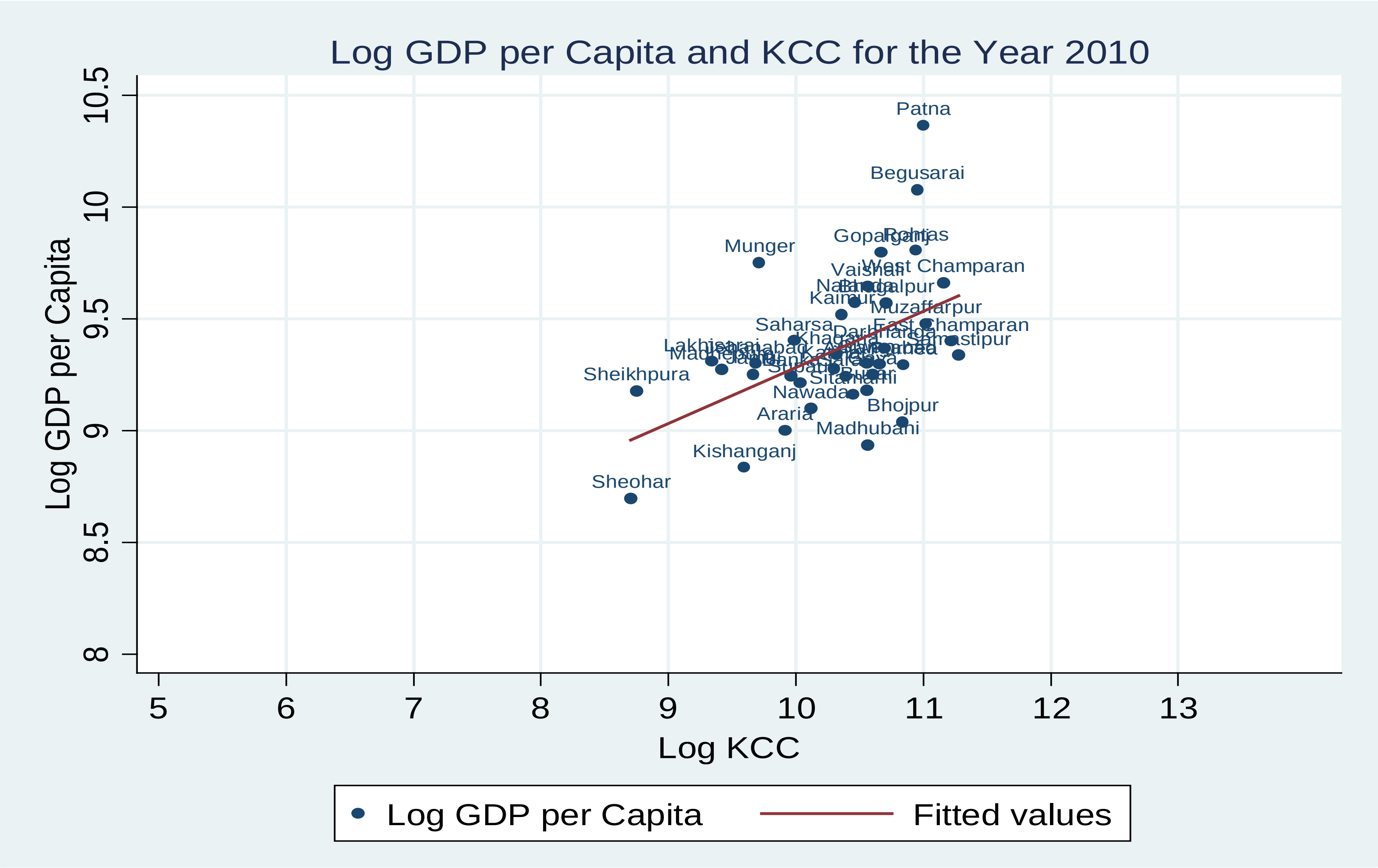
State – Wide Correlation



Regional Heterogeneity - KCC in 2001 – districts with higher KCC tend to have higher pc income



In 2010, the impact of KCC is stronger



Correlation Matrix

	Log GDP per Capita	CD ratio	Log KCC
Log GDP per Capita	1		
CD ratio	-0.0119	1	
Log KCC	0.4615	0.1102	1

Preliminary Functional Form

- We plan to estimate the following log-linearized empirical specification:

$$Log\ (GDP\ per\ Capita)_{dt} = ({}^{Credit}/_{Deposit})_{dt} + Log\ (KCC)_{dt} + D_t + D_d + e_{dt} \ \ldots\ldots (2)$$

Where subscripts: d = districts, and t = time.

Dt = Time fixed effects which captures business cyclical effects

Dd = captures unobserved district heterogeneity like local conditions, or environment.

edt = idiosyncratic error term with IID (independent and identically distributed) properties.

Variables to Analyze

- Sectoral Allocation of credit
- Industry Vs. Agriculture.
- Organized vs. Unorganized sector
- Targeted loan scheme and credit distribution:
- Loan disbursement, Interest rate charged,
- Waiving and default rates in programme like KCC to distinguish between strategic and non strategic default.

Hypothesis:

- Loan Waiving together with targeted lending towards sectors are creating twin effects:
- 1. Over-lending in some but under-lending in other sectors.
- 2. Strategic default in the sectors where lending is more aggressive, could lead to greater contraction in others.
- 3. Undermining confidence of banking sectors towards state, reflected in the low ICD ratio as well.
- Default, volume of loan disbursed in KCC, loan waiving in KCC and related programme could give an answer to low CD ratio and barriers to banking and resource mobilization.