Does Industrial Activity Explain Regional Dispersion in Credit: Empirical Evidences from Indian States

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Abstract

This study explores whether credit inequality across Indian states can be explained by state specific factors representing credit demand and supply and industrial characteristics. While earlier studies have documented credit heterogeneity across states, this study contributes to the literature by exploring deeper into the factors responsible for such diversity. Our results indicate that after controlling for various state specific effects, credit differences are explained by deposit garnered from the state, share of industries in total output, share of gross fixed capital formation (GFCF) in all India GFCF and operational industries in the state. This indicates that states, which have been leaders in terms of garnering deposits have also earned lion's share of the credit; greater financial inclusion may be, at least in part, hold a key to breaking this low level equilibrium trap. A more robust dataset on state specific industrial characteristics will facilitate further research in this area.

1. Introduction

1.1 The phenomenon of heterogeneity of credit across regions is well researched in international literature. While the neo-classical theorists believed that capital flows from developed regions to underdeveloped regions in pursuit of higher returns, Myrdal (1957) and Prebisch (1962) challenged this belief. These authors argued that as the risk weighted return on capital is higher in developed regions, capital flows from underdeveloped regions to developed regions. In the Indian context, available literatures have documented existence of credit diversity across Indian states (Das and Maiti 1998, Tyagarajan and Saoji 1979 and Pai 1970**).** This paper however analyses this issue from a different angle. As the credit diversity and causality between growth and financial development has been adequately explored in the literature so far, this paper evaluates a different postulation. We ask a question, why does credit dispersion across states differ so much? A logical answer to this question would be the risk weighted returns associated with each state may be different which attracts capital to a particular state and dissuades capital from other states. This paper essentially evaluates the factors that characterise the risk weighted return profile of each state. We attempt to quantify the characteristic factors to draw conclusions from empirical study.

1.2 Among emerging market economies (EMEs), India provides a natural laboratory, given its heterogeneity across states in terms of geographic, economic, developmental and demographic characteristics. We attempt to use this rich spatial heterogeneity to address emerging issues relating to credit flow across regions. In particular, using a large panel of 22

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states and data for 9 year (2004-12), we analyse why does the rate of credit disbursal differ so much across Indian states and what are the determinants of credit off-take across regions? Using a large number of explanatory variables that could account for credit divergence across states and an array of alternative models we attempt to decipher the impact of industrial activity and industry aggregates on credit aggregates.

1.3 The rest of the study is organised as follows. Section II gives an overview of the international as well as Indian literature; it also underlines how our study adds to this strand of literature. The dataset are detailed in Section III, while Section IV describes the empirical results. The concluding section-V- apart from summarising the results also discusses the policy implications of the study.

II. Literature Survey

2.1 Empirical literature is rich in studies which analyse whether the causality runs from economic growth to financial development or *vice versa*. Authors like McKinnon (1973), King and Levine (1993) and Levine (2000) have argued that causality runs from financial development to economic growth, because greater financial development facilitates more efficient allocation of resources, which in turn gives a boost to economic growth. However others like Gurley and Shaw (1967), Goldsmith (1969), Jung (1966) have suggested the causality runs the other way round; as economic growth picks up due to structural factors, the demand for financial market products increases and the financial markets develop as a response. Evidence of bi-directional causality has also been documented (Blackburn and Huang 1998, Khan 2001 and Hassen et. al. 2011). In the Indian context, studies such as Demetriades (1996) and Chakraborty (2010) suggest that financial sector reforms helped in achieving higher economic growth.

2.2 From the welfare maximisation point of view, policymakers are interested in ensuring egalitarian distribution of credit across states. However, the neo-classical theory postulates that free movement of factors of production will automatically result in exodus of labour from underdeveloped region to the developed region, while the financial resources, in pursuit of higher returns will seek more profitable opportunities available in underdeveloped region. In such a system, banks may fail to allocate resources among different regions only due to imperfect or asymmetric information or due to barriers to interregional movement of financial flows like transaction costs or policy requirements.

2.3 This neoclassical postulation was challenged by Myrdal (1957) and Prebisch (1962). Both the 'cumulative causation theory' of Myrdal and 'dependence' theory' of Prebisch suggest that yields of productive factors may vary between regions and the risk adjusted profitability of capital is higher in developed regions. This results in the developed regions not only utilising and exhausting all their financial resources, but also in attracting capital from less developed regions. In such systems, financial intermediation and banking play only a limited role, which is confined to garnering deposits.

2.4 Later developments in theory of development phases of the financial system challenged this hypothesis (Chick and Dow, 1988; Dow, 1990). These theories indicate that as the banking system becomes more mature, it develops an ability to create credit in

certain regions without reducing it in others. In this development phase, the decisions of banking system to finance development activities in one region are independent of deposits at its disposal.

2.5 Samolyk (1992) developed a regional credit model and its empirical application for the USA, which suggested that local banking sector problems may constrain economic activity in financially distressed regions, whereas no such link was evident in financially sound regions.

2.6 Gonzalez and Sales (2001) added to this strand of literature by highlighting the role of expectations about the number and magnitude of investment projects, which in turn determine the demand for financing or credit availability. The authors also found that in Spain, introduction of regional banks resulted in relatively low inter-regional differences. Cuesta and Garcia-Verdugo (1998) study on the other hand, found that the preference for liquidity is greater in the relatively lesser developed regions and in those that have a less promising economic outlook, which results in relatively lesser creation of credit for the region and an outflow of capital to more advanced regions. Among the EMEs, Lima and Resende (2008) found evidence of inequality in deposits translating into local credit for Brazilian states; moreover their study indicated bank group-wise differences (public *vs.* private banks) in such inequality pattern.

2.7 Valverde and Fernandez (2004) using a sample of Spanish banks during 1993-99 found that at a regional level, economic growth predicted financial deepening. They also found that the bank-lending specialization to be a key issue in financing firms and households compared to other bank specializations. Banos et. al (2011) also found a positive relationship between economic development, measured by the contribution of industry and services in the real gross domestic product, and banking development across regions in Philippines.

2.8 Recent experience suggests that the relationship between credit and corporate profit is cyclical in nature. In periods of high economic growth, corporate profits are generally high for overwhelming number of enterprises, in an environment of general confidence and optimism (Bilych, 2012). However, when the cycle turns, profits hit rock bottom as business and consumer confidence is shaken. In a scenario where investment is financed primarily through bank credit, the corporate profit serves as a guarantee for repayment of loans. As corporate profits shrink, both the supply and demand for bank loans is affected adversely. On one hand, investment intentions of corporate go down, while at the same time the perceived riskiness of corporates increase, prompting banks to lend less. Even though we could not find any study which evaluates this relationship between corporate profit and bank credit across various regions within an economy, we can be postulated that the relationship may work through economic growth channel, with corporate profits affecting economic growth and that in turn affect the supply of bank credit to that particular region.

2.9 There are a few studies that address the spatial divergence in credit distribution in India and the empirical evidence is mixed. While Das and Maiti (1998) found no significant evidence of credit migration, Tyagarajan and Saoji (1979) observed that credit migration was largely restricted to four major metropolitan cities. Pai (1970) showed that for industrially developed states, the credit expansion is at a higher rate as compared to the deposit growth rate while the *vice versa* is true in case of industrially backward states. Chatterjee *et al*

(1997) observed that the migration of credit in the major states had become more uniform between 1974 and 1994. Singh and Srinivasan (2002) found that per capita bank credit is an important determinant of growth. They also observed that C-D ratios (a proxy for the internal movement of capital) have both become more varied across states and more closely related with SDP per capita over the period.

2.10 This study contributes to the literature in a number of ways: first, as is clear from the literature survey, though a number of studies have documented the credit heterogeneity across states, very few studies have explored deeper to analyse the factors that are responsible for such phenomenon. The basic hypothesis of the present study is that as the monetary policy and interest rates charged by banks are constant across states, factors that specifically characterise the state's risk return profile may be responsible for attracting credit to a particular state as compared to others. Though it is not possible to compile an exhaustive list of all such factors, the key factors could be: availability of deposits, state of financial developments, profitability of investment in the state, investment climate in the state, availability of infrastructure, transaction costs and ease of doing business so on and so forth. It is challenging to capture these factors through appropriate proxies for which state wise time series data may be available. This paper essentially tries to identify and quantify these factors to empirically evaluate whether it has any explanatory power over the credit heterogeneity across states.

2.11 Specifically, we have narrowed down to a set of key indicators which we think would adequately represent the unique characteristics of each state to carry out our analysis. These indicators can be divided into two groups: supply of funds (deposit ratios) and demand for funds represented by industrial factors (state specific factories in operation, fixed capital, share of industry in state domestic product, working capital).

2.12 Second, earlier studies relating to India on this subject selected bigger states, completely ignoring the smaller states. However since this study is about explaining asymmetry in credit distribution, it is important not to exclude small states out of the sample, as that could distort the analysis. We therefore use large number of states (22); only the union territories and certain states in the north-eastern region could not be covered in the study due to unavailability of consistent time series data.

III. Data

3.1 Our study has employed panel data on 22 Indian states[2] for the period 2003-04 to 2011-12. Data for this study have been culled from a variety of sources. State wise time series data on outstanding deposits and credit have been taken from the Basic Statistical Returns (BSR) dataset of the Reserve Bank of India (Table-I). Variables like gross share of industry in state domestic product, factories in operation, have been taken from the Centre for Monitoring Indian Economy (CMIE) States of India database. The Annual Survey of Industries (ASI) database has been used for state specific proxies for demand for credit from the corporate sector including fixed capital, working capital and gross fixed capital formation.

[2] The states include Andhra Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Gujarat, Goa, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

3.2 Credit growth across Indian states has varied substantially, with only a few states registering higher than average growth rate (Chart I). An analysis of share of states in all India credit also points to stark contrasts (Chart II). While a few select states dominated and bagged a lion's share in outstanding credit, majority of the states have only a marginal share of the credit pie. We considered a third variable, the credit to GSDP ratio to represent state credit distribution as a percentage of economic activity. Here again, only a few states showed high credit to GSDP ratio, but most of the states have low levels of the ratio (Chart III). Chart –V also essentially describe the same variability with both transformed dependent variables, explanatory variables and their distributions as indicated along the vertical axis. As evident from these Charts the variables representing credit distribution didn't follow similar path across states and their locus varied considerably over time.

3.3 Amongst the three sectors viz. agriculture, industry and services, the share of industry in non-food credit has always remained highest, mainly reflecting its high credit intensity. Thus size of the industrial sector in the state may be an important demand side factor which attracts credit as suggested by Kumar and Fransisco (2005) and Banos (2011). Smaller size of industrial sector in a region is likely to attract lesser credit due to a variety of reasons: greater informational asymmetry about their operations and profitability, lesser availability of collateral, shorter credit history, little known contracts with suppliers, customers or with labours etc. It is however necessary to normalise this explanatory variable taking into consideration the size of the state. A large state is likely to have a comparatively larger industrial sector and *vice versa*. In our analysis therefore, we have taken share of industrial sector in state domestic product as an explanatory variable.

3.4 Further, we have also taken fixed capital and working capital of industries as explanatory variables. Since the first half of 2000s, the banks have been increasingly providing finance not only for short term requirements of the industry but also medium to long term (RBI 2007). These essentially reflect the credit requirements of industries. Hence they have been taken as explanatory variables with suitable normalisation.

3.5 While the fixed capital is a stock concept, the gross fixed capital formation is a flow concept representing investment in the economy. In a state which has just begun to develop, the stock of capital may not be large, though the investments may be large which is likely to propel further growth in the economy and in anticipation of this higher return, more credit may allocated to these regions. This is in line with the argument of Gonzalez and Sales (2001).

3.6 Lastly, state specific deposit is taken as a proxy representing resources available to financial sector for its lending activities in line with the argument proposed by Beck et. al. (2009) and Resende (2008).

IV. Empirical Analysis

4.1 We employ a generic panel data model with credit (or its transformation) as dependent variable, and function(s) of state domestic product, share of industry in state output, deposit garner in the state, bank-centres, gross fixed capital formation (as a ratio of all India or state domestic products), factories operational, fixed capital as explanatory variable; and working capital; the generic equation is as follows:

$G(credit)_{it}=f(share\_industry_{it}, deposit_{it,}, Gfcf\_AI_{it}, factories\_operational_{it}, fixed\_capital_{it}, working\_capital)+ \alpha_i + \lambda_t + \varepsilon_{it}$

where G(.),f(.) are functions such as log, difference or ratios, while ε_{it} *follows normal distribution.*

4.2 Before analysing data for panel regression we consider evaluating their properties, by running Levin-Lin-Chu test (LLC), which tests the hypothesis H_0: each time series contains a unit root against H_1: each time series is stationary. The finding of this procedure is reported in Table-2.

4.3 In the following section we used different indicators of state wise outstanding credit (both in levels and in normalized form). We start with state credit (it was found stationary) as a ratio of all India credit and estimate the coefficients of deposit and other variables indicating industrial health of the state in a pooled specification. The regression result under different explanatory variable(s) is indicated in Table-3. We controlled for gross state domestic product (GSDP) for the size and cycles of economic activity in the state.

4.4 The estimated coefficient and their P-values suggest that state deposit mobilisation played a major role in credit disbursement of the state. It could be in line with Lima and Resende (2008), where authors investigated regional heterogeneities in financial flows in Brazil, that greater availability of deposit has facilitated disbursement in state levels. This is also in line with the findings of Gao and Stepanyan (2011). Turning to demand factor, share of industry in the state output has a positive impact on the state level credit disbursement, along with the share of gross fixed capital formation in the state. This finding corroborates the findings of Gonzalez and Sales (2001) and Banos et. al (2011) in the Indian context. The operational factories have positively influenced the disbursement of credit. In this context it may be mentioned that Pai (1970) showed that for industrially developed states, the credit expansion is at a higher rate as compared to the deposit growth rate while the vice versa is true in case of industrially backward states. However, the results also indicate that the fixed capital coefficient had a negative sign, and working capital had an insignificant coefficient. The model with cross-section and period fixed effect was chosen on the basis of the F-statistics and redundant fixed effect chi-square test statistics. The residual diagnostics confirmed normal distribution of the panel regression errors.

4.5 To evaluate the effect of industrial variables, we performed a redundant variable likelihood ratio tests for deposits, share of industry and factory operational variables; the F-statistics and the likelihood ratio rejected the null of redundancy of these variables. Similarly, we considered the joint redundancy of the industrial variable on credit disbursements; the LR test statistics however, rejected the redundancy of these variables and indicated the importance of these variables in credit disbursement.

4.6 While the pooled regression indicate overall trend in credit disbursement and its determinants, we further control for state specific effect through a *random effect* panel model. However, the Houseman test statistics strongly indicate that the random effects are correlated which suggest use of fixed effect panel model for appropriate interpretation. In

this vain we estimated different fixed effect models (with cross section dummies, time dummies and with both cross-section and time dummies), estimated parameters and P-values from these different specifications are reported in the Table-4. While the coefficient magnitude and their significance varied across models, overall result indicate that after controlling for the state specific factors, *share of states' gross fixed capital formation* and *operational factories* emerge as important determinants of credit disbursements. *Share of deposits* has positive sign in the panel model with time dummies, however, for panel specification with cross section dummies and both cross-section and time dummies the coefficient turned out to be statistically insignificant.

4.7 To evaluate the persistence of credit flows or lag dependence of the state credit factor, we included first lag of credit in the equation and estimated this dynamic panel model in Panel GMM framework, using *Arellano–Bond* two-step procedure. The estimation results indicate (table-4, Model-4) that the coefficient of the lag-credit variable is positive and significantly different from zero; generally coefficients of industry share, gross fixed capital formation (all India share) and operational factories had positive coefficient supporting our earlier observations, however the *J-Stat*, *Arellano Bond* second lag autocorrelation, indicating that the dynamic panel is not a good fit for period under consideration.

4.8 Secondly, we used different transformation of credit disbursement, which includes state credit as a ratio of to state GDP (credit_GSDP). Other variables, e.g. deposit, GFCF and FC were appropriately normalized; for instance, the estimate of Credit_GSDP we used state deposit to SDP ratio, GFCF to SDP ratio, FC to GSDP and WC to GSDP ratio.

4.9 In line with Table-4 dummies ratio, we controlled for state specific variables and estimated panel model with cross section, time series dummies and with both cross section and time series dummies. The result underlined the importance of deposit mobilisation (relative to SDP) and factories operational in the state. However in the alternative specification the share of gross fixed capital formation to SDP didn't have much explanatory power.
We also estimated random effect model, which broadly supports our findings. Finally, in an attempt to test the dynamic relationship between credit to SDP ratio, we included the lagged value of the same as a right hand side variable and estimated the model using GMM methodology. The regression outcome indicate that while the lagged value of credit to SDP was statistically significantly explained the contemporaneous variables, the coefficient of other variables were not statistically significant; moreover, the *J-statistics* and *Arellano Bond* second lag autocorrelation, suggest poor fit of dynamic panel specification.

4.10 Our study could emphasise a broad trend in spatial distribution of credit and its relation with the industrial variables e.g. operational factories, share of industries in the state, share of gross fixed capital formation in the state and on the states deposit mobilisation, there are certain factors, e.g. the negative coefficient of fixed capital or insignificance of working capital in influencing credit disbursements. In the context it may be useful to consider factors representing banking network, infrastructure facilities and state GPD. One of the variables that we would have liked to consider in our analysis is the state specific profitability measure. This variable however did not give any significant result and had to be dropped for model parsimony. Our analysis suggests that volatility in profit in ASI dataset could be one of the reasons affecting the result. A more robust dataset in this respect would facilitate further research.

V. Conclusions

5.1 Heterogeneity of credit distribution across regions has attracted considerable academic and policy attention. Policymakers are especially interested in understanding the factors that hinder or foster a more egalitarian spatial distribution of credit with a view to removing the obstacles and encouraging the enabling factors. In the Indian context, while earlier studies have documented credit heterogeneity across states, we take a step forward to identify and quantify the state specific factors that characterise their risk return profile which may attract capital to one particular state as compared to others. Specifically, we consider factors related to industrial activities that have not been explicitly addressed in the literature; for instance, share of industries in total output, gross fixed capital formation, fixed and working capital requirements. We consider India, an EME, which provides considerable regional (across state) difference in terms credit disbursement and industrial activities.

5.2 Using data from large number of Indian states from 2003-04 to 2011-12, after appropriately controlling for the general time specific effects across states, we found empirical evidence which suggests availability of funds (deposits) and share of industry in total output as important variables explaining heterogeneity of credit disbursement. Among other variables, share of gross fixed capital formation and factories operational as important factors that affect credit disbursement.

5.3 Our empirical results motivate a few important policy implications. First, our results show that building a robust domestic deposit base is important for sustained and stable credit growth. This indicates that states, which have been leaders in terms of garnering deposits have also earned lion's share of the credit. However the solution to the problem does not lie in administrative credit rationing rules specifying which state should get how much credit; that would be grossly distortive in nature. Greater financial inclusion may be, at least in part, hold a key to breaking this low level equilibrium trap. Recent policy initiatives by Reserve Bank of India such as setting up differentiated banks (such as payments banks) with primary focus on the provision of basic financial services using new technologies could be helpful in achieving greater financial inclusion. The Government's *Jan Dhan Yojana* to provide bank accounts for each poor Indian family, where each account would include a debit card, accident and life insurance coverage, and an overdraft facility is also a major step in this direction.

5.4 Second, high level of industrialisation in the state seems to be attracting greater credit to the state. In line with the earlier discussion, this factor also suggests inequality breeding further inequality amongst states. Possibly, a 'big push' in terms of initiating industrial activity in the state by the Government may address this problem effectively. This can be done most effectively by creating enabling environment for industrial activity such as building strong infrastructure network, improving the investment climate in the state by reducing bureaucratic interference, more clarity and transparency in respect of rules and regulations governing the industrial sector and speedy decision making process.

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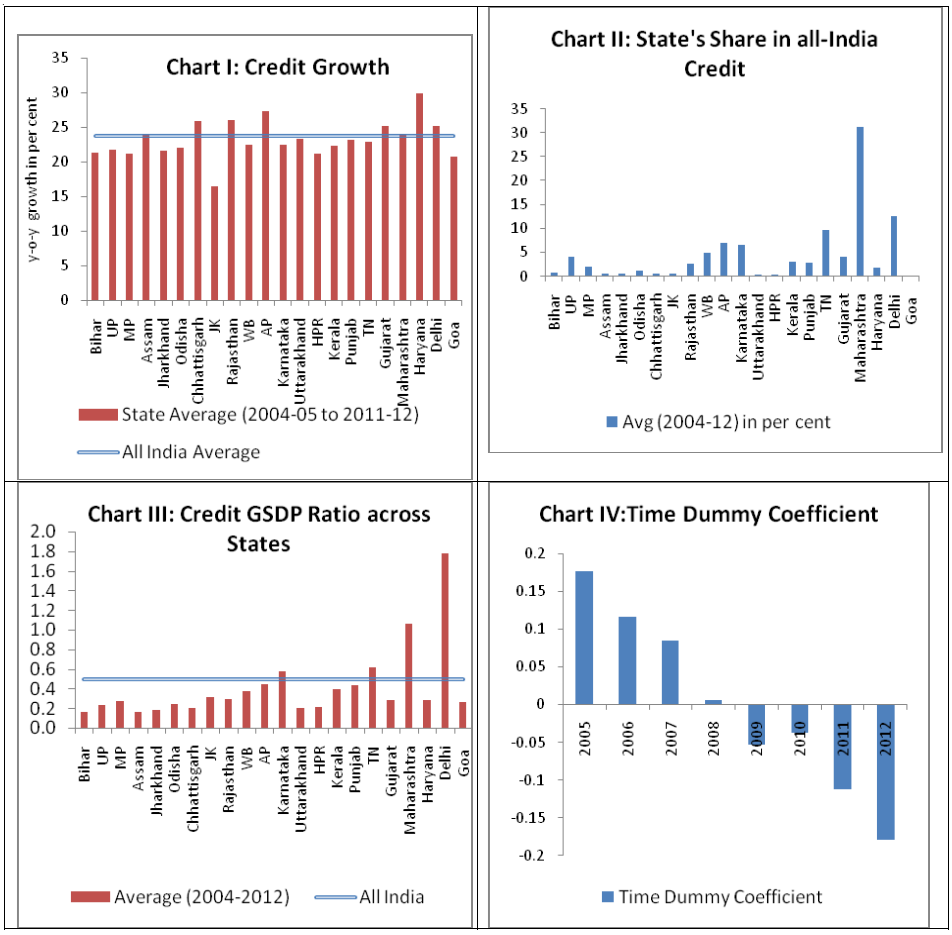
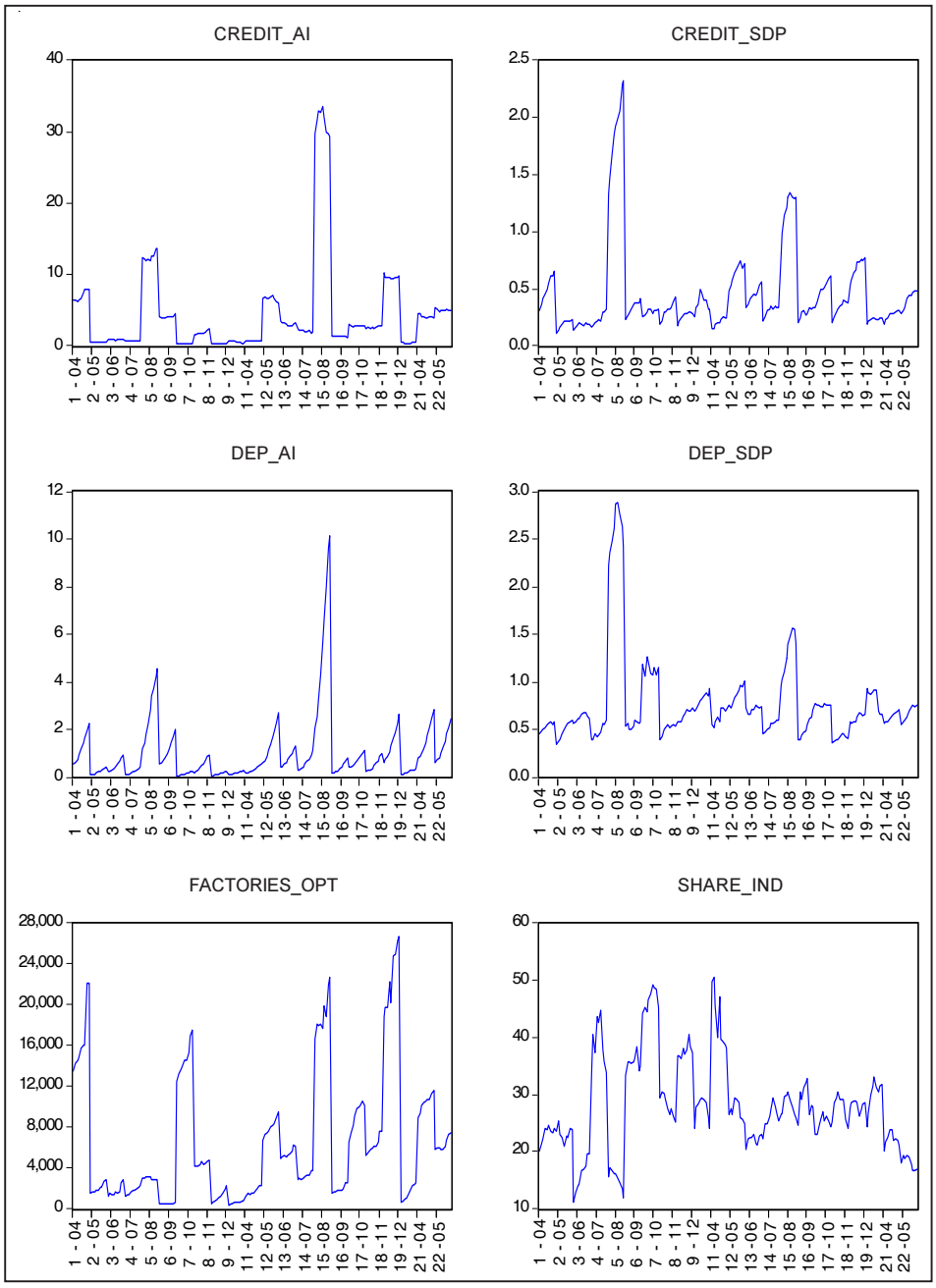


Note: In Charts I, II and III, the states have been arranged in ascending order of their average per capita GDP during the period under consideration.

Chart V: Variability of Credit Indicator and Major Macro Variables in India



Note: Horizontal axis indicate state-year (e.g. 1-2004 indicate state 1 year 2004) for each variable

Table 1: Variable Definition and Descriptive Statistics

Variable	Definition	Source	Mean	Median	Maximum	Minimum	Std. Dev.
CREDIT_AI	State credit to all India credit ratio	BSR-RBI	4.48	2.44	33.51	0.21	6.67
CREDIT_GSDP	State credit to state domestic product ratio	BSR-RBI and SoI- CMIE	0.46	0.33	2.31	0.11	0.39
DEP_AI	State deposit to all India deposit ratio	BSR-RBI	1.02	0.58	10.12	0.07	1.44
DEP_GSDP	State deposit to state domestic product ratio	BSR-RBI and SoI- CMIE	0.77	0.64	2.88	0.34	0.46
FACTORIES_OPT	Factories in operation in the state	ASI-GoI	6450.82	3942.00	26654.00	320.00	6412.03
FC_AI	State fixed capital to all India fixed capital ratio	ASI-GoI	4.52	3.07	19.70	0.08	4.73
FC_GSDP	State fixed capital to state domestic product ratio	ASI-GoI, SoI-CMIE	3.63	3.18	11.32	0.53	1.82
GFCF_AI	State gross fixed capital formation to all India gross fixed capital formation	SoI-CMIE	4.56	2.98	23.51	-0.02	4.58
GFCF_GSDP	State gross fixed capital formation to state domestic product ratio	SoI-CMIE	0.49	0.39	2.14	0.00	0.42
SHARE_IND	Share of industry in state domestic product	SoI-CMIE	28.08	26.86	50.61	11.22	8.24
WC_AI	State working capital to all India working capital ratio	ASI-GoI	4.45	3.19	18.21	-3.75	4.33
WC_GSDP	State working capital to state domestic product ratio	ASI-GoI	0.92	0.65	4.62	-0.71	0.88

Table-2: Panel Unit Root: Levin, Lin & Chu Test (Null: unit root)

	Statistic	Prob.	sections	Obs
Log(credit)	-8.89	0	22	154
log(deposit)	-3.91	0	22	154
Share of Industry in state*	-3.7	0	22	154
Factories Operational*	-8.8	0	22	132
Fixed Capital as ratio of all India	-2.18	0.01	22	154
Gross Fixed Capital Formation#	-5.52	0	22	153
Working Capital as ratio of all India	-5.85	0	22	154

*: variables found to be difference stationary; # as a ratio of all India

Table-3: Pooled Regression Explaining Spatial Credit Dispersion

	Coeff	P-value	Coeff	P-value	Coeff	P-value	Coeff	P-value	Coeff	P-value
C	0.20	0.54	-0.92	0.01	-1.36	0.00	-1.52	0.00	-1.64	0.00
DEP_AI	3.89	0.00	3.36	0.00	3.12	0.00	2.98	0.00	2.91	0.00
D(SHARE_IND)	0.27	0.04	0.24	0.04	0.22	0.05	0.20	0.07	0.20	0.07
GFCF_AI			0.37	0.00	0.32	0.00	0.62	0.00	0.55	0.00
FACTORIES_OPT					0.00015	0.00	0.00017	0.00	0.00017	0.00
LOG(FC_AI)							-1.28	0.00	-1.41	0.00
WC_AI									0.13	0.13
R-Squ	0.74		0.76		0.80		0.82		0.82	

Note: Independent Variabl is the share of state credit as a percentage of All India (AI) credit

Table-4: Static Fixed Effect Panel Model and Dynamic GMM Estimations

	Coeff	P-value	Coeff	P-value	Coeff	P-value	Coeff	P-value
C	3.93	0.00	-1.69	0.00	4.38	0.00		
CREDIT_AI(-1)							0.63	0.00
DEP_AI	-0.24	0.11	3.29	0.00	-0.31	0.07	-0.31	0.13
D(SHARE_IND)	0.00	0.88	-0.04	0.72	0.02	0.36	0.09	0.00
GFCF_AI	0.06	0.03	0.50	0.00	0.04	0.16	0.09	0.01
FACTORIES_OPT	0.00008	0.02	0.00017	0.00	0.00002	0.52	0.00014	0.08
LOG(FC_AI)	-0.09	0.63	-1.28	0.00	-0.01	0.94	-0.88	0.17
WC_AI	0.02	0.23	0.08	0.31	0.02	0.29	0.00	0.96
Fixed Effect	y				y		y	
Time Dummy			y		y		y	
							J-stat	5.06
R-Squ	0.86		0.97		0.99		Prob	0.75

Note: 1) Houseman test found correlated random effects, therefore fixed effect model results reported.
2) GMM estimates are given in the last two columns.

Table-5: Static and Dynamic Panel Models with State Credit to GDP as Dependent Variable

	Coeff	P-value	Coeff	P-value	Coeff	P-value	Coeff	P-value	Coeff	P-value	Coeff	P-value
C	0.29	0.00	-0.05	0.67	0.30	0.00	0.32	0.01	0.07	0.47		
CREDIT_GSDP(-1)											0.78	0.00
DEP_GSDP	0.64	0.00	0.55	0.00	0.63	0.00	0.34	0.00	0.61	0.00	-0.05	0.43
SHARE_IND	-0.01	0.00	0.00	0.94	-0.01	0.00	0.00	0.24	0.00	0.15	-0.01	0.22
GFCF_GSDP	0.00	0.96	-0.01	0.68	0.00	1.00	-0.06	0.02	-0.04	0.16	0.04	0.17
FACTORIES_OPT	0.00001	0.00	0.00002	0.00	0.00001	0.00	0.00000	0.55	0.00001	0.00	-0.00001	0.16
LOG(FC_GSDP)	-0.15	0.00	-0.04	0.01	-0.16	0.00	-0.01	0.38	-0.05	0.00	0.01	0.31
WC_GSDP	-0.01	0.57	0.01	0.64	-0.01	0.56	-0.01	0.37	0.00	0.95	-0.03	0.21
Fixed Effect			y				y		random		y	
Time Dummy					y		y		random		y	
											J-stat	6.31
R-Squ	0.87		0.97		0.87		0.97				Prob	0.61

Note: GMM estimates are given in the last two columns.