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Ease of Doing Business in Selected Major Indian States: Does Bank Credit Lead to Productivity?

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Abstract:

It has been comprehensively debated by economists, that availability of finance is a very important determinant of output in an economy. In the literature, there are strong arguments for and against this idea. It is generally agreed that finance, up to a certain extent, can act as a facilitator to the process of economic growth. Beyond a point, it may begin to destabilize the economy. Scholars normally measure the performance of an economy in terms of its productivity. This leads to the fact that if business has been made easier, productivity should have increased. Thus, there should be some link between "ease of doing business" and productivity. In recent rankings of ease of doing business, one of the important pillars was that of "getting credit". If it is an important pillar, it should be related to productivity, as measured by change in real GDP. Availability of credit can be measured by the credit to deposits ratio of banks as a proxy to measure availability of finance and lending practices. In this paper, this variable will be used to study the patterns across major states of India, to judge the ease of doing business in these states. An attempt is made to study the causality between "ease of doing business" and productivity.

Keywords: Economic growth, Ease of doing business, Financial development

JEL Classification*:* F43, G21, O11

Paper Classification: Research Paper

Introduction

It has been comprehensively debated by economists, that availability of finance is a very important determinant of output in an economy. In the literature, there are strong arguments for and against this idea. It is generally agreed that finance, up to a certain extent, can act as a facilitator to the process of economic growth. Beyond a point, it may begin to destabilize the economy. Scholars normally measure the performance of an economy in terms of its productivity. This leads to the fact that if business has been made easier, productivity should have increased. Thus, there should be some link between "ease of doing business" and productivity. In recent rankings of ease of doing business, one of the important pillars was that of "getting credit". If it is an important pillar, it should be related to productivity, as measured by change in real GDP.

Availability of credit can be measured by the credit to deposits ratio of banks as a proxy to measure availability of finance and lending practices. In this paper, this variable will be used to study the patterns across major states of India, to judge the ease of doing business in these states. An attempt is made to study the causality between "ease of doing business" and productivity.

The quest to identify determinants of economic growth has been long and full of disagreements. There is also a lot of debate over how economic progress should be measured.

Over the years, it has become quite clear that increase in national income need not always qualify as progress in an economy. It is a highly multi-dimensional concept. However, there must be certain variables that are correlated, and must collectively point towards economic progress. Factors like the level of technology, labour force, physical capital, human capital and natural resources, ultimately determine productivity. Further, rising incomes in a nation (due to productivity rises) are correlated with better standards of living. Hence, it should be clear that availability of finance is only one of the many factors, and is a catalyst for economic activities. Therefore, the contribution of finance as a factor for growth cannot be expected to be very large.

However, in India, the financial sector is very large and widespread, comprising of various entities. As per data from IBEF (2016) , the financial sector in India has contributed nearly 6 per cent to the GDP, in 2014-15. Further, commercial banks account for about 64 per cent of the assets of the financial sector in India. Thus, it is quite clear that the banking sector in India holds utmost importance in determining the functioning of the financial sector, and the economy as well. The main sources of finance for corporations are still banks and stock markets. Further, for recurring and immediate needs of corporations, banks are very often the preferred means of raising finance.

As per the ranking methodology of the World Bank , "getting credit" is an important pillar of ease of doing business. This is because access to finance is one of the foremost facilitator for doing business. While the focus in the above mentioned rankings has been more on legal rights and credit information, the credit to deposits ratio of banks may be used as a proxy to measure availability of finance and lending practices. This will be more of a quantitative variable, rather than qualitative. In this paper, this variable will be used to study the patterns of credit availability across major states of India.

Literature Review

Ease of doing business

Economic growth has been believed to depend upon a variety of factors prevailing in the macro-economic environment of the country. Barro (1996) conducted a cross-country study on economic growth, and important factors like schooling, life expectancy, Government policies, legal factors, inflation, trade policy, etc., were highlighted.

In recent empirical studies, other factors leading to financial development, viz., foreign currency inflows, foreign aids, availability of bank credit, proper enforcement of tax and other regulatory procedures, etc., have also been studied. In the recent times, particularly following the World Bank's ranking since 2004, such factors have gained increased importance for the growth of any country. They have been incorporated as a part of the "Ease of Doing Business" index.

[1]Refer http://www.ibef.org/industry/financial-services-india.aspx/ (Retrieved 3rd February, 2016, 11:25 am)

[1]Referhttp://www.doingbusiness.org/~/media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB16-Chapters/DB16-DTF-and-DBRanking.pdf (Retrieved 3rd February, 2016, 12:30 pm)

When arriving at the 'Doing Business' rankings, the World Bank ranks 10 parameters that impact businesses across various stages of their lifecycle – at start-up, getting a location, getting financing, and daily operations. The 10 parameters included in World Bank's index of ease of doing business comprise of:

1	Starting a business	2	Dealing with construction permits
3	Getting electricity	4	Registering a property
5	Getting credit	6	Protecting investor
7	Paying taxes	8	Trading across borders
9	Enforcing contracts	10	Resolving insolvency

Investment in a country is primarily generated from the domestic savings of households, especially in a closed economy. In an open economy however, the domestic savings and investments may not match. If there is a deficit in investment, funds may flow in from other countries. The condition here is that the other countries must find the domestic country a safe and attractive destination. India has witnessed decent growth. However, to sustain its growth path, India needs to move further up the list of preferred international investment destinations. The Government reforms play a key role here, as they help place the country on an equal footing amongst countries having a favourable, flexible, liberalized and more transparent business environment.

On the date of access, this index places India in 130th position among about 189 countries, lower than the other BRICS (Brazil, Russia, India, China, South Africa) countries, and many other smaller countries. Singapore ranks first on the same index. Upon further inspection, it can clearly be observed that India ranks low on all parameters, except rank 8 on "protecting minority investors". On important parameters like "enforcing contracts" and "dealing with construction permits", India ranks among the lowest in all the countries. This portrays India as a country where doing business is not easy – thus India needs to move up the list by implementing crucial reforms.

DIPP (Department of Industrial Policy and Promotion) reports reveal that by 2020, India's population will touch 1.35 billion people. Out of this population, 906 million people will belong to the working age. To sustain India's growth, employment needs to be created. These jobs can only be generated by the manufacturing and service sectors in India. Thus, these sectors must be allowed to grow and be sustainable. For this reason, the business sector needs to strengthen urgently with applying the necessary business reforms. Therefore, the regulatory framework in India has to be improved, in order to generate employment and capital formation. The Government of India has already made many efforts to improve India's Doing Business rank to 50 (from current rank of 130) by 2017.

It must be noted here that reforms can be applied simultaneously at various levels, viz. State, Central etc. Efforts at the Centre must be synchronized with efforts at the State levels. The major areas that comprise these reforms and need attention include (as per World Bank): ease of starting a business; registering property; getting credit; protecting investors; paying taxes; trading across borders; and enforcing contracts. India ranks rather low on these parameters.

Past literature on this subject has extensively used the Doing Business Rankings and corresponding components mentioned above in analysis. Djankov, McLiesh and Ramalho (2006) focused on aggregate impacts using cross-sectional analysis with fixed country effects, and revealed that the countries with a higher Doing Business Ranking in 2004 significantly influence growth. Busse and Groizard (2008) in their study found that the countries with lower levels of

strict regulation are more likely to stimulate growth. Eifert (2009) studied individual components of the Doing Business Rankings to reveal that the time taken to enforce contracts stimulates growth. Ease of doing business is also shown to depend on foreign direct investment (FDI) which in turn promotes economic growth (Alfaro, 2003; Basu & Guariglia, 2007).

Alfaro (2003) remarks "FDI can be a source of valuable technology ... which can help jump start an economy", while Wacziarg (2001) suggests FDI perpetuates trade benefits which then promotes economic growth. Researchers have also used GDP, GDP growth, GDP per capita, etc., as determinants of economic growth (Blonigen, 2011; Alfaro, Chanda, Kalemli-Ozcan & Sayek, 2009; Di Giovanni, 2005) which in turn impact the ease of doing business. For example, high GDP growth suggest large economies of scale (Dhakal, Rahman & Upadhyaya 2007) while high GDP per capita may indicate large market size (Walsh & Yu, 2010) – both of which are conducive to attractive business opportunities. Also, factors like labour flexibility; infrastructure quality; financial depth; judicial autonomy; legal system competence; reduced corruption; political stability; government efficacy; and regulatory practices, exert their influence on doing business ratings (Kostevc, Redek & Susjan, 2007; Masron & Abdhulla, 2010).

Table 1 below presents a summary of the rank and scores of various states of India, based on a report in DNA India (2015).

Table 1: Ranking of States on Ease of Doing Business

Rank	State	Rank	State
1	Gujarat	17	Himachal Pradesh
2	Andhra Pradesh	18	Kerala
3	Jharkhand	19	Goa
4	Chhattisgarh	20	Puducherry
5	Madhya Pradesh	21	Bihar
6	Rajasthan	22	Assam
7	Odisha	23	Uttarakhand
8	Maharashtra	24	Chandigarh
9	Karnataka	25	Andaman-Nicobar
10	Uttar Pradesh	26	Tripura
11	West Bengal	27	Sikkim
12	Tamil Nadu	28	Mizoram
13	Telangana	29	J&K
14	Haryana	30	Meghalaya
15	Delhi	31	Nagaland
16	Punjab	32	Arunachal Pradesh

(DNA India, 2015)

The report clearly shows that Gujarat ranks first in ease of doing business. For example, the state introduced an investor support system, web labour portal, tax services online etc. Andhra Pradesh is placed second. Single window clearances have been stressed upon, and the policy for the same aims to provide all major permissions in 21 working days, which is still long. Land records have also been digitalized. Similarly, it is commonly observed in other states that facilities like online portals for registration and licensing are available. For instance, Madhya Pradesh is placed 5th, where an online application has been introduced to track and scrutinize construction

permits. Similarly, in Maharashtra which ranks 8th, there are facilities like online tax payment and query solving.

Finance and growth

The most recent strand of empirical works begin from the studies by Greenwood and Jovanovic (1990), Pagano (1993) and King and Levine (1993). Their research shows that financial development does have a positive impact on economic growth through investment, saving, productivity of capital and effective management of information. Further, there is no particular differentiation needed between the proportion of banks or stock markets in the economy. Although this argument still goes on, it is believed that both banks and stock markets behave as complementary, rather than rivals in the finance-growth nexus. This is shown by Boyd and Prescott (1986), Boyd and Smith (1998) and Blackburn, Bose and Capasso (2005). Among earlier and recent work in the Indian context, some important ones are Acharya, Amanulla and Joy (2009), Bell and Rousseau (2001), Chakraborty (2007, 2010) and Chakraborty and Ghosh (2011).

From the various studies, there are various views on how finance and growth are related: (i) finance may lead to growth; (ii) growth may lead to finance; (iii) both variables may lead to each other; and (iv) there is no relationship. All views have their supporters and critics. The researcher may begin examining one particular possibility, but the results may end up supporting another possibility. Table 2 below summarizes some of the important empirical work done recently, from across the world.

Table 2: Summary of Studies

Year	Author	Regions Studied	Time Period	Econometric Technique	Major findings
2005	Shan	China	1978 to 2001	VAR analysis	Bidirectional causality between finance and growth
2007	Ang and McKibbin	Malaysia	1960 to 2001	Causality tests	Output growth causes financial depth in the long-run
2008	Biswas	12 Asian countries	1981 to 2005	Cointegration and Causality	Improvements in infrastructure and finance go hand in hand
2009	Hasan, Wachtel and Zhou	China province data	1986 to 2003	GMM estimator	Finance, legal system, property rights are correlated
2009	Ghimire and Giorgini	121 countries	1970 to 2006	Regression	Short run negative effect of private credit on economic growth; no long run effect; Positive (but varying) impact of stock markets on growth
2010	Konstantinos, Alexandros, Emmanuel and Chatsivasileiadou	Greece	1960 to 2006	Time series analysis	Bidirectional causality between finance and growth
2011	Anwar, Shabir and Hussain	Pakistan	1973 to 2007	ARDL technique	Financial sector has a positive impact on sustainable economic development in the short run and long run
2012	Adeneyi, Egwaikhide and Oyinlola	5 African countries	1970 to 2005	VECM analysis	Countries need to upgrade their financial structure to benefit from capital inflows

The main approach used in empirical studies in this area has been to utilise appropriate variables that may represent finance and growth. The method of analysis may include cross-sectional, time series and longitudinal data. The tools used involve regression, correlation, tests of causality, vector auto-regressive models, simultaneous models etc., depending on the data used. The analysis depends a lot on how the researcher has chosen to define the variables. Economic growth, usually, is defined as the change in domestic product of a state/country over a period of time. Finance, on the other hand, can be defined using various measures. In this paper, bank credit has been used as an indicator of finance. Bank credit is a very important source of finance for the economy. Both households and firms require money for various activities. It is observed that injection of money in the economy often stimulates economic activity, especially when sentiments are low. Therefore, bank credit should have a positive relationship with growth. It should be one (of the many) important contributor to growth. However, the same cannot be said about the reverse causality from growth to finance. If an economy is going through a period of high growth, it may not necessarily mean that the demand for banking services will also be high. There are always other sources of finance that investors consider more fruitful. Hence, this paper will also check for causality from growth to finance for the fourteen major states.

Research Gap

The views on finance and growth are diverse. While availability of credit is an important dimension of ease of doing business, the issue needs to be probed further. Hence the gap that this paper addresses is, to establish a relationship between ease of doing business and bank credit.

Contribution of the Study

Generally, regional differences are not studied much in finance-growth work, as seen in Table 2 above. Obtaining state-wise data is difficult in the Indian context. This paper relies on data from the RBI, and attempts to study the regional factors. Thus, the main contribution is towards the regional aspects of productivity in India.

Objective of the Study

To study the relationship between finance and productivity (representing ease of doing business)

Research Methodology

This is a descriptive study based on quantitative data. It relies on secondary data. The statistical tools used and variables have been discussed below. The econometric technique used has been discussed. The first step is to select the major states out of the total states in India. Next, it is necessary to define the basic terms used in the paper. Sources accessed to obtain the data have been elaborated. A brief summary of the average growth rates of the variables over the period of four decades has been shown. Further, the main technique used for data analysis has also been discussed.

Selection of Fourteen Major States

Fourteen major states of India have been identified for this analysis. The selection of these states, as with many other papers, is based on their share in overall economic output of the country. The main objective of this paper is to test the long term relationship between bank credit

and economic growth for the selected fourteen states. This long term relationship can be tested using time-series data analysis.

Concept of Causality

Causality, in simple terms, refers to the ability of one variable to be able to predict changes in another variable. It may occur that both variables have predictive power for each other. Causality, thus, may be unidirectional (one-way) or bidirectional (two-way). The study of causality is an aid in the inquiry of the link between two variables. Basically, over a period of four decades, this concept attempts to measure the extent of changes caused in bank credit due to economic growth and vice versa. It is important in the finance-growth nexus to try and analyse the extent and nature of causality between the variables. There are debates over the issue of causality, which can be examined by certain econometric techniques.

Sources of Data and Definitions of Variables

The data used in this study is time-series data, from 1972 to 2012. It has been collected from the extensive database of the Reserve Bank of India. Net State Domestic Product growth in this paper has been defined as the rate of change of NSDP at factor cost measured at constant prices. Data for bank credit has been extracted from the Basic Statistical returns of Banks data, published by the RBI. This data is obtained at current prices, and thus has to be deflated using the appropriate inflation rate prevailing during a given period.

Econometric (statistical) Technique

Many current studies have employed cointegration and granger causality tests. Time-series analysis of data requires various diagnostic checks. For non-time-series data, the researcher can directly proceed to the data analysis technique. However, for time-series data, the very first check is that of stationarity. The main objective behind this is to test whether the basic properties of the data, such as mean and variance, are constant over time.

The Augmented Dickey-Fuller test is employed here. The test estimates the following three equations:

$$\Delta Y_t = \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad \text{-- (1)}$$

$$\Delta Y_t = \beta_1 + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad \text{-- (2)}$$

$$\Delta Y_t = \beta_1 + \beta_2 t + (\delta) Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad \text{-- (3)}$$

Where, δ is the regression coefficient of the previous period's value, β_1 represents the intercept, β_2 is the regression coefficient of the time component, α_i is a regression coefficient for the rate of change of the variable.

The null hypothesis for the ADF test is that $\delta = 0$ (or $\rho = 1$) which means that the series has a unit root (non-stationary). The alternative hypothesis, that $\delta < 0$ indicates that the series is stationary. This leads to rejection of the null hypothesis.

The test is conducted assuming a time series with an intercept, and a times series with an intercept and trend component. It is done at both level and first differences of the time series. The results are included in Table 3 below.

For the sake of brevity, the author has named Total GDP Growth as TGG, Total Bank Credit as TBC and Bank Credit to Industry as BCI for the remainder of the text. The tests of stationarity have to be performed for different possibilities, all of which have been included in the table.

Results and Analysis

Results of Stationarity tests

The variable TGG that depicts economic growth is stationary at levels. This is expected, as it is not a time series variable. The other two variables are not stationary at levels. This implies that the same test has to be performed at first differences for the same. If the analysis is run on level data, in such a case, the researcher is most likely to get meaningless or spurious results. Thus, further tests of stationarity are performed at first differences. Now, all the calculated ADF values exceed the critical values. These indicate that the two variables are stationary at first differences.

Table 3: ADF test of stationarity

State and Variable	ADF statistic at Level		ADF statistic at First Difference	
	Constant	Constant and trend	Constant	Constant and trend
Andhra Pradesh				
TGG	-7.65***	-7.31***		
TBC	4.12	3.15	-4.01**	-3.44*
BCI	0.22	-1.22	-2.92*	-2.01
Bihar				
TGG	-6.53***	-4.98***		
TBC	7.92	6.54	-5.22***	-5.65***
BCI	2.87	3.55	-3.01*	-3.11*
Gujarat				
TGG	-10.92***	-10.91***		
TBC	9.04	4.46	-3.34**	1.75
BCI	0.37	-1.01	-2.89*	-3.29*
Haryana				
TGG	-8.67***	-8.90***		
TBC	11.22	7.26	-3.58**	1.65
BCI	1.92	5.16	-3.04*	-3.12*
Karnataka				
TGG	-4.24***	-4.37***		
TBC	2.47	1.43	-3.21*	-3.45**
BCI	-0.43	-1.99	-3.99***	-4.49***

(Continued...)

Kerala				
TGG	-5.51***	-5.78***		
TBC	-0.99	-1.51	-2.97**	-2.91
BCI	1.25	1.52	-3.43**	-3.21*
Madhya Pradesh				
TGG	-8.22***	-8.72***		
TBC	2.41	3.44	-3.02**	-2.11
BCI	-0.65	-1.36	-2.91**	-3.24*
Maharashtra				
TGG	-9.43***	-9.67***		
TBC	10.42	8.16	-3.22**	1.21
BCI	1.61	2.51	-2.95*	-2.97
Orissa				
TGG	-4.37***	-4.29***		
TBC	1.21	0.87	-3.54**	2.09
BCI	0.22	-1.64	-3.01*	-2.33
Punjab				
TGG	-7.81***	-7.99***	-	-
TBC	8.43	5.71	-3.67**	1.99
BCI	2.81	3.80	-3.55*	-3.57*
Rajasthan				
TGG	-5.63***	-6.17***		
TBC	0.42	5.16	-3.42**	1.51
BCI	4.61	3.21	-2.98*	-2.94
Tamil Nadu				
TGG	-6.21***	-6.34***	-	-
TBC	3.85	4.51	-3.91***	-3.92***
BCI	5.24	6.12	-3.51*	-3.21*
Uttar Pradesh				
TGG	-5.15***	-4.31***		
TBC	0.12	2.12	-4.11**	-3.54**
BCI	0.62	-1.54	-3.12**	-1.26
West Bengal				
TGG	-3.57**	-4.54***		
TBC	1.52	3.14	-4.52***	-4.75***
BCI	1.27	2.45	-3.31*	-3.61**

****, **, * indicates ADF test value is significant at 1%, 5% and 10% level of significance respectively.*
For constant model, critical values at 1%, 5% and 10% level of significance are, -3.61, -2.94 and -2.61 respectively
For constant and trend model, critical values at 1%, 5% and 10% level of significance are -4.21, -3.53 and -3.19 respectively

Test of Causality

The Granger Causality Test is used to investigate the direction of causality between two variables. The test involves the following bi-variate regression model:

$$Y_t = \alpha_0 + \sum_{i=1}^{m} \alpha_i Y_{t-i} + \sum_{j=1}^{n} \beta_i X_{t-1} + \varepsilon_{1t} \quad \text{-- (4)}$$

$$X_t = \omega_0 + \sum_{i=1}^{m} \gamma_i Y_{t-i} + \sum_{j=1}^{n} \theta_i X_{t-1} + \varepsilon_{2t} \quad \text{-- (5)}$$

where it is assumed that the error terms are uncorrelated. Here, α, β, γ and θ are regression coefficients. If all the coefficients of X in the first regression equation are significant, then the null hypothesis that X does not cause Y will be rejected. If all the coefficients of Y in the second regression equation are significant, then the null hypothesis that, Y does not cause X, will be rejected.

Thus, this test is a simple way to check for long term predictive power that one time series variable shares with another. It is basically an OLS technique, applied to time series data, after having fulfilled the basic condition of stationarity. The results of this analysis are displayed in Table 4 below.

Table 4: Granger Causality Tests

Null Hypothesis	F-stat.	Prob.	F-stat.	Prob.	F-stat.	Prob.
	Andhra Pradesh		Bihar		Gujarat	
TBC does not cause TGG	0.86	0.43	5.65***	0.00	0.17	0.84
TGG does not cause TBC	1.21	0.32	0.32	0.73	0.84	0.44
BCI does not cause TGG	0.76	0.47	3.32**	0.04	0.23	0.79
TGG does not cause BCI	1.03	0.37	0.29	0.75	0.23	0.77
	Haryana		Karnataka		Kerala	
TBC does not cause TGG	2.53*	0.09	0.75	0.48	1.79	0.18
TGG does not cause TBC	0.08	0.92	0.42	0.66	0.01	0.99
BCI does not cause TGG	2.41*	0.1	1.93	0.16	2.59*	0.09
TGG does not cause BCI	0.08	0.91	0.45	0.64	1.39	0.26
	Madhya Pradesh		Maharashtra		Orissa	
TBC does not cause TGG	4.22**	0.02	2.45*	0.10	2.95*	0.06
TGG does not cause TBC	0.58	0.56	1.61	0.22	0.65	0.53
BCI does not cause TGG	4.28**	0.02	2.35	0.11	2.76*	0.08
TGG does not cause BCI	0.94	0.39	0.24	0.79	0.94	0.39
	Punjab		Rajasthan		Tamil Nadu	
TBC does not cause TGG	1.87	0.17	0.09	0.91	1.55	0.23

(Continued...)

TGG does not cause TBC	1.29	0.29	0.61	0.55	2.41*	0.1
BCI does not cause TGG	1.22	0.31	0.07	0.93	1.55	0.23
TGG does not cause BCI	3.71***	0.03	0.46	0.64	0.69	0.51
	Uttar Pradesh		West Bangal			
TBC does not cause TGG	1.31	0.28	2.86*	0.07		
TGG does not cause TBC	0.75	0.48	0.15	0.86		
BCI does not cause TGG	0.87	0.43	2.76*	0.08		
TGG does not cause BCI	1.96	0.15	0.42	0.66		

**** denotes rejection of hypothesis at 0.01 level, ** denotes rejection at 0.05 level, * denotes rejection at 0.01 level*

Findings and Implications

Table 4 displayed the results of the Granger Causality tests. The findings for each state are diverse. For Andhra Pradesh, there is absence of causality from growth to finance and from finance to growth. This may indicate that the growth pattern in the state depends on other factors. For example, the state depends a lot on infrastructural facilities. The road and rail network is quite extensive in the state. The state has the second-highest cargo-handling port, at Visakhapatnam. Productivity depends a lot on infrastructure.

For Bihar, there is unidirectional causality from TBC and BCI to TGG – implying that bank credit may have some predictive power for economic growth. Bihar has struggled with issues of poverty and political instability. The feudal system still dominates a major part of the state. Population growth and levels are quite high. Due to this, the corpus of investable funds is also low. Thus, the state would benefit from financial capital.

For Gujarat, the analysis suggests that there is no causality between TBC and TGG, and between BCI and TGG. Thus, the source of growth in Gujarat is not increased credit by banks. The independent hypothesis is supported here. Gujarat has emerged as an industrial hub for many different sectors. The shift from agriculture is evident. Productivity comes from infrastructure, SME presence and favourable conditions.

For Haryana, the analysis reveals that there is unidirectional causality from TBC to TGG and from BCI to TGG. Credit provided to the state's economy as a whole, and credit provided to industry specifically, both have resulted in increased growth for the state. The state has been host to numerous national and multinational companies over the past few years. These companies have found certain obvious advantages in choosing this location, such as proximity to New Delhi (capital of India), developed infrastructure and availability of trained manpower, etc. In terms of electricity availability, the state ranks high in the country.

For Karnataka, there is absence of causality either way. It has been seen as an investment friendly state. The state's per capita income is higher than the national average. There is a high concentration of industry, especially around Bengaluru. There are many Fortune 500 and multinational companies there. The information technology and biotech companies also have a major presence. Further, sectors like textiles, food processing, tools etc., are also prominent.

For Kerala, there is unidirectional causality from BCI to TGG. This perhaps underlines the importance of credit to industry for this state. There are probably other sources of finance that are unrelated with the prevailing bank lending rates. One possible explanation is the inward remittances from a large proportion of the citizens of the state who have settled in foreign

countries. For Madhya Pradesh, the results are similar to Bihar and Haryana. Here, there is unidirectional causality from TBC and BCI to TGG. Economic growth for this state, thus, does depend on the formal banking structure prevailing. This is because per capita income is low. Thus savings are also low. Yet, the low amount of savings has to be channelled towards productivity. The results for Maharashtra are similar to that of Haryana. Presence of unidirectional causality is detected in this data as well. While causality from TBC to TGG is significant at 10%, that from BCI to TGG is on the border, at 11%. The state is witnessing a transition from primary to secondary and tertiary sectors, and a shift towards urbanization. This seems to be fuelled by bank credit.

Orissa, which was shown to have lower rates of economic growth, shows that there is dependence on bank credit for growth. It has seen slow development in industrial growth, and depends on primary sector and tourism. For Punjab, there is causality from TGG to BCI, which is quite strong at 3% significance. Here, the results suggest that an increase in growth rate of the state (caused by other factors not considered here) leads to an increase in the bank credit provided to industry. Thus here, the direction of unidirectional causality is different from Haryana and Maharashtra.

For Rajasthan and Uttar Pradesh, there is absence of any kind of causality. The large size of the states and low rates of urbanization make bank penetration low and thus establishing a relationship is not easy.

In Tamil Nadu, there is unidirectional causality from TGG to TBC. As growth increases, the overall credit provided by banks also increases. This is witnessed in the state's increasing presence of MNCs, educational institutes and SMEs.

In West Bengal, both TBC and BCI seem to have predictive power for economic growth. Being a very densely populated state at a strategic location and witnessing a transition towards urbanization, could be the possible reasons.

Thus in general, these findings are quite different from the findings reported in DNA (2015).

Limitations of the Study and Scope for Further Research

The study relies on secondary macroeconomic data. It may at times miss out the microeconomic variations and reasons. The time period is determined by availability of data. Identifying exact factors for variations in results is very difficult, as macroeconomic data cannot reveal them. The time period may be broken down further for better understanding. More complex econometric tools can be used.

Conclusion

This study utilized forty years of macroeconomic data for selected Indian states, from 1972 to 2012, to analyse the causal relationship between bank credit and GDP growth. The results are diverse: for example, in Maharashtra and Haryana, there is unidirectional causality from total bank credit to economic growth; and from bank credit to industry to economic growth. This leads to the fact that financial availability, in the form of bank credit, does indeed lead to economic growth. However, once there is economic growth, there may not be further positive effect of increased bank credit. In an economy that is growing rapidly and where there is a thriving industry, there will be further need of credit, especially in the manufacturing and industrial sectors. But it appears that this demand may not necessarily be fulfilled by banks. For Gujarat, no causality from either direction is found. This doesn't imply that the banking network for this state

is not important. It points to the possibility of other sources of finance that businesses consider more attractive. For Punjab and Tamil Nadu, growth is seen to cause an increase in bank credit. Only for these two states, the analysis finds causality which is from growth to finance.

Here, an important point to remember is that during periods of economic growth, most industries are looking to expand operations, for which they borrow money. During periods of slow economic growth, if banks and other financial institutions provide funds at attractive rates, it is bound to act as a catalyst to raise economic growth. Similarly, once adequate growth is achieved, it will lead to further expansion of the banking sector itself, and lead to a greater availability of industrial credit. There will also be a more diverse range of financial instruments and arrangements that crop up to meet the increased demand for credit. Thus while ease of doing business can be correlated with bank credit and growth, it is also true that provision of credit during periods of fluctuating growth is an important part of ease of doing business. The diversities across states are important, but they should not act as barriers to business. Ease of doing business has to be improved across all states.

To sum up, India's ranking in the Doing Business Report has improved. In order to catapult India's ranking on the parameters measured by the World Bank's Doing Business Report, the stakeholders should recognize the importance of renewing the emphasis on structural reforms needed to boost productivity and to make growth stronger and more inclusive. They should commit to continue supporting the implementation of regulatory reforms to improve the business environment. The need for improving ease of doing business has never been more pressing in India than now when the recently launched ambitious mission of 'Make in India' requires transforming investor attractiveness of the country.

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