Does Financial Outreach Engender Economic Growth? Evidence from Indian States

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1. Introduction

The extent of financial outreach is often regarded as a critical factor in making financial products and services available to a wider segment of the population. This is all the more relevant in emerging economies where such facilities typically tend to exclude vast segment of the population, especially the underprivileged sections of the society. Cross country data suggests that in several African economies, there is less than one bank branch per 100,000 people, while in developed economies, these numbers are quite high (Beck *et al*., 2007).

In large federal structures, an additional dimension is introduced by the existence of component federal states with their democratically elected governments. The latter, in effect, provides a convenient anchor for studying sub-national dimensions of policy actions. Since the nation comprises of several states with not only differential growth patterns, but also differential abilities to respond to macro policies, it would therefore, be of interest to understand the extent of such reactions at the sub-national level.[2]

Towards this end, the paper chooses India as a case study and explores the impact of financial outreach on state-level economic growth. Borrowing from the recent literature in this area (Beck *et al*., 2007), it utilizes a consistent set of indicators of financial outreach and explores their empirical association with state-level economic growth, after controlling for other state-level determinants of growth.

The paper makes several contributions to the literature on financial outreach and economic growth. First, the paper is linked to a large body of literature that emphasizes the important of finance in influencing economic growth. Second, the paper augments the evolving literature on financial outreach. Third and more generally, the paper belongs to the class of literature that explores the issue of financing constraints. Finally, the paper belongs to the literature that explores the sub-national effects of greater financial outreach and to a wider literature which examines the impact of economic policies on sub-national economies, both for India and elsewhere.

The views expressed and the approach pursued in the paper are strictly personal.

[2] We employ the terms 'state' and 'sub-national' interchangeably.

The paper comprises of several sections after this introduction. Section 2 presents an overview of the literature with reference to India. This is followed by a description of the stylized facts for the Indian states with emphasis on financial outreach. The data and variables and the regression specification are detailed in the subsequent two sections. Section 6 discusses the results, followed by the concluding remarks.

2. Financial Inclusion: Overview and Indian experience

This paper is related to an emerging literature on access to financial services. Extant research analyzes access to financial services at the firm (Beck *et al.*, 2006a) and bank level (Beck *et al*., 2006b). More recently, Beck *et al*. (2007) present aggregate cross-country data on banking sector outreach (such as branch and ATM penetration, deposits per capita, and loans per capita) and show that these indicators closely track more difficult and costly to collect micro-level statistics of household and firm use of banking services.

In the Indian case, the foundation for broad-basing the institutional credit structure and promoting greater financial access can be traced to the findings of the all-India Rural Credit Survey (RBI, 1954). The findings of the Survey indicated that, out of the total borrowings of farmers in 1951-52 estimated at Rs. 7500 million, commercial banks provided less than 1%, while moneylenders provided 70%. The distribution of bank branches was also highly skewed, with nearly 38% of the bank branches being located in urban and metropolitan/port town locales. The distribution of bank credit was also highly skewed with an overwhelming proportion of credit being cornered by private corporate business.

These and several other disquieting features in the allocation of bank credit eventually culminated in the process of bank nationalization in July 1969. In essence, the State took control of the banking sector and made it a tool for promoting social objectives. Salient elements of the process included control over interest rates and dovetailing of lending towards priority sectors. A critical ingredient of this strategy entailed the imposition of the 1:4 license rule in 1977, wherein banks could open a branch in a location with one or more branches only if it had opened four in a location with no branches (‘unbanked location’). Thus, over the period 1969-91, over 50,000 new bank branches were built, predominantly in rural locales (Table 1). As Burgess and Pande (2005) demonstrate, by improving access to cheap formal credit for the rural poor, this redistributive nature of branch expansion strategy made a significant dent on rural poverty.

Table 1. Commercial banking in India

Indicators	June 1973	December 1980	March 1991	March 1998	March 2004
Number of commercial banks	83	154	272	300	290
Of which: Regional Rural Banks (RRBs)		107	196	196	196
Number of bank offices	15362	34594 (4471)	60570 (14519)	66408 (14471)	69170 (14446)
of which : Rural/semi-urban branches	11282	23227	46115	47130	47766
Population per bank office ('000s)	36	16	14	15	16
Deposits of commercial banks (Rs. billion)	92	404.4	2011.9	6054	15044
Per capita deposit (Rs.)	167	738	2368	6270	14089
Credit of commercial banks (Rs. billion)	64	250.8	1218.7	3241	8408
Per capita credit (Rs.)	117	457	1434	3356	8273
Deposits/national income (%)	24	36	48.1	46.4	60
Total Assets (Rs. billion)	110	710.8	3275.2	5215.4	11516.2

Figures in brackets are branches of RRBs

The second phase of public policy towards promoting greater financial access can be traced to the inception of financial sector reforms. Salient features of this period included higher allocation of credit to private sector, moving away from administered to market-determined interest rates both for commercial and government borrowing, increased competitiveness and liberal entry of foreign banks (Chairlone and Ghosh, 2008). In a sense, the period demonstrated that policies for inclusive banking have to exist concurrently with encouraging strong and efficient financial institutions.

On a broader plane, the Reserve Bank has adopted a two-pronged strategy to expand the reach of banking services. The first strategy, termed empowerment, entails inculcating awareness among the masses about financial products through financial education along with supporting advisory mechanisms (e.g., credit counseling). The second one, termed protection, envisages a comprehensive code of conduct for minimum standards of banking services to be offered by banks with closer and continuous regulatory oversight.

3. Financial outreach in India: Data and summary statistics

We begin by providing an overview of financial outreach across states. Following from Beck *et al.* (2007) and Kendall et al (2010), we utilize the following state-level indicators of banking outreach:

(a) geographic outreach: number of bank branches per 1000 sq. km
(b) demographic outreach: number of bank branches per 100000 people
(c) Loan accounts per capita: number of loan accounts per 1000 people
(d) Deposit accounts per capita: number of deposit (aggregate of savings, term and current) accounts per 1000 people
(e) Loan-income ratio: average size of loans to per capita net state domestic product (NSDP)
(f) Deposit-income ratio: average size of deposits to per capita NSDP

In particular, we focus exclusively on banking outreach for two major reasons. First, in a majority of countries including India, the banking sector intermediates most of the funds in the economy. Second, the statistical information for this sector is easier to obtain as compared to other non-bank service providers.

Indicators (a) and (b) measure the *outreach* of the financial sector in terms of access to banks' physical outlets. These measures however, have limitations as indicators of access to physical banking outlets. More importantly, these measures implicitly assume a uniform distribution of bank outlets within a country's area and across its population. In reality, bank branches and ATMs could be concentrated across population groups, delimiting its utility in certain cases. To overcome this drawback, indicators (c) through (f) measure the *use* of banking services. We focus on bank deposits and loans, because these are the main services offered by banks for which information is available.

Table 2 reports the correlations of growth in PCNSDP with these various measures described above. What is striking is the fact that the correlation of the growth indicator with measures of financial outreach has, in fact, weakened over the reform period. By way of example, the correlation of per capita NSDP growth with bank office per 100000 people was 54% for the entire period and 56% in the pre-reform regime. In contract, the correlation was insignificant in the post-reform era. What this indicates is a possible weakening of the growth-financial outreach nexus, especially in the post-reforms era.

Table 2. Correlations of financial outreach measures with per capita NSDP growth

Financial outreach indicator	1972-73 to 2003-04	1972-73 to 1991-92	1992-93 to 2003-04
Bank office / 1000 sq. kms	0.321 [a]	0.368 [a]	0.037
Bank office/ 100000 people	0.535 [a]	0.562 [a]	0.242
Number of loan accounts per capita	0.568 [a]	0.661 [a]	0.276 [c]
Number of deposits accounts per capita	0.588 [a]	0.618 [a]	0.189
Loan income ratio	-0.554 [a]	-0.663 [a]	0.032
Deposit income ratio	-0.641 [a]	-0.544 [a]	-0.026

a: significance at 1%; *b*: significance at 5%; *c*: significance at 10%

We also examine the extent of financial outreach across states. For expositional simplicity, we classify the states on three-fold criteria: income, region and geography. In our subsequent analysis, we employ dummies to examine differences in financial outreach across these classifications. Specifically, high-income states are as defined by World Bank (2005) and corroborate the earlier classification to this effect by Sachs *et al.*(2002) and Ahluwalia (2002). Likewise, states have also been classified according to regions, following RBI (2008) and finally, as coastal or land-locked (Government of India, 2008a).[3]

[3] High-income states are in alphabetical order: AP, GUJ, HAR, KARN, KER, MAH, PUNJ, TN and WB. Likewise, coastal states are AP, GUJ, KARN, KER, MAH, ORIS, TN and WB (See fn. 6).

The evidence indicates significant differences in both geographic and demographic outreach across high- and low-income states; similar evidence is also manifest in case of deposit and loan accounts as well. There is also evidence to suggest limited use of deposit services in the low-income states (Beck *et al*., 2007). For example, the mean deposit/income ratio in the low-income state is 3.78 as compared to 2.54 in the high-income states. The difference is statistically significant at 5%.

Table 3. Financial outreach across state characteristics: Mean and standard deviation

Variables	Bank office/ 1000 sq. km	Bank office/ 100000 people	Deposit/ Income	Loan/Income	Deposit account/ 1000 people	Loan account/ 1000 people	N.Obs
Panel A: Income							
High income	28.77 (19.56)	7.15 (2.28)	2.54 (1.99)	16.45 (22.21)	399 (18.36)	61.75 (36.10)	72
Low income	14.70 (9.81)	5.39 (1.91)	3.78 (3.55)	16.85 (25.10)	195 (10.29)	37.97 (27.33)	40
t-test for difference	5.06 [a]	4.36 [a]	-2.04 [b]	-0.08	7.55 [a]	3.92 [a]	
Panel B: Region							
Northern	23.75 (15.63)	7.48 (2.35)	2.29 (1.84)	17.79 (21.39)	391 (24.56)	41.83 (22.12)	24
Southern	32.69 (23.94)	7.67 (2.02)	2.27 (1.62)	18.03 (16.56)	398 (17.42)	84.63 (32.51)	32
Western	23.29 (5.25)	5.92 (2.06)	3.04 (2.27)	24.90 (24.77)	364 (12.63)	36.39 (16.22)	16
Eastern	13.30 (15.71)	4.73 (1.67)	4.26 (4.11)	20.78 (33.78)	215 (12.49)	45.37 (35.16)	24
Central	16.95 (9.87)	6.06 (1.96)	3.49 (2.77)	17.42 (23.58)	220 (11.30)	36.33 (31.14)	16
t-test for difference							
Northern v. Southern	1.69 [c]	-0.31	0.06	-2.17 [b]	-0.11	-5.85 [a]	
Northern v. Western	3.04 [a]	2.22 [b]	-1.09	-0.93	0.44	0.89	
Northern v. Eastern	0.09	4.68 [a]	-2.14 [b]	-0.36	3.12 [a]	-0.41	
Northern v. Central	1.69 [c]	2.07 [b]	-1.54	0.05	2.96 [a]	0.61	
Southern v. Western	4.38 [a]	2.81 [a]	-1.21	-2.69 [a]	0.75	6.86 [a]	
Southern v. Eastern	1.77 [c]	5.97 [a]	-2.24 [b]	-1.83 [c]	4.57 [a]	4.27 [a]	
Southern v. Central	3.21 [a]	2.66 [a]	-1.64	-1.57	4.25 [a]	4.99 [a]	
Western v. Eastern	-2.89 [a]	1.92 [c]	-1.21	0.44	3.68 [a]	-1.09	
Western v. Central	-1.31	-0.21	-0.51	0.87	3.39 [a]	0.07	
Eastern v. Central	1.57	-3.21 [a]	0.70	0.37	-0.14	0.85	
Panel C: Location							
Coastal	25.63 (20.71)	6.57 (2.25)	2.75 (2.13)	14.83 (20.93)	350 (16.53)	64.64 (37.24)	64
Land-locked	21.23 (13.41)	6.46 (2.41)	3.30 (3.32)	18.94 (25.89)	296 (21.04)	38.08 (25.05)	48
t-test for difference	1.36	0.24	-1.01	-0.89	1.46	4.51 [a]	
Panel D: Reforms							
Pre reforms	19.41 (15.64)	6.04 (2.45)	4.15 (2.83)	24.42 (26.39)	258 (16.81)	43.57 (33.14)	70
Post reforms	30.97 (19.51)	7.32 (1.79)	1.06 (0.48)	13.54 (11.57)	443 (15.89)	69.40 (32.45)	42
t-test for difference	-3.26 [a]	-3.15 [a]	8.93 [a]	6.59 [a]	-5.83 [a]	-4.05 [a]	

Standard deviation within parentheses

a: significance at 1%; *b*: significance at 5%; *c*: significance at 10%

The differences in the financial outreach for the pre- and post-reform period are particularly striking. The evidence indicates a significant improvement in both geographic and demographic outreach; as well, the values of both deposit-income and loan-income ratio have declined, signifying the greater outreach of banking services (See, Beck *et al*., 2007).

4. Data and Variables

For the analysis, we use state-level data for the 30-year period, 1973-2004. The data includes 14 states in India, in line with the standard practice of comparing the economic performance of states that treats smaller or North Eastern states differently (Ahluwalia, 2002; Sachs *et al.*, 2002; Nachane *et al.*, 2002).[4]

Many of the variables in the model vary less over time. Therefore, rather than using annual data, following earlier analysis in this area (Barro, 1997), we grouped the data into eight, non-overlapping, four-year time intervals. Therefore, we have eight sets of observations on each of the 14 states, yielding a total of 112 observations.

The dependent variable is change in logarithm of real *PCNSDP*, which represents value added originating in each state. A similar variable was employed by Rodrik and Subramanium (2004) in their analysis of India's growth trajectory during the last five decades.

The level of initial per capita income is included to test the convergence hypothesis: if there is convergence, states with higher income levels will tend to grow at a slower rate.

The vector of state-level controls include the ratio of manufacturing to NSDP (to examine the existence of interest rate channel). Rodrik and Subramanium (2004), for instance, find a significant role for registered manufacturing in explaining inter-state growth rates. Besides, the state-level literacy rate is included to control for the quality of educational attainment in the state.

Several studies in the Indian context highlight the importance of infrastructure in impacting state output (Nagaraj *et al*., 2000; Ahluwalia, 2002; Kochhar *et al*., 2006). Kochhar *et al.* (2006) point out that the transmission and distribution (T&D) losses of state electricity boards, to the extent it is the outcome of state-level decisions, reflects on both the quality of its institutions (lack of viability of state electricity boards) as also its infrastructure (high T&D losses reflect low power quality which directly impinges on manufacturing) and could end up dampening economic growth.

Earlier studies on India do not control for state-level fiscal policy. Studies have documented that large government sectors tend to impede growth, *ceteris paribus* (Barro, 1991; Easterly and Levine, 2002). We control for this factor by incorporating the ratio of state budget deficit to NSDP.

State-level income data is derived from the Economic and Political Weekly States Database ((EPW, 2003). Using this data, we construct an annual series on real net per capita income and the

[4]These states, in order are regional location are, Andhra Pradesh (AP), Karnataka (KARN), Kerala (KER) and , Tamil Nadu (TN) in Southern region, Haryana (HAR), Punjab (PUNJ) and Rajasthan (RAJ) in the Northern region, Bihar (BIH), Orissa (ORIS), and West Bengal (WB) in the Eastern region, Gujarat (GUJ) Maharashtra (MAH) in the Western region and Madhya Pradesh (MP) and Uttar Pradesh (UP) in the Central region.

shares of agriculture, manufacturing and services, by appropriately splicing the three base-year series. Data on state-level fiscal variables are hand-coded from various issues of annual report on state finance, supplemented by *Handbook of Statistics on State Government Finances* (RBI, 2004). Infrastructural variables are obtained from the *Statistical Abstract*, supplemented with annual reports of state electricity boards as available on the website of the Indian Planning Commission. The data on the banking variables are culled out from the *Basic Statistical Returns*, a yearly central bank publication which provides detailed state-level information on deposits and credit of commercial banks. The Appendix provides a description of the variables, data source and summary statistics.

5. Regression Analysis

The univariate tests do not control for factors that might systematically impact state economic growth. For one, we do not account for state-level controls. The pace of economic activity could also be an important consideration. Another major concern is the possibility of endogeneity: one must determine that correlations between output and finance are due to output responding to finance and not the other way around. Taking these aspects on board, we estimate the effect of financial outreach on state-level economic growth, employing regressions of the following form:

$$Gr\_PCNSDP_{s,t} = f(Initial\ PCNSDP, Inclusion, Control\ \text{variables}, Year\ dummies) + error \quad \textbf{(1)}$$

where *s* indexes state and *t* denotes year.

In (1), the dependent variable (*PCNSDP*) is assumed to be a function of state-level controls (*Control variables*) including measures of its institutional structure, size, educational attainment and infrastructure. Year dummies included to control for shocks to the state economy. The variable of interest is *Inclusion*. Under the hypothesis that greater financial outreach improves growth, we would expect the coefficient on this variable to be positive.

The outreach of lagged dependent variable (LDV) renders static panel estimation of equation (1) inconsistent. To address this concern, as also to overcome the potential endogeneity of other regressors, we employ panel GMM estimations. More specifically, we employ the system GMM estimator due to Blundell and Bond (1998). We employ the system GMM as compared to its competing rival, the difference GMM estimator, since the latter may suffer from weak instruments problems (Blundell and Bond, 1998).

6. Results and discussion

The results, reported in Table 4 show that we are not able to reject the Sargan test. Moreover, we are not able to reject the null hypothesis of no second-order serial correlation. In other words, the GMM model is well specified.

In all cases, we run the model with and without the control variables. In specification 1, the coefficient on initial per capita income is 0.63, which suggests that initially poor states grow faster than rich ones. In other words, absent controls for differences in state policies and economic structure, the speed of absolute convergence occurs slowly. The rate of convergence is 1.4 percent per annum, which implies that it takes roughly 50 years to close half the gap (also called as "half life") between a state's initial per capita NSDP and its steady-state level of income. This convergence rate is comparable to those obtained in cross-country regressions (Barro and Sala-i-Martin, 1995). In the Indian case, the convergence rate has been estimated at anywhere between 7-48% (Nosbusch, 1999; Nagaraj *et al*., 2000) and more recently, at around 5.3% (Trivedi, 2006). Accounting for controls, the half life is smaller across all models, ranging from 24-46 years.

We first discuss the control variables. States with greater dependence on manufacturing are observed to grow faster. Earlier evidence for India (Nagaraj *et al*., 2000) and the US (Carlino and Defina, 1998) also suggests a positive coefficient on manufacturing, which can be interpreted as evidence in favor of an interest rate channel of monetary policy. The coefficient on *literacy* exhibits mixed signs. Although the positive sign is consistent with the growth-enhancing effects of human capital as popularized in the endogenous growth literature (Lucas, 1988), the negative sign could be picking up standard conditional convergence effects, whereby states with lower initial human capital grow faster, as observed by Barro and Sala-i-Martin (1999) in their cross-country studies. Contextually, studies for India (Ahluwalia, 2002) as also cross-country regressions (Islam, 1995) confirm a negative coefficient on the literacy variable. The coefficient on *size* is negative, suggesting that the higher this ratio, the greater is the state's reliance on deficit financing of outlays, which tends to dampen growth. Across several specifications, the coefficient on T&D losses is negative, indicating that states with better power network, are typically more attractive investment destinations.

All specifications control for the impact of merger of several of the states during the post-reform period. Wherever significant, the coefficient is negative, suggesting that the net effect of mergers has been a lowering in economic growth in the concerned states.

Table 4. Regression estimation: System GMM results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Ln (initial pc income)	-0.63 (0.35)[b]	-0.55 (0.32)[b]	-0.39 (0.14)[a]	-0.36 (0.15)[b]	-0.41 (0.24)	-0.39 (0.21)[c]	-0.33 (0.14)[b]	-0.27 (0.15)[c]	-0.67 (0.19)[a]	-0.59 (0.26)[b]	-0.44 (0.24)[c]	-0.41 (0.20)[b]
Geographic	0.004 (0.003)	**0.002 (0.001)**[c]										
Demographic			**0.032 (0.015)**[b]	**0.029 (0.014)**[b]								
Deposit a/c pc					-0.003 (0.003)	**0.002 (0.0008)**[b]						
Loan a/c pc							0.001 (0.0007)	0.001 (0.0008)				
Deposit/income									-0.033 (0.023)	**-0.061 (0.027)**[b]		
Loan/income											**-0.009 (0.004)**[a]	-0.009 (0.019)
Ln (Mfg.)		0.371 (0.125)[a]		-0.058 (0.073)		0.198 (0.148)		0.063 (0.038)[c]		0.064 (0.026)[a]		-0.092 (0.069)
Ln (Literacy)		0.204 (0.082)[a]		0.035 (0.115)		0.373 (0.167)[b]		0.029 (0.056)		-0.606 (0.267)[b]		-0.030 (0.015)[b]
Ln (Size)		-0.069 (0.026)[a]		-0.073 (0.044)[c]		-0.131 (0.098)		-0.084 (0.044)[b]		-0.173 (0.048)[a]		-0.186 (0.105)[c]
Ln(T&D losses)		-0.061 (0.035)[c]		-0.010 (0.029)		-0.049 (0.026)[c]		0.003 (0.032)		-0.376 (0.162)[b]		-0.029 (0.096)
Constant	-0.600 (0.267)[b]	-1.447 (0.568)[a]	-1.105 (0.389)[c]	-0.365 (0.358)	-1.147 (1.022)	-1.867 (1.004)[c]	-0.164 (0.170)	-0.319 (0.249)	-0.791 (0.202)[a]	-0.717 (0.302)[a]	-0.411 (0.183)[b]	-0.578 (0.395)
Year controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
States, N.Obs	14, 97	14, 97	14, 97	14, 97	14, 97	14, 97	14, 97	14, 97	14, 97	14, 97	14, 97	14, 97
Chi-squared: Hansen over-id test (p-Value)	0.504	0.545	0.197	0.190	0.205	0.288	0.253	0.122	0.334	0.685	0.590	0.329
AR (2): p-Value	0.581	0.256	0.698	0.587	0.443	0.460	0.858	0.302	0.770	0.618	0.767	0.717
Endogenous variables used as instruments	Initial pc income, Literacy, T&D loss	Initial pc income, literacy, T&D loss	Initial pc income, literacy, T&D loss	Initial pc income, literacy, T&D loss	Initial pc income, literacy, T&D loss	Initial pc income, literacy, T&D loss	Initial pc income, literacy, T&D loss	Initial pc income, literacy, T&D loss	Initial pc income, literacy, T&D loss	Initial pc income, literacy, T&D loss	Initial pc income, literacy, T&D loss	Initial pc income, literacy, T&D loss
Lags of endogenous variables used in instrumentation	UR	UR	UR	UR	UR	UR	UR	UR	UR	UR	UR	UR

All specifications control for the impact of mergers in several states during the sample period
UR: Unrestricted
Robust standard errors are reported in parentheses
a: significance at 1%; *b*: significance at 5%; *c*: significance at 10%
AR(2) is a test of second-order serial correlation and follows N (0, 1)

Our coefficient of interest is outreach. Across all models, the coefficient exhibits expected signs, although it is significant in six (out of the twelve) specifications. The magnitude of the effect is however, economically small. To understand the economic significance of this variable, take for instance, specification (4), where the coefficient on demographic outreach is 0.03. Consider a state with demographic outreach at 0.31, the minimum value for the sample; the corresponding growth rate in per capita NSDP being 0.89 percent. An increase in demographic outreach to 1 (over 200 percent increase) would raise its per capita growth to growth rate to nearly 0.95 percent, a rise of about 7%. Likewise, in

specification (10), the coefficient on deposit-income ratio is -0.06. Therefore, greater outreach of banking services as reflected in a decline in this ratio by roughly 86% from its median value of 1.92 to 1.03, the value obtaining at the 25th percentile, would improve the per capita growth by roughly 5 percentage points. In sum, financial outreach seems to exert a salutary effect on economic growth.

7. Concluding remarks

The paper makes a systematic attempt to ascertain the nexus between finance and growth at the sub-national level for an emerging economy. Borrowing from the literature, we employ measures of financial outreach that capture both the outreach as also the use of banking services. We subsequently examine the impact of these measures of financial outreach on per capita economic growth, using data on major states in India for 1973 to 2004.

The analysis indicates significant regional divergences in financial outreach across states, as also in terms of their income characteristics. As well, while indicators of financial outreach have exhibited improvements, their relationship with growth appears to have become tenuous, especially over the reforms period.

More importantly, the multivariate regressions that take on board the state-level controls indicate a significant impact of financial outreach on economic growth. In particular, efforts to improve outreach of the financial sector appears to have led a perceptible improvement in economic growth. The study points to an alternative impact of the social banking experiment: the positive impact of financial outreach on state economic growth. In a sense, we confirm the findings of Burgess and Pande (2005).

The evidence also supports the fact that, as compared to low income states, high income states with higher geographic outreach levels have higher economic growth. Besides, high-income coastal states with higher geographic outreach levels have higher per capita income growth. The analysis therefore offers a rationale for the high growth of certain regions and states in India based on their intrinsic characteristics. We therefore, substantiate the findings of the growth literature in India which finds unequal growth across regions and states (Bajpai and Sachs, 1999; Ahluwalia, 2002; Nagaraj *et al*., 2002; Kochhar *et al*., 2007).

In sum, the results are also a pointer to the fact that the social banking strategy pursued in India was influential in raising state per capita growth, through its effects by expanding the outreach and use of financial services. Given the potential for financial technological outreach to promote economic growth, the analysis suggests a role for technology to “reach out” to larger segments of the populace.

Analysis of such interlinkages between growth and technological outreach using comprehensive datasets constitutes elements for future research.

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