

## Financial inclusion and per capita income: An empirical study on states of India

Debajyoti Das Gupta

Assistant Professor in Commerce, Jogesh Chandra Chaudhuri College, Kolkata, West Bengal, India

### Abstract

Globalization has put huge emphasize on growth of GDP while measuring performance of world economies. Critics argued that this GDP phobia has pushed the real economy out of development track. It has led to jobless growth and many people were staying out of mainstream economy. Thus concept of 'Financial Inclusion' started getting attention of academic people. 'Financial Inclusion' is a costly affair which may include offering conventional & digital banking services and other financial services to financially neglected population of India namely people living below poverty line, poor people and lower middle class people. This article aims to measure relationship between two self-defeating objectives namely 'Financial Inclusion' and 'Per Capita Income' of Indian States.

**Keywords:** per capita income, financial inclusion, globalization, Indian states, correlation

### Introduction

After liberalization in Indian economic scenario the term 'Per Capita Income' has become quite common. However, in recent years the term 'Financial Inclusion' is also attracting enormous attention of academic domain. The concept of globalization & liberalization has emphasized on the measurement of growth of GDP in understanding the performance of economies. It has been criticized in this way that while over-emphasizing the goal of growth of GDP, the development aspect of economics has not been given due importance. It has been understood that a huge population is remaining outside the periphery of mainstream economy. Thus the concept of 'Financial Inclusion' started getting importance. The major problem of achieving 'Financial Inclusion' has been the cost in terms of offering conventional banking services, net banking services, mobile banking services, mobile services, promotion of financial literacy etc. The pertinent question is whether the objective of 'Per Capita Income' & 'Financial Inclusion' are contradictory to each other or not.

### Objective of the Study

The objective of the study is to assess the correlation between two set of ranks, namely, CRISIL Inclusion Rank (2014) & Rank on the basis of Per Capita Income of Indian States (2014) i.e. to understand whether financial inclusion & per capita income of Indian States are positively correlated or not.

### Limitation of the Study

This study is based on secondary data. This is major limitation of the study.

### Scope for Further Research

A study based on both primary (field work) data & secondary data would able to enhance knowledge academic domain.

### Review of Literature

The paper presents an illustrative example of determination and computation of IFI (Index of Financial Inclusion), over time and across regions<sup>[2]</sup>. The index computed for 2002-03 and 2012-13, indicates that different regions of the country are at different levels of financial inclusion<sup>[2]</sup>. The computations indicate no drastic improvement in the extent of financial inclusion in the country over a span of 10 years<sup>2</sup>. The index for human development (HDI) and the income level of the states/union territories seem to show a unidirectional movement with IFI (with the exception of North Eastern states in the context of HDI)<sup>[2]</sup>. The regions experiencing a high level of inclusion are observed to be the ones characterized by high income and high level of socio economic development, the reverse is also true for the regions with a low level of financial inclusion (with only a few exceptions)<sup>[2]</sup>.

The study indicated that the first step of 'connecting people to the formal banking institutions' is progressing but yet to achieve steam<sup>[3]</sup>. Even after a decade of resolute efforts for financial inclusiveness, there is a financial penetration gap among the continents and economies, for instance the ownership of accounts in Euro Area is 94.8 per cent and in Asian developing countries are only 27 per cent<sup>[3]</sup>. The banking sectors all over the world is striving for financial stability and integrity but are challenged by the benchmarks laid down for their performance at national and international levels<sup>[3]</sup>. But the real yardstick for a formal financial institution is the expertise to reach out to the unbanked and under-banked with suitable products especially credit for livelihood and emergencies while attracting and retaining the high net wealth customers<sup>[3]</sup>.

This study examines the impact of financial inclusion on income convergence using three waves of LSMS (Living Standard Measurement Study) data on Nigerian households<sup>[4]</sup>. The results of IVR (Instrumental Variable Regression) and IVQR (Instrumental Variable Quantile Regression) consistently show that financial inclusion exerts a strong positive influence on household income<sup>[4]</sup>.

Given that income convergence was achieved in the third wave, it can be argued that financial inclusion is helpful in reducing income inequality<sup>[4]</sup>. As such, policymakers need to prioritize policies that deepen financial inclusion in many ways in order to reduce inequality<sup>[4]</sup>.

This study assesses the impact of financial inclusion on economic growth in a panel of twenty-five SSA (Sub-Saharan Africa) countries by estimating an endogenous growth model<sup>[5]</sup>. The model includes gross primary school enrollment and gross national savings as control variables<sup>[5]</sup>. The findings reveal evidence of the impact of financial inclusion on economic growth<sup>[5]</sup>. Despite the milestones achieved in terms of penetration of financial services, mainly through mobile money banking, the observed strong impact of usage on GDP per capita relative to access and penetration suggests the need for broadening usage and access dimensions of financial services<sup>[5]</sup>. Usage and access to financial services can be achieved through policy measures to improve peoples' incomes<sup>[5]</sup>. There is a need to ensure that the costs of finance (i.e. interest rates) are not prohibitive, especially to the lower and middle-income groups<sup>[5]</sup>. Further, governments need to create environments that lower the charges related to the provision of financial services in order to enhance access to financial services<sup>[5]</sup>.

The literature suggests that greater financial inclusion could be either positive or negative for financial stability<sup>[6]</sup>. Positive effects include: diversification of bank assets, thereby reducing their riskiness; increased stability of their deposit base, reducing liquidity risks; and improved transmission of monetary policy<sup>[6]</sup>. Negative effects include the erosion of credit standards (e.g., sub-prime), bank reputational risk, and inadequate regulation of MFIs<sup>[6]</sup>.

Financial inclusion broadly means the provision of affordable financial services, viz., access to payments and remittance facilities, savings, loans and insurance services by the formal financial system to those who tend to be excluded<sup>[7]</sup>. Access to financial services is in a very dismal state in the country<sup>[7]</sup>. The key components of the „inclusive growth“ strategy includes a sharp increase in investment in rural areas, rural infrastructure and agriculture; spurt in credit for farmers; increase in rural employment through a unique social safety net; and a sharp increase in public spending on education and health care<sup>[7]</sup>. There is a pressing need for making banking and financial services available to every part of the country<sup>[7]</sup>. Also, in a country like India with diverse social and economic profile, financial education is particularly relevant for people who are resource poor and who operate at the margin and are vulnerable to persistent downward financial pressures<sup>[7]</sup>. Reserve Bank clearly stated that an important criterion for processing the applications from private sector for entering the banking field would be their business model which should provide for financial inclusion<sup>[7]</sup>. Banks still regard financial inclusion as an obligation and not as a business opportunity and therefore, the reach of inclusion was less than desired<sup>[7]</sup>. Banks should be asked to take up financial inclusion as a business opportunity to help the poor come under the banking operation net<sup>[7]</sup>. A part, indeed an important part, of the mandate of central banks is financial stability and an essential prerequisite for financial stability is financial literacy and the central bank has a unique leverage in providing financial literacy<sup>[7]</sup>.

It is important to know some economic conditions and the penetration of the banking system in an area within a certain

time period to determine income<sup>[8]</sup>. The higher the income will provide a greater opportunity to save<sup>[8]</sup>. Results from this study during the study period in 2013-2017 income has increased every year so that shows that the income effect on financial inclusion and income is the most influential variable on financial inclusion among other variables<sup>[8]</sup>. This means that the higher the income, the higher also financial inclusion<sup>[8]</sup>. The results are consistent with research conducted by Kumar (2013) and Rajput (2017) shows the fact that the rate of economic conditions are important determinants of financial inclusion efforts<sup>[8]</sup>.

The study supports the point of view that assumes a significant and positive impact of financial inclusion on financial stability measured by Jordanian financial stability index<sup>[9]</sup>. Based on the findings, this study recommends supervising authorities to follow prudent and adequate supervisory standards that manage risk associated with expansion of the participants of the financial system<sup>[9]</sup>. In addition, it is necessary to increase financial awareness for all sectors in Jordanian society through financial teaching, which enhances the use of financial services and helps participants to manage their saving and take the right investment decisions<sup>[9]</sup>. For control variables, a positive relationship was found between GDP per capita and financial stability<sup>[9]</sup>. On the contrary, domestic credit to private sector, income inequality, financial integration and global financial crisis have a significant and negative impact on financial stability<sup>[9]</sup>.

The findings indicate that there is yet much to be done in the financial inclusion arena<sup>[10]</sup>. Fifty-six percent of adults in the world do not have access to formal financial services<sup>[10]</sup>. The situation is even worse in the developing world with 64 percent of adults unbanked<sup>[10]</sup>. Nevertheless, high income countries also have to worry because approximately one in every five adults is unbanked<sup>[10]</sup>. On the contrary to conventional wisdom, poor people indeed need and use financial services, albeit in small amounts and usually from informal sources as it is costly for formal providers to provide services for such small amounts<sup>[10]</sup>. Anecdotal evidence suggests that informal financial services are at least 5-10 times more costly and also less reliable than formal ones<sup>[10]</sup>. Hence, making formal and affordable financial services available for the unbanked would definitely have positive consequences on the lives of these people<sup>[10]</sup>. Fortunately, the need for improving access to financial services and building inclusive financial systems are increasingly at the core of policymakers' agendas<sup>[10]</sup>. The data indicates that access to deposit services have improved in 2009 despite the crisis<sup>[10]</sup>. In addition, financial regulators are increasingly assuming the role of promoting financial access besides their traditional roles of regulating and supervising financial institutions for the soundness of the financial system and to ensure financial stability<sup>[10]</sup>.

This study demonstrates that financial inclusion has an alleviating effect on different measures of poverty<sup>[11]</sup>. This stresses the importance for developing countries to avoid an exclusion of their poor people from financial services<sup>[11]</sup>. The economic potential of individuals who have the skills to generate jobs for themselves and others can be unleashed by the provision of credits<sup>[11]</sup>.

The paper distinguishes between a more general concept of financial development, namely the size of the financial sector, and financial inclusion<sup>[12]</sup>. Interestingly, the paper finds that financial size does not really contribute to a more

equal income distribution, measured by the GINI coefficient, while financial inclusion does so in a very significant way [12]. This is so much the case that the role of financial inclusion can be compared with that of fiscal policy, based on the size of our estimated coefficients [12].

The circumstances-incentive monetary policy and economy coordinating with finance are the important prerequisites for the sustainable development of financial inclusion, because the circumstances can promote the quality and capital efficiency of financial inclusion and realize long-term coordinated development of financial inclusion [13]. Then, it can be turned into a virtuous circle, for sustainable financial inclusion will lay a solid foundation for future development [13].

It was observed that greater access to bank credit and bank-branch expansion as means of financial inclusion greatly enhance economic well-being across fifty US states and the DC [14]. So, the US monetary policy should attach greater importance to expanding further banking services to rural areas and economically disadvantaged segments of the population in addition to small businesses [14]. They will add to consumer demand, GSP growth and employment [14]. Bank-based financial inclusion would promote equitable economic growth and household financial stability in the long-run resulting in narrowing income inequality and diminishing poverty [14]. Expanding applications of modern information technologies and automation in this regard will be an added advantage [14]. In closing, lessons drawn from this study may also apply to other countries [14].

## Methodology

### Research Design

This study is divided in two parts namely theoretical study and empirical analysis. Empirical analysis is based on the measurement of Pearson's Rank Correlation & the resultant correlation coefficient ( $r_s$ ) has been put for hypothesis testing. The theoretical study is based on review of existing literature

### Sources of Data

This study is based on secondary data. Data regarding CRISIL Inclusion Rank obtained from the report CRISIL Inclusix [CRISIL Inclusix: Financial Inclusion surges driven by the Jan-Dhan Yojana (2018)] [1]. Data regarding Per Capita Income of Indian States obtained from the website (www.track.in>Business>Finance>Per Capita Income of Various Indian States [2016] - Trak.in) [1].

### Detail Methodology of Empirical Study

CRISIL Inclusion Score of different Indian States were placed in Table One. Thereafter, States were given rank on the basis of CRISIL Inclusion Score (Table One). Per Capita Income of different Indian States were placed in Table One. States were given ranking on the basis of Per Capita Income (Table One).

In this study, Spearman's rank correlation coefficient ( $r_s$ ) was used to assess the correlation between two set of ranks, namely, CRISIL Inclusion Rank (2014) & Rank on the basis of Per Capita Income of Indian States (2014). For this purpose following formulae has been used:

$$r_s = 1 - (6\sum d^2) / [n(n^2 - 1)]$$

Here,

$r_s$  = Spearman's Rank Correlation Coefficient

$n$  = number of paired observations

$\sum$  = notation meaning 'the sum of'

$d$  = difference between the ranks for each pair of observation

For this purpose Table Two has been constructed & necessary calculations have been made. Putting the values from Table Two, it is observed

$$r_s = 0.7537$$

In next step,  $r_s$  has been put for hypothesis testing. Here  $n$  is greater than 30, hence  $z$  test has been applied. It is to be noted that there lies a remote possibility of negative relationship between CRISIL Inclusion Rank & Rank on the basis of Per Capita Income of Indian States and hence idea of application of two tailed test has been discarded. In this study one tail test at 1% significance level has been conducted.

$H_0: \sigma_s = 0$  [Null Hypothesis: There is no rank correlation between two sets of data i.e. CRISIL Inclusion Rank & Rank on the basis of Per Capita Income of Indian States are not correlated].

$H_1: \sigma_s > 0$  [Alternate Hypothesis=Two sets of data are positively correlated i.e. CRISIL Inclusion Rank & Rank on the basis of Per Capita Income of Indian States are positively correlated].

Now,  $\sigma_{rs}$  = Standard Error of  $r_s$

$$\sigma_{rs} = 1/\sqrt{(n-1)}$$

Here,  $n=33$

Putting the value of  $n$  it is observed

$$\sigma_{rs} = 0.1768$$

Calculated  $z = (r_s - 0) / \sigma_{rs}$  [Here,  $\mu = 0$ ]

Putting the values it is observed,

$$\text{Calculated } z = 4.2630$$

Tabulated  $z$  (at 1% level of significance) = 2.33

Here, calculated  $z >$  tabulated  $z$

Hence, calculated  $z$  value falls in the critical region. So  $H_0$  [Null Hypothesis] has been rejected &  $H_1$  [Alternate Hypothesis] has been accepted.

Therefore, it could be said that at 1% significance level CRISIL Inclusion Rank & Rank on the basis of Per Capita Income of Indian States are positively correlated.

Table

Name of State	CRISIL Inclusion Score (2014)	CRISIL Inclusion Rank (2014)	Per Capita Income (2014)	Rank on the basis of Per Capita Income of Indian States (2014)
Kerala	90.3	2	1,03,820	11
Goa	87.2	3	2,24,138	1
Puducherry	92.4	1	1,43,677	5
Chandigarh	83.9	4	1,56,951	4
Delhi	83.2	5	2,19,979	2
Karnataka	78.0	7	84,709	17
Andhra Pradesh	76.4	8	81,397	18
Tamil Nadu	78.5	6	1,12,664	8
Telangana	68.3	10	95,361	13
Himachal Pradesh	66.1	12	92,300	15
Punjab	70.5	9	92,638	14
Uttarakhand	66.0	13	1,03,716	12
Haryana	63.4	14	1,33,427	6
Tripura	67.2	11	69,705	22
Andaman & Nicobar Islands	62.3	15	1,07,418	9
Odisha	54.4	19	52,559	27
Maharashtra	54.6	18	1,14,392	7
Gujarat	56.1	17	1,06,831	10
Sikkim	57.7	16	1,76,491	3
West Bengal	47.0	22	70,059	21
Rajasthan	42.2	25	65,974	23
Madhya Pradesh	44.7	23	51,798	28
Jharkhand	40.3	27	46,131	29
Assam	42.3	24	44,263	30
Jammu & Kashmir	50.0	21	58,593	25
Chattisgarh	38.7	29	58,547	26
Uttar Pradesh	40.5	26	36,250	32
Mizoram	52.5	20	76,120	20
Bihar	30.6	32	31,199	33
Arunachal Pradesh	36.5	30	85,468	16
Megalaya	38.9	28	61,548	24
Nagaland	32.9	31	77,529	19
Manipur	26.5	33	41,573	31

Source: 1. CRISIL Inclusix: Financial Inclusion surges driven by the Jan-Dhan Yojana (2018). CRISIL, A S & P Global Company. February 2018, Volume 4.

2. www.track.in>Business>Finance>Per Capita Income of Various Indian States [2016] - Trak.in

Table

Name of State	CRISIL Inclusion Rank (2014) [1]	Rank on the basis of Per Capita Income [2]	Difference Between the Two Ranks (d) [1]-[2]	Difference Squared (d <sup>2</sup> )
Kerala	2	11	-9	81
Goa	3	1	2	4
Puducherry	1	5	-4	16
Chandigarh	4	4	0	0
Delhi	5	2	3	9
Karnataka	7	17	-10	100
Andhra Pradesh	8	18	-10	100
Tamil Nadu	6	8	-2	4
Telangana	10	13	-3	9
Himachal Pradesh	12	15	-3	9
Punjab	9	14	-5	25
Uttarakhand	13	12	1	1
Haryana	14	6	8	64
Tripura	11	22	-11	121
Andaman & Nicobar Islands	15	9	6	36
Odisha	19	27	-8	64
Maharashtra	18	7	11	121
Gujarat	17	10	7	49
Sikkim	16	3	13	169
West Bengal	22	21	1	1
Rajasthan	25	23	2	4
Madhya Pradesh	23	28	-5	25
Jharkhand	27	29	-2	4
Assam	24	30	-6	36

Jammu & Kashmir	21	25	-4	16
Chattisgarh	29	26	3	9
Uttar Pradesh	26	32	-6	36
Mizoram	20	20	0	0
Bihar	32	33	-1	1
Arunachal Pradesh	30	16	14	196
Megalaya	28	24	4	16
Nagaland	31	19	12	144
Manipur	33	31	2	4
				1474

**Source:** 1. CRISIL Inclusix: Financial Inclusion surges driven by the Jan-Dhan Yojana (2018). CRISIL, A S & P Global Company. February 2018, Volume 4.

2. www.track.in>Business>Finance>Per Capita Income of Various Indian States [2016] - Trak.in

### Rationale of Selection of this Case

It becomes very interesting from academic perspective if two important economic objectives become self-defeating. Financial Inclusion is a costly affair while growth of Per Capita Income is the new mantra of all economists nowadays. It is the academic appetite which forced the author to write this article.

### Analysis

Empirical study reveals that 'Financial Inclusion' and 'Per Capita Income' are positively correlated. It implies that an increase in one set of data would result in an increase in other set of data. Thus, it could be said that increase in 'Financial Inclusion' would increase in 'Per Capita Income' of Indian States. This result is quite significant & could be treated as a landmark observation in backdrop of Indian economy. The cost to be incurred for introducing 'Financial Inclusion' would be absorbed by growth of real economy. Hence the financially neglected population of India namely people living below poverty line, poor people and lower middle class people would be benefitted from economic growth and it would give a 'human' face to India's ambitious economic growth model.

Theoretical study states that there exists relationship between high income & high inclusion. High financial inclusion helps to reduce income inequality. The literature suggests that greater financial inclusion could be either positive or negative for financial stability. Banks need to play a greater role in terms of reaching out unbanked segment of the population. At the same time banks need to comply with two self-defeating objective namely keeping the cost of service low for poor unbanked population and maintaining the stipulated financial standards & norms.

### Conclusion

It could be inferred that in Indian context 'Financial Inclusion' and 'Per Capita Income' are positively correlated. In other words, drive for 'Financial Inclusion' would result in an increase of 'Per Capita Income'. Financial Inclusion though costly but it is worth spending taking into account its broader effects. Financial Inclusion would not only improve standard of living of financially neglected people but also would improve self-respect & self-dignity of those people. Further, it can reduce social oppression on economically deprived Indians. In nutshell, it is a milestone result that may change entire economic scenario of India.

Government of India may pass suitable laws or may amend existing laws in order to ensure flow of banking services to unbanked population at a low cost. Finance Ministry of Government of India may co-ordinate with Finance Ministries of State Governments to form suitable time-

bound plan in order to give 'Financial Inclusion' objective a grand success.

### References

1. CRISIL Inclusix. Financial Inclusion surges driven by the Jan-Dhan Yojana (2018). CRISIL, A S & P Global Company, 2018, 4.
2. Nanda Kajole. Bank Led Financial Inclusion and Socio Economic Development: The Case of Indian States. Pacific Business Review International. 2017, 10(4).
3. Usha Sr AA, Johnson B. Is Financial Inclusion Growth Significant? Amity Journal of Management Research. 2016; 1(1).
4. Ibrahim Sani Saifullahi, Aliero Mohammad Haruna. Testing the impact of financial inclusion on income convergence: Empirical evidence from Nigeria. African Development Review. African Development Bank, 2020. DOI: 10.1111/1467-8268.12413
5. Balele Philip Nguling'wa. The Impact of Financial Inclusion on Economic Growth in Sub-Saharan Africa. A Journal of Applied Economics and Business. Volume 7, Issue 4, December, 2019, 51-68.
6. Morgan J Peter, Pontines Victor. Financial Stability and Financial Inclusion. Asian Development Bank Institute. ADBI Working Paper Series. ADBI Working, 2014, 488.
7. Sahu Kumari Kabita Dr. Commercial Banks, Financial Inclusion and Economic Growth in India. International Journal of Business and Management Invention, 2013, 2(5).
8. Yuningsih Irma, Rahadian Dadan. Analysis of Determinants Affecting Financial Inclusion in Indonesia. International Journal of Science and Research (IJSR), 2018, 8(5).
9. Mohammad O, Al-Smadi. The Role of Financial Inclusion in Financial Stability: Lesson from Jordan. Banks and Bank Systems, 2018, 13(4).
10. Ardic Pinar Oya, Heimann Maximilien, Mylenko Nataliya. Access to Financial Services and the Financial Inclusion Agenda around the World: A Cross-Country Analysis with a New Data Set. The World Bank. Financial and Private Sector Development. Consultative Group to Assist the Poor. Policy Research Working, 2011, 5537.
11. Schmied Julian, Marr Ana. Financial Inclusion and Poverty: The Case of Peru Regional and Sectoral Economic Studies, 2016, 16-2.
12. García-Herrero Alicia, Turégano Martínez David. Financial inclusion, rather than size, is the key to tackling income inequality. BBVA Research. 15/05 Working Paper, 2015.

13. Yin Xuluo, Xu Xuan, Chen Qi, Peng Jiangang. The Sustainable Development of Financial Inclusion: How Can Monetary Policy and Economic Fundamental Interact with It Effectively? Sustainability. MDPI, 2019, 11-2524. doi: 10.3390/su11092524.
14. Mustafa Muhammad, Rahman Matiur. Financial Inclusion and Per Capita Real GSP Growth across Fifty US States and the District of Columbia: Evidences from Panel Cointegration and GMM Estimates. Global Business & Finance Review. 2015; 20(1):87-94. [www.track.in](http://www.track.in)>Business>Finance>Per Capita Income of Various Indian States [2016] - Trak.in