Journal of Intellectuals (JoI)
A Peer-Reviewed Multidisciplinary Journal

Original Article

Exploring the Relationship between Financial Inclusion and Economic Growth: The Indian Scenario

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Abstract: The concept of inclusive growth demands for equitable opportunities for each and every participant from every section of the society. The concept of inclusive growth basically implies the participation of every individual in the process of economic growth irrespective of their economic class, gender, disability or religion. The participation from all sections of the society calls for a well-equipped financial system with well-maintained financial intermediaries which will meet the financial demands of all section of the population. In this context, the paper examines the significance of financial inclusion in attaining economic growth in India using Co-integration and Vector Error Correction Model (VECM) over 23-year period ranging from 1991 to 2014. In the co-integrating equation, the beta coefficients for increase in the ratio of broad money to GDP and the increase in credit amount per 100 persons are both significant indicating co-integration of these two variables with increase in gross domestic product. In addition to it, the sign of the coefficient of the increase in the ratio of broad money to GDP is positive indicating that increase in the ratio lead to increase in the gross domestic product and vice versa. However, the coefficient of the increase in credit amount per 100 persons is negative and significant. Although the financial deepening variables do not have long run causality with the increase in gross domestic product; the co-integration of these two variables exists with the increase in gross domestic product. The significance of the chi-square value of the cointegration equation has established the fact.

Keywords: Financial inclusion; Economic growth; GDP; Vector Error Correction Model

Citation: Rabha, R. (2021). Exploring the Relationship between Financial Inclusion and Economic Growth: The Indian Scenario. *Journal of Intellectuals*, 1(1), 21-27. Retrieved from https://journals.bahonacollege.edu.in/index.php/joi/article/view/joi2021-1-1-3

Received: 5 September, 2021
Revised: 28 October, 2021
Accepted: 15 December, 2021
Published: 25 December, 2021

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1. Introduction

Since classical period, economists have divergent views regarding the importance of the financial system in attaining economic growth. The role of financial revolution in the process of economic growth has been discussed from the very beginning of the seventeenth century in the countries like Holland. The issue further has been developed in England during the eighteenth century and in United Kingdom during the nineteenth century. A well functioning financial institution provides funds to the potential entrepreneurs who in turn help in technological innovation. Moreover, economic development brings demand for more financial arrangements which in turn followed by the financial system. Conversely, if there is an absence of adequate financial system, it will pull back a country or an economy from attaining growth. Levine. R (1997) has categorized the inter linkage between finance and growth into five links. These links are-

a) Facilitate trading, hedging, diversifying and pooling of risks,
b) Allocate resources,
c) Monitor managers and exert corporate control,
d) Mobilize savings and
e) Facilitate exchange of goods and services.

By the beginning of the new millennium, concerns have been raised about the inclusiveness of the growth process. In this context, it is imperative to usher in an acceptable degree of financial inclusion, especially in rural areas so that the large mass of population that are deprived from the basic banking facilities, can be brought within the ambit of the financial system. This would enhance rural investment, enterprise, and income, which ultimately will lead to higher growth for the state. Besides, it is globally accepted that financial inclusion will promote social inclusion and will result in a much more cohesive social and economic order (Levine, 1997).

In the Indian context, financial intermediaries play a leading role in influencing economic performance in India. In India, the financial system promotes the aggregate investment and output which in turn lead to industrialization. The growth of industrialization comes up with rural branch expansion. As a result of rural branch expansion, non-agricultural growth can be witnessed and this growth helps in reducing poverty. This is discussed by Bell and Rousseau in 2001 and Burgess, Pande and Wong in 2004.

Various empirical works are conducted to study the link between financial system and economic growth. With the literature, it can be asserted that denying access to credit represents high barriers on the part of the ability of the poor to exploit investment opportunities. These barriers lead to the problem of high income inequality in an economy. This is also discussed by Galor and Zeira in 1993; Benarjee and Newman in 1993 and Aghion and Bolton in 1997. In this regard, empirical evidence has been conducted from time to time and economists have come to the common conclusion that improved access to finance helps to reduce the incidence of poverty and income inequality and poverty as well as paves the way of growth process. The first work in this regard, was conducted by Goldsmith (1969) and McKinnon (1973) and they illustrated the bonding between financial system and economic growth.

A well established literature also recommended that under normal circumstances, a well functioning financial system is not only correlated with growth and employment, but also has a positive impact on the growth process (Levine, 2005 and Pasali, 2013). This is because a developed financial intermediary lessens the transaction cost and capital and risk can be equally distributed across the economy. Along with this, easy accessibility of financial intermediaries is also positively correlated with financial stability.

In spite of the importance of an efficient financial system, incidence of exclusion from formal financial system can be observed among the poor and weaker section of the society from time to time. Various studies have indicated that the incidence of exclusion arises due to various price and non-price barriers associated with the formal financial system. In India, according to Rangarajan Committee Report, 2008, financial exclusion is prevalent due to both demand and supply side factors. The supply side factors include poor banking infrastructure, inadequate resource base for credit supplying institutions, lengthy and cumbersome procedure, lack of financial literacy etc. Alternatively, demand side factors include inadequate human capital, lack of proper land reforms and skewed land distribution, existence of landless labourers, poor infrastructure, low productivity leading to lack of profitability, poor risk mitigation mechanism etc. Hence, it is necessary to mitigate the factors associated with financial exclusion so that an efficient financial system can be developed in the country.

In the above cited scenario, it is legitimate to empirically analyze the relationship between financial inclusion and economic growth. A number of studies have been conducted in connection with the relationship between financial inclusion and economic growth. It has been widely recognized that financial inclusion increases the value of small business by supplying finance while improving human development indicators like- health, nutrition, education, etc. This, in turn, gives a boost the economic growth (Obstfield, 1994).

The interrelation between financial inclusion and economic growth can be observed in country specific studies too. A study has been conducted by Onaolapo (2015) for 30 years in Nigeria, to trace the financial inclusion-growth nexus. It is analyzed that financial inclusion has a significant effect on poverty reduction and economic growth.

With this background, the paper examines the growth of Gross Domestic Product (GDP), increase in the ratio of Broad Money to GDP and increase in the amount of credit per 100 persons in India over 23 year period ranging from 1991 to 2014.

2. Data Source

The paper is based on secondary data collected from using various publications of the Reserve Bank of India during the time period 1991-2014. Economic growth can be attained in a particular economy when there is a continuous increase in the value of economic activities within a country in a particular period of time. Hence, to figure out the association between growth and financial inclusion, increase in Gross Domestic Product (GDP) at constant prices from 1991 to 2014 has been taken into account.

Financial inclusion cannot be expressed in one single indicator. Therefore, to integrate with the broader view of financial inclusion, the paper has adopted two financial deepening indicators. Financial deepening refers to the increase volume of financial services leading to the development of all levels of society.

With this background, two variables for the period 1991 to 2014 have been undertaken to represent the financial deepening condition of India. The two explanatory variables used in the analysis are-

Increase in the Ratio of Broad Money to Gross Domestic Product (GDP):

The ratio of broad money to GDP reflects the size of financial sector development, financial depth and liquidity. The ratio of broad money to GDP increases due to the improvement of penetration of banking services. Therefore, increase in the ratio of broad money to GDP has been adopted as an explanatory variable in the present study.

Increase in the amount of credit for every 100 persons:

The increasing volume of credit per account is another important indicator of financial deepening in a country. In earlier literature, the amount of credit for every 100 persons has been taken as dependent variable while analyzing the determinants of financial inclusion (Mehrotra, Puhazhendhi, Nair and Sahoo, 2009). Hence, the variable is also used as financial deepening indicator in the present paper.

3. Line of Analysis and Outcomes

In order to study the interrelationship between increase in economic growth of the country and changes in financial deepening indicators of India, a multivariate time series analysis is conducted.

In the beginning, both the dependent and independent variables are found to be non-stationary at level. But, the variables are found to be stationary at first difference by using Augmented Dicky-Fuller Unit Root Test.

Thereafter, the lag order of '1' have been selected on the basis of the Akaike Information Criterion (minimum AIC). This is shown in table 1.1:

Table 1.1: Selection of Lag Order

Lag	AIC
0	15.6367
1	14.3256*
2	14.5143
3	15.2205

Source: RBI, Time Series Publication.

After selecting the lag order, the presence of cointegration has been tested by using Johansen's Test of Cointegration. From the result, it can be observed that there is cointegration of rank '1' among the variables. Both trace statistic and max statistic are less than 5 percent critical values for rank '1'. This can be observed from the table 1.2.

Table 1.2: Johansen Test of Cointegration

Maximum Rank	Trace Statistic	5% Critical Value	Maximum Statistic	5% Critical Value
0	31.6523	29.68	28.4387	20.97
1	10.2136*	15.41	6.9770	14.07
2	3.2366	3.76	3.2366	3.76

Source: RBI, Time Series Publication.

As there is cointegration among the variables, Vector Error Correction Model (VECM) has been adopted in the present study. The result of the model has been presented in table 1.3 and table 1.4.

Table 1.3: Result from Vector Error Correction Model (VECM)

D_increase-p	Coefficient
ce1 L1	.0272568
Increase-p -----Increase in Gross Domestic Product	

Equation	Chi Square
ce1	61.533351***

Source: RBI, Time Series Publication.

Table 1.4: Result from Vector Error Correction Model (Continued)

ce1	Coefficient
Increasein-p	1
Increasein-fl	7357623***
Increasein-t	-8481089***
Constant	266239.9
Increasein-fl ---- Increase in the ratio of Broad money to GDP. Increasein-t ----Increase in Credit Amount per 100 persons. *** signifies 1% level of significance.	
No autocorrelation at lag 1, 2 tested by Lagrange- multiplier Test.	
Normality among the residuals tested by Jarque- Bera Test.	

Source: RBI, Time Series Publication.

The result from the Vector Error Correction Model shows that there is no long run causality running from the independent variables to the increase in Gross Domestic Product. The L1 coefficient is positive in the model D_increase-p (1^{st} difference of Increase in GDP) and insignificant. In addition to it, no lagged values of increase in ratio of broad money to GDP and increase in credit amount per 100 persons individually have short term causality.

In the cointegrating equation, the beta coefficients for increase in the ratio of broad money to GDP and the increase in credit amount per 100 persons are both significant. This indicates cointegration of these two variables with increase in gross domestic product. In addition to it, the sign of the coefficient of the increase in the ratio of broad money to GDP is positive indicating that increase in the ratio lead to increase in the gross domestic product and vice versa.

But, the coefficient of the increase in credit amount per 100 persons is negative and significant. Paradoxically, the increase in credit amount per 100 persons has an inverse relationship with the increase in gross domestic product which signifies as the growth rate of the country. It is analyzed in the paper that although the financial deepening variables do not have long run causality with the increase in gross domestic product; the cointegration of these two variables exists with the increase in gross domestic product. The significance of the chi-square value of the cointegration equation has established the fact.

4. Conclusion

As stated earlier, the paper seeks to analyze the interrelationship between financial inclusion and economic growth in Indian context. While analyzing the interrelationship of financial inclusion and economic growth of the country, prevalence of significant association between these two terms can be observed in India during the period under study (1991-2014).

But paradoxically, the increase in credit amount per 100 persons has found to be inversely related to the increase in gross domestic product. It is possible that extension of credit beyond the threshold could adversely affect growth in the economy. However, such a relationship is not established in this paper as it goes beyond the scope of the study. However, the researcher acknowledges the inconsistency between the established perceptions and the result and hopes to address the issue in future research.

Gross domestic product of a country is depended upon many factors and financial inclusion has been considered as one of the important factors in this regard.

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