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Financial Development and Economic Growth in India: An Empirical Analysis

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Abstract
The impact of financial development on economic growth in India during the post-reform reform period is analysed using quarterly data from 1991 to 2015. In order to find stable relationships between variables, this research employed ADF and PP tests. Due to the inherent unpredictability of most financial variables, a direct regression analysis on such data may produce questionable and unexpected findings. So, the study used a fixed test and discovered that the integration of M3/GDP and growth rate at the 5% level is associated with considerable I growth (1). Second, cointegration vectors for long-term relationships were identified with the help of Johnsoen and Jesulisu (1991). Compared to what was anticipated, the M3 / GDP coefficient has a positive sign. To a great extent, India contributes to progress in the financial sector. Proves the significance of financial progress in driving India's economic expansion. For the case of India, integral relations provide evidence for the presence of long-term equilibrium connections between variables. Also included are findings from Granger causality tests that corroborate the theory that India's economic expansion is being fueled by a dynamic banking sector. Research finds that improved financial infrastructure is not counter to economic growth over the long term. An increase in interest rates on the money market would stimulate the economy.
Keywords: *financial development, reform, economic growth, co-integration, causality.*

I. Introduction

The correlation between improved banking and expanded GDP has been the subject of a great deal of research. This connection has recently become the subject of intensive study. There has been some debate about whether a thriving financial sector is a necessary precondition for, or a natural byproduct of, economic expansion. The expansion of the financial sector is generally thought to boost economic expansion. (1)

The financial industry in India has been undergoing reforms since the early 1990s. In addition to other changes made to the financial industry, the banking system and capital markets saw significant changes. Since 1991, when interest rates were deregulated, India's banking sector has been entirely market-based. The function of financial brokers has been hotly contested ever since the seminal works of Goldsmith (1969), Mackie Non (1973), and Shaw (1973). Fosters development over time Several theoretical works published in the 1990s, such as those by Greenwood and Jovanovic (1990), Bencivenga and Smith (1991, 1993), Obstfeld (1994), and Saint-Paul (1992), all contributed to this discussion (2). Both the stock market and banks are discussed as potential alternatives or complementary services in theoretical models (see Boyd and Prescott (1986) and Stiglitz (1985)). (3). The theoretical models initiated empirical investigation into the connection between financial institutions, stock markets, and economic expansion. The rise of the banking sector is a significant factor in the economic development of a sample of 80 nations, as demonstrated by King and Levine (1993a, b).

Levine (1998, 1999) and his coauthors Beck, Levine, and Loayza (2000) and Levine, Loayza, and Beck (2000) all made similar points. Although these studies did find a positive correlation between banks and economic growth, they did not find evidence that this correlation persisted after accounting for changes in the stock market. In contrast, Levine and Zervos's (1998) work stands out. Stock market liquidity and bank development were revealed to be significant determinants of economic growth across 47 countries. (4)

However, Levine and Zervos (1998) I used average moving average data for five years, (ii) accounted for several additional growth drivers, and (iii) generalised Methodology technique for dynamic panels covering 40 nations, confirming the findings found by Beck and Levine (2004). Utilizing time series methods on banks and five developed countries, Arestis, Demetriades, and Luintel (2001) analyse the connection between stock market growth and economic expansion while mitigating the effects of stock market volatility (5). Only in those three countries did they discover confirmation of the results of Levine and Zervos. Bank-based financial systems are more effective than the stock market in supporting long-term growth, according to research conducted in the other two nations. (6)

This white paper aims to delve more into the connection between financial advancement in India and GDP expansion in the post-reform era. In detail, we hope to accomplish the following: The role of financial development in India's economic expansion (7

Second, after the post-reform period, focus on quarterly statistics to monitor the connection between financial development and economic growth in India.

The remaining parts of the paper are structured as follows: The section 2 discusses the justifications for conducting the research. In Section 3, we get an overview of the changes that have been made to India's financial system. Part 4: Analysis of the Existing Literature and Experimental Outcomes The issues of methodology and the data necessary for empirical analysis are the focus of Chapter 5. The outcomes of the experiments are presented in Chapter 6. In Section 7, we discuss the report's findings and their effects on policy. (8)

II. Rationality of the Study

Since the advent of globalisation in 1991, India has emerged as one of the world's leading economies. When an economy undergoes globalisation, it becomes more interdependent with other economies around the world. The world's economies are becoming increasingly intertwined as a result of increased trade, investment, and financial movements (9). It was first started in the 1970s and 1980s in India, but such efforts were written off as insincere, contradictory, and even counterproductive. Globalization in the 1990s, on the other hand, was far more extensive and in-depth, marking a decisive "U-turn" from the course of economic policy taken by India during the previous forty years of centralised economic planning (1950-1990). The Indian economy has shifted from one based on state-led growth into the globalisation era (10). Self-sufficiency and import-substitution industrialization were two goals of the regime's development plan, which was backed by significant public investments in capital-intensive, long-term projects. The Indian economy had both successes and setbacks as a result of globalisation in the 1990s (Pradhan, 2006). Financial growth, as measured by increases in the money supply, exports, stock market value, and bank credit, is one such accomplishment (11). Several empirical studies were discussed above; these studies all point to a connection between progress in the financial sector and overall economic expansion. For this reason, we'd want to look into the subject in India, especially during the era of widespread economic liberalisation that began in the 1990s.

III. An overview of the financial sector reform in India

When India's government began its economic reform programme in 1991, one of the first areas targeted was the country's financial industry. The primary goal of financial sector reforms was to increase the soundness and efficiency of the financial system so that it could better allocate its resources and continue to inspire public trust and confidence (Gopinath, 2007) (12). The Indian government established the Narasimham Committee in August 1991 to conduct a thorough examination of the country's financial system and to propose extensive reforms. In its final report, which it submitted in November 1991, the Committee made a number of reform suggestions for the financial services industry and the stock exchange. Instantaneously, the government as a whole approved the proposals, and the reform process was initiated. In this article, we will provide a high-level overview of the main changes that have occurred in India's banking and financial markets since then. (13)

The interest rate was liberalised in 1991 after the suggestions of the Narasimham Committee. Time deposit interest rates were gradually freed from government control. All interest rates on time deposits, including fifteen day deposits, were deregulated in October 1997. But the Reserve Bank of India still managed the interest rate on savings deposits. Rates of lending were also allowed to become more market-based (14). There is only 10% of commercial advances that are governed by the Reserve Bank of India, and that is the interest rate on export credit (Ahluwalia, 1999). When it came to banking, India's government maintained a strict stance for a long time. Some 93% of all deposits were held by public sector banks. Since foreign and private banks have entered the market, public sector banks no longer have a monopoly on the deposit and credit markets. It's because after the changes, the government allowed private banks free reign to open new branches and cut back on regulations imposed on international banks. These days, the banking sector is still dominated by public sector banks (15). The reserve requirements, which protect banks' liquidity, also impose a large cost on the banks, as the income earned on the reserves is minimal (about 4% per annum). In India, the range is between 3 and 20 percent. This ratio has decreased steadily since the 1991 reforms, and is now at 4%. Once at an all-time high of 38.5% in 1991, the SLR has since been cut down to its current low of 20.50%. Despite certain reforms, India still controls the cost of loans to the country's most vital industries (16). For this reason, India still limits the highest interest rate that can be given on fixed deposits in financial institutions. However, after the reforms were implemented, nominal interest rates increased dramatically. Because of the changes and the subsequent influx of foreign capital, the economy has an abundance of cash and interest rates are only marginally lower than they would otherwise be. Consequently, it is evident that interest rates in India were much below the market clearing level prior to the reform phase. Prior to the reforms, the Indian government had a firm grip on the country's interest rates. State Bank of India (SBI) advance Rate, commercial papers, and firm deposits, along with the money market rate, government bond rate, real interest rate, nominal deposit rate, and other rates have all been liberalised. Prior to 1970, money market rates averaged a meagre 4.5 percent. There was an upward

trend with large variations in the 1970s, but the rates have increased steadily since then (17). When adjusted for inflation, real interest rates were negative throughout the 1960s (i.e. -1.20). They were negative even as recently as the early 1970s, but have since turned slightly positive. After a brief dip in 1984, real rates stayed positive throughout the rest of the 1980s. The role of interest rates as a tool of macroeconomic policy has grown significantly since they first became positive in 1991 and have stayed so ever since. Policy authorities have, since the 1970s, pushed back repression regimes and undertaken extensive reform steps to increase competition and improve the functioning of financial markets, all in response to the McKinnon and Shaw hypothesis. In most countries, the deregulation of interest rates is the most noticeable change brought about by new financial regulations. This move from direct to indirect instruments of monetary control has coincided with changes in the monetary control system's operational processes in response to the new policy environment. It has become increasingly important for central banks to use short-term interest rates as a means of communicating policy signals to the financial markets. (18)

The number of banks increased from 70 to over 90 by March 2004, reflecting increased competitiveness brought about by more open conditions for the establishment of new domestic and foreign banks. As a result of recent industry consolidation, the number of banks has dropped from 100 to 80, with the number of foreign banks dropping from 40 to 29 and the number of private banks dropping from 37 to 27 as of the end of March 2007. While twelve new private sector banks have been established since 1993, a number of them have since merged with existing PSBs, private banks, or gone out of business entirely. The maximum percentage of FDI that can be placed overseas in a private bank is 74%. (19)

IV. Literature Review and Empirical Findings

Increased depth in financial systems is associated with a more efficient supply of financial services to the real sector, including the reduction of liquidity and idiosyncratic risks, the improvement of resource allocation, monitoring and corporate control, the mobilisation of savings, and the facilitation of specialisation (see Levine, 1997). (20). There are solid theoretical foundations that support the claim that financial development can affect economic growth and structural transformation by way of two separate but complementary channels. It's argued, on the one hand, that the financial sector might affect growth via the accumulative channel and the allocative channel. The favourable impacts of physical and human capital accumulation on economic growth are highlighted by the accumulation channel, which is mostly facilitated by the use of financial resources (e.g. Pagano, 1993; De Gregorio and Kim, 2000). The allocation channel highlights how increased financial deepening leads to better resource allocation, which in turn boosts growth (see, for example, King and Levine, 1993). (21). Many researchers, like Vamvakidis (2002) and Harrison (1996), have found that freer commerce between nations favourably impacts economic development. Increased specialisation brought about by freer international trade would boost productivity by better realising economies of scale. It is believed that a more open economy will be subject to greater levels of competition, which in turn will increase productivity and boost economic growth. numerous large-scale empirical research have appeared since the 1990s. The studies' general findings are that financial development aids economic progress, while more regional studies are needed to explain the variation among nations. Generally speaking, these research can be split in half (22). Patrick (1966) hypothesised that the relationship between financial development and economic growth is two-way, namely, supply leading and demand-following, although most cross-country studies begin with the a priori assumption that finance drives growth. It may, he reasoned, change from the former to the latter during the course of an economy's development. The direction of causality between financial development, trade openness, and economic growth is therefore examined by reviewing country-specific studies. Growth in the economy and progress in the financial sector are co-integrated, according to research by Sanjaya Kumar (2015). (23)

It reaches the opposite conclusion, arguing that financial development can be seen as a long-term determinant of economic growth. The idea of Finance - led growth in India was empirically explored by Pal, Mahendra (2013). This is done by analysing the correlation between GDP growth and the M3/GDP ratio, a well-studied indicator of Financial Deepening, over a 33-year time span (i.e., 1971-2004), and finding that a 1% increase in the level of M3/GDP leads growth rate to rise by 0.54%. The findings corroborate the theory that the financial industry plays a pivotal role in driving economic growth (24). He discovers abundant evidence in India of unidirectionality (i.e., that growth and finance are causally linked). Indrani Chakraborty's (2010) research found little evidence backing the hypothesis that India's economy will benefit from the expansion of its stock market. Instead, reforming the banking sector appears to have greatly boosted economic development. According to the data, unlike in certain other growing economies like Chile and Mexico, the stock market in India cannot replace the banking sector. Turkish GDP growth, financial development, and trade openness were all studied by Yucel (2009) to determine their causal relationships throughout the period of 1989–2007. Johansen and Juselius co-integration and Granger causality testing were used as econometric techniques to look for correlation and causation between variables. Despite the benefits of more commerce, the study found that

financial development actually stifles economic expansion (25). In addition, the Granger causality test results showed a bi-causal association between financial development, trade openness, and growth, suggesting that economic policies directed at these two variables have a statistically significant impact on economic expansion. Hassan and Islam (2005) looked at the years 1974–2003 to determine if growth-enhancing factors like financial development and openness to foreign trade may help reduce poverty in Bangladesh. To determine whether or not financial development and trade openness promote growth, a standard Granger-causality test is applied. According to the results of the Johansen co-integration test, the variables are first difference stationary, meaning they do not exhibit any co-integrating connection. To this end, first difference VAR employs a Granger-causality test. Trade liberalisation, financial development, and economic expansion are all examined, but none are found to cause the other. This suggests that growth is not a sufficient mechanism by which financial development and trade openness diminish poverty (26). However, the joint effect of financial growth and trade openness suggests that these two factors might make a direct contribution to reducing poverty. Using data from 1960–2003, Soukhakian (2007) looked into what role financial expansion, trade openness, and economic growth had in Japan's overall development. Except for the correlation between domestic credit (a second measure of financial development) and trade and growth, the results imply that in Japan, all three variables are linked in a long-run equilibrium. Granger causality tests indicate that broad money growth is causally related to GDP growth, lending credence to the supply-leading growth hypothesis for the Japanese economy and the growth-driven trade (GDT) hypothesis, which states that GDP growth leads to "more efficient imports and exports" for Japan. The purpose of the research conducted by Katiricioglu, Kahyalar, and Benar (2007) was to determine whether or not there was a causal relationship between India's economic growth, foreign trade, and financial development. With the help of unit root tests to ensure that the variables under study are stationary, we have examined co-integration and Granger causality tests between financial growth, international commerce, and economic expansion using annual data from 1965–2004. A long-run equilibrium is found between India's financial development, foreign trade, and real income growth. (27) Additionally, the directionality of the causation between real income and exports and imports, exports and imports, M2 and domestic credits, M2 and imports, and imports and domestic credits was studied. Real income and M2 show bidirectional causality, and so do real income and domestic credits. Finally, there is no evidence of a causal relationship between M2 and domestic credits. Wong Hock (2005) looked into how Malaysia's economy grew after the country became more open to foreign trade and finance. In the study's empirical model, real GDP per capita is characterised as a function of employment, capital, a measure of openness to international trade, and financial development. Several indicators of monetary progress were used in the research. The overall results of the unit root tests indicate that all the variables do indeed have a unit root. Growth, employment, capital, a measure of openness to international commerce, and financial development are also shown to be cointegrated in the results of the Johansen (1988) multivariate cointegration technique. When the 1970-1996 data set is examined, it is discovered that all variables, with the exception of the indicators of financial progress in Models 3 and 4, have the predicted indications. Estimated cost models (ECMs) are calculated. Results reveal that a country's level of openness to international commerce and financial development significantly affects GDP growth. These findings point to the importance of financial development and openness to foreign trade for Malaysia's economic success.

Moreover, there is substantial evidence that the opposite is true, that openness to international commerce Granger causes economic growth. However, the strength of the Granger-causal relationship between financial development and economic growth was shown to vary considerably across different measures of financial development. In order to jointly test trade openness (TO) and capital flows (CF), Rajan and Zingales (2003) suggest using the x2 test statistic. If both 2 and 3 are positive and jointly significant, it indicates that financial and trade openness exerts holds, and that even a little increase in trade openness or capital flows will lead to better financial growth.

Panel data from 1970 to 1997 allowed Yanikkaya (2003) to analyse the effect of international trade openness on economic growth in more than a hundred developed and developing nations. The findings demonstrated that there is no simple causal link between international trade openness and GDP expansion. However, the results showed that trade barriers were positively and, in most specifications, significantly associated with economic growth, especially for developing countries, which is in line with the theoretical findings of economic growth but goes against the conventional view on the effects of trade barriers on economic growth.

V. Research Methodology

This research investigates the potential long-term link between financial advancement and GDP expansion, as well as the direction of causality between the two. This research will employ stationary testing, co-integration testing, and Granger causality testing to achieve its aims. As empirical literature has argued, estimating time series data with a unit root will lead to a misleading result, the stationary test can be used to

assist establish if the time series are stationary or not. Additionally, the co-integration method will investigate the model's potential long-run correlations among the variables and interpret the evidence of these ties as interdependence. The Granger causality test, the primary focus of this effort, will be conducted using a multivariate framework rather than the more conventional bivariate one. This will aid in identifying the chain of events and the feedback loops at play in the Indian context between 1991Q3 and 2015Q4. (28)

5.1 Unit Root Test

The standard regression analysis is based on the condition that the variables being used are stationary. However, many macroeconomic time series variables are often not found stationary; they trend up and trend down over time. Therefore, before regression analysis can be carried out on time series variables, test for stationary must be done to avoid getting bias estimates or spurious results. The Augmented Dickey Fuller (ADF) test examine the presence of unit root among the variables (or non- stationery) or otherwise. This is based on the regression equation in the form:

$\Delta yt = \alpha_0 + \alpha_1 \beta y_{t-1} + T + \sum_{j=1}^{m} \beta j \, \Delta Y_{t-K} + \varepsilon_t$ …….(i)

Where Yt is the time series, Δ is the first difference operator, T is the linear trend, α is a constantand ε_t is the error term. The null hypothesis of existence of unit root is β is 0.

The significance of ρ will be tested against the null (ρ=0) based on t-stat on ρ obtained from the OLS estimates of the above two equations. Thus, if the null hypothesis of non-stationery cannot be rejected, the variables are differenced until they become stationary. It is after this is done that we will proceed to test for co-integration.

5.2 Co-integration Test

It is known that if the variables are non-stationary, they should be differenced before being used in the regression model to avoid a spurious regression. If the variables are co-integrated or there is a stable long run equilibrium relationship between them over time, then they could be used in the regression model in the level forms without leading to a spurious regression. There are numerous tests that were acknowledged in the literature for co-integration analysis such as the Co-integrating regression Durbin- Watson test, Engle-Granger Co-integration test and Johansen Co-integration test. We will use Johansen test to test for co-integration between the variables in the empirical model because it has an advantage over other previously mentioned tests as it takes into consideration the possibility of multiple co-integrating vectors. The Johansen co-integration equation starts from vector auto regression.

$\Delta Y_t = \mu + A_1 Y_{t-1} + \ldots + A_p Y_{t-p} + \beta X_t + \varepsilon_t$ …… (ii)

When Y_t is a k-vector of the 1 (I) variables, ε_t is an X_t vector of innovation. The VAR can be written as:

$\Delta Y_t = \mu + \Pi Y_{t-1} + \ldots + \sum_{i=1}^{p-1} \Gamma Y_{t-p} + \beta X_t + \varepsilon_t$ ……. (iii)

In co-integration test of Johansen he develops two different tests to check the long run relationship between variables. The equation (iv) and (v) represents the trace and max statistic.

$J\ Trace = -T \sum_{i=r+1}^{p-1} I\,n\,(1-\lambda i)$ ……. (iv)

$J\ max = -T\ I\,n\,(1-\lambda_{r+1})$ ……. (v)

Where Y_t is the time series, Δ is the first difference operator, T is the linear trend, α is a constant and ε_t is the error term. The null hypothesis of existence of unit root is β is 0.

5.3 Granger Causality Test

It is a statistical test of causality that is based on prediction. According to Granger, if a signal X_1 "G causes" a signal X_2, that means the past value of X_1 contains information to predictX_2. We will use the Granger causality test to know the direction of the causal relationship among the variables in our empirical model. The intuition behind Granger causality tests can be expressed using the following equations:

$\Delta Yt = \alpha 0 + \sum_{i=1}^{p} \alpha\ 1, i\ Yt\text{-}i + \sum_{i=1}^{p} \beta\ 2, i\ Xt\text{-}i + \varepsilon 1t$ ….. (vi)

$\Delta Xt = \mu + \sum_{i=1}^{p} \delta\ 1, i\ Xt\text{-}i + \sum_{i=1}^{p} \Theta\ 2, i\ Yt\text{-}i + \varepsilon 2t$ ….. (vii)

The Granger causality test thus helps to determine the direction of causality between the current account deficits and the budget deficit. If a specific variable (Y) can be forecasted by its own lagged values as well as the current and lagged values of another variable (X), (X) is said to Granger-cause (Y).

If only as in equation (vi) were significant and as are insignificant in equation (vii), it means that (X) granger causes (Y), and vice versa. If both as and as were insignificant, it means that (Y) and (X) are independent from each other, if both as and as were significant, it means that a feedback causal relationship exists between (Y) and (X).

5.4 Model Specification

To proof whether financial development is causing economic growth in India, we constructed a model.

F.D = f (GDP) ….. (viii)

Econometric Specification:
$Y = \alpha + \beta F.D + e$ ……. (ix)
Log form
$\text{Log } y = \log \alpha + \beta \log F.D + e$ …. (x)
We use the following notations.
Variables
F.D = Financial Development or M3/GDP
GDP = Gross Domestic Product at Factor Price

5.6 Overview of the variables (Data) used

The empirical analysis is carried out using quarterly data for India for the period 1991Q1 to 2015Q4. The data series have been directly obtained or compiled from Handbook of Statistics on Indian Economy, 2015-16 (Reserve Bank of India), Reserve Bank of India Bulletin (various issues), International Financial Statistics (International Monetary Fund, various issues) and Organization for Economic Co-operation and Development (OECD) database. (29)

VI. Empirical Findings

6.1 Result of Unit root test

The results of unit root test are presented in the table 1 and 2. The pre- requisite of time series analysis is to bring the stationary of each variable over the sample period. For this, the study used ADF (augmented Dickey-Fuller) and PP (Phillips Peron) unit root test to investigate stationery of each time series data involved in this analysis. The ADF unit root test requires the estimation of the following regression:

$Xt = \alpha + \beta t + \rho Xt\text{-}1 + \mu t$ …. (xi)

Where, α is the intercept, β is the co-efficient of lagged term, ρ is the number of lagged term chosen to ensure that μ is white noise. The optimal lag length is chosen by Akaike Information Criteria (AIC). Based upon this estimate, the hypothesis of test are:

H0: $\rho = 1$, i.e. there is a unit root – the time series is non stationary.

H0: $\rho < 1$, i.e. there is no unit root – the time series is stationary.

The results indicate that the variables considered in this paper, financial development (M3/GDP) and gross domestic product (GDP) analysis are non stationary I(1) variables. Variables such as the log of GDP and log M3/GDP appears to be non stationary at the level trend terms are included in the regressions (see Table 1 and 2). Finally, the result of ADF unit root test shows that the null hypothesis of presence of unit root is rejected at their level. To check the reliability of the unit root result found in the ADF test, we conducted Phillips-Perron (PP) test. When the variables are stationary in their level form, there is no need to check their first difference. After confirming stationery in all series, the study proceeds to conduct cointegration test to ascertain that the variables are co-integrated..

Table-1 Unit root test (Level) for LOGM3/GDP

Log M3/GDP (Level) Null Hypothesis: LOGM3 has a unit root Exogenous: Constant, Linear Trend						
Augmented Dickey Fuller (ADF)				Phillips Perron (PP)		
		t-Statistic	Prob.*	t-Statistic	Prob.*	Concl-usion
Test statistic		-8.516015	0.0000	-8.637266	0.0000	I(1)
Test critical values:	1% level 5% level 10% level	-4.054393 -3.456319 -3.153989		-4.053392 -3.455842 -3.153710		

Source: Calculated with the help of Review 7

MacKinnon's (MacKinnon, 1991) tabulated value has been used to test the level of Significance. I (1): Integrated of order one

Table-2 Unit root test (Level) for LOGGDP

Log GDP (Level) Null Hypothesis: LOGGDP has a unit root Exogenous: Constant, Linear Trend						
Augmented Dickey Fuller (ADF)				Phillips Perron (PP)		
		t-Statistic	Prob.*	t-Statistic	Prob.*	Conclusion
Test statistic		-7.570207	0.0000	-7.637883	0.0000	I(1)

Test critical values:	1% level 5% level 10% level	-4.059734 -3.458856 -3.155470		-4.059734 -3.458856 -3.155470		

Source: Calculated with the help of Review 7

MacKinnon's (MacKinnon, 1991) tabulated value has been used to test the level of significance. I (1): Integrate d of order one

6.2 Johansen Co-Integration Test

Since both variables are stationary after first difference, it is appropriate to test whether the variables are co-integrated. The first step of Johansen – Juselius procedure is to determine the lag order. Since we have annual data and the variables achieve stationary after first differencing. The maximum number of lags used by applied researchers for annual data is two. Although, we report the results of only one lag, we have also tested with two lags. However, we get the same results.

Table- 3 gives results of the co- integration tests with GDP and M3/GDP growth rate in the trended. In the trended cases, there is a strong evidence of a long run relationship among the variables, where trace statistic (26.37671) is greater than critical value of 5% (15.49471). The results suggest that financial development as one of the long run determinant of economic growth

Table- 3 Co-integration results

Sample (adjusted): 1991Q3 2015Q4 Included observations: 89 after adjustments Trend assumption: Linear deterministic trend Series: LOGM3 LOGGDP Lags interval (in first differences): 1 to 1 Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05Critical Value	Prob.**
None *	0.205726	26.37671	15.49471	0.0008
At most 1	0.063908	2.877665	3.841466	0.0553
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				

Source: Calculated with the help of Review 7

6.3 Granger Causality Results

We carried out the test of causality with the help of Granger Causality Test. Growth rate of Financial Development causes the growth rate of income in Indian Economy. It shows unidirectional results i.e., from Financial Development to growth during the period of 25 years after post reform period on quarterly data i.e., (1991Q1-2015Q4). Table –4 shows the causality results in which M3/GDP running towards causing GDP with F-Statistic value of 3.74. Indian panel shows the direction from finance to growth. It means that India is a case of Supply Leading Hypothesis. Patrick (1966) designed two hypotheses in the context of Developed and Developing Countries. He talks about the application of Demand Following Hypothesis in the case of developed countries and while the application of Supply Leading Hypothesis in the case of developing countries. India is a case of Supply Leading Hypothesis that increasing the growth rate. However these results cannot be conclusive. (30)

Table- 4 Granger Casualty Test

Pairwise Granger Causality Tests Sample: 1991Q1 2015Q4 Lags: 3			
Null Hypothesis:	Ob's	F-Statistic	Prob.
LOGGDP does not Granger Cause LOG M3	85	0.18487	0.9064
LOGM3 does not Granger Cause LOGGDP		3.74887	0.0015

Source : Calculated with the help of Review 7

VII. Conclusions and Policy Implications

Using quarterly data for India from 1991 to 2015, this research analyses the effect of financial development on economic growth in the post-reform period. The ADF and PP tests were employed to ensure that the variables were stationary. Direct regression on high-volatility data may produce misleading and unexpected results since most financial variables are inherently volatile. Thus, a stationary test was performed, and it was discovered that the variables comprising Financial Development, i.e. M3/GDP and growth rate, are integrated at level and significant 1 (I) at 5% level. Additionally, we have employed Johnsoen and Jesulisu's

long run relationship co-integration vector formula to (1991). A priori, we anticipate that the sign of the M3/GDP coefficient will be positive. There has been a favourable effect of India's growing economy. Indicates the importance of financial growth to India's economic expansion.

In the case of India, the co-integrating connection argues for the presence of a long-run equilibrium relationship between the variables. Our results, which lend credence to the theory of Finance-Led Growth in India, are backed up by a report on the Granger causation. The research found that while economic growth is one of the long-term causes of financial development, the opposite is not true. Rising interest rates in the money market boost economic expansion. This finding has important policy implications, suggesting that financial development should be the policy variable used to spur economic expansion, and that economic expansion should be the policy variable used to create financial development.

Therefore, the government must deepen the financial sector, continue reforms to the financial sector to improve the efficiency of the domestic financial sector, and take necessary measures to strengthen the long-run relationship between financial development and economic growth in order to maintain sustainable economic growth.

More financial integration, less government interference, elevating the status of financial institutions, etc., are all examples of such steps. These are critical and helpful in bolstering the connection between financial growth and economic expansion. To put it another way, the lack of same has an impact on the country's socioeconomic development as a whole, not only on the finance-growth link. Consequently, the government must take the lead with greater prudence.

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