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Impact of financial factors on economic growth : Evidence from India

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Abstract

To investigate the effects of financial issues, specifically M3 and loans to the private sector, on India's economic expansion from 1996 Q2 to 2020 Q4. The paper employs augmented dickey fuller test to verify stationarity, cointegration analysis and vector error correction model. Key result outcomes indicate that, whereas credit to the private sector and M3 have significant short term and prolonged negative affects on GDP, credit to the private sector has essential favorable short-term effects on GDP. Using financial institution parameters, this research investigates the implication of financial measures on the expansion of the economy of India. The majority of prior investigations had its origins in developed nations.

Subject Classification: *00Bxx, 00-xx.*

Keywords: *Financial factors, Economic growth, Cointegration test, Vector auto correction model.*

1. Introduction

According to evaluations, the advancement of finance is a crucial aspect that influences the expansion of the economy. For the expansion of their economies, the majority of developing nations place significance on the advancement of finance. Policies, elements, and institutions that support a functional financial market and well-organized intercession are all part of the growth of finance. The expansion of the financial sector can be evaluated using a variety of metrics, including depth, scale, accessibility,

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and also the financial system's transparency. (Sunita Sharma, 2019) Effectiveness of the financial acts and systems, such as those of the market, institutions, banks, and services, are also included. A stable financial system is thought to result in the availability of financial services in a nation's economy.

Furthermore, there is evidence from several empirical researches that there is a connection amid the financial sector's progress and the economy's stimulus. While some studies have discovered a strong correlation among financial growth and economic advancement, others have discovered that, in some cases, financial development actually hinders the expansion of the economy (Bojanic, 2012). Numerous studies, for instance, have claimed that therein is no link among financial progress and economic development, (Robinson, 1952) indicated that finance follows a company wherever it goes. It asserts that financial growth and the expansion of the economy are not directly related. (Demetriades & Hussein, 1996) and (Shan, 2005) showed that the association across financial growth and economic expansion is minimal. In contrast, (Odedokun, 1996) and (Estrada et al., 2010) determined that the expansion of an economy can be strongly predicted by its financial progress.

Most people agree that the financial industry is crucial to a country's development. An adequate financial sector delivers advance financial services and it boosts the economy than those economics which are less efficient Levine (1996). According to experimental investigations, the indicators used to quantify financial development describe the direction and deliver details and degree of the connection amid economy expansion and financial progress, and these results differ from one nation to the next.

Examining the link among financial growth and economic expansion in India from 1996Q2 to 2020Q4 is the goal of this inquiry. This research investigation establishes the causal association amid financial expansion and economic advancement using the vector error correction method. Remaining portion of this study is divided into five pieces. The available assessment of the previous researches is included in the 2nd portion. The third portion defines the investigation's data and methods. The 4th section analyses the study's empirical outcomes, and the final section brings the work to a close.

2. Literature Review

(Hermes & Lensink, 2003) are examining the financial system's function from 1970 to 1995 in strengthening the beneficial relationship

amid foreign direct investment and economic expansion. They found that financial system is adequately established in 37 countries out of 67 countries; hence foreign direct investment contributes favorably to economic expansion. In rest of the country's foreign direct investment doesn't help the economy grow in a beneficial way due to inadequately establishment of financial system. (Kar et al., 2011) are discovering the cause and impact association amid financial growth and growth on an economy in MENA countries throughout the period 1980 to 2007. The outcomes show that direction of cause and impact association is appears to be nation and measures of financial growth specific. In MENA countries, the development of GDP and financial growth are not causally associated. (Hassan et al., 2011) are examining the across 1980 and 2007 in low, middle, and upper income nations, a link among financial growth and economic expansion was found. The results showed that financial expansion and economic advancement were positively correlated in emerging nations and negatively correlated in industrialised economies. Financial advancement and economic expansion have a short-term bilateral causal link in the majority of countries, however in two low-income nations, the association is one direction. (Koumparoulis, 2015) investigates the linkage connecting financial growth and economic prosperity since years 2001-2006 in Chinese cities. He came to a decision where the progress of financial sector is having a favourable influence on the progress of the economy and said that the financial sector's size and complexity are key indicators in fostering this expansion. (Bittencourt, 2012) analyzed the contribution of financial growth to fostering expansion of the economy in Latin American nations between 1980 and 2007. He came to discover that economic advancement is greatly influenced by and supported by financial progress. (Adu et al., 2013) from 1988 to 2010 there was research into the prolonged influence of financial growth on Ghana's expansion in the economy. The findings show that factors like private sector credit to total credit and credit to the private sector to GDP are having favorable along with considerable influence on GDP expansion, whereas broad money to GDP is negatively and significantly affecting it. (Samargandi et al., 2015) are examining the link of progress in the economy and the expansion of finance in middle-income nations since 1980 to 2008. The conclusion of the investigation is, while there is a hardly any connection among financial growth and the progress of an economy in the near future, there is one in the prolonged term. (Uddin et al., 2013) are examining the connection across GDP growth and financial growth in Kenya from 1971 to 2011. They discovered a strong correlation among financial growth and economic

expansion. (Bist, 2018) examines the association among financial advancement and economic expansion over the long term in low-income nations since 1995 to 2014. The outcomes demonstrate the long-term connection amid financial progress and economic expansion. Additionally, 3 of the 16 countries show a considerably adverse connection amongst financial progress and economic expansion. (Benczúr et al., 2019) has conducted a study for analyzing the impact of finances by sources and finances by recipients on economic expansion among top earners nations throughout the period of 1990-2014. They concluded that bank credit is having non-linear effect on economic expansion, non-financial corporation is having positive, whereas credit to household is having negative impact on economic growth. (Rapp & Udoieva, 2018) are evaluating the essence of the framework of the financial system in the progress of the GDP in OECD nations for the duration 1994 to 2013. This study revealed that financial system with comparatively larger security markets provides economic growth and reduces the uncertainty. They learned how structure of the financial system affects how quickly a GDP grows. (Asteriou & Spanos, 2019) are evaluating the 1990–2016 period in the economies of the European Union's financial crises and the association amongst financial progress and expansion in GDP. The outcomes show that whereas financial progress had a favorable effect on growth of the economy prior to crises, it had a negative impact following crises. (Gokmenoglu et al., 2015) are determining the long-term connection and pattern of cause and effect amongst financial growth, global commerce, and expansion of the economy in Pakistan from 1967 to 2013. The investigation found an equilibrium connection between economic expansion, international commerce, and financial growth. Involving financial growth, economic expansion, and imports as well as amid financial advancement and economic expansion, there is a two-way causal relationship. (Bojanic, 2012) is analyzing the implication of financial expansion and trade openness on Bolivia's GDP expansion during the time period 1940 to 2010. The analysis shows an equilibrium link among trade openness, financial expansion, and the progress of an economy. Furthermore, the unidirectional causal connection links financial expansion and trade openness to economy expansion. (Enowbi et al., 2017) are exploring the association in African countries' financial instability, financial liberalization, financial growth, and growth of the economic since 1985 to 2010. They draw the inference that financial liberalisation and expansion have a positive effect on financial stability. Additionally, they discovered that economic growth

lessens financial instability and that its effects are more negative before than after the liberalisation period.

3. Data and Methodology

3.1 *Data*

How to obtain a suitable set of realistic financial development indicators is a crucial issue in determining the link among financial advancement and economic expansion. It could be define as the capability of a nation to use reserves into investment effectively and efficiently in its own boundaries due to 1. The strength of its institutional and governing structure, 2. The extent of security market and assortment of financial instruments and their accessibility and 3. the operation of financial market in terms of efficacy and liquidity ((Santabárbara, 2009)).

Numerous financial progress metrics have been employed in the prior researches. In this paper, the expansion of Indian economy as a result of financial expansion is assessed using two financial growth indicators. GDP was utilized as a metric for economic expansion in this analysis. We similarly employed two indicators to evaluate financial growth.

Credit to the private sector (CRE), which gauges financial growth, is the first indicator. A better credit rating for the private sector denotes not only more domestic investment but also faster financial system expansion. Researching borrower firms, imposing corporate control, simplifying transactions, and mobilizing savings are all more viable in financial system that distribute more credit to the private sector (Levine, 2005).

The M3 metric is the next one to use to evaluate financial growth. It measures the liquidity liabilities of banking sector in the economy. A higher M3 means greater intensity in banking sector (King & Levine, 1993)

The data is collected over the period 1996Q2 to 2020Q4.

3.2 *Methodology*

This research is finding the effect of financial advancement on Indian economy expansion by employing time series analysis. For this, firstly we deploying the stationarity test which is augmented dickey fuller (ADF) unit root test, Identify the dataset's stationary or non-stationary state. Then we applied Johansen and Juselius co-integration test to test the co-integration association amid financial factors and economic expansion. Lastly, with the intention of determining the cause- and effect connection among financial factors and economic expansion, the vector error correction model is implemented (Wu, 2018).

3.2.1 Unit root test

Before any empiric investigation firstly stationarity of the indicators has to be examined. In this present research, Augmented dickey fuller test is applied to identify whether or not the dataset is steady. The initial distinction should be utilised to make the data stationary if it is not at level. I(1) signifies that the set of values is stationary at the first level, while I(0) designates that the collection of data is stationary at level.

3.2.2 Co-integration test

If every factor is stationary at the first difference, the co-integration test will be conducted to examine the prolonged connection amid the indicators. Johansen test is conducted to investigate a long-term connection amid the measures, as well as having co-integration between the indicators there should be at least one co-integration vector (Johansen, 1988).

3.2.3 Vector error correction model

The co-integration test's outcome merely demonstrates the variables' long-term equilibrium relationship; it offers no proof of their short-term dynamics. According to the Granger representation theorem, a time series can be effectively represented with error correction if a collection of indicators is stationarity of the data at first difference, or I(1), and also co-integrated. The combination of a differenced and prolonged-term equilibrium model, the error correction model also predicts short-run dynamics.

4. Empirical findings

4.1 *Unit root test*

The indicators' stationarity is examined using the augmented dickey-Fuller test. The outcomes of the ADF analysis are shown in the Table 1.1. While none of the measures are steady at the level, the results show that they are at the first level.

4.2 *Cointegration analysis*

The Johansen cointegration test is utilised to inspect the prolonged link amid the measures. All the three indicators; i.e., GDP, credit to private sector and M3 are incorporated at first level. In this research, GDP is a

dependent indicator while credit to private sector and M3 are independent indicators. Table 1.2 displays the outcomes for cointegration test.

The findings point to a single different cointegration equation being used in this research, and at a 5% level, the null hypothesis permitted to claim that there is no factor cointegration is forbidden. The outcomes show a long-term connection across the GDP, loans in the private sector, and M3.

4.3 *Vector error correction model*

Subsequent the cointegration test, the analysis of the short and prolonged causal links amid the measures is conducted. Findings are reported in Table 1.3.

Error correction unit (c(1)) is statistically important in Table 1.3's results when GDP is utilised as the dependent factor, showing that private sector credit and M3 have a long-term causal link with GDP. According to the short-term coefficient c(2), an increase in GDP of 1% will result in a.57% increase in GDP. According to C(3), the GDP will expand as credit to the private sector rises by 1.33%. M3 is positively but marginally affecting GDP in the short term, as shown by C(4).

5. Conclusion

The link amid the effects of financial growth on India's GDP expansion is examined in the present investigation from 1996Q2 to 2020Q4. First, the prolonged association amid financial growth indicators and expansion of the GDP is looked at by using cointegration analysis recommended by (Johansen, 1988) and Johansen and (Johamen & Jeselius, 1990). Next, a vector error correction model is applied to explore the cause and effect linkage amid the measures of financial progress and economic expansion. The outcomes demonstrate that progress in the economy and financial growth have a long-run equilibrium association. Furthermore, Economic expansion and financial expansion have a unilateral causal association. In the medium term, private sector lending has a favorable and considerable influence on GDP, while M3 has a negligible effect.

Table 1.1
Results for ADF test

Indicators	P-value At level	P-value First difference
GDP	0.4229	0.0001
Credit to private sector	0.1627	0.0001
M3	0.9989	0.0023

Table 1.2
Results for cointegration test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		**Trace**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None *	0.276639	40.05458	29.79707	0.0024
At most 1	0.074602	9.289112	15.49471	0.3393
At most 2	0.020045	1.923611	3.841466	0.1655
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				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		**Max-Eigen**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None *	0.276639	30.76547	21.13162	0.0016
At most 1	0.074602	7.365501	14.26460	0.4468
At most 2	0.020045	1.923611	3.841466	0.1655
Max-eigenvalue 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				

Table 1.3
Results for vector error correction model

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-2.112815	0.229409	-9.209828	0.0000
C(2)	0.572397	0.141720	4.038932	0.0001
C(3)	1.33E+11	3.72E+10	3.577233	0.0006

Contd...

C(4)	0.057304	0.052609	1.089246	0.2789
C(5)	-1.19E+10	1.11E+11	-0.107646	0.9145
R-squared	0.667662	Mean dependent var		2.88E+10
Adjusted R-squared	0.653054	S.D. dependent var		1.83E+12
S.E. of regression	1.08E+12	Akaike info criterion		58.30383
Sum squared resid	1.06E+26	Schwarz criterion		58.43739
Log likelihood	-2793.584	Hannan-Quinn criter.		58.35782
F-statistic	45.70444	Durbin-Watson stat		1.982708
Prob(F-statistic)	0.000000			

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