

Determinants of Financial Development in Emerging Economies: Empirical Evidence from India

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Abstract

Financial development is a key concern for the emerging economies in today's era. This study tends to analyze empirically the major factors that affect on the financial development of the emerging economies and most specifically in case of India. For this purpose, data were gathered from world development indicators (WDI) from the period of 1986 to 2016. Autoregressive distributive lag approach to co integration was implemented on the model as the variables in the study were reflected their stationarity at I(1) level respectively. The findings of this study suggest that the financial development is significantly affected by the logical awareness of the financial system and through it lucid implementation. However money supply, financial awareness and investment opportunities are the key concern for financial development. Moreover, the error correction model provides authentication stamp about the model as the coefficient of error term is negative and which also reflects its convergence towards the equilibrium.

Keywords: Financial Development, Financial Awareness, Emerging Economies, India.

Introduction

In today's modern era the development of financial sector is considered as a major icon for economic development and prosperity. The financial systems are the backbone of the economic systems, Pradhan (2010). However, the level of contribution towards its basic functionality may vary from country to country but their relative importance is considerable around the globe. The economic development is associated with different areas which have considerable bearing on it and most significantly these areas are economic growth (GDP), acceleration of financial institutions, improvement in infrastructure, solid security conditions, improvement in literacy rate, political stability, reduction in poverty and unemployment. Moreover, the economic growth refers to the continuous improvement in per capita income on individual level and total income on the whole. The resonance and development process related to the growth of economy aitches them to adopt new process, advance technologies, proper adoption of competitive environment to manage innovation, processes and economies of scale.

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Financial development is the tycoon for uplifting an economy. As for as the financial development of developing or emerging countries are concern they have their own limitations for improving their life style and in other investment perspectives. However, cheap labor, natural resources, security conditions are may become the cause of investment inflows which ultimately results in economic development and ultimately results in financial development of these countries. The core theme of economic and financial development is to overcome on food, held, security, political and financial issues so that a common man can spend his life in a significant manner.

As the developing or emerging economies are concerned, they are facing their limitations in case of financial literacy, investment opportunities and in terms of money supply. “According to the International Monetary Fund the Indian economy in 2017 was nominally worth US\$2.454 trillion and it is the sixth-largest economy by market exchange rates with worth of US\$9.489 trillion,. Moreover, it is the third largest economy by purchasing power parity. With its average annual GDP growth rate of 5.8% over the past two decades, and reaching 6.1% during 2011–12, India is one of the world's fastest-growing economies Nayak *et al.* (2010)”.

By keeping in view the above mentioned situation, this study intends to analyze empirically the determinants of financial development in case of India. This study will focus on three major areas of financial development namely (1) money supply (2) financial awareness and (3) gross domestic fixed investment. This study will fill the gap in case of earlier mentioned areas of concern.

Literature Review

Financial development is an emerging issue for the developing and emerging economies. Different studies have their different viewpoints about the determinants and motivators of the said issue.

By using the panel data of 108 countries Chinn & Ito (2006) conducted a research on the determinants of financial development. This study concludes that financial openness and the liberalization of capital account are the key areas for the management of financial development. Law (2008) evaluated the issue of financial development in Malaysia. For this purpose, this study applied different econometric tools to justify the objectives of this study. However, the concluding remarks of this study suggests that banking sector development is a need of the hour as the awareness and financial literacy initiatives may results in banking sector development. Moreover the stock market stability is also associated with the matter of financial development. Emerging market’s

set up for financial development has been analyzed by Bokpin (2010). This study focused on risk and return phenomena while interpreting the financial development of an economy. However, capital structure on a broader perspective served as a financing choice for the firms of the emerging economies. After analyzing the panel data, this study provide a bottom line that financial development is strongly effected through macroeconomic variables of an economy.

Hye & Dolgoplova (2011) segregate the data into different years and evaluated the financial development in case of China. The basic purpose of this research was to analyze empirically the relationship between financial development index and economic resonance. For this purpose, this study Johansen-Juselius co-integration approach was applied and the results conclude the theme of this research – long run relationship between the index of financial development and economic growth.

By considering the economy of India as a subject matter Hye (2011) conducted a comprehensive research to provide a guideline about the financial development of the Indian economy. This study evaluated the stationarity through stationarity testing tools and applied autoregressive distributive lag approach to co integration as the data depict the characteristics of its application. This study concludes that financial development index have significant effect on the financial development of Indian economy and the developing countries like India should focus on the ingredients of financial development index to get a better insight and results on the subject matter. Chaudhry *et al.* (2013) concludes that economic development is directly associated with the inflows of foreign direct investment. However financial institutions and their performance have key concern on the earlier mentioned situation in case of China.

The financial resonance and technological up gradation are the new challenges for the developing and for the emerging economies. The distance from developing to emerging and emerging to developed countries is lies between these two issues Karltorp & Sandén (2017). Al-Fayoumi & Abuzayed (2014) analyzed empirically the impact of trade openness on the financial development of the emerging market. This study concludes that the trade openness have positive and significant impact on the financial development. Whereas the findings also suggest that the emerging economies should focus on this situation to keep the track of progress which leads towards the better financial standings of these economies.

By using principal component analysis Pradhan *et al.* (2014) investigate the financial development in ASEAN countries. For this purpose this study took macro economic variables for analysis and concludes that financial development is based on institutional growth and it leads to the economic development as well. Exchange rate has been evaluated by Chaudhry *et al.* (2014) by keeping in view the situation of economic and financial development. This study concludes that trends in the market and structure of exchange rate have direct and significant contribution in the economic development of a economy. However, as concluding remarks of the findings of this research, exchange rate fluctuations management is a key concern for the developing countries like Pakistan.

By keeping in view the developing as well as developed countries, Khalifaoui (2015) investigated the determinants of financial development. This study applied various econometric techniques to get the condoling remarks on this core issue. The finding of this study suggests that institutional framework and legal procedures of this framework are regarded as significant contributor of motivators of financial development. Finance growth modeling has been analyzed by Capelle-Blancard & Labonne (2016) for OECD countries. This study concludes that the financial deepening and efficient financial intermediation process will results in the financial development of the economies. Moreover, the economies should do task based financial management to upgrade the financial development in the concerned economies.

Desbordes & Wei (2017) reflect the effect of financial development in attaining comprehensive investment across the border. However, by considering the different aspects of the real world *i.e.* merger and acquisition deals and project expansions, this study concludes that the countries having strong financial system can attain economies of scale and better performance as compared to those counties with poor financial system. Moreover, to attract the investment across the border, one of the considerable aspects in this regard is upgrade the financial system by removing the constraints related to it. Revolution of technology and advancement in financial system is being discussed by Gabor & Brooks (2017). This includes the main-stream points that originally signalized the financial development at bottom line. However, the findings of this study concludes that the digital revolution expedite the procedures of financial matters and uplift the new ways to generate financial assets on the whole.

By keeping in view the above literature, this study will focus on money supply, financial structure of banks and investment opportunities in case

of India and this research will bridge this gap by the implications of this research.

Model Specification

Data Description

Data were collected from World Development Indicators over the period of 1986-2016 on annual basis. Financial development is a key concern in this research and by keeping in view the earlier mentioned situation, this study focuses on these key areas which have strong impact on the financial development and are regarded as key motivators in various studies. For financial development this study used a proxy of domestic credit to private sector. Quasi money as the percentage of GDP in terms of money supply, financial structure of banks in terms of financial awareness and investment in percentage of GDP is concerned with gross domestic fixed investment.

Econometric Modeling

The basic purpose of this study is to investigate the determinants of financial development in case of emerging economies and most specifically in case of India. However log-linear model is developed to get the results of the study as this model outperforms the linear model (Granger and Newbold, 1974).

$$\ln(\text{FIND}_t) = \beta_0 + \beta_1 \ln(\text{MSUP}_{1,t}) + \beta_2 \ln(\text{FSTR}_{2,t}) + \beta_3 \ln(\text{GDFI}_{3,t}) + \varepsilon_t \dots (1)$$

The abbreviations depicts following circumstances

FIND_t = Financial Development

MSUP_t = Money Supply

FSTR_t = Financial Structure of Banks

GDFI_t = Investment in Percentage of GDP

ε_t = Error Term

Natural logarithmic has been taken for the values in and it is depicted through “ln” in the description. Whereas, β₁, β₂ and β₃ are the long run elasticity's of financial development in terms of money supply, financial structure of banks and in terms of investment.

Econometric Methodology

Before applying any econometric work, stationarity checking is a necessary requirement. However, according to Granger and Newbold (1974) non reliable and spurious results can be attained if the data will be non stationarity. For this purpose augmented dickey fuller test and Philip Peron test of unit root will be utilized to overcome this under consideration issue.

This study will use auto regressive distributive lag (ARDL) approach to co integration for the analysis as it outperform the limitations of Engle and Granger (1987) and Johansen–Juselius (1990) test which requires all the variables in the model at level one stationary. However, ARDL can be significantly applicable in any way – either the variables are level form stationary or first level stationary. The following equation is formulated to estimate ARDL bounds testing approach to co integration.

$$\begin{aligned} \Delta \ln FIND_t &= \beta_0 + \sum_{t=1}^q \beta_{1t} \Delta \ln FIND_{t-1} + \sum_{t=0}^q \beta_{2t} \Delta \ln MSUP_{t-1} \\ &+ \sum_{t=0}^q \beta_{3t} \Delta \ln FSTR_{t-1} + \sum_{t=0}^q \beta_{4t} \Delta \ln GDFI_{t-1} + \beta_5 \ln FIND_{t-1} \\ &+ \beta_6 \ln MSUP_{t-1} + \beta_7 \ln FSTR_{t-1} + \beta_8 \ln GDFI_{t-1} \\ &+ \varepsilon_t \end{aligned} \quad (2)$$

Δ sign shows the difference at first difference operator, $\beta_1, \beta_2, \beta_3$ and β_4 depicts the short run dynamics. However, $\beta_5, \beta_6, \beta_7$ and β_8 reflects the elasticity's of long run relationship. q denotes the optimal lag length respectively.

The existence of long run relationship is checked through error correction model (ECM) which is given by Engle and Granger (1987). This – negative and significant sign with the coefficient depicts the existence of long run relationship among the variables. The following equation depicts the ECM which will be estimated to check the said relationship.

$$\begin{aligned} \Delta \ln FIND_t &= \beta_0 + \sum_{t=1}^{q1} \beta_{1t} \Delta \ln FIND_{t-1} + \sum_{t=0}^{q2} \beta_{2t} \Delta \ln MSUP_{t-1} \\ &+ \sum_{t=0}^{q3} \beta_{3t} \Delta \ln FSTR_{t-1} + \sum_{t=0}^{q4} \beta_{4t} \Delta \ln GDFI_{t-1} + \lambda EC_{t-1} \\ &+ \varepsilon_t \end{aligned} \quad (3)$$

p_1, p_2, p_3 and p_4 reflect the optimal lag length, λ shows the adjustment speed among the designated parameters and EC is denominated for error correction term.

Results and Discussion

Stationarity checking of variables is a preliminary test before applying any econometric technique. By keeping in view this issue is settling

down by checking the stationarity of the variables through augmented dickey-fuller (ADF) test and through Philip Perron (PP) unit root tests. The results of these unit root tests are summarized in table 1 below. However, the results shows that ln(FIND) and ln(GDFI) are stationary at first difference at 1% level of significance and ln(MSUP) and ln(FSTR) are stationary on first difference at 5% level of significance. These results provide the authentication for the application of ARDL approach to co integration as the data reflects the characteristics of this approach application.

Table# 1 Results for Unit Root Test

Variables	ADF Test Statistics (At Level)	ADF Test Statistics (At First Difference)	Phillip-Perron Test (At Level)	Phillip-Perron Test (At First Difference)
lnFIND	-0.63	-4.98*	-0.61	-4.97*
lnMSUP	-1.11	-3.11**	-1.28	-3.17**
lnFSTR	-1.23	-2.47**	-1.29	-2.38**
lnGDFI	0.21	-3.59*	0.26	-3.94*

*Shows Significance at 1%

** Shows Significance at 5%

Checking the long run relationship among the variables is a key concern and this is analyzed through optimal lag length. Pesaran *et al.*, (2001) provides the maximum and minimum bound values related to 1% level of significance at 3 lag level. However, the calculated value of F-statistics is greater than the maximum/upper bound which conforms the situation of long run relationship existence among the variables.

Table# 2 Checking of Long Run Relationship Existence through F Statistics

Lag	F-Statistics	Lower Bound	Upper Bound
3	6.11	4.29	5.61

Auto Regressive Distributive Lag Estimates are calculated by applying Akaike as well as the Schwarz Bayesian Criterion. The FSTR and GDFI are significant at 5% and their coefficients depict positive value in response to financial development and MSUP is significant at 1% and its coefficient also depicts the positive and significant results in case of financial development.

Table# 3 Results of ARDL Model; Dependent Variable lnFIND

Regressor	Coefficient	Standard Error	T-Ratio	p-value
Constant	-49.36	10.98	-3.22*	0.000
ln(MSUP)	2.97	0.74	4.10*	0.001
ln(FSTR)	5.44	1.84	3.77**	0.049
ln(GDFI)	1.45	0.77	2.22**	0.050

*Shows Significance at 1%

** Shows Significance at 5%

The results of error correction model are reflected in table 4 which ultimately depicts the convergence towards equilibrium point. However, the Δ with the coefficients depicts short run dynamics related to the under consideration variable. As the results are concerned, FSTR and GDFI are significant at 5% significance level and MSUP is significant at 1% level of significance and they are contributing positively towards the financial development of the economy of India. The value of the coefficient related to error correction is negative and significant at 1 percent level of significance. However, this result shows and conforms the existence of long run relationship among the variables and the adjustment criterion from base to current time frame's equilibrium is 62% which is reflected in the table below. The value of adjusted R^2 is 0.74 which conforms that that 74% change in financial development is due to the money supply, financial structure of banks and in gross domestic fixed investment. The value of F-statistics is 5.87(0.003) and significant at 1% level of significance which reflects the conformance of the goodness of fit of the model.

Table 4 Error Correction Representation

Regressor	Coefficient	Standard Error	T-Ratio	p-value
Δ ln(FIND)	0.77	0.29	2.21	0.487
Δ ln(MSUP)	2.69	0.75	4.89*	0.002
Δ ln(FSTR)	0.47	0.31	1.67**	0.048
Δ ln(GDFI)	2.89	0.89	2.61**	0.031
EC(-1)	-0.62	0.19	-3.58*	0.001

$R^2 = 0.78$

Adjusted $R^2 = 0.74$

Durbin-Watson Statistics = 1.97

F-Statistics = 5.87 (0.003)*

*Shows Significance at 1%

** Shows Significance at 5%

Conclusion and Policy Prescription

The objective of this study is to investigate empirically the determinants of financial development in emerging economies and most specifically in case of India. For this purpose the data were collected from World Development Indicators over the period of 1986-2016. This study categorized its variables in the form of three major areas (1) Quasi money as the percentage of GDP in terms of money supply (2) financial structure of banks in terms of financial awareness and (3) investment in percentage of GDP is concerned with gross domestic fixed investment which plays their vital role in the financial development.

For the quantification and for the application of any econometric work; stationarity checking was the key concern and it was checked through two different unit root test – ADF test and PP test. The data in this research qualifies the criteria of application of ARDL approach to co integration and shows its reliable results on the subject matter. As per results of analysis, all the three areas are showing their significant contribution towards financial development in case of India. India is one of the emerging countries which have potential to be headed towards the developed economies as the criterion for money supply in contrast to the domestic credit to private sector is significant. Whereas, the financial structure of India financial institutions is concerned the data reflects positive circumstances about it and which is also evident from the results. Investment opportunities are also showing their positive and significant results in the manner of mature financial system which may lead it towards the iconic settlement of the financial development. For overall long run relationship analysis for the selected areas/ variables, the error correction model also stamp the authentication of the variable's long term relationship as the error term coefficient is negative and significant which gave signals for long term reliability in the manner of under consideration areas/variables.

Govt. of India should focus of the elements of this study to retain their economic development and to excel in this particular field. The Govt. of India should liberalize the financial policy and to strengthen the investment opportunities for the investors in India so that they can get economies of scale and better results in case of financial development. This study has equal contribution for academicians, researchers and for the policy makers.

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