"FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH: A CASE STUDY OF INDIA"

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1. INTRODUCTION

Finance is the lifeblood of all economic activities. Acting as an intermediary between the deficit and the surplus sectors of the economy, the financial sector provides financial services to commercial and retail customers. Both households and business firms, as also governments, deal with financial decisions that entail allocation of scarce financial resources over time. Households face financial decisions that range from consumption and saving decisions, investment decisions, financing decisions and risk management decisions. Firms engage in financial decisions in the area of capital budgeting, capital structure, working capital management, and risk management. These financial decisions are exercised using the financial system defined as "the set of markets and other institutions used for financial contracting and the exchange of assets and risks" (Bodie, Merton and Cleeton, 2009). The financial system thus, encompasses markets for bonds, shares, derivatives and other financial instruments, and a broad range of financial intermediaries and institutions ranging from banks, investment companies, insurance companies, fund management firms, etc., and regulatory bodies working in overlapping financial markets, namely, the money market and capital market.

The financial sector performs several functions ranging from enabling inter-sectoral, inter-temporal and spatial transfer of economic resources, managing risk, clearing and settling payments, facilitating pooling of resources as well as subdividing of shares, and provides useful valuation information that lies that the heart of any financial decision-making process. These functions form the fundamental base of the dimensions of financial development in a country, and in analysing its impact on economic growth of the country. The present study is a modest attempt to measure various dimensions of financial development in India over the years, and particularly, in the post-reforms period, and assess its impact on economic growth of India.

A Snapshot of the Financial Sector of India

The financial sector of India is highly diverse and dynamic, expanding at a fast pace. It may be categorized into organized and unorganized financial sector. The organized Indian Financial Sector is composed of financial institutions or intermediaries which can be further classified into banking and non-banking financial institutions (NBFIs), mutual funds, insurance companies, housing finance companies, etc. While the banking sector includes commercial and cooperative banks, the NBFIs include a vast array of financial companies ranging from leasing companies, hire-purchase businesses, retail lenders, infrastructure finance companies, mortgage guarantee companies, micro-finance institutions, etc. NBFIs also include the very important Development Financial Institutions (DFIs) at National and State levels which are sector specific or purpose specific, providing long term finance. There are 76 banks in India in total comprising Public Sector Banks (PSBs), Private Sector Banks (PVBs), Foreign Banks (FBs), Regional Rural Banks (RRBs) apart from Small Finance Banks (SFBs) and Payments Banks. As per Report on Trend and Progress of Banking in India (RBI, 2021) there are 9680 NBFCs in India of which 312 are systemically significant.

The financial markets comprise the capital and money markets, where the former includes the equity market and the debt market, and the latter, various short term financial instruments. The regulatory institutions include the Ministry of Finance, the Reserve Bank of India (RBI), the Securities and Exchange Board of India (SEBI), the Insurance Regulatory Authority of India (IRDA) and other sector specific apex institutions.

India's financial system is traditionally bank based, as against market based system. Measured by the ratio of bank assets to GDP, the size of India's financial sector has increased from 11.40 times to 124.10 times over the 30-year period from 1990-91 to 2019-20, growing at a compound annual growth rate (CAGR) of 8.58 percent. The stock market is also an important component of the financial sector as it provides a direct channel for domestic savings and foreign investments to provide investible funds to the corporate sector, along with the resultant improvement in productivity that comes with market discipline. The stock market capitalization in India has witnessed remarkable growth over the study period, growing at the CAGR of 20.28 percent. Stock market capitalization to GDP ratio for India grew more than 21 times increase from around 7.02 in 992-93 to 150.69 in the year 2020-21.

Brief Overview of Financial Sector Reforms in India

At the onset of the decade of 1990, the Indian economy underwent significant structural changes with the introduction of economic reforms involving structural adjustment programmes. Economic growth and development cannot be accelerated without an efficient financial sector that provides effective financial intermediation. Banking sector reforms in India were introduced based on the recommendations of the Narasimham Committee Report

(1992, 1998) with the primary objectives of instilling competition, increasing efficiency, productivity and profitability, improving governance and building financial stability. Broadly, the reforms in the banking sector may be categorized as deregulation and adoption of prudential norms of regulation by the RBI. Deregulation sought to gradually liberalize the interest rates by giving autonomy to the banks to decide the rates of interest, to ease entry and exit norms for the banking sector so as to instil competition in the sector, and to ease the reserve requirements to be maintained by banks to lend greater freedom to banks to decide the deployment of the deposits mobilized by them. At the same time, efforts have been made to improve legal framework and contract enforcement for effective loan recovery. These include, the SARFAESI Act, 2002, Strategic Debt Reconstruction (SDR) Scheme, 2015, Credit Information Bureaus by the passage of Credit Information Bureau Act, 2005, the Insolvency and Bankruptcy Act, 2016, the broad framework of Prompt Corrective Action (PCA) for early intervention of the RBI, and the like.

The Securities and Exchange Board of India (SEBI) was made into an autonomous body in 1992 and statutory powers were given to it. This eventually led to innovations in financial instruments, introduction of the derivatives markets, dematerialization of financial instruments and changes in the nature of financial participation. Along with multifaceted reforms, the adoption of information technology in financial services gave further impetus to the sector in entirely new dimensions to accommodate and grow.

These changes are expected to get reflected in increased levels of financial deepening and access. Increased level of competition is expected to result into efficiency gains as well. Further, the launch of the Jan Dhan Yojana has widened the coverage of population with bank accounts. Similarly, the increased stress on digital modes of operation is expected to improve the cost efficiency of transactions and the access to banking.

The above reflections offer significant areas for research. The present study draws from the Global Financial Development Framework of the World Bank which is a conceptual framework of *4x2* dimensions, to assess the financial sector development in India. It encompasses four aspects of financial development, namely, access, depth, efficiency and stability across two components of financial system, viz. financial institutions and financial markets.

2. REVIEW OF LITERATURE

The present study has organized the related literature into six broad segments, the first four being based on the four dimensions of financial development, namely, access, depth, efficiency and stability. The fifth segment examines studies on the inter-connections between the dimensions of financial development. The sixth segment comprises studies related to the relationship between financial development and economic growth.

2.1: Studies on Financial Access

Financial access is an extensively researched area in the studies related to financial sector. The research work in this area can be classified into country-comparison studies, single-county studies, studies related to particular aspects of financial access and the challenges there of, and studies related to India. Several studies have examined financial inclusion resulting out of financial access.

The country comparisons studies include Beck, Kunt and Peria (2005), Claessens (2006), Beck and Kunt (2008), Sarma and Pais (2008), Beck, Kunt and Honohan (2008), Sarma (2008), Hannig and Jansen (2010), Rojas-Suarez (2010), Ardic, Hiemann, and Mylenko (2011), Sarma (2012), Rupeika (2014) Amidžić, Massara, and Mialou (2014), Ozili (2018). The studies cover a wide range of countries which are compared on various dimensions of financial development such as access and financial inclusion and usage, both among households and firms. Most of these studies have grouped countries into different categories of developed and developing countries, be it OECD countries, Asian countries, African, Latin American and the Middle Eastern countries, or in terms of high, middle and low income levels. The common findings of these studies is that developed countries exhibit greater level of financial inclusion compared to developing and low income countries, of course, with some exceptions. A greater degree of variation is found among the developing countries indicating that many other factors may be playing a role in determining the level of financial inclusion.

Studies related to financial access and financial inclusion in India include Sharma and Kukreja (2013), Shivani (2013), Mohammad (2014) Aggrawal, R. (2014), Aggrawal, V. Bhan (2014), Malik and Yadav (2014), Garg and Agarwal (2014), Joseph (2014), Kaur (2014), Singh, et.al. (2014), Shah and Dubhashi (2015), Dolli and Panduranga (2016), Reddy (2016), Sujlana and Kiran (2018), Barik and Sharma (2019), to mention a few. Some studies like Kandpal and Mehrotra (2009) Chakrabarti, et al (2014) and Kumar (2016) have focused on financial access in terms of mutual funds penetration in India along with bank penetration. These studies are centred around analysis of the trends in alternative indicators of financial access, issues and challenges of financial inclusion, initiatives of the government and the RBI in reducing financial exclusion.

Some studies like CRISIL (2013), Sethy (2016), Goel and Sharma (2017), Adhikary, Bagli and Dutta (2017), Deepti and Subramaniam (2018) and Singh (2018), Pathan and Fulwari (2020) have constructed indices of financial inclusion combining variety of indicators covering banks, post offices, insurance sector and the stock market, although most studies are limited to banking sector financial access. Broadly, these studies report improvement in the level of financial inclusion in India over time.

Another set of studies relating to India are those that have made state-wise comparison of financial inclusion and ranked states as per the level of financial inclusion reached. These mainly include, Chattopadhyay (2011), Kumar and Mishra (2011), Dutta and Dutta (2011), Bagli and Dutta (2012), Gupta and Singh (2013), Amberkhane, Singh and Venkataramani (2016), Thirupathaiah (2016), Adhikary, Bagli and Dutta (2017), Rajput (2017). The findings of these studies converge as to which states are found to be ranking higher.

The common variables used in studies on financial access have been generally segregated under three dimensions, namely, penetration, availability and usage. The indicators typically used are number of bank deposit accounts and bank loan accounts per 1000 adults, number of bank branches and ATMs per one lakh population, and average size of credit and deposits as a ratio to GDP, and so on. Financial market related indicators include, market capitalization to GDP, and value of shares traded to GDP, which is found in a limited number of studies. Since practically all studies are with reference to a single or a few years, they only show the particular level of financial access and inclusion reached in those years. Very few studies are found that undertake a long period assessment of the state of financial inclusion in the context of India, which can throw light on *extent* of change that has occurred in financial access.

2.2: Studies on Financial Depth

Financial depth implies the size dimension of the financial sector vis-à-vis the size of the real economy. A good number of studies are found in literature that examine the extent of financial deepening experienced in various countries. Since financial deepening is a matter of inquiry and concern for underdeveloped countries, most of these studies are country comparison studies, ranging from Sub-Saharan African countries, Asian countries, middle eastern countries, Asia-Pacific region countries, and emerging countries. Single country studies are largely concentrated on African countries and India too. The overall findings show that the more developed among the country-groups are found to have a greater level of financial deepening. The country-comparison studies on financial deepening are found in Lynch (1996), Ndebbio (2004), Darrat (2006), Mohan (2006), Beck, Kunt and Levine (2009), Joshi (2016), Lea, Hoa and Vua (2019). Darrat (2006) found that diversity of economic environment led to highly country-specific results for financial deepening among the middle-eastern countries.

Most studies combine financial depth in terms of both, financial institutions and financial markets. Most of the studies use varied number of variables but they typically include ratios such as narrow money, broad money, private credit, financial savings, financial assets, etc., to GDP. The objective of majority of these studies is to examine the impact of financial deepening on economic growth of the country. However, many studies in the context of African countries have examined the trend in financial deepening over a period of time. These include, particularly, those with reference to Nigeria, such as Nnanna and Dogo (1998), Nzotto and Okereke (2009), Ume, Nelson, and Onwumere (2015), Nwanna (2016), and Iheanacho (2019). These studies have used different combinations of the common indicators of financial deepening found in the literature, over varying time periods and report increase in financial depth over time.

Studies on financial deepening with reference to India include Goel and Gupta (2011), Krishnan (2011), Chakraborty (2014), Lenka (2015), Ghildiyal, Pokhriyal and Mohan (2015), Gupta and Mahakud (2019). Some of these studies have extended the analysis of financial deepening to its impact on volatility of the stock market and on economic growth.

2.3: Studies on Financial Efficiency

Efficiency is a wide concept and there are alternative ways in which it can be conceptualized and measured. For instance, it is conceptualized as cost efficiency which entails minimization of cost or profit efficiency which implies maximization of profits or revenue. Another concept of efficiency is intermediation efficiency which examines banking efficiency in terms of cost incurred in their intermediation function of deposit mobilization and lending activities, and is typically measured in terms of changes in interest spread and interest margins.

Since efficiency studies with reference to financial institutions are in themselves a vast and deep area of inquiry, there is a large number of studies found in the area, with a variety of reference points. For instance, there are several studies that have analyzed the impact of change in the market structure on interest rate spread and margin, with the entry of foreign banks. These include Claessens, Demirguc-Kunt and Huizinga, 2001; Barajas, Steiner and Salazar, 2000; Demirguc-Kunt, Laeven and Levine, 2004. They find that intermediation efficiency is found to increase in terms of fall in interest spread and margin, with the entry of foreign banks. Another set of studies have examined the link between efficiency and ownership type of banks, whether foreign or domestic and public sector. Most studies report high profit efficiency for foreign banks whereas private domestic banks score in cost efficiency over the foreign banks.

Another set of studies relate efficiency to the impact of financial sector reforms. These include Bonin, Hasan and Watchel (2004), Hauner and Peiris (2005), Bonaccorsi Di Patti and Hardy (2005) and Isik and Hassan (2003). All studies report improvement in efficiency levels post financial liberalization or privatization of the banking sector.

Anjum (2012) has surveyed various studies on financial efficiency conducted by different authors using financial ratios and Data Envelopment Analysis. The study reveals that financial ratios are the most popular tool used since 1990's and frontier analysis is the next new evolution to measure efficiency. A large number of studies in India on efficiency is concentrated on commercial banks which include Bhattacharya, Lovell, and Sahay (1997), Kumar, Mavaluri, and Boppana (2006), Debnath and Shankar (2008), Kumar (2008), Khankhoje and Sathey (2008), Joshi and Bhalerao (2011), Baidya and Mitra (2012), Bapat (2012), Anantharaman and Geetha (2017), Bhatia and Mahendru (2019), Hassan and Mathur (2020), etc., which have employed the technique of Data Envelopment Analysis. The studies range over different time periods and different bank groups, and different number and sizes of banks. The input and output variables also differ across these studies. However, largely, the findings among the post liberalization studies are that private and foreign have achieved greater efficiency. Public sector banks are found to be lagging in efficiency measures.

Several other studies in the context of the Indian banking sector using ratios, have focussed on trends in interest rates, credit deposit ratio, ratio of contingent liability to asset, ratio of investment in securities to asset, ratio of term loans to asset, return on asset and return on equity, net interest margin, operating profit, reserve ratios, capital adequacy, etc., post banking reforms, or the expansionary effects of the banking sector post reforms and on the trends in profitability and efficiency, NPAs, etc. (Das 2010; Bhanavat and Kothori, 2013; Arumugam and Selvalakshmi, 2014; Shivagami and Prasad, 2016; Balayya, 2017; Chadha, 2017). Mohan (2005) has examined various indicators of performance of financial sector and finds improvement in efficiency, competitiveness and strength of various segments of the financial sector.

2.4 Studies on Financial Stability

Financial stability is the ability of the financial system to "absorb shocks without causing a collapse of the financial institutions, financial markets and payment systems" (Motelle and Biekpe, 2015; Nelson & Perli, 2007) The European Central Bank (2012) has defined financial stability as the level of resilience of the financial system to withstand stress and shocks so that it can facilitate smooth functioning of the financial intermediation process which can get severely impaired on account of systemic instability.

Financial stability as understood in terms of macro-prudential approach involves system-wide perspective of financial sector risk rather than focusing only on individual institutional level soundness. It entails the idea that the forces behind risk are the collective behaviour of financial institutions which makes financial instability an endogenous issue. The global financial crises of 2008, particularly, underlined the significance of keeping an eye on systemic financial risk so as to maintain financial stability. Along with micro prudential norms, macro prudential norms also became more important in the context. Therefore, financial stability is an equally important dimension of financial development.

Many studies relate financial stability with other dimensions of financial sector development, such as, financial access and inclusion. The literature related to financial stability is divided on how it is impacted by increased financial inclusion of the population in the formal financial sector. Adasme, Majnoni, and Uribe (2006), for instance, examined the relationship between financial access, as measured by bank loan share of small and medium firms, and financial stability measured in terms of non-performing loans (NPL), for banks in Chile. They found that non-performing small loans exhibited large losses with irregular pattern implying that simplification of the loan process and increase in loans to SMEs could help improve the NPL situation for banks.

Hannig and Jansen (2010), Prasad (2010), Khan (2011) and Han and Melecky (2013) emphasize on similar arguments. They assert that since small savers and low income group population are less affected by economic cycles, their financial inclusion would have favourable effect on the stability of bank deposits and loans. They believe that when financial institutions have exposure to small savers and small borrowers they are better able to withstand economy-wide crisis as they help in sustaining local economic activity. Small savers also add up to the size and stability of the deposit base of the banking sector reducing their need to rely on other sources of financing which become more volatile during times of crisis. This, according to the researchers, reduces pro-cyclical risks. Morgan and Pontines (2014) also find that increased proportion of loans to MSMEs is correlated to higher financial stability by reducing bad debts of the banking sector. Financial inclusion is believed to improve the transmission of monetary policy thereby leading to greater financial stability, as endorsed by Khan (2011), Mehrotra and Yetman (2015) and Le, Chuc and Hesary (2019).

Vives (2010) discusses the experience of banking sectors spanning countries like Japan, the US, Spain, and the European Union where occurrence of financial crisis is found to be correlated to the liberalization of the banking sector, making it more fragile and unstable. Regulatory failures and contagion are found to be the major reasons behind this. At the same time, financial liberalization has been found to increase competition, enhance financial development and thereby economic growth. However, the author points out that competition imposes pressure on banks to take more risks, often, by compromising on the coordination between assets and liabilities and thereby enhances the potential for instability and the probability of crisis. These possibilities need to be reigned by appropriate regulations and strong institutions.

Morgan and Pontines (2014) have addressed the question regarding substitutability versus complementarity between financial stability and financial inclusion in the case of developing economies. The inquiry arises from the backdrop of the fact the developing economies are making conscious efforts to improve financial access of low-income households and small firms which can have significant implications for financial stability. The study examines the effect of alternative measures of financial inclusion on select indicators of financial stability such as non-performing assets of banks and bank Z scores.

Some studies, however, have highlighted negative impact of financial inclusion on financial stability. Khan (2011) contends that wider financial inclusion often leads to compromise in the lending standards leading to sub-prime crises like situation. Inadequate regulation of microfinance institutions, outsourcing of functions like credit assessment of potential borrowers can also expose the system to risk. Likewise, Čihák, Mare, and Melecky (2016) find negative relation between financial inclusion and financial stability for the reason that increased usage of financial services such as loans tends to increase risk during crisis situations and lead to unanticipated losses for the financial sector as more number of borrowers would be affected.

2.5: Studies on interlinkages between the dimensions of financial development

The four dimensions of financial development have a bearing on each other. While financial access and inclusion have been matter of great focus, particularly, in the under-developed and developing countries, often it comes at the expense of efficiency. This is especially so for public sector banks which are historically oriented towards social banking. However, financial inclusion is an important imperative for financial deepening which in turn is essential for inclusive and faster economic growth (Chakraborty, 2014; Ndebbio, 2004; Ghildiyal, Pokhriyal and Mohan, 2015). Further, financial efficiency also lends to financial stability as it makes the banking sector more resilient to financial crisis.

The interconnection between financial inclusion and other dimensions of financial development is well established in the literature (De la Torre, Ize, and Schmukler, 2011; Mehrotra and Yetman, 2015; García and Jose, 2016; Neaime and Gaysset, 2018). Mehrotra and Yetman (2015) assert that as financial inclusion expands, it makes possible for the households to smoothen savings and borrowing and thus helps in reducing price fluctuations. Rather, it assists in maintaining price stability and improves the monetary transmission mechanism. They contend that a broad base of depositors and diversified lending as financial inclusion expands lends to financial stability.

Le, Chuc and Hesary (2019) have focused on the trends of Financial Inclusion and its effect on financial efficiency and financial stability. The study is on 31 Asian countries for the period of 2004 to 2016. It uses principal component analysis to construct composite indicators and Feasible Generalised Least Squares (FGLS) method to analyse the impact of financial inclusion on financial efficiency and financial stability. The result of analysis shows that financial inclusions have significant negative effect on financial efficiency and positive effect on financial stability. The financial inefficiency is explained as the result of increased costs of intermediation arising on account of low income customers and increased difficulty and cost of information. The positive relationship between financial stability and financial inclusion, on the other hand, is supported on the reasoning of wider base of deposits, diversification of bank assets and improved liquidity.

One of the technique found in the literature to consolidate the multi-dimensional nature of financial sector development is the structural equation modelling (SEM) approach. SEM is a combination of measurement, path analysis, regression analysis and factor analysis; "The structural model defines the causal relationships and associations between latent variables" (Kang and Ahn, 2021). Baistaman, et al. (2020) in their study has first used Exploratory Factor Analysis to search for instruments to measure financial literacy for a limited sample pilot study, and thereafter, having developed the instruments, they have used Confirmatory Factor Analysis method to validate the measures.

Shah and Mishra (2018) have used SEM technique to study Confirmatory Factor Analysis in order to determine important factors of financial service availability, access, and usage. Similarly, Pandey, Kiran and Sharma (2022) have also used SEM technique to examine the important factors within financial inclusion, financial literacy and financial initiatives for their impact on sustainable growth.

2.6: Studies on linkages between financial development and economic growth

Economic literature is replete with several studies that have established the positive impact of financial development on the growth of the real economy. The studies found in the area of finance-growth link include cross-country comparisons at a given point of time, cross-sectional and time series analysis of countries, single country studies and studies carried out at microeconomic level which inquire into the particular channel through which finance affects economic growth based on firm level or industry level data.

Earliest theoretical studies on finance-growth linkages can be traced as far as back as Bagehot (1873), Schumpeter (1912), and Hicks (1969) as cited in Kotaro (2000). Another early theoretical as well as empirical study particularly focused on the finance-growth linkage and considered as monumental work in the field is found in the work of Goldsmith (1969) who demonstrated that financial deepening as measured by the ratio of assets of financial institutions to GDP has a positive impact on per capita GDP. He also found that periods of faster economic growth were correlated to above-average development of the financial sector. Gupta (1984), who in an attempt to establish that financial repression was a major deterrent to economic growth examined the role of financial liberalization in India and found that it positively affected financial development and economic growth. Likewise, Demetriades and Luintel (1996) in their study of the financial sector of India, found that banking sector controls such administered interest rates and directed credit coupled with reserve requirements and such other controls had negative effect on its financial development.

A large number of studies have explored the alternative channels through which finance impacts growth. These include Diamond and Dybvig (1983), Greenwood, J and B. Jovanovic (1990), Bencivenga and Smith (1991), Levine (1991), and Saint-Paul (1992), establishing the channel of efficient allocation of capital that the financial sector affords. Leland (1968), Sandmo (1970), Kimball (1990) and Caballero (1990), Jappelli and Pagano (1994), Devereux and Smith (1994), Roubini and Sala-I-Martin (1995) are some of the studies that have emphasised the channel of savings through which finance influences economic growth.

Most of these studies posit financial development in terms of its size, relative to the size of the real economy. This fails to represent other aspects of the financial sector such as the more sophisticated functions it performs or more suitable indicators of its depth. In response to these issues, we find development in this field of inquiry. The subsequent studies have not only incorporated a larger number of countries to examine the finance-growth link, they do so with better indicators of financial development. Other improvements in the subsequent studies are that they better identify the control variables that affect long run economic growth and also look into the direction of causality between growth and financial development. These studies have also tested the impact of financial development, alternatively, by examining the effect on economic growth indirectly through increased capital accumulation and improved productivity.

Prominent among these studies are McKinnon (1991), Barro (1991) and King and Levine (1993), Atje and Jovanovic (1993), Jappelli and Pagano (1994), Obstfled (1994), Bencivenga, Smith and Starr (1995), Bencivenga, et al.(1996), Rajan and Zingales (1998), Levine and Zervos (1998), Demirguc-Kunt and Levine (1999), Rousseau and Wachtel (2000), Levine, Loayza and Beck (2000), Sinha and Macri (2001), Wacabaca (2004), Demirguc-Kunt and Levine (2008), Ahmad and Malik (2009), Estrada, Park and Ramayandi (2010), Bordo and Rousseau (2011), Rjumohan (2019), etc. They have incorporated wider aspects of the financial sector ranging from depth, access, efficiency, information quality, capital accumulation, etc., and applied it to a larger number of countries. Largely, the findings are that financial development has a positive effect of economic growth, productivity and capital accumulation.

A few studies do not subscribe to the positive link between finance and growth. These include Robinson (1952), Lucas (1988), Wachtel (2003) and Manning (2003), Demetriades and Hussein (1996), Arestis, Demetriades, and Luintel (2001), Rousseau and Wachtel (2002), Rioja and Valev (2004). These studies contend that there is considerable degree of variability in the said relation and factors like the range of the rate of inflation, the level of economic development, and the level of financial development are important qualifications that define the finance-growth link.

3. OBJECTIVES OF THE STUDY

About three decades of efforts, initiatives and reforms undertaken by the government and the Reserve Bank of India and other regulatory authorities in the country entails an inquiry into the impact it has had on the financial sector of India and thereby on the Indian economy, and the implications it has for the future. With this premise, the proposed study aims at gauging the extent of financial development that has taken place in India and how it has impacted the real economy. Drawing from the *4x2* framework of the indicators of financial development developed as part of the Global Financial Development Database prepared by the World Bank, the study aims at encompassing financial development not only in terms its size, that is depth, but also in terms of access, efficiency and stability for a 30-year period since 1990-91. Accordingly, the broad objectives of the present study are as follows:

- To measure the extent of financial development in India in terms of access
- To measure the extent of financial development in India in terms of depth
- To analyse the level of efficiency of the financial sector in India
- To analyse the stability of the financial sector in India
- To identify the interlinkages between the various dimensions of financial development
- To study the impact of financial development on economic growth of India

Hypotheses

The analyses of the present research work proceeds under the following hypotheses:

- The Indian financial sector has developed over the years in terms of increase in its access and depth.
- There is an improvement in the efficiency and stability of the financial sector in India.
- The four dimensions of financial development, viz., access, depth, efficiency and stability are inter-related with each other.
- Financial development has a positive effect on economic growth.

4. RESEARCH METHODOLOGY

The proposed study is based on secondary data on wide range of financial variables related to the banking sector and the financial market across the four dimensions of financial development *4 x 2* framework, some others have used as per availability of data in the context of India and as found in the literature. The data has been sourced from various publications of the RBI government and various financial institutions and agencies. The major period of study is the post reforms from 1990-91; however, some measures of financial development have been studied over the pre-reforms period as well, and for shorter periods depending on the availability of data. The various indicators used in the study are shown in Table 1.

Different techniques of analysis have been used as per suitability to the data. While simple statistical tools like ratios, correlation and regression have been used wherever appropriate, the study has developed the index for financial inclusion to gauge the impact of financial access.

The index is constructed by modifying the UNDP methodology used for constructing the HDI by taking simple average of normalized Euclidean distance and its normalized inverse Euclidean distance which is a superior methodology as it satisfies all the properties of an index. Three different indices of financial inclusion have been constructed. One is based on a long period of 30 years which primarily focuses on bank-centric index as data is available for the maximum period on the indicators used for the same. Another index has been prepared for a 20-year period that encompasses several indicators of banks, post offices, insurance sector, non-bank financial companies, stock market, mutual funds, etc. The third index is over a shorter period of 10-years which extends to the inclusion of technological factors over and above the ones mentioned above.

Table 1. Indicators of different dimensions of financial development

Dimension of Financial Development	Financial Institutions	Financial Market
Access Penetration Availability Usage	No. of bank deposit accounts per 1000 adults No. of credit accounts per 1000 adults No. of Post Office Savings accounts per 1000 adults No. of Bank Branches per 100,000 adult population No. of Post Offices per 100,000 adult population No. of Life Insurance Offices per 100,000 adult population Bank Deposit to GDP Bank Credit to GDP Post Office Savings to GDP Small Savings to GDP Life Insurance Premium to GDP Public Deposits of NBFC to GDP	Market Capitalization per 1000 adults No. of Listed Companies per 100,000 adult population Total Value Traded to GDP Net Resources Mobilized by Mutual Funds to GDP
Depth	M1, M2, M3 and M4 to GDP Private sector credit to GDP Financial institutions, asset to GDP Bank Deposits to GDP Bank Credit to GDP Post Office Savings to GDP Small Savings to GDP Public Deposits of NBFC to GDP Life Insurance Premium to GDP Gross value added of the financial sector to GDP	Stock market capitalization to GDP Total Value traded to GDP
Efficiency	NIM = Net interest income / Total Assets Return on equity = Net profit/average total equity Return on Assets = Net profit/average total assets Non-interest income to total income Total income to operating expense Interest expense to deposit	stock market turnover ratio = total shares traded / average market capitalization
Stability	Z – Score Capital adequacy ratio = Capital to risk weighted assets (%) Risk level = provision/total loans coverage ratio = provision/net NPA Bank nonperforming loans to gross loans (%)	Stock price volatility Stock returns volatility

To investigate into the measures that contribute most to the latent variables such as access, depth, efficiency, stability and overall financial sector development, the Structural Equation Modelling (SEM) approach has been used for Confirmatory Factor Analysis. The technique is appropriate in gauging the impact of existing and observed variables on latent variables that are unobservable. Primarily, five models of SEM have been developed, one each for the four dimensions, and one for the entire financial sector. In order to study the interlinkages between the four dimensions of financial development, correlation and regression analysis has been carried out.

To investigate into the relationship between financial development and economic growth, the present study has undertaken regression analysis of economic growth as a function of alternative measures of financial development to test for their significance, apart from the control variables. The study finds that some of the models show significantly positive impact of financial development on economic growth of India.

5. CHAPTER SCHEME OF THE STUDY

The thesis has been organized into six chapters as shown below:

Chapter 1: Introduction

Chapter 2: Review of Literature

Chapter 3: Objectives and Research Methodology

Chapter 4: Analysis of Financial Development in India

Chapter 5: Interlinkages of the Dimensions of Financial Development and their Impact on Economic Growth

Chapter 6: Conclusion and Recommendations

6. CHAPTER-WISE DESCRIPTION

Chapter 1: Introduction

The introductory chapter of the thesis highlights the significance of the financial sector in terms of its functions which form an important base for examining the varied dimensions of the development of the sector in the macro-economic perspective. The chapter also outlines the reforms undertaken in the banking and financial sector which again have implications for their development.

Chapter 2: Review of Literature

The second chapter details the extensive review of literature in the area of financial development. The chapter is organized into sections on thematic basis. The first theme relates to financial access, the second being financial depth. The third section covers studies related to financial efficiency. Section four relates to the theme of financial stability. Section five of the review of literature covers studies on the interlinkages between the various dimensions of financial development. The final section covers a vast range of studies related to the relationship between financial development and economic growth.

Chapter 3: Objectives and Research Methodology

Chapter three lays down the objectives and hypotheses of the study in the light of the extensive review of literature and the research gap therein. It outlines the research methodology used in the analysis.

Chapter 4: Analysis of Financial Development in India

Chapter four covers the analytical work of the thesis wherein related objectives have been addressed with appropriate variables and statistical tools. It provides detailed analysis of the four dimensions of financial development, namely, financial access, financial depth, financial efficiency and financial stability. Each of these dimensions are examined in multiple and alternative ways to gauge its development. With regard to financial access, the study has analysed three dimensions, namely, penetration of financial services, availability of financial services and usage of financial services. Using multiple indicators of each of the three dimensions, across financial institutions and markets, the findings suggest that there is an improvement in financial inclusion on account of improvement in most indicators over the study period.

Section 4.1 Financial Access

The core of financial sector development starts with financial access which forms the first and basic foundation of financial sector development pyramid. The full potential of the financial sector on the real economy cannot be realized unless full access to finance is made possible for all sections of the society. Financial access is necessary for inclusive growth of any economy. Financial Inclusion is important to unleash the stimulant effect of financial development on economic growth. Financial Inclusion is defined “as the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable group such as weaker and low income groups at an affordable cost” (Rangarajan Committee 2008). According, “Financial inclusion refers to universal access to a wide range of financial services at a reasonable cost. These include not only banking products but also other financial services such as insurance and equity products” (The Planning Commission, 2009).

The analysis of financial access starts with examining the trends and growth rates of the alternative measures used to represent the same. It is found that the number of bank deposit accounts has increased from 537 accounts per 1000 adults to 2802, registering more than five times increase over the 31-year period, from 1990 to 2020, that is, a CAGR of 5.66 percent.

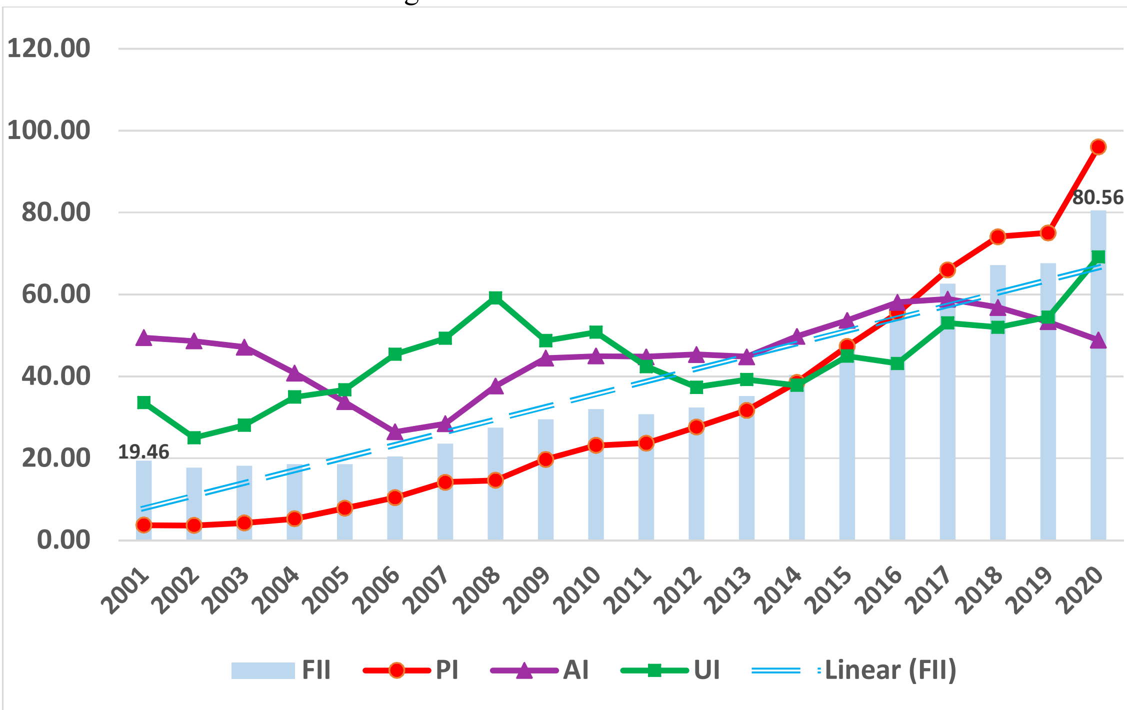
Likewise, the number of bank credit accounts per 1000 adults has improved from 86 to 369 over the same period, clocking a CAGR of five percent. A similar trend is found in the case of post office savings accounts too. With reference to number of bank branches, it is found that there is 2.5 times increase from 60515 branches to 149948 between 1990 to 2020, however, there is vast discrepancy between rural and urban branches. The number of ATMs has increased 12 times from 17642 ATMs in 2005 to 210760 ATMs in 2020.

Access to financial services beyond the banking sector has also shown remarkable growth. The number of insurance offices increased at the CAGR of 8.87 percent with the entry of private firms, over the period 2001 to 2020. Post offices increased in numbers from 147236 in the year 1990 to 156721 in 2020. The market capitalization was Rs.612224 crores in the year 2001, and it has grown to Rs.20430815 crores, recording CAGR upward of 20 percent. Insurance premium per 1000 adult population over the same period has grown at the CAGR of 13.54 percent which is remarkable.

In order to gauge the impact of improvement in financial access, the present study has constructed the index of financial inclusion covering different periods as per availability of data. While a 20-year period Financial Inclusion Index (FII) has been constructed using variables ranging from various financial institutions such as banks, post offices, insurance sector to financial market variables such as those representing the stock market, mutual funds, NBFCs, etc. Using the simple average of normalized Euclidean distance and its normalized inverse Euclidean distance, the FII has been constructed as a composite index of the dimensional index of penetration, availability and usage. There is a four times improvement in FII over the study period, in which the contribution of the dimensional index of penetration is the highest (Fig.1)

Apart from the FII presented above, the study includes more indices constructed on the premise of longer time period bank-centric measures and shorter period indices which include wider range of measures related to financial institutions, markets as well as those that capture information technology based indicators in the construct of the concept of financial inclusion. The study further elaborates on the issues in financial inclusion typically faced by developing countries, which range from geographical, social and economic exclusion to high cost of intermediation. The challenges faced in improving financial inclusion arise in the form of illiteracy, poor levels of incomes and non-monetized and unorganized sectors in the economy.

Fig.1 Financial Inclusion Index



Source: Calculated values by the researcher

Section 4.2 Financial Depth

Financial depth is amongst the oldest and most common measure used across countries to measure the relative size of the financial sector vis-à-vis the real sector. It is of particular significance for underdeveloped and developing countries. The sector deepening is measured using alternative variables such as, money supply (M1, M2, M3, M4) to GDP, bank credit to GDP, bank deposit to GDP, bank credit to commercial sector to GDP and for financial market measured used are market capitalization to GDP, total value traded to GDP.

With reference to India, the ratio of narrow money to GDP increased from merely 3.49 in the year 1990-91 to 20.87 in the year 2020, increasing at the CAGR of more than six percent. Compared to this, broad money has grown drastically from 10.57 times to GDP in the 1990-91 to as high as 115.73 in 2020 at a CAGR of 8.6 percent. Likewise bank deposits to GDP has increased from a low of 7.65 to 93.46, growing twelve times over the 30-year period from 1990 to 2020. Bank credit to GDP has increased even more by upwards of 15 times and at a CAGR of nearly 10 percent. Total assets of the banking sector have also grown remarkably from 11.40 times the GDP to 124.10 between the years 1990-91 to 2019-2020 which is a ten-fold increase. Out of the total credit by the banking sector, a higher proportion is now going to the private (commercial) sector, which means that there is greater access to funds compared to the pre-emption of resources by the government up to the 1980s.

It is also insightful to compare the changing structure of financial depth in terms of bank-based financial sector vis-à-vis market based financial sector. This is measured by the change over time in the ratio of bank assets to market capitalization. It may be noted that between the years 1992-93 to 2019-20, the value of bank assets has reduced from 2.37 times to 1.58 times that of market capitalization. This is substantiated by the fact that market capitalization ratio by has increased at the CAGR of nearly 12 percent from 1992-93 till 2021 while bank assets as ratio to GDP grew at the CAGR of 8.84 percent. It shows that the financial sector of India is moving away from the traditional banking sector towards the capital market. It is a sign of a more mature and sophisticated financial sector. It indicates a relative fall in the intermediation of banks and direct access of firms to the capital market. However, it may be noted that based on the parameter of depth of activity in financial market, total value traded to GDP has increased at a slower CAGR of 2.93 percent over the 22 years from 1997-98 to 2019-20.

Section 4.3 Financial Efficiency

While financial access and inclusion have been the focus of the government through multi-pronged efforts with the resultant impact on financial depth, it often raises the question of the cost in terms of efficiency of the financial sector. The primacy of the objective of full complete inclusiveness often overshadows the imperatives of cost efficiency and profitability of financial institutions. This is particularly so for banking institutions, more so in the context of India, where social banking has been stressed upon since the nationalization of banks. Also, efficiency of the banking sector implies that it effectively performs its basic function of mobilization of resources as well as allocation of resources thereby positively impacting economic growth. With this premise, and based on the global financial development framework of the World Bank, the present study has undertaken an examination of the efficiency of the financial institutions and markets using the indicators included the framework.

To measure the efficiency of banks some of the ratios used in the present study are, net interest margin (NIM), profitability ratios, non-interest income to total income, total income to operating expenses and interest expense to deposit ratios. The variable used for measurement of efficiency in financial markets is turnover to market capitalization ratio.

In a perfect world there is expected to be no difference between lending and deposit rates. By this reasoning, greater the friction in the financial system, greater will be the interest rate spread. It is in this premise that more competitive market structures are expected to get reflected in lower interest spreads as banks attempt to efficiently perform their intermediation function. High intermediation costs are also a reflection of market failures or absence of markets compelling banks to charge higher interest rates on lending than they pay on deposits. Thus, a fall in the net interest margin, measured as net interest income to total assets of banks, over the long run is a sign of increased efficiency as it shows fall in the cost of intermediation. With a more efficient system, information of credit risks become easily and accurately available, allowing banks to reduce the interest rate spread (interest charged less interest paid). For the Indian economy, the banking sector in the overall sense shows a 28 percent fall in NIM over the 29-year period from 1992 to 2020, which certainly indicates increased competition among the banks and a fall in the cost of intermediation. In fact, from 1991-92 to the early 2001-02 which marks the peak period for the Indian economy and also the banking sector, NIM shows a decline of more than 38 percent in the period of ten years. In terms of compound annual rate of decline, it amounts to -4.74 percent.

It will not be incorrect to state that the NIM for the Indian banking sector declined consistently up to the global financial crisis in 2008, registering a rate of fall of 2.74 percent on a compound annual basis. The NIM has increased mildly thereafter to 2.8 percent in the year 2019-20. However, over the long year period, it shows a declining trend. In the recent years, 2021 and 2022, the NIM for the SCBs has increased to 3.5 percent. While a much closer look is required into the behaviour of NIM, such as in terms of bank-group wise performance, given the important implications of the competitive structure and ownership structure of the banking sector for NIM, to get a clearer picture. It must be noted that in the context of the present study, it is required to check the overall NIM for the entire banking sector. Fig. 2 depicts the long run downward movement in NIM.

Other measures of financial efficiency are return on assets (ROA) and return of equity (ROE). ROE measures how efficiently shareholder capital is employed to generate profit and is more important to measure performance of banks as its capital base tends to be different from non-financial companies. The ROE for the Indian Banking sector has been reasonable at 16.2 percent in 1997-98 and thereafter increased to 20 percent in 2003-04. It was the best period for Indian Banking Sector as the full impact of economic reforms was experienced for practically, all sectors of the economy. The ROE has declined for the subsequent five years. From the high of 16.2 percent in 1997-98 it turned negative over the years 2017-18 and 2018-19, only to rise in the recent years. For the overall period, there is a sharp negative trend in the ROE.

Fig.2 Net Interest Margin

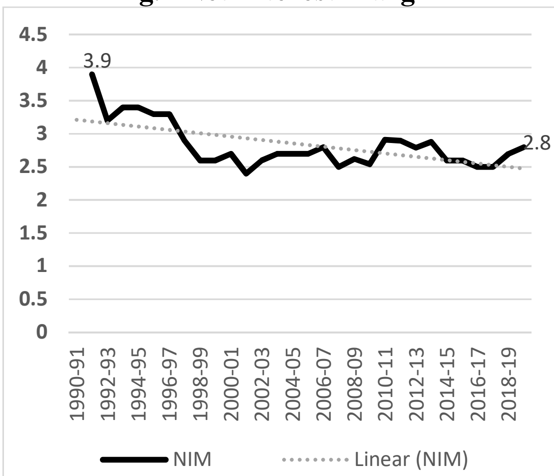
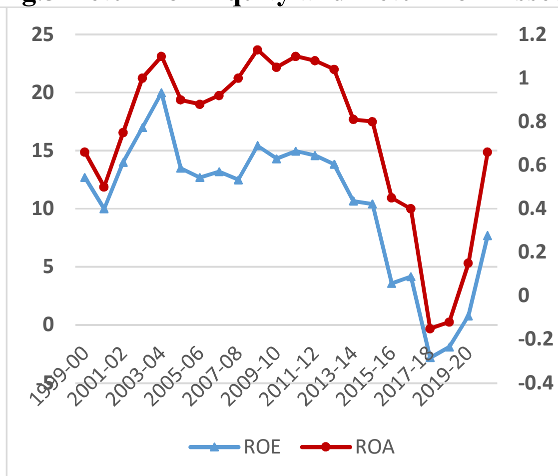


Fig.3 Return on Equity and Return on Assets



Source: RBI Publications

The ROA has a mildly upward trend up to 2008-09, rising 66 percent over the nine years. Post the global financial crisis, there is a decline in the ROA by almost 42 percent. It may be noted that banking business being a highly leveraged activity, as they use public money to generate income, a low ROA also indicates high profitability unlike other industries. It may be observed (Fig.3) that there is high degree of correlation of 0.949 between the two measures. The ROA is shown on the secondary axis.

The present study also examines efficiency of the financial sector with reference to banks in terms of ratio of non-interest income to total income and ratio of total income to operating expenses. Increase in the former would indicate that banks are able to yield greater economies of scope by using the existing capacity to generate income in the form of commissions, exchange and brokerage fees, profit from the sale of government securities and other investments, profit of exchange transactions and so on. Over the years, the proportion of other incomes for the banks in India has been growing; it was particularly high during the peak period of Indian economy in early 2000s.

The ratio of total income to operating expenses highlights how effectively, the expenses incurred on operations result into income generation. Operating expenses include, beyond interest expenses on deposits and borrowings, the expenses on employees, rent, taxes, printing and stationary, promotion, insurance, legal expenses, etc., (Rakhe, P.B., 2011). Increase in the ratio of total income to operating expenses implies more efficient use of the resources. It is found that for the Indian banking sector, the ratio shows a long run upward linear trend which implies improved efficiency.

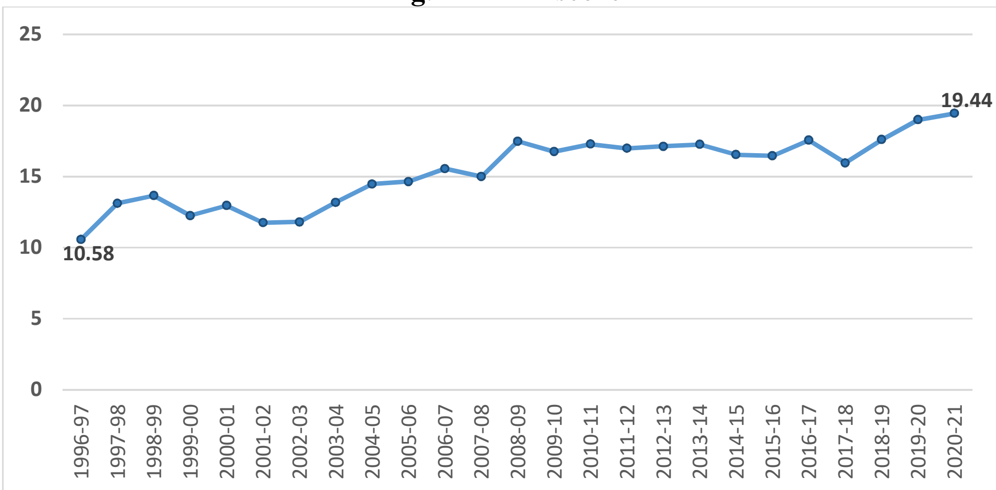
Section 4.4 Financial Stability

Financial access has been a prominent policy goal of the governments, particularly, in developing countries with concerted efforts to include the unbanked population in to the formal financial sector. It is also a dimension which is more easily manifested at the macro level in terms of financial inclusion indices and financial depth. However, often such efforts fail to address the issues and challenges of stability of the financial sector.

Financial development, particularly, in terms of quick pace of financial deepening is beneficial only when it is accompanied by stability and increment in efficiency of the financial system. The criteria for measuring financial stability of the financial institutions include the capital adequacy ratio, provision coverage ratio, bank z-score, etc. The capital adequacy ratio for banks in India has improved from 11.4 percent in 2000-01 to 14.7 percent in the year 2019-20 and it has shown a consistent and gradual increase. The ratio of provision to total loans is a measure of risk which indicates the banks' capacity to bear loss on its loan assets. The data for the period 1996-97 to 2019-20 shows a falling trend in the risk level in the gross sense. Likewise, provision coverage ratio which is a ratio of provisioning to gross non-performing assets, is found to lie between 50 to 70 percent over the 24-year period. The RBI has set the benchmark of 70 percent for the banks to maintain as provision. It may be said that Indian banks are placed reasonably well although the long average provisioning comes to around 55 percent which requires adherence and action.

The bank z-score is calculated as the summation of the ratio of return on assets and the ratio of equity capital to total assets divided by the standard deviation of the return on assets. It is a measures that helps to gauge the resilience of the banking sector in terms of the cushion of its equity capital, reserves and surplus as well as returns to withstand the volatility in its returns. Fig.4 depicts the bank z-score over a long period of 25 years. It certainly shows improvement the stability of the banking sector.

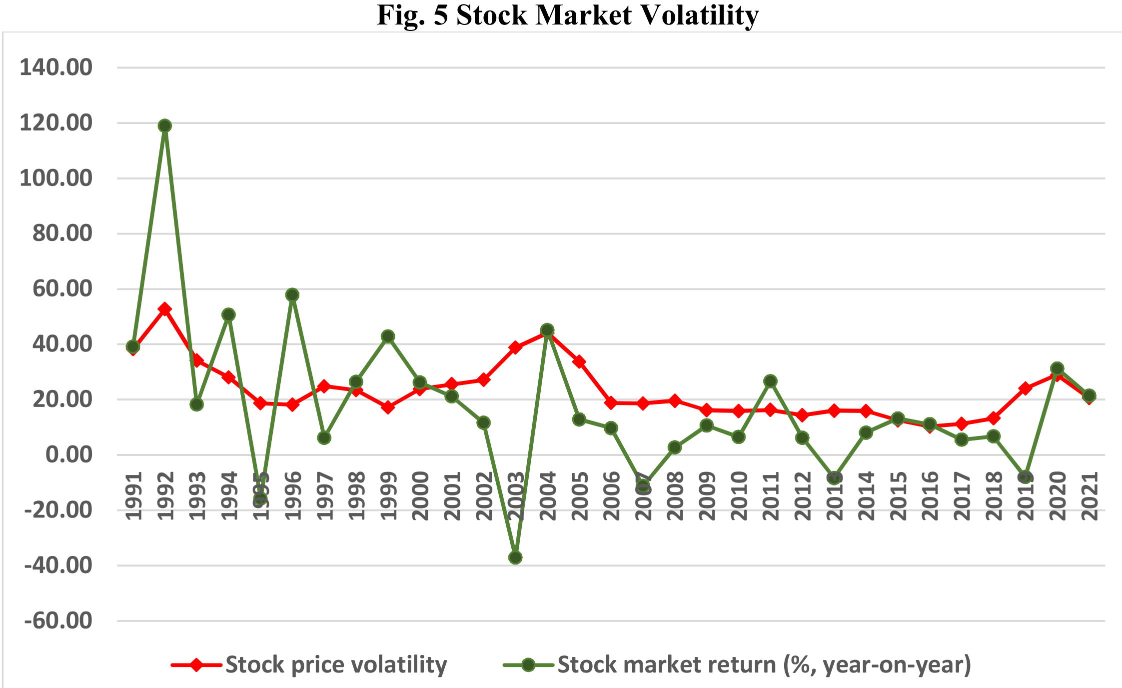
Fig.4 Bank z-score



Source: Author's calculation based on the formula

With regard to stability of the financial market, the variable used is volatility of the stock market which is measured as the fluctuations in the stock prices. Stock price volatility is the average of the 360-day volatility of the national stock market index. Also, the stock market return is also a measure of ups and downs in the stock market. Both the parameters show mildly falling trend indicating a slight decline in stock market volatility over the years (Fig.5).

Fig. 5 Stock Market Volatility



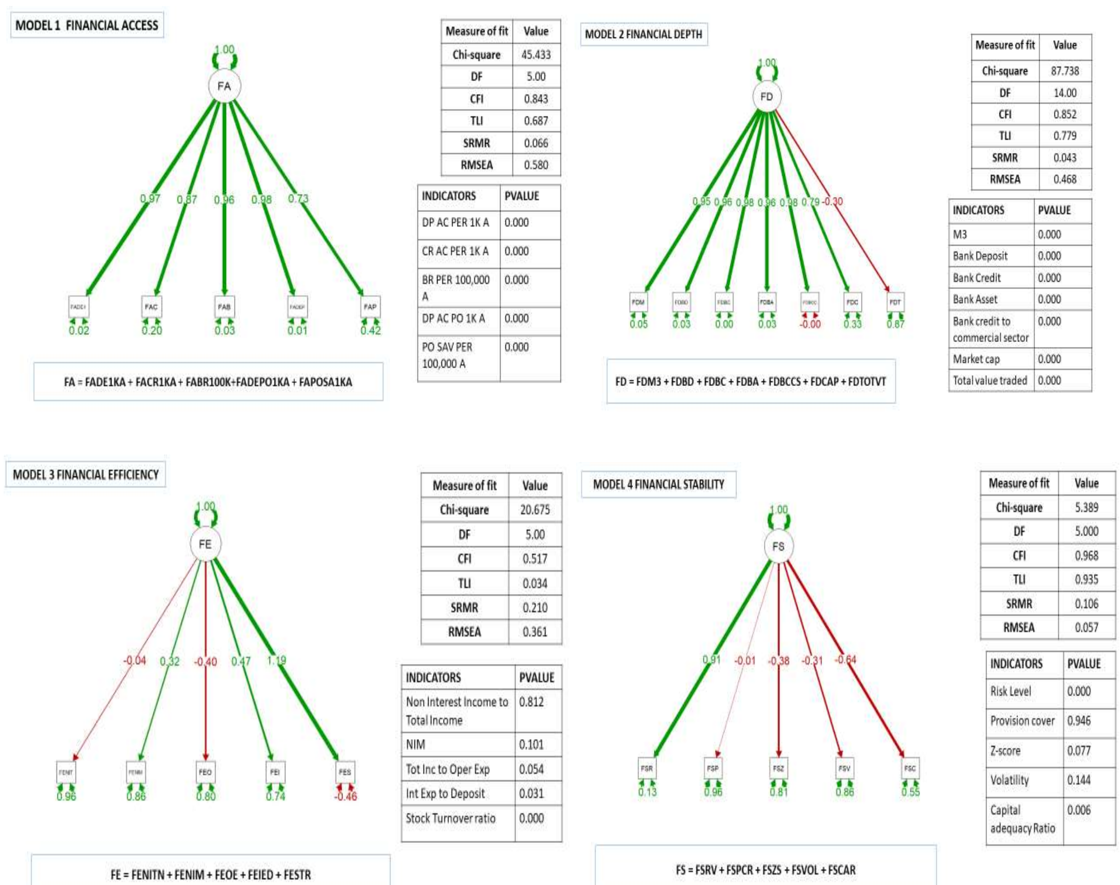
Source: Global Financial Development Database, World Bank

Chapter 5: Interlinkages of the Dimensions of Financial Development and their Impact on Economic Growth with reference to India

Chapter five consolidates the four dimensions by examining their interlinkages. It examines correlations between the dimensions and establishes important associations. A large number of studies are found on individual dimensions of financial sector development. No study is found that examines all these fours dimensions together. The present study has attempted to bring all the dimensions of financial development together and investigate into which dimensions contribute more to financial sector development.

For this purpose, the present has used the structural equation modelling approach. The results of the preliminary analysis are as follows (Fig.6). The thickness of the lines indicates the size of the coefficients. Bigger the value, greater is the thickness of the lines. The study also seeks to examine modified structural equation models with better goodness of fit.

Fig.6 Structural Equation Model: Confirmatory Factor Analysis



The findings of the above model are as follows:

- The coefficients of model of Financial Access carry the correct sign and are highly significant. The goodness of fit of this model is not as high but in the application of the SEM technique, the primary objective is to get coefficients with the correct sign and with high values and not to get the best fit; high goodness of fit is not a necessary and sufficient condition (Kang and Ahn, 2021). Lower values of the goodness of fit may be due to smaller number of observations.
- All indicators of the model of Financial Depth are statistically significant at one percent level except for total value traded. Bank credit to commercial sector is found to impact financial depth negatively. Some of the goodness of fit measures show that the model is a good fit.
- As far as the model of Financial Efficiency is concerned, NIM is found to be significant at ten percent level of significance, while total income to operating expenses and interest expense to deposits are significant at five percent. However, the model is not found to fit well.
- The model of Financial Stability has a high goodness of fit. Risk level, Z score and capital adequacy ratio are found to be significant indicators.

The inquiry into the finance-growth link in the case of India is particularly of great significance given the fact that there have been substantial reforms in the financial sectors in India since the early 1990s. The impact of these changes have been captured in the various dimensions of financial development, namely, access, depth, efficiency and stability. It is therefore pertinent to undertake an examination of how this development could have impacted growth of the Indian economy. The last section of the analytical work deals with the relationship between financial development and economic growth. For this purpose, the study has undertaken an econometric analysis hypothesizing different models of the relationship with alternative measures of financial development as a preliminary attempt. The variables have been checked for their validity and reliability. Preliminarily, it is found that broad money to GDP, bank assets to GDP, bank credit to commercial sector as a ratio to GDP exert positive and significant impact on GDP, per capital GDP, and Net National Income per capita as alternative variables of economic growth.

Chapter 6: Conclusion and Recommendations

Chapter six summarizes the major findings and lays down policy suggestions. The in-depth analysis of financial sector of India reveals that there is substantial development of the financial sector over the last 30 years, in particular. The depth and width of the sector has increased to a great extent not only in relation to banking sector dimensions but also with reference to the insurance sector, stock market, NBFCs and mutual funds.

Improvement is found the most on the supply side of the financial sector which represents the physical infrastructure in terms of good number of banks, branches and offices providing varied financial services. Both, demographic as well as geographic penetration has happened reasonably well. However, the improved access and availability has not resulted into similar growth of the demand side in terms of usage. Many basic savings bank deposits accounts have been opened, particularly, after the Jan Dhan Yojana, however, it has not instilled banking habits among the people to the same extent. Although, a complementary role is being played by information technology which is increasingly facilitating online and mobile banking among the marginalized population also, bringing them into mainstream economy.

Several measures of financial efficiency like the NIM, other incomes to total income ratio, and total income to operating expenses are also found to be trending in the correct direction, although much more effort is needed to improve the profitability of the financial institutions, particularly, the public sector banks. While the stability measures also are positive, there is need for greater consistency in them for greater reliability.

The government, the regulatory authorities and the institutions need to strengthen governance for better outcome of the efforts already put in by them. More targeted efforts aimed at the underbanked population and the micro, small and medium enterprises in terms of ease of operations is also an area to be focused upon. Increasingly digitalized form of operations particularly in the financial markets create issues of inclusiveness for the digitally challenged. Increase in the number of financial service providers and last mile efforts are required along with trust and ease to encourage more people towards usage of sophisticated services and products offered by the financial markets. Financial literacy and education plays a very important role in this regard. It may be noted that demographically India is well placed to adapt increasingly to technology enabled financial sector and reap the economic benefits thereof.

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