RESEARCH ARTICLE

Banking sector development and Economic growth in South Asian Countries: Dynamic Panel Data Analysis

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Abstract
This study explores the contribution of banking sector development to economic growth for a sample of four south Asian countries namely, Sri Lanka, Bangladesh, Pakistan and India. The study employed Fixed Effect (FE), Difference GMM and System GMM models to the data set for the period of 1980 -2017. The findings of the study indicates that bank based financial development index constructed of private sector credit, board money(M2) and domestic credit provided by banks affect economic growth significantly and positively almost in all models. The result approves that bank based financial development contribute to economic growth and augment growth level in the sample countries. The findings conclude that bank based financial development is important in boosting economic growth and suggests sampled countries of this study government's channels and regulatory authority on further improvement on banking system in order to achieve higher economic growth.

Keywords: Banking sector development, economic growth; Difference GMM, System GMM, South Asian-4 countries

Introduction

Financial development of a country plays very essential protagonist in a country economic growth. Financial intermediaries are important in investments monitoring and succor in increasing productivity level. (Schumpeter, 1911) have esteemed the role performed by financial intermediaries in economic development because these intermediaries choose firms where they use society's savings and perform their role in augmenting growth through the issuance of high quality of services related to financing. On the other side, (Lucas Jr, 1988) states the importance of financial development and its association with economic growth is overstrained. In the developmental economics review of (Demirgüç-Kunt & Levine, 2004), (Berman, Neumann, & Stern, 1989) haven't even discussed in the financial system omitted topics list. Levine (2004), and also another researcher (Grossman & Miller, 1988) have designated that financial market development and its impact on economic growth is a protruding intent to be studied. Similarly, (Gurley & Shaw, 1955), (Goldsmith, 1969), (Bagehot, 1873), (Fishkin, Keniston, & McKinnon, 1973) and Schumpeter (1911) have stated that finance growth nexus shouldn't be overemphasized without the substantially adopted economic growth (Cited by Levine, 2004). Some researcher's states assertion that finance influence economic growth only in developed countries and it's not true for low- income economies. Moreover, some other economists contend that financial development is only beneficial in the early stage of a country (McKinnon, 1973). Nevertheless (Stiglitz, 1985) claims that bank-based financial structure is better than market-based financial system and its contribute more to economic growth, while (A. J. Levine, 1997); (Boyd & Smith, 1998) have opposing arguments to this. The views of different economists about economic growth shows that the increase in per capita GDP and aggregate income lead to economic growth, while some of the economists and pioneer even haven't mentioned finance in the developmental economics essays ((Meier & Seers, 1984). As mentioned above that some researches claims that financial development is significant in the early stage of development, therefor the low income economies will gain with high income countries in rapport to economic growth (Fung, 2009). However, some researches show that financial development is beneficial in the later stages of development. In this way the developing countries in which the financial structure is not developed will gain with high and middle income economies in rapport to growth (Evrensel, 2002). There do already exist several studies on finance growth nexus in south Asian-4 countries but in general or have used only single proxy or mixed variables with traditional methods. To the best of my knowledge and based on previous literature, this study is ever the first one measuring separately the specific role of bank based financial development on economic growth in Pakistan, Bangladesh, India and Sri Lanka by using latest panel data for the period of 1980-2017 and models such fixed effect model, dynamic panel estimators (Differences GMM and System GMM).This investigation is useful for the government's channels of these countries regulatory and supervisory determinations towards strengthening financial system to achieve better economic growth.

The rest of the study is organized as follows; section 2 describes the previous literature, section 3 is composed of methodology, section 4 illustrates the results while the last section is composed of conclusion.

Review of literature

Several studies on the relationship between financial development and economic growth have been conducted indicates the positive association of finance and growth (A. J. Levine, 1997). To know that whether if there is development in the banking sector have an influence on economic growth and yet this debate is going for a long time and not been determined. If financial mediators including banks and other institutions of financing are driving a country's economy is referred to bank based financial system and the development of that system is called the bank based financial development (THL Beck, Demirgüç-Kunt, & Levine, 2001). This system composes of widening and deepening of bank financing. The endogenous growth favors the crucial role played by financial development in economic growth (Bencivenga & Smith, 1991). Endogenous literature indicates that a well-structured financial system mobilize savings in a proper way and efficiently allocate resources which in turn accelerate the flow of liquidity and reduce transaction costs (Bencivenga and Smith, 1991). There is arguing debate and some economists claims that banking development is better and contribute more to growth rate because banks provide investors information and help eases risk for them. These economists further argues that bank banks manage the risk associated with liquidity and provide safety to investors and in that's why banks are better than stock markets. all these reasons allocate capital efficiently and its in turn accelerate growth rate (Bencivenga and Smith, 1991). In the repayment timing the banks are performing better role than stock markets, as (Kumar, Rajan, & Zingales, 1999) argues that banks can direct firms gives information's regarding firms operations. During new firm's establishment, the firms get banks financing and provide information's. According to (Kumar et al., 1999), the banks can force the firms to pay back their debts while the stock markets can't force it for the same case when there is absence of sufficient legal system in a country. For this purpose, it is concluded that a bank base system is superior to market base system because its help ease investment activities and in turn boost economic growth better than stock markets. There's tranquil ongoing debate claims that bank based financial system is performing better than stock market development in accelerating growth rate. Specifically, it is believed that the banking sector contributes more to economic growth because it induces long term investment in the real sector. On the other hand there maybe sensitivity to stock market prices in the market-based system where involved the number of short term investments (Hoshi, Kashyap, & Scharfstein, 1990). The bank-based financial system enhances the level of productive investment because its less exaggerated by unsteady financial markets. Bank based system allow firms to remain with investment deprived of foremost them into insolvency so there for is good for economic growth (Demirguc-Kunt & Levine, 2001). By using private sector credit and domestic credit proxy of financial development (Adu, Marbuah, & Mensah, 2013) have found positive relationship of the two in Ghana while negative relationship when financial development proxies by broad money. Similarly, (Kargbo11 & Adamu, 2009) have also found positive association of financial development and economic growth in Sierra Leone by employing ARDL approach. Moreover, (Guryay, Safakli, & Tuzel, 2007) have examined finance and growth in Northern Cyprus. They have applied OLS approach and have found positive negligible relationship between financial development and economic growth. To further investigate this dilemma whether bank-based development contribute to growth process also in developing south Asian-4 countries, the current study use banking development indicators to estimate the banking development role in sample countries.

Methodology of the study

Data

This study explores the effect of banking sector development (BFD) on economic growth in south Asian-4 countries, Sri Lanka, Bangladesh, India and Pakistan. The current study uses a panel data set for the time period of 1980 to 2017 downloaded from the (WDI) World Development Indicators, published by (WB) World Bank. The proxy variables for banking sector financial development used are private credit, broad money (M2) to GDP Per capita and financial credit by banks (FEB) while economic growth is proxy by real GDP per capita. Other control variables were added, namely: inflation, real interest rate, saving and trade openness. All variables were downloaded from the same source. The data descriptive statistics is presented in table 1 below.

Table 1. Descriptive statistics

Variables	Mean	Std.dev	Min	Max
GDPPC	6.846	0.579	5.861	8.255
FDB	31.551	12.769	7.284	60.984
TO	48.346	25.470	12.219	113.597
Inflation	8.121	4.440	0.155	24.891
RIR	5.580	3.975	-10.24	14.821
Saving	26.175	6.676	8.332	53.046

Estimation method and empirical Model of the study

This study employs dynamic panel to study the role of bank based financial development in economic growth in south Asian-4 countries. Following model illustrate the linkage of bank based financial development with economic growth.

$$GDPPC_{it} = \alpha_0 + a_1 BFD_{it} + a_2 TO_{it} + a_3 INF_{it} + a_4 RIR_{itt} + +a_5 SAV_{it} + \delta i + \epsilon_{it}$$

Where, GDPPC is gross domestic product per capita used as a proxy for economic growth, BFD is bank based financial development index constructed of three Bank-based variables namely, financial credit provided by banking sector (FEB), the ratio of broad money (M2) GDP Per capita and Private sector credit (FdPvt) used to proxy bank based financial development. Other control variables used are; trade openness (TO), Inflation (INF), real interest rate and saving (SV), $\boldsymbol{\delta}$ is unobserved country specific effect, while εt is the error term. The dependent variable in the model is lagged gdppc and there are time invariant country specific fixed effects. Country fixed effects omission in the panel data will lead to inconsistent estimators in levels and will be biased (Hsiao,1986). The explanatory variables here can be endogenous, thus it need to be controlled for endogeneity issue of the explanatory variables. (Chen, 2006) and (R. Levine & Zervos, 1998) used the initial values of the explanatory variables to avoid the simultaneity problem such result loss in information and potential consistency loss interpreting the estimation inefficient (Thorsten Beck & Levine, 2004). For efficient consistent model construction, the initial values be replaced with instruments. For the said purpose the developed model of Arellano and Bond (1991) first-differenced GMM estimation method is used. Thus, following the methodology of (Arellano & Bond, 1991) the given model below has been specified for the current study. In equation (2), first-differencing eliminates the intercept as well as the country-specific effects.

$$Y_{it} = Y_{i,t-1} = \beta(Y_{it-1)} - Y_{i,t-2}) + \Upsilon(X_{i,t} - X_{i,t-1}) + (\epsilon_{it} - \epsilon_{i,t-1})$$

Results and findings

In the table 2 given below, the role of bank based financial development in economic growth is investigated via dynamic panel data techniques. The results of the FE, difference GMM and system GMM dynamic panel estimations with regard to Bank-Based financial development FDB for four South Asians countries (Pakistan, India, Bangladesh and Sari Lanka) are given in Table below. The Bank-based financial development index (FDB) exerts positive and significant impact on economic growth which states that bank based financial development index are fit to explain financial development and its positive and significant contribution to economic growth.

In the table 2, the estimated coefficient of FE and system GMM of FDB is statistically positive and significant on economic growth. This result indicates that if there is 1% increase in financial development cause to increases the economic growth in sampled south Asian's countries. the same result were found by (Abubakar, Kassim, & Yusoff, 2015) for Economic Community of West African States .moreover (Ibrahim, 2013) have also found positive significant impact of banking sector development on economic growth in Saudi Arabia. We note that the coefficient of the bank based financial development distributed by the banks and other financial institutions to the private sector is significantly positive. This observation may be directly linked to the predominant public sector in South Asians countries in the allocation of credits. Consequently, to improve the process of credit allocation, South Asians four countries need to accelerate the privatization of national banks or the reinforcement of the regermination of credit and the promotion of competition in the banking sector.

The implication of the results is that there is ardent need to develop the financial sector in order to stimulate economic growth in the economies of four countries. Development of microfinance institutions as a complement to the conventional commercial banks will play a great role mobilizing savings and providing ease access to fund, thus engendering growth process in the Asians countries.

Similarly, the estimated coefficient of GMM and system GMM of trade openness of sampled south Asian's countries has a negative and insignificant impact on economic growth while the results of FE is negative but significant results. This proves that the trade of sampled four countries has been reduced at low level due to weak financial system and governance, corruption and low number of attractions of FDI inflow as a results lower economic growth. Therefor its suggest that these four countries should focus to stabilize their financial system and others factors such as good governance, corruption and political stability in order to promote trade opens which in turn stimulate economic growth. Moreover, we also suggest that these four countries should focus on industrial productions in presence of good governance which can help increase export as a results economic growth magnificent. Likewise, the estimated coefficient of inflations and real exchange rate are statistically significant and the relationship is negative in FE and system GMM model, while the result of system GMM is statistically insignificant. This result implies that 1% increase in the inflations and exchange rate cause to decrease economic growth in south Asians four countries (Pakistan, India, Bangladesh and Sri Lanka). Indeed, the fluctuation in interest rate between the interbank of four countries are increasing due to political instability and weak governance resulting increase in inflation which effects economic growth of the four countries. Conversely, inflation has become an important factor in explaining economic growth. Ireland (1994) and Deyshappriya (2016) also obtained the insignificant results, and stressed that the impact of inflation on economic growth is considerably low, and may die out entirely in the long run.

Table 2: The effects of Bank-Based financial development on economic growth

Variables	(FE)	(DGMM)	(SGMM)
FDB	0.0220***	0.000518*	0.000390*
	(0.00274)	(0.000388)	(0.000201)
Trade Openness	-0.00354*	-0.000270	-0.0001
	(0.00188)	(0.000211)	(0.000158)
Inflation	-0.0208***	-0.00178**	-0.000681
	(0.00664)	(0.000764)	(0.000724)
Real Interest Rate	-0.0207***	-0.00195**	-0.000517
	(0.00735)	(0.000862)	(0.000790)
Saving	0.0126***	0.00114**	0.000814**
	(0.00400)	(0.000498)	(0.000356)
$Loggdppc_{it-1}$		0.993***	1.008***
		(0.0115)	(0.00453)
Constant	6.055***		-0.0416
	(0.130)		(0.0331)
Observations	106	100	104
R-squared	0.874		
Number of id	4	4	4
AR1		-3.12(0.002)	-2.99(0.003)
AR2		0.04(0.970)	0.05(0.958)
Sargan Test		135.10(0.084)	145.75(0.091)

Notes: LOGGDPPC is log GDP per capita, FDB is a proxy of bank based financial development. FE is fixed effect, DGMM is difference Generalized Method of Moments, SGMM is System Generalized Method of Moments. *, ** and *** indicates significance level at 10,5 and 1% respectively.

The results of all models (FE, GMM and system GMM) is significant and the relationship is positive which indicates if there is 1% increase in saving cause to increases the economic growth of sampled four Asians development countries.

We find that saving is one of the most important indicators of economics growth which boost economic growth. In addition, this also proves that the increased mobilization of savings and the best allocation of resources in the economy permit an extension of production possibilities and the adoption of more efficient techniques, which reinforce specialization, technological innovation and economic growth. The overall result shows that bank-based financial development is positive and statistically significant impact on economic growth in the sample countries. Moreover, an increase in the bank-based financial development levels leads to an increase in the economic growth of South Asian sampled countries of this study. These results are similar to those found by other researchers on the same subject (see, among others, Andersen and Tarp, 2003).

Conclusion

The current study investigates the impact of Bank based financial development on economic growth in four countries namely India, Pakistan, Sari Lanka and Bangladesh). The study employee Fixed Effect (FE), Difference GMM and Sys-GMM models to a panel data set for the period of 1980 -2017. After Controlling for endogeneity issue and specific country's effects, the data are reliable with theories that accentuate a consequential positive role in the process of economic growth for banks based financial development. The paper assessed only bank based financial development index and finds its effect on economic growth. We have applied different estimation techniques and procedure along with different control variables which gives the positive significant impact of banking sector development on economic growth. For instance, the two-step estimator of system GMM results prove that the bank based financial development index constructed of three variables are significant and positive mostly in all models, which betokens that bank based financial development play consequential role in boosting economic growth in samples countries of South Asia. The results of this paper have paramount policy implicative insinuation that a well performed financial system and policy is paramount for enhancing the development of financial market are paramount for growth rate in developing countries concretely the sampled south Asian-4 countries of this study.

The study suggests the policymakers of sampled countries to further improve banking system in terms of regulation and supervision which may further upsurge the vigorous link of financial development on economic growth in the sample countries of this study.

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Conflict of Interests

The authors declared no conflicts of interest with regard to publication of this article.

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