INVESTIGATING THE ROLE OF STOCK MARKET AND BANKS FOR OUTPUT GROWTH: A TIME SERIES EVIDENCE FROM PAKISTAN

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Abstract

Financial sector consists of banking sector and stock markets, both play an important and critical role for the better performance of economies. This empirical study investigates the role of stock market and banking sector of Pakistan on its output growth. Utilizing a time series data set ranging over 1980-2009 the methodology of Ordinary Least square has been used to estimate the elasticities. Since the advent of the democracy in 1990s, Pakistan's financial sector underwent a massive restructuring reform. As a consequence, banking sector, which is a major component of Pakistan's financial sector, became efficient as compared to existing before this period. Some of the financial institutions like Capital markets are still undergoing the reform process, where institutions like Securities and Exchange Commission of Pakistan (SECP) is active. The present study also found a positive and robust impact of both these institutions on growth of real output in Pakistan. The conclusions of these studies suggested that there is a need to continue these reforms in order to develop an efficient financial sector to contribute in the economic growth.

1. Introduction

Financial markets consist of banks and stock market, and capital markets all these institutions perform a key function of intermediation through mobilizing savings. They constitute a large pool of small savers and channelizing these funds into productive investments by a generally much smaller number of borrowers. Stock markets also potentially endorse broad-base of increasing ownership of financial assets and the reallocation of funds among corporations and sectors. Moreover, a developed capital market assists in domestic growth and credit expansion by liquidity.

An extensive transformation towards an equity culture has been established after the implementation of structural adjustment programme.. Regarding the role of financial sector Japelli and Pagano (1994), Atje and Jovanovich (1997) pointed out that stock exchanges positively influence the economic growth. Integration proves to be beneficial as it provided more proficient, liquid stock market, new products, and cheap loans for the business and enhanced risk-return frontiers. However' not ignoring **the** downside, the ensuing globalization of financial services can also worsen the too-connected-to-fail problem[1]. Indeed, the ongoing global financial mess showed that the financial institutions and the regulators didn't foresee the consequences of the recent policies.

In the view of many experts, stock market occupies the vital and strategic position in the economic development of countries. As Mohtadi and Agarwal (2007) found that the stock market plays both direct and indirect role in the economic growth. Without having fully developed stock market a country will not be able to increase the availability of equity funding and move towards more balanced financial structures. During the last decade global equity markets experienced phenomenal growth, not only the developed markets but also the emerging markets out performed during the boom. For instance, as the capitalization has risen worldwide from $4.7 trillion to $15.2 trillion (World Bank Report, 2005. Developed stock market provides an avenue to Government for selling and repurchasing its own securities to maintain an appropriate monetary policy which leads to a developed financial sector Caporale et al, (2004).

The commercial bank contributes to increase the financial resources, in this regard various incentives are offered to the savors to increase the savings. They established their branches in rural and urban areas and successful mobilized savings. Bank transforms the idle money which is in the form of savings to a productive asset by lending it to different businesses in the country. The banks are, therefore, not only to keep the country's wealth, but also provide fuel to the economy which is necessary for economic development. The provision of timely credit increases the productive capacity of the economy. Credit is being provided for micro-industries in rural areas and agriculture development in developing world by the commercial banks.
The study is conducted to firstly, empirically analyze the contribution of financial sector in the Pakistan's economy during 1980-2009. Secondly, highlighting the shortcomings and weakness of stock market and suggesting suitable policy recommendation for its solution.

[1] http://www.imf.org/external/pubs/ft/survey/so/2009/RES042109B.htm

2. Literature Review

Ndako (2010) conducted a study to investigate the casual relationship between stock market, banks and economic growth in South Africa. The study used quarterly time series data set ranging from 1983-2007 and applied Vector Error Correction Model (VECM) to check the causality between financial development and growth. The results of this study showed that the financial development has a short run impact on the growth and the indicators of financial development have an important place in the forecasting of future growth. Baboo and Odit (2009) explored to the nature of impact of stock market on the growth for the economy of Mauritius because it was new as compared to many countries. A time series data set was used for the period of 1989 to 2006 by using Engle and Granger approach and made an Error Correction Model (ECM) by using two indicators, size and liquidity, for stock market development, population and foreign direct investment. Major findings of this study included that in both long and short run stock market development and FDI has a positive impact on economic growth and it is an important tool to measure the health of the economy.

Jin and Boubakari (2010) investigated the casual relationship between stock market and economic growth for five European Countries (Belgium, France, Portugal, Netherlands and United Kingdom) by taking quarterly time series data of period 1995 to 2008. Granger causality test was used by taking variables of market capitalization, total trade value and turnover ratio from stock market, GDP and FDI supplemented economic growth for each country. Results of this study showed that the countries which have efficient and liquid stock market have a positive relation among stock market and economic growth and inverse was the case with those countries which have inefficient and less liquid stock market.

Shahbaz and Ahmed (2008) inspected nature of link between economic growth and stock market. Used annual time series data over the period from 1971-2006. To address the issues regarding the stationarity of data, two new tests, Dickey Fuller Generalized Least Square and Ng Perron tests were used. And Johansen co-integration test and ARDL techniques were used to check the robustness in the long run. Results of the study showed a strong relation between stock market development and economic growth. In long run Engle Granger causality test confirms the bi-directional causality in both and uni-directional causality in short runs.

Nazir *et al.* (2010) explored the affiliation among the stock market development and economic growth in Pakistan over the period of 1986 to 2008. For investigating the stock market development and economic growth relationship by using the two major measures of stock market development, namely size of the market and liquidity prevalent in the market in terms of market capitalization. The results exposed that economic growth can be achieved by increasing the depth of the stock markets of a country as well as the market capitalization in an emerging market like Pakistan.

Beck and Levine (2004) inspected the impact of Financial Market on the economic growth. A panel data set used for the period of 1976 to 1998 along with the application of technique of generalized method of moments GMM for dynamic panels. By using one step and two step estimator systems, result showed that the economic growth is influenced by the financial market development and rejected the hypothesis that financial market is not linked to growth.

Khan (2008) explored the relationship between financial development and economic growth of Pakistan. The study used annual data over the period 1961–2005 and an Autoregressive Distributed Lag (ARDL) framework used for estimation. The main empirical findings suggested that in the long and short run, financial development and investment exerted a positive impact on economic growth. The findings also indicated that in the long-run, real deposit rate is positively related to economic growth but exerted an insignificant impact; however, in the short-run, the relationship between real deposit rate and real output is significant. The long- and short-run responses of the real interest rate were very low as compared to financial development variable, implying that the availability of funds is more important than their cost. To achieve sustainable economic growth, the study suggests a further acceleration of liberalization process in Pakistan

Garcia and Liu (1999) explored the macroeconomic variable of stock market development particularly market capitalization. Pooled data ranging from 1980 to 1995is used by taking fifteen industrial and developing countries. Simple regression model has been used for estimations. The paper finds that: (i) real income, saving rate, financial intermediary development, and stock market liquidity are important determinants of stock market capitalization; (ii) macroeconomic volatility does not prove significant; and (iii) stock market development and financial intermediary development are complements instead of substitutes.

Samy and Ghazouani (2003) explored Relationship between financial development and economic growth and also separately checked the impact of banks and financial markets on growth. The study used a panel data from ten Middle East and North African (MENA) region countries. A dynamic panel model with Generalized Method of moments (GMM) estimators used for estimations. The empirical results showed insignificant relationship between banking, stock market development and economic growth. By taking market capitalization as a measure of stock market, the relationship between banks and growth was negative.

Mohtadi *et al* (2007) checked the casual relationship between stock market development and economic growth for 21 developing countries. This study used panel data of 21 years from 1977 to 1997 and used dynamic panel estimation approach. Results showed that the indicators of market capitalization ratio, shares traded ratio, foreign direct investment, domestic investment and secondary school enrollment have positive relation with growth but shares traded ratio was misleading indicator for market liquidity. The study found that the stock market played a vital role in the economic growth through direct and indirect channel.

Antonios (2010) checked the fundamental link between stock market development and economic growth for Germany by taking the data over the period 1965-2007. Vector autoregressive model (VAR) has been used to estimate the relationship between economic growth, stock market development and bank lending. The aim of this study was to explore the long-run relationship between these variables, applying the Johansen co-integration analysis based on the classical unit roots tests. The findings of Granger causality tests showed a unidirectional causality between stock market development and economic growth.

Mishra et *al*, (2010) explored the impact of capital market efficiency on economic growth in India. Study used time series data on market capitalization, total market turnover and stock price index over the period spanning from the first quarter of 1991 to the first quarter of 2010.

Multiple regression models have been used for estimations. Results indicate that the capital market of India has potential to contribute to the economic growth of the country.

3. Research Methodology and Model Specification

The proposed methodology for this paper is Ordinary Least Square (OLS). OLS is an optimization procedure which, when given a series of calculated data, attempts to find a function which directly approximates the data. It attempts to lessen the sum of square of the ordinate differences, called residuals, between points generated by the function and corresponding points in the data. It is considered the most reliable method of estimating linear relationship between economic variables. In this study GDP is dependent variable and on the other hand Investment, Bank credit, Market capitalization, values of shares traded, and turnover ratio are taken as independent variables In order to check whether the data is stationary or not, unit root test is applied for accurate results.. The study starts by a simple function i.e.

$GDP = f\ (Inv, BCR, MCAP,, VST, TRATIO)$ …….. *(4.1)*

$$GDP = \beta 0 + INV\beta 1 + BC\beta 2 + MCAP\beta 3 + VT\beta 4 + TR\beta 5 + \varepsilon i \ldots\ldots\ldots\ldots\ldots \quad (4.2)$$

The logarithmic form of model to calculate is,

$$LRGDP = \beta_0 + \beta_1 LRINV + \beta_2 LRBC + \beta_3 LRMCAP + \beta_4 LRVT + \beta_5 LRTR + \varepsilon_i \ldots\ldots\ldots (4.3)$$

Since the financial sector is a market based phenomenon, so we introduce a dummy which measures the uncertainty in the economy:

$$LRGDP = \beta_0 + \beta_1 LRINV + \beta_2 LRBC + \beta_3 LRMCAP + \beta_4 LRVT + \beta_5 LRTR + D_{03} + \varepsilon i \ldots (4.5)$$

Where RGDP is real GDP growth, RINV is real investment to GDP, RBC is real bank credit to private sector, RMCAP is the real market capitalization, RVT is Real values of shares traded, RTR is real turnover ratio and a dummy D_{03} is used to measures the certainty in the economy. The all the data is collected from the economic Survey of Pakistan.

4. Presentation of Results

Results are obtained, first by applying the stationarity test of ADF to check the time series properties of data further the OLS method is applied for estimation purpose. The results of ADF Test are given below in Table 4.1. The regression analysis and tests of hypotheses are conducted at 5% significance level. After running the relevant regressions, the following results were obtained and are presented below:

Estimated Results

Table 4.1: Results of ADF Test

Variables	ADF at Level (0)	ADF at (1st Difference)	Order of integration
Ln (RGDP)	-1.639060	-2.246214*	I(1)
Ln (RINV)	-1.747142	-2.985969*	I(1)
Ln (RBC)	-2.747452*	-1.827373	I(0)
Ln (RMCAP)	-0.782277	-2.477658*	I(1)
Ln (RVT)	-1.535330	-2.247199*	I(1)
Ln (RTR)	-1.759653	-1.968969*	I(1)

Note: Null hypothesis: Series is non stationary, *Indicates significance at 5%

Table 4.2: Results of OLS Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.34893	5.577965	2.213877	0.04700**
Ln (RINV)	0.462029	0.572363	3.854994	0.000900*
Ln (RBC)	0.834092	0.557825	1.964868	0.0627***
Ln (RMCAP)	-0.183641	0.159063	-1.154515	0.2708000
Ln (RVT)	0.085569	0.052645	1.625400	0.1300000
Ln (RTR)	0.068518	0.041962	4.671628	0.000100*
D03	0.134395	0.161900	2.975841	0.007200*
R-squared	0.714083		**S.E. of**	0.186479
F-statistic	4.995031		**D.W Stat**	0.940239

Note: * significance at 1% level, **significance at 5% level, *** significance at 10% level.

The results showed that most of the coefficients have positive sign and significant at 5 percent level of significance effect except two indicator that is market capitalization and values of shares traded on the economic growth of the Pakistan. This showed better utilization and expansion of financial resources for productive purpose especially for investment opportunities in the country. This shows lack of openness and market imperfection of the Pakistan's Stock Market. Financial development has positive but insignificant effect on economic growth. All these results indicate the effects of financial development over the period of 1980-2009.

Investment Ratio value shows that 1 percent rise in INV will lead GDP to increase by 0.46 percent. Positive sign of INV represent the significant effect of increase in investment share as a real GDP through multiplier effect, which is further mobilize the savings which is the most observable and important function of the financial sector.

Bank Credit demonstrates that bank credit to GDP is an indicator for financial sector development. The effect of financial development on economic growth is positive but insignificant at the 10 percent level of significance. This could be due to the banking development imperfections and low investment during the era of structural adjustment.

Market Capitalization explains that the connection between the market capitalization and the economic growth is negative which is contradictory as theoretical but statistically insignificant. 1 percentage increase in the stock-market capitalization causes an increase in the growth rate of GDP by 0.18 percentage point. The impact of market capitalization to GDP ratio is less than the liquidity available in the stock market, which can be assessed by the smaller value of the coefficient of market capitalization as compared to liquidity, as well as the level of statistical significance of the variables (Nazir, Nawaz and Gilani (2010)).

Values of shares traded and turnover ratio are the two frequently used variables of stock exchange for liquidity. Liquidity means simplicity in buying and selling securities. Liquid markets greatly facilitate the function of stock markets as mobilizing savings to investment for economic growth. TR is market turnover to GDP ratio which has a significant positive impact on economic growth at 5 percent level of significance. 1 percent increase in the market turnover boost up economic growth by approximately 0.26 percent.

VT reveals that, values of shares traded ratio have a positive and significant impact on economic growth at 5 percent level of significance. A 1 percentage increase in values of shares traded-GDP ratio leads to 0.08 percentage increase in economic growth. The dummy variable (D), introduced to capture the impact of certainty and the reform process of the financial sector during the period of structural adjustment, as it expected to have a positive relationship with GDP. As 1 percent change in favorable circumstances in the country would impact 13 percent on the economy. It was concluded that certainty cause positive impact on the economic growth of the country. These results supported a number of arguments, that "the uncertainty would have negative impact on GDP of the country"[2]

5. Conclusion

This study has been aimed to investigate the impact of the stock market and banking sector development on the economic growth of Pakistan by using a time series data for the period of 1980-2009. The ordinary least square has been used to check the link between stock market development, banking sector development and economic growth indices.

The empirical findings suggested that all the variables in the model possess expected relationship with economic growth indicator except the indicator of market capitalization and its magnitude is low. Although the magnitude of the all variables related to the capital market are low which indicated that the capital market of Pakistan has insignificant effect on the economic growth. It was due to uncertainty, non-consistency of the policies and the reform process in institutions. During this period the capital market of Pakistan was not regularized. So far we have three stock

[2]Ahfaq Hassan Khan, A. R. Kamal

exchanges namely Karachi Stock Exchange, Lahore Stock Exchange and Islamabad Stock Exchange. All three markets operated separately and were not interlinked as in other countries.

In last decade Pakistan has efficient trading activities due to due to high GDP growth rates, GDP growth rates, low interest rates, political stability and inoculation of liquidity in the form of transfer of funds by overseas Pakistanis. In recent years liquidity in over the counter market is prevailing in different forms which gives way to another view that it is caused by bad traders in short term speculative trading. Badla trading traded 90 percent of the stocks for which it was allowed as indicated by The State Bank of Pakistan's Financial Market Review (2005). Another important component of the model was the bank credit which showed a reasonable impact on the economic growth because of an effective and regularized banking system.

From this study, it is found that the financial sector has a vital position in the Pakistan's economy. As the arrival of the democracy in 1990s, Pakistan's monetary sector underwent a huge restructuring reform. In results of these reforms, banking sector became one of the best in the world. Some of the financial institutions like Capital markets are still undergoing the reform process under the umbrella of SECP[3]. It is necessary to persist these reforms to regulate and develop an efficient financial sector to contribute in the economic growth.

Recommendations

For an efficient financial system and a positive role of financial development on the economic growth some policy implications are as follows:

- Law and order situation should overcome by the Government to eliminate the factors of uncertainty especially in Karachi because it is a financial hub of Pakistan.
- Minimize the volume of non-performing loans.
- Bank credit ratio in Pakistan is approx 46%. So there is a need to improve the bank credit ratio.
- All three stock exchanges should merge to increase the depth and liquidity of the market.
- Need to boost the reform process in the institutions and also stringent the risk management tools.
- Major steps should be taken to restore the confidence of the investor.
- More effective risk management measures should be implemented to prevent the stock exchange from plunging into crises.
- Minimize the interest rates on savings which leads to mobilization of savings.
- Decision makers need to encourage sustainable growth then long run policies should be made like creation of modern financial institutions.

[3] Securities and Exchange Commition of Pakistan

- The security and exchange commission of Pakistan (SECP) should improve the trading system in order to increase the ease with which investors can purchase and sell shares, thus guaranteeing liquidity on the stock market.

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