

Macroeconomic Indicators and Stock Market Development

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Abstract

The stock markets play a key role in both developing and advanced countries because it channelize idle money into productive investment and generate capital for businesses which boosts the economy up. Pakistan's stock market is an emerging stock market. The main objective of the study is to check the contribution of macroeconomic indicator to the stock market development. In this study, an attempt is made to capture the macroeconomic determinants that effect more or less in stock market development. Karachi Stock Exchange (KSE) is taken as a representative stock exchange of Pakistan. This study considered Gross Domestic Saving (GDS), Money Supply (MS) and Foreign Remittances (FR) as explanatory variables and stock market development (SMD) takes as dependent variable. The study employed Phillips and Perron (PP) test for Stationarity. Finally the study utilized the ARDL to co-integration approach because it is more dominant and robust procedure to examine the short run and long run dynamic relationship. Autoregressive distributed lag (ARDL) and Error Correction Model used to find the relationship between the variables of selected econometric model. The ARDL to Co-integration results showed that Gross domestic savings ,money supply positively contribute to the development of stock market in Pakistan in both short run and long run that are consistent with theoretical and conceptual framework and literature (See also; Raza et al., 2012; Adam and Tweneboah, 2009). Foreign remittances have insignificant effect in both short run and long run on stock market because most of the foreign remittances are used in consumption. CUSUM lines remained inside the critical bound at 5 percent significance level that guaranteed the stability of model.

Keywords: Stock Market development, Money Supply, Gross Domestic Saving, Foreign Remittances

Introduction

We cannot reject the role of stock market in an economy. It plays a central role in an economy because it is a source of long term funding to the firms which means more investment, more employment opportunities and more output and economic growth and development of the economy. It encourages savings which generate more capital through the use of idle money. So it is not be wrong to say that development of stock market is actually a development of an economy. In this respect it is very important to give the confidence to the investors of stock market. Investor's confidence can be built by many firm related variables as well as many external variables like inflation etc. In this research paper, an attempt is made to capture some major macroeconomic factors that may affect to the stock market.

The main objective of the study is to measure the effect of macroeconomic indicators on the development of stock market in Pakistan. Selected macroeconomic indicators are money supply, exchange rate, gross domestic savings, and foreign remittance. There is no any doubt that economic activity has substantial role in the improvement of stock market. So here we focused on some macroeconomic indicators as gross domestic savings, money supply, and foreign remittances.

Now the question is why we choose these variables? Because money supply is associated with the money in circulation and it is also one of the tools of monetary policy. Gross domestic savings promotes capital formation in an economy that leads to aggregate capitalization so called stock market development. Foreign remittances¹ play crucial role in developing countries like Pakistan. It improves economy's foreign exchange reserve that is one of the causes of investment in Pakistan. Due to these reasons we tried to check the existence

¹ After 9/11 attack on World Trade Center, Pakistan's stock market moves towards the growth because of the inflow of capital from developed countries in the form of remittances. The reason behind this is the uncertainty of survival among Muslims especially among Pakistanis in all over the world. Due to the uncertainty and instability factors, they shifted their assets in bulks forms to their domestic countries.

of the relationship between macroeconomic variable and stock market development in Pakistan.

Financial sector reforms and stock market openness in Pakistan started in 1991. But since 1991 after the period of liberalization of stock market, the stock market has developed very fast with remarkable notion. During 1991 the stock market of Pakistan witnessed a boom. Large number of developments has being done in this era. The firstly, the process of financial liberalization results in an inflow of foreign investment which increases the trading volume of stock market. Secondly, the process of privatization and offering of new shares that leads to high growth in stock market, thirdly, political stability which increases the investors' confidence. A rapid development has been shown in last few years in which KSE-100 index goes up to its highest psychological height which shows the attraction of investors and well functioning of stock market in Pakistan.

Suleman et al. (2009) found a significant impact of exchange rate and exchange reserves on stock market after financial reforms in 1991. Consecutively, Pakistan stock market is said the best performing stock market in emerging stock exchanges of the world in 2002. All this shows that Pakistan's stock market is now a prominent stock market in the world. But there are some issues and problems facing Pakistan economy such as energy crisis, terrorism and political instability that affect investor's decision making and can affect the stock market performance in adverse manners. This study is conducted to check this question that is there any co-integration relation exist between economic activity i-e money expansion, domestic saving and foreign remittances on stock market development.

Literature Review

Grossman and Shiller (1980) worked on the determinants that cause the volatility in stock prices. They did not go beyond the discount factor analysis. The study also documented the positive functional relation among stock returns and real variables like capital investment and output growth. Finally, the results confirmed the negative statistically significant relationship between inflation and stock return. Fama (1981) resulted negative significant relationship between consumer prices and real economic activity which induced inverse relation between inflation and stock returns by taking monthly, quarterly and annually data and applied capital regression on each data set separately.

Abdullah and Hyworth (1993) identified a group of macroeconomic indicators which has granger causal to the share prices in USA. The study employed Granger Causality and Vector Autoregressive model for analysis. Money growth, budget deficit and long run interest rate had granger cause to the stock prices. The study also established a direct link between money growth, inflation and stock prices.

Mukherjee et al. (1995) found negative relationship between inflation, government bond and stock prices in Japan. Interest rates on the Tokyo Stock Exchange were found to move in opposite directions. Humpe and Macmillan (2007) analyzed the response of many macro variable on stock index in United States and Japan. The study compared the American and Japan stock exchanges for the period of 1965 until 2005. They found that industrial production had positive impact on stock price. Long run interest rate and money growth were found a negative effect with stock market.

Adam and Tweneboah (2008) analyzed relationships between the stock prices and some economic indicators by selecting the period from 1991 to 2006 and used Johansen's Multivariate cointegration approach for Ghana. The findings of Impulse Response Function (IRF) demonstrated that FDI and interest rate were the major estimators of the stock index in Ghana.

Mohammad et al. (2009) found that foreign exchange reserve was positively associated with stock price index in Pakistan. Wisniewski (2009) tried to explain the political factor that explains the behavior of stock price variability. Pilinkus (2009) attempted to explain the behavior of stock prices in Lithuania. He found that stock prices are directly affected by GDP and money supply. Asaolu et al. (2010) analyzed the impact of macroeconomic variables on stock market in Nigeria. Results explained that only exchange rate had Granger caused to share prices. Gross domestic product growth rate and monetary expansion affect stock market prices. Singh et al (2011) empirically found that GDP has positive but inflation, exchange rate, and money supply were negatively related with stock returns.

Micro and macro level study of stock market had been done by Ali (2011) in Bangladesh. Inflation, foreign remittance used as macro level and market price earnings, growth in market capitalization micro level variables. Multivariate Regression Model was employed and found that inflation and foreign remittance negatively related to stock prices. Industrial production index, market earning per share and growth in market capitalization had positive impact on stock market. Rukh et al.(2011) found that changes in discount rate had involvement in the trading volume at KSE, while the CPI and Treasury bill had inconsequential effect on the trading volume of KSE- 100 index.

Azam (2011) attempted to explain the behavior of stock price variability by analyzing both internal and external variables in Pakistan. He focused on variables that are known good estimator from investor's point of view. Empirical findings showed that the stock prices had positive effect on GDP growth. But interest rate was found to be negative.

Raza et al. (2012) made an attempt to investigate the behavior of foreign direct investment towards stock market growth in Pakistan by taking annual data from 1988 to 2009. Domestic savings also positively related but exchange rate and inflation had a negative effect. The study suggested that foreign direct investment can boost up by providing adequate facility of infrastructure. Raimony et al. (2012) found macroeconomic variable had unfavorable effect on stock returns except GDP that had positive impact on return.

Theoretical and Conceptual Framework

The study is based on "*Efficient Market Hypothesis*" presented by Fama in 1965. It explains that no one can achieve benefit from stock market constantly if it does not use the current information. Now we will give theoretical explanation of econometric model with respect to stock market.

Money Supply and Stock Market Development

In current study, we use M1 as proxy for money supply. It is narrow money which is equal to currency in market plus demand deposits. In literature most researchers used M2 as a measure of money supply? Now the question is: Why we choose M1 instead of M2? Because M1 is money that is most associated to money as men in streets because it covers most frequently used means of payments of cash and cheques drawn on banks current accounts. So that's why, we are concerned to the information of current circulation and demand deposits. Monetary policy of the economy plays a significant role through its tools to control the situation like interest rate, bank rate and open market operation. Easy or expansionary and tight monetary policy has two sided effects.

By adopting easy monetary policy, there is a possibility of excess liquidity through open market operation. People will sale bonds for high return which results in a rise in money supply. It will rise bond prices and interest rate goes down which leads high stock prices. Money supply may affect stock prices in two ways: First, money supply behaves negatively with stock market development as an expansion in money growth in market will increase unanticipated inflation. Consequently in this way uncertainty among the investor rise which will lead to decrease to the stock price.

Second, money supply shows positive influence on stock price. A rise in money supply may stimulate the economic growth and economic activity that will increase the corporate earnings of the firms as a result future cash flow will increase and consequently stock prices goes up. Akbar et al (2012), Suleman et al (2009), Pilinkus (2009), Humpe and Macmillan (2007) and Mukherjee and Naka (1995) empirically established direct relationship between money expansion and stock prices. Negative effect of money supply has been found by Raza et al. (2012), Singh et al. (2011), Gan et al (2006).

Stock Market Development and Consumer Price Index (CPI)

Inflation can be described as the persistence and consistence raise in general price level. Inflation is measured in term of consumer price index (CPI) and GDP deflator. But most common measure of inflation is consumer price index. In literature most researchers use consumer price index to measure inflation rate. CPI measures changes in the prices of basket of consumer goods in a given time period. When there is a rise in the consumer price index it means the general price level goes up so inflation at consumer end. CPI is calculated for given set of goods and services in turn to find out the changes in the index on monthly or annually basis. Here we try to find the relationship between inflation and stock price variability. Inflation may affect stock prices in negative manners.

As inflation increases stock prices will decrease because of purchasing power reduced than before. High inflation leads to tight monetary and fiscal policies. On contrary it may affect stock market index in a positive way also. As inflation is there it can stimulate the economy so in this way stock prices move in upward because it increases the profits of firms so future cash flow generated as a result stock prices increases. In literature Rashid et al (2011), Hosseini et al (2011) and Akmal (2007) found positive relation of CPI with stock price indices. But Akbar et al (2012), Raza et al.(2012), Singh et al.(2011), Ali (2011), Butt et al.(2010), Humpe and Macmillan (2007).

Stock Market Development and Gross Domestic Savings (GDS)

Gross domestic savings is equal to the difference between GDP and total final consumption expenditures. Stock market provides us a platform to channelize the domestic saving into productive investment. Household savings generates investment and capital formation which leads to stimulate economic growth. Household savings also become cause of inflow of capital throughout the stock markets in the economy. Raza et al (2012) found positive relationship between gross domestic savings and stock price index in Pakistan. Expected functional relationship is positive between Domestic Savings on stock market.

Foreign Remittances and Stock Market Development

Foreign remittances are the income which is transferred by immigrants who are employed in foreign country. Money sent to home by migrants constitutes one of the largest financial inflows to Pakistan. The share of

Foreign remittances increases than international aid to Pakistan. Foreign remittances are one of the major sources of inflow of capital from developed to developing countries. This inflow boosts up the economy. In this respect, the theory established positive link between stock prices and workers' remittances because a rise in foreign remittances generates income level which leads to increase saving and do investment in stock market.

In this way, shares demand increases and the stock prices moves upward. Theory suggests positive association between stock market and remittances. Ali et al.(2011) found negative relation between them for Bangladesh. In Pakistan no any study found which tried to check the dynamic relationship between worker's remittances and stock market development.

Data and Methodology

The data is collected from State Bank of Pakistan (SBP), Pakistan economic survey and World Bank official website. The study use annual data from 1973 to 2012. The study employed Philips and Perron Test for stationary measures. After that ARDL to co-integration technique is employed to measure relationship in short run and in long run in our analysis.

Econometric model is as under:

$$SMD = \beta_0 + \beta_1 DGS + \beta_2 MS + \beta_3 FR + \mu_i \quad \text{----- (1)}$$

Where,

- SMD = Stock Market Development
- GDS = Gross Domestic Savings
- MS = Money Supply
- FR = Foreign Remittances

Measurement of the variables

Stock Market Development

Development of Stock market is measured by using a proxy aggregate market capitalization growth at KSE. Aggregate market capitalization is the overall value of all ordinary shares in Karachi stock exchange (Pakistan Economic Survey). Data is taken from state bank of Pakistan. This study use market capitalization as a proxy to measure stock market development.

Gross Domestic Saving

Gross domestic saving is obtained after deducting final consumption expenditure from Gross domestic expenditure. Data is taken from World Bank.

Money Supply

M_1 is taken as proxy for money supply which is considered as narrow money which consists of currency plus demand deposits. M_1 is money that is most associated to money as men in streets because it covers most frequently used means of payments of cash and cheques drawn on banks current accounts. Data source is world development indicator (World Bank).

Foreign Remittances

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Brief Description of Estimation Techniques:

Phillips and Perron Test of Unit Root (PP test)

For unit root test PP test is employed because it is non parametric in nature and corrects problem of serial correlation and problem of heteroscedasticity in error term. The mathematically PP test has approximately same as augmented dickey fuller (ADF) that is constant and trend which is represented as in:

$$\Delta X_t = \beta_1 + \beta_2 t + \gamma M_{t-1} + \epsilon_t$$

$$\Delta X_t = \beta_1 + \gamma M_{t-1} + \epsilon_t$$

In above equations, β_1 is constant and $\beta_2 t$ trend and second equation consist of only constant term (β_1). Here the null hypothesis (H_0) is $\gamma = 0$ (the variable has a unit root) which is less restricted as ADF. Normally ADF and PP tests provide the same results concerning to the order of integration. If the H_0 is rejected, then the variable is said stationary or independent of time. If the H_0 not to be rejected then the variable is said non-stationary or have time effect.

ARDL to Co integration

The present study employs Auto Regressive Distributed Lag (ARDL) model to co-integration that was projected by Pearson et al. (2001). Lagged independent variables through auto time alteration process is taken by ARDL approach which is one of the main features of this approach. This approach estimates the conditional ARDL model for dependent variable and explanatory variables. The model can have the following form.

$$Z_t = \alpha_0 P_t + \alpha_1 P_{t-1} + \alpha_2 P_{t-2} + \dots + \alpha_k P_{t-k} + \mu_t \dots \dots \dots (I)$$

In above model, independent variable P_t changes in t- period and it occurs α_i change in Y_t by $(\alpha_0, \alpha_1 \dots \alpha_k)$ is the effect on Y after one period.

Another effect on Y is α_k and this changes after k periods. So we can say, it takes k periods for the full effects of the impulse to be recognized. The coefficients $\alpha_0, \alpha_1 \dots \alpha_k$ made the impulse response function of plotting from P_t to Z_t .

Another way to confine the dynamic elements of this behavior is to add lagged values of the responded variable and on the explanatory side of the regression model with the independent variable. In time series analysis we usually include lag on both sides of explained and explanatory variables.

$$Z_t = \delta_0 + \delta_1 Z_{t-1} + \delta_2 Z_{t-2} + \dots + \delta_n Z_{t-n} + \alpha_0 P_t + \alpha_1 P_{t-1} + \alpha_2 P_{t-2} + \dots + \alpha_k P_{t-k} + \mu_t \dots \dots \dots (II)$$

The equation (II) describes the Autoregressive Distributed Lag Model (ARDL) (n, k). Here n and k means the quantity of lags of Z and P can be used. Length of lags is selected on the ground of the statistical significance of lagged variables. Finally, resulting model is soundly precised which shows that the model is free from the problem of serial correlation.

Operations in ARDL Model

To check the dynamics relationship, it is constructive to employ lag operator (L) which is also identified as the toward the back shift of (II) operator. It can be written in the form of algebra as

$$\begin{aligned} LZ_t &= Z_{t-1}, L^2 Z_t = Z_{t-2} \dots L^k Z_t = Z_{t-k} \\ Z_t - Z_{t-1} &= (1-L) Z_t \\ Z_t - Z_{t-1} - Z_{t-2} &= (1-L-L^2) Z_t \\ Z_t + \delta Z_{t-1} + \delta^2 Z_{t-2} + \dots + \delta^k Z_{t-k} &= (1 + \delta L + \delta^2 L^2 \dots + \delta^k L^k) Z_t \\ 1 + \delta L + \delta^2 L^2 + \delta^3 L^3 + \dots &= 1/1 - \delta L \quad \text{if } |\delta| < 1 \end{aligned}$$

First Order ARDL Model (1, 1)

The first order ARDL linear regression model form,

$$Z_t = \delta_0 + \delta_1 Z_{t-1} + \alpha_0 P_t + \alpha_1 P_{t-1} + \mu_t \quad t=1, 2, 3, \dots, n \dots \dots \dots (III)$$

Here a notable thing is that Z_t is stable which means it converges to its equilibrium level if $-1 < \delta < 1$.

When Z_t becomes stable then long run equilibrium equation (III) becomes as

$$\begin{aligned} Z_t &= (\delta^0 / 1 - \delta_1) + (\alpha_0 + \alpha_1 / 1 - \delta_1) P_t + \mu_t / 1 - \delta_1 \\ &= W_0 + W_1 P_t + \mu_t / 1 - \delta_1 \dots \dots \dots (IV) \end{aligned}$$

Where $W_0 = (\delta^0 / 1 - \delta_1)$ and $W_1 = (\alpha_0 + \alpha_1 / 1 - \delta_1)$

Equation (IV) is equipped with the supposition of $Z_t = Z_{t-1}$ and $P_t = P_{t-1}$

So objective value is

$$Z_t^* = W_0 + W_1 P_t$$

General form of ARDL equation is as under:

$$\Delta Z_t = \alpha_0 + \sum_{k=i}^n \alpha_k \Delta Z_{(t-i)} + \sum_{k=i}^n \beta_k \Delta P_{(t-i)} + \delta_1 Z_{(t)} \dots \dots \dots (V)$$

There are two major steps of ARDL approach. First one is to test the long run relationship among the dependent and independent variables. For this purpose F-test is used. Pesaran et al. (2001) found two set of critical values: first set assumes that all variables are co-integrated at order I (1). The second set assumes the variables are integrated at I (0) at given level of significance. These two sets are said upper critical bound (UCB) and lower critical bound (LCB). If F-statistic is greater than upper critical bounds than co-integration relationship exists. And if F statistics is lower than lower critical bound than there is no co integration. And if F-static is between upper and lower critical bound then the results are inconclusive.

The second step occupies long run and short run estimation. For short run analysis following model of ECM is taken into consideration.

ECM equation is given below:

$$\Delta Z_t = \alpha_0 + \sum_{k=i}^n \alpha_k \Delta Z_{(t-i)} + \sum_{k=i}^n \beta_k \Delta P_{(t-i)} + \delta ECM_{t-1} + \mu_t$$

By taking lag of our dependent variable and take it as an independent variable, we measure the short run relationship as

$$\Delta SMD_t = \alpha_0 + \sum_{k=1}^n \alpha_k \Delta SMD_{(t-k)} + \sum_{k=1}^n \beta_k \Delta MS_{(t-k)} + \sum_{k=1}^n \gamma_k \Delta GDS_{(t-k)} + \dots + \delta ECM + \mu_t$$

To determine the goodness of fit of the ARDL model, diagnostic tests are constructed. Problems of regression are checked by using diagnostic test. This test used CUSUM and CUSUMSQ to measure whether model is stable or not. If the estimated line of CUSUM and CUSUM square remain inside the critical bounds (upper bound and lower bound) of 5 %, then the model is called statistically stable otherwise instable.

Results and Discussions

Table 1: Results of Phillips Perron Test of unit root

Variables		Intercept			Trend and Intercept			Conclusion
		Null Hypothesis: The variable has a unit root or non-stationary						
		Coefficient	Standard Error	Test statistics (t-value)	Coefficient	Standard Errors	Test - statistics (t-value)	
WR	Level	0.134	0.044	3.048	0.099	0.061	1.621	I(1)
	1st Difference	-0.532	0.155	-3.421	-0.635	0.163	-3.893	
MS	Level	0.050	0.0390	1.293	-0.047	0.073	-0.635	I(1)
	1st Difference	-0.771	0.1719	-4.483	-0.842	0.174	-4.826	
GDS	Level	0.070	0.030	2.303	-0.034	0.067	-0.512	I(1)
	1st Difference	-1.285	0.1682	-7.644	-1.562	0.144	-10.78	
SMD	Level	-0.013	0.0613	-0.212	0.160502	0.092699	-1.731431	I(1)
	1st Difference	-0.739	0.164	-4.505	0.758	0.166	-4.569	

ARDL to Co-integration Results

ARDL model is as under:

$$SMD_t = \alpha_0 + \sum_{k=1}^n \alpha_k SMD_{(t-k)} + \beta \sum_{k=1}^n GDS_{(t-k)} + \gamma \sum_{k=1}^n FR_{(t-k)} + \epsilon_t$$

The estimates of ARDL are obtained on the basis of Schwarz Bayesian Criterion (SBC). Regression estimates of above econometric model are given in the following tables.

Table 2: Results of ARDL (1 0 0 0) Model conducted on SBC: Stock Market Development [dependent variable]

Variables	Coefficients	t-statistics	p-values
SMD(-1)	0.61801	5.7675	0.000
MS	0.19599	3.6621	0.001
GDS	0.01222	3.9262	0.000
FR	-1.2297	-1.7298	.092
R-Squared (LM) = 0.921		R-BAR-Squared (LM) = 0.915	
DW-Statistic (LM) = 1.9842		F-statistics (LM) = 137.50	
Probability (LM) = 0.000			

* indicates significance level at 1%

** indicates significance level at 5 %

The above table results illustrate that there exist a strong co-integration between money supply (MS), gross domestic savings (GDS) and stock market development. The result shows that there exist a significant positive or direct relationship between gross domestic savings and money supply which means that GDS and MS play significant role in the development of stock market. Further we can interpret it as one unit increase in GDS and MS will lead to increase the market capitalization by 0.01222 and 0.19599 respectively. Foreign remittance is rejected at 5 percent level of significant yet it becomes significant at 10 percent level. It is negatively related to the stock market development. R-square value is 0.92 which shows that 92 percent variation in the stock prices is determined by independent variables of the model. F-statistic value is highly significant at 1 percent level of

Figure 1: Graph of Cumulative Sum of Recursive Residual

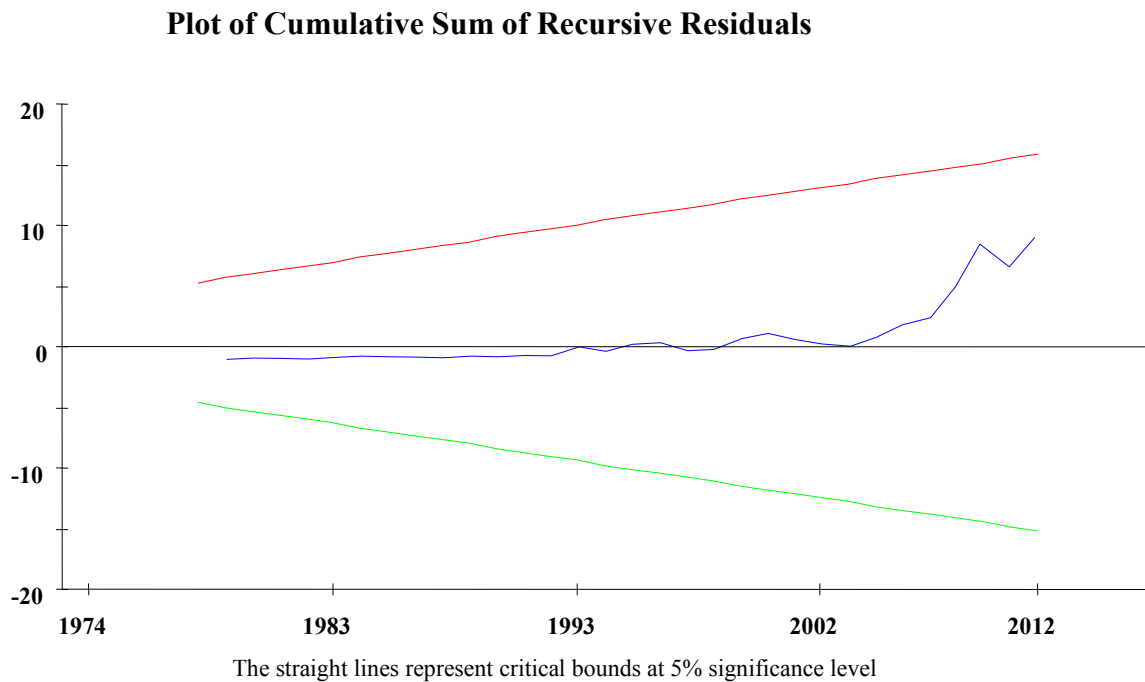


Figure 2: Graph of Cumulative Sum of Square Recursive Residual

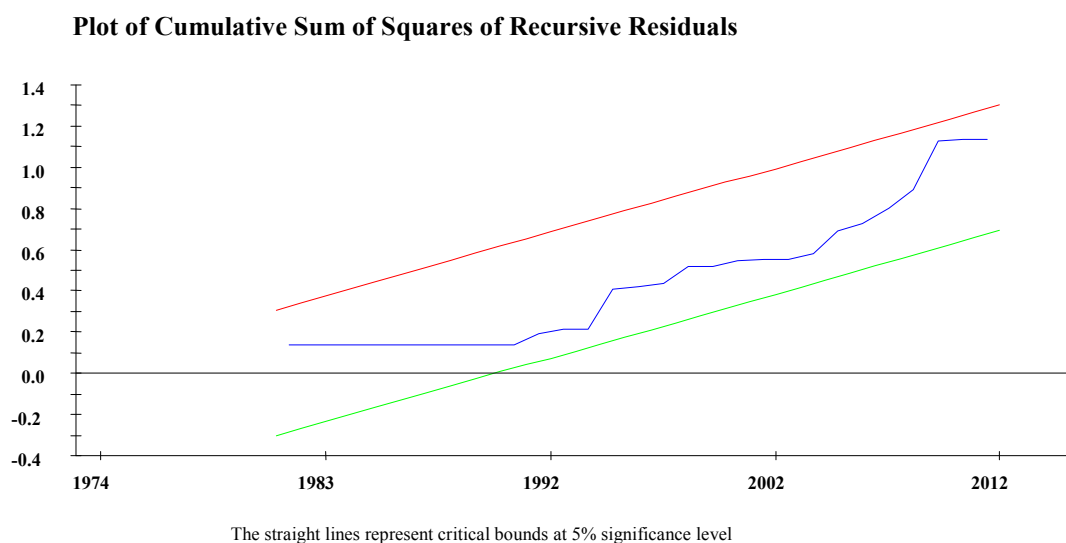


Figure 2 represents CUSUM square of residuals which shows that the estimated line remained within the upper and lower critical bounds at 5 percent significance level. The results cleared that required lines move insides of upper and lower bounds which evidently show that the concerned model is stable within constraints.

Conclusion

The stock markets play a key role in Pakistan because it channelize idle money into productive investment and generate capital for businesses which boosts the economy up. Pakistan’s stock market is one of emerging stock markets in the world. The ARDL to Co-integration results proved that Gross domestic savings ,money supply have positive impact on stock market development in Pakistan in both short run and long run that are consistent with theoretical and conceptual framework and literature [See also: Raza et al.(2012) and Adam and Tweneboah (2009)].

Foreign remittances have an insignificant effect on stock market development in short run. But the

study found no any affect on stock market in long run. F-static is greater than upper bound in both models that confirms the co-integration relationship between dependent and independent variables. CUSUM line remain between the upper and lower critical bound at 5 percent level of significance that guaranteed the stability of the model.

The study proposed that macroeconomic information like inflation; money supply etc can be used to forecast the stock market prices by rational investors. Monetary authorities should use their tools by keeping in view the response effect of them within the context of stock market development and variability of stock prices. The higher the rate of savings, higher will be the capital stock and then higher will be the economic growth. By keeping in view that Savings behavior must be encouraged in the country through appropriate savings schemes by the government.

References

- Adam, A. M. and Tweneboah, G. (2008) "Macroeconomic Factors and Stock Market Movement: Evidence from Ghana". Available at SSRN.
- Aggarwal, G. (2010). "A study of exchange rates movements and stock Market volatility" *International Journal of Business and Management* Vol. 5, No. 12.
- Ajayi, R. A., & Mougoue, M. (1996). On the dynamic relation between stock prices and exchange Rates. *Journal of Financial Research*, 19 , 193-207.
- Akbar,M, Ali,S and Khan,M.F (2012), The relationship of stock prices and macroeconomic variables revisited: Evidence from Karachi stock exchange, *African Journal of Business Management*, 6(4):1315-1322.
- Asaolu, T.O and M.S. Ogunmuyiwa (2011), An Econometric Analysis of the Impact of Macroeconomic Variables on Stock Market Movement in Nigeria, *Asian Journal of Business Management* 3(1): 72-78, ISSN: 2041-8752
- Ali, M.B. (2011), Impact of Micro and Macroeconomic Variables on Emerging Stock Market Return: A Case on Dhaka Stock Exchange (DSE), *Interdisciplinary Journal of Research in Business* 1(5):08-16.
- Ali. R. C., (1995) "Is the Dhaka Stock Exchange Informationally Efficient?" *The Bangladesh Development Studies*, 23(1/2) : 89-104.
- Asaolu, T. O. and Ogunmuyiwa, M.S. (2011), An Econometric Analysis of the Impact of Macroeconomic Variables on Stock Market Movement in Nigeria, *Asian Journal of Business Management* 3(1): 72-78
- Azam, M (2011) "Stock Price Variation Regarding Macro-Economic and Firm-Specific accounting Variables: Evidence from Karachi Stock Exchange", *International Research Journal of Finance and Economics*, (81):1450-2887
- Azam, M and Kumar, D (2011), Factors Influencing the Individual Investor and Stock Price Variation: Evidence from Karachi Stock Exchange, *Australian Journal of Basic and Applied Sciences*, 5(12): 3040-3043
- Bahdur, S. G. C and Neupane (2006), Stock market and economic development: A causality Test, *The journal of Nepalese Business studies*, III (1): 36 – 44
- Barsky , Robert B. and De Long , J. Bradford (1993) "Why Does the Stock Market Fluctuate?", *The Quarterly Journal of Economics*, Vol. 108, No. 2, pp. 291-31, Oxford University Press.
- Beaulieu, M.C , Cosset, J.C and Essaddam, N. (2005), The Impact of Political Risk on the Volatility of Stock Returns: The Case of Canada. *Journal of International Business Studies*, 36(6): 701-718
- Butt, B. Z., Rehman K.U., Khan, M. A., and safwan, N (2010), Do economic factors influence stock returns? A firm and industry level analysis, *African Journal of Business Management*, 4(5): 583-593
- Economic Survey of Pakistan various editions from 1980 to 2010, Ministry of Finance.
- Engle, Lilien and Robins (1987) "Estimating Time- Varying Risk Premia in the Term Structure: The ARCH-M Model", *Econometrica*, 55, 391-407.
- Fama, E. F. (1981), Stock Returns, Real Activity, Inflation and Money. *American Economic Review* 71(4): 545–565.
- Fazal, H.and Mahmood, T (2001), The Stock Market and the Economy in Pakistan. *The Pakistan Development Review* 40 :(2):107–114.
- Gan, C., Lee, M., Yong, H.H.A. and Zhang, J (2006) "Macroeconomic variables and stock market interactions: New Zealand evidence", *Investment Management and Financial Innovation*, 3(4): 89-101.
- Genctruk, M., Celik, I. and Binici, O. (2012), Causal relationship between macroeconomic variables and stock price index in emerging economies: An empirical application for Turkey, *African journal of business management*, 6(20): 6177 – 6182
- Granger C.W.J. (1988). Some recent developments in the concept of causality. *Journal of Econometrics*, 39: 199-221.
- Grossman ,S.J and Shiller,R.J(1981), The Determinants of The Variability of Stock Market Price, *The American economic review* 71(2), :.222-227.
- Gujrati,N. Damodar and Porter,C.Dawn (2005), Basic Econometrics. 5thedition. McGraw Hill.

- Hasan, A and Nasir,Z.M (2008), Macroeconomic Factors and Equity Prices: An Empirical Investigation by :Using ARDL Approach, *The Pakistan Development Review* 47: 4 .501–513
- Haugen, R.A (1970) "Expected Growth, required return and variability of stock prices, *The journal of financial and quantitative analysis*, 5(3): 297-307.
- Heins, A James and Allison, S.L (1996), Some factors affecting stock price variability, *The Journal of Business*, 39(1): 19-23.
- Hosseini, S. M, Ahmed, Z., and Lai, Y. W. (2011), The Role of Macroeconomic Variables on Stock Market Index in China and India, *International Journal of Economics and Finance*, 3(6): 233 – 243
- Humpe, A and Macmillan, P (2007), Can Macroeconomic Variables Explain Long Term Stock Market Movements? A Comparison of the US and Japan. Centre for dynamic macroeconomic analysis *Working paper series* CDMA 07/20
- Husain, F and Mahmood, T (2001) "The Stock Market and the Economy in Pakistan", *The Pakistan Development Review* 40: 2 : 107–114.
- Hussainey K, Ngoc L.K. (2009), The Impact of Macroeconomic Indicators on Vietnamese Stock Prices. *Journal of Risk Finance*, 10(4): 321-332
- Ibrahim, M.H (2011), Level and Volatility of stock Prices and Aggregate Investment: The case of Thailand. *Global Economic Review, Tylor and Francis Jouranals*, 40(4):445-46.
- Iqbal, Z and Sattar,A (2005), Contributions To Worker,S Remittances To Economic Growth in Pakistan. PIDE working paper.
- Irfan, M.C, M Nishat and H. Sharif(2000), Key Fundamental Factors and Long-run Price Changes in an Emerging Market—A Case Study of Karachi Stock Exchange (KSE), *The Pakistan Development Review*, 41(4): 517-533.
- Johansen S (1988). Statistical Analysis of Co-integration Vectors. *J. Econ. Dyn. Control*. 12: 231-254.
- Johansen S (1991). Estimation and hypotheses testing of co-integrating vectors in Gaussian vector autoregressive models. *Econometrica* 59: 1551-1580.
- Kaul, G and H. N. Seyhun (1990), Relative Price Variability, Real Shocks, and the Stock Market, *The Journal of Finance*, 45(2) : 479-496. Published by: Wiley for the American Finance Association
- Kiley, Michael T. (2004), Stock Prices and Fundamentals: A Macroeconomic Perspective, *The Journal of Business*, The University of Chicago Press,77(4):909-936.
<http://www.jstor.org/stable/10.1086/422629>.
- Lee, Bong-Soo (1998), Permanent, Temporary, and Non-Fundamental Components of Stock Prices, *The Journal of Financial and Quantitative Analysis*, 33(1) : 1-32.
- Menike L.M.C (2003), The Effect of Macroeconomic Variables on Stock Prices in Emerging Sri Lankan Stock Market, *Sabaragamuwa University Journal*, 6(1): 50-67
- Mohammad, S. D., Hussain, A., and Ali, A. (2009), Impact of Macroeconomics Variables on Stock Prices Empirical Evidence in Case of Karachi Stock Exchange, *European Journal of Scientific Research*, 38(1): 96-103.
- Mohammad, S.D, Adnan.H, M. A. Jalil and Adnan, A. (2009), Impact of Macroeconomics Variables on Stock Prices: Empirical Evidence in Case of KSE (Karachi Stock Exchange), *European Journal of Scientific Research*, 38(1): 96-103
- Mukherjee,T. K. and Naka, A. (1995), Dynamic relations between macroeconomic variables and the Japanese stock market: an application of a vector error correction model, *The Journal of Financial Research*. 18(2): 223–237.
- Nishat M. and Shaheen R. (2004). Macroeconomic factors and Pakistani equity market, *Pakistan Development Review*, 43(4): 619-637.
- Pearce, Douglas K. and V. V. Roley (1985), Stock Prices and Economic News, *The Journal of Business*, 58(1): 49-67.
- Pesaran and Shin (1995, 1998) An Autoregressive Distributed Lag Modeling Approach to Co-integration Analysis. (DAE Working Papers, No. 9514).
- Pethe ,A. and A. Karnik (2000), Do Indian Stock Markets Matter? Stock Market Indices and Macro-Economic Variables, *Quarterly Journal of Business and Economics*, 1(32): 50-67.
- Phillips P.C.B., Perron P (1988). Testing for a unit root in a time series. *Biometrika*, 75: 335-436
- Pilinkus, D. and Boguslauskas, V. (2009), The Short-Run Relationship between Stock Market Prices and Macroeconomic Variables in Lithuania: An Application of the Impulse Response Function, *Inzinerine Ekonomika-Engineering Economics* (5).
- Raimony, A.D and El-Nader, H. M. (2012), The Sources of Stock Market Volatility in Jordan, *International Journal of Economics and Finance*; 4(11): 108-121
- Rashid, M.T., Ahmed, K., Azim, P. and Rehman, H. (2011), Measuring the Impact of Inflation on Conditional Stock Market Volatility in Pakistan: An Application of IGARCH Model, *Middle Eastern Finance and*

- Economics*, 1450-2889.
- Raza, A., Iqbal, N., Ahmed Z., Ahmed M., and Ahmed, T (2012), The Role of FDI on Stock Market Development: The Case of Pakistan, *Journal of Economics and Behavioral Studies*, 4(1): 26-33
- Singh, T., Mehta S. and Varsha M,S (2011), Macroeconomic factors and stock returns: Evidence from Taiwan, *Journal of Economics and International Finance*, 2(4):217-227.
- Sohail N, Hussain Z (2009). Long-run and short-run relationship between macroeconomic variables and stock prices inPakistan: The case of Lahore Stock Exchange, *Pakistan Economic Social Review*, 47(2): 183-198.
- Wisniewski,T.P (2009), Can political factors explain the behavior of stock prices beyond the standard Present value models? , *Applied Financial Economics*, 19(23):1873-1884.ISSN 1392 – 2785
- Yartey CA (2008). The determinants of stock market development in emerging economies: Is South Africa different? IMF Working Paper , WP/08/32
- Yuhn, K.H (1996), Stock price volatility test for linear and non linear integration in the present value model of stock prices, *Applied financial economics*, 6(6): 487-494.
- Zaidi S.Akbar,(2010), *Issues in Pakistan's Economy*. Pp 457-460, Oxford University Press, Karachi.

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