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Can Stock Market Development Put Chains on Inflation? A Panel Cointegration Analysis on SAARC Countries

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This study investigates the impact of stock market development on inflation in SAARC countries using panel data approach. The estimated results of Panel OLS, FEM model and REM model have revealed that OLS model is not applicable and we have use panel cointegation to find out unbiased and normally distributed coefficient estimates like Kao Residual Cointegration, Long run estimates FMOLS and short run estimates OLS to find out how stock market development influence inflation. The results of long run estimates FMOLS suggest that market capitalization is decreasing inflation by -0.152%, total value of stock traded is increasing inflation by 0.164% and turnover ratio is decreasing inflation by -0.191% in the long run. Thus, the results suggest that stock market development can help put chains on inflation in SAARC countries by introducing more firms to increase size and volume of share transaction, as they will load to rise in production.

Keywords: Inflation, Stock Market Development, Fully Modified OLS, Kao Residual Cointegration **JEL Classification:** E44, O43, E31

1. Introduction

Stock market can be an important part of an economy and its acts as a catalyst. The function of the catalyst is simple, not influence or change but to regulate and accelerate other economic activities. Some theories suggest that the Stock market collects the money and distributes the money in the more productive and efficient sector of the economy [Caporale et al., 2004; Billmeier and Massa, 2009; Cooray, 2010]. In addition, stock market can encourage economic growth in a country by attracting people with cash to investment and providing them a platform and creating cash movement from investors to businesses that require capital and share their risk [Levine, 1991; Levine and Zervos, 1996; Rousseau and Wachtel, 2000; Arestis et al., 2001; Enisan and Olufisayo, 2009; Hou and Cheng, 2010].

These functions of the stock market could be demonstrated as follows; a stock market provides a platform for the investors, mobility of the money and helps them by providing them with financial instruments. Stock market also helps co-ownerships by providing them different and more efficient ways of sharing risk in the stock market. Stock market acts as a platform for investors and that money from investors is distributed to the more efficient and productive businesses of the economy, which are those listed companies in the stock market. Stock market also creates investment opportunities for the domestic and foreign investment. Stock market also promote saving in the country and more saving means more cash for the people to invest which may result in more cash flow in the economy.

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Hence, it is easy to expect that stock market contribution is just as important as other economic sector because stock market have direct link with the efficient and productive businesses of the economy. Therefore, stock market is the leading economic activity in a country (Pierce, 1884). While the stock market development could be the cause of economic development in the country, it is still questionable to say that these factors may follow either positive direction or negative direction but it is also possible that causality will happen in both directions [Bosworth, 1975; Nieuwerburgh et al., 2006].

The south Asian association for regional cooperation (SAARC) countries like Pakistan, Bangladesh, India, Sri Lanka and Nepal are all in developing state and their economic sectors are growing. The stock market are of these countries are also evolving and we need to make sure whether it is a good idea to let it grow freely or do we need to have a regulation to control stock market because there is a chance that stock market can have an impact on inflation.

High inflation may be good for the country if the economic growth is increasing income/sale and at the same time, production is increasing. If inflation continues to grow higher, the economy becomes unstable and is unable to meet the demands of the buyers. Therefore, if productive sector is performing less, the movement of cash from buyer to seller slows down and consumer due to lack of cash cannot buy more product from local seller. The lack of saving and less investment in the stock market makes it difficult for the companies in the stock market to get resources from the investors and causing them to make less capital investment resulting squeezing of economy.

The purpose of this study is to test whether stock market development has positive or negative impact on inflation and can it help control inflation in the long run or not. For this purpose, we will use data from SAARC (South Asian Association for Regional Cooperation) countries and use panel data to conclude the result of this theory by comparing our finding.

Using econometric methodology to determine whether inflation will increase or decrease in SAARC countries and see the trends in them. The paper will use panel data from 5 countries of SAARC and we will comment on the long run and short run implication on these three variables; Market Capitalization, Total Value of traded Stocks, Turnover Ratio, which are most commonly used indicators of stock market development.

1.1 - Impact of Stock Market Development on Inflation

To understand how stock market development is going to impact inflation lets further explain the discussion. It should be clear that stock market itself is not an independent variable because it is a platform where buyers meet sellers. Therefore, to see the increasing or decreasing impact of stock market development we might need to use some appropriate proxies that could represent stock market development.

Market capitalization is our first proxy of stock market development, which represents the total size of a market. Market capitalization is nominal variable because it shows the stock price of the company, which is the market worth of a company. When an investor wants to invest in stock market, they may look at the company's stock price. The more money investor invest in the company, the company uses the money and high performance lead to higher sale price of stock which benefit the shareholder. Market capitalization means the size of the market and it measures the total value of stock in a particular stock market by aggregating the market value of the stocks. Changes in market capitalization occur when fluctuations in share prices or when new

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shares are issued. The logic behind this is that increased level of activity in the stock market may attract more investors in the market (Daferighe, 2012).
Total value of traded stocks is our second proxy of stock market development and is a real variable because it shows the total number of traded stocks in a stock market during a specific period. When stocks are traded in the stock market, the company uses the money for their operations and growth. When firm uses the investment for operation and growth to purchase machines or raw material it increases the economic activity in the country and the expansion of company lead to more shares being floated showing stock market development.
Turnover ratio is our third proxy for stock market development. A stock market's turnover ratio measures how often shares change hands. Some emerging economic countries have very high turnover. High turnover means that the same share has been bought and sold many times just like cash velocity in an economy, thus shocks are liquid assets and this liquidity makes this indicator just as important for our research.
All the above proxies, market capitalization, turnover ratio and total value of traded stocks are used in this study and since they show different aspect they will have same or different effect on inflation.

1.2 - Organization of the Study

This part of the study called as the organization of this study gives the reader a brief introduction of what the research is going to discuss further below in the research. Literature Review section tells about the current and theoretical knowledge about the selection of dependent and explanatory variables. Methodology section contains all the research questions, methods used and the type of data used for this study. Next is estimations, which contains table used in this study and acceptance or rejection of research question hypothesis. Conclusion consists of conclusion, policy implication and limitation in this study.

2 - Literature Review

The pattern of the causal effect on the relationship between inflation and stock market development is mixed because some studies has found a positive relationship between stock market and inflation and some studies has found negative relationship whereas no relationship was also found between stock market and inflation.
These studies report a positive link between inflation and stock market in the long run and short run [Dhakal et al., 1993; Abdullah and Hayworth, 1993; Groenewold et al., 1997; Ratanapauorn and Sharma, 2007]. A positive relationship between stock market returns on inflation rate was investigated by (Choudhry 1998) in four high inflation countries (Argentina, Chile, Mexico & Venezuela) and it was concluded that the stock returns act as a hedge against inflation. However, [Caporale and Jung 1997] test a causal relationship between both expected and unexpected inflation and real stock returns, and found that a positive relationship does exist. [Hess and Lee 1999] they claim that the sign of the correlation between stock prices on inflation depends on the nature of the shock creating inflation. According to them negative relationship is due to supply (real output) shocks and positive relationship is due to demand (monetary) shocks. In addition, (Graham 1996) discovers a positive relationship between stock returns on inflation.
However, other studies suggest that the relationship between stock price index and inflation is negatively related in the short and long-term inflation because stock market influences the economic activities but more specifically, it influences the industrial activities [Fama and

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Schwert, 1977; Fama, 1981; Chen et al., 1986; DeTina, 1991; Humpe and Macmillan, 2009]. [Bakshi and Chen 1996] discuss that a negative correlation between stock prices on inflation has become one of the most commonly recognized practical facts. In addition, [Chatrath, A., Ramchander, S., & Song, F. 1997] found negative stocks return on inflation was explained in the Indian economy. The results indicate a partial support to Fama's hypothesis. Also, (Zhao 1999) finds a significant negative relationship between stock prices on inflation in Chinese economy. This result is consistent with (Fama 1981). Spyrou (2001) examines the relationship between stock returns on inflation rate in Greek by using monthly data from January 1990 to June 2000. The result for the period 1995-2000 show a negative but insignificant relationship, while for the period 1990-1995 there is a significantly negative relationship. [Omran and Pointon 2001] use co-integration analysis and error correction model to analyses the impact of the Egyptian stock market on the inflation. The results show that the stock market has a definite negative impact on the inflation in Egyptian. Saleemet al., (2013) has found negative relationship between stock market and inflation for the case of Pakistan because it is an under develop country and when inflation occurs the economy is effected which effects the stock market as well.
Studies like [Morley, 2002; Pradhan, 2011&Cakan, 2013] found existence of bidirectional causality between stock market and inflation because stock market is used as a hedge against inflation.(Hardouvelis 1988) found no significant relationship between the two variables.
The study will also use one control variables money supply as M2. The reason for choosing one control variable is that according to quantity theory of money, if amount of money in an economy were increasing, it would result increase in prices and cause inflation. As the study only discuss about the impact of stock market development on inflation, hence money supply as control variable is used in this study (Friedman, M. 1987).
The study will use panel data because the study contains five countries from SAARC, which are highly connected or influential on each other and for estimation purpose, study will use three proxies of stock market. The above studies have not conducted a study on SAARC countries. Another reason why this study is different from all the other studies is that, the countries selected in this research are all developing countries with different religions, growing stock markets, high inflation, unemployment, population size, culture, geographical difference and mobilization of money is different. The data contains less cross section and more time series, so our data will behave like time series so we will use panel unit root, panel co-integration and obtain long run and short run estimates.

3 – Methodology

The individual time series data taken for the SAARC countries that include Bangladesh with 24 observation from 1989 to 2012, India with 24 observation from 1989 to 2012, Nepal with 18 observations from 1995 to 2012, Pakistan with 24 observation from 1989 to 2012 and Sri Lanka with 24 observation from 1989 to 2012, total of 114 observations. Data is collected from the World Development Indicator database of World Bank and the international financial statistics of the International Monetary Fund. For our study, we are using three proxies for stock market development; Market capitalization, market turnover and total value of traded stocks. In addition, one control variable money supply. Inflation is taken as consumer price index being dependent variable. The study uses panel data, which consist of both time series and cross sectional data after solving problems of autocorrelation, heteroscedasticity and multicollinearity in the model, this study will provide valid estimates.

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3.1 - Research Objective

The first objective is that is there any connection between both stock market development and inflation and the second objective of this study is to find out whether there exist any positive or negative impact of stock market development on inflation. For this purpose, we are using SAARC countries which includes Pakistan, India, Bangladesh, Nepal and Sri Lanka because these countries are under develop countries and the study will check whether stock market have any impact on inflation in these SAARC countries. Three proxies of stock market development are used and each proxy will test if it has positive or negation relationship with inflation.

3.2 - Main Research Question

Does a selected stock market development indicator help in slowing down inflation or contribute in rise in inflation in long run for the SAARC countries?

4 - Data Description

This section of the study discusses about the association between dependent variable and independent variable and check whether the panel data is normally distributed. The study will then check the historical trends between inflation, which is the dependent variable and the proxies used for stock market development, which are the independent variable and see the possible positive and negative association between the variables.

Table 1 - Descriptive Statistics

	CPI	MP	ST	TR	M2
Mean	3.909	2.620	1.228	3.263	3.797
Median	3.959	2.730	1.173	3.241	3.778
Maximum	4.810	4.989	4.858	6.209	4.390
Minimum	2.479	-0.140	-4.637	0.017	3.147
Std. Dev.	0.535	1.024	2.100	1.521	0.284
Skewness	-0.371	-0.480	-0.366	-0.138	0.050
Kurtosis	2.599	3.118	2.831	2.272	2.820
Jarque-Bera	3.379	4.443	2.677	2.877	0.200
Probability	0.185	0.108	0.262	0.237	0.905
Sum	445.642	298.674	139.967	372.038	432.912
Sum Sq. Dev.	32.322	118.505	498.512	261.489	9.104
Observations	114	114	114	114	114

The table 1 shows the estimated results of descriptive statistics. The values of skewness and kurtosis show that the data series is normally distributed. The normality of data series is tested further by checking the probability value of Jarque-Bera, which rejects the hypothesis that the data is not normally distributed for all the variables.

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The results of table 2 of correlation matrix suggest that there is weak positive correlation between consumer price index and market capitalization, and stock traded, and turnover ratio; there is high positive correlation of consumer price index with money supply.

Table 2 - Correlation Matrix

	CPI	MP	ST	TR	M2
CPI	1				
MP	0.297	1			
ST	0.301	0.732	1		
TR	0.210	0.366	0.896	1	
M2	0.580	0.639	0.514	0.286	1

Model

For the estimation purpose, the study will use the equation 1 below and run OLS on it.

Equation 1:

$$LNCPI_{it} = ß_o + ß_1 LNMP_{it} + ß_2 LNST_{it} + ß_3 LNTR_{it} + ß_4 LNM2_{it} + e_t$$

t is number of years from 1989 to 2012

i is number of countries, which are Pakistan, Bangladesh, India, Nepal and Sri Lanka.

The natural logarithm of each variables is taken, so that the residual is normally distributed, model becomes linear and to make the value of each variables in percentage form.

LNCPI= Log of Consumer Price Index

LNMP= Log of Market Capitalization

LNST= Log of Total Value of Stock Traded

LNTR= Log of Turnover Ratio

LNM2= Log of Money Supply

Table 3 - VIF Matrix

	LNCPI	LNMP	LNST	LNTR
LNMP	1.097	-		
LNST	1.099	2.153	-	
LNTR	1.046	1.154	5.063	-
LNM2	1.508	1.692	1.359	1.089

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The table 3 shows the estimated results of VIF matrix. For time series data, the value of VIF Matrix should be less than 10. The estimate values of above table shows that, all the values of VIF Matrix are less than 10 and suggest that there does not exist problem of multicollinearity in the model (Gujrati 2004)

5 –Estimation

In this section the long run and short run estimates of the model, which is illustrated in equation 1, will be done. Through these estimates, the proposed hypothesis will be answered to achieve the research objectives.

Table 4 - Unit Root Test

	Levine, Lin & Chu		**IM, Pesaran& Shin**		**ADF Fisher**		**PP Fisher**		**Hadri**	
	Cal-Value	P.Value	Cal-Value	P.Value	Cal-Value	P.Value	Cal-Value	P.Value	Cal-Value	P.Value
AT LEVEL										
LNCPI	1.01	0.84	4.30	1.00	1.76	0.99	1.90	0.99	7.97	0.00
LNMP	-1.24	0.10	-0.99	0.16	13.45	0.20	13.49	0.20	4.93	0.00
LNST	-1.70	0.04	-1.18	0.12	14.17	0.17	18.58	0.05	5.35	0.00
LNTR	-2.42	0.01	-1.94	0.03	18.70	0.04	27.39	0.00	3.95	0.00
LNM2	-0.08	0.47	1.09	0.86	5.77	0.83	5.78	0.83	6.95	0.00
AT FIRST DIFFERENCE										
DLNCPI	-4.56	0.00	-3.50	0.00	30.21	0.00	31.17	0.00	0.45	0.33
DLNMP	-9.15	0.00	-7.95	0.00	69.74	0.00	71.20	0.00	-0.96	0.83
DLNST	-6.75	0.00	-6.49	0.00	55.56	0.00	61.37	0.00	1.27	0.10
DLNTR	-4.20	0.00	-4.92	0.00	47.17	0.00	67.90	0.00	2.39	0.01
DLNM2	-6.34	0.00	-5.87	0.00	49.47	0.00	49.42	0.00	-0.60	0.73

The estimated values of Table 14 are used to check whether there exist unit root problem in the model. The null hypothesis here is that there is problem of unit root in the model and alternative hypothesis is that there does not exist problem of unit root for the test of Levine, Lin&Chu, IM,

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Pesaran&Shin, ADF Fisher and PP Fisher. For the test of Hadri, the null hypothesis is that there does exist problem of unit root and alternative hypothesis is that there exist problem of unit root 1in the model. The estimated values suggest that all the variables are non-stationary at level and are stationary at first difference, which suggest that there does not exist the problem of unit root in the model. So we now have to make sure, if there is cointegration.

Table 5- Kao Residual Co-integration Test

Augmented Dickey Fuller	t-Statistic	Prob.
	-1.805	0.036

Table 6 - Long Run Estimates FMOLS

Dep variable: Consumer Price Index

Variable	Coefficient	Prob.
Market Capitalization	-0.402	0.000
Total Value of Stock Traded	0.530	0.000
Turnover Ratio	-0.525	0.000
Money Supply	0.642	0.000

The table 5 is used to test whether there exist co-integration in the model. The null hypothesis is that there is no co-integration in the model and after running Kao residual based co-integration test, the result of probability value suggests that there exist long run relationship between the variables in the model (Kao 1999). The estimation results show that there exist co-integration in the model and there is long run relationship exists between the variables in the model. Therefore, if there exist long run relationship between variables so this study used FMOLS model to estimate long run coefficient in table 6. Here, if market capitalization increases by 1%, it will decrease inflation by -0.402%. If total value of stock traded increases by 1%, then it will increase inflation by 0.530%, inflation will decrease by -0.525%, if turnover ratio increases by 1% and If money supply increased by 1%, it will increase inflation by 0.642% which is complying with the quantity theory of money.

The advantage of the FMOLS is that it provides country specific intercepts, which represent the average influence of all other variables, which are not included in the model on the Inflation. Here in figure 1, the intercept values are shown, since all values are positive hence, they indicate

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that all other excluded variables are jointly contributing in increase in inflation. Since there is not threshold, which can show how high, or low it is, nonetheless it can still be compared across the countries. Here we can see that in terms of relative policy, India and Pakistan have strict policy to control inflation as compared to other countries in the sample.

Figure 1 - Relative Policy Effect

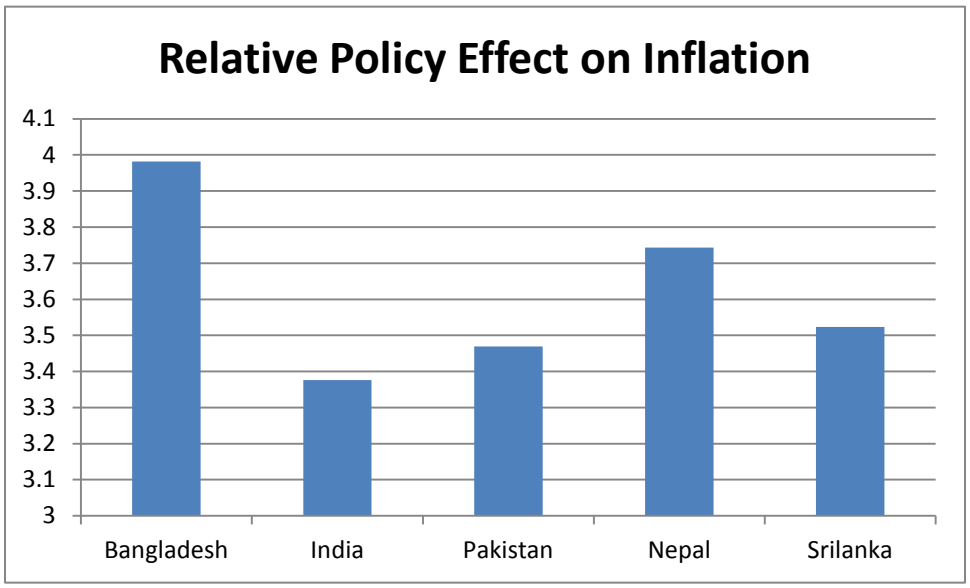

Table 7 - Short Run Estimates OLS

Dep variable: Consumer Price Index

Variable	Coefficient	Prob.
D(LNMP)	0.010	0.419
D(LNST)	-0.013	0.448
D(LNTR)	0.010	0.527
D(LNM2)	-0.148	0.004
ECM(-1)	-0.028	0.031
C	0.080	0.000

Durbin W	1.540	R-Squared	0.625	F-Stats	4.060

The estimated results of table 7 shows short run estimates using OLS and is suggesting that there exist convergence in the model as the coefficient of ECM(-1) is negative and significant. The reason behind slow convergence could be that the stock market in the SAARC countries is not

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mature rather it is in its developing, hence it is taking more time to influence inflation though the stock market development.

Conclusion

The stock market development is treated as an important part of an economy because stock market development can improve the productive sector of the economy. Stock market development can help control inflation because when an investor has enough money to spend, they come to the stock market. The stock market gives a platform to the company and investor, so that the saving from investor are properly utilized. When investment from household is provided to the company through stock market, the company has two choices to make, either spend the money on expansion of business to meet the demand hence inflation is decreased or product differentiation by changing the appearances of the product to make it more attractive and increase in price hence inflation is increases. For SAARC countries, this research is important because these countries are in developing state and inflation can make it difficult for any country in development process. If stock market development can help reduce inflation in SAARC countries, then it can create a big difference because first, it will help industries to grow and generating employment. Secondly, low inflation will help economy to grow and last, with increasing growth and development in industries, it will give companies a competitive advantage in the global market against developed countries. This scenario is possible, if there is negative relationship between stock market development and inflation. However, if relationship is positive then this research is still helpful in a way that it will suggest that companies in stock market are using money not to increase production but they are using money to improve the product quality itself and increasing price.

The study has used Kao Residual Co-integration, Long Run Estimates using FMOLS and Short Run Estimates using OLS, to check if there is a long run relationship of stock market development on inflation, the results have suggest that there is long run and short run of stock market development on inflation.

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Market capitalization means the size of the market and is reducing inflation in the long term, which means that companies are using money to increase production to meet the demand in the economy hence inflation is decreasing. Total value of stocks traded is increasing inflation because the new firms are using stocks to decrease their debt and not for expansion of businesses. Therefore, if restrictions are imposed on new firms to stop them trading for deficit financing then number of traded stocks can be reduced; hence, inflation can be controlled in the long term. Turnover ratio is the velocity of shares changing hands in the stock market and is reducing inflation in the long term. When this velocity of shares changing hands increases in the stock market, the price of stocks is increased because the demand is increased and at the same time, more firms will get benefit with the availability of investments hence production will be assisted. All of these proxies show the effect of stock market development on inflation. The control variable money supply is increasing inflation. However, the household with saving is investing their money and some of that idle saving is used to buy stocks in the stock market. The firms are using that money for expansion of production capacity to meet the demands, which is causing deflation in the economy. The study suggests that even though we are able to prove that there is co-integration among these variables, but the effect of stock market development on inflation is weak when we see the SAARC countries altogether which maybe because of the fact that stock market development in these countries are not potent enough to influence the goods market.

Policy Implication & Limitations

The findings from our estimation results suggest some possible policies for our model. The results of Kao Residual, Long Run Estimates FMOLS and Short Run Estimates OLS have suggested that there is long run, short run in the model but also there is convergence, which suggest that this model can be used to achieve the target of reducing the inflation rate through stock market development.

The results shows that if the size of the stock market is increased through increase in the market capitalization then it helps to reduce inflation at the rate of 0.15%, this is because the size of the stock market increases when firms performs better or increase its capacity which consequently

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lead to reduction in the prices. Here policy makers can promote the big firms to participate in expanding the businesses which will ultimately lead to higher production, higher employment and through the consequence of outcome presented in this study lower inflation.

According to the results, if only number of stocks increase, which happens when new firms enter into the listing of stock market, it will lead to increase in the inflation probably most of the companies when they first enter into the market their objective is to finance their existing deficit (paying off the debts) using the investment received from stock sales. Which is because the counties in the sample are developing with immature stock markets, companies use this source as the last resort to sale portion of the business to get the resources. Here policy makers can regulate the stock market and discourage the firms to float their shares for the sake of deficit, instead the floating of shares should be for expansion of assets.

Turnover ratio as an indicator of stock market development represent the rate at which shares are changing hands, which means the times with the shares are sold and resold. Shares usually change hands frequently if its price is changing, if the price increases then people become interested in investing in the stock market hence more firms are benefited by receiving idle savings of the household. Policy makers can improve the sale and purchase procedure of the shares that wider net of investors can be tapped in.

The limitations this study highlighted was that when the data was collected from all seven countries, the data for Afghanistan, Bhutan and Maldives was not available, so the study had to be conducted for only five countries. Secondly, if a disaggregated analysis of the stock market is done to see which firm is selling shared for expansion and which is selling for differentiation can yield more in-depth outcomes.

Bibliography

Abdullah, D. A. & Hayworth, S. C. (1993).Macroeconometrics of Stock Price Fluctuations. *Quarterly Journal of Business and Economics*, 32 (1): 49-63.

ISBN: 978-1-922069-85-6

Arestis, P., Demetriades, P. O. & Luintel, K. B. (2001). Financial Development and Economic Growth: The Role of Stock Markets. *Journal of Money, Credit and Banking, 33*: 16-41.

Bakshi, G. S. & Chen, Z. (1996). Inflation, Asset Prices, and the Term Structure of Interest Rates in Monetary Economies. *Review of Financial Studies, 9*: 241-275.

Billmeier, A. & Massa, I. (2009).What Drives Stock Market Development in Emerging Markets-Institutions, Remittances, or Natural Resources? *Emerging Markets Review, 10*: 23–35.

Bosworth, B. (1975). The Stock Market and the Economy. *Brookings Papers on Economic Activity, 1*: 257–290.

Cakan, E. (2013). Non-linear Causality between Stock Returns and Inflation Uncertainty: Evidence from the US and the UK. *International Business and Economics Research Journal, 12 (1)*: 63-70.

Caporale, G. M., Howells, P. G. & Soliman, A. M. (2004). Stock market Development and Economic Growth: The Causal Linkage. *Journal of Economic Development, 29*: 33-50.

Caporale, T. & Jung, C. (1997). Inflation and Real Stock Prices. *Applied Financial Economics, 7*: 265-266.

Chatrath, A., Ramchander, S., & Song, F. (1997).Stock Prices, Inflation and Output: Evidence from India. *Applied Financial Economics, 7*: 439-445.

Chen, N. Roll, R. & Ross, S. (1986). Economic Forces and the Stock Market. *Journal of Business, 59*: 383-403.

Choudhry, T. (1998). Inflation & Rates of Return on Stocks: Evidence from High Inflation Countries. *Discussion Paper, University of Wales Swansea, Department of Economics*.

Cooray, A. (2010). Do Stock Markets Lead to Economic Growth. *Journal of Policy Modeling, 32*: 448-460.

Daferighe, C. (2012). The Impact of Inflation on Stock Market Performance in Nigeria. *American Journal of Social and Management Sciences, 3*(2), 76-82.

DeTina, R. H. (1991). Does inflation depress the stock market? *Business Review,* 3-12.

Dhakal, D., Kandil, M. & Sharma, S. C. (1993). Causality between the Money Supply and Share Prices: a VAR Investigation. *Quarterly Journal of Business and Economics, 32 (3)*: 52-74.

ISBN: 978-1-922069-85-6

Enisan A. A. & Olufisayo A.O. (2009). Stock Market Development and Economic Growth: Evidence from Seven sub-Sahara African Countries. *Journal of Economic s and Business, 61*: 162-171.

Friedman, M. (1987).Quantity theory of money. *J. Eatwell et al*, 1-40.

Fama, E. (1981). Stock Returns, Real Activity, Inflation and Money. *American Economic Review, 71*: 545-565.

Fama, E. F. &Schwert, G. W. (1977). Asset Returns and Inflation. *Journal of Financial Economics, 5*: 115-146.

Fisher, R. A. (1925). *Statistical methods for research workers*. Genesis Publishing Pvt Ltd.

Floros, C. (2004). Stock returns and inflation in Greece. *Applied Econometrics and International Development, 4*(2).

Gujarati, Damodar N. (2004). Basic Econometrics, McGRAW HILL FINANCIAL**:** 946.

Graham, F. C. (1996). Inflation, Real Stock Returns, and Monetary Policy. *Applied Financial Economics, 6*: 29-35.

Groenewold, N., O'Rourke, G & Thomas, S. (1997). Stock Returns and Inflation: A Macro Analysis. *Applied Financial Economics, 7*: 127-136.

Hardouvelis, G. A. (1988). The predictive power of the term structure during recent monetary regimes. *Journal of Finance, 43(2)*: 339-356.

Hess, P. J. & Lee, B.-S. (1999). Stock Returns and Inflation with Supply and Demand Disturbances. *Review of Financial Studies, 12*, 1203-1218.

Hou, H. & Cheng, S.Y. (2010). The Roles of Stock Market in the Finance-Growth Nexus: Time Series Cointegration and Causality Evidence from Taiwan. *Applied Financial Economics, 20 (12)*: 975-981.

Humpe, A. & Macmillan, P. (2009). Can macroeconomic variables explain long-term stock market movements? A comparison of the US and Japan. *Applied Financial Economics, 19 (2)*: 111-119.

Hadri, K. (2000). Testing for stationarity in heterogeneous panel data. *The Econometrics Journal*, 148-161.

Im, K. S., Pesaran, M. H. & Y. Shin (1997). Testing for Unit Roots in Heterogeneous Panels. *Cambridge: University of Cambridge*.

ISBN: 978-1-922069-85-6

Indicator, W. D. (2015).*Market capitalization of listed companies (% of GDP)*.from World Development Indicator, http://data.worldbank.org/indicator/CM.MKT.LCAP.GD.ZS.

Indicator, W. D. (2015).*Stocks traded, total value (% of GDP)*.from World Development Indicator, http://data.worldbank.org/indicator/CM.MKT.TRAD.GD.ZS.

Indicator, W. D. (2015).*Stocks traded, turnover ratio (%)*. from World Development Indicator, http://data.worldbank.org/indicator/CM.MKT.TRNR.

Kao, C. (1999). Spurious regression and residual-based tests for cointegration in panel data. *Journal of econometrics*, *90*(1), 1-44.

Levine, R. (1991). Stock Markets, Growth, and the Tax Policy. *Journal of Finance, 46*: 1445-1465.

Levine, R. &Zervos, S. (1996). Stock Market Development and Long-run Growth. *World Bank Economic Review, 10*: 323-339.

Levin, A., Lin, C. F., & Chu, C. S. J. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of econometrics*, *108*(1), 1-24.

Morley, B. (2002). Output, consumption and the stock market implications for European convergence. *Applied Economics, 34*: 317-323.

Nieuwerburgh, S. V., Buelens, F. & Cuyvers, L. (2006).Stock Market Development and Economic Growth in Belgium. *Explorations in Economic History*, *43*: 13-38.

Omran, M. & Pointon, J. (2001). Does the Inflation Rate Affect the Performance of the Stock Market? The Case of Egypt. *Emerging Markets Review, 2*: 263-279.

Peirce, C. S. (1884). The Numerical Measure of the Success of Predictions. *Science, 4*: 453-454.

Pradhan, R. P. (2011). Financial Development, Growth and Stock Market Development: The Trilateral Analysis in India. *Journal of Quantitative Economics, 9 (1)*: 134-145.

Pradhan, R. P., Arvin, M. B., Hall, J. H., & Bahmani, S. (2014). Causal nexus between economic growth, banking sector development, stock market development, and other macroeconomic variables: The case of ASEAN countries. *Review of Financial Economics*, *23*(4), 155-173.

Pradhan, R. P., Arvin, M. B., Samadhan, B., & Tanejha, S. (2013). The impact of stock market development on inflation and economic growth of 16 Asian countries: A panel var approach. *Applied Econometrics and International Development*, *13*(1), 203-220.

ISBN: 978-1-922069-85-6

Ratanapakorn, O. & Sharma, S. C. (2007). Dynamic Analysis between the US Stock Returns and the Macroeconomic Variables. *Applied Financial Economics, 17 (5)*: 369-377.

Rousseau, P. L. & Wachtel, P. (2000).Banks, Stock Markets and China's Great Leap Forward. *Emerging Markets Review, 8*: 206-217.

Raza, S. A., Jawaid, S. T., & Afshan, S. (2013). Is Stock Market Sensitive to Foreign Capital Inflows and Economic Growth? Evidence from Pakistan.

Spyrou, S. I. (2001). Stock Returns and Inflation: Evidence from an Emerging Market. *Applied Economics Letter, 8*: 447-450.

Sikalao-Lekobane, O. L., & Lekobane, K. R. (2014).Do Macroeconomic Variables Influence Domestic Stock Market Price Behaviour in Emerging Markets? A Johansen Cointegration Approach to the Botswana Stock Market. *Journal of Economics and Behavioral Studies*, *6*(5), 363.

Saleem, F., Zafar, L., & Rafique, B. (2013).Long run relationship between inflation and stock return: evidence from Pakistan. *Academic Research International*, *4*(2), 407-415.

Sami, J. (2013). Remmittances, Banking Sector Development and Economic Growth in Fiji. *International Journal of Economics and Financial Issues*, *3*(2), 503-511.

Spaulding, W. C. *Inflation and the Money Supply*. From http://thismatter.com/money/banking/inflation-money-supply-m1-m2.htm.

Zhao, X. Q. (1999). Stock Prices, Inflation and Output: Evidence from China. *Applied Economics Letters, 6*: 509-511.