

ISSN 2072-0149

The AUST

# **Journal of Science and Technology**

Volume-4

Issue-2

July 2012

(Published in January 2014)



**Ahsanullah University  
of Science and Technology**

## **EDITORIAL BOARD**

**Prof. Dr. Kazi Shariful Alam**  
Treasurer, AUST &  
Head, School of Business, AUST

**Prof. Dr M.A. Muktadir**  
Head, Department of Architecture, AUST

**Prof. Dr. Md. Anwarul Mustafa**  
Head, Department of Civil Engineering, AUST

**Prof. Dr. S. M. Abdullah Al-Mamun**  
Head, Department of Computer Science & Engineering, AUST

**Prof. Dr. Abdur Rahim Mollah**  
Head, Department of Electrical & Electric Engineering, AUST.

**Prof. Dr. Mustafizur Rahman**  
Head, Department of Textile Engineering, AUST.

**Prof. Dr. AFM Anwarul Haque**  
Head, Department of Mechanical and Production Engineering, AUST.

**Prof. Dr. M. Shahabuddin**  
Head, Department of Arts & Sciences, AUST

## **EDITOR**

**Prof. Dr. Kazi Shariful Alam**  
Treasurer  
Ahsanullah University of Science and Technology

## Externalities to Stock Price Movement: From Investors' Perspective of Secondary Market of Bangladesh

Naznin Sultana Chaity<sup>\*</sup>; Sanjida Sharmin<sup>†</sup>; Md. Anisul Islam Sajib<sup>‡</sup>

**Abstract :** *Share price is a reflection of the expectation of the investors. Such expectation is influenced by a number of issues related to financial information as well as macro and micro economic information. This study is an attempt to concentrate on the determinant factors that ultimately help the investors to identify the factors causing movement of stock price. For the analysis purpose, primary data have been collected through questionnaire survey using likert scale from individual investors. The sample size was one hundred and fifty and the analytical tool 'Factor analysis' has been used. Twenty one variables related to institutional and micro-macroeconomic information have been chosen by studying different literature from home and abroad. The reliability test was used; the variables under study and sample size came wonderfully reliable. Upon study, these twenty one variables concentrate under four factors by considering the eigen value and variance analysis which have ultimately defined as the most prominent determinant of stock price from the perspective of the investors. These four factors are 'Profitability Indicator Factor', 'Dividend Impact Factor' 'Micro and Macro Economic Factor' and 'Salient Market Factor'.*

**Keywords :** *Principle Component Analysis, Stock Price, Eigen Value, Variance Analysis and Secondary Market*

### Introduction

The price of a stock is the most important determinant to the investors for investing in particular a stock. There are several factors which are related to stock price. According to Grossman and Shiller (1980) movement of stock price may be attributed to new information about future real dividends or real interest rate. Chen et. al (1986) claimed that there is equilibrium relationship between market price of stock and macroeconomic variables. Eita<sup>\*</sup> (2011) conducted a study using VECM econometric methodology to find out how economic activities affect stock prices. The result suggested that increase in economic activity and money supply increase stock market prices while increase in inflation and interest rates decrease stock prices. Another study by Gompers et. al (2003) in both primary or secondary market indicated that the equity price is significantly influenced by book value of the firm, dividend per share, earnings per share, price earnings ratio and dividend per share.

Turmoil in Stock Market leads to examining the determinant factors of stock price movement prevailing at present scenario in Bangladesh. Various factors are

---

<sup>1</sup>Assistant Professor, School of Business, Ahsanullah University of Science and Technology

<sup>†</sup> Lecturer, School of Business, Ahsanullah University of Science and Technology

<sup>‡</sup> Lecturer, Department of Business, Z.H. Sikder University of Science & Technology

## Externalities to Stock Price Movement: From Investors' Perspective of Secondary Market of Bangladesh

---

prominent for pricing a stock in the market. This study will examine the factors which are playing most important role. Empirical evidence on the existing literature suggested that several works are conducted by different scholars worldwide; a few were conducted on Bangladesh. This study contributes to the existing literature by using direct survey of the investors and their decision to invest in stock as well as motivating factors. A principle component analysis of Factor analysis is conducted by surveying the various investors to bring out the actual dominating factors by which they are attracted to invest in stock.

### Literature Review

Many factors may have impact on equity pricing in the stock market. The impact differs from firm to firm, industry to industry, economy to economy and even from time to time. There is no generally accepted theoretical model that could link the micro and macro economic variables to stock market development or to stock market returns. But in 1980s, Chen, Roll and Ross attempted to identify factors in the arbitrage pricing model with macroeconomic variables that have impact on asset return. Many other studies have found the variables such as interest rate, money supply, exchange rate, asset growth, dividend payout, retained earnings are determinant of stock market and stock price behavior.

Friend and Puckett (1964) worked on relationship between dividend and stock price volatility and found a positive relationship. Kumar and Mohan (1975) tried to develop a relationship between dividends and retained earnings. They concluded that the dividend and retained earnings are more or less, equally significant to market price of stock. They argued that the dividend hypothesis has a little superiority over the retained earnings in determining the share prices. According to Miller and Rock (1985); Asquith and Mullin (1983); Born et al.(1984) when a company declares dividends, it provides information to its shareholders to forecast the financial position and earning stability of the company. These forecasts also depend upon the source of information whether it is reliable or not and have impact on price level. Nishat (1995) attempted to establish the relative importance of the dividend with retained earnings hypothesis in determining the share prices of highly profitable growth industries of Pakistan. Nazir et. al. (2010) attempted to investigate the role of corporate dividend policy in determining the volatility of stock price in Pakistan. Among the 73 firms listed in Karachi Stock Exchange, it was found that dividend policy has a strong significant impact on stock price volatility.

Nasif Al- Shubiri, F. (2010) conducted study on 14 commercial banks of Amman Stock Exchange for the period of 2005-2008. It was found that relationship between the macroeconomic variables (net asset value per share, stock dividend percentage, gross domestic product) and stock price is highly positively significant;

whereas there is negative significant relationship among the inflation, lending interest rate and stock prices. Rahman and Hossain (2006) conducted their study to seek evidence whether DSE is efficient or not. The study results explained that the absorption of good and bad news or any other price information may take late effect on share price.

Mondal and Imran (2012) investigated the factors influenced in determining the share price of some companies listed in DSE. The study reveals that some qualitative factors namely, corporate goodwill, market sentiments, company announcements, AGM, unexpected circumstances, analysts' reports, technical influence, change in government policy, political turmoil as well as some quantitative factors like dividend, market capital, price earning ratio, eps, net income, return on investment, interest rate, exchange rate, stock split etc. affect stock prices. This paper also reveals that liquidity, leverage, profitability, size of firm and dividend have positive influence on share price. Khan (2009) identified that in Dhaka Stock Exchange for the period of 2000 to 2006 dividend per share was the main determinant of share prices. Corwin (2003) identifies uncertainty and asymmetric information as strong influence on the firm's equity pricing and as a matter of fact lead to underpricing instrument. Woher and Mark (2006) stated that the decomposition of stock price is very sensitive to what assumption is made about the presence of permanent change in either real dividend growth or excess stock return. Cochrane (1992) argued that fluctuation in stock prices can be explained by time-varying discount rates and future excess returns. Mauldin (2003) studying on the relationship between oil prices and stock prices found strong evidence that change in oil prices affected forecasted stock return. A rise on oil price suggests a lower stock market price and a drop in oil price infers a rise in stock prices.

Smyth and Nadha (2003) examined the relationship between exchange rates and stock prices in Bangladesh, India, Pakistan and Srilanka using daily data over a six-year period from 1995-2001. Using Engle-Granger two-step and Johansen co-integration methods they suggest that there is no long-run equilibrium relationship between these two financial variables in any of the four countries.

### **Objective of the Study**

This study is an attempt to concentrate on the determinant factors causing the movement of stock price in the secondary market of Bangladesh. Based on the study of literature, it was found that different dominating factors were reasonable for volatility in stock price. The main objective of this study is to identify the dominating factors impact on stock price movement from the investors' perspective.

### **Methodology**

By analyzing the previous studies, the impact of different dominating variables to determine stock price are considered. A factor analysis as well as Principle component analysis approach is conducted through a questionnaire survey. Principal components analysis (PCA) and factor analysis (FA) are statistical techniques used for data reduction or structure detection (Kim, Jae and Mueller, 1978; Abdi and Williams, 2010). Principal components analysis is used to find optimal ways of combining variables into a small number of subsets, while factor analysis used to identify the structure of underlying variables and to estimate scores to measure latent factors themselves. Factor analysis (FA) is used to find the common factors among observed variables and Principle component analysis is preferred for the purpose of data reduction. The specific goals of PCA or FA are to summarize patterns of correlations among observed variables, to reduce a large number of observed variables to a smaller number of factors. It presents a set of observed variables or a number of 'common' factors and a factor which is unique to each variable. The common factors (latent variables) are hypothetical variables which explain why a number of variables are correlated with each other. In factor analysis, the coefficients are called loadings and a variable is said to 'load' on a factor. If the observed variables are  $X_1, X_2 \dots X_n$ , the common factors are  $F_1, F_2 \dots F_m$  and the unique factors are  $U_1, U_2 \dots U_n$ , the variables may be expressed as linear functions (regression equation) of the factors:

$$X_n = a_{n1}F_1 + a_{n2}F_2 + a_{n3}F_3 + \dots + a_{nm}F_m + a_nU_n$$

The coefficient  $a_{11}$  shows the effect on variable  $X_1$  of a one-unit increase in  $F_1$ . Factor analysis seeks to find the coefficients ( $a_{11}, a_{12} \dots a_{nm}$ ) which best reproduce the observed variables from the factors (Kim, Jae and Mueller, 1978; Kaiser and Cenry, 1979). When the coefficients are correlated (the factors are uncorrelated) the sum of the squares of the loadings for variable  $X_1$ , namely  $a_{11} + a_{12} + \dots + a_{1m}$  shows the proportion of the variance of variable  $X_1$  which is accounted by the common factors. This is called the communality. The larger the communality for each variable, the more successful a factor analysis solution is. For Principle Component Analysis, the rotation used is Varimax rotation. Principle component analysis is a variance focused approach seeking to reproduce the total variances in which component reflect both common and unique variance of the variable. Varimax is often used where multiple latent variables are present. This rotation is used to minimize the complexity of the components by making the large loadings larger and the small loadings smaller within each component and it constrains the correlation to be zero (0). It tries to maximize the variance of each of the factors so that the total amount of variance accounted for could be redistributed over the extracted factors.

### Sample Size Selection and Data Collection

Data were collected from the primary source through questionnaire survey using the likert scale. Gorsuch (1983) and Kline (1979, p. 40) recommended at least 100 samples for factor analysis. MacCallum, Widaman, Zhang & Hong (1999) said no sample should be less than 100 even though the number of variables is less than 20 (Gorsuch, 1974, p. 333; in Arrindell & van der Ende, 1985, p. 166). Hatcher (1994) recommended that the number of subjects should be larger of 5 times the number of variables; else it should be hundred (100). Hutcheson and Sofroniou (1999) recommends at least 150 - 300 cases, more toward the one hundred fifty (150) when there are a few highly correlated variables, as would be the case when there are highly multicollinear variables (David Garson, 2008). Based on these literatures, we decided to survey at least one hundred fifty (150) individual investors from different brokerage houses.

The measures pertain to two different types of factors – (i) institutional factor (Sharma and Singh, 2006; Gill et. al. 2012; Mondal and Imran, 2012) and (ii) micro and macro economic factors (Nafis Al- Shubiri, 2010; Gosh et.al). Institutional factors include earning per share, dividend per share, dividend payout ratio, price earning ratio, retained earnings, cash dividend, bonus share, right share, season offerings, firm size, assets growth, company goodwill and substitute to the stock. Micro and Macro economic factors include gross domestic product (GDP), lending interest rate (IR), inflation rate (INF), dollar exchange rate (Exc), margin loan facilities and shift in government and policies.

### Reliability Measure of Survey Questionnaire

Reliability indicates the accuracy or precision of the measuring instrument (Norland, 1990). Cronbach's alpha is the most common measure of internal consistency or reliability. It is most commonly used for multiple Likert questions in a survey/questionnaire. Alpha coefficient ranges in value from zero (0) to one (1) and used to describe the reliability of factors extracted from dichotomous. The higher the score, the more reliable the generated scale is. Nunnally (1978) has indicated **0.7** to be an acceptable reliability coefficient but lower thresholds are sometimes used in the literature.

**Table 1: Reliability Statistics**

Cronbach's Alpha	N of Items
<b>.906</b>	<b>21</b>

Cronbach's alpha is **0.906**, which indicates a high level of internal consistency with this specific sample. Item total statistics (Appendix - A1) was done to identify the individual's question reliability. This presents the value that Cronbach's alpha

## Externalities to Stock Price Movement: From Investors' Perspective of Secondary Market of Bangladesh

would be if that particular item was deleted from the scale. It was identified that removal of any question would not result in a lower Cronbach's alpha whereas the value will increase if one variable (bonus share) is removed from the question. But seeing the importance of the variable, we decided to retain it.

### Analysis of Findings

This study is an attempt to concentrate on the determinant factors that cause the movement of stock price. Investors from the secondary market are interviewed. Twenty one variables have been chosen and the reliability test justifies the accuracy of the chosen variables that has already been discussed in the previous section. The next section interprets the sample adequacy that means whether the data are appropriate for doing principle component analysis (factor analysis).

### Sampling Adequacy Measurements

At first, **Kaiser-Meyer-Olkin (KMO)** test is done. KMO measures sampling adequacy and the statistics between 0 and 1 indicate the sampling adequacy. Kaiser's (1974) recommendation of 0.5 to 0.7 are mediocre, 0.7 to 0.8 are good whereas values above 0.9 are superb.. This value is also almost 'marvelous' according to Hutcheson and Sofroniou (1999). The KMO measure of sampling adequacy for this study is 0.866, which is acceptable and good one to conduct factor analysis. This indicates that the sample size is adequate to yield distinct and reliable factors.

**Table 2 : KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		<b>.866</b>
Bartlett's Test of Sphericity	Approx. Chi-Square	2875.348
	Df	210
	Sig.	.000

**Bartlett's Test of Sphericity** is another measure to indicate the strength of relationship among variables. This tests whether the correlations between questions are sufficiently large for factor analysis to be appropriate and whether the correlation matrix is different from an identity matrix.<sup>§</sup> A significant test tells that correlations matrix is not an identity matrix. In this case, it is significant.  $\chi^2 = 2875.348$ ,  $p < .000$  indicate that the correlations within the correlation matrix are different from zero to warrant factor analysis.

<sup>§</sup>In identity matrix, all of the diagonal elements are 1 and all of the diagonal elements are 0.



## Principal Component Analysis

Principle component analysis help to reduce correlated observed variables to a smaller set of important independent composite variable. Principal component analysis works on the assumption that all variance are common and before extraction the communalities are all 1. Communalities are the proportion of variance explained by underlying factor. The amount of variance in each variable (retained factors) is represented by the communalities after extraction. The percent of variance in a given variable which is explained by all the factors jointly may be interpreted as the reliability of the indicator (Gason, 2008). MacCallum, Widaman, Zhang and Hong (1999) suggested that communalities should all greater than 0.6, or the mean level of communality to be at least 0.7. From the appended table, **A-2**, it is clear that communalities are greater than **0.6** except for bonus share.

Total variance explained shows how much of the total variance among all the chosen variables, each of the factors explains, and the first factor will always explain the most. An eigen value indicates how much of the total variance of all variables is covered by the factor. The appended table **A-3** showed the eigen values associated with each linear factor before and after extraction. Extraction Sums of Squared Loadings determine the corresponding the number of factors to be retained. From the table, it is clear that only four (4) factors are acceptable or generated from the 21 variables. The first factor explained **47.806%** of the total variance where as the rest are **11.25%**, **8.64%** and **5.63%** respectively. Rotation Sums of Squared Loadings (Appendix **A-3**) represent the distribution of the variance after the varimax rotation. After the extraction, the variances of Factor 1 become **24.398** and **22.798%**, **15.964%** and **10.185%** variance for the remaining factors respectively.

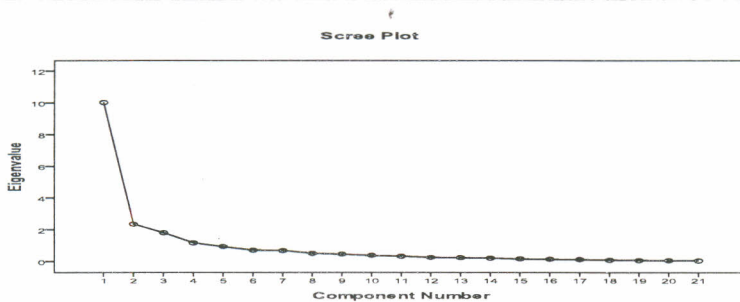


Figure 1: Scree Plot

The Scree Plot is a graph to show the relationship between the relative magnitude of the eigen values and the number of factors (Bryant and Yarnold, 1995). Kaiser's criterion is accurate when there are less than 30 variables and the communalities

## Externalities to Stock Price Movement: From Investors' Perspective of Secondary Market of Bangladesh

after extraction are greater than 0.7, retain all factors with eigen values above 1. This curve is useful to retain how many factors to retain. From the above graph, it is clear that curve begin to flatten after the 4<sup>th</sup> and 5<sup>th</sup> factors. Eigenvalue of Factor 5 is less than 1. By considering the eigenvalue and variance analysis, we decided to retain only four types of factors.

Rotated Component Matrix showed in **Appendix Table A-5**, is used to reduce the number of the factors on which the variable under investigation has high loading. This table contains the rotated factor loadings (factor pattern matrix), which represent both how the variables are weighted for each factor and also the correlation between the variables and the factor. Factor loading more than **0.3** has been displayed. The values greater than **0.3** among variables are considered moderately correlated. This makes the output easier by removing the clutter of low correlations that are probably not meaningful anyway.

**Appendix A-5** shows the four (4) rotated factors along with loading that have been extracted. First factor might be named as "**Micro and Macro Economic Factor**" because items like Lending Interest Rate, Firm size, Goodwill, Gross Domestic Product, Inflation Rate, Dollar Exchange Rate, Margin loan and Shift in Government and Policies load highly on it. The second factor might be called as "**Profitability Indicator Factor**" because items like Price Earning Ratio, Earning per Share, Net Profit, ROA and ROE load highly on it. The third factor could be named as "**Salient Market Factor**" that includes Bonus Share, Right Share, Seasons Offerings, Retained Earnings and Debt/Equity Ratio. The fourth factor may be named as "**Dividend Impact Factor**" and it includes Dividend per Share and Dividend Payout Ratio. The Rank order of factor is done by calculating the mean considering the correlation values of each factor loadings.

**Table 3: Rank Order of Factors**

Factors	Mean	Rank Order of Factors
Profitability Indicator Factor	0.8152	1
Dividend Impact Factor	0.805	2
Mirco and Macroeconomic Factor	0.742	3
Salient Market Factor	0.614	4

From **Table 3**, it is clear that most dominating factor identified by the investor is "**Profitability Indicator Factor**". In this factor loading, earning and profitability of any company is the prime consideration identified by most of the investors. Regular earnings and profitability ensure long term sustainability and dividend. Second factor is the "**Dividend Impact Factor**"; how much dividend is given per

year is the second considering factor to the investors. Investors want dividend right now rather than wait for later. “**Micro and Macroeconomic Factor**” is the third factor to be considered by the investor. Factor loading identifies important variables like lending interest rate, foreign exchange rate, margin loan, shift in government and policies which are important determinant of capital market decision as well as for the individual and institutional investors. And the forth is “**Salient Market Factor**”. Capital structure, seasons offering and right shares come at the end.

### Conclusion

Principal component analysis identifies 4 factors from 21 variables. The variable-to-factor ratio is 5 (21/4). But in certain cases the loading of factors varies. These four factors have been selected by considering the eigen value and variance analysis. There is limited cross loading among the 4 factors. It has been established that the most influencing factors to determine the share price from the perception of the individual investors are ‘**Profitability Indicators Factor**’, ‘**Dividend Impact Factor**’, ‘**Micro and Macro Economic Factor**’ and ‘**Salient Market Factor**’. This study has not considered the institutional investors’ perceptions. Secondary data analysis could give more insight in this area. Our next concern would be to identify the dominating factors by examining institutional investors’ perception.

### References

1. Abdi. H., & Williams, L.J. (2010). "Principal component analysis." Wiley Interdisciplinary Reviews: Computational Statistics, 2: 433–459.
2. Asquith, p and D. Mullins (1983). “The impact of initiating dividends on shareholder wealth” *Journal of Business*, 656, Pp.77-96.
3. Born, Jeffery, James Moser and Dennis Officer (1984) “Changes in dividend policy and subsequent earnings” *Journal of Portfolio Management*, Summer 1988, Pp.56-62.
4. Bryant, F. B., & Yarnold, P. R. (1995). “Principal-components analysis and confirmatory factor analysis”. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding multivariate statistics*. Washington, DC: American Psychological Association.
5. Chen, M. Roll, R. and Ross S.A. (1986) “Economic forces and Stock Market” *Journal of Business*, 59, Pp.383-404.
6. Cochrane, J. H (1992) “Explaining the variances of price-dividend-ratio” *Review of Financial Status*, 15, Pp-243-286.
7. Corwin, Shane, A. (2003) “Determinants of Underpricing for Seasoned Equity Offers” *Journal of Finance*, 58(5).
8. Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment Research & Evaluation*, 10(7). <http://pareonline.net/pdf/v10n7a.pdf>. Retrieved February 20, 2012)

## Externalities to Stock Price Movement: From Investors' Perspective of Secondary Market of Bangladesh

9. Eita J. Hinaunye (2011) "Determinants of Stock Market Prices of Namibia" MONASH University, Working Pp 209.
10. Friend, I and Puckett, M. (1964). "Dividends and Stock Prices" *The American Economic Review*, 54(5), Pp.656-682.
11. Grossman J. Sanford and Shiller J. Robert (1980) "The Determinants of The Variability of Stock Market Prices" National Bureau of Economic Research Working Paper Series-564, October 1980
12. Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: Erlbaum.
13. Garson, D. G. (2008). "Factor Analysis: Statnotes". <http://www2.chass.ncsu.edu/garson/pa765/factor.htm>. Retrieved February 20, 2012.
14. Gill, A. Biger N. and Mathur N. (2012) "Determinants of Equity Share Prices Evidence from American Firms" *International Journals of Finance and Economics*, ISSN 1450-2887, Issue 90 (2012), Pp 176-192.
15. Hatcher, L. (1994). "A Step-by-Step Approach to Using the SAS® System for Factor Analysis and Structural Equation Modeling". Cary, NC: SAS Institute, Inc.
16. Hutcheson, G., & Sofroniou, N. (1999). "The multivariate social scientist: Introductory statistics using generalized linear models". Thousand Oaks, CA: Sage Publications.
17. John Mauldin (2003) "The connection between Oil and Stock Prices, FLT Dec. Edition.
18. Kaiser H. (1970) "A second generation little jiffy," *Psychometrika*, Springer, vol. 35(4), Pp.401-415, December.
19. Kumar, S. and Mohan, M (1975) "Determinants of Share Prices in India" *The Indian Economic Journal*, 23, Pp. 23-27.
20. Kim, Jae-on & Charles W. Mueller. (1978). "Introduction to factor analysis : what it is and how to do it". Beverly Hills, Calif : Sage Publications. (HA29.Q35/VOL 13)
21. Kaiser, H.F. and Cerny, B.A. (1979), "Factor Analysis of the Image Correlation Matrix," *Educational and Psychological Measurement*, 39, Pp. 711 -714.
22. Kline, P. (1979). "Psychometrics and psychology". London: Academic Press.
23. Khan, S.H (2009) "Determinants of share price movement in Bangladesh: Dividends and retained earnings;", *School of Management, Blekinge Institute of Technology*, Pp1-48.
24. Miller, M. H. and Rock k (1985) "Dividend Policy under asymmetric information" *Journal of Finance*, 40, September, Pp.1031-51.
25. MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong S. (1999). "Sample size in factor analysis. *Psychological Methods*", 4, Pp.84-99.
26. MacCallum, R. C., Widaman, K. F., Preacher, K. J., & Hong S. (2001). "Sample size in factor analysis: The role of model error". *Multivariate Behavioral Research*, 36, Pp.611-637.
27. Nasif A I- Shubiri, F. October (2010), "Analysis the Determinants of Market Stock Price Movements: An Empirical Study of Jordanian Commercial Banks" *International Journal of Business and Management*, Vol.5 No. 10, Pp-137-144
28. Mondal Md. Saheb Ali and Imran M. showkat (2012) "Determinants of Stock Price: A case on Dhaka Stock Exchange" *Asia Pacific Business Research Conference*, 13-14 February 2012.

- www.wbiconpro.com/337-Saheb.pdf
29. Nishat, M. 1995 "Share prices, Dividend and Share Retained Earnings Behavior: Empirical Tests". *The Indian Economic Journal*, 40, Pp.56-95
  30. Norland-Tilburg, E. V. (1990). "Controlling error in evaluation instruments". *Journal of Extension*, [On-line], 28(2). <http://www.joe.org/joe/1990summer/tt2.html>.
  31. Nunnally, J. (1978). *Psychometric theory*. New York: McGraw-Hill.
  31. Nazir M.S., Nawaz M.M.; Anwar W. and Ahmed F (2010) "Determinants of Stock Price volatility in Karachi Stock Exchange: The Mediating Role of Corporate Dividend Policy" *International Research Journal of Finance and Economics*, Issue 55, Pp.100-107
  32. Preacher, K. J., & MacCallum, R. C. (2002). "Exploratory Factor Analysis in Behavior Genetics Research: Factor Recovery with Small Sample Sizes". *Behavior Genetics*, 32, Pp.153-161.
  33. R. Smyth and M. Nandha (2003) "Bivariate causality between exchange rates and stock prices in South Asia" *Taylor and Francis Journals* 10, Pp 699-704.
  34. Sharma, S. and B. Singh (2006), "Determinants of Equity Share Prices in Indian Corporate Sector: An Empirical Study" *The ICAFI Journal of Applied Finance* 12(4), Pp 21-38.
  35. Wohar and Mark, E (2006) "What drives stock prices? Identifying the determinants of stock price movements" .*Southern Economic Journal*, V 73, Pp.55-78.

**Externalities to Stock Price Movement: From Investors'  
Perspective of Secondary Market of Bangladesh**

**Appendix**

**A-1: Reliability Measures: Item- Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Cash Dividend	78.3267	225.215	.663	.899
Bonus Share	78.1400	215.974	.214	.942
Right Share	78.0333	226.878	.716	.899
Dividend per Share	78.5800	225.668	.566	.901
Dividend Payout Ratio	79.4800	229.043	.417	.905
Seasons Offerings	78.2400	226.372	.622	.900
Price earnings Ratio	78.3067	228.295	.675	.900
Earnings per Share	78.0067	229.228	.686	.900
Net profit/Net income per year	78.1800	226.914	.717	.899
Retained earnings	78.6200	229.163	.633	.901
Return on Assets	78.6000	229.584	.686	.900
Return on Equity	78.5400	230.545	.645	.901
Capital Structure/Debt Equity Ratio	78.6733	228.544	.557	.902
Firm Size, Good Will and Company News	78.2800	225.049	.750	.898
Substitutes of the stock	79.0600	226.325	.676	.900
Lending Interest Rate	79.1467	229.200	.568	.902
Gross domestic Product	78.8200	225.558	.676	.899
Inflation Rate	78.6867	225.747	.646	.900
Dollar Exchange Rate	79.1267	224.259	.661	.899
Margin loan	78.0867	225.167	.753	.898
Shift in Government and policies	78.1333	224.653	.650	.900

Source : Data collected through questionnaire.

**A-2: Communalities**

<b>Principal Components</b>	<b>Initial</b>	<b>Extraction</b>
Cash Dividend	1.000	.766
Bonus Share	1.000	.334
Right Share	1.000	.683
Dividend per Share	1.000	.804
Dividend Payout Ratio	1.000	.790
Seasons Offerings	1.000	.603
Price earnings Ratio	1.000	.815
Earnings per Share	1.000	.810
Net profit/Net income per year	1.000	.721
Retained earnings	1.000	.684
Return on Assets	1.000	.782
Return on Equity	1.000	.839
Capital Structure/ Debt Equity Ratio	1.000	.665
Firm Size, Good Will and Company News	1.000	.697
Substitutes of the stock	1.000	.738
Lending Interest Rate	1.000	.704
Gross domestic Product	1.000	.884
Inflation Rate	1.000	.780
Dollar Exchange Rate	1.000	.716
Margin loan	1.000	.780
Shift in Government and policies	1.000	.809

Extraction Method: Principal Component Analysis.

**Externalities to Stock Price Movement: From Investors'  
Perspective of Secondary Market of Bangladesh**

**A-3: Total Variance Explained**

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.039	47.806	47.806	10.039	47.806	47.806	5.124	24.398	24.398
2	2.363	11.253	59.059	2.363	11.253	59.059	4.788	22.798	47.196
3	1.816	8.647	67.707	1.816	8.647	67.707	3.353	15.964	63.161
4	1.184	5.639	73.346	1.184	5.639	73.346	2.139	10.185	73.346
5	.950	4.524	77.869						
6	.722	3.440	81.309						
7	.702	3.342	84.652						
8	.516	2.456	87.108						
9	.470	2.239	89.347						
10	.390	1.856	91.202						
11	.341	1.623	92.825						
12	.266	1.264	94.090						
13	.246	1.173	95.262						
14	.224	1.068	96.330						
15	.171	.813	97.144						
16	.155	.738	97.882						
17	.132	.628	98.510						
18	.101	.480	98.989						
19	.079	.378	99.367						
20	.070	.333	99.700						
21	.063	.300	100.000						

Extraction Method: Principal Component Analysis.



A-4 : Component Matrix\*

	Component			
	1	2	3	4
Cash Dividend	.700		-.340	.369
Bonus Share				.480
Right Share	.762			
Dividend per Share	.605		.501	.406
Dividend Payout Ratio	.458		.643	.383
Seasons Offerings	.680			
Price earnings Ratio	.748	.362		
Earnings per Share	.766	.372		
Net profit/Net income per year	.779			
Retained earnings	.664		-.404	
Return on Assets	.756	.324		
Return on Equity	.717	.489		
Capital Structure/ Debt Equity Ratio	.615	.416	-.334	
Firm Size, Good Will and Company News	.794			
Substitutes of the stock	.711	-.402		
Lending Interest Rate	.631	-.526		
Gross domestic Product	.742	-.564		
Inflation Rate	.693	-.497		
Dollar Exchange Rate	.707	-.449		
Margin loan	.816			
Shift in Government and policies	.697		-.536	

Extraction Method: Principal Component Analysis.

\* 4 components extracted.

**Externalities to Stock Price Movement: From Investors'  
Perspective of Secondary Market of Bangladesh**

**A- 5 : Rotated Component Matrix\***

	Component			
	1	2	3	4
Cash Dividend			<b>.783</b>	
Bonus Share			<b>.527</b>	
Right Share	.314	.400	<b>.466</b>	.456
Dividend per Share		.379		<b>.774</b>
Dividend Payout Ratio				<b>.836</b>
Seasons Offerings		.437	<b>.603</b>	
Price earnings Ratio		<b>.846</b>		
Earnings per Share		<b>.834</b>		
Net profit/Net income per year	.365	<b>.725</b>		
Retained earnings		.415	<b>.680</b>	
Return on Assets		<b>.807</b>		
Return on Equity		<b>.864</b>		
Capital Structure/ Debt Equity Ratio		.514	<b>.625</b>	
Firm Size, Good Will and Company News	<b>.609</b>	.383	.424	
Substitutes of the stock	<b>.679</b>			.466
Lending Interest Rate	<b>.820</b>			
Gross domestic Product	<b>.905</b>			
Inflation Rate	<b>.838</b>			
Dollar Exchange Rate	<b>.765</b>			
Margin loan	<b>.713</b>	.308	.420	
Shift in Government and policies	<b>.607</b>		.612	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

\* Rotation converged in 8 iterations.