A VIEW ABOUT THE DETERMINANTS OF CHANGE IN SHARE PRICES: A CASE FROM KARACHI STOCK EXCHANGE (BANKING SECTOR)

Muhammad Yasir Naveed
Superior college Lahore Pakistan

Professor Dr. Muhammad Ramzan
Lahore University of management sciences Lahore Pakistan

Abstract

Over the past many years ago, lot of work has been completed by the researchers trying to understand the relationship between different factors and stock exchange prices. In this article I will try to explain different factors that affect share prices. A sample of 15 banks has been selected from Karachi stock exchange for the period of 2008-2011, Arch-Garch and unit root cannot be applied to check the stationarity and volatility due to small sample size. The analysis utilized fixed effect regression model, the test includes regressing the dependent variable SP (share price) and independent variables size, DY (dividend yield), ROA (return on asset), and AG (asset growth). Results show that “size” has a positive significant relationship with the share price while the other variables (Dividend yield, Asset growth, Return on assets) have insignificant relationship.

Keywords: VIEW; DETERMINANTS; CHANGE; SHARE PRICES; CASE; KARACHI STOCK EXCHANGE; BANKING SECTOR

Introduction

After a number of studies there is still a gap regarding the relationship between the determinants of share price, and so far this topic is open for discussion. According to Modigliani and Miller (1958) firms share price is based upon its earnings, firm’s value is unrelated with dividend policy. John and Williams (1987) reported that the MM,s statement will only be true when managers pass all the information’s including positive and negative to their company shareholders. Mangers disclose just positive information not negative; they will not disclose any negative information until any regulation forces them.
Many researchers have different views about the association between these variables. Lorey and porter (1981) and shiller (1981) found that under the theory of a stock prices were too much unstable to be reliable with preparations in future dividends. Campbell (1991) applied a log linear estimation of stock returns and gets a linear association between the log price-dividend ratio and opportunities of future dividend and stock returns. According to him stock price activities are based upon expectations about future returns. Conroy et al (2000) describes that dividend announcements cannot clarify the market activities towards announcements. Nishat and irfan (2001) analyzed that dividend payment ratio and dividend yield have considerable impact on share prices.

Gordon (1963) reveals that dividend payments have an impact on share price. According to him firms paying high amount of dividends faces less risk in terms of share prices. Jenson (1976) reveals that dividend payments decrease the cost of funds and enhance firm’s cash flow. After paying cash dividends to share holders firms have less idle funds. So managers cannot invest it in less or negative present value projects.

Lot of work has been done on this topic, but almost all the authors have taken just dividend policy as a independent variable to find how it effects the share prices, but the study on relationship of different variables such as size, asset growth, return on asset is not so much taken into consideration.

**Literature Review:**

An important research on determinants of stock market growth has been done in an economic and finance literature. In finance attention has been given to understand the determinants of stock market.

khalid mustafa,( 2013) investigates the relationship between money supply, interest rate and stock prices. They have used monthly basis data from january 1992 to june 2009. They have applied error correction model, co-integration and granger causality test to check the relationship between money supply and share prices. There findings suggests that there exits uni-directional association between share prices and supply of money. There results also reveals that money supply is negatively effectd by share prices in a short run relationship. According to there research findings money supply is not the strong determinant of stock prices. There is no long run relationship between money
supply and stock prices. Interest rates affect the share prices which gives an idea about monetary policy. Monetary policy can be used to check stock prices in Pakistan. Profilet, (2013) put some questions about the determinants of share price volatility, such as what factors affect stock prices and what specific financial factors make share prices more volatile. To answer these questions they choose data of 500 publically traded firms from survey data base. They have used OLS regression technique to check the relationship between these variables. According to their results dividend yield has a positive strong relationship with share price volatility while on the other hand firm size has negative correlation.

Zafar, M. (2013) investigates the determinants of stock market prices. She used time series data for the period of 1988-2008. Different variables are used to examine the relationship such as stock market liquidity, financial development, real interest rate, and foreign direct investment. Her findings reveals that there exist a positive relationship with FDI, value traded, financial intermediary development and negative relationship with interest rate. According to her government role to reduce potential risk.

Syed Atif Ali, (2012) investigates the relationship and impact of company’s internal factors on the stock prices. To achieve their objectives they have taken 6 years data from 7 different sectors of business and these sectors includes 35 companies. According to their regression results return on equity have insignificant impact on share prices and net profit margin, current ratio and total asset turnover as independent variables have significant impact on share price.

Tsz-Kin Chung, (2011) explains share price disparity due to uncertainty from China stock markets. They have used data of 44 dual listed companies over the sample period from 2006-2010. Independent variables are selected by them as a determinants of disparity equity values, debts, time to maturity and risk free interest rate. To analyze the relationship between price disparity and parameter uncertainty they have used panel regression analysis. According to their analysis parameter uncertainty is a strong factor on share price disparity. They have also reveals that parameter uncertainty is also related with other variables.

Mian & Musarat (2010) conducted this research to study the impact of company disbursement policy on share price instability. They have inspected the sample of 73
firms for the period of last six years from 2003-2008. They have used a methodology based upon fixed effect and random effect model regression analysis between the dividend policy and stock price. Other variables such as size leverage, growing and earning. Findings suggest that dividend policy has a strong effect on share price volatility.

Faris & AL- Shubiri (2010) describes in his study after using simple and multiple regression analysis he finds that highly positive significant relationship between net assets value and stock price. He also concludes that inflation has a negative impact and lending interest rate but not always significant on at 2 years 2005, 2006.

Hussain et al. (2009) they consider the quarterly data of many economic variables which includes foreign exchange rate, foreign exchange reserves, industry production index, whole sale price index, gross fixed capital formation, and these variables are acquire from 1986 to 2008 period. The outcomes show that after the incentives in 1991 the manipulation of foreign exchange rate and reserve effects positivly to stock market whiles other variables like IIP and GFCF has not special effects to stock prices. The results also discloses that domestic variables like increase production and capital structure not effects significantly while outer factors like exchange rate and reserve have some significant effects on share prices.

Adam. et al (2009) in their study describes the effect of trading volume in stock market of Ghana. They have used co integra tion and innovation accounting methods. According to their analysis there exist a long run relationship between foreign direct investment, nominal exchange rate and stock market.

Nadeem & hussain (2009) investigated long run and short run relationship between macroeconomic variables and stock prices in Lahore stock exchange. All the data used in these analysis were establish non stationary relationship and inactive at 1st difference. Long run relationships were found between macro economic variables and LSE 25 index. Industrial production index, exchange rate, money supply, and stock returns discloses positive effects, on the other hand inflation had a negative impact on share price.

Horobet & Dumitrescu (2009) describes that Hungary’s stock market index is positively connected with the consumer price index and negatively influenced by real GDP, and the
effective exchange rate, money supply, the interest rate, Substitutes in the development procedure.

Wang, et al (2009) establishes that large firms react quicker to new information as compared to small firms. There is a encouraging force effect for the increasing stock profits earned one week past to the collapse data. Since share prices are advance looking, they present a sole evidence of changing in investors views about the prospect forecast of companies.

Glaser & Weber (2009, 2007) investigate that the confidence level of different investors can be measured with several scores. High risks will be taken by investors after huge profits and after huge profits they purchase high risks securities.

Engle & Rangel (2008) that high frequency collective stock instability has both a short-run and long-run element, and propose that the long-run factor is connected to the business cycle.

Omar (2008) identified the major determinants such as (political events) that influenced Pakistan’s stock market between 1947 and 2001. He had used primary data in the form of questionnaire. Then they analyzed that the probability of an event in any year is relatively high and suggests that the occurrence of political events is neither increasing nor decreasing over the period. He approximates that the risk premium due to political risk is very large, lying somewhere between 10.725% and 16.725%.

Chousa et al (2008) tried to review that stock markets is a mother of speculative business. They applied pooled regression technique of different nine leading emerging economies for the period of 1987-2006.

Shahbaz et al. (2008) analyzed there exist a relationship between economic growth and stock market development. It is in case of less developed countries. Findings of this article suggest that there exist a long run association between stock market growth and economic development. The present study tried to find out impact of macroeconomic variables on stock prices in Lahore stock exchange.

Samitas & kenourgios (2007) reveal major findings about the four European countries, namely Hungary, Czech Republic, Poland and Slovakia. Findings includes that the domestic interest rate has less impact on stock market index as compare to domestic production. 2nd finding is that U.S interest rate has more impact on the stock market than
the U.S industrial production. In European countries German factor has more importance then the U.S global factor.

Al – Tamimi (2007) describes company internal factors (company’s performance, a alteration in board of directors, selection of new management, and the formation of new resources, dividends, incomes), and external factors (government policies and policies, inflation, and other financial situation, behavior of investors, market situation, money supply, competition, unrestrained natural or ecological conditions) as influencers of asset prices. He created the simple regression analysis to analyse the relationship between the independent and dependent variables.

John M. et al (2006) describes that it is a complex task to measure market efficiency of public and private information incorporation. It provides different measures about the competency of an equity market. Security laws and investor security promote a market where inner information is kept secret. These factors have little effect on the ability of a market proficiently.

El-wassal (2005) investigates the association between stock markets growth, foreign portfolio investment, financial intermediation, and economic growth. Results show that economic growth, foreign portfolio investments were the important factors of the stock market development.

Hou & Moskowitz (2005) uses delay to measure efficiency in stocks within the U.S. Then discuss on the 4 markets to bering delay. They described delay as a measure of public information efficiency rather than focusing on undeliverable risk. Amazingly, they discover that the typical emerging market has less information delay than developed markets.

Dimitrova (2005) investigates the relationship between stock prices and exchange rates. He has used a multivariate model, focusing on the stock market of United States and the United Kingdom for the period of 1990 to 2004. This study created a hypothesis that there is an association among the foreign exchange and stock markets. He concludes that there is a positive relationship when share prices are the key variable and negative when exchange rates are the key variable.

Blackburn et al (2005) describes that the growth of stock markets related with the level of economic growth and reserves of capital is positive. These results support the idea that
as economic growth equity markets tend to increase together in conditions of the number of listed companies and in terms of market capitalization.

Rigbon & Sack (2004) analyzed that when the war risks increase, results in declines of govt securities and equity prices, decrease in the dollar, and a rise in oil prices. Between war and oil prices a positive correlation exists. It means that war has a significant effect on the oil prices.

Durham (2002) states that the positive impact of stock market development is primarily reliant on the addition of higher income countries in the regression sample, which restricts the importance for lesser income countries. He provides evidence that indicates that stock market growth has a more positive impact on development for larger levels of GDP per capita, and higher levels of legal development, lower levels of country credit risk.

Mafizur & Salahuddin, reveals that there exist significant positive association between stock market growth and economic development. These results are reliable with hypothetical predictions. The implications of the present study are that although there have been some developments in the stock markets of Pakistan in the recent past, yet, a strong requirement for implementation of efficient rules that simplify and success exists.

**Objective**

The reason of this research is to know about the impact of size, dividend, profitability, asset growth of 15 Pakistani banks on share price on the basis of earlier behavior of all the variables with each other.

**Problem Statement**

The main purpose of this study is to check the impact of independent variables size, dividend, return on asset, and asset growth with share price to analyze the clear about them as it affects many other variables.
Study of variables:

Dependent variable:

Share price:

Share prices were available at stock exchange website in daily, monthly or quarterly basis. I have used data on monthly basis which is converted into yearly by taking the average of 12 months.

Independent variables:

Size:

The variable has been calculated by multiplying face value of share to number of shares issued. Size means equity of a firm. Equity means the real magnitude of the company.

Dividend yield:

The variable has been calculated by taking the sum of cash dividend and stock dividend which is paid by banking sector to its shareholders as a per share dividend.

Asset growth:

This control variable is calculated by taking the change in total asset as compare to last year assets value. Then change divided by current year asset value.

Return on assets:

This variable is calculated by dividing the profit before interest and tax over total assets of each bank.

Sample and data collection:

My sample includes banks those are listed in Karachi stock exchange. There is no missing observation for the whole data (which is required to calculate our model). Time period consists from 2008-2011 and to check the impact of these variables on share price I have selected 15 banks. All the information and data is available for these 15 banks. All
banks are not included because some banks were rejected due to de-listed during my observed time period, some banks amalgamated with other banks and some banks got registered during my observed time period. Panel data is used for whole period consists of 15 banks and 4 years. The annual data related to these banks were collected from different sources such as, balance sheet analysis, annual reports of these banks, and Karachi stock exchange, business recorder.

**Model:**
The analysis utilized fixed effect regression model, the test includes regressing the dependent variable SP (share price) and independent variables size, DY (dividend yield), ROA (return on asset), and AG (asset growth). Hussain et al. (2009) findings suggest that domestic factors of firms like increase in production and capital structure not effects significantly while outer factors like exchange rate and reserve have significant impact on share prices.

According to sajid et al (2010) shows that share price correlate negatively with both dividend yield and payout ratio, and positively correlated with earning volatility and form size.

There are also some other factors which effects share price. So I have constructed a regression model including all independent variables in order to control the influence of these variables. Therefore using of fixed-effect model is to analyze the impact of variables that vary over time. Regressors coefficient ($\beta_1$, $\beta_2$, $\beta_3$, $\beta_4$) values signify the proportionate change in share price due to illustrative variables, other changes can be due to unknown factors that will be included in error term ($\epsilon$).

Following hypothesis has been estimated to be evaluated against econometric model:

$H_1$: There is a positive relationship between the size of the bank and share price.
$H_2$: There is a positive relationship between dividend yield and share price.
$H_3$: There is a positive relationship between return on asset and share price.
$H_4$: There is a positive relationship between asset growth and share price.

$$SP_{it} = \alpha_i + \beta_1 SIZE_{it} + \beta_2 DY_{it} + \beta_3 ROA_{it} + \beta_4 AG_{it} + \epsilon_{it}$$

$$SP_{it} = 298.09 + (-25.44) SIZE_{it} + 1.1784 DY_{it} + (-1.909) ROA_{it} + (-7.923) AG_{it} + \epsilon_{it}$$
Here I have used fixed effect model of regression to show the relationship of the price between share prices and these independent variables. Previous studies show that these all independent variables have an impact (either positive or negative) on dependent variable share price. Such as Nishat and Irfan (2001) describe that size, leverage and earnings has a positive significant effect on share price.

**Results and discussion:**

Table 1 summarizes the descriptive details for 5 variables affecting share price (SP) of fifteen banks. Share price ranges from 1.80 to 257.95 with highest mean value equal to 47.384 and with highest standard deviation 56.48. Second controlled variable of Size (SIZE), it ranges from 8.46 to 11.61 with mean value 10.335 and standard deviation .915, Third variable is dividend yield (DY) which ranges from minimum value 0.0 to maximum 130.0 with mean value 33.18 and standard deviation 35.57, fourth variable that I have considered is return on assets (ROA) it ranges from minimum value -.077 to .369 with minimum mean value of all variables .0304 and lowest standard deviation .0708, my fifth and last variable which is considered in this research it ranges from minimum value in negative -.021 to .796 with mean value .173 and standard deviation .154. Mean value provides the idea about the central tendency of the values of a variable. Standard deviation and the extreme values (minimum in comparison to maximum value) give the idea about the dispersion of the values of a variable from its mean value.

Data which is used in this paper is just for 4 years. So it is a short cross sections and short time period that’s why it is called micro panel. To validate our correlation results I have applied fixed effect model. Fixed effects models are designed to study the causes of changes within a person for companies.

To decide whether to apply fixed or Random effects I have run hausman test. According to the results of this test the probability of chi-square is .0012 which is statistically significant and less than .05 so the null hypothesis of hausman test is rejected because the individual effects are correlated with the other regressors’ in the model.
Hausman test hypothesis:

\[ H_0 \] = Individual effects are uncorrelated with the other regressors in the model

\[ H_1 \] = Individual effects are correlated with the other regressors in the model

Arch-Garch model cannot be applied for share price volatility because small number of observations. Data consists of just for four years. Total number of years four and it is divided into 15 cross sections balanced panel. Table 2 shows Coefficients of fixed effect model shows that if size will increase by one unit share price will change with -25.44 units negatively. It means that relationship between size and share price is in negative with a t-statistic value -2.049364, which shows that each coefficient is different from zero. The value of t-statistic is in negative. We can say that size has a significant influence on share price but in negative way. Size has a statistically significant relationship with share price has a value .0469 which is less than .05.

Second coefficient if DY will increase by one unit share price will change with .1784 units positively. It means that relationship between DY and share price is in positive with a t-statistic value 0.4689. The value of t-statistic is in positive. We can say that size has a significant influence on share price but in negative way. DY has a statistically insignificant relationship with share price has a value .641 which is greater than .05. Roa and AG coefficients are also in negative. If these variables are increases by 1 unit share price will increase by -1.909764 and -7.932905 respectively, and has a statistically insignificant relationship.

Table 5 shows the intercepts of every bank separately which explains that there is the slope for tenure is the same but the intercept is different. Intercept defines as the unexplained variations (Error term) that are due to some other external causes instead of these variables. The value of R-square shows that 93% of variance of share price (SP) is explained by these variables, DY,ROA,AG,SIZE. Probability of F-stat is 0.000 which is less than .05 shows that model is a good fit.

**Conclusion and Recommendation:**

I have conducted this research to investigate the effect of size, dividend yield, asset growth, and return on asset on dependent variable share price. Sample has been taken of 15 Pakistani banks for the period of four years from 2008-2011. The
Experimental estimation is based upon fixed effect model regression analysis between these independent variables and dependent variable share price. From the model I have found that just size has a significant impact on share price but coefficient of size and share price is in negative direction. Other variables have statistically insignificant impact on share price. The value of R-square shows that 93% of variance of share price (SP) is explained by these variables, DY, ROA, AG, and SIZE.

The forces of demand and supply have direct effect on the stock prices. On the other hand other number of firms, industry, and country influences the share prices. Superior quality institutions are a central part of stock market growth. Political risk can be minimized and investment decisions can be made effectively due to good quality institutions. One of the major and important determinants of stock prices is volume traded in stock exchange market. Volume traded is defined as a measure of the quantity of shares that change owners for a given security or total number of shares traded.

Inflation can also be a great cause for changes in share price. Authors proposed that suitable measures should be adopted by government to control inflation, so that the changes in share prices can be minimized. Increase in industrial production can play a vital positive role in growth of capital markets in Pakistan. It is suggested that establishment should make such a policy which supports stock prices through the promotion of industrial production. Further research can be conducted considering microeconomic variables such as money supply, exchange rate etc. panel data analysis can be done in market as a whole or in different industries.
References:


Mohammad Shahbaz.(2008) “Impact of foreign direct investment on stock prices”


Europe” Economic Computation & Economic Cybernetics Studies & Research, 43, 2009, pp. 1-17
Appendix:

Descriptive statistics:

Table 1:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std.dev</th>
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<tr>
<td>C</td>
<td>1.00000</td>
<td>1.00000</td>
<td>1.00000</td>
<td>1.00000</td>
<td>0.00000</td>
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<tr>
<td>SP</td>
<td>47.38483</td>
<td>25.18500</td>
<td>257.9500</td>
<td>1.800000</td>
<td>56.48008</td>
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<td>SIZE</td>
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<td>11.61000</td>
<td>8.460000</td>
<td>0.915662</td>
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<td>DY</td>
<td>33.81000</td>
<td>20.00000</td>
<td>130.0000</td>
<td>0.000000</td>
<td>37.57771</td>
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<td>ROA</td>
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<td>0.017000</td>
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<td>0.070882</td>
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<td>AG</td>
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<td>0.141904</td>
<td>0.796191</td>
<td>-0.210307</td>
<td>0.154576</td>
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Table 2:

Fixed effect model, dependent variable; share price (SP)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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<td>120.0096</td>
<td>2.483903</td>
<td>0.0172</td>
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<td>Size</td>
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<td>0.380469</td>
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<td>40.99572</td>
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<td>AG</td>
<td>-7.932905</td>
<td>22.93143</td>
<td>-0.345940</td>
<td>0.7312</td>
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Table 3:

Correlated random effects; Hausman test

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<th>Total summary</th>
<th>Chi-square statistic</th>
<th>Chi-sq. d.f</th>
<th>Prob.</th>
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<td>Cross section random</td>
<td>18.0944</td>
<td>4</td>
<td>0.0012</td>
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Table 4:

Cross section fixed (dummy variables)

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<tr>
<th></th>
<th>R-squared</th>
<th>Adjusted R squared</th>
<th>S.E Squared</th>
<th>F-statistic</th>
<th>Prob (F-stat)</th>
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<td>Mean dependent var</td>
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<td>.896</td>
<td>18.1277</td>
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<td>S.D dependent var</td>
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<td>Akaike info criteria</td>
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<td>DurbIn Watson stat</td>
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Table 5:

<table>
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<tr>
<th>BANKS</th>
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<td>ABL (Allied bank)</td>
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<tr>
<td>ASK (Askari bank)</td>
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<tr>
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<td>BAL (Bank Alflah)</td>
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<td>BIPL (bank islami Pakistan)</td>
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Graph: