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Determinants of stock price variability

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ABSTRACT
In this study the determinants of share price movements of sugar sector of Pakistan are determined. Data is taken from 2005-2010 of each company of sugar sector. Data is analyzed using three methods as by descriptive statistics, correlation and regression analysis. As in this study ROA (return on assets), ROCE (return on capital employed), EPS (earning per share) and dividend are used as an independent variables and share prices as dependent variable. Relationship between variables is determined through correlation and how much change in dependent variable due to independent variables is determined by regression analysis. Result show that 13.25%variation in dependent variable is explained by ROA, ROCE, EPS and dividend.

Introduction

The stock market function is to register and list companies that meet certain criteria, and then break them into small prices, which are called shares or stocks and these are available for public. The market publicizes all traders so that anyone can watch a particular stock and follow it up to the minute. Movements of all stock fall into a daily average. The stock market is very important for the economic development of every country because it promotes capital formation and raising economic growth. When we trade securities in market then it will facilitates savers and users by pooling fund, share risk and transferring of wealth. Fluctuation in stock prices can be observed on daily basis in stock market. Actually for economic growth stock markets smooth the transfer of funds. By increasing liquidity of financial assets stock exchange are expected to accelerate the economic growth and also through it diversification of global risk become easier for investor when investor promote the wiser investment decisions. The Karachi stock exchange KSE is a stock exchange located Karachi, Sindh, Pakistan. Sugar is second largest agriculture related industry in Pakistan so determinants of share price of sugar industry most beneficial for investors. The first and most important thing you need to know is that for long –term investors, a stock's price is not the same as what the stock is worth. For the long-term investor, a stocks worth is the potential for growth, dividend and so on but the question is that what the price per share tells investors so the answer is that during regular buying and selling of the daily market ,a stock per share price tells us where buyers and sellers agree.

For people who trade stocks that are frequently buy and sell in an attempt to profit from price changes, there is little concern about long-term prospects for a stock. They are focused on the supply and demand balance and attempt to anticipate changes that may cause prices rise or fall.

There are number of factors due to which Smooth market price of stock of any company changes from time at which investor purchase and sold the stock. In this period dividend paid also adds in profit. When this sum is negative the investor makes a loss.

Investor purchase stock in such a way that it will give them maximum return in form of increase in price and after purchase dividend. When market prices will fall in future investor sell off stock held.

As it can be seen from above discussion, an investor must be more concerned with price fluctuation of the stock rather than the absolute price to make profit by way of increase price of market. However when considering the return way dividend, the absolute price is also important. In this study we used four independent variables which are return on assets (ROA), return on capital employed (ROCE), total dividend and earnings per share as independent and share price as dependent variable.

Objective of Study

The objective of this study is to identify variation in share price movements in sugar sector of Pakistan. In Pakistan Sugar is the second largest agriculture related industry. So identification of determinants of share price movements in sugar sector of Pakistan is very important for investor decision making process.

Significance of Study

This study will be of great significance to investor, academic researchers and portfolio managers. This study will identify the factors which will bring change in stock prices and ultimately will guide the investor about the future movements of share prices. Through it investor can make an idea about share prices and take decision either to invest or not. This study is beneficial for individual investors in the sense that can know how share prices moves and to invest in that stock which they predict that prices will increase. Because the two most important factors are stock prices along with dividend on stock affect the return earned by a person investing in stocks.

Literature Review

Sharma(2011)examined the empirical relationship between equity share prices and explanatory variables such as ;book value per share, dividend per share ,price earnings ratio, earning per share, dividend payout, dividend yield, size in terms of sale, and net worth for the period 1993-2004 to 2008-2009. The result revealed that dividend per share, earning per share, and book value per share have significant impact on market price of share. Further, results of this study revealed that, dividend per share and earnings per share being the strongest determinants of market price, so the results of present study supports liberal dividend policy and suggests companies to pay regular dividend.

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Nirmala.et.AL (2011) examined the determinants of share price in Indian market in three sectors auto, health care and public sector undertaking over the period 2000-2009.the variables used are dividend, price earnings ratio and leverage. Data was analyzed by using the fully modified ordinary least square method. The results indicate that the variables dividend, price-earnings ratio and leverage are significant determinants for all the sectors under consideration.

Das.et.AL (2009) examined the behavior of stock market due to various fundamental factors. In this paper critical variables are identify which have significant effect on movements of stock price. And entire market movements will influence through it. The 30 shares constituting the Bombay stock exchange-sensitivity index (BSE-SENSEX) are have been used and find that return on investment, higher earning power, growth possibility and favorable valuation have a positive impact on the share price and stock market movement. While a negative impact of high risk and volatility which used to proxies to capture the entire stock market movements.

Vijayakumar (2010) examined the extent to which some financial performance indicators affect the stock price. The variables used in this study are book value, EPS, dividend cover, growth rate and dividend yield and dividend per share and earnings ratio. Data was analyzed by using correlation analysis, factor analysis, and multiple linear regressions. It was found that book value, EPS, dividend cover, growth rate and dividend yield have a positive association with market price. And dividends per share and price earnings ratio have a negative association with the market price of its equity shares.

Ahmad.et.AL. (2012) examined the relevant macroeconomic variables that cause stock price movements. The data was analyzed by builds the ARIMA model. This study found that a negative and significant impact of exchange rate and inflation on the stock prices and a positive but a weak impact of economic growth on stock prices at Karachi stock exchange .the relationship of money supply with stock prices however, was found to be positive but insignificant.

Akbar.et.AL, (2012) examined the relationship between the KSE 100 and various macroeconomics variables from January 1999 to June 2008. Data was analyzed by error correction, granger causality and co integration tests. It was found that stock prices were positively related with short term interest rates and money supply while negatively related with foreign exchange reserves and inflation.

Nazir.et.AL. (2010) examined the role of corporate dividend policy in determining the volatility in the stock prices in Pakistan the dependent variable is price volatility dependent variable price volatility and independent variable dividend yield. Data was taken of 73 firms from Karachi stock exchange indexed firms for the period 2003 -2008. Data was analyzed by fixed and random effect models .it was found that dividend policy has a strong significant relationship with the stock price volatility in KSE.

Kim (2003) examined the existence of long run equilibrium relationships between industrial production, interest rate, stock price, inflation and real exchange ratein the United States. The variables used in this study are real exchange rate, industrial production, stock price, interest rate, and inflation. Data was taken on monthly basis from 1974-1998. Data was analyzed by applying Johannes, co integration analysis. It was found that industrial production positively related to the S&P 500 stock prices and negatively to the real exchange rate, interest rate, and inflation.

Ekiti.et.AL .(2012) examined the short run and long run effects of exchange rate on stock market development in Nigeria over 1985:1-2009:4. The variables used to check stock prices movements are long term and short term exchange rate. The data was analyzed by using the johansen co-integration tests. It was found that exchange rate in short run show a significant positive stock market performance and negative stock market performance to exchange rate in the long run .

Yang.et.AL. (2004) examined the nature of mean and volatility transmission mechanism between stock and foreign exchange markets for the G-7 countries. The variables used in this study were exchange rate and stock prices. Set of data consists of stock market indices for the G-7 countries and weekly (Friday) closing exchange rates. The vector autoregressive (VAR) model and GARCH (EGARCH) model was used in this study for short run dynamic relationship between stock prices and exchange rates. It was found that empirical evidence supports the asymmetric volatility spillover effect and shows that movements of stock prices will affect future exchange rate movements, but change in exchange rate have less direct impact on future change of stock prices.

Abdalla.et.AL. (1997) examined exchange rates and stock prices interactions in the emerging financial markets of Pakistan, Korea, India, and Philippines. Data was analyzed by using monthly observation on the IFC stock prices index and real effective exchange rate over 1985-94 through bi-variate vector autoregressive model. It was found that in all sample countries there is from exchange rates to stock prices Unidirectional causality except the Philippines.

Kumar (2000) examine the long-run and short-run relation between stock index and exchange rates for India. In this study co- integration used to test for the long-run relationship. But there is no long –run relationship between them according to empirical results. This study by using linear and non linear Granger causality tests also examined the causal relationship between two series. The non linear causality is invested using noisy Mackey-Glass model. It was found that both the causality tests reveal evidence of bi-directional relationship between stock index and exchange rates .So findings imply that regulators can consider development in these two markets into account to promote stability and economic growth.

Mishra.et.AL, (2007) examined the relationship between volatility spillovers between Indian stock and foreign exchange markets. Because an understanding of inter market volatility is important for the pricing of securities .Data was analyzed by generalized autoregressive conditionally heteroscedastic model (EGARCH) and exponential generalized autoregressive conditionally heteroscedastic model (EGARCH). it was found that the there exist a bidirectional volatility spillover between the Indian stock market and the foreign exchange market with the exception of S&P CNX NIFTY and S&P CNX 500.

Hsing.et.AL. (2011) examined the relationship between stock returns or prices and macroeconomics variables. Data was analyzed by EGARCH model and using a quarterly sample for Brazil during 1997.Q1-2010.Q2.it was found that the Brazilian Bovespa stock index is positively associated with industrial production, the ratio of M2 money supply to GDP and the U.S stock market index and negatively impacted by the lending rate, the depreciation of the Brazilian real, the Brazilian inflation rate, and the U.S federal funds rate.

Zhao (2010) examined the dynamic relationship between Renminbi (RMB) real effective exchange rate and stock price.

Correlation

	dividend	*ROA*	*EPS*	*ROCE*	*sp*
dividend	1				
ROA	0.312433	1			
EPS	0.382557	0.667637	1		
ROCA	0.179576	0.223956	0.344735	1	
Sp	0.349203	0.16516	0.20144	0.150184	1

Regression

Regression Statistics	
Multiple R	0.364062
R Square	0.132541
Adjusted R Square	0.115615
Standard Error	28.85645
Observations	210

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	26081.98	6520.494	7.830596	6.83E-06
Residual	205	170702.4	832.6944		
Total	209	196784.3			

	Coefficients	**Standard Error**	**t Stat**	**P-value**	**Lower 95%**	**Upper 95%**	**Lower 95.0%**	**Upper 95.0%**
Intercept	23.40252	2.175203	10.75877	1.09E-21	19.11388	27.69116	19.11388	27.69116
dividend	0.000258	5.84E-05	4.423616	1.57E-05	0.000143	0.000373	0.000143	0.000373
ROA	0.050935	0.186306	0.273395	0.784825	-0.31639	0.418256	-0.31639	0.418256
EPS	0.101276	0.236368	0.428467	0.668761	-0.36475	0.5673	-0.36475	0.5673
ROCA	0.058475	0.05422	1.078476	0.282089	-0.04843	0.165374	-0.04843	0.165374

Data was analyzed by VAR and multivariate generalized autoregressive conditional heteroskedasticity (GARCH) models using monthly data from January 1991 to June 2009. It was found that there is not a stable long-term equilibrium relationship between RMB real effective exchange rate and stock price. There are also not mean spillovers between the foreign exchange and stock markets.

Data and methodology

Data was taken from 2005-2010 of sugar sector of Pakistan and techniques used for data analysis are correlation and regression.

Share price in this study as discussed above use as a dependent variable. The price of a single share of a number of saleable stocks of a company known as share price. Once the stock is purchased, the owner becomes a shareholder of the company that issued the share.

ROA; where asset turnover tells an investor the total sales for each $1of assets, return on assets, or ROA for short, tells an investor how much profit a company generated for each $1 in assets. The return on assets figure is also a sure-fire way to gauge the asset intensity of a business.

ROCE; A measure of the returns that a company is realizing from its capital. Calculated as profit before interest and tax divided by the difference between total assets and current liabilities.

EPS; The portion of a company profit allocated to each outstanding share of common stock. Earnings per share serve as an indicator of company profitability.

Dividend;

A sum of money paid regularly (typically quarterly) by a company to its shareholders out of its profits**.**

Equation

Share price = $\alpha+\beta1\text{dividend}+\beta2\text{ROCE}+\beta3(\text{EPS})+\beta4(\text{ROA})+\varepsilon$……(1)

Data analysis

Correlation

Correlation tells us the relation between two variables results showed the relation between dividend and dividend is 1 which shows perfect positive correlation. The relation between dividend and ROA is 0.31243 which means that they are weak positive correlated with each other. Relation between dividend and EPS is 0.38256 which means that they are also weak positive correlated with each other. The relation between dividend and ROCE is 0.17958 which shows most weak positive correlation between them and the relation of dividend with SP is 0.3492 which also shows weak positive correlation with each other.ROA relation with ROA is 1 which shows perfect positive correlation. ROA relation with EPS is 0.668 which shows strong positive correlation with each other. ROA relation with ROCE is 0.224 which shows weak positive relation between them.ROA relations with SP is 0.165 which means there is strong weak relation with them.

Relation of earning per share with earning per share is 1 which shows perfect positive correlation. Relation of EPS with ROCE is 0.34474 means that they are weak positive correlated with each other. Relation of EPS with SP is 0.20144 which means there is strong weak relation with them. ROCE relation with ROCE is 1 which shows perfect positive correlation. Relation of ROCE with SP is 0.15 which means there is strong weak relation between ROCE and SP.

Regression analysis

Regression analysis tells us that how much change in dependent variable is due to independent variables. As the value of R Square is 0.13254. SO 13.25% change will be occurring in dependent variable which is share price due to independent variables which are ROA, ROCE, EPS and dividend.

Share price = $\alpha+\beta1\text{dividend}+\beta2\text{ROCE}+\beta3$ (EPS) $+\beta4$ (ROA) $+\varepsilon$…… (1)

Co–efficient values are 0.00026 for dividend, 0.05847 for ROCE and 0.10128 for ROA.

The P-VALUE of dividend is significant and ROCE, EPS, ROA is insignificant. The model is significant.

Conclusion

This study examined the variation in share price due to the dividends offered, return on asset, and return on equity, return on capital employed. Investors predict the performance of any company based on different factors. Company offering higher dividends would have attraction for those investors who prefer current income and prefer current income over later benefit because he considers that money loses its value as time passes. Investors predict the future movements of share price on the basis of different factors. Dividends are one reason; others could different performance related ratios.

This study investigated the impact of dividends offered, ROA, ROE and ROCE on share price movements in sugar sector of Pakistan. Results suggested that these variables significantly affect share price movement. However variation explained is only .13(R square value). We suggest that a study covering more variables and data should be conducted in future to further elaborate this topic.

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