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## Article

## Determinants of share prices

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## Determinants of Share Prices: the Case of Listed Firms on Johannesburg Stock Exchange

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**Abstract:** Equity investments offer considerable returns to investors and is considered to be a major source of capital for most large firms. However, these returns are subject to movement in share prices. This study investigate the determinants of share prices using fourteen companies listed on the Johannesburg stock exchange from 2009-2013. Using a multiple regression analysis, the result reveals that dividend per share, earnings per share, and price-earnings ratio accounts for 57.8% of share prices movements. Furthermore, earnings per share and price earnings are significantly positively correlated to share prices although dividend per share was not. This finding implies that, managers can create value for their shareholders by increasing dividend per share, earnings per share and price-earnings.

**Keywords:** Share price, dividend per share, earnings per share, price-earnings ratio.

### 1 Introduction

The equity market has been of significant interest to financial managers due to its ability to provide access to capital for companies and returns to investors with minimum risk (Gatua, 2013). Equity markets are also important in sustaining growth in an industry and a country's economy as a whole and serves as a measurement tool for future growth (Nirmala, Sanju & Ramachandran, 2011). According to Irfan and Nishat (2002) equity market can be defined as the market in which shares of public companies are issued and traded either through exchanges or over-the-counter. Equity investments provide several other benefits such as dividend income, capital gain, limited liability, control and ownership, however, equity investments are solely dependent on share prices because they serve as indicators on whether investors should invest in a particular share. This is particular true because share prices are used as proxies to signal the overall strength and financial health of a company. In addition, share prices also inform the public on management's performance. Prior research has shown that, changes in share prices are subject to varying factors (Srinivasan, 2012; Sharma, 2011; Oyama, 1997; Irfan and Nishat, 2002). Knowledge of these factors will convey valuable information to management in general and financial managers in particular in other enhance their firm's value. These factors will be also of importance to investors as it will enable informed decisions before investing in any particular firm. However, considering the above importance of share prices and

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also considering the factors that impact on share prices, different authors have attributed different factor to share price changes. Prior researchers (Almor-omer & Mutari, 2008; Khan, 2009; Someye et al., 2009; Udding, 2009) have attributed book value per share, earnings per share, dividend, gross domestic product and net asset value has factors that determine share prices. Conversely, other authors (Oyama, 1997; Sunde & Sanderson, 2009) have also revealed that share prices are solely determine by factors such as interest rates, political events, lawsuits, mergers and acquisitions, government policies, investors sentiments and availability of substitutes, analyst reports and technical influences. From the above mentioned viewpoints, it can be concluded that there hasn't been an acceptable explanation of the determinants of share price in different countries of the world. Therefore this research seeks to uncover the determinants of share prices in South Africa using of 14 South African firms listed on the Johannesburg stock exchange.

#### STATEMENT OF THE RESEARCH PROBLEM

The research problem within this research reads as follows "What are the determinants of share prices in South African firms.

#### RESEARCH OBJECTIVES

- To investigate the relationship between dividend payout, return on equity, return on asset, size of the firm, liquidity of the firm, earnings per share and risk of the firm to a share prices over a period of five year using the top 14 South African firms
- To investigate the effect of dividend payout, return on equity, return on asset, size of the firm, liquidity of the firm, earnings per share and risk has on share prices.
- To draw conclusion on the determinants of share prices

## 2. Literature review

Much research has been done around the world on the determinants of share prices around the world but very little research has been done in South Africa in this area which motivates the purpose of this study. One of such research was conducted by Oyama (1997) who investigated the relationship between macroeconomic variables and of share prices for companies in Zimbabwe stock exchange from 1993 to 1994. Using dividend discount model, error-correctional model and multi-factor model, it was concluded that, share price movements are caused by movements of monetary policies and market interest rate. A similar study was conducted by Irfan and Nishat (2002) to investigate the fundamental factors affecting long-run price movement. Using financial statement data of listed firms in Karachi stock exchange from 1981 to 2000, Irfan and Nishat (2002), found that dividend payout ratio, size and dividend yield explains about half of the variations in share price movements. In another attempt to investigate the determinants of share prices, Nirmala et al. (2011) used time series data from 2000 to 2009 from auto and

healthcare sectors. The findings of Nirmala et al. (2011) revealed that dividend, profitability, price-earnings ratio and leverage affects significantly influence share prices. Specifically, the findings showed a positive relationship between dividend, price-earnings ratio and share price, implying an increase in dividend and price-earnings will lead to an increase in share prices. Therefore financial managers can maximize shareholders value by increasing dividend. In an Asian study, Aurangzeb (2012) examined the factors that affect the share prices using a panel data from 1997 to 2010 from Pakistan, India and Sri Lanka. The regression results indicated that, exchange rate and foreign direct investment impacts positively on share prices whereas interest rate has a significant negative relationship to share prices. Aurangzeb (2012) concluded that appropriate macro-economic policies should be in place to take full advantage of stock market and which will maximize share prices. In yet another Asian study, Malhotra and Tandon (2013) investigated the factors influencing share using a panel data of 95 firms for the period of 2007-2012 listed in National stock exchange. Using linear multiple regression model, their findings revealed that the book value, earnings per share and price-earnings ratio accounts for 51.6% of share price movements. Therefore, a firm's manager can maximize their share prices by watching their book value, earnings per share and price-earnings ratio. In another attempt to identify factors that determine share price movements, Gatua (2013) used a panel of data from made up of a sample of firms from seven sectors listed on Nairobi securities exchange from 2008-2012. Also using a regression analysis, the findings revealed that there is no model to determine share prices. The study concluded firms selected variables are independents correlated to share prices, implying selected variables cannot be used to predict share prices movements. In a similar study, Almunani (2014) also investigated the determinants of share prices using listed banks firm in Amman stock exchange from 2005 to 2011. The study revealed that dividend per share, earnings per share, book value, price earnings are major determinants of share prices. The researcher concluded that, dividend per share, earnings per share, book value, price earnings can be used to forecast share prices.

From the above findings, it becomes evident that share price determinants have been well researched in developed nations. Although informative, these studies were conducted in mostly Europe and Asia and therefore their findings cannot be generalized to Africa and South Africa in particular. Furthermore, no study has been done in the South African context which motivates the purpose of this study.

### **3. Research methodology**

This section outlines the blueprint of sample data collection and data analysis to achieve the research objectives.

#### *Data sample*

The study used only secondary data from 2009 to 2013. The sample comprised of companies listed on the Johannesburg Stock Exchange based on the following criteria.

- The firm must have its full financial statements from 2009-2013
- The firm have paid dividend within these period
- All the financial data required for calculation must be present.
- The company must be amongst the top 40 companies within this period.

Accordingly, only 14 companies fulfilled the above requirements and hence made use of.

*Research equation.*

$$S.P_{it} = \beta_0 + \beta_1 DPO_{it} + \beta_2 ROE_{it} + \beta_3 ROA_{it} + \beta_4 SIZE_{it} + \beta_5 L.Y_{it} + \beta_6 EPS_{it} + \beta_7 P.E_{it} + \zeta_{it}$$

*Variables*

Share price (S.P) which is the dependent variable was the monthly closing monthly share prices of each company. The control variables were; Dividend per share (DPO) which was dividend paid to shareholders and was calculated by dividing the total Dividends with number of outstanding share; Return on equity (ROE) calculated by dividing profit after tax with shareholders' equity was used as control variable; Return on asset (ROA) was calculated by the dividing profit after tax with total asset; Size given by natural logarithm of assets (ln total assets); Liquidity (L.Y) was calculated by current assets divided current liability; Earnings per share (EPS) calculated as subtracting preferred dividends from net income and then dividing this figure with the number of outstanding shares; Price earnings ratio (P.E) calculated by dividing share price by earnings per share. This control variables were also used by Malhotra, and Tandon (2013); Nirmala et al. (2011); Almumani (2014).

#### 4. Results and analysis

Table I shows the descriptive statistics for top 14 companies listed on JSE from 2009 to 2013. The descriptive statistics shows that, the mean value of share price is 218 with standard deviation of 173. The mean value of DPO is 0.855 with standard deviation of 1.964 and ranges from 0 to 15.1. This implies that, values of DPO can deviate on both sides by 1.94. In addition, the mean value of earnings per share is 12.53 and standard deviation of 10.58 and ranges from .0562 to 52.62.

**Table 1:** Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
DPO	0	15.1	0.855246	1.964896
ROE	-0.028	0.564	0.191351	0.107579
ROA	-0.015	0.344	0.09309	0.098118
SIZE	10.136	13.3863	11.57781	0.552119
L.Y	0.3	1.9	0.9248	0.28347
EPS	0.0562	52.62	12.52891	10.58324
P.E	0	246	20.6623	30.61573
S. P	12.99	792.5	218.2699	173.7569

Source: spss output

Table 2 presents the results of correlation matrix of amongst the variables. From this table, share price is positively correlated to EPS, P.E, Size and ROA all significant at 1%. The results also reveal that, DPO is positively correlated to ROA and EPS significant at 5%, consistent with the results of Khan (2012). In addition the results also show that DPO and share price are positively correlated but it is insignificant. This result is consistent with the result of Adefila, Oladipo and Adeoti (2013) has shown below

The variance inflation factor (VIF), was used to test for multicollinearity between variables before analyzing the regression model. Prior studies (O'Brien, 2007; Haire *et al.*, 1995; Marquardt, 1970) have indicated that the acceptable values of VIF should be less than 10 and greater than 0.1. In this study, the values of VIF are from 1 to 2 indicating absence of multicollinearity.

**Table 2:** Correlations Matrix

	DPO	ROE	ROA	SIZE	L.Y	EPS	P.E	S.P
DPO	1							
ROE	0.137	1						
ROA	0.273*	0.641**	1					
SIZE	0.068	-0.163	-0.430**	1				
L.Y	0.218	0.025	0.232	0.093	1			
EPS	0.276*	0.327**	.562**	-0.221	0.397**	1		
P.E	-0.095	-0.246*	-0.102	-0.284*	-0.152	-0.156	1	
S. P	0.063	0.055	0.321**	-0.597**	-0.119	0.484**	0.519**	1

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

**Table 3: Model summary**

Model	R	R <sup>2</sup>	adjusted R <sup>2</sup>	Standard Estimate	Error of the
1	.830a	0.689	0.657	101.801	
2	.823a	0.677	0.649	102.927	
3	.774a	0.599	0.572	113.698	
4	.773a	0.598	0.578	112.813	

a Predictors: (Constant), RISK, DPO, LIQUIDITY, ROE, EPS, ROA

1 Predictors: (Constant), L.Y, ROE, DPO, RISK, EPS

2 Predictors: (Constant), ROE, DPO, RISK, EPS

3 Predictors: (Constant), RISK, DPO, EPS

Source:spss output

**Table 4: ANOVA**

		Sum of Squares	DF	Mean Square	f	Sig.
1	Regression	1307209	5	261441.836	24.678	.000b
	Residual	625045.2	59	10593.987		
	Total	1932254	64			
2	Regression	1156614	4	289153.477	22.368	.000b
	Residual	775640.5	60	12927.342		
	Total	1932254	64			
3	Regression	1155922	3	385307.228	30.275	.000b
	Residual	776332.7	61	12726.766		
	Total	1932254	64			

1 Predictors: (Constant), L.Y, ROE, DPO, RISK, EPS

2 Predictors: (Constant), ROE, DPO, RISK, EPS

3 Predictors: (Constant), RISK, DPO, EPS

source:spss

Coefficient of determination ( $R^2$ ) measures the overall fitness and explains how well a model predicts future outcome (Uwuigbe, Jafaru & Ajayi, 2012). From Table 4, after a step-by-step removal of some controlling variables (liquidity, ROA and ROE), the  $R^2$  value was 59.8%. This indicates that DPO, EPS and Risk explain 59.8% of variation in share price. In addition, the adjusted  $R^2$  was 57.8% which also compliments the proportion of share price that is explained by DPO, EPS and P.E. In other words, 42.2% of the movements in share prices are caused by other factors not accounted for in the model. The empirical findings revealed that, dividends per share, earnings per share and price earnings affects share price

significantly ( $p$ -value=0.00). In essence, dividend per share, earnings per share and price-earnings, are the major determinants of share price. This finding is in concurrence with the findings of Nirmala *et al* (2011); Malhotra, and Tandon (2013).

## 5. Conclusions

The aim of this study was to investigate the determinants of share prices using a sample of 16 South African companies listed on the JSE from 2008-2013. Using a multiple regression analysis, the result reveals that DPS, EPS, P.E accounts for 57.8% of share prices movements. Furthermore, EPS and P.E are significantly positively correlated to share prices although whereas DPS was not. From the findings above, managers in South Africa can create value to their shareholders by increasing DPS, EPS and P.E. The above findings are consistent with the findings of Almunani (2014); Al-omar and Al-mutairi (2008); Uddin (2009); Somoye *et al*. (2009); Sharma (2011). Further research on this topic should be conducted on larger sample.

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