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Determinants of Share Prices of Agriculture Listed Firms

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ABSTRACT

The stock market plays an important role in economic development by promoting capital formation and enhancing economic growth. The stock market is among the main sources of financing in this critical sector of the economy. Trading of securities on the Zimbabwe stock exchange facilitates savers and users of capital through fund pooling, risk sharing and transferring wealth. The agricultural sector is one of the most important sectors of the Zimbabwean economy, but it lacks adequate financing. This sector has been experiencing several challenges over the period 2002-2022, mostly from lack of sustainable finance, especially from private investment. It is assumed that lack of funding is due to the volatility of stock prices. The objective of the study is to analyze different factors affecting share price of agriculture sector listed firms on the Zimbabwe Stock Exchange using the panel regression model. Based on the random effect, the study established that share prices are determined by earnings per share, price-earnings ratio and return on equity, which positively impact stock prices in Zimbabwe. The government should control inflation to ensure price stability and aid in easy financial planning. Further, the government should promote agricultural growth initiatives and strategies which would stimulate demand for agricultural oriented stocks.

Keywords: Share price, Price earnings, Stock exchange, fundamental factors, and technical factors
JEL Classifications: C40; B41; C59

1. INTRODUCTION

Capital markets are an important indicator for gauging the success of economies. Stocks are an investment instrument in the capital market that investors are interested in. Stock prices always fluctuate frequently according to market activity. This activity is determined by the market forces of those shares in the market. When the demand for stocks is high, the stock price will rise in the market. On the other hand, the lower the demand for a stock, the lower the price of that stock (Gusni, 2016). The greatest volatility in the stock markets was witnessed during the 2007 Global Financial Crisis (GFC) which affected the world economy and led to turmoil in the stock market worldwide. The global equity markets lost approximately US$32 trillion in value at the peak of the GFC. Before GFC, investors were more concerned about the movements in the prices of the shares to obtain greater returns on their investments. Investment in shares has also been a source of finance for fulfilling firm requirements such as expansion and diversification.

Investors are generally assumed to be risk averse; hence, volatility in their investments is of great concern to them given that changes in prices are a measure of the strength of the risk of their investments. It is important for stockholders to have information about the market actions and contributing factors to the movements. Stock prices are driven by both microeconomic and macroeconomic factors. The key microeconomic determinants are asset and liquidity position, company performance, governance, dividends, and earnings. The macroeconomic factors include governmental rules, the business cycle, investors' attitudes, market conditions, natural disasters, and political qualms like strikes and blockades, among others. Shareholders consider "Value Investing Strategy" an investment instrument projected (Graham and Dodd, 1934). The approach assert that this has been positive in worldwide crisis and

stockholders often outclass growing stock of the market. This is another positive investment method used following the worldwide financial crunch. The approach argues that the shareholders must inspect companies with a low price-earnings shares, low price-to-cash-flow ratio, or low price-to-book ratio shares as it is presumed that these shares may outdo growing stocks.

The stock market plays a crucial role in economic development by promoting capital development and enhancing economic growth. The agricultural sector in Zimbabwe's suffers from shortages of capital. Therefore, the sector must make every endeavor to mobilize available capital effectively. Trading of securities in the Zimbabwe Stock Market enables savers and users of capital to pool funds, share risk and transfer wealth. Investors take the decision to invest in shares of companies, keeping in view their share prices. Studies show that there is an association between changes in share prices and changes in financial fundamental variables and technical variables (Pudji, 2017).

The Zimbabwe Stock Exchange, the first stock market in Zimbabwe, was opened in 1896 and it only operated for 6 years before it closed. The present ZSE was found in Bulawayo in 1946, and in December 1951, a second was opened in Harare. The ZSE Act was promulgated in 1974 (Act 27 of 1973 [Chapter 198]), which formalized the establishment of the present ZSE with its head office in Harare. A revised ZSE was published in 1996 as Chapter 24.18. The ZSE introduced the ZSE Agriculture Index, with effect from April 01, 2022. The base for this index is 100 points.

Zimbabwe's stock exchange deals in a range of shares from businesses in several economic sectors, including agriculture. Given the significance of financing in Zimbabwe's agriculture sector, the share prices of companies listed in this industry are very important. This makes it necessary to study the variables that affect the stock prices of listed companies in the agriculture sector. Thus, conducting research on the factors influencing the share prices of agriculturally listed companies has significant theoretical and practical implications for understanding the development trend of listed companies and devising strategies to enhance and promote their share prices to attract foreign direct investment (FDI) as well as local investment. Examining factors that affect the share price of agricultural companies listed on the Zimbabwe Stock Exchange is the primary goal of the study.

2. LITERATURE REVIEW

Several theories discuss the relationship between stock prices and their determinants. These theories include the Efficient Markets Hypothesis (EMH) and the Asset Pricing Theory. The EMH argues that historical information is not an important predictor of future stock prices, but only new information is able to describe price movements in the stock market (Fama, 1965). The EMH argues that stock prices incorporate all relevant information in a complete and reasonable way. On the other hand, asset pricing theories such as Arbitrage Pricing Theory (APT) and the Present Value Model (PVM) emphasize the dynamic relationship between stock markets and economic activity.

Several authors have studied the factors that affect share prices deriving from the EMH, APT and PVT. These studies have identified that interest rates, GDP, inflation rate, net asset value, earnings per share and price-to-earnings ratio are the economic determinants of share prices (Nguyen, 2021; Aliu et al., 2021; Banerjee, 2017; Gusni, 2016; Barakat et al., 2015; Singh et al., 2014). The studies established that these determinants influence the behavior or movement of share prices, ultimately influencing investor decisions. It is imperative that investors understand factors that affect share prices so that they can make informed decisions.

One of the first researchers to look at stock price determinants for the US market was Collins (1957), who found that the main factors influencing share prices were net profit, dividends, book value, and operating earnings. Since then, a sizable corpus of theoretical and empirical research analyzing the factors influencing share market price has been produced. In a study of the period 1981-2000, Irfan (2002) determined what factors influenced share prices on the Karachi Stock Exchange. Cross-sectional weighted least square regression analysis was used in the study for six variables: dividend yield, price earnings, earnings per share, leverage, and the impact of earnings volatility on share prices. The study found that the key factors influencing share prices in Karachi were payout ratio, leverage, size, and dividend yield. To establish the determinants of share prices in on the Bombay Stock Exchange, Das and Pattanayak (2007) studied at least thirty shares in India. The study found that return on investment, potential growth and economic sustainability positively determined share prices in India. The study further established that uncertainties and price instability negatively affected share prices. In another study in India, Nirmala (2011) evaluated the factors affecting share prices in the automotive, healthcare, and public sectors. The study applied the panel data method, specifically using the fully modified ordinary least squares methodology for the period 2000-2009. The study established that price earnings ratio, dividend, and leverage influenced share prices in all the sectors under study.

Islam and Johan (2012) studied the Bangladesh capital market to identify the effect of dividends and other control mechanism on share prices for the period 2007-2011. The study established that earnings per share was the main factor influencing share prices, while equity depends on future potential price movements. Using multiple regression analysis, Okafor and Mgbame (2011) investigated the relationship between changes in share price and payout ratio and dividend yield. The dividend policy metric that typically had the least impact on share price risk was dividend yield. The dividend payout ratio, which is another measure of dividend policy, exhibited both positive and negative influences in different years, albeit at less significant levels. The study supports the hypothesis that dividend policy influences changes in share price for a sample of companies listed on the Nigerian Stock Exchange. In a study on United Arab Emirates stock exchanges, Al-Tamimi (2011) investigated the main factors that influence stock prices. The data set used in this study included the years 1990 through 2005. The findings demonstrated that earnings per share, or EPS, significantly and favorably affected stock prices

in the United Arab Emirates. The estimated coefficients for GDP and money supply were positive but not statistically significant, as expected. Additionally, the estimated coefficients for the consumer price index and interest rate were, as expected, negative and statistically significant. Zhao (2013) established that a negative relationship with Consumer Price Index (CPI), Industrial Outputs and the share prices. On the other hand, in the Middle East the gross national product, consumer price index, and interest rate were found to be instrumental in influencing the share prices (Al-Qenae and Li, 2002). The researchers used data for the period 1981-1997.

The review of the literature above has demonstrated that the results regarding the factors influencing share prices are not conclusive because they differ across markets and geographical areas. This could be due to regional variations that reflect various cultures, the educational attainment of stockholders, their ability to analyze markets, and their thought processes. Because of this, the researcher is typically unable to determine whether each of these factors has a positive or negative relationship with stock prices. Thus, the purpose of this paper is to close the gap by examining the factors that influence share prices, particularly for listed agricultural companies. Based on the above objectives, the study hypothesized that share price for firms listed on the ZSE are influenced by GDP, CPI, and IRS (technical dependent variables) and EPS, ROE & P/E (fundamental dependent variables).

3. METHODOLOGY

The main objective of this study is to investigate determinants of the share prices of agricultural firms listed on the Zimbabwe Stock Exchange. It looks at how market price per share responds to both macroeconomic and microeconomic factors i.e., price-earnings ratio, return on equity, and earnings per share, GDP, inflation, and interest rate.

The study sample is made up of agriculture sector firms listed on the ZSE for the period 2002-2022 (Table 1). The rationale for selecting this time is because of the significant local and worldwide events and developments that affected the economy broadly and the movement and development in the agricultural sector.

The data for the study was obtained from different sources. The PE ratio, ROE, and EPS respectively and inflation rate, interest rate and GDP were retrieved from Reserve Bank of Zimbabwe (RBZ); Zimbabwe Stock exchange and ZIMSTATS databases. The data on natural and economic challenges was derived from the International Monetary Fund (IMF) and RBZ. Panel data for the period 2002-2022 was used for the study.

The study evaluated the influence of fundamental and technical variables on the share prices of agriculture listed firms by applying a panel regression model (equation 1), which is as

$$MPS_{it} = \beta_1 + \beta_2 EPS + \beta_3 PE + \beta_4 ROE + \beta_5 GDP_{it} + \beta_6 CPI_{it} + \beta_7 IR_{it} + \mu_{it} \quad (1)$$

Where, i=1, 2,…, 10; t=1, 2,…, 21

In the above equations, MPS_{it} denotes market price per share, EPS_{it} denotes earnings per share, ROE_{it} denotes return on equity. The macroeconomic variables are presented in the second equation: GDP_{it} denotes Gross Domestic Product, CPI_{it} denotes inflation rate measured by consumer price index and IR_{it} denotes interest rate spread. β_s are regression coefficients for equation and μ_{it} are the error terms. The independent variables consist of firm-specific and macroeconomic variables as presented in the Table 2.

4. RESULTS AND DISCUSSIONS

The data was subjected to stationarity test using the Augmented Dickey-Fuller methods to avoid spurious estimation. The Unit root tests are shown in Table 3. To reject the null hypothesis that the data are non-stationary or has a unit root, the ADF p-value must be less than the critical value of 5%.

Table 4 shows that all the variables are not stationary on levels. However, all the variables became stationary upon first differencing; hence, the variables can be applied in a regression equation given there are integrated of the same order.

The study further undertook correlation analysis to check for possible collinearity among the independent variables. According to the test, if the correlation is very high close to 1 among the variables, then the two variables, if included in the same regression equation will lead to multicollinearity, a serious

Table 1: Sample selection procedure

Sample	Number
Firm Population	12
Agriculture sector firms listed on ZSE	
Excluded	02
Seed Co & Tanganda Tea Co (no data provided)	
Final sample (agriculture Firms)	10

Table 2: Description of explanatory variables and their expected sign

Variables	Description	Expected Sign
Firm Specific Variables or Factors		
EPS	Earnings Per Share	+
PE	Price Earnings Ratio	+
ROE	Return on Assets	+
Macroeconomic Variables or Factors		
GDP	Gross Domestic Product	+
CPI	Consumer Price Index (Inflation)	+
IR	Interest Rate Spread	+

Table 3: Unit root test results

Variables	ADF P value		Order of integration
	Levels	1st Difference	
CP1	0.2884	0.0000	I (1)
EPS	0.0512	0.0000	I (1)
GDP	0.8735	0.0000	I (1)
IR	0.0649	0.0000	I (1)
Price	0.0533	0.0000	I (1)
PE Ratio	0.0648	0.0000	I (1)
ROE	0.1914	0.0000	I (1)

Table 4: Cross-correlation results

	PRICE	ROE	PE	EPS	GDP	IR	CPI
PRICE	1.0000	0.3300	0.3260	0.4359	−0.6262	−0.2876	0.6539
ROE	0.3300	1.0000	−0.0446	0.1265	−0.2346	−0.1062	0.2343
PE	0.3260	−0.0446	1.0000	−0.4439	−0.2088	−0.1536	0.1946
EPS	0.4359	0.1265	−0.4439	1.0000	−0.3467	−0.1201	0.3681
GDP	−0.6262	−0.2346	−0.2088	−0.3467	1.0000	0.5073	−0.7435
IR	−0.2876	−0.1062	−0.1536	−0.1201	0.5073	1.0000	−0.3892
CPI	0.6539	0.2344	0.1946	0.3681	−0.7435	−0.3892	1.0000

Table 5: Autocorrelation test

Weighted Statistics (A)			
R-squared	0.8793	Mean dependent var	0.3713
Adjusted R-squared	0.8746	S.D. dependent var	3.1419
S.E. of regression	1.1124	Sum squared resid	225.2262
F-statistic	189.3746	Durbin-Watson stat	1.5595
Prob (F-statistic)	0.0000		
Weighted Statistics (B)			
Adjusted R-squared	0.853506	S.D. dependent var	2.8680
S.E. of regression	1.097716	Sum squared resid	232.5612
F-statistic	194.2356	Durbin-Watson stat	1.2820
Prob (F-statistic)	0.0000		

Table 6: The chow-test results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	7.9085	(9,194)	0.0000
Cross-section Chi-square	65.6334	9	0.0000

Table 7: Hausman test results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.0000	6	1.0000

Table 8: Random e ffect model (REM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE	0.4678	0.1065	4.3912	0.0000
PE	0.4528	0.0542	8.3522	0.0000
EPS	0.4193	0.0523	8.0178	0.0000
GDP	−0.7946	0.3095	−2.5675	0.0110
IR	0.0621	0.0592	1.0478	0.2961
CPI	0.1764	0.0526	3.3518	0.0010
PRICE (-1)	−0.0196	0.0434	−0.4513	0.6523
C	0.1105	0.0873	1.2660	0.2071
Adj R-Square		0.853		

problem in regression. A value, which is close to zero, shows a weak correlation, and if the value is zero, it means that there is no correlation. The results from the correlation test results are shown in Table 5.

The results for the correlation test (Table 4) show that there is a weak positive correlation between stock prices and return on equity, price earnings ratio and earnings per share. This means that if PE, EPS and ROE increase, stock prices will also increase but by a small margin. The correlation between stock price and inflation (CPI) is positive and strong because the correlation value is close to +1. On the other hand, interest rate and GDP have weak negative and strong negative correlation meaning that an increase in independent variables (IR and GDP) will result in a decrease in stock prices.

The results obtained from the random effects model show that there is evidence of autocorrelation because the Durbin-Watson statistic lied outside the critical value between 1.5 and 2.5. The Durbin-Watson statistic obtained was 1.282 as shown in Table 5.

To correct for autocorrelation, an additional variable was added to the model, that is, the lag of the depended variable was added. The results obtained show that the problem of autocorrelation has been eliminated, the Durbin-Watson Statistic (1.559) was lying between 1.5 and 2.5. The results after correcting for autocorrelation are presented in Table 5.

The regression analysis for panel data was estimated using a five-step process whereby the research first estimates the coefficients of the pooled least squares method, followed by FEM and REM. Then, to select the best model to be used, two tests were computed that is, the Chow-test to select between the pooled least squares and FEM and Hausman-test to select between FEM and REM.

The results of the Chow test shown in Table 6 reject the hypothesis that the pooled regression model is the appropriate model for the study. Thus, the Fixed Effect Model (FEM) is preferred to pooled regression. This means that a random effects regression model should be compared with the fixed effects model using Hausman test to determine the appropriate model.

The results of the Hausman test (Table 7) fail to reject the hypothesis that the random effects model is a suitable model. In other words, the most appropriate model for estimating regression equations is the Random Effect Model (REM) shown in Table 8.

The aim of the study was to analyse the factors affecting stock price of agriculture companies listed on the Zimbabwe Stock Exchange (2002-2022). The response of Stock prices model on Fundamental and technical factors shows the coefficient determination (adjusted R-square) of 84.6%. This implies that, almost 84.6% of the variation is stock prices is explained by price earnings ratio, earnings per share, return on equity and inflation rate. This shows that stock prices can be explained by both microeconomic and macroeconomic factors.

The study established that there is a positive relationship between share prices and price earnings ratio. This means that an increase in the price earning earnings ratio leads to an increase in the price of shares of agriculture listed firms in Zimbabwe. The result is supported by previous studies (Kumar, 2017; Aliu et al., 2021), which identified that the price earning ratio has a significant effect on share price. On the contrary, this result varies from Al-Dwiry and Al-Eitan

(2022) who failed to establish a relationship between price earnings ratio and stock prices. The results established that return on equity has a significant positive effect on stock prices. This means that an increase in the profitability of the agriculture listed firms, leads to an increase in the price of shares. This result confirms results from Kumar (2017) and Ali et al. (2018) who found that return on equity positively determines company stock prices. Tian (2011) found an inverse relationship between ROE and stock price. The research study also analysed the effect of fundamental factors (GDP, CPI, and IR) on stock prices. The results show that CPI have a significant and positive effect on stock prices. These results tally with Aliu et al. (2021) who established a positive and significant effect of CPI on stock prices in the USA. The results show a positive but insignificant effect of interest rates on stock prices. GDP is also insignificant in influencing share prices. These results correspond to other studies (Atiq et al., 2010; Alsamara et al., 2020) where GDP was found to be insignificant in influencing stock prices.

5. CONCLUSION AND POLICY RECOMMENDATIONS

The agriculture sector in Zimbabwe has been experiencing several challenges since 2002. Chiefly, among the challenges is the lack of financing especially from the private sector. To circumvent this challenge, the government has been using budgetary support to assist farmers with limited activity on the stock market. This study sought to establish the determinants of the share prices of the major agricultural companies listed on the Zimbabwe stock exchange. The result of the study implies that there is a need to understand the factors taken into consideration by investors interested in investing in the agricultural sector. Based on these findings, we can conclude that both fundamental and technical factors have an impact on the company's stock price performance. The study identified that the investors in the sector are interested in price earnings ratio, earnings per share, return on equity and inflation rate (CPI).

The results show that investors are worried about the performance of their investments as well as the stability in the economy. The government, though monetary policy should endeavor to ensure that inflation rates are low and stable since this makes it easy to plan. The findings suggest that the governments should promote agricultural growth initiatives and strategies which would stimulate stock market development.

REFERENCES

Al-Dwiry, M., Al-Eitan, G.N., Amira, W. (2022), Factors affecting stock price: Evidence from commercial banks in the developing market. Journal of Governance and Regulation, 11(4), 339-346.

Ali, S., Bashir, T., Ahmed, T., Ishaq, A., Shahzad, S.J.H. (2018), The determinants of bank stock prices: A panel approach. South Asian Journal of Management Sciences, 12(2), 116-129.

Aliu, F., Nadirov, O., Nuhiu, A. (2021), Elements indicating stock price movements: The case of the companies listed on the V4 stock exchanges. Journal of Business Economics and Management, 22(2), 503-517.

Allahawiah, S., Al Amro, S. (2012), Factors affecting stock market prices in Amman Stock Exchange: A survey study. European Journal of Business and Management, 4(8), 236-245.

Al-Qenae, R., Li, C.A., Wearing, B. (2002), The information content of earnings on stock prices: The Kuwait stock exchange. Multinational Finance Journal, 6(3/4), 197-221.

Alsamara, M., Yaghi, K., Mrabet, Z. (2020), The determinants of stock market index in Syria during the conflict period: Linear versus nonlinear approach. International Journal of Development and Conflict, 10(1), 20-32.

Al-Tamimi, H. A. H., Alwan, A. A., & Abdel Rahman, A. A. (2011). Factors affecting stock prices in the UAE financial markets. Journal of transnational management, 16(1), 3-19.

Atiq, M., Rafiq, M. (2010), Factors affecting stock prices: A case study of Karachi stock exchange. Business and Economic Review, 2(1), 7-12.

Banerjee, A. (2019), Predicting stock return of UAE listed companies using financial ratios. Accounting and Finance Research, 8(2), 214-225.

Barakat, M. R., Elgazzar, S. H., & Hanafy, K. M. (2016), Impact of macroeconomic variables on stock markets: Evidence from emerging markets. International journal of economics and finance, 8(1), 195-207.

Collins, J. (1957), How to study the behavior of bank stocks. Financial Analysts Journal, 13(2), 109-113.

Das, N., Pattanayak, J.K. (2007), Factors affecting market price of SENSEX shares. The Icfai Journal of Applied Finance, 13(8), 33-51.

Fama, E. F. (1965), The behavior of stock-market prices. The journal of Business, 38(1), 34-105.

Graham, B., Dodd, D. (1934), Security Analysis; Principles and Techique. New York: McGraw-Hill Book Co, Inc.

Gusni, G. (2017), The determinants of dividend policy: A study of financial industry in Indonesia. Jurnal Keuangan dan Perbankan, 21(4), 197346.

Irfan, C.M. (2002), Key fundamental factors and long-run price changes in an emerging market: A case study of Karachi stock exchange. The Pakistan Development Review, 2002, 517-533.

Islam, M., Johan, S. (2012), Analysis of financial products of capital market in bangladesh: Present status and future development. International Journal of Marketing Studies, 4(5), 119.

Kumar, P. (2017), Impact of earning per share and price earning ratio on market of share: A study on auto sector in India. International Journal of Research, 5(2), 113-118.

Narayan, P. K., Narayan, S., & Singh, H. (2014), The determinants of stock prices: new evidence from the Indian banking sector. Emerging Markets Finance and Trade, 50(2), 5-15.

Nirmala, P.S., Sanju, P., Ramachandran, M. (2011), Determinants of share prices in India. Journal of Emerging Trends in Economics and Management Sciences, 2, 124-130.

Okafor, C.A., Mgbame, C.O. (2011), Dividend policy and share price volatility in Nigeria. Journal of Research in National Development, 9(1), 202-210.

Pudji, A. (2017), The influence of fundamental factors and systematic risk to stock prices on companies listed in the Indonesian stock exchange. European Research Studies Journal, 20(4A), 230-240.

Qaisi, D. F., Tahtamouni, D., & AL-Qudah, D. (2016), Factors affecting the market stock price - the case of the insurance companies listed in Amman stock exchange. International Journal of Business and Social Science,, 2016, 81-90.

Singh, N. P., & Tandon, A. (2019), The effect of dividend policy on stock price: Evidence from the Indian market. Asia-Pacific Journal of Management Research and Innovation, 15(1-2), 7-15.

Zhao, Y. (2013), The relationship between share price gains, corporate performance and risk. OALib Journal, 5, 110-112.