

The Importance of Financial Ratios in Predicting Stock Price Volatility: A Case Study of Amman Stock Exchange

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Abstract:

The purpose of this paper is to examine the ability of market ratios to predict stock prices of Jordanian firms. While stock prices tend to be a strong indicator of healthy economy, scholars identified financial ratios among the factors that can explain movements of stock prices. Although financial ratios depend on financial statements, market ratios in particular, have additional information related to market, therefore, this study rely on market ratios: dividend per share (DPS), earning per share (EPS), dividend yield (DY), Return on equity (ROE) and price/earnings ratio (P/E); to predict stock prices. The data has been collected from Amman Stock Exchange (ASE), financial statements of 7 Jordanian companies were analyzed for eleven years during the period (2005-2015), multi regression methods applied to test its hypotheses. The study revealed that market ratios can significantly predict stock prices by their own, and have the ability (as combined) to explain stock prices movements in the companies.

Keywords: Stock price, DY, ROE, EPS, DPS, P/E, Jordan, Amman

INTRODUCTION

The primary aim of financial statements is to provide information on the financial status and results of firms provided by the figures reported in the reports deemed to relate to the choices of firms. Accounting information In order to evaluate and forecast performance, stock growth, cash flow and dividend in corporate economic and eventual decisions, consumers rely more than any other information on data extracted from financial statements or its componentes. Financial reporting figures can impact investor confidence in financial markets. Investors are searching for additional resources in the most competitive financial markets and, when making a decision, each investor must pay special attention to "stock price."

Financial indicators are seen as the oldest and most simple practical methods for measuring and controlling company results. It was developed in the mid-19th century and was mostly used by financial analysts and accountants. The financial measures used by internal and external customers to guide their economic decisions; including decision on spending and performance assessment. Over recent decades there have been a range of financial and accounting models created. Nevertheless, the

financial ratios remain as templates or as another relevant studies to help financial and planning assessments, their conventional and necessary strength.

The literature also addresses the use of the accounting reports and financial ratios to explain increases in asset values, and economists and financial analysts were also debating the study of the financial ratios largely due to changes in stock prices.

Kendall (1953) notes the gradual variation of commodity markets over time, and that he has investigated how the price already occurred could be used to forecast possible fluctuations in prices.

Later experiments have extended into other statistical metrics, including dividend yields, price-to-revenue ratios, book-to - market ratios, bond returns and specific interest pricing regimes typically evaluated for stock and return forecasts. But the proofs are mixed.

REVIEW OF LITERATURE

The relation between accounting knowledge of market prices has first been studied by Ball and Brown (1968). Once they examined the correlation between data on the annual report and the share

price, the companies were able to predict an exceptional return if a firm had excess profits and customers. This reveals how financial gains are linked to universal principles.

From another point of view, Beaver argued that financial statements and accounting records for the company could influence product size. Beaver noted that the published information was used by investors in stock trading.

In the area of knowledge about the earnings and operational cash flow of the asset markets, Bernard and Stober (1989), Dechow (1994) and Sloan (1996) respectively researched empirically. We consider that earnings awareness is greater but not growing. Wright, Ken (1996) is analyzing the role and significance of the accounting evidence when taking stock decisions to improve awareness of investing behaviour. When its review the study is entitled "Role and relevance of the accounting reporting records in making stock decisions."

Torpedo (2001) used their finance ratios to measure the predictability of the performance of stock market companies. In his own study, he found that the analysis of the financial ratio could be closely related to productivity and predictability by several economic regression ratios, including a productivity check agreement. The low- and high-profit firms were split into two categories, with strong productivity forecast in the financial ratios predicted from his study.

Hakeem & Bambale (2016) explored the connection between dividend payments and financial results in Nigerian manufacturing firms for the period 2007-2014 in their study 'Mediaising of liquidity impact on corporate results and dividend payments for listed production firms in Nigeria.' As a data modeling tool the report used multiple regressions. The study showed that the relationship between payments of dividends and the company's success in Nigeria was important. The analysis also showed that the growth of the financial situation had a favorable impact on the amount of dividends received by the firms under review.

Rane & Raju (2016) analyzed the share price responses of 57 BSE-listed A&B firms to the twenty-day advertising, based on the relationship between the dividend announcement and the healthcare sector's market prices, in their analysis on

the impacts of the dividend policy on the Stockholder benefit – Empirical examination of Indian medical services. The study observed that the consistency of the BSE dividend declaration during the post-communication period was likely to be high. The analysis also revealed that the dividend announcement includes statistically negligible price sensitive details and event windows for most day after the declaration date.

Ozuomba et al (2016) has published "The effect of dividend policies on wealth maximization" to investigate the effects of dividends on property of Nigerian public entities on their ownership and shareholder policy. The study was published by Ozuomba et al. The study analyzes the effect of various dividend schemes on shareholders' wealth by means of a 1 year survey of 10 firms listed on the Nigerian market. The study findings reveal "the value of dividends and reveal further that Nigerian stock investments are influenced by dividend policies of publicly limited firms."

The investigations concentrate on data from 13 local firms listed between 2008 and 2014 on a Malawi stock exchange. The study revealed the clear positive relationship between Malawi's Foreign Exchange and its share prices in the stock market. Majanga (2015) analyzed the "Stock Price effect dividend – Systematic Examination of Listed Malawi companies." The study also showed that stock prices are the product of several variables, including dividends, which contribute greatly to the share price.

The study by Jakata & Nyamugure (2015) "The Effect of the Share Price Dividend Policy: Evidence for observation on Zimbabwe's stock market," covers the 2003-2011 period. The study shows that the share price (dividend strategy, income per share) of the business is not correlated with the product. The dividend strategy of the company has no effect on share price as companies have implemented stringent dividend policies, whether the interest of shareholders is maintained. The study notes as well. The report also showed that creditors remain in a position to generate capital while traders benefit from the Zimbabwe Börse as an alternative.

A case analysis of selected textile industries in Pakistan was subject to a research by Ullah et al (2015), which explores the dividend policy effect on stock price volatility. The thesis investigated the

relation of the stock price to Karachi Stock Exchange dividend payment by listed enterprises. The research used data from five apparel firms between 2003 and 2008. The variable was based on the stock price, while the independent variable was a dividend distribution while regulated variables included: company size, earnings performance and growth. The findings of some regressions have shown that "the reward ratio has greatly affected stock markets. Other factors have provided contradictory outcomes in other models.

The research is titled: Dividend policy and its effect on the prices of stocks. The analysis found a significant positive influence on stocks affecting regulation-dominant variables: equity profits, hold in Al Masum (2014) on the Dhaka Stock Exchange return and the relationship between dividend policy and stock-market return for the Dhaka Stock Exchange banks between 2007-2011.

Throughout the survey, analysts evaluated the influence of the dividend strategy's effects on the share price output of 53 companies across four sectors on the Jordanian shares. Two major strategies, dividend policy and financial ratios, were studied throughout the study, "The Impact of Dividend Policy on Share Price Volatility: Empirical Evidence from Jordanian Stock Market." (Fawaz, 2014)

Amuche (2014) conducted an assessment of the relationship between dividend yield and stock prices and the impact of pay-out ratio on the Nigerian banks' stock price, entitled "The impact of dividend yields on Nigeria's stock prices." The research covered the period from 2006 to 2010 for five years. The study showed that the return on dividends had a significant and beneficial influence on stock prices and a moderate and positive effect was achieved

The impact on the stock prices of business banks' earnings, while the pay-out ratio for dividends had a negative impact on the stock prices of commercial banks in Nigeria. The study suggests that the "dividend yield, earnings yield and pay-out ratio" affect asset values below the size level, which is significantly beneficial in terms of stock prices.

Hunjra et al . (2014) carried out a analysis on the impacts of "dividend yield, dividend pay-out ratio, return on equity , return on equity and income after market prices," on stock prices of 63 companies

listed in the Bourse of Karachi in Pakistan. The research explores the effect of the "Dividend Scheme, earnings per stock, return on equity and profit after tax." The study found that the following dividend policies: dividend rates and dividend pay-outs have a substantial effect on the share price. The research findings indicate that the relationship between dividend yield and stock price has been negative and that the dividend pay-out ratio and stock price are favourable. The research also identified the important positive effect of variables such as "income after tax and income per share."

The relationship between the dividend policy and the volatility of the share price of 51 companies in the Tehran Stock Exchange during the period 2007 to 2012 is examined by Lashgari & Ahmadi (2014) under their research titled "The impact of the dividend policy on share price volatility in the Tehran Stock Exchange" The study found that the „ significant adverse impact of the dividends distribution ratio on stock market volatility. The study has showed that the growth rates of Tehran Stock Exchange firms have a substantial positive influence on market volatility, while there is no significant impact on the variables: debt, stock price volatility, and sales variability.

Alim et al. (2014) analyzed the relationship between dividends policies and shareholder wealth of fifty textile firms listed on the textile industry at the Karachi bond stock exchange in Pakistan during the period 2001 to 2010, under the title 'Effect of dividend policies on shareholder wealth in Pakistan.' The study used stock values per share as an unsustainable vector of which independent variables included: earnings per share, commodity profit, dividends per share, dividend distribution, market valuation deferred and commodity revenue lagging. The study found that a direct relation to independent variables used in the study is found between market price per share. The study showed that "demand cost, earnings per share, demand lag and lagged market valuation" was strongly influenced by stock price per share. Although the price of the company per share was lower, it was influenced by dividend per share.

The effect of the dividend policy on share prices of quoted companies in Nigeria has been examined in the study entitled "The impact of the dividend policy on stock prices of quoted companies" by Oyinlola &

Ajeigbe (2014). The trial has been carried out with 22 companies listed on the Nigerian stock exchange, using secondary data on the fundamental values of their companies as available from their respective annual reports between 2009 and 2013 and concluding quotations from the two Nigerian dailies, the PUNCH and the GUARDIAN.

The Botchwey research (2014) analyzed the impact of dividend payments to Ghana's stock exchange prices of 36 listed firms on the effect of dividend payments on Ghana 'S stock exchange prices. The study showed that the company's share dividend pressure increases its share rate. In the report, firms with larger dividend and larger valuation need an rise in the share price, which is equal to smaller businesses with lower dividends.

In "The effect on share prices of the dividend policy," Bilal and Jamil (2015) analyzed the correlation between dividend policy and share price per share in the Bangladesh context . The results indicate a preferred relationship between the dividend policy and market share price. The study shows that dividend payment has an impact on the market price per share rather than retention. The study showed that the results favor the underlying hypothesis of dividends, which indicates that the dividend strategy affects the pricing of stock.

The dividend policy effect for competitiveness, equity income and investment by the five companies mentioned in Nigeria in "Dividend policy and Corporate outcomes in Nigeria" has also been analysed by Adediran and Alade, (2013) . The study showed a "strong positive relationship between dividend policy and competitiveness"

In the report "Market Pre Volatility on Dividend Policy; A Case Report" Sadiq et al . (2013) found equity price volatility to be of 35 Karachi market-listable non-financial companies for 2001-2011. The key dividends were included in the analysis

Fanon (2013) measured the impact of dividend policies on the capital market valuation of the economy by evaluating the general price transition of securities and the corporate appraisal by the study "The influence of dividends on the prices of the economic policy entities of Alborsah." The study selected 25 non-capital institutions listed in Qatari securities exchanges, which were distributed between 2011 and 2012 in many other industries

except the financial sector. There are also alternate dividend analysis approaches that demonstrate the effect of simple and multifaceted linear regression on the institution's capital market evaluation. The study results indicate that dividends represent one of the main kinds of dividends impacting an enterprise's market valuation and that the dividend is a statistically significant link between the dividend strategy and the asset value.

Hashemijoo et al (2012) published research entitled The effect of a dividend strategy on market price stability in Malaysia. In 2005-2010, the researchers studied in Malaysian shares for eighty consumer product companies the relationship between dividend policy and share price fluctuations. The study describes the output and pay-out variables and regulates such variables as the scale, profit volatility, productivity, debt, and development, using the dividend policy as the key variable. The analysis found that the relationship between stock price volatility and size was very negative, "important negative links between market fluctuations and the dividends payout from two major dividend policies."

Khan (2012) reviewed, in its Stock Price Dividend Effect – Pakistan Chemical and Pharmaceutical industry case, the relationship between announcements of dividends and stock prices of twenty-five companies in the Pakistan KSE-100 Index. The variables of control include: share income, holding ratio and equity return. The study found that the association of cash, retention and returns on equity prices was strongly positive. Throughout Pakistan's chemical and pharmaceutical industries there are variations throughout market prices. Furthermore, the relationship between equity (EBITs, stock dividends) and stock prices is unfavorable. A, Oh. (2012) The determinants of dividend pay-outs for all companies in the field of real estate, energy, construction, telecoms, health and industrial industries (other than banks and investment concerns) listed in the Abu Dhabi Bursa for a 5-year period have been studied by the 'Empirical Analysis of Dividend Determinants Policy-Evidence for US Companies.' The impact of the dividends program and the unquoted institution of the financial market valuation, as well as a study of institutions listed in the Amman Stock Exchange, split into three sectors – insurance, services and business – over a span of 20 years, through a survey

entitled "The impact of dividends on asset prices in a single financial market scheme" The research used a basic linear and multi-model regression to assess the impact of the dividend strategy, using an proxy, BPA income per share, and cash distribution earnings per share DPA. (American President Ramadani, 2012)

RESEARCH METHODOLOGY

The aim of the study was to decide if the financial relation to the company's stock prices is statistically significant and to decide whether and how deep the relationship is. The analysis evaluated the panel results. Panel data analysis (Wooldridge, 2009; 452) Analysis of panel data analysis methods is done by choosing a fixed or a random effect model, which includes the horizontal and time series which integrates a dataset of the same unit over a variety of periods. In the study, Hausman's test statistics were used to establish the pattern to be chosen.

Research consists of a period of 10 years from January 2005 to December 2015. The study has taken Jordan Islamic bank for finance & investment, Cairo Amman bank, Jordan insurance, Al-Amin for investment, The Arab international for education & investment, Jordan telecom and Jordan electric power. The following are the study variables:

Variable Name	Type	Code	Measurement
Dividend Yield	Independent	DY	Cash Dividend per share / Market Price per share * 100
Divident Per Share	Independent	DPS	Dividend/Total Share
Earning Per Share	Independent	EPS	Profit after tax/Total Shares
Return on Equity	Independent	ROE	Net Income/ Shareholder's Equity
Price Earning Ratio	Independent	P/E	Stock Price/EPS
Stock Return	Dependent	RR	Stock Price at the end of the year

Hypotheses

Main hypothesis:

H01: There is no significant impact of market ratios on Amman Exchange's stock price

Sub Hypotheses

H_{1.1}: Dividends per share (DPS) has no significant impact on firms' stock prices.

H_{1.2}: Earnings per share (EPS) has no significant impact on firms' stock prices.

H_{1.3}: Dividend Yield (DY) has no significant impact on firms' stock prices.

H_{1.4}: Return on Equity (ROE) has no significant impact on firms' stock prices.

H_{1.5}: Price/earnings ratio (P/E) has no significant impact on firms' stock prices

Research Model

In order to examine the study hypotheses, the research model can be designed as follows:

Stock Value = α_{it} + β_1 ROE + β_2 P/E + β_3 EPS + β_4 DPS + β_5 DY + ϵ_{it}

Table-1: Descriptive of the variables

Variable	Average	SD	Skewness	Kurtosis
DY	3.929	2.841	0.553	3.206
DPS	0.454	1.179	5.222	31.750
EPS	0.47	0.701	2.516	10.17
P/E	4.23	7.06	2.98	12.45
ROE	13.66	13.62	0.118	5.07
RR	0.147	5.335	1.63	1.45

The descriptive statistics (table 1) for the variables show that mean and standard deviation varies. As the skewness and Kurtosis should be in a range of 0 to 3. All the variables are positively skewed but in the case of DPS, EPS, P/E, ROE and Return the kurtosis came to be high.

Table 2: OLS Results

DV	Stock Return			
Variables	Coefficient	Std. Error	Statistics	P
DY	0.086	0.23	0.362	0.717
DPS	0.33	0.55	0.599	0.549
EPS	-2.11	1.40	-1.49	0.136
MSP	-5.39	1.13	-0.05	0.996
ROE	0.122	0.063	0.73	0.96

As can be seen from the previous results of OLS, there exists a positive relationship between Dividend Yield, Dividend Per Share and Return on Equity on Stock Return. There also exists a negative relationship between Earning per Share and MSP on Stock Returns. (table 2)

Table 3 : GMM results

Variable	Coefficient	Std. Error	Statistic	P
DPS	0.18	0.82	0.22	0.821
DY	0.09	0.230	0.424	0.671
EPS	-2.688	1.22	-2.191	0.0305
MSP	3.71	1.11	0.33	0.73
ROE	0.11	0.06	1.95	0.057

GMM results show that EPS has a negative effect on stock prices, despite improvement in value compared to the previous year, due to the negative EPS values in some of the years analysed. It is also possible that investors could not properly evaluate EPS information. They had a positive impact on Amman Exchange stock prices for the remainder of the variable. (Table 3)

Table-4: GARCH Results

Mean Equation				
Variable	Coefficient	Std. Error	Statistic	P
DPS	0.18	0.82	0.22	0.821
DY	0.09	0.230	0.424	0.671
EPS	-2.688	1.22	-2.191	0.0305
P/E	3.71	1.11	0.33	0.73
ROE	0.11	0.06	1.95	0.057
Variance Equation				
GARCH	0.517	0.264	1.94	0.052
DPS	10.01	5.54	1.80	0.07
RR	1.93	1.738	2.61	0.008

The GARCH results were calculated by taking a dummy variable, it shows that DPS, DY, PE, ROE and DPS were influencing the values of the stock prices throughout the period they are analyzed for. The results are similar to the results presented by Ligocka and Stavarek (2019). (table 4)

CONCLUSION

This study was conducted to examine the ability of market ratios to predict market share prices. Based on the statistical results, the model showed that there is a significant ability of market ratios to predict market share prices.

It should be noted that almost all variables in the model are statistically significant, with the exception of the P / E ratio; this means that market ratios can predict stock prices significantly on their own and have the ability (as combined) to account for more than 89% of stock price movements in Jordanian

manufacturing companies. For this cause, investors and financial analysts should take into account market ratios and depend on them in their investment decisions rather than on certain financial ratios. Although the empirical results of this study show that market ratios can predict stock prices in Jordanian companies.

IMPLICATIONS AND LIMITATIONS

This study will also help ' active investors ' decide when to invest for higher returns. Future studies should be carried out in order to evaluate the performance of the indices with the help of these equations. The studies should also include different ratios for the forecasting of stock prices. Since only five ratios were used for the study, the study can not clarify the trends in the stock markets. There are other ratios that can be taken as well.

REFERENCE

1. Adediran, S. A., & Alade, S. O. (2013). Dividend policy and corporate performance in Nigeria. *American journal of social and management sciences*, 4(2), 71-77.
2. Al-Shawawreh, F. K. (2014). The impact of dividend policy on share price volatility: Empirical evidence from Jordanian stock market. *European Journal of Business and Management*, 6(38), 133-143.
3. Alim, S., & Ozuem, W. (2014). The influences of e-CRM on customer satisfaction and loyalty in the UK mobile industry. *Journal of Applied Business and Finance Researches*, 3(2), 47-54.
4. Ball, R., & Brown, P. (1968). An empirical evaluation of accounting income numbers. *Journal of accounting research*, 159-178.
5. Bernard, V. L., and T. Stober. 1989. The nature and amount of information in cash flows and accruals. *The Accounting Review* 64 (4): 624-652.
6. Bilal, Z. O., & Jamil, S. A. (2015). Does Dividend Policy Impact Stock Market Prices?- Evidence From Oman. *International Journal of Applied Business and Economic Research*, 13(9), 6873-6883.
7. Dechow, P. M. 1994. Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. *Journal of Accounting and Economics* 18 (1): 3-42.

8. Fanon, F. (2013). *Jordens fördömda*. Leopard förlag.
9. Hakeem, S. A. A., & Bambale, A. J. A. (2016). Mediating Effect of Liquidity on Firm Performance and Dividend Payout of Listed Manufacturing Companies in Nigeria. *Journal of Economic Development, Management, IT, Finance & Marketing*, 8(1).
10. Hashemijoo, M., Mahdavi Ardekani, A., & Younesi, N. (2012). The impact of dividend policy on share price volatility in the Malaysian stock market. *Journal of business studies quarterly*, 4(1).
11. Hunjra, A. I., Ijaz, M., Chani, D., Irfan, M., & Mustafa, U. (2014). Impact of dividend policy, earning per share, return on equity, profit after tax on stock prices. *Hunjra, AI, Ijaz, M. S, Chani, MI, Hassan, S. and Mustafa, U.(2014). Impact of Dividend Policy, Earning per Share, Return on Equity, Profit after Tax on Stock Prices. International Journal of Economics and Empirical Research*, 2(3), 109-115.
12. Jakata, O., and Nyamugure, P. (2015). The effects of dividend policy on share prices: Empirical evidence from the Zimbabwe Stock Exchange. *International Journal of Science and Research*, 4(10), 674-683.
13. Kendall, M. G., & Hill, A. B. (1953). The analysis of economic time-series-part i: Prices. *Journal of the Royal Statistical Society. Series A (General)*, 116(1), 11-34.
14. Khan, K. I. (2012). Effect of dividends on stock prices—A case of chemical and pharmaceutical industry of Pakistan. *Management*, 2(5), 141-148.
15. Lashgari, Z., & Ahmadi, M. (2014). The impact of dividend policy on stock price volatility in the Tehran stock exchange. *Kuwait Chapter of the Arabian Journal of Business and Management Review*, 3(10), 273.
16. Ligocká, M., & Stavárek, D. (2019). The relationship between financial ratios and the stock prices of selected European food companies listed on Stock Exchanges. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 67(1), 299-307.
17. Majanga, B. (2015). The dividend effect on stock price—An empirical analysis of Malawi listed companies. *Accounting and Finance Research*, 4(3).
18. Masum, A. (2014). Dividend policy and its impact on stock price—A study on commercial banks listed in Dhaka stock exchange. *Global Disclosure of Economics and Business*, 3(1).
19. Mehta, A. (2012). An empirical analysis of determinants of dividend policy—evidence from the UAE companies. *Global review of accounting and finance*, 3(1), 18-31.
20. Oyinlola, O. M., & Ajeigbe, K. B. (2014). The impact of dividend policy on stock prices of quoted firms in Nigeria. *International Journal of Economics, Commerce and Management*, 2(9), 1-17.
21. Ozuomba, C. N., Anichebe, A. S., & Okoye, P. V. C. (2016). The effect of dividend policies on wealth maximization—a study of some selected plcs. *Cogent Business & Management*, 3(1), 1226457.
22. Ramadani, V. (2012). The importance of angel investors in financing the growth of small and medium sized enterprises. *International Journal of Academic Research in Business and Social Sciences*, 2(7), 306-322.
23. Rane, A., & Raju, A. (2016). Impact of dividend announcement on stockholder's return—an empirical analysis of Indian healthcare sector. In *Doctoral Research Conference in Business Studies and Social Sciences* (pp. 1-15).
24. Sloan, R. G. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings?. *Accounting review*, 289-315.
25. Ullah, H., Saqib, S. E., & Usman, H. (2015). The impact of dividend policy on stock price volatility: A Case study of selected firms from textile industry in Pakistan. *International Journal of Academic Research in Economics and Management Sciences*, 4(3), 40-51.
26. Wooldridge, J. M. (2009). On estimating firm-level production functions using proxy variables to control for unobservables. *Economics letters*, 104(3), 112-114.