

The Accounting Variables' Ability in Explaining the Volatility of Stock's Price: The Case of Amman Stock Exchange

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Abstract

This study aims at identifying the ability of some accounting variables which are (dividend Payout ratio, dividend yield, market value, net income volatility, debt ratio, and the company's assets Growth) of explaining the volatility of stock's price of the industrial companies listed in Amman Stock Exchange during the years 2001 to 2010. To achieve the study's objectives, the researchers reviewed the annual reports of the public companies listed in Amman Stock Exchange, and also reviewed the Amman Stock Exchange's statistical bulletins for the years 2001-2010 to get the accounting variables and to get the stocks' closing prices. The sample of the study consisted of (64) industrial companies. To test the hypotheses of the study, the multiple regression model was used to test the independent variables' ability in explaining the variance in the dependent variable (Volatility in stock price).

The study concluded that the accounting variables (dividend Payout ratio, dividend yield, market value, net income volatility, debt ratio, and the company's assets Growth) explained (3.8%) of the volatility in stock price while (96.2%) of the volatility in stock price referred to other reasons. The results of the study also showed that there was an important weak correlation between ratios of dividend Payout ratio and between volatility in stock price and this relation explained (1.2%) of the changes in volatility in stock price. Finally, the results indicated lack of significant correlation between the other accounting variables and the volatility in the stock prices explaining (2.6%) of the volatility in the stock prices.

Key words: accounting variables, volatility in the stock prices, industrial companies, Amman stock Exchange.

1. Introduction

The financial reports which the companies published are considered one of the most important resources that supplied decision makers with the information that enable them to evaluate the future attitudes of the companies. In addition and due to the importance of the accounting information and its role in rationalizing the investment decisions, the Financial Accounting Standards Board (FASB) stated that the aim of the accounting information is to help the current and the possible investors making their investment's decisions.

To collect savings, stock exchange in any country has to be efficient in pricing its securities (Issam, 2009). The efficient financial market is the market which its stock's performance reflects all the available information without any cost where the accounting information flow from the companies' financial reports and then these information were analyzed and published by the financial market as periodical statistical *bulletins* including some market indications that help in making decisions concerning the dealers in the stock exchange especially the investors.

The performance of the stock is considered the real face which the investors and the management depend on for judging the company's performance and the decrease in the stock price means that the company has weak performance when it is compared with other companies and the opposite is totally true, that is the increase in the stock price means the company's success in managing its business and this success revealed the extent of the company's efficiency and the management's appropriate policies and procedures (Kothari and Salon, 1992).

Based on what was mentioned previously, the prices of the companies' stocks are exposed to great fluctuations from time to time causing a state of dispersion and the investors' uncertainty of the future prices of the stocks (Al-Badri&Al-khori, 1997). Hence, the investors' expectations of the prices need eagerly specific indications to access into prices that reflect the available information. Therefore, this study examined the accounting indicators and their relation with the stocks' prices. It is expected that this study helps the current investors and the

expected ones in designing and planning their policy of investment clearly. Moreover, this study anticipated to help selecting the company which the investors will deal with in terms of buying its shares or sell them through following the accounting changes resulted from the financial statements of these companies and so the importance of the information of the Financial statements will be enhanced.

2.Theoretical framework & previous studies

2.1 Theoretical framework

The volatility of share price is the systemic risk faced by investors who possess ordinary shares investment (Guo, 2002). Investors are by nature a risk- averse, and the volatility in their investments is so important to them because it is a measure of the level of risk they are exposed to.

By following up the stocks' prices in the stock exchanges, we notice instability in the prices of the stocks which make the investors feel frightened about their investments. But there are some accounting indicators that the investors and the shareholders may depend on to evaluate the company's stock price and to understand the change in the stock price in the financial market and hence to evaluate the company's performance as a whole. Accordingly, the study tries to identify the accounting variables which are more capable to explain the volatility of the stock prices and therefore it could be used to predict the perspective stock price.

Generally, the effective factors in the prices of the stocks are considered an important issue in the literature of accounting and the financial markets. In addition, there are many studies about this issue; some of them focused on studying these factors separately and others focused on them together with different proportions. Most of the shareholding companies' decisions are based on the factors that affect its stocks' prices so it is important to know the major factors that affect the price of these companies' stocks.

The investors and other dealers with the stocks need to analyze many factors and variables that affect the stocks' price in the market by analyzing the industry which the stock belongs to and the company's circumstances in terms of historical development of its sales and the demand of its products, in addition to the extent which the company reached in comparison with other companies according to the performance, competitive rank, nature of the product, financial structure of the company and the extent of the technology progress (Bernd and Kutun, 2005), plus the analysis of the general economic circumstances of the state in terms of the current economic situation, inflation rates, unemployment and the financial and cash policies followed in the country . The most significant elements concerning the stocks according to the investors are financial data, dividend announcements, mergers, and changes in company's management, announcements of new products and the changes in the governments' policy that may affect the interest's rates.

All these variables have a correlation and impact on the stock's market value and therefore the dealers in the markets have to get sufficient information from the appropriate and trusted resources because these information can affect the variables and the limitations which influenced the stock's market value. This type of analysis has received the interests of academics and the dealers with the stocks for its great importance in making decisions regarding buying or selling and these elements and variables that affect the stock price in the market were analyzed.

2.2 Previous Studies

The study of (Hussainey et al., 2011) examined the relation between dividend policy and share price changes in the UK stock market. Multiple regression analyses were used to explore the relation between share price changes and both dividend yield and dividend payout ratio. The study included independent variables concerning the policy of profit distribution as dividend yield and dividend payout ratio. In addition it includes some control variables as market value (size), long-term debt, and growth in assets and earnings volatility.

The study concluded that there was a significant negative relationship between the payout ratio of a firm and the volatility of its stock price and a negative relationship between dividend yield and the volatility of stock price.

According to the control variables, it was discovered that size and debt had the highest correlation with price volatility. While size had a significant negative relationship with price volatility, suggesting that the larger the firm is, the less volatile the stock price will be, debt on the other hand showed a significant positive relationship with price volatility suggesting that the more leveraged a firm is, the more volatile the stock price would be .

Abo Osba (2007), in Jordan, examined the impact of some accounting variables which are earning per share, **book value per share and the** cash dividend per share on the share price of the banking sector listed in Amman Stock Exchange over the years (2001-2005). The results of the study revealed there was a statistically significant

strong relationship between earning per share, share's *book value*, *the* cash dividend in one hand and the bank' share price on the other hand.

Al-Mawed's (2005) study aimed at identifying the variables that affect the shares price of the public shareholding companies listed in Amman Stock Exchange during the years (1998-2003). The sample of the study which consisted of 42 public shareholding companies listed in Amman Stock Exchange represented all the sectors including the most important companies in terms of market value and market's trading volume. The study's variables were volatility in the share price (dependent variable) and the volatility in share turnover ratio, earnings per share, dividends, interest rate in one year deposit and inflation rate (independent variables).

The results showed a direct statistical significant relationship between share turnover ratio and share price. The results also showed a significant negative relationship between interest rate and share price while the results did not show any statistical significant relationship between earnings per share and between cash dividend per share in one hand and the share price on the other hand. Additionally, the results did not reveal any statistical significant relation between the inflation and the share price. The researcher concluded that the change in the independent variables together explained only (9.5%) of the change in the market share price and this may due to the existence of other elements other than these used in the study.

In America, Belkaoui & Picur's (2001) study aimed to explore the impact of cash dividend and the retained earnings on the market share price where the researchers, depending on some models of evaluation that are based on accounting information, applied a study on a set of US multinational companies during the years (1992-1998). The sample of the study consisted of 256 company. The study concluded that market value of these companies' shares was determined greatly by relying on the retained earnings and the dividend affect with less degree of the market value of these companies.

Lee and Park (2000) investigated intraday patterns of quarterly stock price return and earnings announcements relations. More specifically, the study aimed at identifying the more influential accounting variables on the stock price and whether they were interim quarter earnings or the fourth quarter earnings of the financial year. The sample of the study consisted of 265 companies listed in *New York* Stock Exchange relating to 1994-1999. The researchers used Coefficient of determination (R). The results showed that fourth quarter announcements exhibited a lower earnings response coefficient but a more rapid adjustment to new equilibrium levels of prices and a higher R^2 than interim quarter announcements. Allen & Rachim (1996) studied 173 Australian listed stocks during the years (1972 – 1985). Their study aimed to examine the relation between dividend policy and the volatility in a stock's price after controlling market value (firm size), earnings volatility, leverage and growth. Regression analysis was used to test the study's hypotheses. Allen and Rachim (1996) failed to find any evidence that dividend yield influence the stock price volatility in Australia. However, they found a significant positive correlation among stock price volatility and earning volatility and leverage, and a significant negative relationship between price volatility and payout ratio. According to their results, there was a negative correlation between size and stock price volatility.

3. Empirical study hypotheses

This study seeks to identify the accounting variables that help in explaining the volatility in stock prices of the public shareholding companies listed in Amman Stock Exchange and therefore this section proposes several empirical hypotheses which are consistent with the literature.

First hypothesis: *The dividend payout ratio of the ordinary share does not explain the Volatility in the stock price.*

Second hypothesis: *The dividend yield does not explain volatility in the stock price.*

Third hypothesis: *The market value does not explain volatility in the stock price.*

Fourth hypothesis: *The volatility in the net income does not explain volatility in the stock price.*

Fifth hypothesis: *The debt ratio does not explain volatility in the stock price.*

Sixth hypothesis: *The growth in total assets does not explain Volatility in the stock price.*

4. Methodology of the study

This part addresses the variables of the study and ways of measuring them, model of the study, selection of data resources, population and the sample of the study, instrument of the study and the statistical methods which were used.

4.1 Dependent variable

Share price volatility (PV): PV is the dependent variable that is used for this study. PV will be measured through calculating the difference between the highest and the lowest share's price divided by the average stock square. This method was used by (Hussainey et al., 2011).

4.2 Independent variables:

- Dividend Payout ratio (DPR): this variable will be measured by dividing the ratio of dividend per share by earnings per share.
- Dividend Yield (DY): this variable will be measured by dividing the ratio of dividend per share by share price.
- Company's market value: will be measured through multiplying number of ordinary shares by the market price of the share.
- Net income Volatility: this variable will be measured through calculating standard deviation of net profit for the five years proceeded the specific year (target).
- Debt ratio: this variable will be measured by dividing the long term debt to the total assets.
- The company's assets Growth: this variable will be measured by ratio of change in the assets.

4.3 Data resources

This study depends on two resources of data; the secondary one which includes reviewing the previous studies and the theoretical frameworks which are related to the topic of this study, and the primary resources that include using comprehensive survey method to all the industrial companies listed in Amman Stock Exchange during the years (2001-2010). This method is characterized of increasing confidence and accuracy's level which the researchers seek to achieve in addition to the increase in the degree of generalization which the researchers also seek for their study's results (Obeidat et al., 2006).

4.4 Population & sample of the study

The population of the study consisted of industrial companies listed in Amman Stock Exchange. The industrial sector is chosen because it represents the biggest sector in terms of market capitalization and because this sector was distinguished for its fast growth after the government had issued decisions and laws of encouraging investment concerning tax and custom exemption especially for the new and vital projects. The sample of the study which consisted of the industrial companies listed in Amman Stock Exchange was 64 company. Some of the industrial companies were excluded because of lack of information about them as it illustrated in table (1).

Table 1. Number of the companies (sample of the study) according to the sector

Industry which the company belongs to	No. of companies
Chemical Industry	9
Electrical industry	5
Engineering & Construction Industry	8
Food & Drinks	10
Ceramics industry	1
Extractive Industries	11
Paper & cardboard industry	3
Medicine & pharmacy	7
Printing & packaging	2
Tobacco and Cigarettes	2
leather & garment	6
Total	64

5. Statistical analysis

The Statistical Package for Social Science (SPSS) was used to analyze data. The following statistical tests were used:

5.1 Test of Multicollinearity

To check lack of Multicollinearity *problems between the variables, results of* Variance Inflation Factor (VIF) test were used and so if the sample of the study is small and the value of VIF equals 10 or more, this means that there is a *Multicollinearity problem between the independent variables of the study whereas if the sample of the study is large and the value of VIF equals 5 or more, this indicates a Multicollinearity problem between the independent variables* (Sekaran and Bougie, 2009).

Table 2. Results Of Variance Inflation Factor (VIF).

Variable	VIF
Dividend Payout ratio	1.118
Dividend Yield	1.115
Market value	2.743
Net income Volatility	2.723
Debt ratio	1.060
Assets Growth	1.025

Table (2) showed that the values of the independent variables were less than 5 and therefore it indicated lack of Multicollinearity between the independent variables.

5.2 Autocorrelation Test

To check lack of autocorrelation between the random errors, Durbin- Watson- Test was used. The results of this test ranged between (0-4) and if the result was (2), it means lack of correlation whereas if the results get closer to (0), this is an indication that there is a positive correlation and if the results get closer to (4) it means there is a negative correlation. The statistical results showed the value of Durbin- Watson- Test was 1.956 and it is a good one because it is within desired scope and so there is no autocorrelation between the random errors.

5.3 Testing hypotheses of the study using Simple Regression method

Regression method was used to test the hypotheses and the following rule was used: the null hypothesis is accepted if the value of calculated (t) was less than the value of the tabulated one and the significance value was bigger than (0.05) but the null hypothesis is rejected if the value of the calculated (t) is greater than the tabulated one and the significance was less than (0.05).

Table (3) presents results of testing hypotheses using Regression method. Based on the results shown down and according to decision rule the first hypothesis is not supported and the alternative hypothesis is supported and this indicates that dividend payout ratio explains volatility in stock prices but this relation is relatively weak because the correlation coefficient was (10.9%) and coefficient of determination R^2 was (1.2%) which means dividend payout ratio explain (1.2%) of the Volatility in stock prices. Moreover the results in table (3) showed that the value of calculated (t) is less than its tabulated value for the hypotheses (2nd up 6th) therefore, the null hypotheses are accepted and this indicates the following :

- Dividend payout ratio does not explain volatility in the stock price.
- The company's Market value does not explain volatility in the stock price.
- Volatility in the net income does not explain volatility in the stock price.
- Debt ratio does not explain volatility in the stock price.
- Growth in total assets does not explain Volatility in the stock price.

Table 3. Results of testing hypotheses using Regression method

Hypothesis	Variable	R	R ²	T calculated	T tabulated	Sig.	Fixed	B	Result of null hypothesis
1 st	Dividend Payout ratio	0.109	0.012	2.504	1.96	0.013	0.487	0.001	Rejection
2 nd	Dividend Yield	0.017	0.000	0.380	1.96	0.704	0.504	0.003	Acceptance
3 rd	Market Value	0.021	0.000	-0.483	-1.96	0.629	0.512	-7.43E-11	Acceptance
4 th	Net income Volatility	0.014	0.000	-0.314	-1.96	0.754	0.510	-1.667E-8	Acceptance
5 th	Debt ratio	0.033	0.001	0.707	1.96	0.480	0.486	0.088	Acceptance
6 th	Assets Growth	0.040	0.002	0.898	1.96	0.369	0.475	3.388E-9	Acceptance

5.4 Multiple Regression Test

The researchers used the model of Multiple Regression Test to test the independent variables to explain the variance in the dependent variable (Volatility in stock prices). The Multiple Regression Test is considered one of the best statistical measurements in explaining the extent of volatility in dependent variable based on the values of the independent variables (Sekaran and Bougie, 2009), and this is the objective which this study tries to identify. Using coefficient of determination (R²) helps in judging the extent of the relation between the independent variables and the dependent variable.

Table 4. Results of Multiple Regression Test

F calculated	F tabulated	Sig	Result of null hypothesis	R	R ²
2.782	2.10	0.02	Rejection	0.194	0.038

It is clear that the value of calculated F is (2.782) and it is greater than the value of the tabulated F (2.10) and the significance is less than (5%) which means that the whole accounting variables explain volatility in stock prices but this relation is relatively weak because the coefficient of multiple correlation (R) is (19.4%) and the value of coefficient of determination (R²) is (0.038) indicating that the independent variables explain (3.8%) of the change in the dependent variable.

Table 5. Results of Coefficients of Multiple Linear Regression (B) between the all the independent variables together and between the dependent variable (Y)

B	Model
0.468	Constant
0.001	X1 - Dividend Payout ratio
0.001	X2 - Dividend Yield
-4.53E-10	X3 - Market value
1.480E-08	X4 - Volatility in net income
-0.001	X5 - Debt ratio
0.004	X6 - Assets Growth

Table (5) presents results of testing hypotheses using Multiple Linear Regression method. Based on the results shown above, it is possible to form a model helps in calculating Volatility in the share price depending on the values of the *Regression* Coefficients of independent variables as follows :

$$Y = 0.468 + 0.001 X1 + 0.001 X2 - 4.53 E-10 X3 + 1.480E-08 X4 - 0.001 X5 + 0.004 X6 .$$

6. Results and recommendations

6.1 Results

This study aimed to identify the ability of some accounting variables in interpreting volatility in stock prices which are the independent variables (dividend payout ratio, dividend yield, market value, volatility in net income, debt ratio and assets growth). Based on the statistical analysis, the study concluded the following:

First : the study's results showed that the accounting variables together explain (3.8%) of the changes in the stock prices which indicates that (96.2%) of the changes in the Stock prices may refer to other different and varied reasons including economic circumstances as inflation and interest rates, political circumstances as the political situations surrounded the country for their influence on the changes of the stock's price and the efficiency of the market compared with the efficiency which the developed markets have, in addition to the ratios and the accounting indicators that play role in the stock's price's changes in the financial market. The psychological elements can be added to the previous elements for their important effect on the stock's prices and on the general attitudes of the Market.

Second: the study's results showed a weak relationship between the dividend payout ratio and the volatility in the stock prices that explains (1.2%) of the volatility in the stock prices and this result was compatible to some extent with the results of (Hussainey et al., 2011) which showed whenever dividend ratio increases, the volatility of stock price decreases.

Third : the study's results showed lack of significant correlation between the other accounting variables (dividend yield, market value, net income volatility, debt ratio, assets growth) and they explained (2.6%) of the volatility in stock price in Amman Stock Exchange in the industrial sector and these results were not compatible with the results of the study of (Hussainey et al., 2011) as it showed negative significant correlation between debts ratio and volatility in the stock price which means that the volatility in the stock price increases as a result of the increase of debt ratios.

6.2 Recommendations

The researchers suggest the following recommendation that may minimize the share price volatility and help the stock market dealers to identify factors that explain the price volatility in Amman stock exchange.

- Prevention and limitation of monopoly's phenomenon of information which Amman Stock Exchange received and which are controlled by some specific groups and people leading to unusual and immoral gains causing imbalance in the financial market.
- Increase the investors' awareness through increasing the ability of the financial analysis and linking between the variables that affect the stock price and to find the causes for this.
- Supporting the transparency principal and Equal opportunities by making the information which Amman stock exchange received available to everyone who would like to deal with the financial market.

- Conducting further studies concerning volatility of stock price taking into account other variables that are expected to affect the changes of the stock prices in more than one sector and at different periods of time.

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