Does Dividend Policy Affect Stock Price Volatility? Evidence from Egypt [1]

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ABSTRACT

The stock market performs the important function of enabling firms raise the needed capital, which may significantly contribute to economic growth and development. However, elevated volatility levels can make investors shy away from investing in stock markets, lowering the ability of companies to raise capital, impeding economic growth, and leading to devastating ramifications for companies as well as the overall economy. The research paper seeks to investigate the association between dividend policy and share price volatility in Egypt and explain how investors in emerging markets would respond to changes in the dividend policy adopted by firms. The paper studies the impact of dividend yield and dividend payout ratio on the volatility of stock prices. Stock price volatility is estimated using the GARCH (1,1) model. The sample of the study includes 69 firms listed on the Egyptian Stock Exchange (EGX) from 2016 to 2022. Data is analyzed using 2-way fixed effects model, 1-step dynamic panel data model, in addition to panel weighted least squares model. A significant negative relationship between dividend yield and stock price volatility was concluded. Also, a significant negative relationship between dividend payout and stock price volatility was supported, but by only one of the tested models.

Keywords: *Stock Price Volatility, Dividend Policy, Dividend Yield, Dividend Payout, EGX, Emerging Markets.*

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1. INTRODUCTION

The stock market has always been perceived as a main channel that allows for the movement of funds so that investors can generate return on their investments and firms can raise capital, leading to a higher overall rate of investment. This can result in improved overall economic conditions, financial stability, and economic growth. That is why having a well-functioning stock market is considered indispensable when it comes to promoting investment and enabling economic growth (Mishkin & Eakins, 2006).

As explained by Profilet (2013), volatility refers to the rate of change in the value of a financial security over a particular period; accordingly, it indicates risk, where the higher the volatility, the higher the likelihood of a substantial loss or gain and the more difficult it is to predict future stock prices. The dividend policy adopted by the firm can be one of the major decisions that influence the volatility of its stock price. In addition, because most investors are risk averse by nature, they would care a lot about the volatility of their investments and are expected to prefer less risky stocks that have more predictable earnings.

According to Hashemijoo et al. (2012), dividend policy refers to the strategy adopted by a corporation with regard to the amount of dividends to be distributed to shareholders, along with the amount of retained earnings to be reinvested in new investment projects, which may eventually result in deferred capital gains to investors. Nevertheless, dividend policy does not only act as a means of compensating stockholders, but also as a management technique that facilitates controlling the level of stock price volatility. Even though it is crucial to adopt the proper dividend policy that is expected to serve shareholders' best interests, it is also indispensable to consider the impact of such policy on the market price of firms' shares, and how their shares can become attractive to investors with dissimilar characteristics and tax brackets.

At the outset, early researchers in the dividend policy arena were solely concerned with a company's choice regarding paying dividends in the form of cash or retaining a portion of their earnings instead. But later, their main concern shifted towards other pivotal issues including how a given firm can protect and enhance the market value of its shares using dividend policy (Hussainey et al., 2011; Phan & Tran, 2019). This being so, the impact of a firm's dividend policy on stock

price volatility is considered a topic of great concern not only to corporations, but also to economists and investors (Al-Shawawreh, 2014).

The study of corporate dividend policy has been consistently an issue of great interest to finance scholars. Numerous theoretical and empirical studies are conducted and can be classified into either supporting or disproving the relevance of dividend policy to the company's value, and hence, the price of its share (Barman, 2008). The relevance of dividends becomes more plausible when the market imperfections of the real-world are considered, including flotation costs, differential tax rates, brokerage fees, differences in information at insiders' and outsiders' disposal, as well as conflicts of interest between management and stockholders (Lease et al., 2000). Despite the fact that scholars naturally concentrate on each market imperfection isolated from the others, complex interactions between such frictions are always highly probable (Baker et al., 2002).

As suggested by Gordon (1963), if a given firm pays more dividends, its risk level is expected to decrease. This is expected to influence a firm's cost of capital in addition to its stock price. Moreover, from the viewpoint of the agency theory introduced by Jensen and Meckling (1976), company managers may not seek to maximize shareholders' wealth due to having conflicting interests, a situation that is triggered by the separation of ownership and control, which results in the agency problem. Company management may be motivated to use retained earnings by investing them in low-return investments in order to serve their own monetary benefits and interests. In order to rule out such scenario, it is suggested that a considerable portion of a company's earnings to be paid out in the form of dividends instead of keeping them as retained earnings. By doing this, there will be less funds at managers' discretion, and they will have less access to resources that they would otherwise use to meet their own interests and finance unprofitable investments (Nazir et al., 2012). Recently, attention became highly directed towards several aspects of governance, including the relationship between management and shareholders, especially after the 2008 financial crisis and prominent financial scandals in major entities like Enron, AIG, and Lehman Brothers (Shahwan, 2015).

As explained by Gitman and Zutter (2011), it was argued that an increase in dividends payout leads to an increase in the stock price, while a decrease in

dividends payout leads to a reduction in share price, and it isn't the dividends that matter, instead it is the information content of dividends that does. This implies that investors perceive altering dividends as a signal indicating that management anticipates a change in earnings in the same direction. Therefore, a dividend increase is a positive signal, and investors are willing to buy the share at a higher price. On the other hand, a dividend decrease is a negative signal that makes investors willing to sell their shares, driving share prices down.

Additionally, declaring dividends sends a message to investors that managers' objectives are aligned with their own objectives (Jensen, 1986). Moreover, taxable dividends are likely to attract institutional shareholders, who are expected to be involved in the corporate governance process of the firm either directly or indirectly, and hence encourage a better company performance (Allen et al., 2000). Consequently, there is a great controversy when it comes to the relevance of dividends and its impact on firm value, this is why dividend policy remains a major paradox in corporate finance with no consensus regarding its impact on firm value and degree of risk (Allen et al., 2000; Easterbrook, 1984).

1-1 Research Problem

Regarding the literature gap, past studies that examined the impact of dividend policy on share price volatility in other contexts, did not provide conclusive results. Also, limited studies were applied on emerging markets, particularly on the Egyptian market. Moreover, reviewing several literature review settings including both developed and developing contexts, showed that applying the study in different settings has led to different results. The paper extends the existing literature through exploring volatility of stock prices in the Egyptian context, and providing insight into how dividend policy can help reduce volatility levels, hence enabling a better prediction of the risk inherent in the price of a given stock. Egypt is considered one of the largest markets in the region with respect to the number of listed companies, a highly attractive market for foreign direct investment (FDI), and the country with the largest population in the MENA region (Nasr & Ntim, 2018). Recently, Egypt initiated a powerful economic reform program that focusses on encouraging investment and boosting investors' confidence, which makes the Egyptian market an interesting setting for the current study (Abdel-Meguid, 2021).

1-2 Importance of the Study

The study investigates the impact of both dividend yield and dividend payout as possible deterrents to the volatility of stock prices, thus providing thorough implications for numerous parties. With the aim of increasing the robustness of the findings, three different estimation models are employed. Additionally, the paper does not only depend on statistical significance to determine the major dividend policy indicators that can affect volatility, but it also relies on the effect size so as to further support the findings and identify the dividend policy indicators having high practical significance, and therefore can provide the foundation for an effective strategy formulation and policy implementation.

The paper contributes to the body of knowledge by providing robust empirical evidence concerning the relationship between dividend policy and stock price volatility, given the limited studies conducted in emerging markets, especially the Egyptian market, as well as the lack of consensus regarding the aforementioned relationship. Additionally, the paper is expected to offer important implications to several parties by enabling investors to make more informed investment decisions that are founded on a better prediction of the volatility of stock prices. Accordingly, managers can perceive dividend policy not only as a tool to reward shareholders, but also as an effective mechanism to control the firm's share price volatility, thus its cost of capital. Finally, this would encourage decision-makers to pay great attention to the dividend policy adopted by firms, being a major factor that can possibly contribute to lower volatility levels and more stability in stock markets, which in turn can facilitate efficient allocation of capital, increase the level of investments, reduce unemployment, and may also enable economic growth.

1-3 Objectives

The paper aims to achieve the following objectives:

- Identify the impact of dividend yield on stock price volatility.
- Understand how dividend payout can affect stock price volatility.
- Explain to what extent the findings in the Egyptian context can compare to those of past studies in other emerging and developed nations.

- Compare the findings provided by different models to reach more robust conclusions.

The rest of the paper is organized in the following way: the next section covers the findings of previous studies that examined the impact of dividend policy on stock price volatility in numerous contexts. Section three describes the methods employed in the study. The fourth section includes the findings and discussion of the study results. Finally, the conclusion is provided in the last section.

2. LITERATURE REVIEW

As previous studies suggest, numerous factors can have an impact on firms' share price volatility, perhaps one of the most integral factors as suggested by previous studies is dividend policy (Ahmad et al., 2018; Hooi et al., 2015; Ilaboya & Aggreh, 2013; Zainudin et al., 2018). Even though a series of earlier studies investigated the impact of dividend policy on firms' share price volatility using several proxies for both dividend policy and stock price volatility, they did not manage to reach a consensus and settle the controversy surrounding such association. According to Hashemijoo et al. (2012), share price volatility is considered a benchmark for assessing risk; indicating the pace and extent of change in the price of a given stock over a particular time period. The greater the volatility, the higher the possibility of a gain or a loss in the short-term.

In the context of developed nations, the majority of studies reported a negative association between dividend policy and share price volatility. For instance, in the US context, Profilet (2013) tested the impact of dividend yield, payout ratio, size, leverage, and growth on stock price volatility proxied by the standard deviation of stock prices, where the results concluded that dividend yield, size, leverage, and growth showed a negative influence on stock price volatility. In addition, Allen and Rachim (1996) studied the association between dividend policy and stock price volatility in the Australian context, where the findings of the study did not support the existence of a relationship between dividend yield and stock price volatility, however a significant negative relationship between payout ratio and stock price volatility was reported. Moreover, in a study applied on firms listed in the London Stock Exchange, Hussainey et al. (2011) reported a negative impact for both dividend yield and dividend payout ratio on stock price volatility.

In the context of developing nations, various studies supported the negative association between dividend policy and share price volatility. In a study conducted by Nishat and Irfan (2004), examining the impact of dividend policy on stock price volatility of firms listed on the Karachi Stock Exchange in Pakistan, it was found that both dividend yield and payout ratio have a significant negative impact on share price volatility. Similarly, Nazir et al. (2012) studied the impact of dividend policy on stock price volatility for firms listed on the Karachi Stock Exchange in Pakistan, where the results indicated the existence of a significant negative relationship between dividend yield and stock price volatility. Also, Habib et al. (2012) investigated the impact of dividend policy on stock price volatility in Pakistan, while controlling for size, debt, earnings volatility, and growth, and it was found that payout ratio as well as firm size had a negative relationship with stock price volatility. In the same vein, Shah and Noreen (2016) found a significant negative impact for both payout ratio and dividend yield on stock price volatility for firms listed on the Karachi Stock Exchange in Pakistan.

Moreover, Lashgari and Ahmadi (2014) studied the impact of dividend policy on stock price volatility for companies listed on Tehran Stock Exchange in Iran, where it was concluded that dividend payout ratio has a significant negative effect on stock price volatility. In the Nigerian context, Okafor and Chijoke-Mgbame (2011) found that dividend yield has negative impact on stock price volatility, while dividend payout ratio has a negative impact in some years and a positive impact in others.

In the Malaysian context, Hooi et al. (2015) studied the relationship between dividend policy and stock price volatility for firms listed on the Kuala Lumpur Stock Exchange, and the results showed a significant negative impact for both dividend yield and dividend payout on stock price volatility. Additionally, Hashemijoo et al. (2012) found that both dividend yield and dividend payout have a significant negative influence on share price volatility for firms listed in Bursa Malaysia. Moreover, Zainudin et al. (2018) analyzed the relationship between dividend policy and stock price volatility of firms listed on Bursa Malaysia. The study controlled for earnings volatility, firm size, leverage and asset growth, and also examined the impact of the global financial crisis on the relationship between stock price volatility and the independent variables. The

results support the existence of a negative relationship between each of the payout ratio and dividend yield, and the dependent variable stock price volatility. Furthermore, the study found that payout ratio predominantly affects volatility during pre-crisis and post-crisis sub-periods, while earnings volatility significantly affects stock price volatility during the crisis period.

Ahmad et al. (2018) found that both dividend yield and dividend payout had a significant negative impact on stock price volatility of firms listed on the Amman Stock Exchange. In a study applied on insurance firms, Almanaseer (2019) examined the relationship between dividend policy and stock price volatility in Jordan, where stock price volatility was estimated on the basis of the model developed by (Baskin, 1989). The findings of the different stages of regression analysis depicted a negative relationship between dividend yield and stock price volatility, as well as a negative relationship between payout ratio and stock price volatility, even though the relationship between dividend yield and stock price volatility was more prevalent through most of the regression models.

Additionally, Nguyen et al. (2019) investigated the relationship between dividend policy and share price volatility for non-financial companies listed in Ho Chi Minh Stock Exchange in Vietnam. It was found that dividend payout and dividend yield have significant negative impact on stock price volatility. Such findings can imply that increasing dividend yield and payout ratio can help achieve more stability and reduce volatility of share prices.

Some studies supported the positive association between dividend policy and share price volatility. For instance, Zakaria et al. (2012) examined the impact of dividend yield and dividend payout ratio on share price volatility of Malaysian construction and material companies listed on the Kuala Lumpur Stock Exchange, where the findings indicated a significant positive relationship between dividend payout ratio and stock price volatility. Ilaboya and Aggreh (2013) examined the relationship between dividend policy and share price volatility of companies listed in the Nigerian Stock Exchange and concluded that dividend yield has a significant positive impact on stock price volatility. In Pakistan, Chaudry et al. (2015) studied the impact of dividend policy on stock price volatility as well as the moderating impact of firm size. The independent variables of the study included dividend payout ratio, earnings volatility, dividend yield and growth in assets, while the dependent variable was stock price

volatility, and the moderating variable was firm size. It was found that dividend payout ratio, earnings volatility, dividend yield, growth in assets, and firm size had a significant positive impact on stock price volatility. Moreover, firm size was found to have no significant moderating impact on the relationship between dividend policy and stock price volatility.

Additionally, Pradhan and Gautam (2017) studied the relationship between dividend policy and share price volatility for Nepalese commercial banks. The study included three dependent variables, namely stock price volatility, change in market price per share, and stock return change, with each dependent variable having its own regression model. The independent variables of the study included dividend payout, dividend yield, growth, size, earnings volatility, and debt ratio. The findings of the stock price volatility model indicate that dividend yield had a significant positive influence on stock price volatility. The findings of the change in market price per share model show that dividend yield had a significant positive influence on the change in market price per share. Finally, according to the stock return change model, dividend yield had a significant negative influence on the change in stock return. In the South African context, Pelcher (2019) aimed to test the existence of a relationship between dividend policy and stock price volatility for firms listed on Johannesburg Stock Exchange Limited, where a significant positive relationship was found between dividend yield and stock price volatility.

A number of studies supported the existence of a negative association between dividend policy, when measured in terms of dividend payout, and share price volatility. However, when dividend policy was measured in terms of dividend yield, a positive association between dividend policy and share price volatility was found. Such studies include Al-Shawawreh (2014) who investigated the relationship between dividend policy and share price volatility of firms listed in Bursa Amman in Jordan, where a significant negative relationship between dividend payout and share price volatility was found, in addition to a positive relationship between dividend yield and share price volatility. In the same vein, Provaty and Siddique (2021) studied the impact of dividend policy on share price volatility in Bangladesh, in a study that was applied on firms operating in the financial service industry, and the results indicated a significant positive relationship between dividend yield and stock price volatility, in addition to a

significant negative relationship between dividend payout ratio and share price volatility.

Some studies supported the absence of an association between dividend policy and share price volatility. For instance, Rashid and Rahman (2008) tested the relationship between dividend policy and stock price volatility of firms listed in Dhaka Stock Exchange in Bangladesh, where no significant relationship between dividend yield and stock price volatility was reported.

After examining several studies that tackled the impact of dividend policy on stock price volatility while placing a greater emphasis on studies applied in the context of developing nations, the following was concluded: regarding developing nations, several studies have shown a negative relationship between dividend policy and stock price volatility, other studies have shown a positive impact, and limited studies have shown no impact for dividend policy on stock price volatility. Interestingly, some studies have shown a negative impact for dividend policy when measured in terms of dividend payout, in addition to a positive impact when using dividend yield as a proxy for dividend policy, which provides an additional rationale for using both measures in the current study to proxy for dividend policy in order to find out whether the two measures will generate consistent or contradicting findings.

3. DATA AND METHODOLOGY

This section presents the methodology adopted in the study, including the research hypotheses, sampling design, data collection methods, in addition to an explanation for the variables included in the study.

3-1Research Hypotheses

After reviewing the literature regarding the impact of dividend policy on stock price volatility in several contexts, the existence of an association between dividend policy and stock price volatility in the Egyptian context can be anticipated. Consequently, the following main hypothesis is formulated:

H1: There is a significant relationship between dividend policy and stock price volatility.

The main hypothesis will be further subdivided into two sub-hypotheses:

H1.1: There is a significant relationship between dividend yield and stock price volatility.

H1.2: There is a significant relationship between dividend payout and stock price volatility.

3.2 Data and Sample

The sample of the study includes 69 non-financial firms, listed in the EGX, for a 7-year period starting from 2016 to 2022. The period under study is justified by the flotation of the exchange rate that occurred in 2016, and its impact on Egyptian firms on many aspects, in addition to the release of the third issue of the Egyptian corporate governance code by the Egyptian institute of directors (EIoD) in 2016, which is expected to have substantial effects on Egyptian firms, particularly listed ones. Several firms were excluded from the study, such as financial firms, firms de-listed from the exchange, firms that did not distribute any dividend at all during the period of the study, in addition to firms that provide their financial statements on the 30th of June. The study excluded financial firms on the grounds that they have a different nature, they are differently regulated with regard to their capital adequacy requirements, and their financial statements are differently structured. A list of the companies examined in the study is presented in Table A1 in the appendix. The study relies on secondary data that were collected from the financial statements, disclosure reports, historical share prices, board of directors' reports, and shareholder structure reports, which were all obtained from the database of Egypt for Information Dissemination (EGID), a subsidiary firm that is owned by the EGX.

3.3 Empirical Model

Based on the literature and the hypotheses of study, the following general model is developed so as to explain the relationship between dividend policy and stock price volatility, as depicted in function (1):

$$SPV_{it} = C + DP_{it} + \sum_{k=1}^{K} \beta_k X_t^k + \varepsilon_t \quad (1)$$

Where (SPV_{it}) represents the dependent variable, which is the stock price volatility for firm i at time t, where (t=1, 2,...,n), C denotes the function constant, (DP_{it}) represents the target independent variable, which is the dividend policy of firm i at time t, while (X_t^k) is the vector of control variables, which represents potential determinants of stock price volatility other than dividend policy, and finally (ε_t) represents the error term.

According to what was suggested by previous studies, including Ilaboya and Aggreh (2013), Hooi et al. (2015), Ahmad et al. (2018), and Zainudin et al. (2018), the study's model can be formulated in its final form as illustrated in function (2):

$$SPV_{it} = \beta_0 + \beta_1 DP_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 ROA_{it} + \beta_5 GROWTH_{it} + \beta_6 GROWTH_{it}^2 + \beta_7 LEV_{it} + \beta_8 EVOL_{it} + \sum_{i=1}^{N} firms + \sum_{t=1}^{n} years + \varepsilon_t \quad (2)$$

This implies that stock price volatility will be a function of dividend policy (DP_{it}), as well as firm size ($SIZE_{it}$), firm age (AGE_{it}), return on assets (ROA_{it}), asset growth ($GROWTH_{it}$), leverage (LEV_{it}), earnings volatility ($EVOL_{it}$), in addition to a vector of firm-specific fixed effects ($\sum_{i=1}^{N} firms$) and time ($\sum_{t=1}^{n} years$). Moreover, asset growth in quadratic form ($GROWTH_{it}^2$) was also introduced to the function to capture the non-linear relationship between asset growth and stock price volatility1.

Based on the findings of past studies, dividend policy can be seen not only as a means for compensating shareholders, but also as a mechanism for controlling and mitigating the firm's risk level and the volatility of its share price. Therefore, the sign of the coefficient (β_1) is expected to be negative.

[1] To ensure the good description of the model, that is, whether the independent variables in their relationship with the dependent variable (stock price volatility) follow a linear or non-linear form, the Auxiliary regression for non-linearity test - squared terms was used. Which showed that all independent and control variables follow a linear form in their relationship to stock price volatility, with the exception of the asset growth variable, which takes a non-linear form and will therefore be expressed in a quadratic form.

3.4 Variables of the Study

This section provides an explanation for the different variables included in the study.

3-4-1 Dependent Variable

The dependent variable of the study is stock price volatility, which indicates the extent of uncertainty and variability in predicting changes in share prices. High price volatility means that stock prices can span a wide range of values and are likely to witness radical changes over a short period of time in either direction (Al-Shawawreh, 2014). In this paper, stock price volatility will be measured using the generalized autoregressive conditional heteroscedasticity (GARCH) model proposed by Bollerslev (1986), where the aim is to model the variance of daily stock price series. The GARCH (1, 1) model takes the following form:

$$\mathrm{dln\ (Stock\ Price)_t}|_{i_{t-1}} = \alpha + \beta X_t + u_t \qquad (3)$$

$$\begin{cases} \alpha + \beta X_t & \text{Conditional mean equation} \\ \delta_t^2 = \lambda_0 + \lambda_1 u_{t-1}^2 + \lambda_2 u_{t-1}^2 & \text{Conditional variance equation} \end{cases}$$

where; $\mathrm{dln\ (Stock\ Price)}$ represents the logarithm of the first difference of stock prices, so as to show volatility more accurately, it is also conditional (i_{t-1}) on information from the previous period. (α) represents the constant of the equation (the average of stock price series), while (X_t) represents the set of variables affecting stock prices. Regarding the error term iid (u_t), it is represented in the level of volatility of the stock price series around its mean (α), where $u_t|_{i_{t-1}} \sim \mathrm{iid}\ N(0, \delta_t^2)$, and it is observed that the error variance (δ_t^2) is not constant for the observations (Variance heteroscedasticity).

Finally, $\lambda_1 u_{t-1}^2$, $\lambda_2 u_{t-1}^2$ represent the squared constant of the error term in the previous period, and the error variance in the previous period respectively. If λ_1 or λ_2 is equal to zero, then the error variance will be constant, indicating there is no ARCH effect. Thus, the coefficients of the conditional variance equation must be positive, and $0<\lambda<1$ in order for an ARCH effect to exist. The rationale behind using the GARCH (1, 1) model, i.e., using a single lag period for both the error term and the error variance (in the conditional variance equation), is that applied studies have proven that it obviates the need for the ARCH (3) model and above, and its performance is even superior to ARCH for providing degrees

of freedom. Consequently, it is considered a valuable and powerful model for measuring stock price volatility in this paper. Figure (1) depicts stock price volatility for the sample of the study.

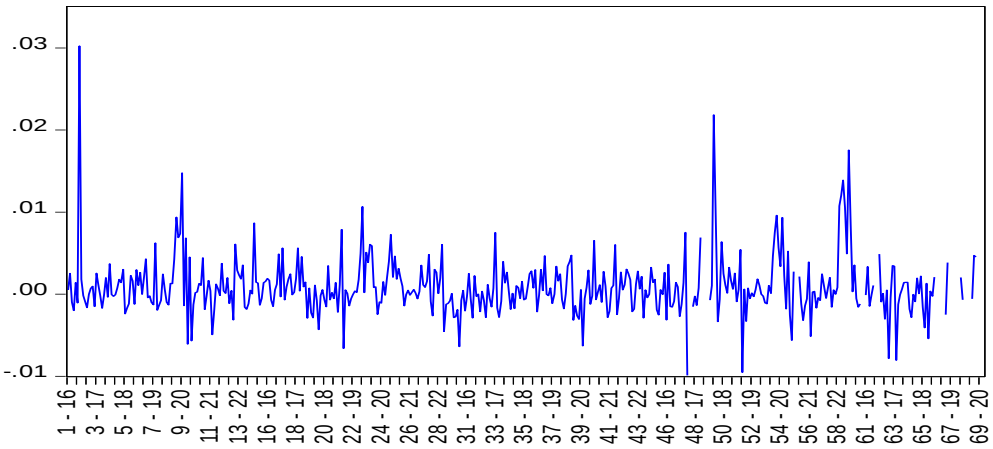

Figure 1: Stock Price volatility during the study period

3.4.2 Independent Variables

The first independent variable is dividend yield, calculated by dividing the dividend per share by the market price per share (Ilaboya & Aggreh, 2013; Profilet, 2013; Shah & Noreen, 2016).

$$DY_{it} = \frac{Div_{it}}{MP_{it}} \quad (4)$$

Where; (DY_{it}) denotes the dividend yield for firm i during period t, while (Div_{it}) and (MP_{it}) refer to the dividend per share and the market price per share respectively for firm i during period t.

The second independent variable is dividend payout ratio, calculated by dividing the dividend per share by the earnings per share (Al-Shawawreh, 2014; Ilaboya & Aggreh, 2013; Lashgari & Ahmadi, 2014).

$$DP_{it} = \frac{Div_{it}}{EPS_{it}} \quad (5)$$

Where; (DP_{it}) denotes the dividend payout ratio for firm i during period t, while (EPS_{it}) refers to the earnings per share for firm i during period t.

3.4.3 Control Variables

The study controls for earnings volatility, leverage, asset growth, firm size, firm age, and firm performance. Table (1) provides a summary for the variables included in the paper.

Table 1: Measurement of variables

Type	Name	Abbreviation	Measurement
Dependent Variable	Stock Price Volatility	SPV_{it}	Stock price volatility calculated using the GARCH (1, 1) model, i.e., using a single lag period for both the error term and the error variance (in the conditional variance equation).
Independent Variables	Dividend Yield	DY_{it}	Dividend per share divided by the market price per share.
	Dividend Payout	DP_{it}	Dividend per share divided by the earnings per share.
Control Variables	Earnings Volatility	$EVOL_{it}$	Standard deviation of net earnings.
	leverage	LEV_{it}	Total debt ratio
	Asset Growth	$GROWTH_{it}$	Ratio of the change in total assets at the end of the year to total assets at the beginning of the year.
	firm size	$SIZE_{it}$	Natural logarithm of total assets.
	Firm Age	AGE_{it}	Natural logarithm of the number of years of being listed on the Egyptian stock exchange.
	Firm Performance	ROA_{it}	Net income divided by total assets.

4. RESULTS AND DISCUSSION

This section presents the results of the different models of the study and discusses the findings regarding the impact of dividend policy on stock price volatility.

4.1 Descriptive Statistics

In order to identify the nature and characteristics of the different variables of the study, appropriate descriptive statistics are estimated, including the mean, standard deviation, median, minimum and maximum, in addition to the normality test. The results for the descriptive statistics are shown in Table (2).

Table 2: Descriptive summary statistics, 2016-2022

	Obs.	Mean	Median	Std. Dev.	Min	Max	Normality test
Dependent Variable:							
Stock Price Volatility (SPV)	442	0.001	0.0004	0.005	-0.045	0.068	[105382]a
Independent Variables:							
Dividend Yield (DY)	442	4.347	3.058	5.323	0	45.91	[6437.9]a
Dividend Payout (DP)	442	104.7	31.06	1232.2	-5000	25000	[2.6e+6]a
Control Variables:							
Firm Size (SIZE)	442	20.96	21.12	1.672	17.20	25.39	[3.0109]a
Firm Age (AGE)	442	2.881	3.045	0.576	0	3.689	[723.52]a
Return on Assets (ROA)	442	0.062	0.057	0.085	-0.308	0.522	[295.14]a
Asset Growth (GROWTH)	442	0.125	0.085	0.229	-0.901	1.369	[1189.7]a
Leverage (LEV)	442	0.414	0.432	0.230	0.001	1.171	[8.2699]b
Earnings Volatility (EVOL)	442	17.36	17.32	1.782	12.27	21.75	[1.8969]

Note: - a, b, c indicate significance at 1%, 5% and 10% respectively.

It can be noticed from Table (2), that the difference between the minimum and the maximum values for all the variables is huge. This variance can be considered normal provided the differences in companies' characteristics, structures, experiences, internal and external conditions, in addition to their sectors. Such

discrepancy is confirmed by the normality test, which was found statistically significant for all the variables (except for earnings volatility), and consequently the null hypothesis is rejected, and the alternative hypothesis is accepted, indicating that the variables do not follow a normal distribution.

Concerning the dependent variable, stock price volatility, the median is a positive value equal to 0.0004 and its standard deviation is 0.005, which indicates that most of the stock price volatility of Egyptian firms is a positive volatility, representing an increase in the stock price levels. Regarding the independent variables, based on the median values, it can be observed that the dividend policies adopted by Egyptian firms are based on distributing a dividend representing 31.1% of earnings per share to shareholders, which also represents 3.1% of the market price per share.

4.2 Correlation Analysis

A bivariate correlation analysis is applied in order to enable an initial verification for the hypothesized relationships. Table (3) depicts the results of the zero-order correlation between all the variables of the study.

Table 3: Correlation matrix between study variables, 2016-2022

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
SPV	(1)	1								
DY	(2)	-0.103a	1							
DP	(3)	-0.014	0.148a	1						
SIZE	(4)	-0.094b	0.095b	-0.039	1					
AGE	(5)	-0.135a	0.029	-0.013	-0.154a	1				
ROA	(6)	0.101b	0.176a	-0.024	0.087c	-0.139a	1			
GROWTH	(7)	0.000	-0.022	-0.009	0.117b	-0.039	0.217a	1		
LEV	(8)	-0.044	0.005	-0.057	0.308a	0.007	-0.208a	0.263a	1	
EVOL	(9)	-0.078	0.109b	-0.037	0.893a	-0.179a	0.140a	-0.010	0.217a	1

Note: - a, b, c indicate significance at 1%, 5% and 10% respectively.

As illustrated in Table (3), there is a positive and statistically significant correlation at the 1% level between the two dividend policy indicators (dividend yield, dividend payout). The correlation coefficient between them was (14.8%),

which implies that increasing the dividend yield will be accompanied by an increase in the dividend payout. On the other hand, it is observed that stock price volatility is inversely correlated with each of the two dividend policy indicators (-10.3% with dividend yield and -1.4% with dividend payout). It was also found that the control variable that is the most strongly correlated with stock price volatility was firm age with a correlation coefficient (-13.5%), followed by return on assets (10.1%), then firm size (-9.4%), earnings volatility (-7.8%), financial leverage (-4.4%), and finally asset growth (0.0%).

As for the correlation coefficients among the independent variables, they ranged from weak to moderately strong. According to Anderson et al. (2017), correlation coefficients greater than 0.7 may indicate that the model is exposed to the multicollinearity problem. Consequently, no possibility of multicollinearity was detected between the variables of the study, except for one strong correlation between firm size and earnings volatility, amounting to (89.3%). This suggests that increasing firm size will be associated with an increase in earnings volatility. This requires being cautious during actual application so as to ensure that this problem is neutralized and does not influence the results.

4.3 Regression Analysis

4-3-1 Estimation Method

As a result of using a large sample of firms that differ widely in terms of their stock price volatility or the dividend policy they chose to adopt, the problem of individual differences or individual effects for each company may arise when applying the analysis. This was confirmed by the Robust test for differing group intercepts, the results of which are shown in Table 4. The calculated F value was significant at 1%, thus the rejection of the null hypothesis that firms have common intercepts, and the acceptance of the alternative hypothesis that they do not have common intercepts, which implies that there are individual effects for each firm.

Additionally, this was confirmed by the (Residual variance) and (Breusch-Pagan) tests that indicated that either the fixed effects or random effects model is better than the pooled least squares model. In order to determine which model is more appropriate for the study, the Hausman test was implemented and was statistically significant for the two regression models, which indicates that the

fixed effects model is more suitable for the study, given the study sample and data. Furthermore, the (Time) test was statistically significant for both regressions, which indicates that time affects the relationship. Therefore, based on the conducted regression diagnostics, the most appropriate measurement methodology for the data is the two-way fixed effects method (2way-FEM), as it deals with individual effects by adding dummy variables for each company and each year.

To ensure the consistency and robustness of the results, two additional methods which deal with individual effects differently will also be implemented. Firstly, the Dynamic Panel Data (DPD) model, developed by Arellano and Bond (1991), in which the lagged dependent variable is used as an explanatory variable, allowing for partially modified dynamic modeling. DPD deals with individual effects by removing them by taking the first difference of the equation, with the use of instrumental variables, that is, based on the lagged values of the instrumental variables, which may all be related to u_i, representing the unobserved individual effects. Therefore, the first difference of the equation removes u_i as well as the associated problem of omitted variable bias. The second method is the Panel Weighted Least Squares (PWLS) model, which is considered a generalization of ordinary least squares (OLS) and linear regression, where the identification of unequal variance of the observations of the study is integrated into the regression, and such approach is highly effective against heteroscedasticity.

4-3-2 Regression Results

Before running the regression, it is extremely important to ensure its quality and that it is free from various measurement problems so as to guarantee the reliability of the obtained results. Diagnostics tests have shown the existence of heteroscedasticity and serial correlation between the residuals, and that the residuals do not follow normal distribution. All the aforementioned measurement problems are quite anticipated in such large sample of heterogeneous companies. In order to overcome these problems, the (2way-FEM) method is estimated using the (White cross-section standard errors) as well as the (Firm GLS weights) commands, which are effective in eliminating heteroscedasticity as well as serial correlation between the residuals. As for the DPD method, it is designed to deal with heteroscedasticity and autocorrelation

within individual unit errors and is estimated using the (Asymptotic standard errors) command.

Also, non-normality will not be of great concern, since with a large sample size, OLS estimators will generally approximate a normal distribution. Thus, in large samples, as in this study, statistical inference will follow the normal OLS method, which assumes normal distribution. Accordingly, the estimates resulting from the employed methods of measurement are reliable and highly efficient.

Table (4) depicts the results of the regression models testing the impact of dividend policy on stock price volatility. Regression (1) uses the (2way-FEM) technique to test the first hypothesis of the study, and it shows a negative impact for dividend yield on stock price volatility, significant at the 1% level. Such result is consistent with the correlation matrix, which showed an inverse statistically significant correlation between the two variables at the 1% significance level. According to the regression coefficient, an increase in the dividend yield by 1% leads to a decrease in stock price volatility by 0.00013 degrees on average, hence supporting the first hypothesis of the study. This was confirmed by regression (3) using the (1step-DPD) technique, and regression (5) using the (PWLS) technique as both regressions demonstrated a negative effect for dividend yield on stock price volatility at the 1% significance level and the regression coefficient is quite similar in the three regression models. This provides further support since the negative impact of dividend yield on stock price volatility is robust against different estimation methodologies, i.e., it is consistent no matter which estimation technique is employed.

Table 4: Dividend policy and Stock price volatility: Econometrics results

Dependent variables: Stock Price Volatility (SPV)

	Expected Sign	2-way fixed effects model		1-step dynamic panel data		Panel weighted least squares	
		Reg (1)	Reg (2)	Reg (3)	Reg (4)	Reg (5)	Reg (6)
SPV(-1)				-0.09276 [-2.570]**	-0.09459 [-2.593]***		
Dividend Yield	(-)	-0.00013 [-11.08]***		-0.00013 [-4.882]***		-0.00010 [-5.405]***	
Dividend Payout	(-)		-4.48e-08 [-2.598]***		-3.47e-07 [-0.603]		-9.05e-09 [-0.199]
Firm Size		-0.00049 [-4.902]***	-0.00083 [-6.126]***	-9.64e-05 [-0.523]	-0.00012 [-0.641]	-0.00014 [-1.135]	-0.00021 [-1.718]*
Firm Age		0.00136 [5.737]***	0.00113 [2.403]**	-0.00069 [-2.556]**	-0.00080 [-2.986]***	-0.00039 [-2.123]**	-0.00068 [-3.805]***
Return on Assets		0.00553 [10.84]***	0.00622 [15.34]***	0.00544 [3.107]***	0.00435 [2.491]**	0.00441 [4.845]***	0.00389 [4.835]***
Asset Growth		0.00099 [4.759]***	0.00149 [6.220]***	0.00162 [1.967]**	0.00191 [2.271]**	-0.00087 [-2.500]**	-0.00111 [-3.787]***
Asset Growth squared		-0.00236 [-12.71]***	-0.00258 [-11.02]***	-0.00301 [-2.997]***	-0.00296 [-2.892]***		
Leverage		0.00059 [0.617]	0.00135 [1.993]**	0.00011 [0.168]	0.00016 [0.246]	0.00028 [0.744]	0.00027 [0.951]
Earnings Volatility		-0.00037 [-4.986]***	-0.00021 [-2.085]**	-0.00031 [-1.799]*	-0.00035 [-2.027]**	2.54e-06 [0.022]	2.95e-05 [0.258]
Constant		0.01352 [4.332]***	0.01734 [6.279]***	0.01149 [5.474]***	0.01262 [5.998]***	0.00468 [3.137]***	0.00576 [3.860]***
Key Regression Statistics							
Obs.		442	442	373	373	442	442
Unit (Firms)		69	69	67	67	69	69
Adjusted R-squared		85.4%	84.2%			35.6%	92.9%
Fisher test (F-stats.)		(2547.8)***	(6194.6)***			(19.726)***	(448.97)***
Residual variance test (F-stats.)		(4.760)***	(4.255)***				
Breusch-Pagan test (χ^2 stats.)		(164.4)***	(143.5)***				
Hausman test (χ^2 stats.)		(15.75)	(12.37)				
Time test (χ^2stats.)		(56.71)***	(62.15)***	(62.56)***	(70.82)***		
Test for AR(1) errors (z-stats.)				(-7.872)***	(-8.168)***		
Test for AR(2) errors (z-stats.)				(-0.363)	(-0.741)		
Sargan over-identification (χ^2 stats.)				(77.41)***	(73.72)***		
Wald (joint) test (χ^2 stats.)				(77.92)***	(50.78)***		
Number of instruments				34	34		
Practical significance for Dividend Policy: Effect Size							
Effect Size (Cohen's d)		-1.0662	-0.2500	-0.5168	-0.0638	-0.5231	-0.0096
Interpretation		Large	Small	Intermediate	No Effect	Intermediate	No Effect

Note: - ***, **, * indicate significance at 1%, 5% and 10% respectively. - t-Statistic in parentheses.

Additionally, regression (2) tests the second hypothesis of the study using the (2way-FEM) technique and it shows a negative effect for payout ratio on stock price volatility at the 1% significance level. According to the regression coefficient, increasing the dividend payout ratio by 1% leads to a decline in stock price volatility by 4.48e-08 degrees on average, which supports the second hypothesis. On the other hand, regression (4) and regression (6) using the (1step-DPD) and the (PWLS) techniques respectively show no significant impact for dividend payout ratio on stock price volatility. Such results do not support the results of regression (2), which implies that the effect of dividends payout on stock price volatility is not consistent under different estimation methodologies, i.e., it may differ based on the employed estimation methodology.

As for the control variables, regressions (1) and (2) show a negative impact for firm size and earnings volatility on stock price volatility. On the other hand, a positive impact for firm age and return on assets on stock price volatility was observed. Concerning financial leverage, it showed an unstable effect on stock price volatility. Additionally, the results showed a non-linear relationship between asset growth and stock price volatility, where this relationship has an inverted U-shape, implying that a low rate of asset growth positively affects stock price volatility, but this effect becomes negative at high asset growth rates. In other words, low rates of asset growth increase stock price volatility, while high rates of asset growth reduce it.

Table 5: Sasabuchi–Lind–Mehlum test for an inverse U-shaped relationship

Variable	X_i	X_i^2	Interval		Slope at X_l	Slope at X_h	Sasabuchi test	Extremum Point
	$\hat{\beta}$	$\hat{\gamma}$	$X_{l\,(min)}$	$X_{h\,(max)}$	$\hat{\beta} + 2\hat{\gamma}X_l$	$\hat{\beta} + 2\hat{\gamma}X_h$	(t-value)	$-\hat{\beta}/(2\hat{\gamma})$
Asset Growth	0.00099 [4.759]***	-0.00236 [-12.71]***	-0.9008	1.3687	0.00525	-0.00547	[2.963]***	0.21093 Extremum inside interval

Note: - ***, indicate significance at 1%.

To verify this non-linear relationship, the Sasabuchi–Lind–Mehlum test was implemented, as shown in Table (5). The test statistic was not statistically

significant, therefore the acceptance of the null hypothesis which proposes the existence of an inverted U-shaped relationship. Also, the inflection point came within the limits of the actual data and is equivalent to (21.1%), implying that the inverted U-shaped relationship exists. Accordingly, the effect of asset growth rates below 21.1% on stock price volatility is positive, but this effect becomes negative when asset growth rates exceed the 21.1% limit.

The rest of the regressions provide the same results for the control variables, which confirms the robustness and consistency of the impact of the control variables on stock price volatility. Additionally, from regressions (3) and (4), a negative impact for stock price volatility in the previous year on current volatility is observed, which implies that volatility is short-term, resulting from speculative operations to generate profits.

Moreover, regarding general statistics, the values of the adjusted coefficient of determination (Adjusted R^2) suggest that the first regression model (for dividend yield) explains 85.4% of the changes that occur in stock price volatility, while the remaining percentage is attributed to random error resulting from other variables that were not controlled for in the model. Also, the second regression model (for dividend payout) explains 84.2% of the changes that occur in stock price volatility. Fisher's test also indicates the rejection of the null hypothesis and the acceptance of the alternative hypothesis supporting the statistical significance of the first and second study models at a significance level of 1%.

The results of the diagnostic tests for regressions (3) and (4) also indicate the significance of the AR (1) errors test at the 1% level, therefore the rejection of the null hypothesis that there is no first-order autocorrelation, and the acceptance of the alternative hypothesis of the existence of AR (1). However, unlike the second-order autocorrelation AR(2), it doesn't form a serious threat to the validity of the model. Also, Sargan's over-specification test shows that the used instruments are valid, and the Wald test shows that there is joint significance for the explanatory variables collectively at the 1% significance level.

Since statistical significance is the least interesting issue about results, p-value is not enough as it only indicates the existence of a stronger relationship between two variables (rejecting the null hypothesis), i.e., it simply indicates that the

relationship between the variables is unlikely to be caused by pure chance. Accordingly, the effect size will also be used, where it provides a quantitative measure for the size of the association between variables. Therefore, it provides an assessment of the strength of the results that statistical significance tests solely do not provide. In other words, it shows the extent of the practical significance of the relationship in actual reality. Therefore, the effect size brings along additional information for the inferential decision to accept or reject the null hypothesis.

The effect size is calculated from the partial correlations between dividend policy and stock price volatility, which measure the correlation between the dependent and independent variables while controlling for other variables in the model (assuming that they also affect the dependent variable). The Cohen (1988) statistic in Table (4) indicates that there is an intermediate to large effect size for dividend yield in reducing the volatility of stock prices. On the other hand, the dividend payout had an effect size that ranged from small to none. Therefore, it can be concluded that there is a great practical significance for dividend yield in reducing the volatility of stock prices, unlike the dividend payout. This provides much support for developing theory and creating policies to control volatility through dividend yield.

4.3.3 Discussion

The negative influence of dividend yield on stock price volatility is consistent with the findings of Hussainey et al. (2011) in the United Kingdom, Profilet (2013) in the United States, Nishat and Irfan (2004) in Pakistan, Okafor and Chijoke-Mgbame (2011) in Nigeria, Nazir et al. (2012) in Pakistan, Hashemijoo et al. (2012) in Malaysia, Habib et al. (2012) in Pakistan, Hooi et al. (2015) in Malaysia, Shah and Noreen (2016) in Pakistan, Zainudin et al. (2018) in Malaysia, Ahmad et al. (2018) in Jordan, and Nguyen et al. (2019) in Vietnam. On the other hand, the negative impact of dividend yield contradicts Ilaboya and Aggreh (2013) in Nigeria, Chaudry et al. (2015) in Pakistan, Pelcher et al. (2019) in South Africa, and Al- Shawawreh (2014) in Jordan who found a positive impact for dividend yield, in addition to Rashid and Rahman (2008) in Bangladesh who found no impact for dividend yield on stock price volatility.

Additionally, the negative association between dividend payout and stock price volatility is in line with Hussainey et al. (2011) in the United Kingdom, Allen and

Rachim (1996) in Australia, Nishat and Irfan (2004) in Pakistan, Hashemijoo et al. (2012) in Malaysia, Habib et al. (2012) in Pakistan, Lashgari and Ahmadi (2014) in Iran, Hooi et al. (2015) in Malaysia, Shah and Noreen (2016) in Pakistan, Zainudin et al. (2018) in Malaysia, Ahmad et al. (2018) in Jordan, Nguyen et al. (2019) in Vietnam, and Al-Shawawreh (2014) in Jordan. However, the negative impact of dividend payout contradicts Zakaria et al. (2012) in Malaysia, and Chaudry et al. (2015) in Pakistan who found a positive effect for dividend payout, in addition to Pelcher (2019) in South Africa, who found no relationship between payout ratio and stock price volatility.

Such negative impact of dividend policy can be justified by the notion that most investors are risk averse, so they normally prefer safe investments like investing in gold, certificates of deposits, and bonds, and if they chose to invest in the stock market, they would highly favor receiving cash dividends over generating deferred capital gains. Additionally, many investors may perceive dividends distributed by firms as an indicator of an improved financial performance and strong financial position. Moreover, it is quite plausible that shareholders and potential investors would think of dividends as a tool that can decrease the free cash flow available for managers, hence reduce the possibility of a conflict of interest with company managers, and limit the ability of managers to risk shareholders' wealth for their own personal benefits.

Moreover, the findings of the paper challenge the irrelevance proposition and support the notion that dividends do matter when it comes to firm value and the volatility of its share price. Therefore, the findings would suggest that dividends should not only be considered a way for compensating shareholders, but also an effective mechanism that can communicate valuable information about the firm's performance and future prospects and help control the firm's share price volatility levels.

5. CONCLUSION AND RECOMMENDATIONS

This paper examined the association between dividend policy and stock price volatility for Egyptian listed firms for the time period from 2016 to 2022. The study controlled for six variables: firm size, firm age, ROA, asset growth, leverage, and earnings volatility. Dividend policy was proxied by both dividend

payout and dividend yield, whereas stock price volatility was estimated using the GARCH (1, 1) model.

After running six different regression models, the findings showed a significant negative relationship between dividend yield and stock price volatility which was supported by all the models of the study. Similarly, a significant negative relationship between dividend payout and stock price volatility was found, but by only one of the tested models. Consequently, the findings of the current study suggest that dividend policy can act as a major deterrent to stock price volatility for Egyptian listed firms. Such findings are consistent with the results of many previous studies, including Nishat and Irfan (2004), Hussainey et al. (2011), Hashemijoo et al. (2012), Hooi et al. (2015), Shah and Noreen (2016), Zainudin et al. (2018), Ahmad et al. (2018), and Nguyen et al. (2019).

Consequently, the findings of the study offer important implications for academics, practitioners, and investors. The academic implications include providing a more profound understanding of the role of dividend policy in the prediction of stock price volatility and perceiving it as a major factor that contributes to lower volatility levels in the Egyptian market, which agrees with the majority of past studies conducted in other developing and developed nations. As far as the practical implications are concerned, the findings of the paper can encourage firms' managers to consider dividend policy, not only as a form of compensation for shareholders, but also as a potent mechanism for reducing the volatility of their share prices. Furthermore, the findings can enable investors to make more informed investment decisions based on a more thorough understanding of the risk involved. This can help reduce the reluctance and fear of some investors to invest in the stock market, resulting in a more active market, higher investment levels, as well as improved economic conditions.

Nevertheless, the findings of the study should be dealt with carefully, given the following limitations:

- The study focused on cash dividends only and did not consider the potential impact of stock dividends or stock buybacks on stock price volatility.
- Several listed firms did not distribute dividends at all during the period of the study, hence were excluded from the sample.

- The findings of the study cannot be generalized on financial firms due to their different nature, in addition to the fact that their financial statements are differently structured.

Accordingly, the paper provides some valuable recommendations for future studies, including:

- Studying the impact of stock dividends and buybacks on the volatility of share prices, in order to understand how they compare to cash dividends.
- Investigating how the impact of dividend policy on share price volatility would be different in pre-flotation period versus post-flotation period, so as to understand the impact of exchange rate changes on such relationship.
- Conducting similar studies on financial firms so as to identify whether the findings would be consistent or contradicting to those reached in non-financial firms.
- After dividend policy was found to affect stock price volatility in the Egyptian setting, it would be quite plausible to test its effect on cost of capital also.

Thus, the paper not only sheds light on the dividend policies adopted by Egyptian firms and the impact of such dividend policies on share price volatility, but also it paves the way for many future studies to be conducted, in Egypt or in other comparable developing markets.

REFERENCES

Abdel-Meguid, A. (2021). Corporate governance in Egypt: The landscape, the research, and future directions. Corporate Ownership & Control, 18(3), 296-306. https://doi.org/10.22495/cocv18i3siart5

Ahmad, M. A., Alrjoub, A. M. S., & Alrabba, H. M. (2018). The effect of dividend policy on stock price volatility: Empirical evidence from Amman stock exchange. *Academy of Accounting and Financial Studies Journal*, 22(2), 1-8. https://doi.org/10.13140/RG.2.2.26262.09289

Allen, D. E., & Rachim, V. S. (1996). Dividend policy and stock price volatility: Australian evidence. Applied Financial Economics, 6(2), 175-188. https://doi.org/10.1080/096031096334402

Allen, F., Bernardo, A. E., & Welch, I. (2000). A theory of dividends based on tax clienteles. *The Journal of Finance*, 55(6), 2499-2536. https://doi.org/10.1111/0022-1082.00298

Almanaseer, S. R. (2019). Dividend policy and share price volatility: Evidence from Jordan. Accounting and Finance Research, 8(2), 75-85. https://doi.org/10.5430/afr.v8n2p75

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.

Anderson, D. R., Sweeney, D. J., Williams, T. A., Camm, J. D., & Cochran, J. J. (2017). Statistics for business & economics (13th ed.). Cengage Learning.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The Review of Economic Studies, 58(2), 277-297. https://doi.org/10.2307/2297968

Baker, H. K., Powell, G. E., & Veit, E. T. (2002). Revisiting the dividend puzzle: Do all of the pieces now fit? Review of Financial Economics, 11(4), 241-261. http://dx.doi.org/10.1016/S1058-3300(02)00044-7

Barman, G. P. (2008). An evaluation of how dividend policies impact on the share value of selected companies [Master's thesis, Nelson Mandela

Metropolitan University]. South East Academic Libraries System. http://hdl.handle.net/10948/806

Baskin, J. (1989). Dividend policy and the volatility of common stocks. Journal of Portfolio Management, 15(3), 19-25. https://doi.org/10.3905/jpm.1989.409203

Bollerslev, T. (1986). Generalized autoregressive conditional heteroskedasticity. *Journal of Econometrics*, 31(3), 307-327. https://doi.org/10.1016/0304-4076(86)90063-1

Chaudry, S. N., Iqbal, S., & Butt, M. (2015). Dividend policy, stock price volatility & firm size moderation: Investigation of bird in hand theory in Pakistan. *Research Journal of Finance and Accounting*, 6(23), 16-19. https://core.ac.uk/download/pdf/234631201.pdf

Easterbrook, F. H. (1984). Two agency-cost explanations of dividends. *The American Economic Review*, 74(4), 650-659.

Gitman, L. J., & Zutter, C. J. (2011). Principles of managerial finance (13th ed.). Prentice Hall.

Gordon, M. J. (1963). Optimal investment and financing policy. *The Journal of Finance*, 18(2), 264-272. https://doi.org/10.2307/2977907

Habib, Y., Kiani, Z. I., & Khan, M. A. (2012). Dividend policy and share price volatility: Evidence from Pakistan. Global Journal of Management and Business Research, 12(5), 2249-2283. https://globaljournals.org/ GJMBR_Volume12/9-Dividend-Policy-and-Share-Price-Volatility.pdf

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), 111-129. https://ssrn.com/abstract=2147458

Hooi, S. E., Albaity, M., & Ibrahimy, A. I. (2015). Dividend policy and share price volatility. Investment Management and Financial Innovations, *12*(1), 226-234.

Hussainey, K., Mgbame, C. O., & Chijoke-Mgbame, A. M. (2011). Dividend policy and share price volatility: UK evidence. *The Journal of Risk Finance*, *12*(1), 57-68. https://doi.org/10.1108/15265941111100076

Ilaboya, O. J., & Aggreh, M. (2013). Dividend policy and share price volatility. *Journal of Asian Development, 2*(2), 109-122.

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review, 76*(2), 323-329.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360. https://doi.org/10.1016/0304-405x(76)90026-x

Lashgari, Z., & Ahmadi, M. (2014). The impact of dividend policy on stock price volatility in the Tehran stock exchange. *Arabian Journal of Business and Management Review, 3*(10), 273-283. https://doi.org/10.12816/0018408

Lease, R.C., John, K., Kalay, A., Loewenstein, U., & Sarig, O.H. (2000). Dividend policy: Its impact on firm value. Harvard Business School Press.

Mishkin, F. S., & Eakins, S. G. (2006). Financial markets and institutions (5th ed.). Pearson.

Nasr, M. A., & Ntim, C. G. (2018). Corporate governance mechanisms and accounting conservatism: Evidence from Egypt. Corporate Governance: *The International Journal of Business in Society*, 18(3), 386-407. https://doi.org/10.1108/CG-05-2017-0108

Nazir, M. S., Abdullah, & Nawaz, M. M. (2012). How dividend policy affects volatility of stock prices of financial sector firms of Pakistan. *American Journal of Scientific Research*, 61(1), 132-139.

Nguyen, D. T., Bui, M. H., & Do, D. H. (2019). The relationship of dividend policy and share price volatility: A case in Vietnam. Annals of Economics & Finance, 20(1), 123–136. https://www.researchgate.net/profile/Mai-Bui-15/publication/341342659

Nishat, M., & Irfan, C. M. (2004, January 13–15). Dividend policy and stock price volatility in Pakistan [Conference presentation]. The 19th Annual General Meeting and Conference of the Pakistan Society of Development Economists, Islamabad, Pakistan.

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

Pelcher, L. (2019). The role of dividend policy in share price volatility. *Journal of Economic and Financial Sciences, 12*(1), 1-10. https://doi.org/10.4102/jef.v12i1.221

Phan, T. K. H., & Tran, N. H. (2019). Dividend policy and stock price volatility in an emerging market: Does ownership structure matter? Cogent Economics & Finance, 7(1), 1-29. https://doi.org/10.1080/23322039.2019.1637051

Pradhan, R.S., & Gautam, N. (2017). Dividend policy and share price volatility: A case of Nepalese commercial banks. *SSRN Electronic Journal*. http://dx.doi.org/10.2139/ssrn.3044060

Profilet, K. A. (2013). Dividend policy and stock price volatility in the US equity capital market. Longwood University. https://digitalcommons.Longwood.edu/etd/145

Provaty, S. S., & Siddique, K. A. (2021). Impact of dividend policy on stock price volatility: An empirical study on financial service industry of Bangladesh. *Journal of Financial Markets and Governance*, 1(1), 16-32. https://doi.org/10.54728/2112091639050253

Rashid, A., & Rahman, A. Z. M. (2008). Dividend policy and stock price volatility: Evidence from Bangladesh. *The Journal of Applied Business and Economics, 8*(4), 71-80.

Shah, S. A., & Noreen, U. (2016). Stock price volatility and role of dividend policy: Empirical evidence from Pakistan. *International Journal of Economics and Financial Issues, 6*(2), 461-472. https://www.econjournals.com/index.php/ijefi/article/view/1752

Shahwan, T. M. (2015). The effects of corporate governance on financial performance and financial distress: Evidence from Egypt. Corporate Governance, 15(5), 641-662. https://doi.org/10.1108/CG-11-2014-0140

Zainudin, R., Mahdzan, N. S., & Yet, C. H. (2018). Dividend policy and stock price volatility of industrial products firms in Malaysia. *International*

journal of emerging markets, 13(1), 203-217. https://doi.org/10.1108/IJoEM-09-2016-0250

Zakaria, Z., Muhammad, J., & Zulkifli, A. H. (2012). The impact of dividend policy on the share price volatility: Malaysian construction and material companies. *International Journal of Economics and Management Sciences, 2*(5), 1-8.

Appendix A

Table (A1): List of the firms examined in this paper

ID	Company
1	Egyptian Media Production City
2	Telecom Egypt
3	Arabian Food Industries Co.
4	Cairo poultry
5	Delta Sugar Co.
6	Edita Food Industries
7	Ismailia Misr Poultry
8	Juhayna Food Industries
9	Mansoura Poultry
10	Obourland for food industries
11	Egyptian Transport & Commercial Services Co. (EGYTRANS)
12	Delta For Printing & Packaging
13	Alexandria New Medical Center
14	Egyptian International Pharmaceutical Industries Company (EIPICO)
15	Minapharm Pharmaceuticals
16	Pyramisa Hotels and Resorts
17	Rowad Tourism
18	Amer Group Holding
19	El Obour for Real Estate Investment
20	Gharbia Islamic Housing Development
21	Gulf Canadian Company for Arab Real Estate Investment
22	Madinet Nasr for Housing and Development
23	Orascom Development Egypt
24	Palm Hills Developments
25	Arab Developers Holding
26	Sixth of October Development and Investment Company (SODIC)
27	United for Housing & Development
28	Al Shams Housing and Urbanization
29	Egypt Gas
30	Acrow Misr
31	Nasr Company for Civil Works
32	Industrial Engineering Company for Construction and Development (ICON)
33	Golden Tex
34	Oriental Weavers
35	Arabian Cement
36	Lecico Egypt
37	Misr Beni Suef Cement
38	Misr Cement Qena
39	The Arab Ceramic Co. (Ceramica Remas)
40	Arab Valves Company
41	Al Ezz Ceramic and Porcelain Co (Gemma)

42	Arab Aluminum Company
43	Al Ezz Dekheila Steel Company - Alexandria
44	Egyptian Financial & Industrial Company
45	Kafr El Zayat Pesticides and Chemicals Company
46	Misr Fretilizers Production Company (Mopco)
47	Egyptian International Tourism Projects
48	Assiut Islamic Trading
49	October Pharma
50	GlaxoSmithKline
51	Sharkia National Food
52	The Egyptian Satellite Company (Nilesat)
53	Talaat Moustafa Group
54	El Ahram Co. For Printing And Packing
55	Modern Shorouk Printing and Packaging
56	Zahraa Maadi Investment & Development
57	Sinai Cement Co.
58	Development and Engineering Consultants Co.
59	Arab Engineering Industries
60	Egyptian Starch & Glucose
61	Suez Cement
62	Nozha International Hospital
63	Elsewedy Electric
64	Sidi Kerir Petrochemicals Co.
65	Raya Holding for Financial Investments
66	El Nasr Transformers & Electrical Products Co. (El Maco)
67	Misr Refrigeration and Air Conditioning Mfg. Co. (Miraco)
68	Suez Bags
69	National Company for Maize Products

هل تؤثر سياسة توزيع الارباح علي تقلبات اسعار الأسهم في السوق المصري؟

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ملخص البحث باللغة العربية

يلعب سوق المال دور هام يتمثل في تمكين الشركات من الحصول علي التمويل المطلوب, مما يساهم بشكل فعال في النمو الاقتصادي وكذلك التنمية. ولكن ارتفاع مستوي تقلبات أسعار الأسهم قد يجعل المستثمرين يبتعدوا عن الاستثمار في سوق المال مما يقلل قدرة الشركات علي الحصول علي التمويل اللازم, ويمثل عائق امام النمو الاقتصادي, وقد يؤدي ايضاً لعواقب وخيمة للشركات وكذلك للاقتصاد ككل. تدرس هذه الورقة البحثية العلاقة بين سياسة توزيع الأرباح و تقلبات أسعار الأسهم في السوق المصري بالاضافة الي توضيح كيفية استجابة المستثمرين للتغير في سياسات التوزيع التي تتبعها الشركات المصرية. تبحث الدراسة أثر العائد الربحي و نسبة توزيع أرباح الأسهم علي تقلبات أسعار الأسهم. حيث قامت الدراسة بحساب تقلبات اسعار الأسهم بإستخدام نموذج الانحدار الذاتي الشرطي المعمم (GARCH 1,1). تتألف عينة الدراسة من 69 شركة غير مالية مدرجة بالبورصة المصرية خلال الفترة (2016- 2022). وتم تقدير العلاقة بين المتغيرات بإستخدام اسلوب الأثار الثابتة ثنائي الإتجاه (way-FEM2) بالإضافة إلي نموذج البيانات الطولية الديناميكية (DPD) و نموذج المربعات الصغري المرجحة (PWLS). اظهرت نتائج الدراسة وجود تأثير سلبي معنوي للعائد الربحي علي تقلبات أسعار الأسهم. كذلك كشفت النتائج وجود تأثير سلبي معنوي لنسبة توزيع أرباح الأسهم علي تقلبات اسعار الأسهم, و هذا التأثير تم تأكيده من خلال نموذج واحد من نماذج الدراسة.

الكلمات الدالة: تقلبات اسعار الأسهم، سياسة توزيع الأرباح، العائد الربحي, نسبة توزيع أرباح الأسهم، البورصة المصرية، الأسواق الناشئة

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