

Impacts of Dividend Announcement on Stock Return Empirical study: Algiers Stock Exchange

تأثير إعلان توزيعات الأرباح على عائد الأسهم دراسة ميدانية: بورصة الجزائر

Aissa Bedrouni ^{1*}, M'hamed Benelbar ², Hamza Gharbi ³

¹ University of M'sila, aissa.bedrouni@univ-msila.dz

² University of M'sila, m'hamed.benelbar@univ-msila.dz

³ University of M'sila, hamza.gharbi@univ-msila.dz.

Date of receipt: 2022-03-15 Date of revision: 2022-03-20 Date of acceptance: 2022-12-30

Abstract

This paper aims to determine the reaction of the Algerian Stock Exchange (SGBV) to dividend announcements by a sample of companies listed on the Algiers Stock Exchange, and for a fixed period 2018-2019. To reach the goal, the event's methodology was relied upon to study the effect of the dividend announcement on the share price surrounding forty days of the announcement. Additionally, the stock price reaction is determined for the dividend announcement.

The results of the research indicate that stock prices are moving up significantly after dividend announcements, and downward after the date of loss of the right to claim dividends. It was statistically disclosed using abnormal return (AR) from the market model. The results emphasize the theory of dividend distribution, because dividend announcements have a significant impact on stock prices.

Keywords: Dividend Announcement; Abnormal returns; Event study; Market model.

JEL Classification: G32, G35.

* Corresponding authors

ملخص

تهدف هذه الورقة إلى تحديد رد فعل البورصة الجزائرية (SGBV) على إعلانات توزيع الأرباح لعينة من الشركات المدرجة في بورصة الجزائر العاصمة، ولمدة محددة 2018-2019. للوصول إلى الهدف، تم الاعتماد على منهجية الحدث لدراسة تأثير إعلان توزيع الأرباح على سعر السهم خلال أربعين يوماً من الإعلان. بالإضافة إلى ذلك، يتم تحديد رد فعل سعر السهم لإعلان توزيع الأرباح. تشير نتائج البحث إلى أن أسعار الأسهم تتحرك صعوداً بشكل ملحوظ بعد إعلانات توزيعات الأرباح، وإلى الانخفاض بعد تاريخ فقدان الحق في المطالبة بتوزيعات الأرباح. تم الكشف عنها إحصائياً باستخدام عائد غير طبيعي (AR) من نموذج السوق. تؤكد النتائج على نظرية توزيع الأرباح، لأن إعلانات التوزيعات لها تأثير كبير على أسعار الأسهم.

الكلمات المفتاحية: إعلان توزيعات الأرباح، عوائد غير طبيعية، دراسة الحدث، نموذج السوق.

تصنيف JEL: G32, G35.

1. INTRODUCTION

Dividend policy decision is one of the most important financial decisions. Therefore, the way in which the managers get to take the dividend policy decisions, and whether they follow an accurate set of guidelines or precise strategies for making these decisions, will affect the future performance of their companies.

(Robert D. Coleman, 2006) Demonstrate that shares-, dividends- and price-entailing asset pricing simultaneities conform to three phases: events, individual risk factors and multifactor return models, and the simultaneities reflect patterns that have a common source, which suggests a grand design. And, The three component variables of stock return are share price, cash dividends and number of shares of common stock issued and outstanding in the total capitalization of a firm.

Investors pay prices that exceed their own valuation of future dividends as they anticipate finding a buyer willing to pay even more in the future. Because of this resale option, the price of an asset exceeds its fundamental value (Jianping Mei and Jos'e A. Scheinkman and Wei Xiong, 2009).

The main goal of any company's managers is to maximize the wealth of shareholders, which means maximizing the value of the company, as a measure of the price of ordinary shares. This goal can be achieved by making a good choice in the company's various financial decisions, such as dividend policy [one reference at least]. However, the effect of the dividend policy on shareholder wealth remains unresolved. Therefore, studies differ in its findings regarding the impact of the dividend policy on shareholder wealth.

A sample of 141 listed non-finance companies in Ho Chi Minh Vietnam Stock Exchange, from 2011 to 2016, The study is reveals that the dividend payout and dividend yield have statistically significantly negative impact on share price volatility (Duy T. Nguyen and Mai H. Bui and Dung H. Do, 2019).

The aim of any company's managers should discover the optimum dividend policy that will increase the market value of the company. It is often said that the share price tends to decrease whenever there is a decrease in dividend payments. Announcing an increase in dividends yields abnormal positive returns, and an announcement of lower dividends generates

abnormal negative returns. A decrease in the share price occurs because the dividend distribution is an important indicator for the company.

Many researchers form a dividend policy assuming unequal information between the manager and the investors [some authors with years]. Dividend policy can refer to informations about the future performance of companies. Therefore, the purpose of this paper is to note whether the share price interacts with the announcement of the dividend distribution on the Algiers Stock Exchange, and how this interaction is if it exists.

(Chaabouni Ines, 2017) Investigate the stock prices response to dividend announcement of 10 companies listed in Saudi Arabia Financial Markets during the period 2014-2015. Research result indicates that the stock prices move upward significantly after dividend announcements. Abnormal return (AR) and cumulative abnormal return (CAR) from the market model are statistically significantly revealed. The results confirm dividend-signaling theory as the dividend announcements have significant impact on share prices.

In previous empirical study, most of them concluded that the share price should react positively to the announcement of the distribution or increase of dividends, and on the contrary, it interacts negatively with the decrease in the dividend distribution.

2. LITERATURE REVIEW

Several field empirical studies disagreed on the importance of the relationship between dividend and stock prices (Hazlina Abdul Kadir and Reza Masinaei and Nasim Rahmani, 2011). (Miller. M. H & Modigliani. F, 1961) Suggested, under an unrealistic assumption, in a world free of taxes and transaction costs, that dividends were not related to share prices.

(Gordon. M. J, 1963) Argued that shareholders prefer distributing cash dividends to capital gains, because they want to reduce the risk of dividends in the future, and prefer a high dividend policy to highly uncertain capital gains from a doubtful future investment. Moreover, the company often makes a decision regarding the dividend policy in an attempt to make a positive impact that helps increase the company's value.

(Easterbrook. F. H, 1984), (Jensen. M & Meckling. W, 1976) In addition (Black. F, Winter 1976) Suggest that stock dividends are a rule in reducing agency conflicts between managers and shareholder. When the manager

decides to distribute the dividends, the cash is removed from control and paid back to the shareholders. Positive changes in the share price occur as a result.

Based on signal theory, from research conducted by (Lintner. J, 1956), who found that the decision to distribute dividend depends on the long-term sustainability of corporate profits.

(Bhattacharyya. N, 2007) Argues that the dividend policy based on asymmetric information that managers have special information about the project's cash flow support and can send a signal to the market by choosing a dividend policy.

(Miller. M. H & Rock. K, 1985) Argues that it is unwise for companies with poor expectations to distribute high-level dividend, and only good forecasters can achieve high-level profits without unconfirmed long-term operations. (John. K and Williams. J, 1987) Predicts a positive relationship between dividends and stock prices.

There is another opinion, that dividend changes suggest a permanent change in current earnings, (Franklin Allen and Roni Michaely, 1995), regardless of the exact information provided in the dividend reference, the hypothesis is correct.

Several studies have found that the market reaction to dividend announcements is more sensitive to dividend increases when sentiment increases, and this is in the context of knowing the relationship between investor sentiments on the market reaction to dividend announcements, (Elisabete Vieira, 2012).

In a study that included 120 trading days ending 3 days prior to the date of the event, for a sample consisting of 901 French companies and 888 German companies, which included 3061 increases in dividends, and 836 events decreased dividends between 1991 and 2009, the study found weak evidence to support the relationship between changes in dividends and profit changes in the two years following the change in dividends, and in the third year, the estimate model becomes negative, which indicates a backlash in the performance of these companies, (Ijaz Ali and Noor Muhammad & Ali Gohar, 2017).

Signal proponents believe that the dividend policy is seen as a tool to spread the message of quality over a lower cost than other alternatives. In

line with the results of their research, an important guarantee can be given, that unexpected dividends changes should be followed by stock price changes in the same direction.

According to the background related to the importance of the dividend argument and stock price, stock prices include all expected future profits, and therefore one of the most important corporate events is the announcement of dividend distribution in addition to the investor conducting event studies (dividend distribution) to examine the reaction of the resulting stock price.

3. STUDY METHODOLOGY

This study focuses on investigating the effect of a dividend announcement on the market price of stocks, by examining the stock price reaction to dividend announcements using the event's study methodology to explore dividend returns on the date of the dividend announcement.

The study of the event studies the stock price behavior of companies on trade or economic events, such as dividend announcements. In the empirical of accounting and finance, event studies have been applied to a variety of specific events and economies at the company level. In most applications, the focus is on the impact of an event on the price of a particular class of company stock.

Some examples, such as the purchase announcement, mergers and acquisitions, new stock issues or debt announcement, and dividends are the core of the study in this research paper. According to (Brown. S & Warner. J, 1985), an event study describes experimental financial research technology that allows an observer to assess the impact of a particular event on a stock's price such as a dividend announcement and stock repurchase.

To study the effect of dividend announcements on the market price of a share, one of the Algerian companies listed on the Algiers Stock Exchange, during the period 2018-2019 that had price sensitive information on the history of dividend announcements in this research paper, was taken.

The date of the event is the date of the dividend announcement. When the board of directors proposes a dividend proposal and this is announced in the financial market, this date is defined as $t = 0$, and the time window is the estimate period and the event period. So, the time period during which

prices are taken Corporate stocks, (MacKinlay. A. C, 1997). This paper uses a period of -20 to +20 around the event date.

For the estimated revenue parameters, the estimate window period is 100 days. The market model is estimated with data ($t = -120$ to $t = -21$), where $t = 0$ is the date of the dividend announcement on market, and the linear regression model is used.

According to the Capital Asset Pricing Model (CAPM), the expected daily return ($E(R_{it})$) of share i on day t is calculated as follows:

$$E(R_{it}) = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$

Coefficients α_i and β_i are estimated from the estimate period using data ($t = -120$ to $t = -21$), and using the least squares method. R_{mt} Is the market (m) rate of return in day t .

In analyzing the impact of the "dividend announcement" event to use the event study technique proposed by (John. Y Campbell and Andrew. W Lo and A. Craig MacKinlay, 1997) which explores an abnormal return of the stock in the event window.

Abnormal returns (AR_{it}) are calculated as the difference between actual (R_{it}) returns and the $E(R_{it})$ returns predicted by the market model, as follows:

$$AR_{it} = R_{it} - E(R_{it}) \quad (2)$$

After obtaining the abnormal returns for each period, the t-student is calculated daily, starting from the day the announcement of the dividend distribution (-20 days) until after the date of the announcement of the dividend distribution (+20 days). The t-student can be calculated as follows:

$$(calculated - t - student)_{it} = \frac{AR_{it}}{SE_i} \quad (3)$$

Whereas, SE_i represents the standard deviation of the abnormal returns per share during the event period, i.e. from -20 days to +20 days. The standard deviation is calculated as indicated by the following relationship:

$$SE_i = \frac{\sum_{t=-20}^{t=+20} (AR_{it} - \overline{AR_i})^2}{40} \quad (4)$$

The value 40 (in the denominator) represents the degree of freedom, which is the number of periods of the event minus one, (20 days before the event + 20 days after the event + day of the event, and we subtract one day to obtain the degree of freedom), so the result is 40.

After calculating the t-student at each day in the event period, the calculated t-student is compared to the scheduled t-student at 40 degrees of freedom, equal to the absolute value of 3.307, i.e. (tabulated-t-student = ∓ 3.307), this means either 3.307 or -3.307.

The calculated t-student is statistically significant whenever it is greater than 3.307 or less than -3.307. The test hypothesis is given as follows:

$$|calculated - t - student| \leq (\text{tabulated} - t - \text{student} = \mp 3.307) \quad (5)$$

Although, the researcher has found abnormal returns, it must be proved that the results were not obtained unexpectedly or through biased time series. The basic assumption is the abnormal daily return which is distributed identically and independently.

It is also assumed that stock prices over a long period tend to approach the expected value. Test the calculation by t statistic for a sample of N notes per day "t" in the event window.

The study examines the following hypothesis: There are no abnormal returns, that is:

$$AR_{it} \in \{E(AR_{it}) - SE_i, E(AR_{it}) + SE_i\} \quad (6)$$

If the outcome of an event is believed to affect the current and future profits of the company, then its share price changes once the market studies the event. To observe if an event has any impact on the company's values, the abnormal returns are measured before and after the event. The conclusions are then described test results of statistical significance for abnormal returns (AR_{it}).

4. DATA ANALYSES

In the data analysis, the procedures outlined in component (3) above, related to the study methodology, are followed.

4-1. Estimate the model

At this stage, the model for the correlation of the company's biofarm share rate (bio) with the changes in the financial market return rate is estimated. The estimated model is shown in relationship (1) above.

Using the financial market data, which precedes the date of announcing the distribution of dividends by approximately 20 days, the results are organized as follows.

Table 01. ANOVA Analysis of the Biopharm Share Return Model (bio) with the Financial Market Return
 ANOVA^a

Model	Sum of squares	dof	Medium square	F	Sig.
1 Regression	,023	1	,023	3506,224	,000^b
Residues	,001	117	,000		
Total	,024	118			

- a. Dependent variable: Rbio
- b. Predictors: (Constant), Rm

Source: The table was prepared by data analysis using SPSS.

The above table shows that there is a correlation between the biofarm share return rates (Rbio) and the changes in the financial market return rate (Rm), and with statistical significance. Based on this result, the model is now estimated by determining the coefficients.

Table 02. Determining the Coefficients of model
 Coefficients^a

Model	Non-standardized coefficients		standardized coefficients	t	Sig.
	B	Standard deviation	Beta		
(Constant)	,000	,000		-,426	,671
Rm	1,412	,024	,984	59,213	,000

- a. Dependent variable : Rbio

Source: The table was prepared by data analysis using SPSS.

It appears from the above table that the coefficient (β_{bio}) of the financial market return rate is statistically significant. So, it is possible to write a model of the relationship between the changes in the share price of the biofarm company (Rbio) and the rate of return of the financial market as follows (Rm):

$$E(R_{bio,t}) = 0.000 + 1.412R_{mt} \tag{7}$$

4-2. Calculation of abnormal returns (AR)

After estimating the correlation model between the biofarm rate of return (R_{bio}) and the financial market rate of return (R_m), the difference between the realized stock returns and the estimated rate of return (according to relationship No. 7 above) is calculated, using the model shown in relationship No. 2 above. This is during the period that begins 20 days before the announcement of dividend distribution until 20 days after the date of the announcement of dividend distribution. (The results are shown in Appendix 1).

After calculating the abnormal returns, the standard deviation of these returns is calculated in the event period, as shown in the following table:

Table 3. Event period statistics for the abnormal returns (AR) of the biofarm (AR-bio) share
 Unique Sample statistic

	N	Average	Standard deviation	Average standard error
AR	41	,000351171	,0227114038	,0035469254

Source: The table was prepared by data analysis using SPSS.

After calculating both: abnormal returns and standard deviation for the event period, t-student (calculated-t-student) is now calculated for each day of the event period, and compared with tabulated-t-student. As shown by the hypothesis explained in relationship (5) above. Which,
 $| \text{Calculated-t-student} | < (\text{tabulated-t-student} = \mp 3.307)$. Calculated-t-student is statistically significant whenever: $| \text{calculated} - t - \text{student} | > (3.307)$.

The results are shown in Appendix 1.

5. RESULTS AND DISCUSSION

The results contained in this study were obtained in terms of the event study methodology in which the abnormal return of the company is due to the objective of studying the effect of the announcement of the dividend.

In order to investigate the occurrence of the abnormal return (AR_{it}) based on the date of the dividend announcement for the study period, the same thing was focused on the 41-day event window that includes 20 days before / after the announcement of dividend distribution, as shown in Appendix No. (1).

The results shown in Appendix 1 show that the abnormal return on the announcement of the dividend distribution, had a negative change about one day after the announcement (+1), and a positive change in (-9) days before the day the announcement of the dividend distribution on the stock exchange.

The statistical significance of the positive change in abnormal returns in the day (-9) can be explained by the date of the announcement of the dividend distribution on the stock exchange, that there is a possibility of information on the distribution of dividends in the market, which may have been provided through the company's board of directors meeting, which was before Today (-9) shortly. What confirms the effect of information availability on the market is the noticeable increase in abnormal returns on this day (day-9).

The statistical significance of the negative change that occurs in the abnormal returns in the day (+1) after the date of announcing the dividend distribution on the stock exchange, can be explained by the possibility that the market had consumed the availability of dividend information in the market, which may have been provided through a board meeting for the company, which was shortly before today (-9).

After reviewing the announcement of the dividend distribution, it became clear that today (+1) is the beginning of dividend distribution to the owners, meaning that buying the stock during this period does not give the right to receive the dividend distribution, and therefore, it loses its market price from its value equal to the market value of dividends. This explains the negative change in abnormal returns on this exact date.

Therefore, the general conclusion from this analysis, (R_{it}) and (AR_{it}), is that dividends announcements are of great importance and have a direct impact on the stock market price. The date of the meeting of the Board of Directors is the beginning of the positive effect of the agreement regarding the decision to distribute the dividends.

Also, the date of losing the right to claim the distribution of the dividends is the beginning of a decline in the market price of the share by an amount equivalent to the loss of the right to claim the dividends previously distributed. So, as an answer to the problematic of the study: There is an

effect of the announcement of the dividend distribution on changes in the market price of a share.

6. Conclusion

The results of this empirical study indicate that stock prices move upward after the dividend announcements, and move downward after the date of loss of the right to claim dividends. This effect was revealed significantly statistically by using the abnormal return (AR) from the market model. These results confirm the theory of dividend distribution, because dividend announcements have a significant impact on stock prices, and that the date of losing of the right to claim dividend payment has a negative impact on the market price of a share.

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8. Appendix

Abnormal returns (AR), calculated-t-student, and significance

Event	ARt	t-test	Sig.	Event	ARt	t-test	Sig.
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Date				Date			
-20	0	0		+1	-0,0877193	-3,86234593	***
-19	0	0		+2	0	0	
-18	0	0		+3	0	0	
-17	0	0		+4	0	0	
-16	0	0		+5	0	0	
-15	0	0		+6	0	0	
-14	0	0		+7	0,00334448	0,14726001	
-13	0	0		+8	0	0	
-12	0	0		+9	0	0	
-11	0	0		+10	0	0	
-10	0	0		+11	0	0	
-9	0,09109677	4,01105871	***	+12	0	0	
-8	0,00076923	0,0338698		+13	-0,04868966	-2,14384173	
-7	0	0		+14	0,04706667	2,07238033	
-6	0,00691776	0,30459392		+15	0	0	
-5	0	0		+16	0	0	
-4	0	0		+17	0,00083333	0,03669229	
-3	0	0		+18	0	0	
-2	0,00076336	0,03361125		+19	0	0	
-1	0	0		+20	0	0	
0	0	0					

Fig 1. Abnormal returns (AR_t) during the event period (-20j + 20j)

