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Taufiq Choudhry
Jacek Mizerka *Editors*

Contemporary Trends in Accounting, Finance and Financial Institutions

Proceedings from the International
Conference on Accounting, Finance and
Financial Institutions (ICAFFI), Poznan
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Editors

Taufiq Choudhry
Southampton Management School
University of Southampton
Southampton
UK

Jacek Mizerka
Department of Corporate Finance
Poznań University of Economics
Poznań
Poland

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Preface

The field of finance is very broad. It includes both macroeconomic (e.g. public finance, monetary policy) and microeconomic issues (e.g. corporate finance, accounting, investment decision on capital market). The field of finance is also very vital. This is evidenced by research undertaken by contemporary researchers. Some of the results of these researches were presented during the International Conference on Accounting, Finance and Financial Institutions. Theory Meets Practice (ICAFFI), which took place in Poznań, on 19–21 October, 2016. A part of the papers discussed during ICAFFI have been presented to the wide audience in this book. We tried to choose this volume articles representing a broad scope of financial issues. The issues related to decisions taken in the capital market are represented by three articles: Leszek Czapiewski, Jarosław Kubiak, *Investor Reactions to Dividend Announcements of Companies Listed on the Warsaw Stock Exchange*, Krzysztof Piasecki, Joanna Siwek, *Two-Asset Portfolio with Triangular Fuzzy Present Values—An Alternative Approach*, Szymon Stereńczak, *Stock Market Liquidity and Company Decisions to Pay Dividends: Evidence from the Warsaw Stock Exchange*. The paper of L. Czapiewski and J. Kubiak concerns the impact of changes in the quality of dividends paid and changes in the dividend rate on the return of excess rate of companies whose shares were listed on the Warsaw Stock Exchange (WSE) in 1996–2014. The article written by K. Piasecki and J. Siwek proposes an alternative approach to the characteristics of a two-asset portfolio in a case of present value estimated by a triangular fuzzy number. The goal of Sz. Stereńczak’s paper is to investigate the relationship between stock liquidity and both companies’ propensities to pay dividends, and the level of dividend payments.

Two articles concern corporate finance: Józefa Gryko, *Managing of Financial Flexibility* and Sanjeev Kumar, K. S. Ranjani, *Financial Constraints and Cash Flow Sensitivity to Investment in Indian Listed Manufacturing Firms*. The paper of J. Gryko focuses on showing the importance of financial management in creating the flexibility of the company and identifying conditions affecting the decision on the company’s financial flexibility. The article of S. Kumar and K. S. Ranjani is an effort to test the validity of cash flow sensitivity to investment as a measure of

financial constraints in Indian manufacturing firms using panel data for 768 listed firms over a period of 6 years (2010–2016).

A paper proposed by A. Wójcicka, *Credit-Risk Decision Process Using Neural Networks in Industrial Sectors*, concerns the assessment of credit risk. The author focuses on factors determining credit risk; she proposes using neural networks in the process of credit-risk management.

The paper of K. Charoontham and T. Amornpetchkul, *Impact of Pay-for-Performance on Rating Accuracy*, discusses the role of credit rating agencies (CRAs). The authors analyse whether the pay-for-performance scheme can encourage to issue accurate ratings under an investor-pay model.

The article of M. D. Stasiak, *Modelling of Currency Exchange Rates Using a Binary-Temporal Representation*, proposes methodical point of view. The author presents a new method for modelling exchange rates with a binary-temporal representation.

The field of public finance is represented by the article *The Role of Tax Havens in Tax Avoidance by Multinationals* written by M. Kutera. The main purpose of this publication is to present the scale of tax avoidance by multinational firms and the possible impact of that avoidance on the capital flows in the global economy.

Astonishing, but interesting, research problem was taken by A. Pavković, K. Dumičić, and B. Žmuk in the article *Number of Automated Teller Machines in Selected European Countries: Exploration of Trends and Development Indicators Impacts*. The authors discovered and compared variability and trends in the number of automated teller machines (ATMs) in the recent history in the European Union member states. They also studied the influence of selected factors on the number of ATMs.

The paper of I. Pyka and A. Nocoń, *'Repolonization' Process of Domestic Banks. Analysis of Conditions and Opportunities*, has a more journalistic character and concerns the 'hot' issue of the so-called repolonization of the banking sector in Poland.

Finally, we would like to thank all the contributing authors and the reviewers for their contribution to this book. We also wish an interesting reading to academics and practitioners.

Poznań, Poland
Southampton, UK
January 2018

Jacek Mizerka
Taufiq Choudhry

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Investor Reactions to Dividend Announcements of Companies Listed on the Warsaw Stock Exchange



Leszek Czapiewski and Jarosław Kubiak

Abstract The aim of the article is to assess the impact of changes in the quality of dividends paid and changes in the dividend rate on the return of excess rate of companies whose shares were listed on the Warsaw Stock Exchange (ESE) in 1996–2014. Following the theory of the dividend information content, according to which the dividend value is a signal to investors that higher rates of return should be expected in the case of companies which increase the dividend value or rate. The event analysis method was used as that most often used in this type of research, with the cumulative surplus return rate CAAR as a measure of investor response to change in the value of dividends paid. Three models were used as a benchmark: index, market and CAPM. The conducted studies do not give a clear picture of the results, however in the case of companies for which the dividend rate was growing a positive reaction can be observed in the event window. The published research results contain data for all cases in which a change in dividend values could be stated from year to year by companies listed on the WSE in 1996–2014.

Keywords Dividend policy · Dividend rate · Signalling theory
Event analysis

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L. Czapiewski (✉) · J. Kubiak
Corporate Finance Department, Poznan University of Economics and Business,
Poznań, Poland
e-mail: leszek.czapiewski@ue.poznan.pl

J. Kubiak
e-mail: jaroslaw.kubiak@ue.poznan.pl

1 Introduction

Dividend policy is one of the most important areas of financial decisions in an enterprise. In the case of public companies, the investor preference for the payment of dividends and capital gains should be taken into account when making this decision. A number of theses presenting the “pro-dividend” and “anti-dividend” positions can be found in the literature. This paper examines the approach related to the theory of dividend information content, according to which the dividend value is a signal to investors, indicating the managers’ predictions relating to the future financial situation of the company. Therefore, the dividend is treated as a signal determining the company’s quality.

The purpose of the article is to examine the impact of changes in the dividend policy of non-financial companies whose shares were listed on the WSE in 1996–2014 for the amount of excess return rates. This impact will be studied using the methodology of event study analysis. The message about the decision of the General Meeting of Shareholders (GMS) about the amount of dividends per share will be the event.

2 Dividend Payments and Market Reaction—A Brief Literature Review

Views on the reaction of stock prices to the change in a company’s dividend policy are related to the dispute over the impact of dividends on a company’s value. Advocates of the “pro-dividend” approach say that companies paying relatively high dividends will show a higher market value than companies with a similar profile of activity but typified by a low dividend rate. M. J. Gordon (1959) and J. Lintner (1956) argued that investors are more likely to value a guaranteed dollar which they receive from a dividend than one from expected capital profits. The fundamentals of the “pro-dividend” approach can also be sought in other theories, especially regarding the shaping of the capital structure, for example in the agency theory (Jensen 1976). Usually, the positive market reaction to the decisions to share profits with shareholders is explained in the context of signalling theory.

In accordance with the theory of dividend information content, their level is a signal for investors which indicates the managers’ predictions relating to the future financial situation of the company. The initiation of a dividend payment, or an increase in their value, is a positive sign determining the company’s quality (Bhattacharya 1979; Miller and Rock 1985). It should be noted that investors often react not to the dividend amount, but to its change. Recent studies (Pettit 1972; Aharony and Swary 1980; Brickley 1983; Healy and Palepu 1988; Michaely et al. 1995) mostly point to a positive correlation between a change in the dividend value and the share price. In addition, a share price increase is observed in the event of the initiation of dividend payments, and a decrease in the event of ceasing dividend payments.

The issue of stock price reactions to changes in dividend policy has also been studied in relation to companies listed on the WSE. The authors of these studies rightly point out that, given the relatively short history of the WSE, the emerging nature of this market, as well as the relatively great reluctance to share profits with investors, results may differ from those obtained for developed markets.

These issues were dealt with by, among others, T. Słoński and B. Zawadzki, who published the results of their analyses in two articles. In the article *The analysis of investors' reactions to the change of the value of the dividend paid by the companies listed on the WSE in Warsaw* (2012a), 263 observations of companies were analysed, which in 2005–2009 changed the value of the dividend paid. The authors did not find a correlation between the direction of changes in dividend policy and average return rates. The mere fact of the dividend payment, regardless of its value or the direction of changes, caused an average increase in stock above the expected value (although a statistically significant increase was noted only in one case). In addition, the reaction of stock prices to the change of dividend value was studied in groups of enterprises created according to the criterion of their capitalization (small, medium, large). It was noted that the link between dividend policy and above-average return rates is very weak.

In the second article, *The Impact of a Surprise Dividend Increase on a Stock's Performance. The Analysis of Companies Listed on The Warsaw Stock Exchange* (2012b) Słoński and Zawadzki primarily dealt with the issue of market reactions to the occurrence of unexpected dividends. The study covered the period of 2005–2010. The authors identified 21 cases of unexpected dividends, i.e. those, whose value approved by the GMS differed from the announcement of the Board. Their occurrence led to the acquisition of a statistically significant, positive surplus of return rates. In addition, the authors also examined the market reaction to changes in the dividend value paid determined at GMS at a level consistent with the announcement of the management boards of the companies. It was found that statistically significant positive surpluses only occurred in the case of relatively higher dividend increases (higher than the median of all increases).

Studies of investor reactions to dividend payments were conducted by Perepeczo (2013). The research sample included companies which in 1992–2011 paid a dividend at least once. The author used two models that form the estimation of extraordinary return rates. Research where the surplus of return rates was statistically significant (median adjusted model) was based on 113 cases and showed a positive relation between the dividend payment and stock value.

Frasyniuk-Pietrzyk and Walczak (2014) focused on investor reactions to dividend payments only in companies which regularly paid dividends. In the years 2005–2013, the authors identified 13 such companies. In the event of a rise in the dividend value, the surplus return rate was positive, in the event of a dividend decline—negative. However, it should be noted that the surplus return rate was statistically significant only on the GMS day ($t0$).

Summing up the above research results, it should be noted that they are not clear. It is noted that in cases of dividend increases, abnormal returns are positive, but not always statistically significant.

3 Research Method and Description of the Sample

The article analysed dividend payments in 1992–2014, but due to the lack of data concerning the dates of General Meetings of Shareholders (GMS), the study covered the period of 1996–2014. The data was taken from GPW Infostrefa, the Warsaw Stock Exchange operation base and the Stock Exchange Yearbooks. The studies were performed on the basis of the companies corrected with the stock market operations.

The study included dividend payments which occur year after year, which made it possible to measure changes in dividend policy. Two measures of dividend policy were applied, mainly the change in value of the dividend payment, and the change in dividend yield. The study was conducted separately for cases of increases and decreases in the value of dividends or dividend yields, respectively.

The most popular indicators that allow the determination of the size of the dividend payments include: the dividend per 1 share and the dividend rate.

One of the basic dividend indicators is the dividend per share indicator (*DPS*). It is calculated using the following formula:

$$DPS = \frac{\text{Dividends}}{\text{Number of Shares}} \quad (1)$$

The ratio of dividend per share makes it possible to determine the profitability of an investment, to a limited extent, into shares of the given company, which is why its cognitive value is small. However, it is an important element of successive indicators, thanks to which it is possible to compare the level of dividend payments for individual companies more accurately.

The dividend rate index (*DRI*) is an important indicator, used when comparing dividend strategies of companies, which is calculated using the formula:

$$DRI = \frac{DPS}{\text{Share Price}} \quad (2)$$

The dividend rate indicator makes it possible to compare the return rates from different stocks, individual industries and the entire market. The dividend rate is primarily of interest for all investors who want to receive regular cash flows from investments, not only those who expect benefits from the increase of the stock value.

Event analysis was the research method used (Fig. 1). The date of resolution adopted at the GMS was the event day t_0 . The estimation window consisted of 120 quotes preceding the event window $t - 126$; $t - 6$, while the event window included 11 days: $t - 5$; $t + 5$.

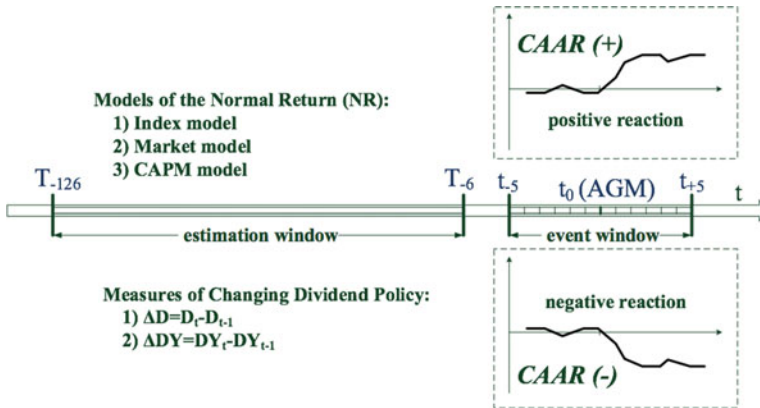


Fig. 1 The event analysis method—parameters used

Below are the formulae patterns used to estimate models determining the normal return rate (*NR*):

– Index model:

$$NR = R_{M,t} \tag{3}$$

where: $R_{M,t}$ —the return of a market index on day t ,

– Market model:

$$NR = \alpha_i + \beta_i R_{M,t} \tag{4}$$

where: α_i, β_i —the intercept and the slope resulting from the regression analysis, $R_{M,t}$ —the return on a market index on day t .

– CAPM model:

$$NR = R_{F,t} + \beta_i (R_M - R_F) \tag{5}$$

where: $R_{F,t}$ —the risk free rate on day t ,
 $(R_M - R_F)$ —the market risk premium.

4 The Results of the Empirical Research

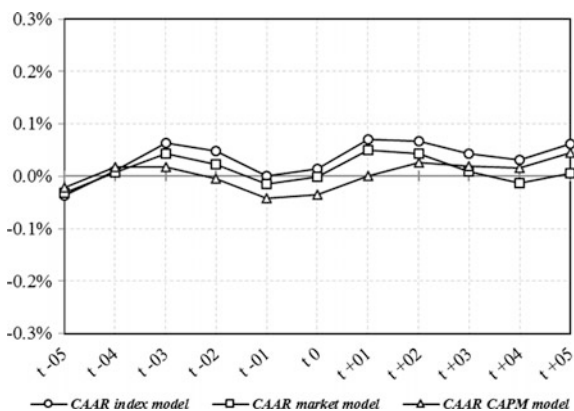
First, the market reaction to changes in the values of dividends paid were to be examined through the analysis of increases and decreases, respectively.

Table 1 and Fig. 2 show the results of excess return rates (from the given day and cumulative for the event window) of all increases in the value of the dividend paid in the studied period for the entire population of companies. 511 cases have been identified. The table also includes the significance of the results using the parametric t-student test.

Table 1 Reaction to dividend value increase—AAR and CAAR value (%)—511 cases

t	Index model		Market model		CAPM model	
	AAR	CAAR	AAR	CAAR	AAR	CAAR
t - 05	0.00	-0.37***	-0.08	-0.33***	-0.04	-0.21**
t - 04	0.21**	0.10	0.16	0.08	0.20*	0.18
t - 03	0.18*	0.64***	0.06	0.43***	0.07	0.17
t - 02	-0.01	0.47**	-0.13	0.23	-0.11	-0.05
t - 01	0.08	0.01	-0.03	-0.15	-0.05	-0.42*
T 0	0.26**	0.15	0.20**	-0.01	0.22**	-0.36
t + 01	0.49***	0.70***	0.44***	0.50*	0.50***	0.00
t + 02	0.00	0.67**	-0.06	0.43	0.02	0.26
t + 03	0.08	0.43	-0.04	0.08	0.05	0.19
t + 04	0.02	0.32	-0.02	-0.12	0.02	0.16
t + 05	0.25**	0.62*	0.20**	0.06	0.25**	0.44

Significance at level: ***0.01; **0.05; *0.1

Fig. 2 Reaction to the increase in the value of dividends paid

In the event of an increase in dividend value, a statistically significant but relatively weak positive market reaction can be observed for all benchmarking models on the event day (t0), on t + 1 and t + 5.

Table 2 and Fig. 3 show the results of excess return rates of all decreases in the value of the dividend paid.

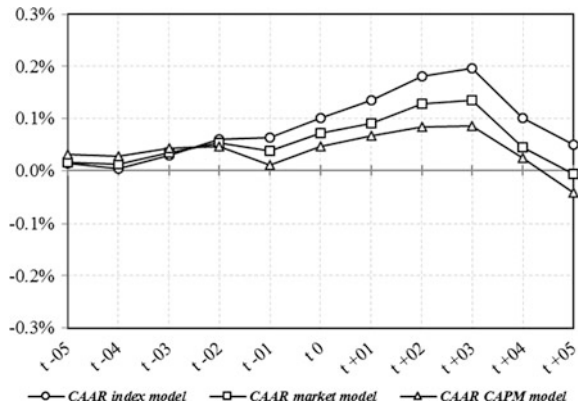
In the event of a decline of dividend value, the response expressed both by the AAR and CAAR rates is stronger than for a dividend increase and statistically significant for cumulative return rates on the event day and the three subsequent days. This may indicate that investors on the WSE in Warsaw facing the relatively rare cases of dividend payments respond positively to the mere fact of a dividend payment.

Table 2 Reaction to a decrease in dividend value—the AAR and CAAR values (%)—271 cases

t	Index model		Market model		CAPM model	
	AAR	CAAR	AAR	CAAR	AAR	CAAR
t - 05	-0.08	0.14	-0.06	0.16	-0.11	0.32**
t - 04	-0.23	0.05	-0.21	0.12	-0.21	0.28
t - 03	0.25*	0.30	0.23*	0.35	0.23	0.44*
t - 02	-0.02	0.60**	-0.10	0.53**	-0.12	0.47*
t - 01	0.14	0.64**	0.05	0.38	-0.04	0.10
T 0	0.35**	1.01***	0.36**	0.71**	0.38**	0.46
t + 01	0.14	1.36***	0.09	0.91**	0.09	0.67*
t + 02	0.29**	1.81***	0.25*	1.28***	0.14	0.85**
t + 03	0.10	1.95***	0.03	1.35***	0.00	0.86**
t + 04	-0.25*	1.01**	-0.32**	0.45	-0.31**	0.24
t + 05	0.21	0.50	0.17	-0.06	0.16	-0.42

Significance at level: ***0.01; **0.05; *0.1

Fig. 3 Reaction to a decline in the value of dividend paid



In the authors’ opinion, the dividend rate is the measure which best reflects the company’s policy in terms of profit-sharing, more than the change in dividend value. This rate takes into account the issue value (share price) which must be incurred by the investor to be entitled to receive dividends. The next two Tables 3 and 4 and the diagrams formed on their basis (Figs. 4 and 5) show the investor reaction to an increase and decrease of dividend rate, respectively.

In the case of the dividend increase, the market response expressed by CAAR, practically in the entire 11-day event window, is positive and statistically significant for all three models used for the measurement of so-called normal return rates. A relatively strong and statistically significant positive reaction to an increase in dividend rate was also observed in the case of all three models on the first day after the day of a General Meeting of Shareholders. These results can be read as

Table 3 Reaction to an increase of dividend rates—AAR and CAAR values (%)—449 cases

t	Index model		Market model		CAPM model	
	AAR	CAAR	AAR	CAAR	AAR	CAAR
t - 05	0.04	-0.17*	-0.06	-0.17*	-0.03	0.00
t - 04	0.05	0.46***	0.00	0.32**	0.01	0.45***
t - 03	0.16	1.02***	0.09	0.70***	0.12	0.81***
t - 02	-0.07	1.02***	-0.15	0.65***	-0.14	0.66***
t - 01	0.04	0.97***	-0.05	0.58**	-0.12	0.52**
t 0	0.08	1.29***	0.05	0.82***	0.05	0.70**
t + 01	0.45***	1.39***	0.41**	0.88***	0.48***	0.76**
t + 02	0.09	1.44***	0.04	0.82***	0.13	0.87***
t + 03	0.02	1.41***	-0.09	0.71**	0.01	1.07***
t + 04	-0.06	1.61***	-0.09	0.90**	-0.07	1.34***
t + 05	0.30***	1.94***	0.24**	1.19***	0.29***	1.80***

Significance at level: ***0.01; **0.05; *0.1

Table 4 Reaction to a decline of dividend rates—AAR and CAAR values (%)—392 cases

t	Index model		Market model		CAPM model	
	AAR	CAAR	AAR	CAAR	AAR	CAAR
t - 05	-0.06	0.07	-0.13	0.04	-0.07	0.30**
t - 04	-0.10	-0.51***	-0.19	-0.65***	-0.08	-0.06
t - 03	0.21*	-1.03***	0.07	-1.37***	0.19*	-0.67***
t - 02	-0.02	-1.14***	-0.11	-1.43***	-0.01	-0.61***
t - 01	0.25**	-0.87***	0.06	-1.40***	0.09	-0.53**
t 0	0.49***	-0.31	0.36***	-1.03***	0.46***	-0.04
t + 01	0.31***	-0.35	0.15	-1.30***	0.23*	-0.17
t + 02	0.13	-0.33	0.02	-1.47***	0.12	-0.06
t + 03	0.13	-0.31	-0.06	-1.56***	0.03	0.04
t + 04	-0.18	-0.38	-0.31***	-1.71***	-0.19*	0.11
t + 05	0.31**	-0.51	0.21*	-1.91***	0.31**	0.13

Significance at level: ***0.01; **0.05; *0.1

confirming the thesis of dividend information content, according to which the growing dividends can be perceived as a signal of a company's good quality.

The results presented in Table 4 and Fig. 5 do not provide clear conclusions. The market reaction expressed by CAAR, in almost the entire 11-day event window, is statistically significant only in the case of using the market model as benchmark. This reaction is negative. In the case of two other models, the reaction is small—especially in the period after the day of a General Meeting of Shareholders.