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EFFECT OF DIVIDEND AND REPURCHASE ANNOUNCEMENTS ON THE POLISH STOCK MARKET

The main aim of this paper is to explore the information content of dividend and buy back announcements. Using daily data from the Warsaw Stock Exchange, we investigate the reaction of stock prices of the announcing firms as well as the industry rivals to the announcement issue. The regression analysis is carried out to explain the differences in magnitude of valuation effects across rivals.

Keywords: *dividend announcements, repurchase announcements, event study, Polish stock market*

1. Introduction

Based on data from Compustat, U.S. expenditure on buy back programs (relative to total earnings) increased from 4.8 percent in 1980 to 41.8 percent in 2000. In this time period buy back expenditure grew at an average annual rate of 26.1 and dividends under 7 percent. Since 1999 U.S. companies have spent more money on buy back than on dividend payments. In Germany buy backs have been allowed from 1884 to 1931. In 1931 repurchases were forbidden. Since 1998 buy backs (maximum 10% of basic capital) have been allowed in Germany again. In the time period 1.5.1998–31.3.2002 German companies announced 156 repurchases and this number is tending to increase. The most frequent reasons were acquisitions (72) and underpricing (60). This means that stock repurchases become the favored way to use excess capital. The

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excess capital is not really the company's money but the shareholders. Therefore, if a company buys back stock, it is returning the capital where it belongs, and the owner ought to be able to go out and find higher returns.

Two forms of repurchases are open to all shareholders: open market repurchases that are executed through brokers at current market prices and regular commission rates, and self-tender offers where the firm makes a public offering to buy back a pre-specified number of shares at a given price (or range of prices in a Dutch auction) within a certain time. While in U.S. both forms of buy backs are applied, in Germany only open market repurchases take place.

Contributors do not agree about the dependence between dividend payments and repurchases. From the figures given above the authors draw the conclusion that managers substitute repurchases for dividends, i.e., buy backs and dividends are interchangeable payout methods. Miller and Rock [22] and Jensen [16] stated that either dividends or buy backs can be used to signal the undervaluation of a firm or to avoid agency costs. In this sense dividends and buy backs are interchangeable. But some authors such as Bernheim [3], Allen et al. [2] state that management uses dividends, as opposed to buy backs, to signal the firm's quality and therefore these payouts are not interchangeable. A dividend increase is interpreted by shareholders as a positive signal from management about the company's future position, while a dividend reduction is a negative one. Due to the *reluctance to change dividend hypothesis* companies prefer a stable dividend policy, e.g. dividends are increased if there are good prospects for future earnings and enlarged dividends can be probably paid for a long time. In the case of extraordinary excess earnings the favored payout method is buy back. In this way a company can avoid expectations that this extraordinary payment will be regularly repeated.

Recent empirical studies, e.g., by Grullon and Michaely [12] found, in favor of the substitution theory that in the U.S. the average total payout ratio of firms stayed relatively constant despite the decline in the average dividend payout ratio.

Employing standard event study methodology early contributions by Masulis [19], Lakonishok and Vermalen [17] and Dann et al. [7] provide strong evidence that the announcement of repurchases causes significant stock market response.

In the recent literature several possible motives for buy backs are given:

Buy backs may be used as an information-signalling vehicle, leading firms to experience significantly negative abnormal returns in the months prior to an open market repurchase; buy backs can be used to reduce management's ability to disgorge excess funds and thus decrease the repurchasing company's agency free cash flow costs; buy backs may be used as a tool for adjusting leverage to a more desirable level. Sometimes buy backs are performed by management in order to fend-off takeover attempts (Denis [8]). Stock buy backs are an efficient means to institute so called employee share and stock option programmes. By means of repurchases it is possible to transfer wealth between shareholders, managers, and bondholders of the firm and to reduce the number of investors. The smaller number of investors enables costs reduction in postage, general shareholders meetings and

so on. In addition, a company in the case of a takeover or merger can pay by means of its own equities. These stocks can be purchased by buy backs.

According to Lakonishok and Vermalen [17], markets probably under-react to both types of buy back announcements since there are positive excess returns in the years following self-tender offers and open market share repurchases (Ikenberry et al. [15]). According to Gerke et al. [11] the number of German buy backs depends on market state; in Baisse (bear market) it is significantly larger than in Hausse (bull-market). Moreover, the effect of buy backs on prices in the first phase is significantly stronger than in the second. Therefore, buy backs are recommended in Germany if underpricing of equities is observed.

One can find an extensive discussion of hypotheses concerning payouts in the form of dividends in Gurgul et al. [14]. The authors provide empirical evidence of market reaction (prices and trading volume) to dividend announcements.

This study is aimed at testing the informational content of dividend and buy back announcements. To accomplish our intention, we use event study methodology based on the set of dividend and repurchase announcements which were released on the WSE (Warsaw Stock Exchange) during the period 01/2000–06/2004. First of all, we hypothesize that announcing firms will experience positive valuation effects:

H_1 : When firm announces dividend payment or share buy back, its stock prices increase significantly.

The second hypothesis focuses on the relative importance of both types of announcements.

H_2 : Stock price reaction to buy back announcement is greater than to dividend announcement.

These two conjectures follow from some hypotheses known in the literature (Gerke et al. [11]):

- signalling hypothesis,
- free cash flow theory,
- increase of management efficiency,
- price pressure effect and imperfect substitutes hypothesis,
- reduction of capital costs and increase of profit per equity.

The first two hypotheses are mentioned above. The efficiency effect is connected with the so called owner effect. In the case where management holds equities and does not participate in repurchases as seller, then management's share of stocks increases. Therefore, after a buy back, management is more interested in high profit generation and cost reduction. As a result, returns tend to increase. The price pressure effect assumes that neither short-run nor long-run demand is elastic perfectly. This supposition results in a reduction of equity supply due to buy backs, because according to this theory stocks are not perfect substitutes. Therefore long-run equilibrium stock price increases. After buy back the number of shares held by inve-

stors (i.e. on the market) decreases, and as a consequence profit and returns per stock increase.

It is probable that dividend and repurchase announcements convey industry-wide information as well as firm-specific information. Industrial rivals are likely to experience positive valuation effects if the information about the future prospects of an announcer concerns all firms operating within the industry (contagion effects). On the other hand, the likelihood of negative valuation effects for industrial rivals is greater when the announcing firm's market position improves at the cost of industry counterparts (competitive effects). This leads to the third hypothesis:

H₃: When the dividend payment or share repurchase is announced, stock prices of industry rivals increase (contagion effects) or decrease (competitive effects) significantly.

The hypotheses 4–7 (below) investigate the determinants of the magnitude of rivals' stock price reaction to dividend news or share repurchase news. It seems to be reasonable that the stock price response of industry rivals will be more pronounced if the announcer's stock price reaction is greater. Therefore, we hypothesize that abnormal returns of industry rivals positively depend on the abnormal returns of an announcing firm:

H₄: The greater the abnormal returns of an announcing firm, the greater the magnitude of the response of industry rivals' stock prices.

Erwin and Miller [9] and Laux et al. [18] show that both contagion effects and competitive effects are more likely in the case of an industry with a lower level of competition. Hence, the next hypothesis tests whether abnormal returns of industry rivals negatively depend on the level of competition in the industry.

H₅: The lower the competition level in the industry, the greater the valuation effects for industry rivals (in Section 4.4 we specify how the level of competition is measured).

The degree of similarity in cash flows between an announcing firm and industry rivals is probably another factor that can affect the size of contagion effects for the industry counterparts of the announcer. Companies whose cash flows are strongly correlated with those of announcing firms are likely to have similar investment opportunities to announcers. This leads to the sixth hypothesis:

H₆: The higher the level of similarity in cash flows between an announcing firm and industry rivals, the stronger the rivals' stock price response.

The information incorporated in announcement is probably seen by market participants as more representative of the whole industry when the announcing firm is large. The seventh hypothesis is, therefore, as follows:

H₇: Industry rival valuation effect is stronger when the announcing firm is larger.

The paper is organized as follows. Section 2 demonstrates our database. In Section 3 we describe in detail the methods applied within the framework of event study. Section 4 contains empirical results including parametric and non-parametric test results as well as bootstrap inference. Final remarks are given in the last section.

2. Data description

The data set includes forty five dividend announcements and twenty repurchase announcements which were issued by companies listed on the primary market of the WSE over the period from 1st January 2000 to 30th June 2004 (see Appendix A). These announcements were filtered from approximately 60,000 news items available in the PARKIET database. Of course, there is no need for the sampled firm to be quoted on the primary market of the WSE in the whole analysed period. Instead, we demand at least 100 quotations of each sampled member.

Most of the companies whose shares are listed on the WSE do not have any clear dividend policy. The reluctance-to-change dividends hypothesis seems not to hold true in the case of the Polish stock market. Therefore, unlike in previous work (see, e.g., Gurgul et al. [14]), the dividend process is not assumed to be martingale under this study. Instead, we expect that each declaration of dividend payment can be interpreted by the market participants as a positive signal. Only a dividend payment abandonment can be considered as a clear negative signal.

Buy back is a rather recent occurrence on the WSE. The first buy back announcement on the stock market in Poland took place almost nine years after the reactivation of the WSE at the beginning of the 1990s. The announcing firm was the Polfa Kutno. The legal basis of stock repurchases stems from the commercial code (Dz.U. 01.102.1117) and the law on the public trading of securities (Dz.U.02.49.447). According to law, a company can purchase its own shares on the stock market only in the case where it intends to execute the redemption of shares. We do not differentiate between stock repurchase motives, because the number of buy back announcements is too small to do it. Our sample size is also too small to be divided into two subsamples: market in Hausse and market in Baisse.

For each dividend and repurchase announcement included in our sample, we formed a portfolio of industry rivals consisting of all companies that operated in the same industry like an announcing firm when the announcement was released. Unfortunately, we have reason to believe that some of the industry rivals portfolio return series are affected by confounding events. We ended up reducing the number of industry rival portfolios to thirty six (22 and 14 for the dividend and buy back announcements, respectively).

The price series for all firms included in our sample comes from the PARKIET database.

3. Methodology

Event study methodology has become the standard method of detecting stock price reaction to events such as dividend and buy back announcements, since Fama et al.

[10] introduced it more than thirty years ago. Figure 1 presents the main idea of this method.

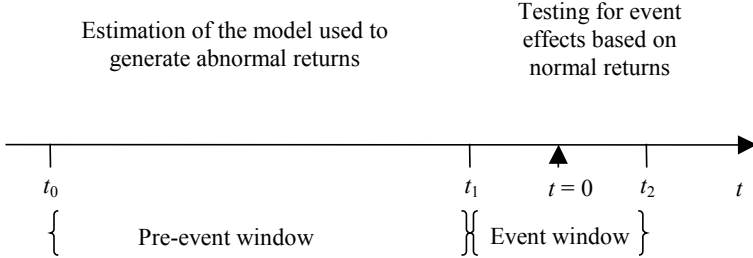


Fig. 1. Detecting stock price reaction to informative events

At the start of our study, we define the pre-event window and the event window. Testing the event effects for stock prices of announcing firms, we use the symmetrical event window which covers two days prior to the event day and two days after it ($t_1 = -2$ and $t_2 = +2$). The pre-event window, on the other hand, contains fifty trading days prior to the event window ($t_0 = -52$). Some contributions, e.g., Otchere and Ross [23], provide evidence that valuation effects for industry rivals appear with a delay when compared with effects for announcers. For this reason we decided to extend the event window to three trading days before and three trading days after the event day in the case of testing for industry-wide effects ($t_1 = -3$ and $t_2 = +3$). Moreover, in the cluster of dividend announcements, in order to avoid the perturbation caused by the presence of other events within the estimation period (the so called convolution problem), the length of the pre-event window is limited to forty trading days prior to the event window.

We define an abnormal return of the i -th firm for day t as:

$$AR_{i,t} = r_{i,t} - E(r_{i,t} | I_{t_1-1}) \quad t_1 \leq t \leq t_2, \quad (3.1)$$

where $r_{i,t}$ denotes the stock return of the i -th firm for day t and $E(r_{i,t} | I_{t_1-1})$ stands for the expected value of stock returns of the i -th firm for day t conditional on the set of information I available on day $t_1 - 1$.

The expected value of stock returns required in (3.1) is commonly generated by means of Market Model. In this model the stock returns of a given firm depend on market portfolio returns. This can be expressed as:

$$r_{i,t} = \alpha + \beta r_{M,t} + \varepsilon_{i,t}, \quad (3.2)$$

where $r_{M,t}$ denotes the returns of the market portfolio for day t and ε represents the error term.

At the beginning, our data set was checked for mistakes by excluding the cases where stock prices were fixed not by the law of demand and supply, but arbitrarily by market

specialists. We controlled our sample in respect of confounding events, like dividend payments, stock splits, earning announcements in event window and pre-event window as well. In the case of confounding event occurrence the firm was excluded from the sample. After controlling for mistakes and confounding events, we calculated continuous returns for each firm and rival portfolio included in our sample over the analysed period. Next, we computed abnormal returns (3.1) using the Market Model. To proxy market portfolio returns, returns of the market-capitalization weighted stock index (WIG) are employed. Estimates of model parameters in (3.2) were obtained by means of the OLS-method.

Finally, for all days within the event window, we check the null hypothesis about zero average abnormal returns against the alternative that average abnormal returns are statistically different from zero. Firstly, we use a test based on the t -statistic (see Brown and Warner [4]) given as:

$$t = \frac{\frac{1}{N} \sum_{i=1}^N AR_{i,t}}{\hat{\sigma}_{AR}}, \quad t_1 \leq t \leq t_2, \quad (3.3)$$

where N stands for the number of events and $\hat{\sigma}_{AR}$ is defined as:

$$\hat{\sigma}_{AR} = \frac{1}{N} \sqrt{\frac{1}{t_1 - t_0 - 1} \sum_{t=t_0}^{t_1-1} \left(\sum_{i=1}^N AR_{i,t} - \sum_{t=t_0}^{t_1-1} \sum_{i=1}^N AR_{i,t} \right)^2}. \quad (3.4)$$

Note that the standard deviation (3.4) is computed within the pre-event window to avoid an increase in variance of abnormal returns when the event occurs. Under the null hypothesis, the statistic (3.3) is t distributed with $N - 1$ degrees of freedom (Brown and Warner [4]).

In order to verify the validity of our t -statistic we also applied the non-parametric test (Corrado [6]) as well as bootstrap techniques (see sections 4.2 and 4.3). In the next part, we turn to the presentation of our main findings within this study.

4. Empirical results

4.1. Parametric test results

In Table 1, we report the cross-sectional average abnormal returns and the corresponding t -statistic for each day within the event period in two clusters: ‘Dividend’ and ‘Buy back’. Note that results are organized in two separate panels, for the announcing firms and for the industry rivals described in Section 2.

As expected, both dividend and repurchase announcements are associated with positive valuation effects for the announcing companies. The shareholders of firms announcing a dividend payment intention earned a statistically significant abnormal return of 0.79% on the day following the announcement. A similar effect is observed in the case of buy backs, where the earned abnormal return is even greater, and equals 1.3%. It should be noticed that the observed delay in stock price reaction (one day after the event day) can be, at least partially, attributed to technical factors. This issue is explained in detail in Gurgul and Majdosz [13].

Table 1

Parametric test results for average abnormal returns in two panels

Day t	Dividends		Buy backs	
	Average abnormal returns (%)	t -statistic	Average abnormal returns (%)	t -statistic
Panel A: Announcing companies				
-2	0.411	1.231 [0.225]	-0.255	-0.425 [0.676]
-1	-0.241	-0.723 [0.474]	0.398	0.662 [0.516]
0	-0.005	-0.015 [0.988]	-0.823	-1.371 [0.186]
+1	0.788*	2.361 [0.023]	1.295*	2.158 [0.044]
+2	0.588	1.759 [0.085]	-0.086	-0.143 [0.887]
Panel B: Industry rivals				
-3	-0.404	-1.236 [0.230]	0.333	0.960 [0.355]
-2	-0.261	-0.799 [0.433]	-0.147	-0.424 [0.678]
-1	0.028	0.086 [0.932]	0.155	0.447 [0.662]
0	-0.435	-1.328 [0.199]	0.189	0.546 [0.595]
+1	0.231	0.706 [0.488]	0.281	0.809 [0.433]
+2	0.686*	2.095 [0.048]	-0.979*	-2.822 [0.014]
+3	0.409	1.248 [0.226]	-0.097	-0.279 [0.785]

The p -values are shown in the brackets.

* Significant at 5%.

The difference in average abnormal returns which is 0.79% in the first cluster and 1.3% in the second one seems to support our hypothesis that the market response to buy back announcements is greater than to dividend announcements, though it is statistically insignificant. This observation is also confirmed for the German market by Gerke et al. [11]. The effect of buy backs in Germany expressed as abnormal returns in an event window (on average 6% on event day) is much higher than for the U.S. (Stephens and Weisbach [24] report for open market repurchases 2.69%) or for the Polish market. In addition, U.S. contributors believe that the price increase on buy back announcement day is due to a reduction in information asymmetry between management and shareholders (confirmation of signalling hypothesis).

Regarding the hypothesized industry-wide effects, one can find that average abnormal returns statistically differ from zero on the second day after the event day in both clusters (see Panel B). Note, however, that the direction of valuation effects for rivals is different across clusters. If the company announced a dividend payment intention, the shareholders of the rivals earned an average abnormal return of 0.69%. In contrast, if a buy back announcement was released, the shareholders of the rivals experienced a negative mean abnormal return of -0.98% . This means that dividend announcements are associated with contagion effects (information about future prospects concerns all companies operating in the same industry as the announcing firm), while repurchase announcements are accompanied by competitive effects (an announcing firm gains advantage at the expense of industry rivals).

It is worth noting that industry-wide effects occur with a delay when compared to the firm-specific effects. This finding is consistent with those of Otchere and Ross [23], who examined the information content and information transfer effects of share buy back announcements using Australian data.

4.2. Non-parametric test results

The validity of our t -statistics is supported by application of a non-parametric rank test developed by Corrado. This test is based on the transformation of each abnormal return series (3.1) into their respective rank. The test statistic is defined as:

$$T(u) = \frac{\frac{1}{N} \sum_{i=1}^N (K_{i,u} - (t_2 - t_0) / 2 - 1)}{\hat{\sigma}(K)}, \quad t_1 \leq u \leq t_2, \quad (4.1)$$

where $K_{i,t} = \text{rank}(AR_{i,t})$ and $\hat{\sigma}(K)$ is given by

$$\hat{\sigma}(K) = \sqrt{\frac{1}{t_2 - t_0} \sum_{t=t_0}^{t_2} \left(\frac{1}{N} \sum_{i=1}^N (K_{i,t} - (t_2 - t_0) / 2 - 1) \right)^2}. \quad (4.2)$$

Under the null hypothesis about zero event effects, the test statistic is standard normal.

The Corrado test results lead to the same conclusions as that put forward in Section 4.1 (see Table 2). Statistically significant event effects can be identified on day +1 for announcing firms and on day +2 for industry rivals, which means that our data do not exhibit outlier effects.

Table 2

Non-parametric test results for average abnormal returns in two panels

Day t	Dividends		Buy backs	
	Average abnormal returns (%)	$T(u)$	Average abnormal returns (%)	$T(u)$
Panel A: Announcing companies				
-2	0.411	0.699 [0.484]	-0.255	-0.691 [0.489]
-1	-0.241	-0.269 [0.788]	0.398	1.245 [0.213]
0	-0.005	-0.565 [0.572]	-0.823	-0.871 [0.384]
+1	0.788*	2.178 [0.029]	1.295*	2.268 [0.023]
+2	0.588	1.605 [0.109]	-0.086	-0.830 [0.407]
Panel B: Industry rivals				
-3	-0.404	-1.845 [0.065]	0.333	-0.212 [0.832]
-2	-0.261	-1.065 [0.287]	-0.147	0.348 [0.728]
-1	0.028	-0.060 [0.952]	0.155	0.423 [0.672]
0	-0.435	-1.365 [0.172]	0.189	0.333 [0.740]
+1	0.231	1.710 [0.087]	0.281	1.602 [0.109]
+2	0.686*	2.055 [0.040]	-0.979**	-2.600 [0.009]
+3	0.409	1.710 [0.087]	-0.097	0.242 [0.809]

The p -values are shown in the brackets.

** Significant at 1%.

* Significant at 5%.

4.3. Bootstrap

The bootstrap used here takes into account the two-dimensional nature of our data. Abnormal returns are resampled (with replacement), first for the pre-event window across the time dimension, and then cross-sectional for the entire data sample. In order to leave the chronological ordering of abnormal returns intact, we do not resample across the time dimension in the event window. The resampled abnormal returns are then used to generate artificial return data and compute the relevant test statistics and estimates.

The bootstrap distribution of abnormal returns is approximated with 100,000 Monte Carlo iterations. Table 3 contains a 95% confidence set as well as a mean value for abnormal returns. One can find that in Panel A for day +1 the lower quartile is greater than zero. In Panel B, on the other hand, the lower quartile is positive for day +2 in the first cluster (Dividends) and the upper quartile is negative for the same day in the second cluster (Buy backs). This finding fully corroborates the statistical inference on the basis of test statistic (3.3).

Table 3

Bootstrap results for average abnormal returns in two panels*

Day <i>t</i>	Dividends			Buy backs		
	$Q_{0.025}$	Mean	$Q_{0.975}$	$Q_{0.025}$	Mean	$Q_{0.975}$
Panel A: Announcing companies						
-2	-0.119	0.411	0.998	-1.342	-0.253	0.876
-1	-0.692	-0.241	0.215	-0.824	0.399	1.623
0	-0.729	-0.006	0.746	-2.745	-0.821	1.040
+1	0.036	0.789	1.559	0.091	1.292	2.591
+2	-0.050	0.586	1.272	-0.978	-0.086	0.848
Panel B: Industry rivals						
-3	-0.879	-0.404	0.126	-0.371	0.335	1.369
-2	-0.596	-0.260	0.080	-1.073	-0.149	0.650
-1	-0.543	0.029	0.619	-0.378	0.156	0.694
0	-1.062	-0.435	0.165	-0.239	0.189	0.648
+1	-0.270	0.232	0.704	-0.372	0.282	0.829
+2	0.063	0.685	1.387	-1.665	-0.978	-0.356
+3	0.105	0.408	0.748	-1.186	-0.097	0.791

*All values are expressed in %.

4.4. Determinants of valuation effects on industry rivals

The hypotheses 4–7 formulated under this study are jointly tested by means of the modified regression proposed by Otchere and Ross [23] given as:

$$AR_{i,t+2} = \text{CONSTANT} + \text{ARAF}_{i,t+1} + \text{COMPETITION}_i + \text{CORRELATION}_i + \text{SIZE}_i + \varepsilon_i, \quad (4.3)$$

where:

$AR_{i,t+2}$ – abnormal return of industry rival portfolio i for day +2,

$\text{ARAF}_{i,t+1}$ – abnormal return of announcing firm i for day +1,

COMPETITION_i – the number of firms operating in the same industry as the announcing firm i when the announcement is released,

CORRELATION_i – degree of similarity in cash flows between the announcing firm i and industry rivals (approximated by correlation between stock returns of announcer and returns of the industry rivals portfolio over the pre-event period),

SIZE_i – size of the announcing firm i (proxied by the logarithm of market capitalization).

The regression analysis is carried out in two subsamples separately. In the first step, we estimate the model (4.3) using the full sample (all observations regardless of effect direction). Next, we re-estimate the model (4.3) using only observations which

are associated with contagion effects. On the other hand, we did not re-estimate (4.3) in the subsample for competitive (negative) effects due to the small number of observations. The estimation results are reported in Table 4.

Table 4

OLS-estimation results for regression (4.3)

Variable name	Full sample			Contagion (positive) effect		
	Estimates (%)	Std. Error	<i>t</i> -statistic	Estimates (%)	Std. Error	<i>t</i> -statistic
CONSTANT	6.668 ***	2.376	2.807	4.119	2.588	1.591
ARAF	-15.854 *	8.070	-1.965	-12.168	8.166	-1.490
COMPETITION	-0.100 *	0.054	-1.847	-0.119 **	0.053	-2.226
CORRELATION	2.090 **	0.979	2.134	2.220 **	1.003	2.213
SIZE	-0.325 **	0.154	-2.107	-0.123	0.168	-0.727
<i>N</i>			36			27
Adjusted R ²			0.251			0.269
<i>F</i> -statistic			3.932**			3.387**

* Significant at 10%.

** Significant at 5%.

*** Significant at 1%.

In the case of regression estimated across the full sample, all model parameters are statistically significant at least at a 10% level. The degree of competition in the industry, the degree of similarity in cash flows, and the size of an announcing firm affect the level of valuation effects for industry rivals, which is in line with our expectations. The lower the level of competition in the industry, and the higher the degree of similarity in cash flows between the announcing firm and industry rivals and the smaller the announcing firm, the stronger the valuation effects for industry rivals. Surprisingly, the sign of the ARAF parameter is negative. This contradicts the hypothesis that the magnitude of effects for rivals positively depends on the abnormal return of an announcing firm, suggesting rather a reverse relationship. One possible explanation for this refers to the fact that investors who bought shares of the announcing firm in response to the information issue might, at least partially, be derived from shareholders of its industry rivals. The greater stock price reaction of the announcing firm, the more shareholders of industry rivals are prone to adjust their portfolio by selling stocks of rivals and buying shares of the announcer, and the weaker the valuation effect of industry rivals.

Limiting our interest to the cases where the valuation effects for industry rivals are positive, we find evidence in favour of the competition and correlation effect. Other model parameters are insignificant.

In order to prove that estimates presented in Table 4 correctly reflect both the direction and the magnitude of the impact of selected variables on the level of valu-

ation effects for industry rivals we checked assumptions underlying the applied model. The residuals in (4.3) should be homoscedastic and not serially correlated. The first assumption was checked by means of the White test. We found that in both cases (full sample and contagion effect) test statistic is insignificant at a 5% level (it amounts to 14.13 and 22.49, respectively). Using the Ljung–Box Q test, we verified whether serial correlation does not exhibit in error term of (4.3). The test results were also insignificant in this case (for the chosen number of lags $k = 15$ the test statistic equals 21.85 and 11.15, respectively). We also employed the Jarque–Bera test for normality as well as the Engle test for ARCH effect. We concluded that neither non-normality nor ARCH effect was present in OLS-residuals. Finally, multicollinearity effect was checked by using the Farrar–Glauber test. The test statistic equals 8.21 and 9.13, respectively and is insignificant at a 5% level. This means that there is no dependence between the explanatory variables in the regression (4.3).

5. Conclusions

In this paper we test several hypotheses about market response to dividend and repurchase announcements. The sample includes 65 dividend and repurchase announcements which were released on the WSE between 01/2000–06/2004. Our results can be summarized as follows.

1. Dividend and buy back announcements convey firm-specific information. Announcing firms experience a statistically significant positive abnormal return on day +1.

2. Dividend and buy back announcements also convey industry-wide information. Companies operating in the same industry as the announcing firm (industry rivals) experience a statistically significant abnormal return on day +2.

3. Dividend announcements are associated with positive effects for industry rivals while repurchase announcements are accompanied by competition (negative) effects for industry rivals.

4. The positive difference between abnormal returns for repurchase and dividend announcements suggests that buy back announcement effects are stronger compared to dividend announcements. However, from a statistical point of view, this difference remains insignificant.

5. Valuation effects for industry rivals occur with a delay.

We also find that across the full sample valuation effects for industry rivals, on the one hand, depend negatively on the degree of competition in the industry and the size of an announcing firm. On the other hand, it depends positively on the degree of similarity in cash flows between the announcing firm and industry rivals. After limiting our interest to the positive valuation effect only, the size effect becomes negligible.

Our study is limited by the low number of events included in the sample, especially, in the case of industry-wide effects. Therefore this part of presented results has to be confirmed by future research.

References

- [1] AHARONY J., SWARY I., *Quarterly dividend and earnings announcements and stockholders' returns: An empirical analysis*, Journal of Finance, 1980, 35, 1–12.
- [2] ALLEN F., BERNARDO A.E., WELCH I., *A Theory of dividends based on tax clienteles*, Journal of Finance, 2000, 55, 2499–2536.
- [3] BERNHEIM B.D., *Tax policy and the dividend puzzle*, Journal of Economics, 1991, 22, 455–476.
- [4] BROWN S.J., WARNER J.B., *Using daily stock returns – The case of event studies*, Journal of Financial Economics, 1985, 14, 3–31.
- [5] CABLE J., HOLLAND K., *Modelling normal returns in event studies: a model-selection approach and pilot study*, The European Journal of Finance, 1999, 5, 331–341.
- [6] CORRADO C.J., *A nonparametric test for abnormal security–price performance in event studies*, Journal of Financial Economics, 1989, 23, 385–395.
- [7] DANN L., MASULIS R., MAYERS D., *Repurchase tender offers and earnings*, Journal of Accounting and Economics, 1991, 14, 217–251.
- [8] DENIS D., *Defensive changes in corporate payout policy: share repurchases and special dividends*, Journal of Finance, 1990, 45, 1433–1456.
- [9] ERWIN R., MILLER J., *The intra-industry effects of open market share repurchase: contagion or competitive?*, Journal of Finance Research, 1983, 21, 389–406.
- [10] FAMA E.F., FISHER L., JENSEN M., ROLL R., *The adjustment of stock prices to new information*, International Economic Review, 1969, 10, 1–21.
- [11] GERKE W., FLEISCHER J., LANGER M., *Kurseffekte durch Aktienrückkäufe – eine empirische Untersuchung für den deutschen Kapitalmarkt* [in:] Börsig, Clemens/Coenenberg, Adolf G. (Hrsg.), *Bewertung von Unternehmen: Strategie – Markt – Risiko*, Kongress-Dokumentation 56. Deutscher Betriebswirtschafter-Tag 2002, Stuttgart, 2003, 275–304.
- [12] GRULLON G., MICHAELY R., *Dividends, share repurchases, and the substitution hypothesis*, Journal of Finance, 2002, 57, 1649–1684.
- [13] GURGUL H., MAJDOSZ P., *The information content of earning forecasts announcements: the case of the Polish stock exchange*, Proceedings of the Thirtieth International Conference Macromodels'2003, W. Welfe, and A. Welfe (eds.), Wydawnictwo Uniwersytetu Łódzkiego, 2004, 87–102.
- [14] GURGUL H., MESTEL R., SCHLEICHER C., *Stock market reactions to dividend announcements: empirical evidence from the Austrian stock market*, Financial Markets and Portfolio Management, 2003, 17, 332–350.
- [15] IKENBERRY D., LAKONISHOK J., VERMALEN T., *Market underreaction to open market share repurchases*, Journal of Financial Economics, 1995, 39, 181–208.
- [16] JENSEN M.C., *Agency costs of free cash flow, corporate finance, and takeovers*, American Economic Review, 1986, 76, 323–329.
- [17] LAKONISHOK J., VERMALEN T., *Anomalous price behaviour around repurchase tender offers*, Journal of Finance, 1990, 45, 455–477.
- [18] LAUX P., STARKS L., YOON S.Y., *The relative importance of competition and contagion intra-industry information transfer: an investigation of dividend announcements*, Financial Management, 1998, 27, 5–12.

- [19] MASULIS R., *Repurchases by tender offer – an analysis of stock price changes*, Journal of Finance, 1980, 35, 305–321.
- [20] MCWILLIAMS A., SIEGEL D., *Event studies in management research: theoretical and empirical issues*, Academy of Management Journal, 1997, 40, 626–657.
- [21] MESTEL R., GURGUL H., *ARIMA modeling of event induced stock price reactions in Austria*, Central European Journal of Operations Research, Springer-Verlag, 2003, 11, 317–333.
- [22] MILLER M.H., ROCK H., *Dividend policy under asymmetric information*, Journal of Finance, 1985, 40, 1031–1051.
- [23] OTCHERE I., ROSS M., *Do share buy back announcements convey firm-specific or industry-wide information? A test of the undervaluation hypothesis*, International Review of Financial Analysis, 2002, 11, 511–531.
- [24] STEPHEN C.P., WEISBACH M.S., *Actual shares requisitions in open market repurchase programs*, Journal of Finance, 1998, 53, 313–333.

Appendix A

Table A

Companies included in the sample

Company /ISIN/	Dividend announcements	Buy back announcements	Total
BPH /PLBPH0000019/	2	–	2
BSK /PLBSK0000017/	7	–	7
DBC /PLDEBCA00016/	3	–	3
ELB /PLELTBD00017/	4	1	5
ELE /PLELTIM00013/	1	–	1
ELW /PLELMWS00016/	1	–	1
EPD /PLENMPD00018/	1	–	1
IPX /PLIMPXM00019/	1	–	1
MPW /PLMPEC000027/	1	–	1
MSX /PLMSTEX00017/	2	2	4
MSZ /PLMSTZB00018/	1	–	1
NDA /PLBKMNL00018/	2	–	2
ORB /PLORBIS00014/	1	–	1
PEO /PLPEKAO00016/	1	–	1
RLP /PLRELPL00014/	1	1	2
RPC /PLROPCE00017/	6	–	6
SFT /PLSOFTB00016/	3	–	3
STO /PLSTLLOL00013/	2	–	2
WAR /PLWARTA00014/	1	–	1
BZW /PLBZ00000044/	1	–	1
ZWC /PLZYWIC00016/	3	–	3
IND /PLINDKP00013/	–	1	1
KTY /PLKETY000011/	–	1	1
MSS /PLMSTSD00019/	–	2	2
NVT /PLNVITA00018/	–	1	1
PFK /PLPLFKT00019/	–	2	2
PGF /PLMEDCS00015/	–	1	1
PRM /PLPRCHM00014/	–	4	4
PSP /PLPRSPR00046/	–	4	4
Total	45	20	65

Wpływ zapowiedzi wypłaty dywidendy oraz zapowiedzi umorzenia akcji na rynek akcji w Polsce

Celem artykułu jest zbadanie zawartości informacyjnej ogłoszeń o wypłacie dywidendy oraz ogłoszeń o planowanym przez spółkę umorzeniu własnych akcji. Temat ten był przedmiotem wcześniejszych opracowań, a ich autorzy wnieśli istotny wkład w wyjaśnienie poruszanych zagadnień. Dotychczasowe prace dotyczyły jednak rynków akcji krajów wysoko rozwiniętych, głównie amerykańskiego rynku akcji. W artykule przedstawiono wyniki pierwszego tego typu badania, dotyczącego małego rynku wschodzącego, jakim jest rynek polski. Nasze wyniki mogą zatem służyć jako podstawa do porównań z rozwiniętymi rynkami krajów Europy Zachodniej i Ameryki Północnej. Aby zagwarantować wiarygodność formułowanych wniosków, wyniki testów parametrycznych uzupełniono wynikami uzyskanymi w oparciu o testy nieparametryczne oraz techniki bootstrapowe. Dokonano analizy reakcji rynku na ogłoszenie o wypłacie dywidendy oraz ogłoszenie o umorzeniu akcji w oparciu o jednolitą metodykę. Nie spotykaliśmy tego w żadnym z wcześniejszych opracowań, co było powodem trudności w odgadnięciu relatywnej ważności zdarzeń obu typów. W ramach badania stwierdzono, że akcjonariusze spółek, które ogłosiły zamiar wypłaty dywidendy (zamiar umorzenia akcji) osiągnęli ponadprzeciętny zysk, średnio w wysokości 0,79% (1,30%), następnego dnia po ogłoszeniu. Akcjonariusze firm konkurencyjnych względem firmy ogłaszającej osiągnęli, drugiego dnia od ukazania się ogłoszenia, ponadprzeciętny zysk, średnio 0,69% (w przypadku zapowiedzi wypłaty dywidendy) lub doświadczyli ponadprzeciętnej straty 0,98% (w przypadku umorzenia). Podsumowując wyniki badania, należy stwierdzić, że programy wykupu własnych akcji wydają się być ważnym mechanizmem przepływu środków pieniężnych do akcjonariuszy. Zarówno ogłoszeniu o wypłacie dywidendy, jak i ogłoszeniu o umorzeniu akcji towarzyszy reakcja cen akcji sektorowych konkurentów. O ile jednak w przypadku dywidendy reakcja ta ma charakter dodatni, o tyle w przypadku zakupu akcji w celu ich umorzenia odnotowuje się reakcję negatywną.

Słowa kluczowe: ogłoszenia o dywidendzie, ogłoszenia o umorzeniu własnych akcji, analiza zdarzeń, rynek akcji w Polsce