Preliminary communication
UDC: 336.781.2:336.761.5
https://doi.org/10.18045/zbefri.2022.2.441

Factors influencing dividend payout policy: Evidence from listed non-financial firms of the Zagreb Stock Exchange*

Darija Prša[1], *Aljoša Šestanović*[2], *Ivo Ramljak*[3]

Abstract

This paper aims to assess the impact of financial factors on the dividend payout ratio, and the purpose is to research factors affecting dividend payout in less developed markets and compare them with the results of previous studies. We use the global research platform Screener.co, and the financial statements available on Zagreb Stock Exchange to collect the data. Our sample consists of companies listed on the Zagreb Stock Exchange that paid dividends at least once in the last three years. In the model applied, we covered five years (dividends paid from 2017 to 2021, based on financial fundamentals preceding dividends from 2016 to 2020) using hierarchical linear regression analysis that consists of four explanatory variables: return on equity, return on assets, financial leverage, and free cash flow to revenue. First, the research found high fluctuations in the dividend payout ratio and return on equity variability. Secondly, we found no statistically significant causality between the dividend payout ratio and explanatory variables. The results suggest that other long-term non-financial factors, such as the investors' expectations, history of paying dividends, and large cash reserves backed by high retained earnings, may have a decisive impact on the dividend payout ratio rather than recent financial factors.

Key words: *dividend policy, dividend payout, financial analysis, Zagreb Stock Exchange*

JEL classification: *G32, G35, O16*

* Received: 16-10-2022; accepted: 29-12-2022

[1] *PhD, Narodne novine d.d., Savski gaj XIII. 6, 10 020 Zagreb, Croatia. Scientific affiliation: finance, accounting. Phone: +385 98 229 015. E-mail: prsa.darija@gmail.com.*

[2] *PhD, EFFECTUS-Entrepreneurial Studies, Square J. F. Kennedyja 6, 10 000 Zagreb, Croatia. Scientific affiliation: finance, microeconomics, financial analysis. Phone: +385 98 9342 419. E-mail: asestanovic@gmail.com.*

[3] *Univ. spec. oec., Narodne novine d.d., Savski gaj XIII. 6, 10 020 Zagreb, Croatia. Scientific affiliation: finance, accounting. Phone: +385 95 5692 875. E-mail: iramljak952@gmail.com.*

1. Introduction

One of the key financial objectives is to maximize the firm's value. The firm value depends on investment, financing, and dividend choices. The firm's value is maximized when the company's assets are financed at the lowest expense. This rule applies to all components of the capital structure, including the owner's capital. The cost of the equity is not explicit, but it is reflected in the required return that compensates the investor for the risk taken and is materialized both by dividends and capital gain.

The academic community so far has no unique position on factors that determine the dividend policy. The reason for this is the multitude of variables that may impact dividend policy. It is subject to numerous internal and external factors. Hence, the explanation of the dividend preference phenomenon may reach even the sphere of behavioral science. The central question is whether, by paying dividends, the shareholders are rewarded for the invested capital or perhaps deprived of higher earnings in the future (Black, 1976).

Furthermore, some corporate actions, such as stock repurchases, may further veil the factors that influence dividend policy. Until 1980, repurchases were relatively rare (Brealey et al., 2014). The dividend payouts still prevail, although in some parts of the world, as an alternative to the dividend payouts, repurchases are just as frequent. For example, companies make repurchases due to the accumulation of excess cash or when they want to change the capital structure in favor of indebtedness (Brealey et al., 2014).

We propose the following research hypothesis:

> H1: Dividend payout ratio has statistically significant dependence on key financial performance variables: 1) return on equity (ROE), 2) return on assets (ROA), 3) financial leverage measured as the ratio of assets to equity (F.L.), and 4) surplus of free cash flow (FCF) over revenues.

The ratio behind the hypothesis is the idea that companies with strong recent financial fundamentals are in a better position to pay dividends. This argument has more foundation on less developed markets and is consistent with the bird-in-the-hand theory, which concludes that risk-averse investors prefer dividend payouts to retained earnings that will be reinvested. Less developed markets may be less efficient, and new positive information may not be effectively embedded in stock prices. Thus, investors would prefer dividends over future capital gains. On the other side, companies with high profitability are incentivized to reinvest earnings in expectation of future growth.

The paper is structured as follows. The following section provides an extensive review of the literature and empirical studies dealing with determining dividends

by internal and external factors. In the third section, the research model is specified. The fourth section contains empirical data and analysis, while in the fifth section, we present and discuss the results of the empirical analysis supported by explanations. Finally, the last section brings conclusions.

2. Literature review

The literature review covers a theoretical framework, an empirical studies review, a review of some buyback practices, and some external impacts on dividend policy, such as different institutional frameworks (emerging markets) and different ownership structures (state-owned enterprises).

A rich theoretical framework tries to explain the determinism of dividend policy. Various authors tried to explain why companies pay dividends, whether this may affect the company's value, and what determines dividend policy. The pioneering study of Miller and Modigliani (1961) marked the beginning of a greater interest in the topic of dividends that continues to this day. They developed a model in which they claimed that the company's value in perfect market conditions, without the influence of taxes, transaction costs, or asymmetric information, does not depend on the dividend policy. On the contrary, Gordon (1963) pointed out the shortcomings of the previous theory. They developed the so-called The-bird-in-the-hand theory, which considers the time value of money and shows that dividend payouts increase the company value because risk-averse investors prefer dividend payouts to retained earnings that will be reinvested. The theory of tax differentiation is opposed to the theory of the irrelevance of dividends. This theory was developed by Litzenberger and Ramaswamy (1982). It explains the influence of taxes on investors' preferences. According to the theory, taxes which are generally higher on dividends than on capital gains, favor the orientation of investors towards retained earnings and companies towards repurchases. Signaling Theory (Bhattacharya 1979, John and Williams, 1985; Miller and Rock, 1985) suggests that information about the size of dividends can affect the share price, especially in conditions of greater information asymmetry. The reaction to dividend changes also depends on the ownership structure. It will not cause the same reaction whether it consists of insiders or institutional shareholders (Bajaj et al., 2002). In this respect, insider ownership could serve as a performance bond against false signaling (Born, 1988). Clientele effect theory recognizes that shareholders can be categorized into classes regarding payout preference in opposition to capital gains. For example, retail investors who often use dividends for necessities may have different preferences over dividends compared to institutional investors (Brav et al., 2005). According to Jensen and Meckling (2019), who are the originators of the Free cash flow theory as a variation of the Agency theory, managers will invest excess free cash flow resources in negative net present value investments, hence paying dividends is

one of the ways to reduce overinvestment and agency costs. This theory has been endorsed by DeAngelo et al. (2004). They argue that 25 companies with stable dividends in the USA would have otherwise kept USD 1.6 trillion of retained cash and probably used it for non-efficient investments.

Overall, empirical studies consider the impact of various factors on dividend policy, such as profitability, indebtedness, liquidity, company size, investment opportunities, company growth, clientele effects, ownership concentration, asymmetric information, etc. Lintner is one of the first authors who researched the dividend policy. Lintner's model of dividend policy on how a company creates a dividend policy with fluctuating earnings or the importance of their stability to company managers marked the beginning of greater interest in the topic of dividend payouts (Lintner, 1956). Baker and Powell (2000) showed that the most significant determinants of a firm's dividend policy are the level of current and expected earnings and the pattern or continuity of past dividends. Fama and French (2001) investigated the influence of profitability, investment opportunities, and company size on the probability of dividend payouts. They concluded that larger and more profitable firms have a higher probability of paying dividends, while the opposite is true for firms with larger investments. Their research also confirms the theory of tax differentiation. Consistent with the research by Fama and French (2001) that referred to U.S. companies, the research by Eije and Megginson (2006) showed a decline in the number of companies that pay dividends in the E.U., while total real dividends paid and dividends payments as a fraction of total profit increase significantly. Their conclusions are consistent with the study by Raaballe and Hedensted (2006), who determined that firms that pay dividends are characterized by higher ROE and low volatility, high retained earnings, and large firm size, while the market-to-book value and ownership structure do not play a role in whether the firm pays a dividend or not. Likewise, Denis and Osobov (2007) conclude in their study that larger and more profitable firms and those with higher retained earnings are more likely to pay dividends.

DeAngelo et al. (2006) showed that with the growth of retained earnings to total equity, the probability of paying dividends also increases, which is consistent with a life cycle theory of dividends. Therefore, companies in the mature stage have higher retained earnings and higher profitability but lack investment opportunities. In the research conducted by Gill et al. (2010), they found that for companies in the manufacturing industry in the USA, the ratio of dividend payments is a function of profit margin, taxes, and the ratio of market to book value of the company. A study conducted in Sweden by Hellström and Inagambaev (2012) showed that variables such as free cash flow, growth, financial leverage, profit, risk, and size affect the dividends, but not equally for large and medium caps. Dividend payout ratios of large caps are more sensitive to growth rate changes than medium caps; medium caps are more severely affected by leverage than large caps, whereas medium caps

are more sensitive to size changes than large caps. In consistence with previous findings Franc-Dbrowska and Mądra-Sawicka (2020) claimed that free cash flow, company growth, liquidity, profitability ratio and a size increase the likelihood of dividend payouts.

Research has shown that share buybacks have become significantly more frequent since the early 1980s, mostly in mature and more profitable companies. However, buybacks did not replace the payment of dividends. Unlike regular dividend payouts, which are more persistent, repurchases are more arbitrary and not binding in the long term (Brealey et al., 2014). It is also confirmed by the study of Fama and French (2001). They discovered a significant decrease in the number of companies that pay dividends, but not at the expense of share buybacks because share buybacks occur in companies that pay out dividends.

A survey conducted by Brav et al. (2005) showed that in the case of increased financing needs of profitable projects, companies would be more reluctant to reduce dividends than to reduce buybacks which means buybacks are more sensitive to M&A strategies. Furthermore, they found that the buyback is more flexible than the dividend payout because the dividends are paid out of permanent cash flow, while the buybacks can eliminate short-term excess liquidity. It is also consistent with research by Servaes and Tufano (2006), who show that the most common reasons for buybacks are the return of excess capital to shareholders, an increase in leverage in asset financing, undervaluation of shares, tax treatment, etc. Furthermore, the signaling power is larger in the case of dividend payments than in buybacks, but at the expense of less flexibility. They also found differences in the forms of dividends distribution, so they state that dividend payouts prevail globally, and extraordinary dividends are more frequent than the buyback of shares in Asia, Australia and New Zealand, Germany, and Latin America. In contrast, the buyback of shares in North America is almost as significant as the dividend payouts.

Moreover, in their study Raaballe and Hedensted (2008) claim that, from a tax perspective, shareholders of companies that bought back shares fared better than shareholders of dividend-paying companies due to a higher tax rate on dividends compared to capital gains. They also stated that companies with more generous dividend payments are also those with more frequent share buybacks. Finally, they concluded that companies that buy back are larger, with a higher ROE and a more concentrated ownership structure.

The research mentioned above mainly dealt with internal factors' impact on the dividend policy. However, the influence of the mentioned internal factors will not be the same in the existence of different external factors (such as the legal or institutional framework, the level of capital market development, etc.). Therefore, the dividend policy will differ whether it is an emerging market or developed country, when it comes to different institutional and regulatory frameworks, or

state-owned or private companies, whether it is a booming or a crisis period (Floyd et al., 2015), etc.

By comparing dividends in 33 countries, La Porta (2000) concludes that better protection of the shareholders' rights, for example, the minority shareholders' protection, corresponds to higher dividend payments. Aivazian et al. (2003) showed that the dividend policy in Emerging market countries, compared to the U.S., is sensitive to the same variables, but the intensity of this sensitivity differs by country. Curiously, the study results show that companies in the Emerging market paid higher dividends than U.S. counterparts, despite financial constraints. Amidu and Abor (2006) investigated the relationship between determinants of dividend payout ratios from the context of a developing country. They concluded that there is a significant positive relationship between dividend payout and profitability, cash flow, and taxes and a negative association between dividend payout and risk, institutional shareholding, growth, and market-to-book value. Research by Cristea and Cristea (2017) related to companies in the Bucharest Stock Exchange as an example of the Emerging market showed a positive relationship between profitability and dividend policy and a negative relationship between the variables of financial leverage, company size, growth, and dividend payout. Another research conducted at the Istanbul Stock Exchange by Kisava and John (2017) shows that the dividend policy is directly explainable by the profitability, liquidity of the company, the amount of debt, and the ratio of market to book value. In Indonesia, Fajaria and Isnalita (2018) show that the company's profitability and growth positively affect the dividend size, while liquidity and high indebtedness have a negative effect. Contrary to them, in the same market, Pattiruhu and Paais (2020) claim that the variables such as Current Ratio, ROE, and company size did not have a positive and significant effect on dividend policy while Debt-to-Equity Ratio and ROA have a positive and significant impact.

State-owned enterprises account for many countries' gross domestic product, employment, and assets (Putniņš, 2015). Agency costs tend to be higher than for companies in the private sector (Estrin and Perotin, 1991), and dividend policies may differ depending on the government's budgetary needs. The OECD Guidelines on Corporate Governance of State-Owned Enterprises, considered a global benchmark, recommend setting profitability targets, optimal capital structure objectives, and dividend policy (OECD, 2015). Best practice shows that in setting the dividend policy, State-owned enterprises identify the cost of capital and determine the optimal capital structure (OECD, 2014). The state's objective is to ensure that dividend yield is sustainable and predictable, considering the capital enterprise's future capital requirements and financial position (Ministry of Enterprise and Innovation, 2021). States also use dividend policy to achieve an optimal capital structure for companies they own (OECD, 2014). There are also examples of extraordinary dividend payouts resulting from excessive capitalization

and cash surplus (OECD, 2014). When determining the dividend policy, one needs to consider the company's need to cover any remaining losses from previous years, investment plans, the company's indebtedness, return on capital and the company's liquidity (OECD, 2014). There are also examples where in order to set dividend levels, capital reserve level, debt/equity ratio, previous dividend levels, future investment needs, but also payouts ratios in private sector peers are considered (OECD, 2014).

Good Corporate Governance has a significant positive influence on the decision to pay dividends and on the average dividend payout level (Yarram, 2015). The composition of the board in favour of independent directors and the intensity of equity incentives increase dividend payout as well (Driver at all, 2020). Furthermore, the board's characteristics affect dividend policy. A study conducted by Dissanayake and Dissabandara (2021) revealed that women on boards, the board size, and CEO duality have a significant positive relationship for the likelihood to pay dividends whereas Audit Committee size, board independence, and frequency of board meetings negatively affect the dividend decision. On the contrary, Widyasti and Putri (2021) stated that corporate governance, represented by the number of Audit Committee members does not affect dividend policy.

Dividend policy determination has remained a puzzle until today. Moreover, there is a growing interest in the field. According to the analysis made by Pinto et al. (2019), out of a total of 768 articles published in the past 47 years obtained from the Scopus database, 80% were published from 2005 onwards whereas the highest number of publications come from US and UK.

3. Conception of analysis

The main goal of this paper is to determine the causal relationship between the dividend payout ratio as a dependent variable and four explanatory variables as independent variables. The sample consists of 28 listed companies on Zagreb Stock Exchange. We propose the following research hypothesis:

H1: Dividend payout ratio has statistically significant dependence on key financial performance variables: 1) return on equity (ROE), 2) return on assets (ROA), 3) financial leverage measured as the ratio of assets to equity (F.L.), and 4) surplus of free cash flow (FCF) over revenues.

The empirical analysis is based on a hierarchical linear regression analysis. The expected causal relationship is represented in the following econometric model:

$$DPR_{i,t+1} = \beta_0 + \beta_1 ROE_{it} + \beta_2 ROA_{it} + \beta_3 FL_{it} + \beta_4 FCF/Rev_{it} + \beta_5 \ln(Rev)_{it} + u_{it} \quad (1)$$

The model investigates the relationship between the dividend payout ratio (DPR) as a dependent variable and four explanatory variables as independent variables. DPR is calculated as the ratio of dividend payout shown in the cash flow statement for period $t+1$ to net income presented in the income statement for period t. We focus our research on the dependency of the dividend payout on profitability factors. The main factors widely used in practice as true represents of corporate profitability are the return on equity (ROE), return on assets (ROA), and the ratio of free cash flow to revenue. ROE stands for return on average equity. It is calculated as a ratio of net profit or net loss in period t to average equity (beginning and end of respective year). ROA stands for return on average assets. ROA is calculated as the ratio of earnings before interest and taxes (EBIT) to average assets. FL marks financial leverage and is calculated as the ratio of assets and equity for the respective year. We have included this ratio as the main liaison between ROE and ROA. Finally, the FCF/Rev represents the respective year's free cash flow ratio to revenue. This ratio is important as it represents the financial capacity to payout dividends. In addition, it should be expected that more profitable companies will generate higher free cash flow. The controlling variable is the size of the company (logarithm of the revenue, ln (Rev)). β_0 is constant, while β_1, β_2, β_3, and β_4 are parameters of independent variables. u_{it} represents an error term.

We have covered five years period (T=5) and applied variables on 28 non-financial companies listed on Zagreb Stock Exchange (ZSE). Thus, we have a total of 140 observations for each variable.

4. Empirical data and analysis

The data for the analysis comes from two primary sources. The first is the global equity research platform Screener.co, and the other is a database of financial statements publicly available on the Zagreb Stock Exchange. The analysis covers 28 non-financial companies listed on Zagreb Stock Exchange. The main criteria for inclusion in the analysis have been at least one dividend payout in the last three years presented in the cash flow statement in 2019 – 2021. Therefore, the dividend payout has been extracted from the financial section of the cash flow statement. The decision on dividend payment is based on the decisions of the General Assembly. Commonly, the dividends of companies listed on ZSE are paid-out in the year following the closing of the financial statements for the previous financial year. Therefore, the dividends paid in 2021 and shown in the financial section of the cash flow statement for 2021 are generally related to financial performance for 2020, i.e., on the net result shown in the income statement for 2020.

Consequently, the dividends presented in the cash flow statement for 2020 are related to on net result shown in the income statement for 2019 and so forth. The

analysis covers five years. The first observation starts from dividends paid out in 2017 and is related to the net result shown in the income statement for 2016. The most recent observation relates dividends paid out in 2021 to the net result shown in the income statement for 2020.

Descriptive statistics for all study variables are reported in Table 1.

Table 1: Summary of descriptive statistics of all variables

Descriptive statistics (N = 140)				
Variable	Minimum	Maximum	Mean	SD
Y – DPR	-738.8%	267.0%	35.4%	82.0%
X1 – ROE	-292.1%	2,571.5%	23.2%	218.7%
X2 – ROA	-21.0%	15.5%	4.5%	4.8%
X3 – Financial Leverage	-19.1	28.0	2.1	3.2
X4 – FCF to Rev	-172.9%	36.2%	-1.7%	25.2%
Ln (Rev)	17.5	23.8	20.5	1.5

Source: Authors' calculation

Bivariate correlations (Pearson's r) between study variables are reported in Table 2.

Table 2: Bivariate correlations for study variables

Bivariate correlations for study variables (N = 2140)						
	1.	2.	3.	4.	5.	6.
1. DPR	-	-0.02	0.13	-0.05	0.12	-0.09
2. ROE		-	-0.02	.42***	0.03	-0.02
3. ROA			-	0.13	0.33***	0.11
4. Financial Leverage				-	-0.01	0.04
5. FCF-to-Rev					-	0.16
6. Ln (Rev)						-

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$(two-tailed).

Source: Authors' calculation

Results of hierarchical linear regression analyses (Table 3) showed that FCF/Rev positively predicted DPR in the second step of regression analyses ($\beta = 0.39$, $p < 0.05$) in the 2018 year. In addition, ln (Rev) as a criterion significantly predicted DPR ($\beta = 0.44$, $p < 0.05$) in the 2016 year, while other variables (ROE, ROA, and Financial Leverage) are not significant predictors of DPR.

Table 3: Hierarchical linear regression analysis: prediction of DPR based on ROE, ROA, Financial Leverage, and FCF-to-Rev for the period time 2016 – 2020

Hierarchical linear regression analysis (N = 28)										
Criterion: DPR										
	2016		2017		2018		2019		2020	
	β	t	β	t	β	t	β	t	β	t
Step 1										
Ln (Rev)	0.44*	2.45*	0.15	0.76	-0.14	-0.73	-0.19	-0.97	-0.25	-1.32
R^2	0.19*		0.02		0.02		0.04		0.06	
Step 2										
Ln (Rev)	0.33	1.71	0.11	0.56	-0.28	-1.36	-0.27	-1.31	-0.28	-1.31
ROE	0.36	0.68	2.36	1.37	-0.18	-0.23	0.46	0.83	0.05	0.10
ROA	-0.02	-0.05	-0.82	-1.61	0.24	1.16	-0.04	-0.10	0.17	0.42
Financial Leverage	0.09	0.38	-1.51	-1.05	-0.01	-0.01	0.19	0.50	-0.17	-0.42
FCF-to-Rev	0.11	0.55	0.33	1.68	0.39*	2.06*	0.21	0.86	0.05	0.21
ΔR^2	0.14		0.19		0.23		0.14		0.06	
Total R^2	0.33		0.21		0.25		0.18		0.13	

Note: Standardized regression coefficients (β) and R^2 (squared multiple R) are from regression models, including four predictors of criterion (DPR). ΔR^2= R change for the predictors entered in a separate step after controlling Ln (Rev).

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$(two-tailed)

Source: Authors' calculation

5. Results and discussion

Table 1 the dividend payout ratio measured as the ratio of dividend to net income, ranges from negative -739% to 267%. The financial source for the dividend payouts may come from net income earned from the recent year or retained earnings (net income earned in periods preceding the recent year). The two primary reasons may explain this divergence. First, even when a company shows a net loss in the income statement but has significant cash reserves, it may decide to pay dividends from retained earnings from previous years. In that case, DPR has a negative sign. Secondly, in certain circumstances, as in the case of large cash reserves and the absence of lucrative investment opportunities, a company may decide to pay dividends that several times surpass the most current annual net income.

As shown in Table 2, the criterion variable (DPR) is not significantly related to any predictor or control variable at the bivariate level. In addition, Table 3 shows

that the other variables (ROE, ROA, and Financial Leverage) are not significant predictors of DPR, while the FCF/Rev ratio positively predicted DPR in the second step of regression analyses ($\beta = 0.39$, $p < 0.05$) but only in 2018. This result suggests that dividend policy, particularly the DPR of the listed companies, is not necessarily affected by the most recent financial results reflected by the profitability measured with ROE and ROE, nor with the financial leverage. Instead, the DPR decision is more likely influenced by other long-term and non-financial factors, such as the history of dividend payments or dividend expectations. Moreover, these non-financial factors may outweigh current profitability (ROE and ROA) as a primary determinant of dividend payouts.

The practical implications of these results suggest that investors chasing dividend-paying firms will be more likely to rely on the history and expectation of dividend payments as more critical than the recent profitability. Furthermore, results come from the Zagreb Stock Exchange, characterized by relatively small size, turnover, low efficiency, and orientation of companies toward banking debt as a dominant source of financing (Šestanović, 2014; 2018). Therefore, there is expected high diversity in DPRs on small stock exchanges with a relatively small number of dividend-oriented companies. As a result, even passive investors investing in the stock indices of such exchanges may face the high variability of the DPR.

Bivariate correlations for study variables, ROE is moderately positively correlated with Financial Leverage ($r = 0.42$, $p < 0.001$). It is expected as the decomposition of ROE is shown by multiplying the net profit margin, total assets turnover, and financial leverage. The FCF-to-Rev is also moderately positively correlated with Financial Leverage ($r = 0.33$, $p < 0.001$). Capital expenditures are commonly financed with operating cash flow and cash from financing (debt or equity). The company may increase its financial leverage to exploit investment opportunities. The correlation of the FCF-to-Rev and financial leverage suggests that the company undertakes additional debt only when the free cash flow is large enough to ensure future debt repayments.

Most previous studies researched dividend policy on the developed stock exchange and, to a much lesser degree, in less developed stock exchanges. This study contributes to the existing empirical studies of less developed markets. In addition, it investigates and brings conclusions on dividend payment decisions that may have implications for other less stable markets. Therefore, further research may focus on the dividend policies of firms in less developed markets.

6. Conclusion

Previous empirical research gives different importance to factors that influence dividend policy. Apart from internal factors, various external and non-financial factors may impact dividend policy. The hypothesis that the dividend payout ratio

has a statistically significant dependence on four explanatory variables is rejected. Results suggest that dividend payout ratios are not statistically influenced by the recent financial profitability (ROE and ROA) nor the financial leverage and free cash flow to revenue. Several conclusions may bring light to these results. First, other non-financial factors may have a decisive influence on dividend payment. These factors include the investors' expectations, history of paying dividends, and large cash reserves backed by high retained earnings. Secondly, countries' institutional and regulatory frameworks and capital development levels vary. As a result, developing markets are generally less efficient in the information-price embedment. Thus, we may expect investors' behavior to follow the proposition of the bird-in-the-hand theory, i.e., to prefer dividends over future capital gains in the tax-neutral treatment of the dividends over the capital gains. Thirdly, while it is expected that financial leverage has no significant effect on the dividend payout ratio, the impact of profitability ratios (ROE, ROA, free cash flow to revenue) on dividend payment may be more appealing. While more profitable firms generally have more financial capacity for dividend payments, they also have more incentives to reinvest earnings or suspend dividends while investing in new opportunities. This study was confined to the 28 companies listed on the Zagreb Stock Exchange that paid out dividends at least once in the previous three years. The obstacle for the larger sample is that the Croatian capital market is relatively small and limited in broader usage of the new stock issue as a source of financing. Hence, due to inherent limitations, the results are not necessarily applicable to more developed or larger economies with more efficient markets and wider financing choices. Future research can study different variables as dividend payment determinant factors. The determinants of the dividend payout ratios in non-listed companies may also be further explored to reveal the eventual difference in the dividend-paying decisions compared to listed companies. Further research may also focus on a publicly listed state-owned enterprise as a subsegment of the listed companies. These companies are influenced by market conditions and government decisions regarding capital structure and dividend policies.

References

Aivazian, V., Booth, L., Cleary, S. (2003) "Do Emerging Market Firms Follow Different Dividend Policies From U.S. Firms?", *Journal of Financial research*, Vol. 26, No. 3, pp. 371–387, https://doi.org/10.1111/1475-6803.00064.

Amidu, M., Abor, J. (2006) "Determinants of Dividend Payout Ratios in Ghana", *The Journal of risk finances*, Vol. 7, No. 2, pp. 136–145, https://doi.org/10.1108/15265940610648580.

Bajaj, M., Vijh, A. M., Westerfield, R. W. (2002) "Ownership Structure, Agency Costs and Dividend Policy", *Research in Finance*, Emerald Group Publishing Limited, https://doi.org/10.1016/S0196-3821(02)19002-2.

Baker, H. K., Powell, G. E. (2000) "Determinants of Corporate Dividend Policy: A Survey of NYSE Firms", *Financial Practice and education*, pp. 29–40, Available at: <https://www.researchgate.net/profile/H-Baker/publication/236860977_Determinants_of_Corporate_Dividend_Policy_A_Survey_of_NYSE_Firms/links/53e94cf70cf2fb1b9b6709e3/Determinants-of-Corporate-Dividend-Policy-A-Survey-of-NYSE-Firms.pdf > [Accessed: September 29, 2022].

Bhattacharya, S. (1979) "Imperfect Information, Dividend Policy, and "The Bird in the Hand" Fallacy", *Bell Journal of Economics, Vol.* 10, No. 1, pp. 259–270, https://doi.org/10.2307/3003330.

Black F. (1976) "The Dividend Puzzle", *Journal of Portfolio Management*, Vol. 2, pp. 5–8, https://doi.org/10.3905/jpm.1976.408558.

Born, J. A. (1988) "Insider Ownership and Signals: Evidence from Dividend Initiation Announcement Effects", *Financial Management*, Vol. 17, No. 1, pp. 38–45, https://doi.org/10.2307/3665913.

Brav, A. et al. (2005) "Payout Policy in the 21st Century", *Journal of Financial Economics*, Vol. 77, No. 3, pp. 483–527, https://doi.org/10.1016/j.jfineco.2004.07.004.

Brealey, R. A., Myers, S. C., Marcus, A. (2014) *Fundamentals of Corporate Finance*, 8th Edition, McGraw-Hill Education.

Cristea, C., Cristea, M. (2017) "Determinants of Corporate Dividend Policy: Evidence from Romanian Listed Companies", In MATEC *Web of Conferences*, *Annual Session of Scientific Papers IMT ORADEA*, Vol. 126, No. 2, pp. 1–4, EDP Sciences, doi: 10.1051/matecconf/201712604009.

DeAngelo, H., DeAngelo, L., Stulz, RM (2004) *Dividend policy, agency costs, and earned equity*, NBER Working paper Series No. 10599, National Bureau of Economic Research, doi: 10.3386/w10599.

DeAngelo, H., DeAngelo, L., R. Stulz (2006) "Dividend Policy and the Earned / Contributed Capital Mix: A Test of the Lifecycle Theory", *Journal of Financial Economics*, Vol. 81, No. 2, pp. 227–254, https://doi.org/10.1016/j.jfineco.2005.07.005.

Denis, D. J., Osobov, I. (2008) "Why do Firms Pay Dividends? International Evidence on the Determinants of Dividend Policy", *Journal of Financial Economics*, Vol. 89, No. 1, pp. 62–82, https://doi.org/10.1016/j.jfineco.2007.06.006.

Dissanayake, D. M. K. T., Dissabandara, D. B. P. H. (2021) "The Impact of Board of Directors' Characteristics on Dividend Policy: Evidence from a Developing Country", *Corporate Governance and Sustainability Review*, Vol. 5, No. 2, pp. 44–56, https://doi.org/10.22495/cgsrv5i2p4.

Driver, C., Grosman, A., Scaramozzino, P. (2020) "Dividend Policy and Investor Pressure", *Economic Modelling*, Vol. 89, pp. 559–576, https://doi.org/10.1016/j.econmod.2019.11.016.

Estrin, S., Perotin, V. (1991) "Does Ownership Always Matter?", *International Journal of Industrial Organization*, Vo. 9, No. 1, pp. 55–72, https://doi.org/10.1016/0167-7187(91)90005-6.

Fajaria, A. Z., Isnalita, NIDN (2018) "The Effect of Profitability, Liquidity, Leverage and Firm Growth of Firm Value with its Dividend Policy as a Moderating Variable", *International Journal of Managerial Studies and Research (IJMSR)*, Vol. 6, No.10, pp. 55–69, http://dx.doi.org/10.20431/2349-0349.0610005.

Fama, E. F., French, K. R. (2001) "Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?", *Journal of Financial economics*, Vol. 60, No. 1, pp. 3–43, https://doi.org/10.1016/S0304-405X(01)00038-1.

Floyd, E., Li, N., Skinner, DJ (2015) "Payout Policy Through the Financial Crisis: The Growth of Repurchases and the Resilience of Dividends", *Journal of Financial Economics*, Vol. 118, No. 2, pp.299-316, https://doi.org/10.1016/j.jfineco.2015.08.002.

Franc-Dbrowska, J., Mądra-Sawicka, M. (2020) "Determinants of Dividend Payout Decisions – The Case of Publicly Quoted Food Industry Enterprises Operating in Emerging Markets", *Economic Research – Ekonomska Istraživanja*, Vol. 33, No. 1, pp.1108-1129, https://doi.org/10.1080/1331677X.2019.1631201.

Gill, A., Biger, N., Tibrewala, R. (2010) "Determinants of dividend payout ratios: evidence from United States", *The Open Business Journal*, Vol. 3, No. 1, pp. 8-14, 10.2174/1874915101003010008.

Gordon, M. J. (1963) "Optimal Investment and Financing Policy", *The Journal of Finance*, Vol. 18, No. 2, pp. 264-272, https://doi.org/10.2307/2977907.

Hellström, G. & Inagambaev, G. (2012) *Determinants of dividend payout ratios: A study of Swedish large and medium caps*, Master Thesis, Umeå School of Business and Economics, Umeå University. Available at: <https://www.diva-portal.org/smash/get/diva2:538687/FULLTEXT02.pdf> [Accessed: September 22, 2022]

Jensen, M. C., Meckling, W. H. (2019) "Theory of the firm: Managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, Vol. 3, No. 4., pp. 305-360, https://doi.org/10.1016/0304-405X(76)90026-X.

John, K., Williams, J. (1985) "Dividends, Dilution, and Taxes: A Signalling Equilibrium", *Journal of Finance*, Vol. 40, No. 4, pp. 1053–1070, https://doi.org/10.1111/j.1540-6261.1985.tb02363.x.

Kisava, Z. S., John, F. M. (2017) "Determinants of Dividends Payout and Policy Used In Emerging Economies: Evidence from Turkey", *Business and Economic Research*, Vol. 7, No. 2, https://doi.org/10.5296/ber.v7i2.11921.

La Porta, R. et al. (2000) "Agency Problems and Dividend Policies around the World", *The Journal of Finance*, Vol. 55, No. 1, pp. 1–33, https://doi.org/10.1111/0022-1082.00199.

Lintner, J. (1956) "Distribution of Incomes of Corporations Among Dividends, Retained Earnings, and Taxes", *The American Economic Review*, Vol. 46, No. 2, pp. 97–11, Available at: <https://www.jstor.org/stable/1910664> [Accessed: September 27, 2022].

Litzenberger, R. H., Ramaswamy, K. (1982) "The Effects of Dividends on Common Stock Prices Tax Effects or Information Effects?", *The Journal of Finance*, Vol. 37, No. 2, pp. 429–443, https://doi.org/10.2307/2327346.

Miller, M. H., Modigliani, F. (1961) "Dividend Policy, Growth, and the Valuation of Shares", *The Journal of Business*, Vol. 34, No 4, pp. 411–33, Available at: <https://www.jstor.org/stable/2351143> [Accessed: September 27, 2022].

Miller, M. H., Rock, K. (1985) "Dividend Policy Under Asymmetric Information", *Journal of Finance*, Vol. 40, No. 4, pp. 1031–1051, https://doi.org/10.1111/j.1540-6261.1985.tb02362.x.

Ministry of Enterprise and Innovation (2021) *State Ownership Policy and principles for state-owned enterprises 2020*, Stockholm: Springtime-Intellecta, Available at <https://www.government.se/49eb29/contentassets/aef85fbd7beb4319a70af9a30d6723a1/state-ownership-policy-2020.pdf> [Accessed: October 1, 2022].

OECD – Organisation for Economic Co-operation and Development (2014) *Financing state-owned enterprises: An overview of national practices*, OECD Publishing, https://doi.org/10.1787/9789264209091-en.

OECD – Organisation for Economic Co-operation and Development (2015) *OECD Guidelines on Corporate Governance of State-Owned Enterprises, 2015 Edition*, OECD Publishing, https://doi.org/10.1787/9789264244160-en.

Pattiruhu, J. R., Paais, M. (2020) "Effect of Liquidity, Profitability, Leverage, and Firm Size on Dividend Policy", *The Journal of Asian Finance, Economics and Business*, Vol. 7, No. 10, pp. 35–42, https://doi.org/10.13106/jafeb.2020.vol7.no10.035.

Pinto, G., et al. (2019) "Bibliometric Study on Dividend Policy", *Qualitative research in financial markets*, Vol. 12, No. 1, pp. 75–95, https://doi.org/10.1108/QRFM-11-2018-0118.

Putniņš, T. J. (2015) "Economics of State-owned Enterprises", *International Journal of Audience Administration*, Vol. 38, No. 11, pp. 815–832, https://doi.org/10.1080/01900692.2014.982289.

Raaballe, J., Hedensted, J. S. (2008) "Dividend Determinants in Denmark", *SSRN*, http://dx.doi.org/10.2139/ssrn.1123436.

Servaes, H., Tufano, P. (2006) "Corporate Dividend Policy", *The Theory and Practice of Corporate Dividends and Share Repurchase Policy.* Deutsche Bank Liability Strategies Group, Frankfurt. Available at: <http://faculty.london.edu/hservaes/Corporate%20Dividend%20Policy%20-%20Full%20Paper.pdf> [Accessed: October 2, 2022].

Šestanović, A. (2014) "Treba li Hrvatskoj Burza Vrijednosnih Papira?" *Ekonomija / Economics*, Rifin d.o.o., Vol. 21, No. 1, pp. 161–186. Available at: <http://www.rifin.com/images/stories/2014/10/ekonomija_economics_broj_21_1_za_arhivu_ili_web.pdf > [Accessed: October 2, 2022].

Šestanović, A., Horvat, Đ., Tomić, B. (2018) "Ispitivanje Teorije Hijerarhije Financijskih Izbora na Hrvatskom Tržištu", *Ekonomski pregled*, Vol. 69, No. 1, pp. 58–72. Available at: <https://hrcak.srce.hr/195505> [Accessed: October 2, 2022].

Eije, H. v., Megginson, W. L. (2008) "Dividends and Share Repurchases in the European Union", *Journal of Financial Economics*, Vol. 89, No. 2, pp. 347–374, https://doi.org/10.1016/j.jfineco.2007.11.002.

Widyasti, I. G. A. V., Putri, I. G. A. M. A. D. (2021) "The Effect of Profitability, Liquidity, Leverage, Free Cash Flow, and Good Corporate Governance on Dividend Policies (Empirical Study on Manufacturing Companies Listed in Indonesia Stock Exchange 2017-2019)", *American Journal of Humanities and Social Sciences Research* (AJHSSR), Vol. 5, No. 1, pp. 269–278. Available at: <https://www.ajhssr.com/wp-content/uploads/2021/01/ZJ21501269278.pdf> [Accessed: December 25, 2022].

Yarram, S. R., (2015) "Corporate Governance Ratings and the Dividend Payout Decisions of Australian Corporate Firms", *International Journal of Managerial Finance*, Vol. 11, No. 2, pp. 162–178, https://doi.org/10.1108/IJMF-01-2013-0012.

Čimbenici politike isplate dividendi: dokazi temeljem uvrštenih nefinancijskih društava na Zagrebačkoj burzi

Darija Prša[1], *Aljoša Šestanović*[2], *Ivo Ramljak*[3]

Sažetak

Cilj rada je ocjena utjecaja financijskih čimbenika na omjer isplate dividendi. Svrha je istražiti čimbenike koji utječu na isplatu dividendi na manje razvijenim tržištima i usporediti ih s rezultatima prijašnjih studija. Uzorak obuhvaća kompanije uvrštene na Zagrebačku burzu koje su isplatili dividendu barem jednom u posljednje tri godine. Model obuhvaća razdoblje od pet godina (dividende isplaćene u razdoblju od 2017. do 2021. godine na temelju fundamentalnih financijskih pokazatelja od 2016. do 2020. godine ostvareni prije isplate dividendi). Za podatke je korišten servis Sreener.co, globalna istraživačka platforma, kao i raspoloživi financijski izvještaji objavljeni na Zagrebačkoj burzi. U radu je korišten hijerarhijski linearni regresijski model s četiri eksplanatorne varijable: prinos na vlastiti kapital, prinos na imovinu, financijska poluga i omjer slobodnih novčanih tokova i prihoda. Rezultati su pokazali visoku fluktuaciju omjera isplate dividendi, kao i varijabilnost prinosa na vlastiti kapital. Nadalje, nismo utvrdili statistički značajnu kauzalnost između eksplanatornih varijabli i omjera isplate dividendi. Rezultati sugeriraju da drugi, dugoročni, nefinancijski čimbenici kao što su očekivanja investitora, povijest isplata dividendi i velike rezerve novca praćene visokim zadržanim dobitima mogu imati jači utjecaj na omjer isplate dividendi negoli prethodno nedavno ostvareni financijski čimbenici.

Ključne riječi: *politika dividendi, isplata dividendi, financijska analiza, Zagrebačka burza*

JEL klasifikacija: *G32, G35, O16*

[1] *Dr. sc., Narodne novine d.d., Savski gaj XIII. 6, 10 020 Zagreb, Hrvatska. Znanstveni interes: financije, računovodstvo. Tel.: +385 98 229 015. E-mail: prsa.darija@gmail.com.*

[2] *Dr. sc., EFFECTUS-Entrepreneurial Studies, Trg J. F. Kennedyja 6, 10 000 Zagreb, Hrvatska. Znanstveni interes: financije, mikroekonomija, financijska analiza. Tel.: +385 98 9342 419. E-mail: asestanovic@gmail.com.*

[3] *Univ. spec. oec., Narodne novine d.d., Savski gaj XIII. 6, 10 020 Zagreb, Hrvatska. Znanstveni interes: financije, računovodstvo. Tel.: +385 95 5692 875. E-mail: iramljak952@gmail.com.*