

# “Factors affecting the dividend policy of non-financial joint-stock companies in Ukraine”

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# FACTORS AFFECTING THE DIVIDEND POLICY OF NON-FINANCIAL JOINT-STOCK COMPANIES IN UKRAINE

## Abstract

Dividend policy, as part of corporate governance, is largely dependent on the institutional environment in which companies operate. The study aims to determine factors affecting dividend policy in the conditions of the Ukrainian underdeveloped stock market, legal insecurity of minority shareholders, high cost and concentration of capital. For this purpose, hypotheses about the impact of a company's financial state, size, business risk, and ownership structure on dividend payments were tested using a sample of 58 Ukrainian non-financial public joint-stock companies and applying Interactive tree classification techniques (C&RT). The resulting classification model for predicting dividend decisions correctly classifies 92.86% of companies that paid dividends and 93.3% of companies that did not. The findings, based on the classification tree and importance scale, prove the hypothesis that companies in which individuals and institutional investors have a controlling interest are more likely to pay dividends than other non-state companies. The financial indicators accurately classify only those firms that do not pay dividends, and business risk does not affect classification accuracy at all. The paper substantiates the ways of using the study findings for economic regulation, protection of minority shareholders' rights, and proliferation of modern corporate governance practices.

## Keywords

dividend policy, determinants of dividend decisions,  
minority shareholders, ownership structure, emerging  
markets

## JEL Classification

G32, G35

## INTRODUCTION

Decision regarding the distribution of the company's earnings on dividend payout and retention is one of the most important in corporate finance. This decision is the result of the implementation of principles and methods of corporate dividend policy based on the analysis of the external and internal environment. The economic feasibility of paying dividends is still a debatable issue. The authors of dividend policy theories and numerous experimental studies give different answers to the question of how it affects the stock price and the firm's value (Rohov & Solesvik, 2016). At the same time, the fact of the influence of the dividend policy on the interests of stakeholders, and especially minority shareholders, is not in doubt. For this reason, dividend policy is a component of corporate culture and a factor of sustainable development in the social dimension.

In economic literature, much attention has been paid to the dividend policy determinants, which are common factors motivating corporate dividend decisions of different companies. These determinants are important for investors interested in dividends, managers seeking to create a sound corporate governance system, and policymakers seeking to improve the model of economic regulation. Numerous experi-

mental studies have shown conflicting results regarding the impact on the dividend policy of various factors characterizing the financial condition of a company, business risks, ownership structure, etc. Their influence on dividend policy has its specific features in different markets. Dividend payment in the non-financial sector of the Ukrainian economy is still the exception rather than the rule. So, among all public joint-stock companies in the mining, metallurgical, chemical, machine-building, tool and energy sectors, only 28 announced the accrual of dividends in 2016 and 2017. In the context of an undeveloped stock market, lack of dividends has not often offset by an increase in the stock price. All this does not contribute to the investment attractiveness of the corporate sector. Under such circumstances, it is very important to determine the factors affecting a corporation's decision whether to pay dividends or not. This paper contributes to the literature on the dividend policy determinants in emerging markets, studying factors affecting corporate dividend decisions in the institutional environment of Ukrainian non-financial public joint-stock companies.

## 1. LITERATURE REVIEW

Companies distribute their corporate income according to the selected theoretical model of dividend policy (Rohov & Solesvik, 2016). Meanwhile, empirical studies on the determinants of dividend policy confirm or question the correctness of these theoretical models. Dividend payments are expressed in studies mostly in terms of a dividend payout ratio or a dummy variable, which takes two values: "Yes" if dividends are accrued and "No" if it is not the case (Dragotă, Pele, & Yaseen, 2019).

Among factors that can affect dividend policy, profitability indicators, leverage, liquidity and firm size have been studied most frequently. The impact of profitability on dividend policy is usually explained by the pecking order theory (Myers & Majluf, 1984). This theory states that companies prioritize their financing sources as follows: first of all, they prefer using their internal funds, then debt, and at last raise equity. Investors, unlike managers, do not have complete information about the financial condition of the company and therefore consider the issue of equity as a relatively negative signal. Regarding the pecking order theory, the companies, which have sufficient profit for financing their projects, are not inclined to pay dividends. In other words, the relationship between profitability and dividend payments must be negative.

However, this relationship is not strictly determined. Highly profitable companies are less dependent on debt and may allow the payment of dividends, especially in the absence of large-scale investment projects. According to the clientele

theory, the shareholder structure is also a significant factor. The shareholders, such as institutional investors, owners of low-risk securities and low-income shareholders, usually prefer higher dividend yield. More profitable companies have more opportunities to satisfy the preferences of these shareholders. It is worth noting that the profitability level depends on industry. Besides, the pecking order theory does not explain the dividend policy of firms with a high share of intangible assets, since they have a high cost of debt. Therefore, it is advisable to study how profitability affects the dividend payout ratio separately by industry. For this, of course, it is necessary to have sufficient statistics for each industry.

Due to these reasons, the empirical studies of profitability impact on dividend payments have shown inconsistent results. For example, a positive effect was found for U.S. manufacturing companies (Juma'h & Olivares Pacheco, 2008), Romanian and Turkish listed firms (C. Cristea & M. Cristea, 2017; Takmaz, 2017). Meanwhile, Kania and Bacon (2005) showed negative relationships between profitability and dividend payments for publicly traded firms from the Multinvestor database. Kaźmierska-Jóźwiak (2015) had similar results for nonfinancial companies listed on the Warsaw Stock Exchange.

For emerging markets, a positive relationship between profitability and dividend payments are more common. The empirical research revealed it, in particular, for nonfinancial companies in Jordan (B. Jaara, Alashhab, & O. Jaara, 2018), Vietnam (N. Dang, Nguyen, & T. Dang, 2018), India (Kumar & Sujit, 2018; Chakraborty, Shenoy, & Kumar, 2018; Pinto & Rastogi, 2019),

Malaysia (Noorhayati, Zuraida, & Nurul, 2018) and the ASEAN region (Thi, Xuan, & Manh, 2019). However, some studies conducted on emerging markets called these findings in question (Brahmaiah, Srinivasan, & Sangeetha, 2018; Mahdzan, Zainudin, & Shahri, 2015; Kozmenko & Bielova, 2015).

The effect of leverage on dividend payments is still questionable too. Highly geared firms have high debt servicing costs. Their ability to pay dividends, without increasing the company's risks, is reduced. From this point of view, leverage negatively affects dividend payments. This hypothesis has been repeatedly confirmed by empirical studies in some developed and emerging markets, in particular, in Australia, the UK (Kang, 2006), Poland (Kaźmierska-Jóźwiak, 2015), Romania (Cristea & Cristea, 2017), Turkey (Kuzucu, 2015; Takmaz, 2017), Vietnam (Dang et al., 2018), India (Labhane & Mahakud, 2016; Kumar & Sujit, 2018), Malaysia (Mahdzan et al., 2015; Noorhayati et al., 2018) and African countries (Yensu & Adusei, 2016).

Precisely the opposite conclusion follows from the signaling dividend theory. To support their reputation, companies use dividend announcements as the signals to a stock market that, despite high leverage, they have sustainable growth opportunities. This method of communication with investors and creditors is quite likely for highly profitable companies that take advantage of the debt tax shield to optimize capital structure. Some researchers provided empirical evidence, which is strongly coherent with the signaling dividend theory (Kania & Bacon, 2005; Mai & Vuong, 2017; Kannadhasan, Aramvalathan, Balasubramanian, & Gopika, 2017; Nurchaqiqi & Suryarini, 2018).

A company's ability to pay dividends depends on the amount of cash. From this point of view, firms with higher liquidity must pay more dividends. This conclusion, which is in line with the signaling theory, has been supported by many empirical studies (Adhikari, 2015; C. Cristea & M. Cristea, 2017; Mai & Vuong, 2017, Kumar & Sujit, 2018). On the other hand, dividend payments decrease the amount of cash and the financial condition of a company. Therefore, some researchers argue high liquid firms prefer to reinvest earnings rather than distribute them

in the form of dividends (Tariq, 2015; Khan, Naeem, Rizwan, & Salman, 2016; Prokopenko, Slatvinskyi, Biloshkurska, Biloshkurskyi, & Omelyanenko, 2019).

As a proxy for a firm's size, researchers use indicators such as total assets or total sales. Many empirical studies showed a positive relationship between firm size and dividends (Abdioglu, 2016; Jaara et al., 2018; Pinto & Rastogi, 2019). The positive effect of firm size finds its theoretical justification primarily in agency theory. This theory stems from the need for external monitoring of a company to harmonize the interests of its owners and top managers. A larger firm is more difficult to monitor. Therefore, large companies have to pay more dividends to attract investors for monitoring. Another argument in favor of the positive relationship is the low cost of capital and sufficient cash flow of the large firms.

However, some studies provided evidence of a negative relationship between firm size and dividends (Lestary, 2018). These studies explain this result based on the signaling theory. The financial position of a large company is usually quite clear for the investment market. Hence, the company does not need to send signals in the form of dividends.

Thus, empirical studies of the relationship between the above indicators and dividend payments have shown conflicting results. In contrast, there is a consensus in the scientific community regarding the impact of business risk on payout policy. Risk has been an important reference point for investors since it characterizes the uncertainty in future earnings. Therefore, companies tend to signal them about low risk by paying high dividends (C. Cristea & M. Cristea, 2017; Takmaz, 2017; Pinto & Rastogi, 2019).

The fact that investment opportunities negatively affect dividends is also a traditional view. This conclusion is in line with the pecking theory and repeatedly confirmed by empirical studies (Jahanzeb, Memon, Tunio, & Abbas Shah, 2016; Gangil & Nathani, 2018). However, Dennis and Osobov (2008), Ahmad and Wardani (2014), and Yensu and Adusei (2016) argue that investment opportunities have no clear association with the propensity to pay dividends.

Roy (2015) notes the growing influence of ownership structure on dividend policy, especially across the emerging economies. At the same time, empirical studies of the relationship between the share ownership by institutional investors, foreign firms, individuals, inside shareholders, state and dividend payment, in the context of ownership concentration, have shown conflicting results (Juhandi, Sudarma, Aisjah, & Rofiaty, 2013; Jahanzeb, Memon, Tunio, & Abbas Shah, 2016; Noorhayati et al., 2018; Kautsar, 2019).

It is worth noting that some researchers documented the effect of other factors, such as shareholder rights, board size and independence, audit quality (Batool & Javid, 2014), and R&D intensity (Kumar & Sujit, 2018). However, there is no evidence in the literature that these indicators belong to the most important determinants of dividend policy.

In the economic literature, the conflicting results of empirical studies of dividend policy factors are due to the specifics of markets under consideration. Kang (2006) notes that the corporate dividend policy is consistent with the institutional environment, in particular, regulations, tax systems, market transaction costs, and a certain level of economic development. The institutional environment in which the Ukrainian corporate sector operates has significant specifics. First of all, we are talking about the underdeveloped stock market, the legal insecurity of minority shareholders, the high concentration of capital and the poor financial condition of many companies.

It is worth noting, that, nevertheless, there is no empirical evidence on the factors affecting dividend policy in such an environment.

## 2. AIMS

The purpose of this paper is to determine factors affecting dividend policy of non-financial public joint-stock companies in the institutional environment in which the Ukrainian corporate sector operates. The use of the dividend payout ratio, as a dependent variable in the model, provides a more in-depth analysis of dividend policy determinants. However, in an undeveloped stock market, where

dividend payments are not systemic, research simply on the propensity to pay dividends increases the reliability of the results. This statement fully applies to the study of the dividend policy of Ukrainian non-financial corporations.

The review of related literature shows that the financial state of a company affects its dividend policy, but whether negatively or positively is still questionable. However, despite the undetermined results of the research, using profitability as a continuous predictor, it is clear that the presence of the profit is a condition for any dividend payment. Besides, it is worth noting that the vast majority of Ukrainian non-financial companies are highly geared, and they have financial problems.

All this allows formulating the following hypotheses:

*H1: A company's financial state is a significant factor in dividend policy. Profitable firms with low leverage and high liquidity are more likely to pay dividends.*

Given the above evidence of a negative relationship between business risk and payout policy, it would be logical to assume the same relationship in the Ukrainian corporate sector:

*H2: Business risk negatively affects dividend payment.*

Ukrainian large firms have a lower cost of capital and much bigger free cash flow than smaller ones. Therefore, the following hypothesis is proposed:

*H3: Dividend payment is positively associated with a company's size.*

Concentrated ownership is a feature of the vast majority of Ukrainian companies. Given that controlling shareholders, as usual, try and extract private benefits for themselves, the different groups of controlling shareholders should have different effects on dividend policy. The dividend policy of Ukrainian state companies is subject to applicable law (Legislation of Ukraine, 2006). The empirical studies have shown inconsistent effect of institutional ownership on the dividend payout ratio. However, it is clear that institutional investors

have a natural interest in dividends. Under certain conditions, this is also true for companies where natural persons have a controlling interest. It leads to the fourth hypothesis:

*H4: The companies, where individuals and institutional investors have a controlling interest, are more likely to pay dividends than other non-state companies.*

It is worth noting, that investment opportunities of Ukrainian companies were significantly limited during the study period and poorly reflected in their financial statements. Therefore, it is not possible to verify the hypothesis about the influence of this factor on dividend policy.

### 3. METHODS

The sample used in this study includes all public joint-stock companies (PJSC) of the mining, metallurgical, chemical, machine-building, tool and energy sectors that announced the accrual of dividends in 2016 and 2017 (28 PJSC). Besides, all PJSCs of these types of economic activities, paying no dividends and registered in the four most industrialized regions of Ukraine (Dnipropetrovsk, Zaporizhzhia, Kharkiv, and Kyiv), are included in the sample. The total sample size is 58 public joint-stock companies. The data were collected from the public information database of the National Commission on Securities and Stock Market (National Commission on Securities and Stock Market, 2019).

The variables used and their measurements are as follows. *Dividend payment* is a dependent variable, which, in accordance with the objectives of the study, takes two values: “Yes” if dividends are accrued, and “No” if it is not the case. *Profitability*, *leverage*, and *liquidity* are three indicators used to analyze how a company’s financial status affects its dividend policy. Given the large percentage of unprofitable enterprises in the corporate sector of the Ukrainian economy, profitability has been represented in the form of a categorical predictor with two levels (“Net income” for the profitable companies and “Loss” for loss-making companies). The debt-to-asset ratio is used as a proxy for leverage instead of the debt-to-equity ratio because of the

sample containing some companies with negative equity. The debt-to-asset and liquidity ratios (current assets divided by current liabilities) are continuous predictors.

Other continuous predictors, put in the study, are proxies for *Business risk* and *Firm Size*. The size of a company is mostly associated with its total sales or total assets. Taking into consideration the instability of sales, which was typical for Ukrainian enterprises in the analyzed period, firm size is measured as the natural logarithm of assets in 2017. Since Beta coefficients are not always feasible to reliably represent a business risk in an underdeveloped stock market, the study uses a five-year (2013–2017) coefficient of variation in ROA (the ratio of the return on assets standard deviation to the mean) as a substitute. To analyze how *Ownership Structure* affects corporate dividend policy, this variable was presented as a categorical predictor with three levels (“State” is for joint-stock companies with a state share in the authorized capital, “Individuals” is for the companies, where individuals and institutional investors have a controlling interest, and “Legal entities” for other companies).

The choice of Interactive tree classification techniques (C&RT) as a research method is due to the following reasons. C&RT allows using a categorical predictor as a dependent variable. This corresponds to the choice of a dependent variable based on the purpose of the study. Besides, C&RT is a nonparametric and nonlinear method. It is practical because there is no implicit assumption that the relationships between the variables are monotonic. There is not even enough a priori information to assert whether the relationship is positive or negative. Given the lack of empirical data on factors affecting dividend policy in the institutional environment of Ukrainian corporations, an advantage of the tree classification techniques is the ability to study a large number of factors without the risk of reducing the reliability of the results, since the algorithm selects the most significant among them, and only they are used to build a classification tree.

The opportunity to construct trees interactively is important because decisions on the distribution of income in the Ukrainian corporate sector have been based not just on economic factors analysis.

Dividend payments in joint-stock companies with a state share in the authorized capital are subject to applicable law (Legislation of Ukraine, 2006). Thus, classification factors have different priorities. Combining this a priori knowledge with the automatic methods for building trees improves the classification accuracy.

### 4. RESULTS

In the sample, the percentage of dividends paid by joint-stock companies on common shares is 48%. The use of the research method described above made it possible to build the classification model to predict dividend policy (Figure 1). This model correctly classifies 92.86% of companies that paid dividends, and 93.3% of companies that did not accrue dividends (Table 1). A receiver operating characteristic chart, visualizing the quality of the binary classification, is shown in Figure 2. The AUC (Area Under Curve) value (0,958333) and

Gini coefficient value (0,916667) indicate the classification accuracy.

The importance of variables that determine a corporate dividend policy on the 100 point scale is shown in Figure 3. It is appropriate to analyze the Importance plot in conjunction with the Classification tree. Given the Importance plot, a corporate dividend policy mostly depends on the ownership structure. First of all, it could be explained by legal requirements to pay dividends on the state share in the authorized capital. The least significant factor on the 100 point scale was the profitability factor. At the same time, not a single company in the sample with losses for the reporting year accrued dividends. Therefore, categorical predictor Profitability with two levels, “Net income” and “Loss”, has been used as the first split variable in the classification tree.

Leverage is the second most important factor influencing dividend policy (Figure 3). As Figure 1

Source: Own elaboration.

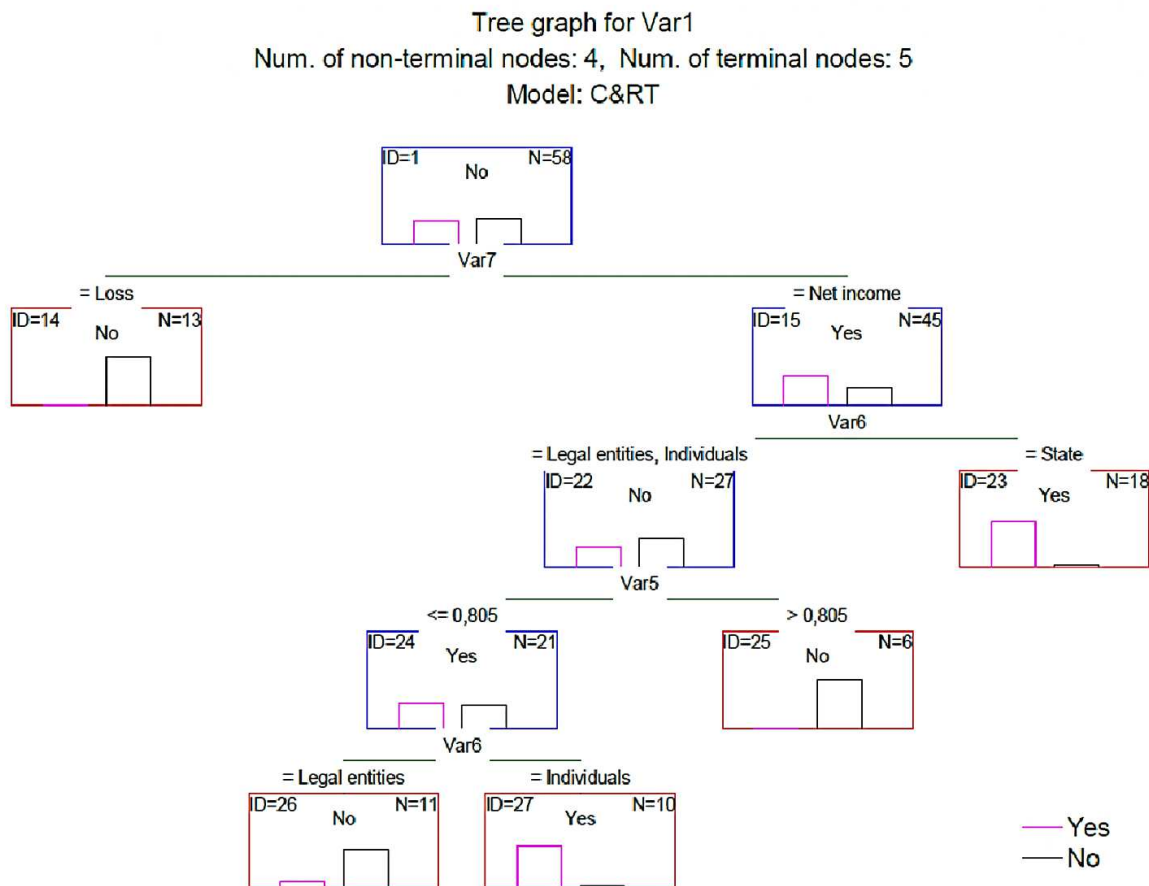


Figure 1. Classification tree related to factors determining a dividend policy

**Table 1.** Classification accuracy

Source: Own elaboration.

Indicators	Classification matrix			
	Observed	Predicted Yes	Predicted No	Row Total
Number	Yes	26	2	28
Column percentage		92.86%	6.67%	
Row percentage		92.86%	7.14%	
Total percentage		44.83%	3.45%	48.28%
Number	No	2	28	30
Column percentage		7.14%	93.33%	
Row percentage		6.67%	93.33%	
Total percentage		3.45%	48.28%	51.72%
Count	All groups	28	30	58
Total percent		48.28%	51.72%	

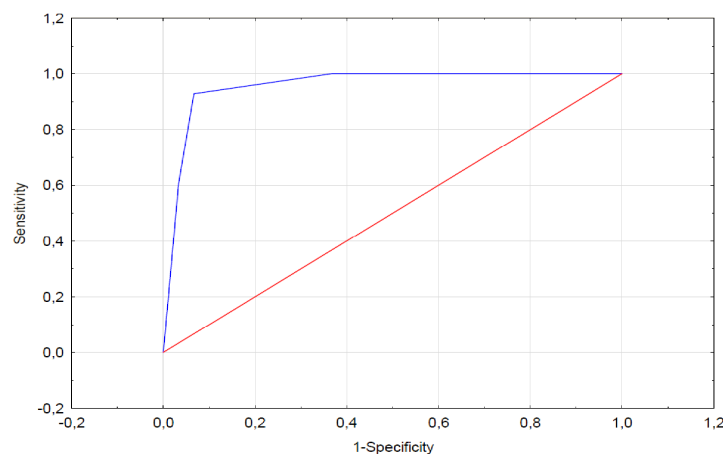
shows this indicator (Var5) is crucial for classifying companies with no state share in the authorized capital. None of these companies in the sample with leverage value exceeding 0.805 accrued dividends. Undoubtedly, the high values of this indicator worsen the enterprises' financial health, which makes it difficult to pay dividends. It is worth noting that dividend policy is irrelevant to leverage if its value does not exceed 0.805. Leverage, as well as profitability, are indicators that determine the conditions under which companies can consider the possibility of accruing dividends, but no more.

Liquidity ratio turned up the third factor on the importance scale (Figure 3). However, it is not significant for constructing a classification tree (Figure 1). The liquidity ratio characterizes the

company's current debt, whereas leverage is a strategic indicator of total debt. This study has shown that Ukrainian companies that form dividend policy are guided by a generalizing indicator of their financial independence, and not by current debt. Based on the above, hypothesis 1 is partially confirmed. The poor financial conditions of a company and dividend payments are incompatible. Meanwhile, there is no proof that profitable firms with low leverage and high liquidity are more likely to pay dividends.

Following the importance plot, business risk affects dividend policy less than the liquidity ratio does and half as much leverage. Moreover, a risk factor does not affect the classification accuracy (Figure 1). Thus, the study does not support hypothesis 2. This is in line with the results

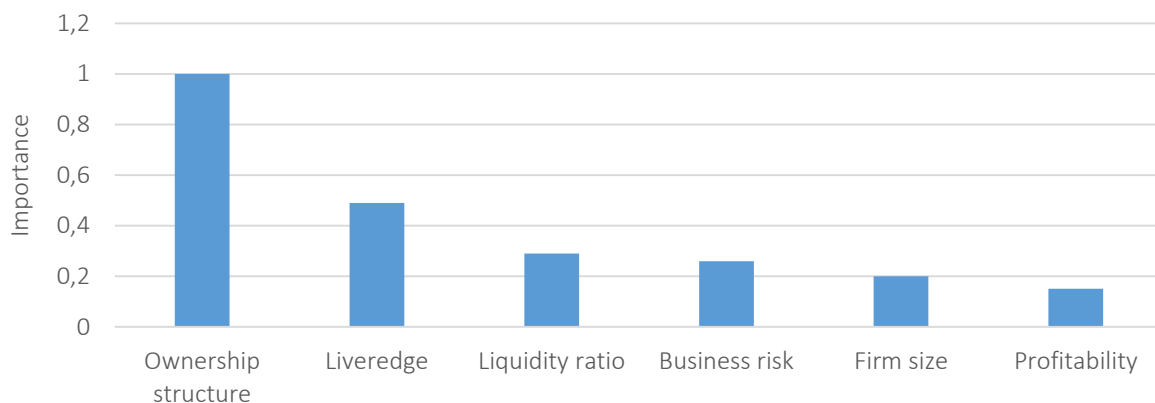
Source: Own elaboration.



**Figure 2.** Receiver operating characteristic for the dividend payment  
(Area under curve: 0.958333; Gini: 0.916667)



Source: Own elaboration.



**Figure 3.** Importance plot

for developing countries, in particular, Thai and Indonesian listed firms (Komrattanapanya & Suntrauk, 2013; Lestari, 2018), Iranian and Indian companies (Fatemian & Hooshyarzadeh, 2016; Labhane & Mahakud, 2016) and pharmaceutical companies of the Pakistan Stock Exchange (Khan & Ahmad, 2017).

In the sample, none of the relatively small joint-stock companies (the natural logarithm of assets  $\leq 15,31$ ), without a state share in the authorized capital and where individuals and institutional investors have no controlling interest, did accrue dividends. Therefore, the dividend payment could be positively associated with the company's size. However, judging by the importance plot, the impact of firm size on dividend policy is even less than that of the business risk factor. Besides, the firm size factor is not necessary to form the classification tree nodes (Figure 1). Thus, there are no sufficient grounds to support hypothesis 3.

The study has found that the factor of ownership was the most important in dividend policy. The legal requirements to pay dividends on the state share in the authorized capital are not the only reason. The dividend policy depends on the block of shares owned by individuals and institutional investors. The share of firms, which pays dividends in the sample of profitable non-state companies with leverage value exceeding 0.805, where individuals and institutional investors have a controlling interest, is 90%. At the same time, only 18.18% of other profitable non-state companies with leverage value exceeding 0.805 paid dividends. It is worth noting that 64.29% of all non-

state companies in which individuals and institutional investors have a controlling interest accrued dividends. Among other non-state companies, the share of those which accrued dividends is only 8.33%. Thus, the study fully supports hypothesis 4.

## 5. DISCUSSION

Only an insignificant part of the Ukrainian profitable joint-stock companies, where state, institutional investors and natural persons have no controlling share in the authorized capital, accrue dividends. The share of such companies in the sample is 13.3%. Minority shareholders, as a rule, cannot compensate for dividends by an increase in the market value of shares. The main reason is the underdevelopment of the Ukrainian stock market. There are very few companies in the country that meet the listing requirements. The number of public joint-stock companies in the exchange registers in 2016–2017 did not exceed seven (Tkachuk, 2018). Their shares have low free float. For example, only one company in the sample had a free-float level exceeding 21%. For other companies, the value of this indicator ranged from zero to eight percent. According to the clientele theory, legal entities with controlling share in the authorized capital do not usually consider dividends as a priority interest. This conclusion finds additional evidence in an undeveloped stock market, especially when there are opportunities for hidden dividends.

Given the extremely high concentration of capital of Ukrainian companies, minority shareholders

have no opportunity to affect dividend policy. Such discrimination of minority shareholders does not contribute to the sustainable development of the economy in the social dimension and significantly worsens the investment climate. Undoubtedly, the corporate sector lacks legal protection of minority shareholders' rights and in-depth corporate governance practices. However, recent amendments to the Law on Joint Stock Companies (Legislation of Ukraine, 2017) are unlikely to contribute to solving this problem. First of all, this concerns the introduction of the squeeze-out procedure.

According to these amendments, the dominant controlling shareholders have gained the right to demand to sell them the remaining shares. Formally, this is in line with the Directive 2004/25/EC on takeover bids (Legislation of European Union, 2004). The Directive aims to protect the interests of minority shareholders and applies to securities admitted to trading on a regulated market. However, in Ukraine, the shares of only a few issuers have been admitted to trading on the stock exchange. Besides, as noted above, these securities have low free-float. At the same time, the right to squeeze-out is also granted to the dominant controlling shareholders of private joint-stock companies. In this context, a fair price for the minority shareholders is not guaranteed. In the context of the social dimension of corporate development, it is worth emphasizing that among the minority holders of the offered company's securities are often those individuals who acquired corporate rights in the privatization process.

It is precisely the above-mentioned features of the Ukrainian stock market that can explain the fact that indicators of profit and financial leverage accurately classify only companies, which do not pay dividends, and the risk does not affect the dividend policy in general. At the same time, attention should be paid to the unsatisfactory financial condition of many Ukrainian enterprises, which makes it impossible to pay dividends a priori. For example, according to the State Statistics Service of Ukraine, the average value of the debt-to-asset ratio in the industry exceeds 0.73 (State Statistics Service of Ukraine, 2019). High-interest rates contribute to the growth of a nonperforming loan and increase the debt-to-asset ratio. Although the discount rate of the National Bank of Ukraine de-

creased from 18% in December 2018 to 8% in April 2020, the dynamics of reduction in bank credit rates were not so significant (National Bank, 2020). Such a gap in the trends of the discount rate and credit rates stems from the priority scenarios of the bank's market value strategic management in the current institutional environment (Kolodiziev & Gontar, 2014).

In addition to lowering credit rates, a more flexible depreciation policy, similar to the USA, Australia, United Kingdom and some other countries (Ernst & Young, 2019), can improve financial position of Ukrainian enterprises and reduce the high leverage. In turn, this will contribute to the implementation of dividend policy in the interests of all shareholder groups. An alternative is to tax only non-reinvested income, as is done in Georgia, Latvia, and Estonia, and is provided for in the draft tax on withdrawn capital (Legislation of Ukraine, 2019). It is worth noting that such a type of taxation will have an ambiguous effect on dividend policy.

In the Ukrainian stock market, companies, where individuals and institutional investors have a controlling interest, are much more likely to pay dividends than other non-state companies, which are mostly held by a few legal entities. This study result is consistent with the findings of Kumar (2006) that essential corporate shareholding (25% and more) negatively affects dividend policy. In the sample, the individuals that hold a controlling interest are also, as a rule, top managers of these companies. The factor of insider ownership is usually negatively related to dividends, especially in developed markets (Kang, 2006; Kania & Bacon, 2005; Abdioglu, 2016). However, this does not reduce the positive effect of natural person shareholding on dividend payment in this case.

As a first approximation, this result can be explained based on the clientele theory, since the dividend payments expressed in the study are in terms of a dummy variable. In the context of low liquidity of shares, certain dividends are necessary for both institutional investors and shareholders-individuals. How much institutional ownership affects the dividend payout ratio is another matter. Another possible reason is that legal entities and individuals have got different oppor-

tunities to withdraw capital and pay dividends in more tax-friendly jurisdictions, in particular, due to transfer pricing. Such an explanation is very likely, given that approximately every one in four dollar from Ukraine's foreign exchange earnings goes offshore (Jevstignjejeva, Krasovs'kyj, & Nasridinov, 2019).

In this context, it is positive that Ukraine joined Action Plan on Base Erosion and Profit Shifting (BEPS) in 2017. The plan includes 15 actions (OECD, 2013). Ukraine pledged to implement the minimum BEPS standard at the first stage. It covers countering harmful tax practices (Action 5), preventing tax treaty abuse (Action 6), improving tax transparency with country-by-country reporting (Action 13), and making the resolution of tax-related disputes between jurisdictions more perfect (Action 14). In addition to the Action Plan on BEPS, to stimulate the dividend policy of Ukrainian companies, the limit on dividend repatriation was canceled from July 2019. However, the high tax burden on business remains an anti-stimulus.

The evidence of quite different clientele effect in companies, where institutional investors have a controlling interest, is of practical value, as far as dividends are an essential component of minority shareholders' rights. Economic incentives for joint

investment institutions would contribute to sustainable development in the social dimension and the proliferation of modern corporate governance practices.

The use of Interactive tree classification techniques made it possible to consistently study and explain the effect of the factors on the dividend policy, without limiting their number, with little a priori knowledge about the type of the studied relationships in the institutional environment of the Ukrainian corporate sector. To solve such problems, the method is effective. According to Hill and Lewicky (2006), "... tree methods can often reveal simple relationships between just a few variables that could have easily gone unnoticed using other analytic techniques" (p. 85). However, it is worth noting that the method also has certain disadvantages. The tree methods are sensitive to changes in the dataset and input noise. A few changes in the data can transform the classification tree structure. The noise or random fluctuations often leads to overfitting in machine learning, which manifests itself in too many terminal nodes and worsens the interpretability of the classification model. Therefore, further research can use other techniques, such as a correlation matrix and a panel regression model using control variables to verify and concretize the results obtained.

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## CONCLUSION

The findings show how the undeveloped stock market, high concentration of capital and legal insecurity of minority shareholders affect the dividend policy of Ukrainian corporations. First, financial indicators only determine conditions under which dividend payments are absolutely impossible, but nothing more. Second, business risk and firm size do not affect dividend decisions. Third, the factor of ownership is the most important in dividend policy. The hypothesis that the companies in which individuals and institutional investors have a controlling interest are more likely to pay dividends than other non-state companies has been confirmed. This result, given the high concentration of capital of Ukrainian companies, suggests that dividend decisions are usually made on the basis of clientele theory.

The results have some implications for policymakers and practitioners. In the corporate sector of the Ukrainian economy, there are many highly geared firms that are forced to fully reinvest earnings. Therefore, in the context of dividend policy, creating conditions for the financial recovery of enterprises is of great importance. It is about reducing the rate of the National Bank of Ukraine and credit rates, more flexible depreciation policy and tax liberalization.

Nowadays, the rights of Ukrainian minority shareholders are not sufficiently protected. In this regard, it is advisable to amend the squeeze-out procedure prescribed by the Law on Joint Stock Companies. To

reduce the opportunities of legal entities to pay dividends in more tax-friendly jurisdictions, Ukraine must implement at least the minimum BEPS standard. Dividend policy that respects the rights of minority shareholders positively affects corporate sustainability in the social dimension. Therefore, managers should use the factors of dividend policy identified as a result of studying corporate governance practices.

Future research may explore changes in the dividend policy of Ukrainian joint-stock companies following the implementation of BEPS and reforms aimed at financial recovery of enterprises. In case of qualitative changes in dividend policy, the dividend payout ratio would be better used as a proxy. Further research is needed in the financial sector as well.

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