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Determinants of dividend payout ratio: a case of Polish banking sector

Abstract

The dividend policy is one of the most important issues for the company's management. Nowadays banks play a key role in the development of the country, its GDP growth and citizens' wellbeing. The paying of dividends to the owners is directly connected with the strategy and further bank's development, so it is important to understand the determinants of dividend payout ratio. The main goal of this research is to examine the factors influencing payment of cash dividends by banks in Poland. The database of the study consists the financial data for the period of 5 years (from 2014 to 2018) for 15 banks listed on the Warsaw Stock Exchange. The researcher used the ordinary least squares (OLS) regression model to explore the determinants of dividend payout ratio. The six regression models were considered. Profitability, size, leverage are negatively related with the dividend payout ratio. The liquidity, volume of previously paid dividends, cash flow and corporate tax are unimportant from the perspective of dividend policy by Polish banks.

Keywords: dividend policy, dividend payout ratio, determinants, financial industry, bank

Determinanty wypłaty dywidendy na przykładzie polskiego sektora bankowego

Abstrakt

Polityka dywidendowa jest jedną z najważniejszych kwestii dla zarządu spółki. Obecnie banki odgrywają kluczową rolę w rozwoju kraju, wzroście jego PKB i dobrobycie ludzi. Wypłata dywidend dla właścicieli jest bezpośrednio związana ze strategią i dalszym rozwojem banku, dlatego ważne jest zrozumieć determinanty wypłaty dywidendy. Głównym celem artykułu jest zbadanie czynników wpływających na wypłatę dywidendy przez banki w Polsce. Baza danych zawierała dane finansowe za lata 2014–2018 dla 15 banków notowanych na Giełdzie Papierów Wartościowych w Warszawie. W pracy wyestymowano parametry modelu regresji liniowej przy wykorzystaniu metody najmniejszych kwadratów (OLS model). Rozważono sześć modeli regresji. Rentowność, wielkość banku i poziom dźwigni są istotnie negatywnie powiązane z zakresem wypłacanej dywidendy. Płynność firmy, wysokość poprzednich dywidend, przepływy pieniężne i podatek od osób prawnych są nie rzutują istotnie na ustalanie polityki dywidendowej przez polskie banki.

Słowa kluczowe: polityka dywidendowa, wskaźnik wypłaty dywidend, determinanty, sektor finansowy, bank

1. Introduction

The main objective of company management is to maximize the long-term value of the company by maximizing the share price on the stock exchange. In order to achieve this goal, management should make decisions related to: investments, financing and dividends (Murtaza, Iqbal, Ullah, Rasheed and Basit, 2018). According to the literature, dividends are commonly defined as the distribution of earnings (past and present) among the shareholders (Murtaza et al., 2018). The level of dividends and its dynamics are one of the significant factors in managing the economic potential of the company, its financial capabilities and investment attractiveness. Dividend policy, as well as management of the capital structure, have the impact on the company's position on the capital market and on the dynamics of the share price.

The empirical studies investigating the impact of dividend payment on company value are very broad nowadays. The first group of researchers discussed that dividends are positively correlated with the value of the company, which means increasing value of share in case of rising cash dividends (Richardson, 1972). According to the bird-in-hand theory, paying dividend is a key factor in the development of the organization (Murtaza et al., 2018). The other

empiricists supported dividend irrelevance theory, which state that the dividends policy does not have any influence on the market value of a firm (Black and Scholes, 1973).

The dividend policy is a very controversial issue, because managers need to decide about the proportion of the profit which should be paid to the shareholders of the company. The dividend policy is also considered during the setting of the short-term and long-term firm goals. So, it is important to understand determinants of the dividend payout ratio.

In a context of economic globalization, when currency, banking and financial crises break out in one or other part of the world, the question of ensuring stable economic development in each country is crucial. The financial sector plays an important role in the modern economy, because it provides financial intermediation in the following way: the transferring of funds from savers to investors. The well-functioning financial sector enables to allocate savings in the most productive investments, thus supporting innovation and contributing to an economic role. Banks are the most important financial intermediaries all over the world. The financial stability and sustainable development should be not only a short-term achievement of the banks, but also their strategic objectives. Thus, it will have the positive impact on the dynamism of market transformation and raising social standards.

The main objective of this study is to investigate determinants of dividend payout ratio by Polish banks. On 31 December 2018 fifteen banks were listed on the Warsaw Stock Exchange. The database consists the data for the period of 5 years (from 2014 to 2018) which were obtained from the companies' official websites (the annual financial reports) and the official website of the Warsaw Stock Exchange.

The research paper is organized as follow. Section two provides the literature review and develops the research hypothesis of the study. Section three consists of the description of the database, the research method and construction of variables. Section four analyzes results from the empirical models and the obtained findings. The last section concludes the discussion.

2. Literature review and research hypothesis

The volume of research papers on the determinants of dividend payout ratios by listed companies in the developed and developing countries is growing rapidly. However, the finance literature which describes the factors affecting dividend policy by the financial institutions is limited.

Previous research studies suggest that the profitability of the company is one of the most significant determinants of dividend policy. Nevertheless, researchers from different countries found mixed relationships between dividend payout ratios and profitability. The finance

literature describes the pecking-order theory, which mean that firms are tend to pay less dividends because they prefer to have more retained earnings and finance their investment projects by internal resources (Mehta, 2012). The results of the study performed on the Polish market confirmed the pecking-order theory. Firms use the retained earnings as the capital resources, so profitable companies pay less dividends (Kaźmierska-Jóźwiak, 2014). However, there are other research articles that show the positive and significant relationship between the profitability and dividend payout ratio. If a company's profit for a period is higher, dividends also increase because in such a way firms want to give a signal to the market about its good financial condition (Fitri, Hosen and Muhari, 2016). Another study confirmed that profitable banks in Ghana pay higher dividends (Marfo-Yiadom and Agyei, 2011), that is, when financial institutions are unsure about its profits they are not tend to pay dividends to its owner. The return on assets and return on equity are the common ratios used during the measurement of company profitability (Mehta, 2012; Kaźmierska-Jóźwiak, 2014).

Rafique (2012) investigated the significance of corporate tax during the settlement of dividend policy by listed companies on the Karachi Stock Exchange. The results of the study showed that the corporate tax is positively correlated with dividend payout ratio. If a company pays higher taxes, it means that it generates higher profits which influence its profitability.

The earning per share indicator (EPS) also directly reflects a company's profitability. Various researchers confirmed that if the earnings of a company grow, the dividend payout ratio also increases (Malik, Gul, Khan, Rehman and Madina, 2013; Imran, 2011). Moreover, the potential investors pay special attention to EPS during the selection of companies to their portfolio, so it is important for the company to maximize this ratio.

Considering both the theoretical arguments and the empirical results of previous studies, we support the view that more profitable banks listed on the Warsaw Stock Exchange pay higher dividends in comparison to less profitable ones. We express this prediction in hypothesis H1.

H1. *There is a positive relationship between company's profitability and the dividend payout ratio.*

Another important factor which is important from the perspective of dividend policy is company size. The wide range of previous research studies confirmed that big companies tend to pay higher dividends. Mehta (2012) argued that big companies have better access to external resources on the capital market, and therefore are more eager to pay higher dividends and which reduce their internal resources. In addition, payment of dividends by big companies helps to reduce agency costs. The same point of view has been expressed by the following researchers:

Imran (2011), Malik et al. (2013), Rafique (2012), Maladjian and Khoury (2014). Taking into consideration the previous empirical evidence, hypothesis H2 states:

H2. *There is a positive relationship between company size and the dividend payout ratio.*

A company's level of debt has also significant impact on dividend policy. Firms that have higher debt ratios pay less dividends because of the high level of liabilities due to third parties. (King'wara, 2015; Malik et al., 2013). Debt covenants usually reduce firm's ability to pay dividends (Huhu, 2014). Kaźmierska-Jóźwiak (2015) found that a company's risk and transaction costs are directly connected with the leverage of the firm, and they decrease firm owners' chances to receive dividends. Consequently, we formulate hypothesis H3:

H3. *There is a negative relationship between a company's leverage and the dividend payout ratio.*

A firm's cash flow is another important factor affecting the level of paid dividends by listed companies. The result of the study performed by Imran (2011) showed the negative impact of generated cash flows on the volume of dividends. The explanation is following: firms that generate more cash flow are prefer to invest it in development instead to pay dividends. However, other researchers confirmed the positive relationship between cash flows and dividend payout ratios. According to Amidu and Abor (2006), ability to pay dividend increases in case of stable cash flow generated by companies. Thus, firms which generate stable cash flow tend to pay higher dividends. Afza and Mirza (2010) confirmed the existence of a positive relationship between the operating cash flow (OCF) and dividend payout ratios. In addition, they pointed out that the OCF is the main source for a company to pay dividends. Taking these findings into account, we formulate hypothesis H4:

H4. *There is a positive relationship between a company's cash flow and the dividend payout ratio.*

Another factor affecting the dividend payout ratio is a company's liquidity. The results of the research study conducted by Malik (2013) showed the positive relationship between the liquidity and the dividend payout ratio by listed firms on the Karachi stock exchange. A company with liquid assets can generate stable cash flows which – in turn – increase its ability to pay dividends to owners (Maladjian and El Khoury, 2014). Consequently, we formulate the following hypothesis H5:

H5. *There is a positive relationship between a company's liquidity and the dividend payout ratio.*

A previous year's dividend is also important determinant of the dividend policy by listed companies. Fitri et al, (2016) confirmed the positive impact of the previous dividend on the current dividend. The companies want to increase, or maintain, the level of dividend to become more attractive for current owners and potential investors. Imran (2011), Maladjian and El Khoury (2014) received the same results in their research studies. Considering the empirical results, we support the view that previous dividends influences current dividends, and we express this prediction in hypothesis H6:

H6. *There is a positive relationship between the previous and current dividend payout ratios.*

3. Data and Methodology

3.1. Description of the data set

The research was performed using the financial data for all fifteen banks that were listed on the Warsaw Stock Exchange on December 31, 2018[1]: Alior Bank S.A., Banco Santander S.A., Bank Handlowy w Warszawie S.A., Bank Millennium S.A., Bank Ochrony Środowiska S.A., Bank Polska Kasa Opieki S.A., BNP Paribas Bank S.A., Getin Holding S.A.[2], Getin Noble Bank S.A., Idea Bank S.A., ING Bank Śląski S.A., Mbank S.A., Powszechna Kasa Oszczędności Bank Polski S.A., Santander Bank Polska S.A. and Unicredit S.P.G. The dataset the period of 5 years (from 2014 to 2018). Data on the financial statements were obtained from the official companies' websites (the annual financial reports) and the official website of the Warsaw Stock Exchange. Based on obtained financial data we calculated the financial ratios for each entity in the sample and in each year of the analysis.

3.2. Construction of the data set

- **Construction of variables**

The construction of dependent and independent variables follows the literature standards. The dependent variable is the dividend payout ratio (DPR) which was measured in our research paper as a proportion of paid dividends to net income generated by the company (Rafique, 2012).

Following Metha (2012), Kaźmierska-Jóźwiak (2015), Rafique (2012), and Malik et al. (2007), we alternatively employed several independent variables in order to test H1: return on assets (ROA), return on equity (ROE), corporate tax (TAX) and earning per share (EPS). ROA

[1] https://www.gpw.pl/spolki (25.09.2019).
[2] There is a capital group consisting of Getin Holding S.A., Getin Noble Bank S.A. and Idea Bank S.A. which is part of the WIB-banks index.

shows how many percentages of net income are generated by a company's assets, and reflects the proportion of net income to total assets. The similar strategy was used to calculate ROE, which is a percentage of net income generated by a company's equity, and it is measured as proportion of net income to equity. TAX is directly connected with a firm's profitability, and can be calculated as paid corporate tax divided by income before tax. The last variable used in the study to reflect profitability is EPS which is calculated as net profit divided by the total number of company's shares.

The independent variable which reflects the size of the company (SIZE) was used in the article to test H2. Following Imran (2011), the firm's size is the natural logarithm of a company's total assets.

In order to test H3, the leverage of a company was calculated in the two ways. The first financial ratio (LEV1) is a proportion of a company's debt to total assets (Nuhu, 2014). The second one (LEV2) is measured as total debt to total equity (Malik et al., 2007).

Testing of H4 was based on three independent variables. A company's ability to generate cash flow can be measured as: natural logarithm of cash flow (CF1) (Imran, 2011) and natural logarithm of net cash flow (CF2) (Amidu and Abor, 2006). The operating cash flow variable (OCF) reflects the proportion of generated cash from operating activity to total assets (Afza and Mirza, 2010).

A bank is a financial institution, which is supervised by the government authorities. So, it is required from the bank to calculate the liquidity coverage ratio (LCR) and disclosure this information in its annual reports. According to the document called "Basel III: A global regulatory framework for more resilient banks and banking system", the LCR is intended to promote resilience to potential liquidity disruptions over a thirty-day horizon. It will help ensure that global banks have sufficient unencumbered, high-quality liquid assets to offset the net cash outflows they could encounter under an acute short-term stress scenario (The Basel Committee on Banking Supervision (BCBS), 2010, p. 9). The LCR was used to teste the hypothesis 5 (H5).

In order to test H6, the previous dividend ratio was calculated as a proportion of paid dividends for the previous year to the total number of company's share in the previous year (Khoury, 2014).

Table 1 summarizes all variables which were used in the study, Table 2 shows respective descriptive statistics for the sample, while Table 3 presents a matrix with correlation coefficients for each pair of variables. Statistics from Table 2 indicate that the range of variation of each variable reveals a reasonable pattern, and the sample does not suffer from outliers that should be eliminated before calculations. The data set contains 920 bank-year observations for

15 listed Polish banks over the period of five years (from 2014 to 2015), and it includes 13 variables.

	Variable	Description	Expected Relationship	References
DEPENDENT VARIABLE				
	Dividend payout ratio	Dividend/net profit		Rafique (2012)
INDEPENDENT VARIABLES				
1	ROA	Net profit/total assets	+	Metha (2012)
2	ROE	Net profit/equity	+	Kaźmierska-Jóźwiak (2015)
3	Corporate tax	Corporate tax/profit before tax	+	Rafique (2012)
4	Earnings per share	Net profit per share	+	Malik et al., (2007)
5	Size	Natural log of total assets	+	Imran (2011)
6	Leverage 1	Total debt/total assets	-	Nuhu (2014)
7	Leverage 2	Total debt/total equity	-	Malik et al., (2007)
8	Cash flow 1	Natural log of cash flow	+	Imran (2011)
9	Cash flow 2	Natural log of net cash flow	+	Amidu and Abor (2006)
10	Operating cash flow	Operating cash flow/total assets	+	Afza and Mirza (2010)
11	Liquidity	Liquidity Coverage Ratio	+	The Basel Committee on Banking Supervision (2010)
12	Previous dividend	Last year's dividend per share	+	Khoury (2014)

Table 1. *Summarizing of dependent and independent variables*

3.3. Research method

To verify the research hypotheses, we regress the dependent variable against a set of explanatory variables with the use of the ordinary least squares (OLS) method. Different model specifications employ several explanatory variables, but – to avoid collinearity of regressors – each specification includes only one variable from each set dedicated to test each hypothesis.

	Mean	Median	Minimum	Maximum	Std. Dev.
DPR	0.3	0.0	0.0	2.0	0.5
ROA	0.2	0.1	-0.1	0.2	0.2
ROE	-0.1	0.1	-6.9	0.7	0.8
TAX	0.2	0.2	-1.1	2.2	0.4
EPS	5.7	2.9	-24.1	31.1	9.3
SIZE	7.8	7.8	4.9	9.2	0.9
LEV1	0.9	0.9	0.8	1.0	0.0
LEV2	11.5	9.2	5.2	75.2	11.1
CF1	6.3	6.4	3.3	7.5	0.9
CF2	0.8	4.3	-6.8	7.0	5.6
OCF	0.1	0.1	-0.1	0.2	0.0
LCR	0.2	0.1	0.1	0.2	0.0
PREVDIV	1.9	0.0	0.0	13.0	3.2

Table 2. *Summary Statistics*

ROA	1.0	0.9	0.2	0.5	0.1	-0.6	-0.6	0.0	-0.2	0.1	0.7	0.2
ROE	0.9	1.0	0.2	0.4	0.1	-0.5	-0.7	0.0	-0.1	0.1	0.6	0.1
TAX	0.2	0.2	1.0	0.2	-0.2	-0.2	-0.5	-0.2	-0.2	0.1	0.2	0.2
EPS	0.5	0.4	0.2	1.0	0.0	-0.5	-0.4	0.1	-0.1	-0.0	0.5	0.4
SIZE	0.1	0.1	-0.2	0.0	1.0	-0.0	-0.1	1.0	0.1	0.1	0.2	0.0
LEV1	-0.6	-0.5	-0.2	-0.5	-0.0	1.0	0.5	-0.2	0.1	-0.1	-0.6	-0.6
LEV2	-0.6	-0.7	-0.5	-0.4	-0.1	0.5	1.0	-0.1	0.2	-0.1	-0.6	-0.2
CF1	0.0	0.0	-0.2	0.1	1.0	-0.2	-0.1	1.0	0.1	0.2	0.2	0.1
CF2	-0.2	-0.1	-0.2	-0.1	0.1	0.1	0.2	0.1	1.0	0.4	-0.1	-0.1
OCF	0.1	0.1	0.1	-0.0	0.1	-0.1	-0.1	0.2	0.4	1.0	0.2	-0.0
LCR	0.7	0.6	0.2	0.5	0.2	-0.6	-0.6	0.2	-0.1	0.2	1.0	0.2
PREVDIV	0.2	0.1	0.2	0.4	0.0	-0.6	-0.2	0.1	-0.1	-0.0	0.2	1.0
	ROA	ROE	TAX	EPS	SIZE	LEV1	LEV2	CF1	CF2	OCF	LCR	PREVDIV

Table 3. *Correlation Matrix*

4. Empirical results

The determinants of dividend payout ratio are presented in Table 4. The six regression models were considered. Coefficient and standard deviation are presented for each variable.

- ***Profitability***

It is observed that a company's profitability measured with ROA, ROE and EPS is significantly negatively related to the dividend payout ratio. When the profitability of a company decreases dividends paid to the owners increase. Profitable banks listed on the Warsaw Stock Exchange are not eager to pay dividends and use the retained earnings to finance their own investments. This result rejects H1, but it is supported by research findings by Metha (2012) for the UAE companies and Kaźmierska-Jóźwiak (2014) for Polish firms.

Also, the received findings can be supported by the results received by the National Bank of Poland (NBP) in the report called "Innovations in the commercial bank sector in Poland. Research report 2019". The Polish banks started to invest more money in artificial intelligence, machine learning as well as customer experience. In general, there is an upward trend in the entire banking sector. The following graphs present the investment on development and innovation of Polish banks.

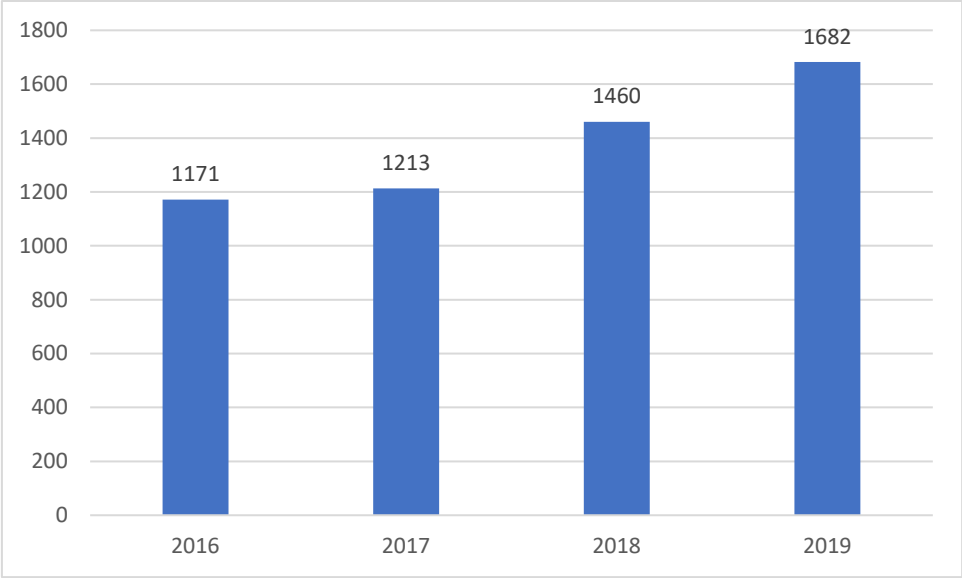

Figure 1. *Investment on innovation and development of Polish banks according to NBP report 2019*

The received empirical results also show that profitability reflected indirectly in TAX is positively related with the dividend payout ratio, however coefficient for this variable is statistically insignificant.

- ***Size***

The observation that company size is negatively related to the dividend payout ratio rejects H2. A high value of total assets of a Polish bank reduces the level of dividends paid to owners. A following explanation to this result can be provided: large banks retain dividends in order to avoid costly financing (Alza and Mirza, 2010). Another reason for negative coefficient of size can be as follow: small banks do not have easy access to capital market, so the try to attract investors through high dividend payment, while the large banks build up reserves instead of paying dividends to the shareholders (Alza and Mirza, 2010).

The extra explanation can be described using the NPB report 2019. According to this report, the huge part of expenditure in the Polish banks is investment in ICT (Information Communication Tech). Due to significant investment on ICT, the large banks can gain a competitive advantage by escaping small and medium-sized banks.

Dependent variable	*DPR*					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
ROA		-12.172*** (3.0899)				-9.608** (3.813)
ROE				-0.603* (0.313)		
TAX			0.0414 (0.0441)	0.00783 (0.0546)		
EPS	-0.00785* (0.00435)				-0.00903* (0.00432)	
SIZE		-0.0856* (0.407)				
LEV1		-13.332*** (3.322)	-4.282* (2.402)		-5.689** (2.563)	-9.142** (3.028)
LEV2	-0.00133 (0.00369)			-0.0631* (0.0336)		
CF1				-0.0434 (0.0367)	-0.0309 (0.0271)	-0.0628 (0.0349)
CF2		0.000288 (0.00598)	-0.000373 (0.00383)			
OCF	0.103 (0.485)					
LCR	2.731 (1,949)	2.0639 (2.283)		2.0618 (1.909)	1.0391 (1.365)	2.141 (2.081)
PREVDIV	0.0701** (0.0285)		0.0511 (0.0309)	0.0469 (0.0305)	0.0499 (0.0297)	0.0364 (0.0292)
Constant	-0.265 (0.277)	12.571*** (3.0899)	3.934* (2.188)	0.687 (0.553)	5.315* (2.507)	8.465** (2.909)
Observations	60	60	65	60	60	60
R^2	0.482	0.514	0.521	0.525	0.569	0.594

* Significance at the 10% level.
** Significance at the 5% level.
*** Significance at the 1% level.

Table 4. *Determinants of dividend payout ratio*
Source: *author's own calculations.*

- ***Leverage***

Except for Model 1 coefficients for leverage-related variables are negative and statistically insignificant. Thus, the received empirical results show that a company's high leverage measured with either LEV1 (the proportion of total debt to total assets) or LEV2 (the proportion of total debt to total equity) reduce the dividend payout ratio. The negative relation between leverage of Polish banks and dividend payout ratio can be described in the following way: a financial institution which has a higher level of debt pays less dividends because of increased liabilities due to third parties. It means, that the banks keep the retained earnings to pay off future debt obligations (Marfo-Yiadom and Agyei, 2011). Thus, H3 is supported by this empirical result. The same findings were received by King'wara (2015) in Kenya and Malik et al. (2013) in Pakistan.

- ***Cash Flow***

The received empirical results from Table 4 indicate that the coefficient for cash flow variables is statistically insignificant. Thus, the relationship between cash flow and dividend payout ratio which is observed in the literature has not been confirmed in this study.

- ***Liquidity***

As is the case of cash flow, any relations between company liquidity measures with LCR (Liquidity Coverage Ratio) and dividend payout ratio is not confirmed by the received empirical evidence, as a result of statistically insignificant coefficient for LCR.

- ***Previous dividends***

Exclusively the empirical results received from the Model 1 show the positive and statistically significant coefficient for the PREVDIV variable. So, the evidence that H6 is supported by this analysis is weak. However, it could mean that the banks listed on the Warsaw Stock Exchange can be tent to paid higher level of dividends in the current year in compare with the previous year. It can be explained, that financial institutions want to become more attractive for investors. The same results received by Fitri et al. (2016) in their study performed in Indonesia, by El Khoury (2014) in the Lebanese Republic and by Imran (2011) in Pakistan.

5. Conclusions

The financial sector plays an important role in the modern economy and banks are the most important financial intermediaries. The main objective of this research was to examine the factors influencing cash dividends by banks in Poland. The paper used the ordinary least squares (OLS) regression model to explore the determinants of dividend payout ratio. The six regression models were considered. The results of the study showed that profitability, size and leverage are negatively related to the dividend payout. These findings are consistent with outcomes obtained for other markets. The liquidity, the volume of previously paid dividends, cash flow and the volume of paid corporate tax are unimportant factors from the perspective of the dividend policy of Polish banks.

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