SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 211

DIVIDEND POLICY IN TURBULENT TIMES: POLISH FIRMS DURING THE COVID-19 PANDEMIC

Jerzy GAJDKA[1], Marek SZYMAŃSKI[2*]

[1] University of Lodz; jerzy.gajdka@uni.lodz.pl, ORCID: 0000-0003-1870-3129
[2] University of Lodz; marek.szymanski@uni.lodz.pl, ORCID: 0000-0001-5762-4840
* Correspondence author

Purpose: This paper investigates changes in dividend policies of Polish firms during the COVID-19 pandemic. It focuses on whether firms were more likely to cut or omit dividends during this period compared with pre-pandemic times and what are the factors influencing dividend policy choices in times of economic uncertainty.
Design/methodology/approach: The study includes firms listed on the Warsaw Stock Exchange that paid dividends between 2010 and 2023. First we present trends in dividend policy changes. Then, using logistic regression, we examine the factors influencing these decisions.
Findings: Our findings reveal a significant increase in dividend cuts and omissions in 2020, but this trend reversed quickly in subsequent years. The logistic regression analysis could not definitively identify the specific factors driving these changes.
Research limitations/implications: The study offers new insights into corporate financial management during crises, it also underscores the need for further research to provide a comprehensive explanation of the observed phenomena.
Originality/value: We were unable to find any research on the dividend policy of Polish firms during the COVID-19 pandemic. This significant gap in the literature motivated our research.
Keywords: dividend, payout policy, COVID-19, capital market.
Category of the paper: Research paper.

1. Introduction

Dividend policy plays a crucial role in financial management as it directly impacts a company's shareholder value. Dividends represent a portion of a company's profits that are distributed to its shareholders. This distribution can influence investor sentiment, stock price, and the overall financial health of a firm. By understanding and effectively managing dividend policy, companies can optimize their capital structure, attract investors, and enhance their long-term financial performance.

It is understandable that dividend policy was one of the first research areas in corporate finance explored by academic researchers. However, despite many changes that have occurred in the global economy over the past few decades, firms today face similar challenges, when making dividend policy decisions, to those identified by Lintner (1956) in the mid-1950s. Although many of the significant issues related to the dividend policy remain unresolved, some of the claims have gained widespread support. One such claim is that managers are generally reluctant to reduce dividends, as such a reduction, especially if not previously announced, typically leads to a decline in share price (e.g., Kreiger et al., 2021). This phenomenon is explained in various ways, the most important are agency theory and signaling theory.

According to agency theory, the dividend policy is particularly significant due to the separation of ownership and management. If a firm generates cash flows, managers find many ways to use them for their own purposes, even inefficient ones, rather than distributing them to shareholders (Jensen, 1986). The capital market reacts to this by lowering share prices when dividends are reduced and raising them when dividends are increased. Signaling theory, on the other hand, suggests that dividends act as a means for managers to convey information to investors about the firm's condition under conditions of information asymmetry (e.g., Bhattacharya, 1979; John, Williams, 1985; Megginson, 1996). Since this is a costly signaling mechanism, only firms in good financial position are able to use dividends to signal their true condition. Therefore, a high dividend is interpreted by the market as a signal of the firm's strong financial position, resulting in an increase in the share price when dividends are raised and a decrease when they are lowered. As a result, managers are reluctant to cut dividends, expecting that such a decision will lead to a decline in the share price. This can explain why, according to numerous empirical studies of developed markets, only a relatively small proportion of dividend-paying firms decide to cut dividends from one period to the next in "normal times". However, this situation changes significantly during economic crises or when a firm faces financial difficulties (Krieger et al., 2021). In such cases, dividend cuts become much more common, which can be seen as a rational action motivated by the desire for the firm’s survival.

While extensive research has examined dividend policy in developed markets, studies on emerging markets, particularly during crises, are relatively limited. To address this gap, this paper aims to present whether and how dividend payments of Polish public firms changed during the pandemic. In particular, the focus is on whether, during the COVID-19 pandemic in Poland, there was a tendency to omit or cut dividends. The study covers firms listed on the Warsaw Stock Exchange (WSE) that paid dividends in the years 2010-2023. By examining dividend changes, omissions, and cuts during this period, we seek to provide empirical evidence on the factors influencing dividend policy choices in times of economic uncertainty.

A two-stage approach was used in the study. The first stage involved presenting quantitative summaries of all dividend-paying firms, with a specific focus on those that cut or omitted dividend payments between 2010 and 2023. In the second stage of the study, logistic regression was used to examine the factors influencing the omission or cut of dividend payments.

The remainder of the paper is organized as follows. Section 2 reviews literature on dividend policy during financial crises. Section 3 introduces research methodology and data description. Section 4 provides results, and Section 5 discussion. Conclusion summarizes the paper.

2. Literature Review

Firm's dividend policy is determined by both its financial situation and the overall state of the economy. DeAngelo and DeAngelo (1990) showed that a firm's financial situation has a very strong impact on its dividend policy. In a sample of US companies studied in the years 1980-1985, almost all of the firms that reported losses during that period decided to cut dividends. However, managers of firms with long dividend histories appeared particularly reluctant to omit dividends.

In recent years, Poland has witnessed several events that could be considered as having symptoms of a crisis threatening the state of the economy and reducing the sense of security. One of the most significant events of this kind was the COVID-19 pandemic, which officially began in Poland in March 2020 when a state of epidemic was declared and ended in May 2022 when it was lifted.

Since economic crises typically lead to a rise in the number of loss-making firms, numerous studies have confirmed a negative relationship between crises and dividend payouts. Floyd et al. (2015) found that during the 2008-2009 financial crisis, the number of firms cutting dividends in the financial sector increased. Similarly, Basse et al. (2013) demonstrated that during the financial crisis, the number of banks paying dividends in European countries decreased. Kirkulak and Kurt (2003) examined the situation during the Istanbul stock market crisis in 2001 and found that the number of firms paying dividends decreased significantly. Ali (2022) tested the impact of the COVID-19 pandemic on the dividend policy of firms in G-12 countries and found that the proportion of firms omitting or reducing dividend payments increased significantly during the pandemic. However, he noted that most firms tried to maintain or slightly reduce the dividend level, thus signaling to investors their financial condition. Krieger et al. (2021) also noted an increased proportion of publicly traded firms in the US that had either omitted or reduced dividends during the COVID-19 pandemic. Theri et al. (2023) observed a similar trend in France, where dividends per share declined during the pandemic. Finally, Ntantamis and Zhou (2022), examining the impact of the coronavirus pandemic on the adjustments of dividends and share repurchases of publicly listed firms in the G-7 countries, found that firms generally reduced payouts to shareholders during this period, but did so in different ways. Firms in the United Kingdom, Germany, France, and Italy experienced a widespread cut in dividends, while firms in the United States and Canada cut payout more via share repurchases, with Japanese firms in between.

While the impact of crises on corporate dividend policy has been extensively studied in various countries, there is a notable gap in research on the Polish market. To the best of our knowledge only one study, Witkowski (2012), has examined the effects of the 2008-2009 financial crisis on Polish listed firms. Although Witkowski found evidence that the crisis influenced dividend policy, the relationship was weaker than expected. Surprisingly, we were unable to find any research on the dividend policy of Polish firms during the COVID-19 pandemic. This significant gap in the literature motivated our research. Understanding how firms adjust their dividend policies during economic crises is crucial for investors who consider dividends a key factor in their investment decisions.

3. Methods and Data

To assess the frequency and magnitude of dividend cuts and omissions data was collected for firms listed on the Warsaw Stock Exchange that paid dividends between 2010 and 2023[1]. Following Krieger et al. (2021) this study adopted a two-stage approach. The first stage involved presenting quantitative summaries of all dividend-paying firms, with a specific focus on those that cut or omitted dividend payments between 2010 and 2023.

A firm was classified as enacting a dividend omission in year t if it paid dividend in year t-1 but ceased to do so in year t. A firm was classified as enacting a dividend cut in year t if the dividend per share in year t-1 was higher than that in year t (if dividend in year t was reduced to 0, it was defined as a dividend omission, however, it was also considered as a dividend cut). In case of stock split the dividend was not taken into account.

In the second stage of the study, logistic regression was used to examine the factors influencing the omission or cut of dividend payments in the pre-COVID-19 period (2010-2019) and in the first year of the pandemic in Poland, i.e., 2020[2]. Two logistic regression models were used, both with binary dependent variables. In Model 1, the dependent variable "dividend omission" took the value of 1 for firms enacting dividend omission and 0 for those that did not. In Model 2, the dependent variable "dividend cut" took the value of 1 for firms enacting dividend cut and 0 for those that did not cut dividend payment. Explanatory variables potentially predictive of dividend cut or omission include: firm size, profitability, liquidity, debt, listing age, and growth opportunities. These control variables were previously found to be significant determinants of corporate dividend policy by Brav et al. (2012), Fama and French (2005), and Krieger et al. (2021). All variable measurements are presented in Table 1.

[1] Data for the study was obtained from the Biznesradar database.

[2] Given that a significant increase in the proportion of firms cutting or omitting dividend payment during the COVID-19 pandemic (see the following section) occurred only in 2020, the logistic regression aimed at identifying factors contributing to increase solely on 2020 data.

Table 1.
Variables description

Variable	Abbreviation	Measurement
dividend cut	DIV_CUT	binary variable: 1 – dividend cut, 0 – all the rest
dividend omission	DIV_OMIT	binary variable: 1 – dividend omission, 0 – all the rest
size of firm	SIZE	logarithm of assets in thousands
profitability	ROA	net profit / assets
liquidity	LIQ	cash / assets
debt	DEBT	(long- and short-term debt) / assets
age	AGE	years since IPO
growth opportunities	PBV	price / book value

Source: own elaboration.

The regression models are given as follows:

Model 1, dividend cut:

$$DIV\_CUT_t = \alpha_o + \alpha_1 SIZE_{it-1} + \alpha_2 ROA_{it-1} + \alpha_3 LIQ_{it-1} + \alpha_4 DEBT_{it-1} + \\ + \alpha_5 AGE_{it} + \alpha_6 PBV_{it-1} + e_{it} \quad (1)$$

Model 2, dividend omission:

$$DIV\_OMIT_t = \alpha_o + \alpha_1 SIZE_{it-1} + \alpha_2 ROA_{it-1} + \alpha_3 LIQ_{it-1} + \alpha_4 DEBT_{it-1} + \\ + \alpha_5 AGE_{it} + \alpha_6 PBV_{it-1} + e_{it} \quad (2)$$

4. Results

4.1. Quantitative Analysis of Dividend Cuts and Omissions (2010-2023)

Table 2 presents the number and proportion of dividend omission in comparison to the prior year for years 2010-2023.

Table 2.
Historical frequency of dividend omissions

Year	Omit	No Omit	Total	Omit / Total
2010	5	52	57	8,8%
2011	5	61	66	7,6%
2012	8	72	80	10,0%
2013	7	79	86	8,1%
2014	6	87	93	6,5%
2015	12	90	102	11,8%
2016	10	103	113	8,8%
2017	13	109	122	10,7%
2018	18	107	125	14,4%
2019	11	115	126	8,7%
2020	38	91	129	29,5%
2021	3	126	129	2,3%
2022	11	118	129	8,5%
2023	12	117	129	9,3%

This table reports the historical frequency of dividend omissions. A firm was classified as enacting a dividend omission in year t if it had paid dividend in year t-1 but ceased do so in year t. The Year column refers to the dividend paid in a given year. For instance, the dividend for 2015 is the dividend paid in 2015 from the net income earned in 2014. The Omit column refers to the firms that omitted dividend in a given year.

Source: own elaboration.

Table 2 shows that the ratio of firms omitting dividend payments to those paying dividends was significantly lower in the pre-pandemic period (2010-2019) compared to the first year of the pandemic (2020). Before the pandemic, around 9.5% of firms on average omitted dividend payment, but this figure skyrocketed to almost 30% in 2020. This trend is similar to what Krieger et al. (2021) found in their study of publicly traded firms in the US. However, this phenomenon did not persist in subsequent years of the pandemic. On the contrary, in 2021, although the pandemic was still ongoing, firms almost completely ceased omitting dividend payments, with the lowest proportion ever recorded at just 2.3%. In 2022 and 2023, the proportion returned to levels closer to the pre-pandemic average.

The next question is whether these changes in dividend policies affected all sectors of the economy or just certain ones. Table 3 breaks down dividend omissions by sector, giving a clearer picture.

Table 3a.
Historical frequency of dividend omissions in sectors

Year	Finance			Energy			Chemicals and materials		
	O	N	Omit / Total	O	N	Omit / Total	O	N	Omit / Total
2010	0	10	0,0%	0	4	0,0%	1	5	16,7%
2011	0	13	0,0%	0	4	0,0%	0	7	0,0%
2012	2	12	14,3%	0	4	0,0%	1	7	12,5%
2013	0	15	0,0%	1	4	20,0%	0	8	0,0%
2014	2	15	11,8%	0	5	0,0%	1	7	12,5%
2015	4	15	21,1%	0	5	0,0%	1	9	10,0%
2016	0	24	0,0%	1	4	20,0%	2	8	20,0%
2017	1	26	3,7%	1	4	20,0%	2	9	18,2%
2018	2	25	7,4%	1	4	20,0%	2	9	18,2%
2019	2	25	7,4%	1	5	16,7%	2	9	18,2%
2020	12	16	42,9%	1	5	16,7%	3	8	27,3%
2021	1	27	3,6%	0	6	0,0%	0	11	0,0%
2022	0	28	0,0%	1	5	16,7%	0	11	0,0%
2023	3	25	10,7%	0	6	0,0%	0	11	0,0%

Column O refers to dividend omission, column N refers to no dividend omission.

Source: own elaboration.

Table 3b.
Historical frequency of dividend omissions in sectors (continued)

Year	Industrials			Consumer goods			Trade and services		
	O	N	Omit / Total	O	N	Omit / Total	O	N	Omit / Total
2010	3	16	15,8%	0	6	0,0%	0	7	0,0%
2011	3	19	13,6%	0	7	0,0%	1	7	12,5%
2012	4	24	14,3%	1	7	12,5%	0	10	0,0%
2013	3	25	10,7%	1	8	11,1%	1	11	8,3%
2014	1	30	3,2%	0	9	0,0%	2	10	16,7%
2015	4	30	11,8%	0	10	0,0%	2	10	16,7%

Cont. table 3b.

2016	3	33	8,3%	0	13	0,0%	2	11	15,4%
2017	4	34	10,5%	1	12	7,7%	3	12	20,0%
2018	6	32	15,8%	2	13	13,3%	1	15	6,3%
2019	3	35	7,9%	0	15	0,0%	2	14	12,5%
2020	10	28	26,3%	5	10	33,3%	7	10	41,2%
2021	1	37	2,6%	0	15	0,0%	0	17	0,0%
2022	3	35	7,9%	3	12	20,0%	2	15	11,8%
2023	2	36	5,3%	6	9	40,0%	0	17	0,0%

Source: own elaboration

Table 3c.

Historical frequency of dividend omissions in sectors (continued)

Year	Healthcare			Technology		
	O	N	Omit / Total	O	N	Omit / Total
2010				1	4	20,0%
2011				1	4	20,0%
2012	0	1	0,0%	0	7	0,0%
2013	1	1	50,0%	0	7	0,0%
2014	0	3	0,0%	0	8	0,0%
2015	0	3	0,0%	1	8	11,1%
2016	2	1	66,7%	0	9	0,0%
2017	0	3	0,0%	1	9	10,0%
2018	1	2	33,3%	3	7	30,0%
2019	1	2	33,3%	0	10	0,0%
2020	0	3	0,0%	0	11	0,0%
2021	1	2	33,3%	0	11	0,0%
2022	0	3	0,0%	2	9	18,2%
2023	0	3	0,0%	1	10	9,1%

Source: own elaboration.

Table 3 shows that more firms stopped paying dividends in in the first year of the COVID-19 pandemic, i.e., 2020, especially in: industrial, trade and services, and financial sectors. However, this trend was not observed in the healthcare and technology sectors. This can be economically justified, as the pandemic increased the demand for healthcare products and services, which likely prevented firms from stopping dividend payments (although the small number of firms in this sector does not allow for broader generalization). Similarly, the technology sector, largely related to the Internet, saw increased demand for its products and services, which may have kept dividend payments steady. Interestingly, even though many sectors saw a big increase in omitting dividends in 2020, the number usually dropped sharply in 2021.

When we compare these results to the US study by Krieger et al. (2021), we see an important difference. In the US, industrials were more likely to stop paying dividends in 2020, while the financial and utilities sectors didn't. However, in Poland, the financial sector was among those that significantly omitted dividend payments.

Shifting our focus from dividend omissions, Table 4 provides an analysis of dividend cuts.

Table 4.
Historical frequency of dividend cuts

Year	Cut	No Cut	Total	Cut / Total
2010	12	45	57	21,1%
2011	12	54	66	18,2%
2012	18	62	80	22,5%
2013	23	63	86	26,7%
2014	25	68	93	26,9%
2015	28	74	102	27,5%
2016	30	83	113	26,5%
2017	38	84	122	31,1%
2018	36	89	125	28,8%
2019	20	106	126	15,9%
2020	60	69	129	46,5%
2021	12	117	129	9,3%
2022	31	98	129	24,0%
2023	30	99	129	23,3%

This table reports the historical frequency of dividend cuts. A firm was classified as enacting a dividend cut in year t if the dividend per share in year t-1 was higher than that in year t (dividend reduced to 0 was also considered as a dividend cut). The Year column refers to the dividend paid in a given year. For instance, the dividend for 2015 is the dividend paid in 2015 from the net income earned in 2014. The Cut column refers to the firms that cut dividend in a given year.

Source: own elaboration.

Table 4 shows a similar pattern to dividend omissions. The share of firms cutting dividends among all dividend-paying firms also increased sharply in the first year of the pandemic, i.e., in 2020, reaching over 46%, compared to the pre-pandemic average of 24.5%. Similar to dividend omissions, the share of firms cutting dividends was lowest in 2021. However, in 2022 returned to a level close to the pre-pandemic average. To give a clear overview of this analysis table 5 breaks down dividend cuts by sector.

Table 5a.
Historical frequency of dividend cuts in sectors

Year	Finance			Energy			Chemicals and materials		
	C	T	C / T	C	T	C / T	C	T	C / T
2010	0	10	0,0%	1	4	25,0%	2	6	33,3%
2011	0	13	0,0%	1	4	25,0%	1	7	14,3%
2012	7	14	50,0%	0	4	0,0%	1	8	12,5%
2013	4	15	26,7%	3	5	60,0%	2	8	25,0%
2014	5	17	29,4%	2	5	40,0%	5	8	62,5%
2015	8	19	42,1%	2	5	40,0%	3	10	30,0%
2016	6	24	25,0%	2	5	40,0%	4	10	40,0%
2017	12	27	44,4%	1	5	20,0%	4	11	36,4%
2018	7	27	25,9%	1	5	20,0%	3	11	27,3%
2019	5	27	18,5%	1	6	16,7%	2	11	18,2%
2020	18	28	64,3%	2	6	33,3%	5	11	45,5%
2021	3	28	10,7%	0	6	0,0%	0	11	0,0%
2022	3	28	10,7%	1	6	16,7%	1	11	9,1%
2023	9	28	32,1%	0	6	0,0%	1	11	9,1%

Column C refers to dividend cuts, column T refers to total dividend payment in a given year.

Source: own elaboration.

Table 5b.
Historical frequency of dividend cuts in sectors (continued)

Year	Industrials			Consumer goods			Trade and services		
	C	T	C / T	C	T	C / T	C	T	C / T
2010	5	19	26,3%	0	6	0,0%	2	7	28,6%
2011	6	22	27,3%	1	7	14,3%	2	8	25,0%
2012	6	28	21,4%	1	8	12,5%	2	10	20,0%
2013	6	28	21,4%	2	9	22,2%	2	12	16,7%
2014	6	31	19,4%	1	9	11,1%	6	12	50,0%
2015	10	34	29,4%	2	10	20,0%	2	12	16,7%
2016	9	36	25,0%	2	13	15,4%	2	13	15,4%
2017	10	38	26,3%	4	13	30,8%	5	15	33,3%
2018	10	38	26,3%	6	15	40,0%	4	16	25,0%
2019	5	38	13,2%	2	15	13,3%	3	16	18,8%
2020	17	38	44,7%	8	15	53,3%	8	17	47,1%
2021	3	38	7,9%	4	15	26,7%	1	17	5,9%
2022	11	38	28,9%	8	15	53,3%	5	17	29,4%
2023	11	38	28,9%	7	15	46,7%	1	17	5,9%

Source: own elaboration.

Table 5c.
Historical frequency of dividend cuts in sectors (continued)

Year	Healthcare			Technology		
	C	T	C / T	C	T	C / T
2010				2	5	40,0%
2011				1	5	20,0%
2012	0	1	0,0%	1	7	14,3%
2013	1	2	50,0%	3	7	42,9%
2014	0	3	0,0%	0	8	0,0%
2015	0	3	0,0%	1	9	11,1%
2016	2	3	66,7%	3	9	33,3%
2017	0	3	0,0%	2	10	20,0%
2018	2	3	66,7%	3	10	30,0%
2019	1	3	33,3%	1	10	10,0%
2020	0	3	0,0%	2	11	18,2%
2021	1	3	33,3%	0	11	0,0%
2022	0	3	0,0%	2	11	18,2%
2023	0	3	0,0%	1	11	9,1%

Source: own elaboration.

Results showed similar trends in dividend cuts as in omissions, i.e., in most sectors 2020 was the year with the highest number of firms cutting dividends, while 2021 generally had a very low proportion of such firm. However, the healthcare sector was the most notable exception, with no dividend cuts in 2020.

4.2. Determinants of Dividend Omissions and Cuts

Table 6 and 7 report the estimation results of model 1, where the dependent variable was dividend omission for the periods before the COVID-19 pandemic (2010-2019), and in the year of the pandemic outbreak (2020).

Table 6.
Logistic regression predicting dividend omissions, before COVID

	B	standard error	Wald statistic	p-value	
Const	-2,568	0,922	7,749	0,005	***
SIZE	0,118	0,064	3,399	0,065	*
ROA	-5,954	1,640	13,187	0,000	***
LIQ	-0,098	1,684	0,003	0,953	
DEBT	-0,057	0,737	0,006	0,938	
AGE	-0,065	0,024	7,223	0,007	***
PBV	-0,098	0,100	0,966	0,326	

*** denotes significance at 1% level; ** denotes significance at 5% level.

Source: own elaboration.

Table 7.
Logistic regression predicting dividend omissions, COVID (only 2020)

	B	standard error	Wald statistic	p-value	
Const	-4,366	2,453	3,167	0,075	*
SIZE	0,094	0,165	0,323	0,570	
ROA	6,257	5,221	1,436	0,231	
LIQ	-0,897	3,840	0,055	0,815	
DEBT	2,619	1,830	2,048	0,152	
AGE	0,019	0,056	0,111	0,739	
PBV	0,133	0,118	1,271	0,260	

*** denotes significance at 1% level; ** denotes significance at 5% level.

Source: own elaboration.

The analysis shows that the statistically significant factors for the decision to omit dividends in the pre-pandemic period were: firm size, profitability (return on assets), and age of the firm on the market. Larger, less profitable firms that had been listed for a shorter time were more likely to omit dividend payments in the pre-pandemic period. This is partly in line with Krieger et al. (2021), where profitability and age were also significant variables (although in addition to these factors, debt and growth opportunities were also significant). However, in the first year of the pandemic in Poland, i.e., in 2020, the situation changed fundamentally. None of the studied factors were significant in Poland, unlike in the US where debt and growth opportunities proved to be statistically significant.

Table 8 and 9 report the estimation results of model 2, where the dependent variable was dividend cut for the periods before the COVID-19 pandemic (2010-2019), and in the year of the pandemic outbreak (2020).

Table 8.
Logistic regression predicting dividend cut, before COVID

	B	standard error	Wald statistic	p-value	
Const	-1,425	0,657	4,701	0,030	**
SIZE	0,099	0,048	4,241	0,039	**
ROA	-3,688	1,293	8,135	0,004	***
LIQ	0,612	1,100	0,310	0,578	
DEBT	-1,059	0,541	3,833	0,050	**
AGE	-0,043	0,017	6,591	0,010	**
PBV	0,043	0,055	0,605	0,437	

*** denotes significance at 1% level; ** denotes significance at 5% level.

Source: own elaboration.

Table 9.
Logistic regression predicting dividend cut, COVID (only 2020)

	B	standard error	Wald statistic	p-value	
Const	-2,094	2,193	0,912	0,340	
SIZE	0,011	0,152	0,005	0,944	
ROA	12,921	6,346	4,146	0,042	**
LIQ	-3,199	3,163	1,023	0,312	
DEBT	0,219	1,573	0,019	0,889	
AGE	0,076	0,051	2,258	0,133	
PBV	0,051	0,133	0,148	0,700	

*** denotes significance at 1% level; ** denotes significance at 5% level.

Source: own elaboration.

Table 8 shows that for the pre-pandemic period, firm size, profitability, debt, and age were statistically significant factors. These were the same factors as in our first model (dividend omission), with the additional inclusion of the debt factor. In contrast, for 2020, the first year of the pandemic, only the estimate for profitability was statistically significant. Surprisingly, firms that were more profitable were more likely to cut their dividends.

5. Discussion

Our study reveals that Polish firms listed on the stock exchange made significant changes to their dividend policies during the COVID-19 pandemic. These changes, primarily related to the frequency of dividend omissions and cuts, are consistent with the results of other studies. In "normal" times, managers generally try to avoid cutting dividends, this position may change radically during a crisis. As a result during the first year of the pandemic crisis, in 2020, there was a sharp increase in dividend cuts and omissions compared to the pre-pandemic period. However, not all sectors were affected equally; healthcare and technology, for example, did not experience this trend.

Our analysis of the factors influencing dividend cuts and omissions indicates that while, in the pre-pandemic period, these factors were largely consistent with the predictions of theories and other studies, in the first year of the pandemic, this situation changed fundamentally. As a result, in 2020, none of the tested factors proved to be statistically significant in the case of dividend omissions. For dividend cuts, statistical significance was found only for one factor – profitability, but the positive sign of the coefficient, indicating that more profitable firms were more likely to cut dividends, does not appear to be consistent with theory. The pandemic clearly disrupted dividend policies of Polish firms, but the reasons for these changes are not fully understood and require further research.

There are multiple ways to justify the research findings for the first year of the pandemic.

The influence of unknown, 2020-specific factors: The unprecedented shock of the COVID-19 pandemic in 2020 may have overshadowed the impact of traditional financial indicators on dividend decisions such as debt, P/BV ratio, profitability, or firm size. Factors such as increased uncertainty, regulatory changes, and operational disruptions could have played a more significant role. These factors, not captured in our model, may explain why traditional indicators were less predictive in 2020.

Non-financial motivations for management decisions: The pandemic may have led management to prioritize non-financial factors in their dividend decisions, based on factors other than those normally considered. Strategic considerations, such as preserving liquidity for future uncertainties, could have outweighed traditional financial metrics. This suggests that the pandemic's unpredictability made financial indicators less reliable.

Changes in corporate behavior in response to macroeconomic conditions: The 2020 pandemic prompted many firms to adopt a more conservative approach to dividends and capital management. Even when financial metrics allowed for dividend payments, firms often opted for dividend cuts due to future uncertainties, supply chain disruptions, and operational challenges, or recommendations from regulatory bodies. This suggests that dividend decisions were influenced more by broader economic concerns than by current financial performance.

Dividend omissions and financial independence: In the unique circumstances of 2020, dividend decisions may have been less influenced by traditional financial metrics such as liquidity, debt, or growth opportunities. This would imply that traditional models for predicting dividend behavior may have been less reliable during the pandemic, as firms were forced to respond to unprecedented external factors.

Overall, the results indicate that in 2020, the first year of the pandemic, decisions by Polish firms to omit dividend payments were less dependent on traditional financial indicators, suggesting the influence of factors directly related to the pandemic, such as market uncertainty, changes in management priorities, or other macroeconomic factors difficult to capture in traditional models. Interestingly, the impact of the pandemic on dividend policies in Polish firms was short-lived. As a result, in 2021, the second year of the pandemic, the number of dividend omissions and cuts was record-low, and in 2022 and 2023, it returned to a level similar to the pre-pandemic average. This suggests a brief period of disruption on dividend payments. It is difficult to say whether the cause of this was the anti-crisis measures taken by the authorities, or whether the reasons for this should be sought in other areas. However, further research is needed to confirm this.

6. Conclusion

Dividend policy plays a crucial role in financial management as it directly impacts a company's shareholder value. This paper examines dividend policy changes during economic crises, focusing primarily on dividend cuts and omissions by Polish firms listed on Warsaw Stock Exchange before and during the COVID-19 pandemic. These findings have significant implications for investors who place a high value on dividends when making stock investment decisions.

Our findings reveal a significant increase in dividend cuts and omissions in 2020, but this trend reversed quickly in subsequent years. The logistic regression analysis could not definitively identify the specific factors driving these changes. The results highlight a significant shift in dividend practices during the pandemic, which conventional theories struggle to fully explain. Notably, these changes were transient, primarily confined to the 2020-2021 period, as dividend policies reverted to pre-pandemic levels after 2021.

While this study offers valuable insights into dividend policy during the COVID-19 pandemic, it is important to acknowledge its temporal limitations. The study focuses solely on Polish firms listed on the Warsaw Stock Exchange. This limits the generalizability of the findings to other emerging market. While the study observes a significant increase in dividend cuts and omissions in 2020, the logistic regression analysis could not pinpoint the specific factors driving these changes. This suggests the need for further research to provide a comprehensive explanation of the observed phenomena, which has significant implications for investors, particularly for those who give considerable importance to dividends in their investment decisions regarding stocks.

The study contributes to a broader understanding of corporate financial management during crises. It sheds light on how companies adapt their dividend strategies in response to unexpected events like a pandemic. This can help policymakers and regulators develop more effective measures to support businesses and ensure financial stability during future crises. Understanding how firms adjust their dividend policies during economic crises is also crucial for investors who rely on dividends as a key factor in their investment choices.

References

1. Ali, H. (2022). Corporate dividend policy in the time of COVID-19: evidence from the G-12 countries. *Finance Res. Lett., 46*, 102493, https://doi.org/10.1016/j. frl.2021.102493.
2. Basse, T., Reddemann, S., Riegler, J.-J., von der Schulenburg, J.M.-G., (2014). Bank dividend policy and the global financial crisis: empirical evidence from Europe. *Eur. J. Polit. Econ., 34*, 25-31, https://doi.org/10.1016/j.ejpoleco.2013.09.001
3. Bhattacharya, S. (1979). Imperfect information, dividend policy and the „Bird in the Hand" fallacy. *Bell Journal of Economics, 10*, 259-270.
4. Brav, A., Graham, J.R., Harvey, C., Michaely, R. (2005). Payout policy in the 21st century. *Journal of Financial Economics, 77,* 483-527. https://doi.org/10.1016/j.jfineco. 2004.07.004.
5. DeAngelo, H., DeAngelo, L. (1990). Dividend policy and financial distress: An empirical investigation of troubled NYSE firms. *Journal of Finance, 45*, 1415-1431. https://www.jstor.org/stable/2328743.
6. Fama, E., French, K.R. (2002). Testing trade-off and pecking order predictions about dividends and debt. *Review of Financial Studies, 15*, 1-33. https://www.jstor.org/ stable/2696797.
7. Floyd, E., Li, N., Skinner, D.J. (2015). Payout policy through the financial crisis: The growth of repurchases and the resilience of dividends. *Journal of Financial Economics 118,* 299-316. https://doi.org/10.1016/j.jfineco.2015.08.002.
8. Hoberg, G., Prabhala, N.R. (2009). Disappearing dividends, catering, and risk. *Review of Financial Studies, 22*, 79-116. https://doi.org/10.1093/rfs/hhn073.
9. Jensen, M.C. (1986). Agency cost of free cash flow, corporate finance, and takeovers. *American Economic Review, 76*, 323-329. https://doi.org/10.2139/ssrn.99580.
10. John, K., Williams, J. (1985). Dividends, dilution and taxes: a signalling equilibrium. *Journal of Finance, 46*, 1053-1070.
11. Kirkulak, B., Kurt, G. (2010). Are dividends disappearing or shrinking? Evidence from the Istanbul stock exchange. *Emerging Market Finance and Trade, 46(2),* 38-52, https://doi.org/10.2753/REE1540-496X460203.
12. Krieger, K., Mauck, N., Pruitt, S. (2021). The impact of the COVID-19 pandemic on dividends. *Finance Research Letters, 42*, 101910.
13. Lintner, J. (1956). Distributions of incomes of corporations among dividends, retained earnings. and taxes. *American Economic Review, 56*, 97-113.
14. Ntantamis, C., Zhou, J. (2022). Corporate payout, cash holdings, and the COVID-19 crisis: evidence from the G-7 countries. *Finance Research Letters, 50,* 103275, https://doi.org/10.1016/j.frl.2022.103275.

15. Theiri, S., Ben Hamad, S., Ben Amo, M. (2023). Dividend policy and crisis: Exploring the interplay between performance and financial constraints in the French context. *Helyon, 9,* e20586.
16. Witkowski, P. (2012). Polityka dywidendowa na GPW w Warszawie w kontekście kryzysu finansowego. *Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania, 28*, 217-235.