

COVID-19, PROFITABILITY, AND DIVIDEND POLICY: A ROBUSTNESS TEST FOR MEDIATION MODEL USING COVARIANCE-BASED SEM

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ABSTRACT

This study aims to test the mediating effect of profitability on the COVID-19 pandemic crisis toward dividend policy in Indonesia. The study was conducted between 2014 and 2020, with samples selected from real estate, property, and construction companies using a purposive sampling technique with pre-determined criteria. Furthermore, covariance-based structural equation modeling was used as the statistical analysis tool to test causality, and a robustness test was conducted on two empirical model approaches. The results showed that the COVID-19 pandemic crisis had a positive effect on profitability, which in turn had a positive effect on dividend policy. In the mediation test, the crisis positively affected dividend policy significantly mediated by profitability. This shows that real estate, property, and construction companies in Indonesia tend to reduce dividend levels during the crisis. Therefore, the management needs to pay attention to the mediating effect of profitability to determine dividend policy during a problem optimally. Investors also need to consider the mediating effect of profitability to obtain optimal returns in the form of dividends, specifically for real estate, property, and construction companies.

INTRODUCTION

Even though the government has ended the National Policy of Community Activity Restrictions (PPKM), the COVID-19 pandemic is not expected to end in Indonesia until 2022. The instruction of the Minister of Home Affairs No. 52 of 2022 further regulates the handling of the pandemic. However, it was not considered to have ended until the World Health Organization (WHO) declaration. The ministerial instruction still regulates the necessary control of the spread during the transition to endemic status (Indonesia Ministry of Home Affairs, 2022). These efforts are made to assist the government in recovering from the impact on various sectors, especially the economy.

Considering the COVID-19 pandemic that started in 2020, there were systemic effects on the global economy, including Indonesia. The gross domestic product growth rate plummeted to -2.07% in 2020, a significant decline compared to the previous five years, in which it ranged between 4.88-5.17%. This condition was also represented by fluctuations in stock prices on the Indonesia Stock Exchange (IDX). The Composite Stock Price Index (CSPI) enormously dropped to a level of 4,914.94 on March 20, 2020. Other stock indexes experienced significant declines on the same day, as shown by the SRI-KEHATI falling to a level of 256.56 and the LQ45 to 624.76 (Hartono & Raya, 2022; Tinungki, Hartono, et al., 2022).

This crisis has affected various economic sectors. Utomo & Hanggraeni (2021) reported that the crisis had a negative effect on the stock market in Indonesia. Gunawan & Anggono (2021) stated that Bitcoin, Ethereum, Litecoin, and Ripple are not a haven for the CSPI during the COVID-19 pandemic. Meanwhile, Kamaludin, Sundarasen, & Ibrahim (2021) reported on the impact of the COVID-19 pandemic on the equity market in the ASEAN-5 countries, including Indonesia. Company profitability has also been shown to have a significant difference in averages, with a significant decline in 2020. Rinofah et al. (2021) found a significant difference in the average profitability of companies indexed in the Kompas 100. In addition, a statistical descriptive analysis showed a decline in 2020 compared to the previous year.

During a crisis, companies generally tend to reduce or even eliminate the level of dividends distributed to their shareholders. Negative dividend policies are also adopted due to the uncertainty of the economic conditions. Abdulkadir et al. (2015); Basse & Reddemann (2011); and Hauser (2013) reported that companies tend to adopt negative policies. Even Cejnek et al. (2021) and Krieger et al. (2021) proved that the companies reduce or even eliminate dividends distributed to their shareholders during COVID-19 pandemic crisis.

However, dividend policies in Indonesia have been shown to differ from what has been previously reported. Tinungki, Robiyanto, et al. (2022) stated that non-financial sector companies in Indonesia adopt a positive dividend policy even during a crisis. Similarly, Tinungki, Hartono, et al. (2022) found that 24 competitive companies indexed in SRI-KEHATI adopt a positive dividend policy. Hartono & Raya (2022) also proved that manufacturing companies adopt a positive dividend policy during the 2020 crisis.

This is strongly suspected to be an effort to boost stock trading in a sluggish capital market due to the crisis. Tinungki, Hartono, et al. (2022) found a significant and rapid positive reaction from the stock market to the announcement of dividends by non-financial sector companies in 2020. Hartono & Raya (2022) also confirmed that there was a positive reaction from the stock market to the dividend announcement, although the reaction was slow. This is supported by descriptive statistical results, as there was an increase in the average dividend per share (DPS) among companies that distributed dividends in 2019 and 2020, out of the 228 listed on IDX and distrusting at least once during 2014-2020. Among those that distributed dividends, the average DPS was 92 out of 134 in 2019, and 110 out of 132 in 2020.

The positive dividend policy is also suspected in 2020 because the companies had good profitability, hence they tended to distribute dividends positively even during the crisis. Empirical evidence reported by Hartono & Raya (2022); Tinungki, Hartono, et al. (2022); Tinungki, Robiyanto, et al. (2022) consistently proved that profitability had a positive effect on dividend policy, especially in conditions of high profitability.

Furthermore, the endogeneity assumption of the profitability predictor in the empirical models reported by Hartono & Raya (2022); Tinungki, Hartono, et al. (2022); Tinungki, Robiyanto, et al. (2022) questions how profitability mediates the effect of the crisis on dividend policy. Ongore & Kusa (2013) supported this assumption by showing that GDP growth has a positive effect on profitability. Meanwhile, the GDP growth predictor has the same position as an exogenous variable in the complexity context of the empirical model (Romus, Anita, Abdillah, & Zakaria, 2020).

The assumption of the effect of the COVID-19 pandemic crisis on dividend policy mediated by profitability creates a conceptual framework that the crisis affects profitability, which in turn affects dividend policy (Hartono & Raya, 2022; Tinungki, Hartono, et al., 2022). Previous studies have not examined the effect of the COVID-19 pandemic crisis on dividend policy, mediated by profitability. The mediating effect of profitability needs to be tested in order to determine its contribution to dividend policy during crisis.

Therefore, this study examined the effects of the COVID-19 pandemic crisis on the dividend policy mediated by profitability. The examination was divided into direct and indirect effects. The former tested the effect of the COVID-19 pandemic crisis on profitability and the effect of profitability on dividend policy. While the latter tested the effect of the crisis on dividend policy mediated by profitability. A robustness test was conducted to examine the consistency of the main variables in the examined mediation models (Li, 2016). The samples consisted of companies in the real estate, property, and construction sectors. The justification for selecting this industry sector was to observe its dividend policy, which is considered to be significantly affected by the COVID-19 pandemic crisis. This sector is related to other industries such as banking, material industries, services, and more, which further confirms the effect of the crisis (Hartono, Sari, Tinungki, Jakaria, & Hartono, 2021).

LITERATURE REVIEW

In a crisis, companies tend to reduce or even eliminate dividends distributed to shareholders. This is supported by the Pecking Order Theory, which posits companies will prioritize internal funding sources because they have the lowest risk, in this case, retained earnings from net income. Moreover, they prefer a lower cost of capital compared to external funding sources, such as bonds or stock issuance. Companies face uncertainty during the COVID-19 pandemic, hence they generally reduce dividend levels to ensure survival amid the crisis (Altig et al., 2020; Damodaran, 2015; Myers, 1984).

In contrast, they may establish a positive dividend policy to give a positive signal to the sluggish stock market during a crisis. This condition is supported by the Dividend Signaling Theory, which posits companies will give a positive signal to the market by distributing dividends to show good performance. This signal is expected to attract investors to trade stocks because of good performance. In addition, agency conflict can be suppressed by distributing dividends (Ali, 2022; Lambrecht & Myers, 2012).

The COVID-19 pandemic crisis has an effect on the Indonesian economy and company finances. Dividends are determined based on the proportion of a net income. The formulation of this policy tends to be negative with consideration for the company survival, during and after the crisis (Abdulkadir et al., 2015; Cejnek et al., 2021). However, companies can also determine their dividend policy positively during a crisis with the consideration of giving a positive signal to the sluggish stock market (Ali, 2022).

During the crisis specifically caused by the COVID-19 pandemic, movement and trade restrictions have resulted in a business cycle downturn. The decrease in business activity has macroeconomic implications that consequently lead to a decline in GDP. The pandemic's economic effect has put pressure on company performance, resulting to a decrease in profitability (Dewi, Soei, & Surjoko,

2019; Ongore & Kusa, 2013). Dewi et al. (2019); and Ongore & Kusa (2013) proved that GDP has a positive effect on company profitability.

Nevertheless, Hartono & Raya (2022); Tinungki, Hartono, et al. (2022); Tinungki, Robiyanto, et al. (2022) found a negative effect of GDP on dividend policy, meaning that the policy is positively determined during the COVID-19 crisis. The study also proved a positive effect of profitability on dividend policy. The endogeneity of profitability in the empirical model, including the endogeneity of GDP on dividend policy, builds the hypothesis that profitability mediates the effect of GDP as a crisis measurement on dividend policy. Therefore, the empirical evidence by Hartono & Raya (2022); Tinungki, Hartono, et al. (2022); Tinungki, Robiyanto, et al. (2022) that profitability has a positive effect on dividend policy and the COVID-19 crisis has a negative effect on dividend policy provides a rational basis that GDP has a negative effect on profitability. De Leon (2020) gave empirical evidence that GDP growth has a negative impact on profitability. This justifies that companies in crisis periods can even have higher net income due to growth opportunities. Companies are considered to be less affected by the crisis caused by pandemic's restrictions on people or goods compared to monetary or other systemic crises (Maharsi, Puryandani, & Kristanto, 2019; Sari & Fakhrudin, 2016). Based on this rational basis and previous studies, the first hypothesis formulated is that gross domestic product as a proxy for the COVID-19 pandemic crisis has an effect on profitability.

The dividends received represent a proportion of the net income earned by companies (Damodaran, 2015). The companies also set aside retained earnings for future investment. The higher the profit earned, the more likely to distribute larger dividends (Yusof & Ismail, 2016). This supports the bird in the hand theory, which posits investors tend to prefer dividends as a more certain return than capital gains (Bhattacharya, 1979). Furthermore, dividend payouts of the net income earned tend to mitigate agency conflict between the principal and agent within the companies (Lambrecht & Myers, 2012). The positive effect of profitability on dividend policy during crisis conditions is supported by (Tinungki, Hartono, et al. (2022); Tinungki, Robiyanto, et al. (2022). This result is also in line with Lestari (2018); Patra, Poshakwale, & Ow-Yong (2012); and Ranajee, Pathak, & Saxena (2018) who found a positive effect of profitability on dividend policy.

Contrarily, companies adopt a positive dividend policy during crisis conditions (Damodaran, 2015; Sharma, 2021). This is because they tend to provide a positive signal to the market that their performance is good in times of crisis. The companies can also establish a positive dividend policy even though their net income decreases or profitability negatively affects the dividend policy when determining their dividend levels during crisis. This policy is supported by the dividend signaling theory to indicate that the company's stock instrument is good (Abdulkadir et al., 2015; Singla & Samanta, 2018). The assumed mediating effect of profitability on the effect of GDP growth on dividend policy is supported by Ongore & Kusa (2013) which found a positive effect of GDP on profitability. Similarly, Hartono & Raya (2022); Tinungki, Hartono, et al. (2022); Tinungki, Robiyanto, et al. (2022) showed GDP has a negative effect on dividend policy, thereby strengthening the rational basis that profitability can have a negative effect on the policy. Gusni (2017) reported that profitability negatively affects dividend policy. Based on the rational basis and previous studies, the second hypothesis formulated is that profitability has an effect on dividend policy.

Hartono & Raya (2022); Tinungki, Hartono, et al. (2022); Tinungki, Robiyanto, et al. (2022) found a significant positive effect of profitability on dividend policy. The condition indicates that the

company's profit increases with a distributed dividend, and vice versa. The study also showed the positive effect of the previous-year dividends on the current-year's. Tinungki, Hartono, et al. (2022) found a significant and positive correlation between profitability and previous-year dividends. The effect of these two predictors on dividend policy shows that the policy is set positively during a crisis, or it is negatively affected by the COVID-19 pandemic. This also indicates that the company's profitability is good enough to distribute dividends positively, as evidenced by the positive effect of profitability on dividend policy. These two rationales suggest the mediating effect of profitability on the negative effect of the COVID-19 pandemic crisis on dividend policy.

In contrast, Ongore & Kusa (2013) reported a positive effect of the crisis on dividend policy, thereby creating a different rational basis. In the context of the pandemic crisis, Tinungki, Hartono, et al. (2022) showed that profitability significantly affects dividend policy positively. Therefore, this mediating effect can also create the assumption that the crisis affects dividend policy, mediated by positive profitability (Ashraf, 2021; Cejnek et al., 2021; Cepoi, 2020; Hartono & Raya, 2022; Robiyanto & Yunitaria, 2022; Tinungki, Hartono, et al., 2022; Tinungki, Robiyanto, et al., 2022; Utomo & Hanggraeni, 2021). Based on the rational basis and the support of the previous studies, the third hypothesis formulated is that GDP has an effect on dividend policy mediated by profitability.

METHODS

The formulated hypotheses were tested using a quantitative approach. The tested hypotheses were causal relationships among variables in the model. Furthermore, the purposive sampling technique was used for sample selection (Sekaran & Bougie, 2016). The sample criteria were companies that had complete financial statements for variable needs, had distributed dividends at least once during the research period, and had not been delisted or undergone an initial public offering. The research period was set from 2014 to 2020, with 2020 being justified as the year of the COVID-19 pandemic crisis (Tinungki, Robiyanto, et al., 2022). Also, 30 companies were selected from the 85 real estate, property, and building construction companies registered until the end of 2020, covering a 7-year period. Therefore, the total observations were 210 units. The secondary data used were accessed from financial statements on Indonesian Stock Exchange website.

The tested variables were proxied by specific measures. Based on the developed hypotheses, the testing of this model consisted of independent, dependent, and mediating variables. A control variable was also included in the testing as a robustness checking to examine the consistency of the main variable testing, with the justification of selection being postulated variables (Hartono & Raya, 2022). These variables are defined in Table 1. Proxies measuring the variables were adapted from previous studies. A transformation was also applied to the firm age variable to eliminate extreme variances using the ladder of power transformation in STATA version 14, with the selected optimal transformation of SQRT.

The hypothesis testing was carried out using variables that were proxied by each proxy. This was subsequently tested by the covariance-based structural equation model estimation method, and estimated using IBM AMOS version 23. The measurement proxies for the tested variables were manifest or observed variables (Hair, Black, Babin, & Anderson, 2018). Based on Table 1, the main variables tested were dividend policy as the dependent variable with DPS as the proxy, the COVID-19 pandemic crisis as the independent variable with GDP proxy, and profitability as the mediating

variable with EPS proxy. Subsequently, the control variable used was financial leverage with the DER as the proxy, firm size with FS proxy, and firm age with FA proxy.

Table 1: Independent, Dependent, Mediating, and Control Variables, as well as Proxies and Their Formulations

Variable	Proxy	Formulation	Reference
Dependent Variable			
Dividend Policy	Dividend per Share (DPS)	$DPS = \frac{Total\ Dividend}{Outstanding\ Shares}$	Lestari (2018); Ranajee et al. (2018)
Independent Variable			
COVID-19 Pandemic Crisis	Gross Domestic Product growth (GDP)	$GDP = \frac{GDP_t - GDP_{t-1}}{GDP_{t-1}}$	Hartono & Raya (2022); Tinungki, Hartono, et al. (2022); Tinungki, Robiyanto, et al. (2022)
Mediating Variable			
Profitability	Earning per Share (EPS)	$EPS = \frac{Net\ Income}{Outstanding\ Shares}$	Hartono & Matusin (2020); Sharma (2021)
Control Variable			
Financial Leverage	Debt to Equity Ratio (DER)	$DER = \frac{Total\ Liability}{Total\ Equity}$	Aritonang & Rahardja, (2022); Octaceria & Rahardja (2020); Ranajee et al. (2018); Suhandi (2014); Yusof & Ismail (2016)
Firm Size	Firm Size (FS)	$FS = \ln(Total\ Asset)$	Hartono et al. (2023); Muchtar, Hartono, & Sari (2020); Rahardja, Gunawan, Augustine, & Wadhani (2021); Thakur & Kannadhasan (2018)
Firm Age	Firm Age (FA)	$FA = \sqrt{Age}$	p -Value of $\chi^2 = 0,411$; Hartono & Matusin, (2020); Muchtar et al., (2020)

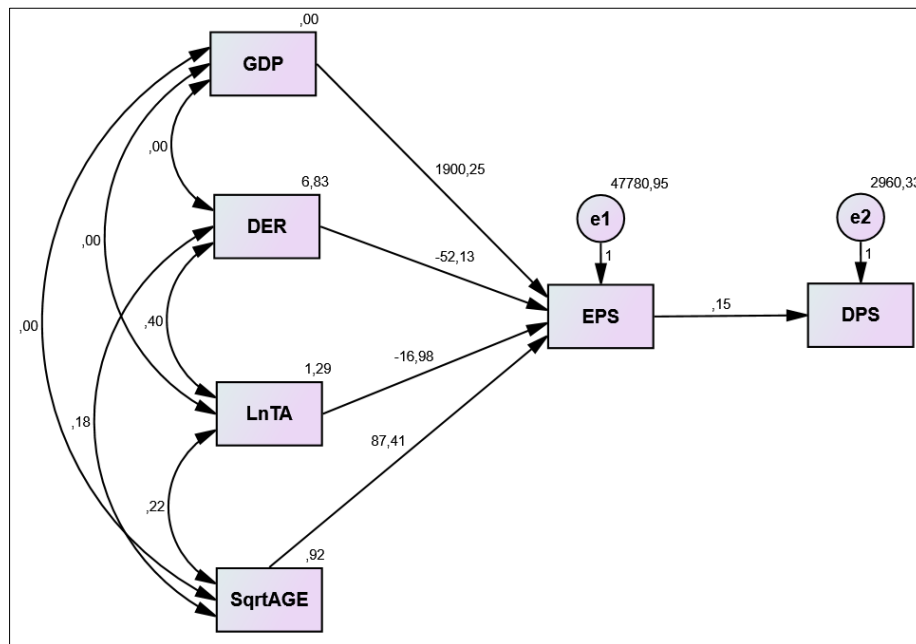


Figure 1: Empirical Model 1

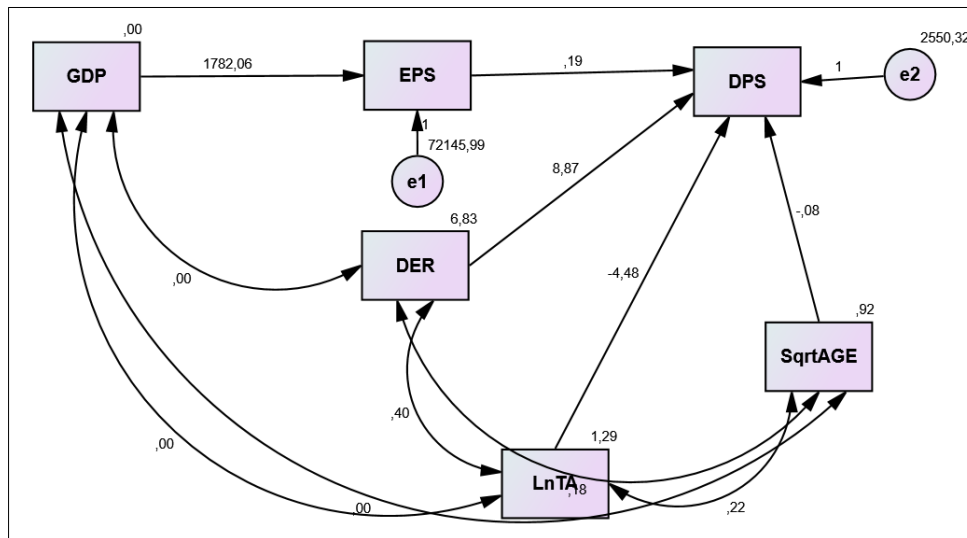


Figure 2: Empirical Model 2

According to figure 1 and figure 2, the empirical model was divided into two as a robustness test for the mediation model, where the consistency of the main variables testing was observed (Li, 2016). In the main variable, the effect of GDP on DPS mediated by EPS was tested. The control variable was placed in two positions. Firstly, it was positioned to indirectly affect DPS through EPS. Secondly, it was positioned to directly affect DPS. Figure 1 and 2 below describe empirical model 1 and 2 respectively. A Sobel test was subsequently conducted to complete the mediation test.

RESULT AND DISCUSSION

The descriptive statistics for each proxy are presented in Table 2. The data variance for each proxy variable appears at a moderate level. The over-dispersed proxies are DPS, EPS, and DER, while the equi-dispersed are GDP, FS, and FA. The equi-dispersed condition can be explained by the transformation applied to FS and FA, as well as the nature of GDP which does not have a high degree of variability (Hartono, Tinungki, et al., 2021).

Table 2: Descriptive Statistics

Proxy	Obs.	Mean	Std. Dev.	Min.	Max
DPS	210	27.625	67.931	0	503.162
GDP	210	0.040	0.025	-0.0207	0.0517
EPS	210	116.607	272.879	-1616.927	1264.904
DER	210	1.478	2.620	0.084	35.466
FS	210	16.052	1.137	13.917	18.639
FA	210	6.119	0.962	3.317	8.246

Table 3 presents the Pearson correlation of each tested proxy, which is dominated by very weak. Moderate correlations are shown between EPS and DPS, as well as EPS and DER, with coefficients between 0.4 - 0.5. This indicates there is no significant correlation between the independent variables.

The parameter estimation on empirical models 1 and 2 begins with a goodness of fit test. Three measurement types were used as model specification tests to ensure consistent and unbiased results. Table 4 presents the results of the goodness of fit for both empirical models tested. The relevant measurement types and indicators for manifest variables are adapted from Hair et al. (2018) and Jakaria et al. (2021).

Table 3: Pearson Correlation for each Variable Proxies

Proxy	DPS	GDP	EPS	DER	FS	FA
DPS	1,000					
GDP	0,091	1,000				
EPS	0,596	0,163	1,000			
DER	-0,042	-0,033	-0,494	1,000		
FS	-0,095	-0,067	-0,087	0,134	1,000	
FA	0,190	-0,103	0,240	0,072	0,203	1,000

The goodness of fit test on empirical model 1 indicates that the p-Value of χ^2 , RMSEA, and TLI are poor fit indicators. The NFI and CFI indicators are marginally fit, while the GFI indicator is fit. Furthermore, the test on empirical model 2 indicates that the p-Value of χ^2 , RMSEA, NFI, CFI, and TLI are poor fit indicators, while the GFI indicator is a goodness of fit. Therefore, the goodness of fit test results for empirical models 1 and 2 are acceptable because there is at least one model fit indicator for each empirical model.

Table 4: Goodness of Fit Test Results from Measurement of Empirical Models 1 and 2.

Measurement Type	Indicator	Cut-off Value	Model 1		Model 2	
			Result	Conclusion	Result	Conclusion
Absolute Fit Indices	p-Value of χ^2	$\geq 0,05$	0,000	Poor Fit	0,000	Poor Fit
	GFI	$\geq 0,9$	0,956	Model Fit	0,901	Model Fit
	RMSEA	0,03 – 0,08	0,181	Poor Fit	0,314	Poor Fit
Incremental Fit Indices	NFI	$\geq 0,92$	0,864	Marginal Fit	0,626	Poor Fit
	CFI	$\geq 0,92$	0,873	Marginal Fit	0,618	Poor Fit
	TLI	$\geq 0,92$	0,523	Poor Fit	-0,432	Poor Fit

Table 5 presents the parameter estimation for direct effects on empirical models 1 and 2. The main variables showed that GDP had a positive and significant effect on EPS in empirical model 1. Similarly, it is evident in empirical model 2 that GDP had a positive and significant effect. These results confirmed the robustness of the findings; therefore the first hypothesis was accepted. In summary, COVID-19 pandemic crisis had a positive effect on profitability. These results are consistent with Dewi et al. (2019); dan Ongore & Kusa (2013), who found that GDP had a positive effect on profitability. This condition indicates that profitability declines during crisis. Conversely, it will increase with positive GDP growth during non-crisis periods.

Table 5: Parameter Estimation of Direct Effects of Empirical Models 1 and 2

Parameter Effect	Model 1			Model 2		
	Estimation	S.E.	Z	Estimation	S.E.	Z
GDP → EPS	1900,247	612,330	3,103**	1782,063	747,438	2,384**
DER → EPS	-52,131	5,846	-8,918**	-----	-----	-----
FS → EPS	-16,980	13,728	-1,237	-----	-----	-----
FA → EPS	87,406	16,176	5,404**	-----	-----	-----
EPS → DPS	0,148	0,014	10,735**	0,189	0,013	14,717**
DER → DPS	-----	-----	-----	8,868	1,350	6,568**
FS → DPS	-----	-----	-----	-4,481	3,168	-1,414
FA → DPS	-----	-----	-----	-0,082	3,722	-0,022

Description: Testing with a two-tailed statistical approach. (**) has an effect on the 1% significance level and (*) has an effect on the 5% significance level.

As presented in table 5, EPS has a significant positive effect on DPS in model 1. This is supported by model 2 which showed a positive and significant positive effect of EPS on DPS. These two results significantly proved that profitability had a positive effect on dividend policy, hence the second hypothesis was accepted. This report is in line with Wahjudi (2020); dan Yusof & Ismail (2016). As net profit increases, companies are more likely to set higher dividends as they are perceived as being more capable of paying them (Lestari, 2018).

Table 6: Parameter Estimation of Indirect Effects of Empirical Models 1 and 2

Parameter effect	Model 1			Model 2		
	Estimation	Sobel Test Stat.	p-Value	Estimation	Sobel Test Stat.	p-Value
GDP → EPS → DPS	282,015	2,978	0,003	336,585	2,352	0,019
DER → EPS → DPS	-7,737	-6,816	0,000	-----	-----	-----
FS → EPS → DPS	-2,520	-1,229	0,219	-----	-----	-----
FA → EPS → DPS	12,972	4,811	0,000	-----	-----	-----

Description: Testing with a two-tailed statistical approach.

Table 6 presents the estimation of indirect effects in empirical models 1 and 2. A Sobel test is also included for mediating effects in both models. GDP had a positive indirect effect on DPS through EPS in empirical model 1. The result is significant at a 5% alpha level, indicating that EPS mediates the effect of GDP on DPS. Meanwhile, GDP had a positive indirect effect on DPS through EPS in empirical model 2. It is also significant at the same alpha level, indicating that EPS mediates the effect of GDP on DPS.

Based on the statistical tests, it can be robustly proven that the crisis caused by the COVID-19 pandemic, proxied by GDP, had a positive effect on dividend policy through profitability, as shown in Table 6. Therefore, the third hypothesis was accepted. This result is supported by Dewi et al. (2019); and Ongore & Kusa (2013). Furthermore, Singla & Samanta (2018); Yusof & Ismail (2016) found profitability had a positive effect on dividend policy, hence supporting the rational basis for the indirect effect of the COVID-19 pandemic crisis on dividend policy that is mediated by profitability positively.

CONCLUSION

The estimation results for the direct effect showed the COVID-19 pandemic crisis, as proxied by GDP, had a positive effect on profitability, which in turn had a positive effect on dividend policy. Meanwhile, the indirect effect showed that the crisis predictor had a positive effect on dividend policy, mediated by profitability. This means that during the COVID-19 crisis when GDP growth decreases to -2.07%, profitability will also decrease, and generally, dividend policy is negatively determined. Based on the robustness tests on both models, the estimation parameters in Model 1 are more consistent and less biased than in Model 2. This is demonstrated by the better model specification tests and the significance of the parameters. The results indicate that control variables that have indirect effects on dividend policy mediated by profitability are better than those with direct effects (Hair et al., 2018).

Contrarily, Tinungki, Robiyanto, et al. (2022) found that a total of 212 companies tended to set dividend policies positively during the 2020 crisis in Indonesia. This is supported by Tinungki, Hartono, et al. (2022) who studied companies listed on the SRI-KEHATI index in Indonesia, and Hartono & Raya (2022) who studied Indonesian manufacturing companies. They found that dividend

policies were set positively, and pandemic crisis had a negative effect on the policy. This study provides different results for real estate, property, and construction companies that set dividend policies negatively, thereby impacting their business activities. Companies in this sector tend to suppress dividend levels by retaining net profits to survive the COVID-19 crisis, which until the end of 2020 had no certainty of ending. Therefore, company management is expected to pay attention to profitability as a mediating function in dividend policy during the crisis. This is to ensure that the dividend policy set is optimal for the companies. Furthermore, it is important the investors pay attention to the mediating effect of the company profitability studied. This is to obtain optimal returns on their investment in the form of dividends during the crisis, specifically for real estate, property, and construction companies (Hartono, et al., 2020).

This study is limited to robustness testing from two perspectives, with mediation tests. Endogeneity testing has not been carried out in this mediation test based on the empirical evidence of previous reports. Therefore, it is necessary to select a more relevant estimation method for the endogeneity issue adjusted to the empirical model formed. A robustness test should also be conducted to produce consistent and unbiased parameter estimates (Hartono & Robiyanto, 2023; Li, 2016).

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