

## Cash Reserve, CEO Health Risk, The Price Reaction Due to COVID-19 First Announcement on Leisure Industry

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### Abstract

This study investigates stock market reaction in leisure industries to the first Government announcement of the COVID-19 outbreak in Indonesia on March 2, 2020. This study used event study methodology and was supported by multiple linear regression to analyze the relationship between market reaction and independent variables. The analysis was further modeled using Fama French three-factor models to estimate the expected return on firms due to the first COVID-19 outbreak announcement. Based on our calculation of Cumulative abnormal returns, the stock of tourism industries has more negative reaction towards a confirmed first case of COVID-19 compared to other industries. We also find that Indonesian firms with greater cash reserves experienced less negative stock returns while firms with higher leverage ratios were penalized more. Additionally, this paper does not find that firms with Chief Executive Officers (CEO) who were exposed to significant health risks from COVID-19 experienced worse stock market performances.

## Cadangan Kas, Karakteristik CEO Terhadap COVID-19, Reaksi Pasar Akibat Pengumuman Kasus Pertama COVID-19 di Indonesia pada Industri Pariwisata

### Abstrak

Penelitian ini menyelidiki reaksi pasar saham di industri hiburan terhadap pengumuman Pemerintah pertama tentang wabah COVID-19 di Indonesia pada 2 Maret 2020. Penelitian ini menggunakan metodologi event study dan didukung oleh regresi linier berganda untuk menganalisis hubungan antara reaksi pasar dan independen variabel. Analisis selanjutnya dimodelkan menggunakan model tiga faktor Fama French untuk memperkirakan pengembalian yang diharapkan pada perusahaan karena pengumuman wabah COVID-19 pertama. Berdasarkan perhitungan Kumulatif abnormal return, saham industri pariwisata memiliki reaksi negatif lebih banyak terhadap kasus pertama yang dikonfirmasi dari COVID-19 dibandingkan dengan industri lain. Kami juga menemukan bahwa perusahaan-perusahaan Indonesia dengan cadangan kas yang lebih besar mengalami pengembalian saham negatif yang lebih sedikit, sementara perusahaan-perusahaan dengan rasio leverage yang lebih tinggi mendapat sanksi yang lebih besar. Selain itu, makalah ini tidak menemukan bahwa perusahaan dengan Chief Executive Officer (CEO) yang terpapar risiko kesehatan signifikan dari COVID-19 mengalami kinerja pasar saham yang lebih buruk.

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## INTRODUCTION

Previous studies have identified major events that affected stock market returns. Such events that have affected the global effect of the stock market include oil price fluctuation (Khamis et al., 2018), political communication (Conrad & Zumbach, 2016; Pereira et al., 2018; Gustavo et al., 2021), the exchange rate (Khan, 2019) government policy announcements (Gursida & Indrayono, 2019; Wibowo & Puji, 2019), terrorism activity (Ahmad et al., 2022) and disaster (Kowalewski & Śpiewanowski, 2020) were causing impact to negative market returns.

At the end of 2019, World Health Organization (WHO) made first announcement of an infectious virus in Wuhan, China that was caused by a new variant, Coronavirus SARS CoV-2 (COVID-19). The virus then has spread to 216 different countries with a total of 252,478 deaths globally in just four months after the first announcement. On March 11, the COVID-19 has been declared by WHO as a pandemic therefore Some countries such as China, France, Japan, and Korea reacted in crisis mode and establish immediate border closings and lockdown to slow down the transmission, causing business closures and job losses on the other side to prevent rapid transmission of the virus. The COVID-19 pandemic generates severe operation risks and financial losses for corporations overall across the globe (Goodell, 2020; Shen et al., 2020). It has negatively affected the global markets with plummeting stocks in response to rapid COVID-19 cases and death to growth in COVID-19 confirmed cases. As a country's number of confirmed cases rises, stock market returns decrease. In terms of the growing number of death due to COVID-19, the correlation is positive but not as significant as the number of confirmed cases (Ashraf, 2020; Harjoto & Rossi, 2021)

This paper focuses on the Indonesian stock market because of its peculiar situation. As Salazar et al. (2020) mentioned on his paper, Indonesia, the country with the fourth-highest population

and has close links to China, could have unreported instances. Using mathematical modeling based on estimates of air travel volume between the nation and the city of Wuhan, Indonesia is anticipated to have about five instances in February 2020. Despite what academics had predicted, Indonesia has just announced the first confirmed positive test of COVID-19 by March 2, 2020. Due to the pandemic outbreak has reported, regulations such as "stay at home" orders, travel restrictions, and termination of tourism activities had been implemented. It caused a crisis and led to significant declines in revenue and profitability for Airlines (Mhalla, 2020), hotel and restaurant industry (Gossling et al., 2020), and the tourism sector (Nayak et al., 2022). By using Panel Structural Vector Auto-Regression (PSVAR), recovery of the travel-related industry will take a longer time compared to SARS-2002 and H1N1-2009 crisis (Rahman et al., 2021). COVID-19 is highly disruptive impact on the travel and tourism industry where it creates crowd for the virus to transmit quicker from one person to the other. As a result, governments of each country have imposed unprecedented policies, especially for travel-related activities. In the Airlines industry, As Indonesian Central Bureau of Statistics claims that total passengers of domestic and international flights dropped drastically down to 98,26% in March 2020 compared to March 2019. Therefore, more than 11,680 domestic flights and 1,023 international flights at 15 airports were cancelled due to pandemic announcements and travel restriction policy. Tourist numbers decreased to 6,800 per day. In terms of hotels and restaurants, occupancy rates were declining. Around 6,000 hotels in Indonesia can only reach 50% occupancy rates which have affected the decline of tourism foreign exchange more than half a year ago (Atmojo & Fridayani, 2021). Specifically, we examined firms in leisure industries such as airlines, hospitality, restaurant, and tourism that have experienced negative impacts significantly due to COVID-19 (Devi et al., 2020). This paper would like to prove how these leisure companies are heavily affected by the pandemic outbreak due to how investors priced the business. It is also

the sector who particularly vulnerable where the solutions to boost performance are contrary strategies against the spread of viruses.

Finally, this paper contributes to the COVID-19 literature to understand how investors incorporated new information related to COVID-19. Moreover, we might see how important cash reserves are due to economic crashes and operational restrictions by COVID-19 pandemic outbreaks in industries that experienced negative significantly. In terms of upper echelons theory, the analysis of market reaction that sudden implicate to CEO's health risk caused by COVID-19 provides an opportunity to evaluate the investor view on CEOs to the firm performance. We also register a control variable, the financial leverage of firms, to determine how the investors react to pre-COVID firms' performance

## Hypothesis Development

### Market Reaction

The paper has applied this logic throughout our study of the Indonesian stock market. The market reaction due to the Australian Government's announcement of public health emergency and the WHO's declaration of COVID-19 as a pandemic had a negative impact on the market in Australia, with an average cumulative abnormal return of -4,39% or an average capitalization loss of AUD 8352 per company, according to Rahman et al (2021). The COVID-19, according to Herwany et al (2021), had a significant impact on the Indonesian stock market. The impact is shown that there is an abnormal return on negative sentiment from the time of the announcement and the following three days. The financial industry is the most affected by anomalous returns during the event period up to the next 30 days, followed by the services trade and investment sectors. This is related to a drop in exports, output, economic activity, and investment concerns. Hence, the first hypothesis:

H1: The stock market reacts negatively after the first announcement of COVID-19 confirmed case in Indonesia compared to normal circumstances (Pre-COVID-19)

### Industries Reaction

Due to prevent the spread of the COVID-19, the implementation of a "lockdown" policy and restrictions on mobility from countries that have been affected by COVID-19 first made the stock market react negatively. It also caused airlines and tourism industries to be most critical due to the spread of the COVID-19 (Nayak et al., 2020). Using a structural vector auto-regression (PSVAR) panel, Skare et al (2021) predict that recovery of the tourism industry will take longer time than SARS 2002 crisis and the H1N1 2009 crisis. Thus, the proposed hypothesis is as follows:

H2: The stock market reacts even more negatively to leisure industries, including airlines, hospitality, and tourism compared to other industries

### Cash Reserve

The paper uses cash reserve as an indicator to better comprehend how investors reacted to the pandemic crisis using new information and preferences. In pandemic outbreaks, adequate liquidity is very important given the possibility of severe financial distress due to limited operational activities to prevent the spread of the virus. Carter et al (2021) found that U.S travel-related firms with greater cash reserves experienced less negative returns over the period. A cash reserve can represent the ability of firms to meet their obligations. Therefore, investors see that if firms had enough cash reserve during pandemic situations, then the financial risk of firms is lower than firms that do not have enough cash reserve.

H3: The market reaction will be more negative for companies that have smaller cash reserves compared to firms with larger cash reserves

### CEO Health Risk

The paper also used CEOs' COVID-19 health risk to understand the scale of impact on the overall industry. In the absence of effective medical treatment, panic caused by dreadful news of COVID-19, and the only

feasible solutions to handle COVID-19 were hygiene and social distancing in the early stage of pandemic outbreaks change the preference of investors. One of the obvious effects is the disruption of firms' operations due to the threat posed to the workforce's health. The effect is relevant for key employees, the CEO, as suggested by the upper echelon's theory (Hambrick & Mason, 1984). From the first stages of COVID-19 news, there was a widespread notion that older adults are exposed to fatal outcomes, especially those who are over 60 years. In China, there is also abundant evidence that indicates older age experiences higher disease severity and mortality (Huang et al., 2020; Chen et al., 2020). Mendez & Pathan (2021) found in the Australian stock market, Firms with CEOs who were exposed to significant health risks of COVID-19 experienced poorer performance than firms with aged CEOs during pandemic situations. Therefore, the Australian stock market perceives disruptive effect of CEO health risk due to COVID-19. Indeed, an abrupt CEO turnover event due to sudden death or even illness is a disruptive event for the firm that time-consuming and costly process of an unplanned succession. Ballinger & Marcel (2010) found that unplanned CEO turnover often leads to a temporary CEO succession, which is associated to lower firm performance. Therefore, the last hypothesis of this research is as follows:

H4: The Market reaction will be more negative for firms that have a higher fatality rate of CEOs due to coronavirus disease compared to firms that lower fatality rate of CEOs

## METHOD

### Data Collection Method

This study uses data obtained by Thomson Reuters Datastream, Bloomberg, and Companies' 2019 annual reports. In terms of firms that were investigated, we classified firms in the GIC sub-industries: Airlines & Airport

Services, restaurants, Hotels, Resorts & Cruise Ships, and leisure facilities. The paper obtains daily stock price data for the 210-trading days for the estimation period (Anintyarini & Utama, 2018) from April 10th, 2019 to February 14th, 2020 for estimating beta values. The paper applies several standard filters to clean the data. First, eliminating the penny stocks. Then, eliminating firms that trade less than 210-trading days, to estimate consistent beta. We also eliminated firms that do corporate actions in the estimation period. Finally, the paper only include firms whose financial data is available. As a result, the firms investigated in this paper consist of 31 observations from industries that were most negatively impacted during COVID-19 and 457 firms from other industries.

### Research Variables

This paper analyzes how the market reacts to COVID-19's first case announcement and the market assessment of the firm's cash reserve, CEO's health risk, market capitalization, and book-to-market ratios during a pandemic crisis. The dependent variable is the continuously compounded cumulative abnormal return (CAR) during the event window which was the first announcement of COVID-19 cases in Indonesia. We use  $t(-10,+10)$  from the event date, March 2nd, 2020.

The formula to calculate the daily individual stock return is given as follows:

$$R_{it} = \ln(P_t/P_{t-1})$$

$R_{it}$  = Stock return of firm  $i$  for period  $t$

$P_t$  = Stock price of firm  $i$  for period  $t$

$P_{t-1}$  = Stock price of firm  $i$  for period  $t-1$

Calculation of expected return on this paper by using Fama-French three-factor model. They described value and size are the most significant factors, outside of market risk, for explaining the realized returns of the stocks, to represent these risks, there are two factors; SMB to address size risk and HML to address value risk (Fama, 1970; Fama & French, 1993).

The formula for Fama-French three-factor model is given as follows:

$$R_{it} - R_f = \beta_1(R_m - R_f) + \beta_2(\text{SMB}) + \beta_3(\text{HML}) + \alpha$$

- $R_{it}$  = Stock returns of firm i for period t  
 $\alpha$  = An intercept from regression process result of daily return during estimation period (210 days before event window)  
 $\beta_{1,2,3}$  = Regression coefficient  
 $R_f$  = Risk-free based on Indonesia Government Bond Yield  
 $R_m$  = Market return during estimation period  
 SMB = Small Minus Big factor  
 HML = High Minus Low factor

Based on the efficient market hypothesis (Bodie, 2014; Sharpe, 1964), stock prices must reflect information about the risks of the assets and an expectation of future returns. The actual return is called a normal return when there is no important information or event during a given period. However, if there is important information or event that reflects stock price and the market is not efficient, then the actual return is called an abnormal return. Therefore, abnormal return defines as the difference between actual return and the expected return obtained by investors for a period of time. Calculation of abnormal return is performed using the following formula

$$AR_{it} = R_{it} - E(R_{it})$$

- $AR_{it}$  = Abnormal return of stock i during period t  
 $R_{it}$  = Stock returns of firm i for period t  
 $E(R_{it})$  = Expect return of firm i for period t

As a result, we use the cumulative abnormal return to describe the total abnormal return observed during the event window. The following formula is used to calculate the value of CAR.

$$CAR = \sum_{i=1}^n AR_t$$

- CAR = Cumulative abnormal return i during estimation period  
 $AR_t$  = Abnormal stock return i in period t

In terms of independent variables, there are two variables in this study. The first variable is the firm's cash reserves (CASHTA = Cash and short-term investment to total asset ratio followed literature (Carter & Simkins, 2004; Yong & Laing, 2021; Cardella et al., 2021; Carter et al., 2021). The second variable is the CEO health risk due to COVID-19. It can be defined that corresponding fatality rates by age group as published by CDC (Chinese Center for Disease Control and Prevention) as of Feb 17th (CEO-FAT = the log transformation of fatality rate followed literature Mendez & Pathan, 2022).

### Empirical Framework

Following the existing literature of Al Awadhi et al., (2020), Ashraf (2020), and Mugiarni & Wulandari (2021), Multiple Linear Regression was used to examine the effect of COVID-19 first cases announcement on the stock performance of Airlines, Hotels, and Tourism industries. Thus, estimating the following equation that presents the regression model of this paper

$$CAR_{it} = \alpha + \beta_1 \text{CASHTA} + \beta_2 \text{CEO FAT} + \beta_3 \text{LEV} + \beta_4 \text{IND}$$

The coefficients  $\alpha$  and  $\beta$  are the parameters to be estimated. In terms of a dependent variable, CAR is the cumulative abnormal return of several dates representing COVID-19 first case announcement. In terms of independent variables, CASHTA represents the cash reserve that firms have, CEOFAT represents the CEO's health risk exposure due to COVID-19 and LEV represents financial leverage of firms. In addition, we apply industry dummies (IND) to control for industry fixed effects.

## RESULT AND DISCUSSION

### Expected Return

Market returns are obtained from Jakarta Composite Index (JCI) data. We calculate 210 days before the event window to estimate the alpha and beta for each portfolio in the event window, as previously mentioned. In terms of risk-free rate, we use Indonesian government bond with tenor a year which is divided daily

because this study uses daily abnormal returns, therefore the risk-free rate is 0.000135% per day. To calculate Fama-French Three-Factor Model, we follow instructions (Awwaliyah & Husodo, 2017). Table 1 show descriptive statistics of each portfolio to calculate the expected return by FF3.

We also do a normality test to determine whether the CAR value is normally distributed. By Shapiro-Wilk test, kurtosis, and skewness value, we conclude the CAR value distributes unnormal, therefore we transform (Utama & Hapsari, 2012) to  $\log(1+CAR)$  to normalize the data.

**Table 1.** Descriptive Statistics of Portfolio

	B/H	B/M	B/L	S/H	S/M
Mean	-.001049	-.00111	-.001333	-.000265	.00042
Std Dev	.007616	.007114	.005555	.004568	.005892

Table 2. describes the summary statistic of the expected return for each event window. These descriptive statistics provide us with an explanation of normal returns that should investors get if there is no information about the COVID-19 announcement by President Joko Widodo. We find that the average expected return is mostly negative. Overall, the expected return before the announcement of COVID-19's first case was higher than after the announcement.

The CAR calculation result shows that the market responded negatively when the first case of COVID-19 was announced on that day (t0). However, the following day (t+1) and the day after (t+2) market experienced an increase in abnormal returns. Then, market reaction was always negative from the third (t+3) to the tenth (t+10) day after President Joko Widodo's declared the first case of COVID-19 in Indonesia except on the sixth (t+6) day. Moreover, the

**Table 2.** Descriptive Statistics of Expected Return in Event Window

	Er t <sup>-10</sup>	Er t <sup>-9</sup>	Er t <sup>-8</sup>	Er t <sup>-7</sup>	Er t <sup>-6</sup>	Er t <sup>-5</sup>	Er t <sup>-4</sup>	Er t <sup>-3</sup>	Er t <sup>-2</sup>	Er t <sup>-1</sup>	Er t <sup>0</sup>
Mean	.0026	-.0014	.0003	.0000	-.0002	-.0047	-.0012	-.0044	-.0073	-.0100	-.0066
	Er t <sup>+1</sup>	Er t <sup>+2</sup>	Er t <sup>+3</sup>	Er t <sup>+4</sup>	Er t <sup>+5</sup>	Er t <sup>+6</sup>	Er t <sup>+7</sup>	Er t <sup>+8</sup>	Er t <sup>+9</sup>	Er t <sup>+10</sup>	
Mean	-.0017	.0068	.0058	-.0065	-.0177	-.0092	-.0006	-.0148	-.0084	-.0130	

**Market Reaction Analysis**

In this section, we present the empirical result of event study calculation before and after the announcement. The range of observations used to calculate the CAR is (t-10, t+10).

values are -0.0082 and -0.0274 correspondingly when examined based on an average value of the ten (t-10, t-1) days before and ten days after (t+1, t+10). This result proves previous research (Dunford & Qi, 2020; Harjoto & Rossi, 2021;

**Table 3.** Descriptive Statistics of Cumulative Abnormal Return

	logCAR t <sup>-10</sup>	logCAR t <sup>-9</sup>	logCAR t <sup>-8</sup>	logCAR t <sup>-7</sup>	logCAR t <sup>-6</sup>	logCAR t <sup>-5</sup>	logCAR t <sup>-4</sup>	logCAR t <sup>-3</sup>	logCAR t <sup>-2</sup>	logCAR t <sup>-1</sup>	logCAR t <sup>0</sup>
Mean	-.0023*	.0001	-.0002	.0004	-.0039*	-.0072*	-.0102***	-.0134***	-.0204***	-.0247***	-.0263***
Std Dev	.02785	.04583	.06137	.05154	.05215	.05597	.0667	.07163	.0847	.08958	.09779
	logCAR t <sup>+1</sup>	logCAR t <sup>+2</sup>	logCAR t <sup>+3</sup>	logCAR t <sup>+4</sup>	logCAR t <sup>+5</sup>	logCAR t <sup>+6</sup>	logCAR t <sup>+7</sup>	logCAR t <sup>+8</sup>	logCAR t <sup>+9</sup>	logCAR t <sup>+10</sup>	
Mean	-.021***	-.0127***	-.0147***	-.0164***	-.0278***	-.0189***	-.0291***	-.043***	-.042***	-.0485***	
Std Dev	.13758	.08892	.08955	.08711	.08884	.09168	.09693	.11707	.11204	.12418	

\* Sig 10% | \*\* Sig 5% | \*\*\* Sig 1%

Herwany et al., 2021) and the hypothesis that the confirmation of the COVID-19 entry into Indonesia will have a more detrimental impact on the Indonesian stock market that under normal circumstances.

**Industry Reaction Analysis**

Table 4 illustrates the compared means and t-test of market reaction due to COVID-19’s first case announcement by type of Industries. We used a dummy variable in this research to explain the industry categorization. For the airlines, hospitality, and tourism industries, the dummy index is 1 whereas 0 is for other industries. We obtain negative coefficients across all columns for dummy index 1. Unfortunately, the result is not statistically significant. The result data presents that airlines, hospitality, and tourism did not impact negatively as other industries after the announ-

cement of the first confirmed case of COVID-19 on March 2, 2020. The results are not consistent with previous research (Alam et al., 2021; Clark et al., 2021) and the research hypothesis, which predicts that airlines, hospitality, and tourism industries experience greater negative reactions.

**Determinant Factors**

We discuss in this section the main result for analysis of the market assessment of the firm’s cash reserve and the CEO’s health risk exposure due and financial leverage of firms to COVID-19’s first announcement. We do a multicollinearity test to determine whether there is a relationship between independent variables, with a tolerance value > 0.1 and VIF value < 10 indicating no multicollinearity (Gujarati, 2012). Due to the tolerance value being 0.912 and VIF 1.097, the result demonstrates that there is no

**Table 4.** Compare Means

Variables	IND	N	Mean	P-value	Std. Dev
logCAR t0	1	31	-.0723***	.280	.2467
	0	457	-.0234***		.0778
logCAR t+1	1	31	-.0649*	.298	.2434
	0	457	-.0182*		.1272
logCAR t+2	1	31	-.0638***	.222	.2427
	0	457	-.0093***		.0662
logCAR t+3	1	31	-.0729***	.163	.2406
	0	457	-.0110***		.0671
logCAR t+4	1	31	-.0792***	.131	.2393
	0	457	-.0124***		.0637
logCAR t+5	1	31	-.0904***	.149	.2494
	0	457	-.0239***		.0636
logCAR t+6	1	31	-.0728***	.215	.2510
	0	457	-.0156***		.0679
logCAR t+7	1	31	-.0905***	.154	.2474
	0	457	-.0253***		.0757
logCAR t+8	1	31	-.1032***	.187	.2630
	0	457	-.0392***		.0991
logCAR t+9	1	31	-.1105***	.152	.2750
	0	457	-.0376***		.0899
LogCAR t+10	1	31	-.1220***	.135	.2819
	0	457	-.0439***		.1042

\* Sig 10% | \*\* Sig 5% | \*\*\* Sig 1%

correlation between independent variables. As a result, there is no evidence of multicollinearity. In terms of the autocorrelation test, the values of the Durbin-Watson test are around 2 which means the independent variables have autocorrelation

Table 5 shows regression results that predict the effect of independent variables on COVID-19's first announcement in each event window. By interpreting R<sup>2</sup>, An examination of the result reveals that the influence of a firm's cash reserve, CEO's fatality rate due to COVID-19 and financial leverage are only able to affect 8.1% of cumulative abnormal returns in each event window, while 91.9% is influenced by other variables.

Furthermore, coefficients in CASHTA are all positive across all columns and statistically significant to forecast cumulative abnormal return on each event window. These results provide strong support to the notion that the market has evalu-

ated positively the firm's cash reserve. On the contrary, the coefficients in CEOFAT are not consistent and statistically not significant. Therefore, we may conclude that the market does not use the CEO fatality rate as a benchmark for its investment portfolio due to the COVID-19 announcement in Indonesia. In terms of control variable, negative remarks on coefficient in LEV show an inverse relationship between the financial leverage of firms and cumulative abnormal returns.

**Tendencies of Firm's Cash Reserve**

The regression analysis shows that firm's cash reserves have a substantial impact on market response following the announcement of confirmed COVID-19 first cases in Indonesia. Firms with greater cash availability have less negative abnormal returns. It can be inferred that Investors are thought to pay attention to

**Table 5.** Empirical Results

	C	CASHTA	CEOFAT	LEV	IND	R <sup>2</sup>	Adj R <sup>2</sup>	F
LogCAR t0	-.027 (.196)	.262*** (.001)	-.001 (.802)	-.727*** (.000)	-.045*** (.010)	.080	.072	10.317*** (.000)
logCAR t+1	-.11 (.701)	.287** (.013)	-.007 (.418)	-.644*** (.001)	-.045* (.077)	.036	.028	4.435*** (.002)
logCAR t+2	-.016 (.379)	.234*** (.001)	.001 (.874)	-.717*** (.000)	-.050*** (.002)	.096	.089	12.696*** (.000)
logCAR t+3	-.024 (.200)	.210*** (.004)	.004 (.470)	-.719*** (.000)	-.057*** (.000)	.101	.094	13.467*** (.000)
logCAR t+4	-.020 (.264)	.184*** (.009)	.002 (.622)	-.658*** (.000)	-.063*** (.000)	.099	.091	13.034*** (.000)
logCAR t+5	-.011 (.559)	.193*** (.007)	-.004 (.445)	-.717*** (.000)	-.063*** (.000)	.106	.098	14.043*** (.000)
logCAR t+6	-.006 (.758)	.196*** (.009)	-.003 (.527)	-.680*** (.000)	-.054*** (.001)	.084	.077	10.972*** (.000)
logCAR t+7	-.016 (.447)	.203** (.011)	-.004 (.470)	-.641*** (.000)	-.063*** (.000)	.077	.069	9.908*** (.000)
logCAR t+8	-.047* (.059)	.198** (.040)	.003 (.632)	-.778*** (.000)	-.059*** (.006)	.067	.059	8.496*** (.000)
logCAR t+9	-.028 (.236)	.189** (.040)	-.002 (.785)	-.786*** (.000)	-.069*** (.001)	.078	.071	10.131*** (.000)
logCAR t+10	-.034 (.200)	.156 (.127)	.000 (.955)	-.799*** (.000)	-.073*** (.001)	.068	.060	8.686*** (.000)

\* Sig 10% | \*\* Sig 5% | \*\*\* Sig 1%



their portfolios for firms. Greater cash reserves are more likely to be kept in their portfolio than other companies with small cash reserves. Moreover, adequate liquidity is important for a firm to ensure coverage of its recurring obligations. Under unnormal circumstances of severe financial stress related to a pandemic situation, firms would need a large reserve of cash or short-term investment to avoid financial distress. The firm's cash reserves serve as emergency funding, demonstrating that when a firm has large cash reserves, it can mitigate the risks posed by COVID-19 uncertainty, as well as restrictions on the firm's operations and other economic activities imposed by the Government of Indonesia, as other countries have done. The results are supported research that claims firms with greater cash availability would have less negative abnormal returns on the airline, hotel, and tourism industries.

**Tendencies of CEO Health Risk**

The paper does not obtain a negative relationship between CEO's fatality rate and cumulative abnormal return. these results suggest that the market does not perceive the higher health risk of older CEOs exposed to the COVID-19 and does not provide support to the notion that a higher risk of unplanned and disruptive CEO substitution for illness or sudden death will harm the firm's market valuation. Therefore, this study is unable to uncover any such impact, indicating that it does not support the research hypothesis and are not in line with<sup>21</sup> that claim firms with CEOs who were exposed to significant health risks from COVID-19 experienced poorer stock market performance than firms with young CEO. We

do a robustness check using CEO age to ensure the result.

Table 6 illustrates the regression coefficient result of robustness check by the CEO's age. The paper hypothesizes that firms with an elderly CEO have more negative returns than firms with an adult CEO. On the other hand, we still do not obtain a relationship between CEO's age and cumulative abnormal return. therefore, we believe that investors are not concerned with upper echelons' characteristics due to COVID-19's first case announcement in Indonesia's stock market.

**Tendencies of Financial Leverage of Firms**

Based on the calculation, investors penalized more firms that have higher financial leverage. Firms with less debt, and thus lower fixed debt payments would have greater chance to survive any financial stress on pandemic situations.

**CONCLUSION AND RECOMMENDATION**

The outbreak of COVID-19 has caused a global economic disruption, including Indonesia. To shed light on how stock markets respond to the COVID-19 pandemic by industry type and whether the firm's cash reserves and upper echelons characteristics due to the COVID-19 crisis, we constructed a regression analysis and evaluate the relationship between cumulative abnormal return and firm characteristics. we have found that airlines, hospitality, and tourism industries have more negative returns than other industries due to COVID-19 confirmed case announcement. We also obtain evidence indicating that firms with greater cash reserves

**Table 6.** Robustness Check by CEO Age

	LOGCAR0	LOGCAR1	LOGCAR2	LOGCAR3	LOGCAR4	LOGCAR5
Coefficient	-.012	-.039	.000	.010	.004	-.024
	(.604)	(.262)	(.984)	(.652)	(.854)	(.257)
	LOGCAR6	LOGCAR7	LOGCAR8	LOGCAR9	LOGCAR10	
	-.021	-.026	.07	-.017	-.011	
	(.363)	(.272)	(.814)	(.532)	(.710)	

were associated with less negative returns. However, we do not find that firms whose CEOs were exposed to high health risks due to COVID-19 suffer higher market value losses.

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