The current issue and full text archive of this journal is available on AFEBI Management and Business Review at:
https://journal.afebi.org/index.php/ambr/article/view/559

CASH RESERVE, CEO HEALTH RISK, THE PRICE REACTION DUE TO COVID-19 FIRST ANNOUNCEMENT ON LEISURE INDUSTRY

Muhammad Afif Arsyad*, **Cynthia Afriani Utama**
Department of Management, Faculty of Economics and Business, Universitas Indonesia, Indonesia

Abstract

This study investigates stock market reaction on leisure industries to first announcement of COVID-19 case which affected Indonesia on 2nd March 2020. The method of this research is event study and supported by multiple linear regression to analyze the relationship between market reaction and independent variables. This paper uses Fama French three-factor models to estimate expected return on firms due to the COVID-19 announcement. Based on a calculation of Cumulative abnormal returns, the stock of tourism industries has a 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 returns while firms with higher leverage ratios were penalized more. Additionally, we don't find that firms with CEOs who were exposed to significant health risks from COVID-19 experienced worse stock market performances

Keywords: COVID-19, Cash Reserve, CEO Health Risk, Event Study, Fama-French Three-Factor Model

Received
May 29th 2022
Review
June 11th 2022
Publish
June 30th 2022

*Corresponding author. *Email address:* muhammad.afif04@ui.ac.id

AFEBI Management and Business Review (AMBR)

P-ISSN 2548- 530X
E-ISSN 2548-5318

INTRODUCTION

Previous studies have identified major events that affected stock market returns. Several events such as 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 market returns.

Based in WHO, At the end of 2019 in Wuhan, there was an infectious virus caused by a new variant, Coronavirus SARS CoV-2 which spread to 216 countries with a total of 3,406,824 confirmed cases and 252,478 deaths by 27 April 2020. It is also known as COVID-19, one of the severe acute respiratory syndrome family of viruses which easily transmitted by droplets and small airborne particles from people that have been infected. The symptoms can be quite serious for the elderly or those with chronic medical problems such as cancer, cardiovascular disease, diabetes, and chronic respiratory problems. On March 11, WHO officially declared the COVID-19 outbreak as a pandemic therefore almost all countries did regulations such as lockdown, business closures, and social distancing 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 also caused global stock markets to plummet as negatively react to growth in COVID-19 confirmed cases. The stock market returns decline as the number of confirmed cases increases in a country. In terms of the growing number of death due to COVID-19, the correlation is positive but not 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 Harvard academics have suggested there could be undetected cases in Indonesia, the world`s fourth most populous country, which has close links to China. Using mathematical modelling based on air travel volume estimates between the country and the central Chinese city of Wuhan, Indonesia is expected to have approximately five cases (Salazar et al, 2020) in February 2020. Despite what academics had predicted, Indonesia has just announced the first confirmed positive test of COVID-19 by 2nd March 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 firms (Gossling et al, 2020), and the tourism sector (Nayak et al, 2022)

By using panel structural vector auto-regression (PSVAR), previous research predicts that 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 causes a high destructive impact on the travel and tourism industry where the virus spreads extremely fast. 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 up 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 up to 6,800 per day. In terms of hotels and restaurants, occupancy rates were declining. Around 6,000 hotels in Indonesia can reach 50% occupancy rates which has affected the decline of tourism foreign exchange more than half a year ago (Atmojo & Fridayani, 2021). Specifically, we examine firms in leisure industries such as airlines, hospitality, restaurant, and tourism that have experienced negative impacts significantly due to the COVID-19 (Devi et al, 2020). The motivation why we select these firms is to determine how investors priced the business that was severely affected by the pandemic outbreak. 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. Evidence about the "CEO effect" is inconclusive with studies reflecting the growing influence of the CEO on the firm's affairs. We also register control variable, the financial leverage of firms, to determine how the investors react to pre-COVID firms' performance.

LITERATURE STUDY

Efficient Market Hypothesis

According to Fama (1970), the stock price generated in the market reflects all available information about the company's value. Stocks always trade at their fair value on exchanges, making it impossible for investors to purchase undervalued stocks or sell stocks for inflated prices. Therefore, it should be impossible to outperform the overall market through expert stock selection or market timing, and the only way an investor can obtain higher returns is by purchasing riskier investments.

Event Study

According to Damodaran (2012). Event studies are thus used to examine the market reaction and excess return in the case of an event that contains specific information. Such information may be market-wide, such as macroeconomic policy announcements, occurrences of force majeure, or firm-specific events. It is crucial however that the event window is known so that the event does not become contaminated by news of other events. This is an important part of the analysis process so that the result is not biased.

Fama French Three Factor Models

The Fama and French Three-Factor Model is an asset pricing model developed in 1992 that expands on the capital asset pricing model (CAPM) by adding size risk and value risk factors to the market risk factor in CAPM. This model considers the fact that value and small-cap stocks outperform markets on a regular basis. By including these two additional factors, the model adjusts for this outperforming tendency, which is thought to make it a better tool for evaluating manager performance. The Fama and French model has three factors: the size of firms, book-to-market values, and excess return on the market. In other words, the three factors used are small minus big (SMB), high minus low (HML), and the portfolio's return less the risk-free rate of return. SMB accounts for publicly traded companies with small market caps that generate higher returns, while HML accounts for value stocks with high book-to-market ratios that generate higher returns in comparison to the market.

Hypothesis Development

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 M per company, according to Rahman et al (2021). The coronavirus pandemic, 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.

H1: Market reaction will be more negative after the announcement of the COVID-19 confirmed case compared to normal conditions in Indonesia

Due to preventing the spread of the Virus, the implementation of a “lockdown” policy and restrictions on mobility from countries that have been affected by Corona Virus first made the stock market react negatively. It also caused airlines and tourism industries are most critical due to the spread of Corona Virus (Nayak et al, 2020). Using a structural vector auto-regression (PSVAR) panel, Skare et al (2021) predict that recovery of tourism industry will take longer time than SARS 2002 crisis and H1N1 2009 crisis.

H2: Market reaction will be more negative for industries that related to airlines, hospitality and tourism compared to other industries

Furthermore, to better understand how investors used new information and preferences in response to the pandemic situation, we investigate the following two indicators: first is cash reserve. 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: Market reaction will be more negative for companies that have smaller cash reserves compared to firms with larger cash reserves

Second is the Chief Executive Officer Fatality rate of COVID-19. 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 on the early stage of pandemic outbreaks change the preference of investors. One of the obvious effects is the disruption on 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 and 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 and Pathan (2021) found in the Australian stock market, Firms with CEOs who were exposed to significant health risks of the 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 and Marcel (2010) found that unplanned CEO turnover often leads to a temporary CEO succession, which is associated to lower firm performance.

H4: Market reaction will be more negative for firms that have a higher fatality rate of CEO`s due to coronavirus disease compared to firms that lower fatality rate of CEO`s.

METHODOLOGY

Data

This study uses secondary data obtained from 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. We obtain 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. We apply several standard filters to clean the data. First, we drop the penny stocks. Then, we drop firms that trade less than 210-trading days, to estimate consistent beta. We also drop firms that do corporate actions in the estimation period. Finally, we 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.

Measures of 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) (Sharma, 2017) from the event date, March 2nd, 2020. The formula to calculate the daily individual stock return is given as follows:

$$\mathbf{Rit = Ln\ (Pt/Pt\text{-}1)}$$

Rit = Stock return of firm i for period t

Pt = Stock price of firm i for period t

Pt-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 and French, 1993). The formula for Fama-French three-factor model is given as follows:

$$\mathbf{Rit - Rf = \beta 1\ (Rm - Rf) + \beta 2(SMB) + \beta 3\ (HML) + \alpha}$$

Rit = Stock returns of firm i for period t

α = An intercept from regression process result of daily return during estimation period (210 days before event window)

β1,2,3 = Regression coefficient

Rf = Risk-free based on Indonesia Government Bond Yield

Rm = Market return during estimation period

SMB = Small Minus Big factor

HML = High Minus Low factor

Based on the efficient market hypothesis, stock prices must reflect information about 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 reflect to 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 expected return obtained by investors for a period of time. Calculation of abnormal return is performed using the following formula:

$$ARit = Rit - E(Rit)$$

ARit = Abnormal return of stock i during period t
Rit = Stock returns of firm i for period t
E (Rit) = 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 event window. The following formula is used to calculate the value of CAR:

$$CAR = \Sigma_{(i-1)}^{n} ARt$$

CAR = Cumulative abnormal return i during estimation period
ARt = 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 and Simkins, 2004; Cardella 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 (CEOFAT = the log transformation of fatality rate followed literature Mendez and Pathan, 2022).

Empirical Framework

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

$$CARit = \alpha + \beta 1\ CASHTA + \beta 2\ CEOFAT + \beta 3\ LEV + \beta 4\ IND$$

Where subscript i denotes individual firms. The coefficients α and β 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 effect. We use the multicollinearity and autocorrelation test as classical assumption tests that must be fulfilled to create best linear unbiased estimator.

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 expected return by FF3.

Table 1. Descriptive Statistics of Portfolio

	B/H	B/M	B/L	S/H	S/M	S/L
Mean	-0.001049	-0.00111	-0.001333	-0.000265	0.00042	-0.000299
Std Dev	0.007616	0.007114	0.005555	0.004568	0.005892	0.007581

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.

Table 2. Descriptive Statistics of Expected Return in Event Window

	Er t-10	Er t-9	Er t-8	Er t-7	Er t-6	Er t-5	Er t-4	Er t-3	Er t-2	Er t-1	Er t0
Mean	0.0026	-0.0014	0.0003	0.0000	-0.0002	-0.0047	-0.0012	-0.0044	-0.0073	-0.0100	-0.0066
	Er t+1	**Er t+2**	**Er t+3**	**Er t+4**	**Er t+5**	**Er t+6**	**Er t+7**	**Er t+8**	**Er t+9**	**Er t+10**	
Mean	-0.0017	0.0068	0.0058	-0.0065	-0.0177	-0.0092	-0.0006	-0.0148	-0.0084	-0.0130	

Market Reaction

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). 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 and Hapsari, 2012) to log (1+CAR) in order to normalize the data.

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 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; Herwany et al, 2021). follows:

Table 3. Descriptive Statistics of Cumulative Abnormal Return

	Log CAR t-10	Log CAR t-9	Log CAR t-8	Log CAR t-7	Log CAR t-6	Log CAR t-5	Log CAR t-4	Log CAR t-3	Log CAR t-2	Log CAR t-1	Log CAR t0
Mean	-0.0023*	0.0001	-0.0002	0.0004	-0.0039*	-0.0072*	-0.0102***	-0.0134***	-0.0204***	-0.0247***	-0.0263***
Std Dev	0.02785	0.04583	0.06137	0.05154	0.05215	0.05597	0.0667	0.07163	0.0847	0.08958	0.09779
	Log CAR t+1	**Log CAR t+2**	**Log CAR t+3**	**Log CAR t+4**	**Log CAR t+5**	**Log CAR t+6**	**Log CAR t+7**	**Log CAR t+8**	**Log CAR t+9**	**Log CAR t+10**	
Mean	-0.021***	-0.0127***	-0.0147***	-0.0164***	-0.0278***	-0.0189***	-0.0291***	-0.0431***	-0.0425***	-0.0485***	
Std Dev	0.13758	0.08892	0.08955	0.08711	0.08884	0.09168	0.09693	0.11707	0.11204	0.12418	

Notes: * Sig 10% | ** Sig 5% |*** Sig 1%

Industry Reaction

Table 4 illustrates the compared means and t-test of market reaction due to COVID-19 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 and statistically significant coefficients across all columns for dummy index 1. These results suggest that the market perceives airlines, hospitality, and tourism as the most impacted industries by the COVID-19 crisis.

The result data presents that airlines, hospitality, and tourism had a more negative impact than other industries after the announcement of the first confirmed case of COVID-19 on March 2nd 2020. The results are 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 multicollinearity24. Due to the tolerance value being 0.912 and VIF 1.097, the result demonstrates that there is no 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 4. Descriptive Statistics of Cumulative Abnormal Return

Variables	IND	N	Mean	P-value	Std. Dev
logCAR t0	1	31	-0.0723***	0.007	0.2467
	0	457	-0.0234***		0.0778
logCAR t+1	1	31	-0.0649*	0.066	0.2434
	0	457	-0.0182*		0.1272
logCAR t+2	1	31	-0.0638***	0.001	0.2427
	0	457	-0.0093***		0.0662
logCAR t+3	1	31	-0.0729***	0.000	0.2406
	0	457	-0.0110***		0.0671
logCAR t+4	1	31	-0.0792***	0.000	0.2393
	0	457	-0.0124***		0.0637
logCAR t+5	1	31	-0.0904***	0.000	0.2494
	0	457	-0.0239***		0.0636
logCAR t+6	1	31	-0,0728***	0.001	0.2510
	0	457	-0.0156***		0.0679
logCAR t+7	1	31	-0.0905***	0.000	0.2474
	0	457	-0.0253***		0.0757
logCAR t+8	1	31	-0.1032***	0.003	0.2630
	0	457	-0.0392***		0.0991
logCAR t+9	1	31	-0.1105***	0.000	0.2750
	0	457	-0.0376***		0.0899
LogCAR t+10	1	31	-0.1220***	0.001	0.2819
	0	457	-0.0439***		0.1042

. Notes: * Sig 10% | ** Sig 5% |*** Sig 1%

Table 5. Regression Results

	C	CASHTA	CEOFAT	LEV	IND	R2	Adj R2	F
LogCAR t0	-0.027	0.262***	-0.001	-0.727***	-0.045***	0.080	0.072	10.317***
	(0.196)	(0.001)	(0.802)	(0.000)	(0.010)			(0.000)
logCAR t+1	-0.11	0.287**	-0.007	-0.644***	-0.045*	0.036	0.028	4.435***
	(0.701)	(0.013)	(0.418)	(0.001)	(0.077)			(0.002)
logCAR t+2	-0.016	0.234***	0.001	-0.717***	-0.050***	0.096	0.089	12.696***
	(0.379)	(0.001)	(0.874)	(0.000)	(0.002)			(0.000)
logCAR t+3	-0.024	0.210***	0.004	-0.719***	-0.057***	0.101	0.094	13.467***
	(0.200)	(0.004)	(0.470)	(0.000)	(0.000)			(0.000)
logCAR t+4	-0.020	0.184***	0.002	-0.658***	-0.063***	0.099	0.091	13.034***
	(0.264)	(0.009)	(0.622)	(0.000)	(0.000)			(0.000)
logCAR t+5	-0.011	0.193***	-0.004	-0.717***	-0.063***	0.106	0.098	14.043***
	(0.559)	(0.007)	(0.445)	(0.000)	(0.000)			(0.000)
logCAR t+6	-0.006	0.196***	-0.003	-0.680***	-0.054***	0.084	0.077	10.972***
	(0.758)	(0.009)	(0.527)	(0.000)	(0.001)			(0.000)
logCAR t+7	-0.016	0.203**	-0.004	-0.641***	-0.063***	0.077	0.069	9.908***
	(0.447)	(0.011)	(0.470)	(0.000)	(0.000)			(0.000)
logCAR t+8	-0.047*	0.198**	0.003	-0.778***	-0.059***	0.067	0.059	8.496***
	(0.059)	(0.040)	(0.632)	(0.000)	(0.006)			(0.000)
logCAR t+9	-0.028	0.189**	-0.002	-0.786***	-0.069***	0.078	0.071	10.131***
	(0.236)	(0.040)	(0.785)	(0.000)	(0.001)			(0.000)
logCAR t+10	-0.034	0.156	0.000	-0.799***	-0.073***	0.068	0.060	8.686***
	(0.200)	(0.127)	(0.955)	(0.000)	(0.001)			(0.000)

Notes: * Sig 10% | ** Sig 5% |*** Sig 1%

Table 5 shows regression results that predict the effect of independent variables on COVID-19's first announcement in each event window. By interpreting R2, 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.

2 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 evaluated 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.

CONCLUSION

The outbreak of the COVID-19 has caused a worldwide deterioration of economic conditions including in 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 construct a regression analysis and evaluate the relationship between cumulative abnormal return and firm characteristics. In short, our findings indicate 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 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.

Additionally, the results add more valuable insight for the investor in making decision-related to investing in the Indonesian stock market, especially in health crisis announcements. Thus, an interesting task of future research would be to add more events such as a new variant of COVID-19, vaccine discovery, and first or second waves of COVID pandemic announcement to analyze more deeply. Furthermore, the following research also could add more independent variables in upper echelons theory and financial ratios.

REFERENCES

Abd Al-Awadhi, A. M., Alsaifi, K., Al-Awadhi, A., & Alhammadi, S. (2020). Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns. Journal of Behavioral and Experimental Finance, 27. https://doi.org/10.1016/j.jbef.2020.100326

Ahmad, T., Hussain, S., Akbar, M., & Rehman, A. U. (2022). Impact of terrorism on stock market: Evidence from developed and developing markets. International Journal of Disaster Risk Reduction, 70. https://doi.org/10.1016/j.ijdrr.2022.102786

Alam, M. M., Wei, H., & Wahid, A. N. M. (2021). COVID-19 outbreak and sectoral performance of the Australian stock market: An event study analysis. Australian Economic Papers, 60(3), 482–495. https://doi.org/10.1111/1467-8454.12215

Anintyarini, C., & Utama, C. A. (2019). Market Reaction to Announcement of the Corporate Governance "Comply or Explain" Regulation and Determinants of Compliance Level.

Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities? Research in International Business and Finance, 54. https://doi.org/10.1016/j.ribaf.2020.101249

Atmojo, M. E., & Fridayani, H. D. (2021). An Assessment of Covid-19 Pandemic Impact on Indonesian Tourism Sector. Journal of Governance and Public Policy, 8(1), 1–9. https://doi.org/10.18196/jgpp.811338

Au Yong, H. H., & Laing, E. (2021). Stock market reaction to COVID-19: Evidence from U.S. Firms' International exposure. International Review of Financial Analysis, 76. https://doi.org/10.1016/j.irfa.2020.101656

Awwaliyah, I. N., & Husodo, Z. A. (2017). The Extended Fama-French Three Factor Model: Revisited.

Bodie, Z., Kane, A., & Marcus, Alan. J. (2014). Investments (Douglas Reiner, Ed.; 10th Edition). Mc-Graw Hill.

Cardella, L., Fairhurst, D., & Klasa, S. (2021). What determines the composition of a firm's cash reserves? Journal of Corporate Finance, 68 https://doi.org/10.1016/j.jcorpfin.2021.101924

Carter, D., Mazumder, S., Simkins, B., & Sisneros, E. (2022). The stock price reaction of the COVID-19 pandemic on the airline, hotel, and tourism industries. Finance Research Letters, 44. https://doi.org/10.1016/j.frl.2021.102047

Chen, M. H., Demir, E., García-Gómez, C. D., & Zaremba, A. (2020). The impact of policy responses to COVID-19 on U.S. travel and leisure companies. Annals of Tourism Research Empirical Insights, 1(1). https://doi.org/10.1016/j.annale.2020.100003

Clark, J., Mauck, N., & Pruitt, S. W. (2021). The financial impact of COVID-19: Evidence from an event study of global hospitality firms. Research in International Business and Finance, 58. https://doi.org/10.1016/j.ribaf.2021.101452