

## THE IMPACT OF COVID-19 OUTBREAK ON INDONESIA TOURISM STOCK PERFORMANCE

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### ABSTRACT

*The Corona Virus Disease (Covid-19) Outbreak weakened the country's economy all around the world. The tourism industry suffered the most, experiencing the highest stock price decline within a year of the Covid-19 outbreak. The purpose of the study is to examine whether COVID-19 has a significant effect on stock price movements of the Indonesian tourism industry in general and how the capital market reacts to the Covid-19 outbreak in Indonesia in particular. The study used event-study approach and t-statistical to test the hypothesis. The result showed that on and after the day of announcement of COVID-19 outbreak, eighty four percent of Indonesia tourism stocks showed significantly negative cumulative abnormal returns, indicating a significant impact of the Covid-19 outbreak on tourism stock performance. Empirical findings could be used to make investment decision and estimate future winner investment sector for the similar pandemic.*

**Keywords:** *tourism stock price; covid-19; pandemic*

### ABSTRAK

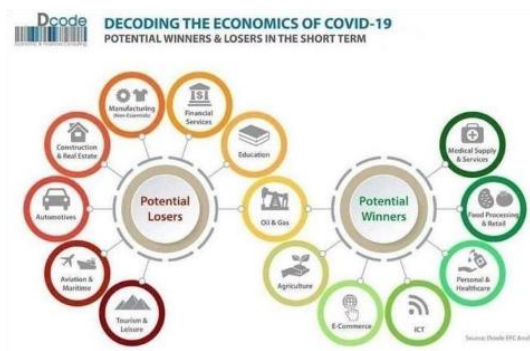
Wabah Corona Virus Disease (Covid-19) melemahkan perekonomian negara di seluruh dunia. Industri pariwisata paling menderita, mengalami penurunan harga saham tertinggi dalam setahun sejak wabah Covid-19. Tujuan penelitian untuk mengkaji apakah COVID-19 berpengaruh signifikan terhadap pergerakan harga saham industri pariwisata Indonesia secara umum dan bagaimana reaksi pasar modal terhadap wabah Covid-19 di Indonesia pada khususnya. Penelitian ini menggunakan pendekatan event-study dan t-statistik untuk menguji hipotesis. Hasil penelitian menunjukkan bahwa pada dan setelah hari pengumuman wabah COVID-19, delapan puluh empat persen saham pariwisata Indonesia menunjukkan abnormal return kumulatif negatif yang signifikan, menunjukkan dampak signifikan wabah Covid-19 terhadap kinerja saham pariwisata. Temuan empiris dapat digunakan untuk membuat keputusan investasi dan memperkirakan sektor investasi pemenang masa depan untuk pandemi serupa.

**Kata kunci:** harga saham pariwisata; covid19; pandemi

## INTRODUCTION

COVID-19 is the serious disease caused by SARS-CoV-2, a new type of coronavirus. WHO first learned of this new virus on 31 December 2019, following a report of a cluster of cases of 'viral pneumonia' in Wuhan, People's Republic of China, (Glass, Cash, & Mullen, 2020). The Covid-19 brought big impacts on all sectors around the world. Health, psychology, education, politics and economy. All those impacts are the result of people's behaviour change as responds to covid-19. The COVID-19 outbreak was recorded to have killed thousands of victims and has changed the behavior of Indonesian people. They began to show awareness to prevent the spread of the virus by wearing masks, adopting a clean and healthy lifestyle by washing their hands more frequently and taking various supplements to increase endurance, delaying mass activities that could potentially spread the virus and not traveling unless necessary. They only leave the house to get basic necessities such as food, toiletries, medicines etc (Www.kompas.com, n.d.). This causes the decrease of public's demand for secondary and tertiary products such as need for pleasure and tourism. This opinion is supported by Data from [www.kemenparekraf.go.id](http://www.kemenparekraf.go.id) that informs Star Hotel Room Occupancy Rate decreased 20.64% and Foreign Tourist Visits decreased -64.10% on march 2020, (Ministry of Tourism Republic of Indonesia, 2017).

By looking at changes in people's behaviour, several industries are predicted to be potential winners and potential losers (Dcode Economic & Financial Consulting, 2020). Industry potential winners include the medical supply & services, food processing & retail, personal healthcare and ICT industries. Meanwhile, potential industry losers include construction & real estate, automotive, aviation & maritime and tourism & leisure. The tourism and leisure industry is in the lowest rank, which indicates that this industry is the industry most affected by the COVID-19 outbreak. Tourism sector consists of accommodation for visitors, food and beverage service activities, passenger transportation, travel agents and other reservation activities, cultural activities, sports and entertainment activities. The scope of the tourism industry concerns various economic sectors. The aspects covered in the tourism industry include restaurants, lodging, travel services, transportation, development of tourist destinations, recreational facilities and tourist attractions (World Tourism Organization, 2017).

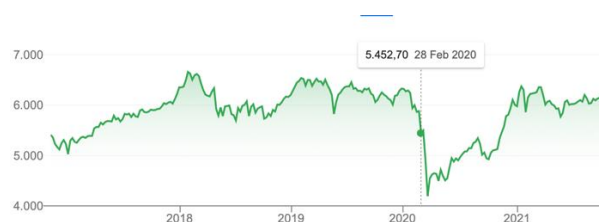


**Figure 1.**  
Potential Winners and Losers in short term  
Source : DCODE, 2020

The industries most affected are the hotel, restaurant and tourist attraction industries. The phenomenon of a sharp increase in the number of COVID-19 patients psychologically affects Indonesian citizens, especially residents of the capital Jakarta. Residents are reluctant to travel on weekends and national holidays for fear of being exposed to the corona virus. This can be seen from the decline in the number of visitors to hotels, restaurants, malls and tourist attractions. Citizens voluntarily limit the amount of time they spend in public places, thereby reducing consumer spending (CNBC, n.d.). The tourism sector has dramatically affected by the wide- spread of COVID-19 and may remain for a longer time. (Foo, Chin, Tan, & Phuah, 2020) stated that the pandemic is highly impacting the tourism industry in Malaysia, particularly, the airline and hotel businesses. The arrival of foreign tourists in India from different parts of the world has reduced by 68% in March 2020 compared to the previous month. It has a great impact on revenue generated from tourism (Jaipuria, Parida, & Ray, 2020). Tourism-related sectors were particularly hard hit, as travelers canceled their trips and consumers avoided shops, restaurants and entertainment venues (Chen, Jang, & Kim, 2007). This Pandemic is responsible for the huge loss of tourist income because tourism services are a non-durable commodity (Min, J.C.H., Wu, 2004).

Much attention has been devoted to the seriousness of Covid-19 and some research has been conducted to examine the impact of Covid-19. However, most economic impact studies focused on the demands of vacationers and business travelers, not on the reaction of stock investors or of the stock market. Thus, there is a niche for further research to examine the impact of the disease on the financial performance of tourism firms. It is important to investigate the magnitude of covid-19 impact not only through its effects on tourist- related industries but also through the stock market's reactions. The purpose of this study is to examine whether COVID-19 has a significant effect on tourism industry in Indonesia by examining its stock price movements in general and how the capital market reacts to the Covid-19 outbreak in Indonesia in particular.

One of capital market indicator that can be seen is the movement of stock prices. The stock price describes the value of the firm, so that the stock price is strongly influenced by the company's performance and the company's prospects in an effort to increase the company's value in the future (Suryanto & Kesuma, 2013). Firm value is the present value of the firm's expected future free cash flows, discounted at the appropriate discount rate. The COVID-19 pandemic can affect firm valuation by changing the expectation of future cash flows or by changing the required rate of return, due to changes in risk (Carter, Mazumder, Simkins, & Sisneros, 2021). The following is stock market price (IDX Composite) movements for the last one year.



**Figure 2. *IDX Composite Movement***  
Source : IDX

Based on figure 2 above, IDX's movement become fluctuative and started to decline in early March when Indonesian President Joko Widodo announced a covid-19 positive confirmed patient for the first time, reported by the news portal (Kompas.id). Since the first Covid-19 patient in Indonesia was confirmed in early March 2020, trading transactions on the stock market have fluctuated, IHSG continues to oscillate during the COVID-19 pandemic. The ups and downs of the stock market do not only occur in Indonesia, but also in other parts of the world (Tambunan, 2020). Stock Exchange IDX Composite or known as IHSG is an index that shows general stock price movements listed on the stock exchange, which is a reference for developments in capital market activities (Panji, Anoraga, 2001). IHSG is one index that investors often pay attention to when investing in Indonesia (Astuti, Susanta, & Apriatni, 2013).

Information is a signal for investors to assess the prospects of the company concerned. Beaver 1986 in (Muharam & Widati, 2006) states that the availability of good, reliable, complete and timely information will enable investors to make rational decisions so that they will get the expectations that investors want. The assumption of signalling theory is that management has accurate information about firm value that is unknown to outside investors about the factors that affect firm value, and that management is always trying to increase its profits, (Suwanna, 2012).

An event or company action carried out by a company, such as an announcement of an pandemic victims, is a means of something bad happen to the market regarding the performance of a company. This can be interpreted as a signal whether the performance of a company is bad or vice versa. Decreasing company returns can provide negative signals to investors about the prospects and performance of the company in the future so that investors are not willing to buy these shares. This selling action causes stock prices to decrease which in turn will decrease stock returns.

An investor with low return on investment expectations may view an announced pandemic victims as "bad news", while an investor who has high return on investment expectations will perceive this as "good news". If the number of investors who view the announced pandemic victims as bad news is more, the company's stock price will decline, and vice versa.

## **RESEARCH METHODS**

The population of this study is all stock price listed in indonesia stock exchange (IDX). The sample of this study contained twenty six stocks engaged in the tourism sector including hotel, restaurant, travel and tourism objects as follows :

1. PT. Bayu Buana Tbk (BAYU)
2. PT. Bukit Uluwatu Villa (BUVA)
3. PT Citra Putra Realty Tbk (CLAY)
4. PT Dafam Property Indonesia Tbk (DFAM)
5. PT Jaya Bersama Indo Tbk (DUCK)
6. PT Eastparc Hotel Tbk (EAST)
7. PT Fast Food Indonesia Tbk (FAST)
8. PT Hotel Fitra International Tbk (FITT)
9. PT. Saraswati Griya Lestari Tbk (HOTL)
10. PT Menteng Heritage Realty Tbk (HRME)
11. PT Island Concepts Indonesia Tbk (ICON)
12. PT Indonesian Paradise Property Tbk (INPP)

13. PT Jakarta International Hotels & Development Tbk (JIHD)
14. PT Mas Murni Indonesia, Tbk (MAMI)
15. PT. Map Boga Adiperkasa Tbk (MAPB)
16. PT. Map Boga Adiperkasa Tbk (MAPB)
17. PT Ayana Land International Tbk (NASA)
18. PT Nusantara Properti Internasional Tbk (NATO)
19. PT Panorama Sentrawisata Tbk (PANR)
20. PT Pembangunan Graha Lestari Indah Tbk (PGLI)
21. PT Pembangunan Jaya Ancol Tbk (PJAA)
22. PT Pudjiadi and Sons Tbk (PNSE)
23. PT Pioneerindo Gourmet International Tbk (PTSP)
24. PT Sarimelati Kencana Tbk. (PZZA)
25. PT Hotel Sahid Jaya International Tbk (SHID)
26. PT Satria Mega Kencana Tbk (SOTS)

To examine the impact of the COVID-19 on tourism stock performance in Indonesia, we applied the event-study methodology (ESM), which has been widely used to measure the economic event's impact on the firms stock returns or value (Ibrahim, Mohammad, & Mohammed, 2020). The ESM allows us to separate the component of tourism stock price movement due to firm-specific events from that due to market-wide movements. The component attributed to firm-specific events like the COVID-19 event is called "abnormal" return (AR), which is computed as the difference between actual return and expected return around the time of the event. If an announcement of an event is good news, we expect ARs to be positive, indicating that the market believes that the event will increase the firm's value. On the contrary, a negative AR signals bad news and the market believes that the event would decrease the firm's future profitability.

First of all, the researcher displays a one-month return for all industrial sectors in Indonesia. This is to provide an overview of which sectors are affected by COVID-19. Then specifically and detailly calculates the impact of covid-19 on the tourism industry stocks using abnormal return and the cumulative abnormal return (CAR) on an event date for sampled firms. This is done to capture the valuation impact of that event. We then test the statistical significance of the CARs. The event significantly impacts stock prices when the cumulative abnormal return is statistically far from zero.

Measuring abnormal returns and hypothesis. To measure the ARs of tourism stocks, we need to estimate the expected returns (ER) of tourism stocks. First of all, we need to calculate the return of each individual stock and market return

$$R_i = \frac{(P_{i,t} - P_{i,t-1})}{P_{i,t-1}} \quad \dots \text{(Eq.1)}$$

$$R_m = \frac{(IHSG_{i,t} - IHSG_{i,t-1})}{IHSG_{i,t-1}} \quad \dots \text{(Eq.2)}$$

where  $P_{i,t}$  is the closing price of stock  $i$  on day  $t$ ;  $R_m$  represents the market return, the average of returns for all firms included in the market index; the market index is IHSG, which is a value-weighted index based on a broad cross-section of the market.

All of tourism stock prices and market index were taken from the financial database of the Indonesia Stock Exchange (IDX). For the analysis, we used 232 trading days for the estimation period, which is from March 2, 2019 to February 10, 2020, and a 1(-t1;t2) event window:  $t_1$  trading days before and  $t_2$  trading days after the event on March 2, 2020 when the Covid-19 was first reported in Indonesia.

The AR in the window is computed based on Eqs. (3) and (4):

$$AR_{j,t} = R_{j,t} - ER_{j,t},$$

$$ER_{j,t} = \hat{\alpha}_j + \hat{\beta}_j R_{m,t}, \quad \dots \text{Eq. (3) and Eq. (4)}$$

where the coefficients  $\hat{\alpha}_j$  and  $\hat{\beta}_j$  are estimates of the true parameters obtained via an ordinary least squares (OLS) regression analysis and  $AR_{j,t}$  is abnormal return for tourism stock  $j$  on day  $t$ . In the section of methodology, abnormal returns on stock  $j$  from Eq. (3) are broken down into two components: a market component and a firm-specific component. While the market component reflects general market movements, the firm-specific component reflects price variations caused by firm-specific events, such as the Covid-19 outbreak in this study.

To determine whether CARs are significant, the test statistic on any day  $t$  in the event window for all  $n$  tourism stocks is constructed as in Eq. (5):

$$t \text{ statistics} = \frac{1}{\sqrt{n}} \sum_{i=1}^n CAR_i \quad \dots \text{(Eq.5)}$$

The t-statistic as the test statistic follows a standard normal distribution (Campbell et al., 1997). If the covid-19 outbreak caused abnormal returns, the t-statistic should be significantly different from zero. Thus, we test the null hypothesis  $H_0$  against the alternative hypothesis  $H_1$ :

$H_0$ . The covid-19 outbreak had no impact on tourism stock prices.

$H_1$ . The covid-19 outbreak had a significant impact on tourism stock prices.

## **RESULTS AND DISCUSSION**

The Covid-19 outbreak devastated almost all industry sectors of the Indonesian economy. Table 1 provides a comparison of one-month stock returns from various industries in Indonesia. All industries experienced a decline in negative returns during March 2020. The order of decline in returns from lowest to highest is as follows, food & beverages, banking, textile, mining, automotive, wholesale, telecommunication, pharmaceutical, construction and tourism. Thus, tourism is the most suffering industry compared to others. The Covid-19 outbreak is responsible for the worst impact on the tourism sector (Min, J.C.H., Wu, 2004). This occurs as a result of declining revenues and profitability of the company (Najmah, Dewi, & Fajri, 2021).

**Table 1. Comparison of stock return from various industry sector**

Industry Sector	One-month Return
Tourism	-0,5003
Automotive	-0,1419
Banking	-0,1099
Telecommunication	-0,1785
Food & Beverages	-0,0797
Pharmacy	-0,1859
Textille	-0,1251
Mining	-0,1394
Wholesale	-0,1475
Construction	-0,2670401

Source: Data analyzed from [www.idx.co.id](http://www.idx.co.id)

Then specifically, the researcher describes the details of tourism stocks one by one. The tourism industry consists of shares of companies engaged in hotels, restaurants and tourist attractions. March 2, 2020 was designated as a event day where President Joko Widodo announced the first time that Indonesian citizens were confirmed positive for COVID-19. Since then, the tourism stock prices chart has shown fluctuations. Fluctuation that occurs reflects how the market responds to the company (Masdupi, 2015). To find out more, it is necessary to know the Abnormal Return and Cumulative Abnormal Return of each stock. Abnormal Return is the difference between the actual profit and the expected rate of profit. Cumulative Abnormal return (CAR) is the sum of abnormal returns from the previous day in the event period for each security (Jogiyanto, 2011). Table 2 and Table 3 provides CAR of each tourism stock on event day, five days before and after event.

By comparing CAR during the period before and after event, it can be seen the effect of an event on stock prices in a period. Based on the table above, Most of the stock's CAR decreased at t-1, t-event and t+1, indicating that investors responded quickly to information so that it was reflected in prices. While the CAR of MAMI, NASA, PNSE and PTSP remains zero because the stock prices are stable and there is no fluctuation at all. Based on IDX data, it turns out that the stock price has fallen and is stable since the end of 2019 and early 2020. To find out more whether COVID-19 affects tourism stock prices, t-statistics test is carried out for each stock.

**Table 4. Result Summary**

No	Stock	t statistic	value
1	BAYU	-0,61706	SIG
2	BUVA	-1,10471	SIG
3	CLAY	-1,17199	SIG
4	DFAM	0,13324	NOT SIG
5	DUCK	-9,53868	SIG
6	EAST	-2,11756	SIG
7	FAST	-3,67115	SIG
8	FITT	-0,35757	SIG
9	HOTL	0,01980	SIG
10	HRME	-0,09992	SIG
11	ICON	-1,43956	SIG
12	INPP	-0,04482	SIG
13	JIHD	-1,63058	SIG
14	MAMI	0,00000	SIG
15	MAPB	0,35795	NOT SIG
16	MINA	0,10767	NOT SIG
17	NASA	0,00000	SIG
18	NATO	-1,35495	SIG
19	PANR	-2,29514	SIG
20	PGLI	0,80183	NOT SIG
21	PJAA	-4,52928	SIG

22	PNSE	0,00000	SIG
23	PTSP	0,07950	NOT SIG
24	PZZA	-0,57937	SIG
25	SHID	-0,08743	SIG
26	SOTS	-0,37640	SIG

Table 4 showed t-statistic value for each tourism stock. Table 4 shows the t-statistic values for each tourism stock. There are twenty-one out of twenty-six or about 84% of tourism stocks showing significant t-test results. While the other five stocks proved insignificant. This proves that there is a significant difference in the average stock return during the five trading days before and after the event. The results of this study confirm that tourism stock prices are negatively and significantly affected by COVID-19. In line with research conducted by (Wu, Lee, Xing, & Ho, 2021) that showed that the crisis negatively impacted tourism sector stocks. (Chai, 2021) found that the COVID-19 has a significant negative effect on tourism markets. This finding represents the impact of the tourism stock market after COVID-19 as a contribution to the tourism stock market. In line with research conducted by (Pan et al., 2021), tourism suffered huge losses, and the stock prices of tourism were influenced dramatically by the outbreak of the COVID-19. (Hao, Xiao, & Chon, 2020) suggests that COVID-19 will significantly and permanently affect four major aspects of China's hotel industry—multi-business and multi-channels, product design and investment preference, digital and intelligent transformation, and market reshuffle.

Both negative and positive COVID-19 information is significant, though negative news is more impactful, suggesting a negativity bias (Baek, Mohanty, & Glamboosky, 2020). Investors see the COVID-19 outbreak as bad news that will cause a decline in revenue from the tourism sector, resulting in lower share prices. This is also the basis for investors' considerations in determining investment attitudes. (Mahata, Rai, Nurujjaman, & Prakash, 2021) suggest investors to invest in the quality stocks to restructure their portfolio to reduce the risk in uncertainty condition like COVID-19. On the other hand, these findings could serve as references for the Indonesia Security Regulatory Commission to monitor the market in future pandemic management. Investors are advised to avoid tourism shares the moment there is any suspicious development of virus outbreak in the future. Instead, they could look for opportunity to buy dip after massive market decline at the appropriate timing (Liew, 2020). The stocks that are recommended to be invested during the COVID-19 pandemic on the Indonesia Stock Exchange are as follows: consumer goods, telecommunications and health sectors (Rizvi, Mirza, Naqvi, & Rahat, 2020).

## CONCLUSIONS AND SUGGESTIONS

This study shows that all industrial sectors in Indonesia are affected, but the tourism sector is the worst hit. The results of this study confirm that tourism stock prices are negatively and significantly affected by COVID-19. Investors react negatively to the news of covid-19 in Indonesia. It then causes a decline in revenue from the tourism sector, resulting in lower share prices. This finding can be used by investors' as considerations in determining investment decision and estimate future winner investment sector for the similar pandemic.



**Table 2. Cumulative Abnormal Return of each tourism stock**

TIME	CAR												
	BAYU	BUVA	CLAY	DFAM	DUCK	EAST	FAST	FITT	HOTL	HRME	ICON	INPP	JIHD
T+5	0,0025	-0,068	-0,007	0,05	-0,131	0,0131	-0,01	0,2637	-0,002	-0,023	-0,10	-0,33	-0,048
T+4	0,0216	-0,011	-0,002	0,03	-0,136	0,0804	-0,00	0,2852	-0,003	-0,002	-0,17	-0,49	-0,064
T+3	0,0071	0,0204	0,0898	0,03	-1,035	0,155	-0,00	0,3757	0,0024	0,009	-0,09	-0,56	0,0387
T+2	-0,018	0,0382	0,1096	0,01	7,438	0,1528	-0,00	0,3506	0,0161	0,0421	-0,02	-0,63	-0,011
T+1	0,0088	-0,014	0,1347	0,01	-7,287	-0,184	-0,04	0,4395	0,0316	0,0352	-0,10	-0,63	-0,016
T0	-0,002	-0,055	-0,073	0,01	-7,343	-0,066	-0,06	-0,603	-0,032	0,0334	-0,10	-0,52	0,031
T-1	-0,017	0,1024	0,055	0,01	7,339	0,0114	-0,06	0,5799	0,0984	-0,005	-0,08	-0,60	0,0307
T-2	-0,016	0,0639	0,0516	0,02	7,329	-0,006	-0,06	0,635	0,0181	0,0112	-0,08	-0,63	0,0317
T-3	-0,016	0,0728	0,0754	0,02	7,332	0,095	-0,06	0,5075	0,0096	0,0202	-0,06	-0,54	0,0316
T-4	-0,03	0,1052	0,0776	0,02	7,323	0,0121	-0,07	0,5193	-0,022	0,0103	-0,18	-0,66	0,03
T-5	-0,003	0,1138	0,0811	0,02	7,334	0,0111	-0,06	0,6104	-0,02	0,0078	-0,19	-0,56	0,0295
T+5	0	0,1055	0,0317	0	-0,008	0,0043	0,1399	-0,05	0	0	-0,09	1,0321	
T+4	0	0,1084	0,0395	0	-0,012	0,0359	0,1539	-0,08	0	0	-0,07	1,1783	
T+3	0	0,1123	0,0887	0	-0,035	0,0639	0,1674	-0,09	0	0	-0,03	0,6936	
T+2	0	0,1172	0,2082	0	-0,021	0,0657	0,1804	-0,09	0	0	-0,03	-0,521	
T+1	0	0,1224	0,4019	0	-0,020	0,1056	0,2255	-0,12	0	0	-0,05	-1,883	
T0	0	0,1257	0,4312	0	0,0669	-0,068	0,2726	-0,11	0	0	-0,04	-1,959	
T-1	0	0,129	0,4088	0	0,0391	0,0645	0,2864	-0,11	0	0	-0,10	-2,085	
T-2	0	0,1285	0,2137	0	0,0485	0,0826	0,3003	-0,11	0	0	-0,08	-1,879	
T-3	0	0,1317	0,2425	0	0,0757	0,0809	0,3486	-0,11	0	0	-0,07	-1,949	
T-4	0	0,1096	0,0411	0	0,0651	0,0613	0,3621	-0,11	0	0	-0,07	-2,398	
T-5	0	0,1098	0,0812	0	0,0512	0,0458	0,3758	-0,11	0	0	-0,07	-2,119	

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