

# Moving Average Analysis of Islamic Stock Composite Index in Asia during Covid-19 Pandemic

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## Abstract

*This study aims to determine the average growth of Islamic stock market conditions over the past three years since the Covid-19 pandemic hit through the proxy of the Islamic stock index through a comparative study in each country studied. This research method is descriptive quantitative, the nature of the data is data series, using secondary data sourced from daily reports downloaded from each country's stock exchange. The results of this research show that there is no significant difference between the first, second, and third years of the average movement of the sharia stock index in Asian countries that are the subject of the study (Indonesia, Malaysia, Thailand, China, Japan, India, and the United Arab Emirates). The countries that experienced a decrease in the Islamic index in the first year towards the second year (2020-2021) are Indonesia and China. And decrease index from the second year towards the third year (2021-2022) are Malaysia, Thailand, Japan, India, and the United Arab Emirates.*

**Keywords:** *Islamic composite index, Covid-19, Asia shariah stocks market, Pandemic*

## INTRODUCTION

The capital market is a very important component of a country's economy. It is a place where companies and governments can obtain long-term funds by selling stocks and bonds to investors (Axel, 2022; Beljan, Brener, & Dolinar, 2022; SULEHRI, 2023). Some reasons why capital markets are important to a country: (1) Long-term source of funding (Cornelius, 2020); (2) Risk diversification (Zhang, Hu, & Ji, 2020); (3) Increased asset liquidity (Chordia, Subrahmanyam, & Tong, 2014); (4) Transparency and disclosure of information (Cho, 2015); (5) Improved corporate governance (Mazur, Dang, & Vega, 2021); (6) Encouraging innovation and economic growth (Moshirian, Tian, Zhang, & Zhang, 2021). Alam, et al (2017), the world has been looking for an alternative form of stock market for some time so that the interests of all relevant stakeholders can be protected. As a result of the chronic financial and health crises in recent years, one of the alternative stock investment instruments that is considered capable of protecting investors' rights is the Islamic stock market. Currently, the stock market not only provides stock data for conventional markets but also provides Islamic stock markets even in countries where the majority of people are not moslem (Shahzad, Ferrer, Ballester, & Umar, 2017).

Figure 1 below shows the movement of Islamic stock price indices in several Asian countries from the beginning of the pandemic (2020) to the third year (2022).



**Figure 1 Average movement of the 2020-2022 Islamic stock price index in several Asian countries.**

Source: Stock exchanges from each country and reprocessed

For the first year, 2020, the average movement of sharia index growth both experienced negative volatility in response to the emergence of the Covid-19 pandemic, especially in March 2020, where each country reached its lowest point. In the second year (2021), the lowest point of the moving average of shariah index growth for each country is more varied. Indonesia, China, and India all experienced their lowest point in March 2021. Meanwhile, Malaysia, Thailand, Japan, and the UAE had their lowest point in February 2021. The third year (2022) saw the lowest moving average growth point for the majority of shariah indices in September (Malaysia, Thailand, China and UAE). India and Japan have the lowest growth in January, while Indonesia is consistent in March.

The covid-19 outbreak shook the entire world's stock markets, both conventional and Islamic stock markets. Not a few studies on the performance of the Islamic stock market during the pandemic show that in some countries it is able to provide healthier financial performance than conventional ones such as in Turkey (Erdoğan, Gedikli, & Çevik, 2020), India and some ASEAN countries (M. Ali, Khattak, Khan, & Khan, 2022; Irfan, Kassim, & Dhimmarr, 2021). However, this does not mean that the Islamic stock market is superior, the results of a study of the sharia stock market in the Dow Jones also experienced a surge as well as conventional (Hasan, Mahi, Hassan, & Bhuiyan, 2021). Similarly, in several Asian, European and African countries, the Islamic stock market followed the surge experienced by the conventional market (Abdullahi, 2021).

This study aims to determine the average growth of Islamic stock market conditions over the past three years since the pandemic hit through the proxy of the Islamic stock index through a comparative study in each country studied. This research focuses on testing the difference in the moving average of Islamic stocks in the second year against the first year since the pandemic and also the third year compared to the second year and from this it is hoped that it can be seen how the condition of the Islamic stock market throughout the outbreak lasts.

## **METHOD**

The object of this research is the daily index of the Islamic stock market in Asian countries including Indonesia (Jakarta Islamic Index, JII), Malaysia (Bursa Malaysia Hijrah Syariah, BMHS), Thailand (Stock Exchange of Thailand Shariah, SET Shariah), Japan (Japan Islamic Index, AC Asia), China (China Hongkong Islamic Index, HKII), India (India Islamic Index, III), and the United Arab Emirates (Dubai Index). Starting from the first year of the pandemic to the third year (January 2020 - December 2022). This research method is descriptive quantitative, the nature of the data is data series, using secondary data sourced from daily reports downloaded from each country's stock exchange.

This study uses two related samples, namely Wilcoxon Signed-Rank which is a non-parametric test with data that does not have to be normally distributed (distribution-free test) but still pays attention to the magnitude of the difference value (Westfall & Henning, 2013). The hypotheses formulated are  $H_1$ : There is a significant difference in the Islamic stock index in the first year (2020) and the second year (2021) of the pandemic;  $H_2$ : There is a significant difference in the Islamic stock index in the second year (2021) and the third year of the pandemic (2022). Some of these things certainly refer to each country's conditions under study.

## **RESULTS AND DISCUSSION**

Based on the results of the comparison of the average percentage movement of sharia stock index growth between the first year (2020) and the second year (2021) of the pandemic and also between the second year (2021) and the third year (2022), the

**Table 1 Wilcoxon Signed Rank Test Percentage of Moving Average Shariah Index**

Month	Indonesia Islamic Index (JII)		Malaysia Islamic Index (BMHS)		Thailand Islamic Index (FSTSH)	
	2021 - 2020	2022 - 2021	2021 - 2020	2022 - 2021	2021 - 2020	2022 - 2021
Jan	0,1037	0,1508	0,0182	-0,0901	0,1689	-0,0378
Feb	0,8579	-0,0323	0,0070	0,5113	0,5116	0,0874
Mar	0,7348	0,3153	0,2195	-0,0483	0,9292	-0,0357
Apr	-0,8644	0,4078	-0,0920	-0,1074	-0,4856	-0,1565
May	-0,1562	0,1585	-0,8797	-0,0199	-0,0987	-0,1532
June	-0,2415	-0,1145	-0,2499	-0,1672	-0,0923	-0,3958
July	-0,2118	0,2527	-0,6594	0,1998	-0,3389	0,2314
Aug	-0,0297	0,0605	0,4508	-0,2250	0,3474	-0,0376
Sep	0,3989	-0,0861	-0,1116	-0,1284	0,2708	-0,0810
Oct	-0,1222	-0,0920	0,0930	0,1495	0,1109	0,0571
Nov	-0,5247	-0,0743	-0,1803	0,2284	-0,9721	0,1740
Dec	-0,2399	-0,1351	0,1460	0,0948	-0,1220	-0,1183

following objective data is obtained Table 1).

Month	China Islamic Index (IJI)		Japan Islamic Index (AC Asia)		India Islamic Index (III)		Dubai Index	
	2021 - 2020	2022 - 2021	2021 - 2020	2022 - 2021	2021 - 2020	2022 - 2021	2021 - 2020	2022 - 2021
Jan	0,3611	-0,4636	0,1038	-0,3980	0,0279	-0,0407	0,0751	-0,0113
Feb	0,0495	-0,0701	0,5227	-0,1982	0,6498	-0,4879	0,3228	0,1959
Mar	0,1922	-0,0025	0,4292	0,0635	1,3358	0,1799	1,5131	0,2730
Apr	-0,2510	-0,5342	-0,1463	-0,1096	-0,9492	0,0750	0,1559	-0,3551
May	0,2120	0,1219	-0,2789	0,0924	0,3263	-0,7657	-0,1910	-0,5373
June	-0,1862	0,1576	-0,0071	-0,2160	-0,4127	-0,3026	-0,0480	-0,5352
July	-0,6734	-0,0365	-0,0170	0,2500	-0,5193	0,3062	0,3596	0,0604
Aug	-0,1363	-0,3493	-0,1580	-0,0791	0,0523	-0,1267	-0,0941	-0,2364
Sep	0,0642	-0,5161	0,1111	-0,4484	0,0343	-0,4572	-0,2501	-0,4784
Oct	-0,0980	-0,5281	0,0805	0,1886	0,0354	0,2036	0,0300	-0,1041
Nov	-0,4495	0,9300	-0,5310	0,2179	-0,2953	0,3326	-0,3683	0,4771
Dec	-0,3352	0,2922	-0,0002	-0,2941	-0,2908	-0,2933	0,0492	-0,3331

For Indonesia, the difference in the moving average of the sharia index (JII) in the second year (2021) against the first year of the pandemic (2020) for the same month period is dominantly negative (there are eight months) with the highest difference value in April (- 0.8644%). This means that in the same month period, the growth of the sharia index in 2021 is lower than the previous year. However, positive growth for the same month period (February) can be achieved by 0.8579%. The next difference in the third year (2022) against the second year (2021), overall the growth can be said to be balanced (there were six positive months and six negative months recorded). The lowest growth difference was in December (-0.1351%) and the highest in April (0.4078%). Conditions in Malaysia, the difference in the moving average of the sharia index (BMHS) in the second year (2021) against the first year of the pandemic (2020) for the same month period was balanced (there were six negative months and the rest were positive) with the highest difference value in May (- 0.8797%). This means that in the same month period, the growth of the sharia index in 2021 is lower than the previous year. However, positive growth can still be achieved in the August period of 0.4508%. For the next comparison in the third year (2022) against the second year (2021), overall the growth can be said to be slightly unfavorable due to negative growth in seven periods (months). The lowest growth difference was in August (-0.2250%) and the highest in February (0.5113%). The next ASEAN country is Thailand, the difference in the moving average of the sharia index (FSTSH) in the second year (2021) against the first year of the pandemic (2020) for the same month period turns out to be balanced (there are six negative months and the rest

are positive) with the highest difference value in November (- 0.9721%). This means that in the same month period, the growth of the sharia index in 2021 is lower than the previous year. However, positive growth can still be achieved in the March period of 0.9292%. For the next comparison in the third year (2022) against the second year (2021), overall the growth can be said to be slightly unfavorable due to negative growth in eight periods (months). The lowest growth difference was in June (- 0.3958 %) and the highest in July (0.2314 %).

For other Asian countries, Table 1 above shows that the average movement of China's sharia stock index growth in the first year of the pandemic (2020) against the second year (2021) experienced seven negative periods with the lowest value in July (- 0.6734%) and five positive periods with the highest value in January (0.3611%). In Japan, the difference between the growth of the first year against the second year (2020-2021) and the growth of the second year against the third year (2021-2022) can be said to have no change in terms of negative periods, which both have seven negative periods. The largest negative period (2020-2021) is in November (- 0.5310%) and the largest positive period is in February (0.5227%). The largest negative period for 2021-2022 growth is in September (- 0.4484%), the largest positive period is in July (0.2500%).

The moving average growth of the Islamic index in India and Dubai, during the first year to the second year of the pandemic (2020-2021), both had five negative periods and seven positive periods where for India the lowest growth was in April (- 0.9492%) and Dubai in November (- 0.3683%). And for the highest positive growth, in India it was 0.6498% (February) and March (1.5131%) in Dubai. Meanwhile, from the second to the third year of the pandemic (2021-2022), India and Dubai experienced an increase in the number of consecutive negative periods, namely seven periods (India) and eight periods (Dubai). The lowest growth both occurred in May, for India at - 0.7657% and Dubai at - 0.5373%. However, the highest positive growth for both countries also occurred in the same month of November with respective values of 0.3326% (India) and 0.4771% (Dubai).

In Table 2, based on the Wilcoxon t-test, the objective results are as follows.

**Table 2 Wilcoxon t-test of moving average growth of Islamic stock indices**

		<b>Z</b>	<b>Sig. (p)</b>
Jakarta Islamic Index	2021 - 2020	-0,628	,530
	2022 - 2021	-1,02	,308
Malaysia Islamic Index	2021 - 2020	-0,628	,530
	2022 - 2021	-0,314	,754
Thailand Islamic Index	2021 - 2020	-0,314	,754
	2022 - 2021	-0,628	,530
Hong Kong China Islamic Index	2021 - 2020	-1,02	,308
	2022 - 2021	-0,941	,347
Japan Islamic Index	2021 - 2020	-0,235	,814
	2022 - 2021	-1,02	,308



India Islamic Index	2021 - 2020	0	1,000
	2022 - 2021	-0,863	,388
UAE Dubai Index	2021 - 2020	-0,471	,638
	2022 - 2021	-1,412	,158

The Indonesian sharia stock market index (Jakarta) shows an insignificant difference between the first year (2020) and the second year of the pandemic (2021), with a value of  $Z = -0.628$  and  $p = 0.530 (> 0.05)$ . Likewise, the difference between the second year (2021) and the third year (2022) shows an insignificant difference ( $Z = -1.02$ ;  $p = 0.308$ ). The same condition also occurs in other Asian countries included in this observation. Malaysia, the difference test between the first year of the pandemic (2020) and the second year (2021) gave insignificant results ( $Z = -0.628$ ;  $p = 0.53$ ). The same was true between 2021 and 2022 ( $Z = -0.314$ ;  $p = 0.754$ ). The condition of Thailand's Islamic stock market is similar to that of the other two ASEAN countries (Indonesia and Malaysia). That is, the results of the difference test between the first year of the pandemic (2020) and the second year (2021) gave insignificant results ( $Z = -0.314$ ;  $p = 0.7543$ ). The same thing also happened between 2021 and 2022 ( $Z = -0.628$ ;  $p = 0.53$ ).

Outside ASEAN, namely China, Japan, India, and the United Arab Emirates, each of them provides an insignificant difference from each of the movements in the growth of the Islamic market, both the first year (2020) against the second year of the pandemic (2021) and also the second year against the third year (2022). Where each difference test result provides a significance level above five percent ( $p > 0.05$ ).

Based on table 2 above, it turns out that the sharia stock market for the countries observed in this study arguably did not experience significant growth changes in the first, second and third years of the pandemic. This at least indicates that the Islamic stock market index has lower risk and is a better alternative for portfolios during the pandemic (Siddiqui & Sumbul, 2023), although it is not necessarily superior. It should be noted that this health crisis is a real factor that can make stock market growth negative (Winy & Yulfiswandi, 2022), as evidenced at the beginning of the pandemic, the average market movement from the first year to the second year was dominated by negative growth.

The COVID-19 pandemic has led to a global economic slowdown and high uncertainty (Elleby, Domínguez, Adenauer, & Genovese, 2020; Isaac et al., 2020). This has had a negative impact on the overall stock market, including the Islamic stock market. Many companies have experienced a decline in revenue and profits (Ichsan, Suparmin, Yusuf, Ismal, & Sitompul, 2021; Roy, 2020), resulting in a fall in the value of their shares (Chowdhury, Khan, & Dhar, 2022).

Some sectors that generally have a high weighting in the Islamic stock index, such as the hospitality, tourism and transportation sectors, were severely impacted by travel and social activity restrictions during the pandemic (Gunay, Bakry, & Al-Mohamad, 2021; Samdin, Abdullah, Khaw, & Subramaniam, 2022). The decline in demand and revenue in these sectors contributed to the decline in the growth of the Islamic stock

market (Benamraoui, 2021; Hassan, Rabbani, & Abdulla, 2021).

Oil prices also fell sharply during the pandemic due to a drop in global demand (Corbet, Goodell, & Günay, 2020; Norouzi, 2021). This has negatively impacted the stocks of energy companies, which also generally have a high weighting in Islamic stock indices (S. R. M. Ali, Mensi, Anik, Rahman, & Kang, 2022).

Al-Thaqeb et al (2022), during periods of economic uncertainty, investors tend to be cautious and risk-averse. Some investors may have specific concerns related to Shariah-compliant businesses, such as companies involved in the conventional financial sector or alcohol. This may lead to a decrease in interest and demand for Islamic stocks (Arif, Naeem, Hasan, Alawi, & Taghizadeh-Hesary, 2022; Umar & Gubareva, 2021).

Giglio et al (2020), it is important to remember that the stock market is dynamic and can change over time. While the current growth of the Islamic stock market may be negative, this does not rule out the possibility that the market could recover and grow again in the future (Norouzi, 2021; Umar, Adekoya, Oliyide, & Gubareva, 2021).

During the COVID-19 pandemic, some of the sectors that have continued to grow positively are as follows: (1) Technology and IT: Technology and IT companies experienced significant growth, especially in terms of e-commerce, teleconferencing, and other digital platforms. Demand for hardware, software, and related services has also increased (Hassounah, Raheel, & Alhefzi, 2020); (2) Healthcare: As healthcare needs increase, healthcare sectors such as pharmaceutical, medical device, and medical research companies continue to experience strong growth. Demand for medicines, test kits, and other medical supplies increased during the pandemic ; (3) E-commerce: In an effort to avoid social contact and restrictions, many consumers have turned to online shopping. E-commerce companies such as Amazon, Alibaba, and JD.com reported huge increases in sales and revenue during the pandemic (Istyarini et al., 2020; Priambodo, Sasmoko, Abdinagoro, & Bandur, 2021); (4) Food and Beverages: Although the food and beverage sector saw a decline due to the closure of physical restaurants, the demand for food delivery, processed food, and ready-to-eat meals increased (Mangifera & Mawardi, 2022; Memon, Pawase, Pavase, & Soomro, 2021). This has boosted business growth in this sector; (5) Finance and Insurance: Although the finance and insurance sector experienced an initial shock in terms of market volatility and rising insurance claims, they remain a stable and growing sector. Demand for digital banking, investment, and health insurance services remains high (Nguyen, Hai, & Nguyen, 2021); (6) Online Education: With schools and colleges closing in many countries, online education is becoming a key solution for continuing learning. E-learning platforms and companies providing online education services have seen rapid growth during the pandemic (Jena, 2020; Mandasari, 2020).

While the above sectors have experienced positive growth during the pandemic, it is important to note that the impact of the pandemic may vary by country and depends on the policies implemented.

## CONCLUSION

This research implies a comprehensive knowledge of the condition of Islamic capital markets in Asian countries during the three years of the pandemic. Overall, there is no significant difference between the first, second and third years of the average movement of the Islamic stock index in the Asian countries that are the subject of the study (Indonesia, Malaysia, Thailand, China, Japan, India, and the United Arab Emirates). The results of the comparative study showed that the countries that experienced an increase in the negative moving average of the Islamic stock index between the first year and the second year were Indonesia, and China. And the comparison between the second year to the third year, the increase in the average negative movement of the Islamic stock index is in Malaysia, Thailand, Japan, India, and the United Arab Emirates.

So it can be concluded that several countries experienced a decrease in the Islamic index in the second year towards the third year of the pandemic (2021-2022). However, sectoral factors also play a role in contributing to growth in each sector and it depends on each country.

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