

Analysis of the Fairness of Shariah Stock Prices After the Covid-19 Pandemic in 2023 using the Dividend Discount Model Method

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Abstract

Analysis of the fairness of stock prices is important to determine the right investment decision, ensuring that the risk of loss is minimized for investors. This research was conducted to determine the fair prices of stocks after the Covid-19 pandemic in 2023 in Sharia-compliant companies indexed by the Jakarta Islamic Index (JII). In this research, the Dividend Discount Model (DDM) method was employed to determine the fairness of stock prices. Among the 30 companies listed on the JII index, only 14 operate in the mining sector, and 10 of them have complete financial reports meeting the research criteria. Among these 10 companies, 9 are in an undervalued condition, exhibiting variations in fair prices compared to the closing market price on November 9, 2023. Notably, two stocks, Bukit Asam Tbk (PTBA) and Adaro Energy Indonesia Tbk (ADRO), show fair price differences higher than 10% of the market price. Additionally, seven companies have fair prices greater than the market price by less than 10%, including Vale Indonesia Tbk (INCO), Indocement Tunggal Prakarsa Tbk (INTP), ESSA Industries Indonesia Tbk (ESSA), Aneka Tambang Tbk (ANTM), Indika Energy Tbk (INDY), Barito Pacific Tbk (BRPT), and Semen Indonesia Tbk (SMGR). Conversely, one stock, Perusahaan Gas Negara, Tbk (PGAS), is in an overvalued condition. It is recommended to consider purchasing shares of the nine companies experiencing undervalued conditions.

Keywords: Fair stock price, JII Market Price, Stock

Introduction

Investment is one of the way of investors allocate funds or other resources with the aim of securing future profits. In modern times, an investor is akin to an entrepreneur who possesses a specific place and business product; however, their ownership in a business is limited to a certain extent. Investment in the view of Islam according to Chaidir, Iqbal and Razak (2019) is a business to gain profits or rewards in the hereafter, in order to realise the welfare of human life as part of worship to Allah SWT. Indonesia is a population with a majority of adherents of Islam, therefore Islamic investment and business are one of the benchmarks for investors. According to Stevanus and Rahardi (2020), many investors prefer to choose stock investment over other investment instruments for the long term because they get high profits from capital gains if the stock price increases in the future.

For certain stock investors in Indonesia, sharia stocks are the right choice for investing because they are in accordance with Islamic principles where sharia stocks can only be issued by companies that do not conflict with Islamic economic principles, such as companies that do not manage businesses that are prohibited in Islam, such as gambling, usury, and other haram products. In addition, Islamic stocks must also fulfil the financial requirements set by the Islamic stock supervisory institution, such as not having debts that exceed the company's assets and must have a reasonable profit rate. According to Chaidir, Iqbal and Razak (2019) there are several problems faced in Islamic stock

investment such as the need for wisdom from Muslim business behaviour (entrepreneurs) to form an Islamic economic life as a motivation in increasing the image of market participants towards the existence of capital market instruments in accordance with Islamic law, short-term and long-term plans by the Capital Market and Financial Supervisory Agency (BAPEPAM) to accommodate the development of Islamic instruments in the capital market and the need for scientific studies on Islamic capital markets, such as academic support to understand the need for the existence of Islamic capital markets.

There are two methods for stock investors to earn profits in the future after owning shares in a company, namely obtaining profits from capital gains or the difference in the selling price of shares or from the distribution of stock dividends. The capital market is one of the media as a place where potential investors and stock traders meet, where the process of buying and selling shares is carried out through securities listed on the Indonesia Stock Exchange (IDX). Stock investment activities need to pay attention to the index to determine price movements as material for analysing investment decisions because in choosing stocks that have the potential to increase in price must be with proper and scientific consideration.

The stock index is a statistical measure of all price movements on a set of stocks in accordance with certain criteria and methodologies and is evaluated periodically. The stock index is essentially used as a benchmark for capital market performance and investment products of a particular issuer or combination of issuers. Stock indices can display a picture of overall stock price movements through the Composite Stock Price Index (JCI) and are used as a reference for stock portfolio performance so that profits can be measured. Currently there are only 5 sharia stock indices in Indonesia listed on the Indonesia Stock Exchange (IDX) including the Indonesian Sharia Stock Index (ISSI), Jakarta Islamic Index (JII), Jakarta Islamic Index 70 (JII70), IDX-MES BUMN 17 and IDX Sharia Growth (IDXSHAGROW). According to Frensidy (2006) intuitively stock prices move in the same direction as the movement of the index, there are three methods of calculating the weighting of each stock in an index, namely based on price (Price-Weighted), based on market capitalization value (Weighted by value or value-Weighted) and based on unweight or equal-weighted value (Unweight or Equal-weighted).

The JII index is a sharia stock index that was first launched in the listed capital market since 3 July 2000, the JII index consists of 30 selected stock issuers selected under certain conditions. There are certain criteria for this index, the first requirement is that the shares must be included in the constituents of the Indonesian Sharia Stock Index (ISSI) and have been listed for the last 6 months, the second requirement is that the issuers of shares included in the first list are selected from 60 stock issuers based on the order of the highest average market capitalisation over the last 1 year and from these 60 stocks, then 30 stocks are selected based on the highest average daily transaction value in the regular market, the remaining 30 stocks are selected stocks. Based on these requirements, the JII index is calculated in the same way as the ISSI index with further selection based on these requirements. The calculation of the market capitalisation value used as the basis for calculating the ISSI index began in December 2007. The stock issuers that will be evaluated are all stocks listed on the Sharia Securities List (DES) which is an investment guide for DES users issued by the Financial Services Authority (OJK) where the selection of stock issuers included in this index occurs twice a year where the ISSI calculation follows the calculation method based on price (Price-Weighted) or weighted average which is multiplying the

number of shares outstanding during a certain period of time using December 2007 as the base calculation year of the ISSI.

Among the 30 companies that operate in their respective industrial fields, there are several companies engaged in various industrial fields such as trade, chemicals, and forestry but the business sector listed is the company's main line of business. Companies engaged in the mining sector dominate the majority of companies listed on the JII stock index, there are 14 mining companies 46.6% of the 30 companies listed on the JII. The number of mining companies listed on the JII index is also the basis for this research, why more companies in the mining sector are listed than other business sectors and which are the best for investment after the Covid-19 pandemic in 2023 because the majority of stock prices have decreased during the pandemic (Hidayati, 2022). According to (Fatmawati, Prasetyoningrum and Farida, 2020) mining is part of or all stages of activities in the context of mineral and coal exploitation, mining is also a capital-intensive industry requiring large investments that are balanced with the results to be expected.

Mining also has a high risk that requires a large investment in worker safety as a mandatory responsibility for every company (Saputra, 2022). As an investor, there are several decisions that can be made, such as buying, selling or holding shares that are already owned. Investors can buy shares when the intrinsic value of the shares $>$ the current market price "*undervalued*", otherwise when the intrinsic value of the shares $<$ the current market price "*overvalued*" investors can sell the shares owned. When the intrinsic value of the shares = the current market price "*correctly valued*" then investors are better off holding their shares or not buying and selling shares until investors find conditions that can benefit them. The rapid economic development and growth after the transition of the Covid-19 pandemic that began to enter the endemic period affected stock prices where on 16 March 2020 since the implementation of the *work from home* policy by the government on the first day of its implementation, the shares of PT Indofarma Tbk (INAF) and PT Kimia Farma Tbk (KAFF) had almost no stock trading volume and a decline in stock prices the following day (Hasya Mazaya Lathifah, 2021).

There has been a varied decrease in stock prices in 38 companies incorporated in the Jakarta Islamic Index (JII) experiencing a decline in stock price trends since March 12 when the World Health Organization or WHO also officially announced the Covid-19 virus which was categorised as a global pandemic (Ersyafdi, 2021). Since 21 June 2023, Indonesia has transitioned from a pandemic condition to an endemic condition. Pandemic is a condition where a large outbreak situation that occurs widely and evenly while endemic is a condition where disease outbreaks that occur are limited to certain areas and tend to be overcome (Sari, 2020).

This research is supported by previous studies related to the fairness of stock prices conducted by Rokhimah, Digor Mufti and Susetyowati Sofia (2022) concluded that of the 4 manufacturing companies incorporated in the LQ-45 stock index, there are 3 issuers which are overall undervalued, namely ASII, KLBF, and UNVR. While 1 issuer, INTP, is in the undervalued and overvalued categories. The right investment decision making is to buy stocks that are undervalued, namely ASII, KLBF, UNVR and INTP only in 2017 and 2021. Other studies were conducted by Hadi Satria Ganefi, Agus Prasetyono and Mei Rani Amalia (2023) stating that in general the share prices of ten banking sub-sector companies in 2021 are undervalued (cheap). The right investment decision is to buy among the shares of the

following companies, namely PT Bank Central Asia Tbk, PT Bank BNI Tbk, PT Bank BRI Tbk, PT Bank Danamon Tbk, PT Bank Pembangunan Jawa Barat (BJB) Tbk, PT Bank Bumi Artha Tbk, PT Bank Mandiri Tbk, PT Bank CIMB Niaga Tbk, PT Bank Mega Tbk, and PT Bank Woori Saudara Tbk. The differences between previous studies with this one are the variables of the research where researchers will analyse the fair price for mining companies incorporated in the Jakarta Islamic Index (JII) after the announcement of the transition of the Covid-19 pandemic conditions to endemic conditions on June 21, 2023 so that investors can determine the right investment decisions after the Covid-19 pandemic conditions. In previous studies, the determination of fair prices occurred in pandemic conditions, but fundamentally and from a social perspective, 2022 and 2023 are transitional periods between pandemic and endemic conditions so that directly or indirectly there will be differences in each country's policies to anticipate, prevent and deal with Covid-19 which will have an impact on the performance of companies both doing business nationally and internationally for this reason, it is necessary to compare stock prices in the Covid-19 pandemic condition starting in 2020 to the endemic condition in 2023.

Research Method

Analysis using the DDM method can be done with the first few steps of calculating dividend growth, then determining dividend estimates in a particular year, and the last step is to determine the terms of the return rate and determine the intrinsic value. DDM was first developed by an important economist in the field of fundamental analysis named John Burr Williams in his book entitled "The Theory of Investment Value" published in 1938. There are many approaches in the DDM method including:

1. Dividen growth

Dividend growth or the rate of expected dividend growth denoted by the symbol (g) is obtained by multiplying ROE by the retention ratio.

$$g = \text{ROE} \times \text{Retention Ratio (RR)}$$

Dividen growth (g)	: the rate of expected dividend growth
Return on Equity (ROE)	: net profit
RR	: the percentage of a company's profits that is not paid out in

Dividends (Nugraha dan Sulasmiyati, 2017)

Return on Equity (ROE) is the percentage of results that the company prints for shareholders can be found by the formula:

$$\text{ROE} = \frac{\text{Net Profit After Tax}}{\text{Shareholder's Equity}} \times 100$$

Return on Equity (ROE)	: net profit
Net Profit After Tax	: the net profit received by the company after deducting tax payments.

Shareholder's Equity	: amount of shareholder ownership (Nugraha dan Sulasmiyati, 2017).
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Retention ratio is the percentage of the company's profit that is not paid in the form of dividends but is credited to retained earnings can be found using the formula:

Retention Ratio (RR) = 1-Dividend Payout Ratio

RR : The percentage of company's profit that is no paid out in dividend
 Dividend Payout Ratio : Net profit paid in the form of dividends to shareholders (Nugraha dan Sulasmiyati, 2017).

Dividend payout ratio is the comparative value of the division result where Dividend Per Share (DPS) is divided by Earning Per Share (EPS), can be determined by the formula:

$$\text{Dividend Payout Ratio (DPR)} = \frac{DPS}{EPS}$$

DPR : Net profit paid in the form of dividends to shareholders
 DPS : Dividends earned per share
 EPS : Profit earned per share
 (Hasibuan dan Harahap, 2021)

2. Requirements for the Rate of Return

The terms of the rate of return symbolised by (k) are obtained by summing the quotient of the last year's dividend received (D0) and the current share price (P0) with dividend growth (g).

$$k = \frac{D_0}{P_0} + g$$

k : return rate requirement
 D₀ : the latest dividends received
 P₀ : Current share price
 Deviden growth (g) : Expected dividends grow rate
 (Hasibuan dan Harahap, 2021)

3. Intrinsic Value / Fair Price of Shares

The intristic value or true value of a company, asset, stock is calculated from all certain aspects that affect the company, determining the intristic value of a stock can be done by formula:

$$P_0 = \frac{D_0 (1+g)}{k-g}$$

k : return rate requirement
 D₀ : the latest dividends received
 P₀ : Fair price
 Deviden growth (g) : Expected dividends grow rate (Nugraha dan Sulasmiyati, 2017).

The calculation of the fair price of stocks using the Dividend Discount Model (DDM) method is made by comparing the intrinsic value obtained with the stock market value so that investment decisions can be made. According to Ganefi, Prasetyono and Amalia (2023) investment decision making criteria there are 3 conditions, first if the intrinsic value > market value then this condition is undervalued where the market price is lower than the fair price of the stock should be, the second condition is overvalued, which is a condition where the intrinsic value < market value where the price should be lower than the market price so as to reduce the risk of greater losses, it is advisable to sell shares under these conditions and the last condition is fairvalued, which is a condition where the intrinsic value = market value, meaning that the current stock price is the same as the fair price of the stock should be so that the right decision is to refrain from selling the shares until the price starts to determine the direction of the new price movement.

Price Increase Based on Islamic View

According to Syamsul Effendi, (2021: 27-30) Islamic economic theory regarding prices can first be seen from a hadith that tells that a friend proposed to the prophet to set prices in the market. The Prophet rejected the offer and said that prices in the market should not be set because Allah determines them. In accordance with the hadith narrated from Anas that one day there was an extraordinary price increase at the time of the Prophet Muhammad, so the friends asked the Prophet to determine the price at that time, then the Prophet said: It means *"Allah is the One who takes away and gives, the One who provides sustenance and determines prices"* (HR. Abu Daud).

Price is one of the variables of marketing or sales. Islam provides freedom in pricing, which means that all forms of price concepts that occur in buying and selling transactions are allowed in Islamic teachings as long as there is no evidence that prohibits it, and as long as the price occurs on the basis of justice and mutual consent between the seller and the buyer. The concept of market mechanism in pricing according to Islam can be referred to the hadith of the Apostle Muhammad SAW, it means: *"The Rasulallah SAW passed by those who hoarded goods then sent the hoarders to the middle of the market and places that could be seen with the eye. Then a companion said to him, "It would be nice if you (the Rasulallah SAW) would set the price unilaterally". But he became angry so that the signs of his anger could be seen on his face, so he said, "Should I set the price unilaterally for them?". The price of goods is up to Allah, He raises it or lowers it at His will". (HR. Thusi). Prices are the decree of Allah SWT which can be seen from the balance between the amount of demand and the amount of supply, the correct supply of goods, the absence of obstacles that allow high cost economics.*

Result and Discussion

From the data recorded in the JII index, 14 companies meet the sample criteria in the mining sector of the 14 companies that meet the sample criteria, there are 2 companies that have never distributed dividends, namely Bumi Resources Minerals Tbk (BRMS) and Merdeka Copper Gold (MDKA). While 2 other companies have not published Q3 2023 financial reports on the Indonesia Stock Exchange, namely Harum Energy Tbk (HRUM) and Indo Tambangraya Megah Tbk (ITMG) so that the companies used as research samples are shown in table 1.

Table 1. Companies Met Sample Criteria with Complete Financial Report

Code	Firms Nime	Sector
BRPT	Barito Pacific Tbk	Mining
ESSA	ESSA Industries Indonesia Tbk	Mining
INCO	Vale Indonesia Tbk	Mining
INDY	Indika Energy Tbk	Mining
INTP	Indocement Tunggul Prakarsa Tbk	Mining
PGAS	Perusahaan Gas Negara Tbk	Mining
PTBA	Bukit Asam Tbk	Mining
ANTM	Aneka Tambang Tbk	Mining
ADRO	Adaro Energy Indonesia Tbk	Mining
SMGR	Semen Indonesia (Persero) Tbk	Mining

Calculating a stock's fair price or intrinsic value requires several instruments such as the rate of return (k), earnings per share (EPS), dividends per share (DPS), net income per share (DPR), percentage of the company's profit not paid out in dividends (RR), Return on Equity/net income (ROE).

After finding out some of the values of the supporting instruments to calculate the intrinsic value or fair share price can then be done.

Table 2. Value ROE, EPS, DPS, DPR

Code	Firms Name	Sector	ROE (%)	EPS (Rp)	DPS (Rp)	DPR (%)
BRPT	Barito Pacific Tbk	Mining	2,55	5,90	1,59	0,27
ESSA	ESSA Industries Indonesia Tbk	Mining	2,28	8788,00	45,00	0,01
INCO	Vale Indonesia Tbk	Mining	8,75	349,98	89,60	0,26
INDY	Indika Energy Tbk	Mining	9,28	282,49	208,00	0,74
INTP	Indocement Tunggul Prakarsa Tbk	Mining	6,25	369,00	160,00	0,43
PGAS	Perusahaan Gas Negara Tbk	Mining	7,97	128,70	141,00	1,10
PTBA	Bukit Asam Tbk	Mining	20,11	329,00	1,09	0,00
ANTM	Aneka Tambang Tbk	Mining	11,57	118,00	79,00	0,67
ADRO	Adaro Energy Indonesia Tbk	Mining	18,59	618,50	151,00	0,24
SMGR	Semen Indonesia (Persero) Tbk	Mining	3,80	254,00	245,00	0,96

In table 2, the highest Return on Equity / net profit (ROE) value is owned by Bukit Asam Tbk (PTBA) with a value of 20.11% and the lowest ROE is owned by ESSA Industries Indonesia Tbk with a value of 2.28%. The highest earnings per share / EPS is owned by ESSA Industries Indonesia Tbk with a value of 8788 rupiah while the lowest EPS is owned by Barito Pacific Tbk of 5.90 rupiah. The highest dividend per share / DPS is owned by Indika Energy Tbk (INDY), this is in accordance with the level of net income received per share

where INDY has a high EPS value of 282.49 per share while the lowest DPS value is owned by Bukit Asam Tbk (PTBA) with a value of 1.09 rupiah.

Table 3. Value G, K, Intristik/P₀, Current Price

Code	Name Firms	G	K	Intristik /P ₀	Endemi	Investation Decision
BRPT	Barito Pacific Tbk	0,019	0,020133648	1.076	1.056	Undervalued/Buy
ESSA	ESSA Industries Indonesia Tbk	0,023	0,098060134	611	597	Undervalued/Buy
INCO	Vale Indonesia Tbk	0,065	0,083898309	5.076	4.766	Undervalued/Buy
INDY	Indika Energy Tbk	0,024	0,158405306	1.591	1.553	Undervalued/Buy
INTP	Indocement Tunggal Prakarsa Tbk	0,035	0,051981758	9.991	9.649	Undervalued/Buy
PGAS	Perusahaan Gas Negara Tbk	-0,008	0,117493219	1.118	1.127	Overvalued/Sell
PTBA	Bukit Asam Tbk	0,200	0,200896235	2.825	2.353	Undervalued/Buy
ANTM	Aneka Tambang Tbk	0,038	0,085830192	1.723	1.660	Undervalued/Buy
ADRO	Adaro Energy Indonesia Tbk	0,141	0,201747357	2.813	2.466	Undervalued/Buy
SMGR	Semen Indonesia (Persero) Tbk	0,001	0,039431366	6.442	6433	Undervalued/Buy

Table 3 shows that 9 of the 10 research samples companies are undervalued so that based on the analysis using the Divident Discount Model (DDM) method, the right decision is to buy the shares because the outstanding price on November 9, 2023 is too low from the fair price value of the shares that should be. Stocks that have a fairly high fair price difference from the closing price on November 9, 2023 are the shares of Vale Indonesia Tbk (INCO) with a price difference of 310 rupiah, Indocement Tunggal Prakarsa Tbk (INTP) with a price difference of 342 rupiah, Bukit Asam Tbk (PTBA) with a price difference of 472 rupiah and Adaro Energy Indonesia Tbk (ADRO) with a price difference of 347 rupiah.

Table 4. Stock Price in Pandemic, Endemic, Market Price and Fair Price

Code	Company Name	Before	Pandemic Condition (9 Nov 2020)				Fair Price
		Pandemic (8 Nov 2019)					
BRPT	Barito Pacific Tbk	984	930	970	805	1.056	1.076
ESSA	ESSA Industries Indonesia Tbk	287	138	320	1.110	597	611
INCO	Vale Indonesia Tbk	3.589	4.550	4.840	7.175	4.766	5.076
INDY	Indika Energy Tbk	1.355	970	1.780	2.870	1.553	1.591
INTP	Indocement Tunggal Prakarsa Tbk	20.541	13.175	12.675	10.175	9.649	9.991
PGAS	Perusahaan Gas Negara Tbk	2.009	1.125	1.515	1.830	1.127	1.118

PTBA	Bukit Asam Tbk	2.535	2.010	2.680	3.660	2.353	2.825
ANTM	Aneka Tambang Tbk	837	1.240	2.340	2.000	1.660	1.723
ADRO	Adaro Energy Indonesia Tbk	1.413	1.130	1.705	3.640	2.466	2.813
SMGR	Semen Indonesia (Persero) Tbk	12.769	10.225	9.650	7.875	6433	6.442

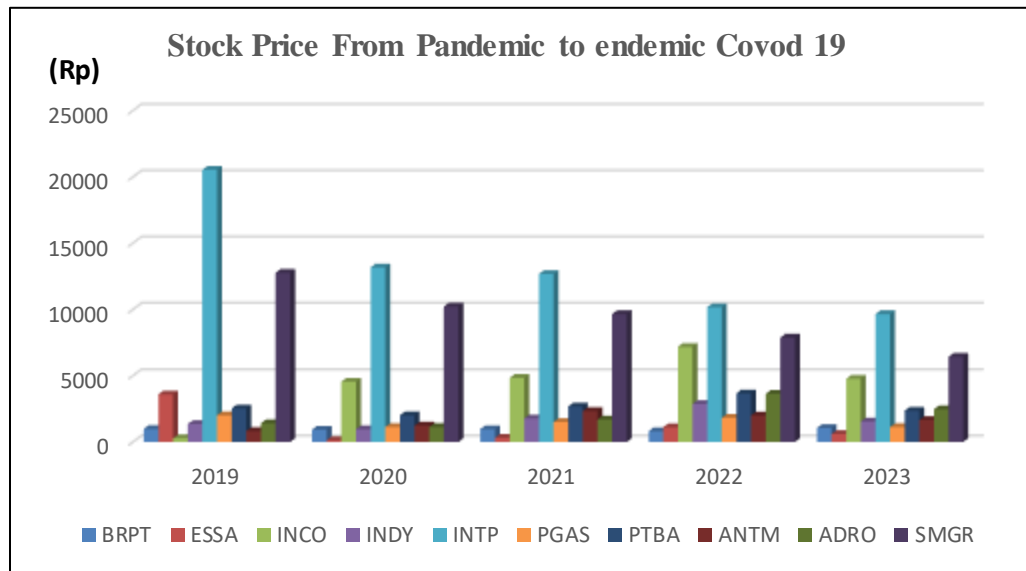


Figure 1. Stock Price from Pandemic to Endemic Covid-19

Figure 1 shows the movement of stock prices from pre-pandemic conditions to Covid-19 endemic conditions. On December 31, 2019 Covid-19 was first discovered in Wuhan City, Hubei, China was declared by WHO as a global pandemic on March 11, 2020. Covid-19 entered Indonesia for the first time on Monday, March 2, 2020. Periodically, stock prices are calculated since 2019 pre-pandemic conditions, 2020-2022 are included in pandemic conditions, while since the endemic on June 21, 2023 the Indonesian government announced that the pandemic conditions transitioned to Covid-19 endemic conditions so that 2023 was counted as a Covid-19 endemic condition.

The movement of stock prices from pre-pandemic conditions to the Covid-19 endemic in mining companies listed on the JII index looks very fluctuative 8 out of ten companies experienced a drop in prices from pre-pandemic conditions to pandemic conditions in early 2020 except for INCO and ANTM companies where stock prices continued to rise from before Covid-19 to endemic conditions in 2023 so it can be concluded that the Covid-19 pandemic conditions did not have a significant effect on the company's stock price.

Conclusion

Based on the results of research that has been conducted on the fair price of shares using the Dividend Discount Model (DDM) method of mining companies listed on the JII index (Jakarta Islamic Index). Of 10 companies that meet the sample criteria 9 companies are undervalued, namely with the difference in the fair price of shares and the closing price on 9 November 2023 which varies, and 1 company by Perusahaan Gas Negara Tbk (PGAS) is in

an overvalued condition. There are 4 stocks that have a fairly high fair price difference with the market price. Including Bukit Asam Tbk (PTBA) with a price difference of 472 rupiah or 16% of the fair price. Adaro Energy Indonesia Tbk (ADRO) with a price difference of 347 rupiah or 12% of the fair price, Vale Indonesia Tbk (INCO) with a price difference of 310 rupiah or 6% of the fair price and Indocement Tunggal Prakarsa Tbk (INTP) with a price difference of 342 rupiah or 3.4% of the fair price.

Transition conditions from pandemic to endemic on 21 June 2023 caused mining stock prices on the Jakarta Islamic Index (JII) to recover and move stably after previously during the Covid-19 pandemic several mining companies listed on the JII had experienced a significant decline in share prices. Researchers provide several recommendations without the intention of patronising both specifically and generally, researcher recommendations specifically for investors who want to invest in Jakarta Islamic Index (JII) stocks, they can look at stocks that have a high enough difference from the actual fair price of shares, namely Bukit Asam Tbk (PTBA) and Adaro Energy Indonesia Tbk (ADRO). Researchers also recommend that academics be able to expand the reach of this research in the future so that it can present the fair price of shares for all Islamic stocks listed on the Indonesian Sharia Stock Index (ISSI) and assess the fair price of shares not only from the comparison of dividends but also from the comparison of share prices to earnings growth.

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