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STOCK VALUATION IN ELECTRIC VEHICLE COMPANIES LISTED ON THE INDONESIAN STOCK EXCHANGE

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Abstract

The aim of this study is to estimate the fair value of shares in electric vehicle companies listed on the Indonesian Stock Exchange (BEI), namely PT. NFC Indonesia (NFCX), PT. Wijaya Karya (WIKA), PT. TBS Energi Utama (TOBA), and PT. Indika Energy (INDY). This study uses the discounted cash flow method with the free cash flow to firm approach and relative valuation with the price earning ratio (PER) and price-book value (PBV) approaches. Both methods use three scenarios: pessimistic, moderate, and optimistic. The results of both of these methods will give advice to the parties involved. The results of the study showed that with the DCF-FCFF methods, NFCX, TOBA, and INDY shares were undervalued in all scenarios, while WIKA was overvalued used in all scenarios.

Keywords: Valuation, Intrinsic Value, Discounted Cash Flow, Relative Valuation.

INTRODUCTION

The global energy crisis is currently occurring in almost all countries, such as America, Europe, and Asia. One of the conditions is that the world's oil has begun to fade and will become a shortage as demand for oil continues to rise, including in Indonesia djpb.kemenkeu.go.id (2021). It's not just the European countries that are experiencing an energy crisis, it's also Indonesia. Indonesia is the largest producer of oil, gas, and coal in the world, but for the moment, the consumption of oil in Indonesia exceeds production, making Indonesia an oil importer djpb.kemenkeu.go.id (2021).

To overcome the energy crisis, governments must continue to support renewable energy to meet their future energy needs. There is a lot of renewable energy to alleviate energy crises, like biogas, biodiesel, and ethanol. But for land transport, such as motor vehicles, electric vehicles can be used as an alternative. The use of electricity is the best solution today, so governments have to consider the amount of supply needed to produce it bppt.go.id (2018). The government's support is one of the real actions of electric vehicles in Indonesia, whether electric cars or electric motors bppt.go.id (2018).

One of the government's supports for electric vehicles in Indonesia is Presidential Decree No. 55 of 2019 on Accelerating the Battery-Based Electric Motor Vehicle Programme. In the National Industrial Development Plan (RPIN), the priority for the development of electric vehicles from 2020-2035 is the evolution of electric vehicle and their main components such as batteries, electric motors, and inverters kemenperin.go.id (2021). Next is the publication of the President's Intrusion (INPRES) No. 7 of 2022, which states that vehicles based on Electric vehicles (EVs) are operational vehicles of both central and local governments. Such a goal as a service vehicle can be quickly and accurately, because it can have a positive impact on the

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environment especially in the reduction of air pollution (kemenperin.go.id 2021).

As for the company that produces electric vehicles listed on the Indonesian Stock Exchange, PT.NFC Indonesia (NFCX), which produces, PT. Wijaya Karya (WIKA), PT. TBS Energi Utama (TOBA), PT. Gaya Abadi Sempurna (SLIS), and PT. Indika Energy (INDY) indopremier.com (2023). Sales of these electric vehicles will continue to increase every year, as the government is preparing an ecosystem development of electric vehicles from the beginning to the end and a subsidy policy for electric vehicles Kemenperin.go.id (2022).

Here are the stock price movements of the company that produces electric vehicles in 2018-2022:

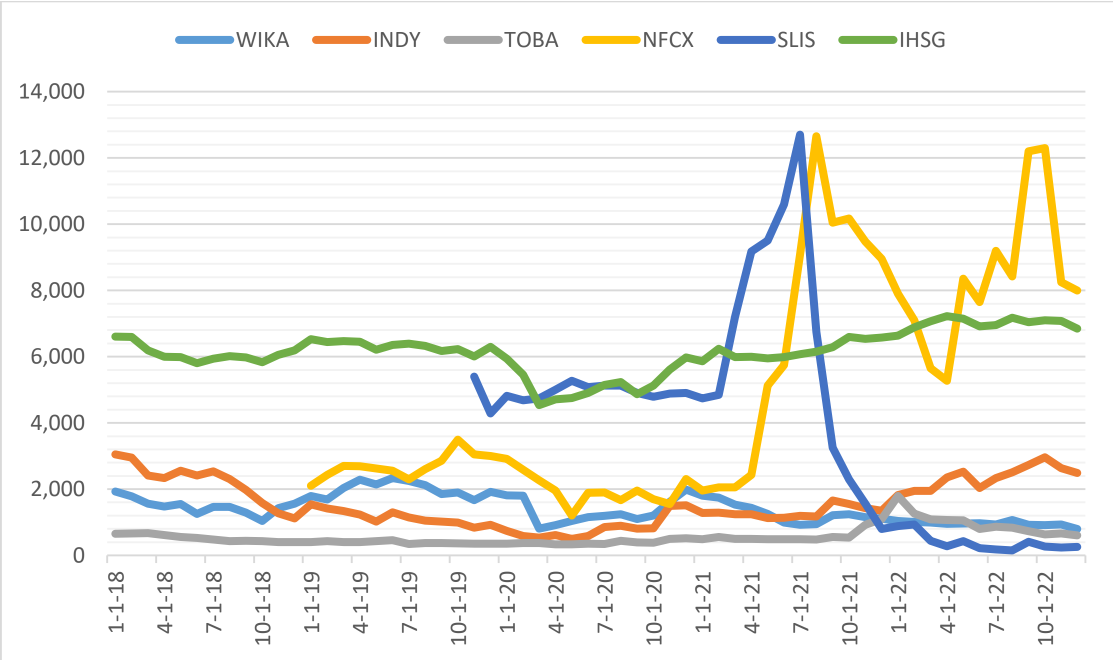

Figure 1: stock price movements

Based on the figure 1 above, we can see that the stock price movements of each company are fluctuating. Almost all the company's stock movements are still under IHSG. This can mean that for the shares of the company that produces electricity this still has not given reinforcement against IHSG, but IHSG is raising the share. Despite current fluctuating stock movements, it is unavoidable that these shares will be in demand by investors in the coming years, as the future of EV prospects in Indonesia will grow more rapidly.

Therefore, investing in stocks becomes a much-demanded investment, because it can yield huge profits but the risk is also quite large bantenprov.go.id (2020). Therefore, if you want to reduce the risk of an investment, it is better to diversify the investment where the investment is not focused on a single instrument Komang Diantriasih et al. (2018). Stock price movements in Figure 1 above many factors that influence the stock price in the capital market. Factors that can influence the price of the stock include, macroeconomic, social, political, corporate

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finance, and more. Therefore, for investors who are investing in the long term, it is advisable that investors make a reasonable price assessment of the stock so that it is appropriate in making a decision whether the stock is undervalued, fairvalued, or overvalued (Prowanta & Herlianto, 2020).

The valuation of the fair price of shares is part of fundamental analysis because it analyzes the financial performance based on the company's financial statements to determine the financial capacity of the company Kemenperin.go.id (2022). In stock valuation, there are three types of stock value that need to be considered: book value, market value, and intrinsic value (Prowanta & Herlianto, 2020). There are three approaches to stock valuation: discounted cash flow, relative valuation, and option pricing model (Damodaran, 2006).

The valuation of stocks varies depending on the circumstances of each investor. There are three scenarios in the price assessment of stocks: pessimistic, moderate, and optimistic. Pessimistic conditions are conditions where investors buy stocks at low prices and the growth of the company is below the average of industrial growth, while moderate conditions are conditions where the investor buys the stock at a reasonable price because of the investor's demand between the seller and buyer versus straight. And for optimistic conditions, that is, investors can buy stocks, but at a high price, because in optimistic circumstances, the company's growth is considered very good (Gumanti, 2011).

The valuation of different stock prices depends on the circumstances of each investor and the economic conditions at the time. The difference in the valuation of the stock is there are three conditions based on the results of the three scenarios: undervalued, fairvalued, and overvalued. Undervalued is a condition in which the stock price is undervalued by the investor because its value is lower than its intrinsic value, while fairvalued is the price of the stock according to its intrinsic value, and overvalued is a condition where the share price is more expensive than it (Prowanta & Herlianto, 2020).

Based on the background that has been discussed, the problem that arises in this study is how to assess the fair price of stocks for companies that produce electric vehicles. Then it takes further analysis of the stock to evaluate it reasonably. The methods used in this study is discounted cash flow with free cash flow to firm approach and relative valuation with price earning ratio (PER) and price book value (PBV) approach. The reason for using this DCF method is because its value is close to the market price, according to the fundamental aspects of the company Ivanovska et al. (2014), and the data used can be easily obtained from the financial statements (Damodaran, 2014).

The relative valuation method is used to compare market values with those of similar industries (Damodaran, 2014). The aim of this study is to find out the fair value of the shares of the company that produces electric vehicles and to see if there is a difference in the fair price of shares between the method of discounted cash flow and relative valuation. This research is expected to be beneficial to the aspects of interest.

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LITERATUR REVIEW

Valuation Theory

Valuation is part of one of the fundamental analyses that plays a major role in a wide range of financial fields. Valuation has a role in analyzing the company, fundamentally influenced by various factors. These factors will be used in the valuation so that there is no bias (Damodaran, 2012). This valuation will determine the fair value of a good company. For a company that has gone public or has not gone public, good company value will be reflected in the price of the stock in the market, which is increasingly higher (Asnawi & Chandra, 2011). There are four methods of valuation: discounted cash flow, relative valuation, contingent valuation, and asset-based valuation (Damodaran, 2012).

Value of the firm

The company's value is the performance of the stock, which is reflected in the stock price formed by supply and demand in the capital market. It is this supply and demand that reflect the public's judgment of the company's performance in real terms (Harmono, 2017). The primary purpose of the company itself is to maximize the well-being and wealth of its shareholders; the real form of this is the value of the corporation concerned. For a company that's already going public, the company's value will reflect the price of the stock in the market, the higher the value of the company, the higher the stock price on the market (Gitman, 2015).

Discounted Cash flow (DCF)

Discounted cash flow is one of the analytical methods for estimating the value of current cash flows in the future, or, as it is often called, measuring the intrinsic value of an asset. This DCF method is the most common and commonly used in carrying out stock valuation, as it is the basis of other valuation models Hendrawan & Rahayu (2020).There are three approaches that can be used in discounted cash flow (Damodaran, 2014):

1. Dividend Discounted Model

The Dividend Discounted Model (DDM) is one of the direct but conventional methods of estimating the fair price of the stock, as it only counts from the cash flow that will actually be paid to the shareholders (Damodaran, 2014). However, on the other hand, it also makes sense because the investor buys the shares and will receive their profits based on the dividends that will be paid by the company. This DDM can be calculated by:

$$\text{Price per shares} = \sum_{t=1}^{t=\infty} \frac{E(DPS_{t})}{(1+K_e)^t}$$

Descriptions:

DPS_t : Expected dividend per share

K_e : *Cost of Equity*

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2. Free Cash Flow to Equity

Free Cash Flow to Equity (FCFE) is the remaining cash flow after fulfilling obligations in paying debts (including interest), as well as providing reinvestments to maintain existing assets. FCFE is usually used to evaluate a company by looking at its capital structure, which is dominated by equity. FCFE is also divided into three models: the constant growth model, the two-stage growth model, and the three-stage model. FCFE can be measured by:

$$FCFE = NI + DA - Capex - \Delta WC - PR - NDI$$

Where is:

FCFE : *Free Cash flow to Equity*

NI : *Net Income*

Capex : *Capital Expenditure*

ΔWC : *Change in noncash working capital*

PR : *Principal Repayments*

NDI : *Net Debt Issue*

3. Free Cash Flow to Firm (FCFF)

Free Cash Flow to Firm FCFF is one of the analytical methods for evaluating companies based on equity and liabilities by looking at net cash flows as their assets. This FCFF method is usually used for companies that use equity and debt to maximize the value of their companies. The FCFF is divided into three models: the constant growth FCFF model, the two-stage growth FCFF model, and the Three-Stage FCFF models (Damodaran, 2014).

$$FCFF = EBIT(1 - tax\ rate) - capex + DA \pm \Delta WC$$

Descriptions:

FCFF : *Free cash flow to firm*

EBIT : *Earning Before Interest Tax*

CAPEX : *capital expenditure*

DA : Depreciation and Amortization

ΔWC : *Change in noncash working capital*

Cost of Capital

Cost of capital is the rate of return given to investors on funds that they invest in an investment instrument. The capital cost that is appropriate for all decisions is the weighted average cost of capital (WACC) Ramdhani Kurnia & Sitorus (2020). WACC can be calculated with:

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$$WACC = K_e\left(\frac{E}{V}\right) + K_{ps}\left(\frac{P}{V}\right) + K_d\left(\frac{D}{V}\right)(1 - tax)$$

Where is:

Ke : Cost of Equity

E : Equity market value

V : Total cumulative market value of equity, preferential shares, and interest or market value debt of the company (E+P+D)

Kd : Debt before tax

P : Market value of prefential stocks

Tax

Terminal Value

Terminal value is a proxy to facilitate the calculation of a company's value after an explicit period. Determining the correct terminal value is very important, as it can provide a considerable contribution to the total value of the company. Terminal value is quite important because it contributes to the overall value of a company, so it can be assumed to have a consistent rate of growth (Djaja, 2018). Terminal Value can be calculated by:

$$Terminal\ Value = \frac{FCFF_{n+1}}{WACC_{n+1} - g_n}$$

Relative Valuation

Relative valuation is included in one of the fundamental analyses performed by comparing the value of assets in a similar company (Damodaran, 2014). The approaches used in this study are price earning ratio (PER) and price book value (PBV). PER is a ratio that is determined consistently with the value of equity per share that divides profit per share as a distributor. Here's the PER formula:

$$PER = \frac{Market\ price\ per\ share}{Earning\ per\ share}$$

After obtaining the PER, the next step is to calculate the intrinsic value of the stock with the formula (Tandelilin, 2017):

$$P_0 = estimasi\ EPS\ x\ PER$$

While PBV is one of the proxy book values of companies or comparison transactions to calculate the value of equity of companies, according to the PBV formula,

$$PBV = \frac{Price\ per\ share}{Book\ value\ of\ equity\ per\ share}$$

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METHODOLOGY

This research uses the quantitative method, which is a method of research based on an empirical philosophy used on a particular sample with the aim of testing a hypothesis and finding the desired result (Sugiyono, 2017). The results of this study are to find the intrinsic value of shares in companies that produce electric vehicles listed on the Indonesian Stock Exchange (BEI) with the discounted cash flow method with the free cash flows to firm (DCF-FCFF) approach and relative valuation with the price earning ratio (PER) and price book value approach (PBV).

This research uses purposive sampling because it requires samples to be tested according to predetermined criteria (Sugiyono, 2017). The sample criteria set by the author are:

1. Companies that produce electric vehicles registered in the IDX in 2018-2022
2. Companies publish financial statements in succession and for the years 2018-2022
3. Shares that have an active volume of transactions in the IDX until 2022

So the samples in this research are:

1. PT. NCF Indonesia Tbk (NFCX)
2. PT. Wijaya Karya Tbk (WIKA)
3. PT. TBS Energi Utama Tbk (TOBA)
4. PT. Indika Energi Tbk (INDY)

Framework

Investors always expect to get maximum returns with minimal risk. In fact, the stock price in the capital market is very volatile. Many factors cause share prices to rise and fall because share prices fluctuate and can't be predicted Vega Neaxie & Hendrawan (2017). The solution to prevent the uncertainty of the price of the stock is to conduct a fundamental analysis, one of which is to know the actual value of the fair price. By doing a stock price analysis, we can find out what the actual value of the stock is. The methods used in this study are discounted cash flow with the free cash flows to firm (DCF-FCFF) approach and relative valuation with the price earning ratio (PER) and price book value (PBV) approach.

This discounted cash flow method requires assumptions that will be used to project the value of future cash flows Vega Neaxie & Hendrawan (2017). Such projections are based on a series of unknown variables, so it requires an underlying assumption to make some assumptions in decision-making Ivanovska et al. (2014). Therefore, this study used three scenarios, namely pessimistic scenarios (conditions below industrial growth), moderate (most possible conditions), and optimistic (conditions above industrial growth) Vega Neaxie & Hendrawan (2017). The next is to calculate the fair value of the shares of each company, and the last is to perform a different test using the wilcoxon signed ranks test to see if there is a significant difference between the DCF-FCFF method with PER and PBV.

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H1: There is a difference in assessing the intrinsic value of shares between the discounted cash flow method with the free cash flow to firm approach and relative valuation with the PER and PBV approaches.

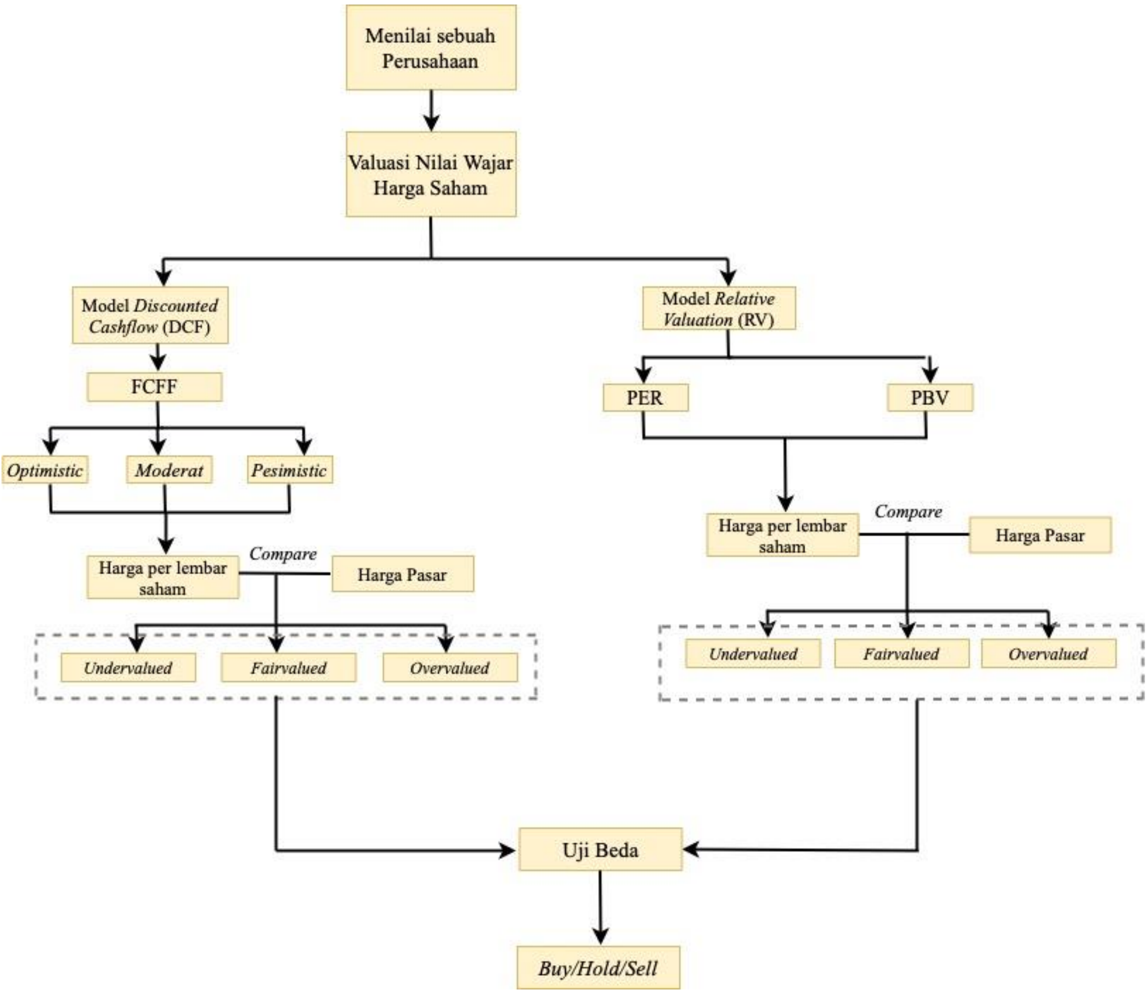

Figure 2: Research Framework

RESULT AND DISCUSSION

Growth Rate

The historical data used in this study are the financial statements of each company starting in 2018-2022, which are the basis for projections for the years 2023-2027 and for the calculation of free cash flow. Projections on free cash flow to firm are obtained from the historical averages of 2018-2022. To determine the growth rate, it is taken from the historical average revenue of each company for 2018-2022 then compared with the industry growth rate. The growth rate of companies that produce electric vehicles can be seen in the Table 1 below:

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Table 1: Growth rate

Kode Emiten	*Growth* Historis	*Average* Industri	Skenario	*Forecast Growth*
NFCX	17,04%	17,44%	Pesimis	16,84%
			Moderat	17,04%
			Optimis	17,44%
WIKA	14,16%		Pesimis	12,52%
			Moderat	14,16%
			Optimis	17,44%
TOBA	17,92%		Pesimis	17,44%
			Moderat	17,92%
			Optimis	18,16%
INDY	17,43%		Pesimis	17,43%
			Moderat	17,43%
			Optimis	17,44%

Source: Result of data processing (2023)

Based on historical data in Table 1 above, the growth rate of NFCX is 17,04%, WIKA is 14,16%, TOBA is 17,92%, and INDY is 17,43%. For the average industrial growth rate is 17,44%. The highest growth rate is in TOBA at 17,92%, and the lowest is in WIKA at 14,16%. After knowing the historical growth rate and the average industry, for projections, the rate of growth can be seen in the table above.

Weighted Average Cost of Capital (WACC)

In the analysis of discounted cash flow, the WACC is used for the rate of future discount cash flow to obtain the current net value of the company. The WACC is one of the most important analytical indicators and is often used by investors to decide whether an investment is worthwhile or not, Ramdhani Kurnia & Sitorus (2020). WACC calculation values for NFCX, WIKA, TOBA, and INDY can be seen in the table below:

Table 2: WACC

Emiten	WACC
NFCX	7,61%
WIKA	7,32%
TOBA	6,91%
INDY	11,26%

Source: Result of data processing (2023)

Based on the calculations of the WACC in Table 2 above, the highest value for the INDY was 11,26%, while the lowest value was TOBA of 6,91%. Then for the NFCX, the value was 7,61%, and the last WIKA was 7,32%.

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Intrinsic Value Stock Discounted Cash Flow Method

The results of the fair price assessment of shares for NFCX, WIKA, TOBA, and INDY using the discounted cash flow method with the free cash flow to firm approach can be seen in the table below:

Table 3: Intrinsic Value Stock Discounted Cash Flow Method

FCFF				
Kode Emiten	**Skenario**	**Nilai Intrinsik**	**Harga Pasar (12 Sep 2023)**	**Keputusan**
NFCX	Pesimis	7.686	6.875	*Undervalued*
	Moderat	7.617		*Undervalued*
	Optimis	7.491		*Undervalued*
WIKA	Pesimis	4,81	428	*Overvalued*
	Moderat	3,68		*Overvalued*
	Optimis	2,60		*Overvalued*
TOBA	Pesimis	1.056	338	*Undervalued*
	Moderat	1.031		*Undervalued*
	Optimis	1.020		*Undervalued*
INDY	Pesimis	34.868	2.020	*Undervalued*
	Moderat	34.852		*Undervalued*
	Optimis	34.818		*Undervalued*

Source: Result of data processing (2023)

Based on table 3 above, in a pessimistic scenario, the fair value of NFCX shares is IDR 7.686, while the stock price in the capital market on September 12th 2023, is IDR 6.875, it can be said that the stock is undervalued. Then the intrinsic value of the stock of WIKA is IDR 4,81 while the stock price in the capital market is IDR 428, so the stock is categorized as overvalued. If the actual value of TOBA is IDR 1.056 and the price is in the market is IDR 338, then the stock can be said to be undervalued. Furthermore, the intrinsic value of INDY shares is IDR 34.868, while the price on the capital market is IDR 2,020, it can be said that INDY shares are undervalued. Last, the intrinsic value of INDY shares is IDR 34.868, while the price on the capital market is IDR 2.020, it can be said that INDY shares are undervalued.

In a moderate scenario, the actual value of NFCX shares is IDR 7.617 if compared with the stock price on the market on September 12th 2023, which was IDR 6.875, so NFCX shares are undervalued. The intrinsic value of WIKA stock is IDR 3,68 while the share price in the market is IDR 428, it can be said that the stock of WIKA is overvalued. The fair value of TOBA stock is IDR 1.031, and the market price of the share is IDR 338, so when compared to the price of TOBA shares, it is undervalued. The intrinsic value of INDY shares is IDR 34.852 while the market price is IDR 2.020. It can be said that INDY is undervalued. In the optimistic scenario, the fair share value of NFCX is IDR 7.491 when compared with the stock price on the market on September 12th 2023, IDR 6.875, so NFCX stock is undervalued. The intrinsic value of the

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stock of WIKA IDR 2,60 while the price of the share in the market is IDR 428, it can be said that the stock of WIKA is overvalued. After that, the actual value of the stock TOBA IDR 1.020 while the market share price is IDR 338, so TOBA is categorized as undervalued. Based on the calculations using the discounted cash flow–free cash flow to firm method, the investor is advised to sell WIKA shares in all scenarios because WIKA stock is overvalued, which means it is not worth buying because its price is already too expensive. Apart from that, given the difficult conditions of his company at the moment, due to the high liabilities, so much that he asked for a deferral in his payments. Moreover, many investors have already sold shares rather than bought them. Next, investors should buy NFCX, INDY, and TOBA shares in all scenarios (pessimistic, moderate, and optimistic), because the shares are undervalued. This means that the share price has the potential to continue to increase to reach the fair value of the shares.

Intrinsic Value of Shares Relative Valuation – PER Method

Here is the intrinsic value of the stock using the price earning ratio (PER) method:

Table 4: Intrinsic Value of Shares PER Method

RV-PER					
Kode Emiten	**Skenario**	**Nilai PER**	**Nilai Intrinsik**	**Harga Pasar**	**Keputusan**
NFCX	Pesimis	2,8	97,92	6.875	*Overvalued*
	Moderat	2,7	96,01		*Overvalued*
	Optimis	2,7	94,13		*Overvalued*
WIKA	Pesimis	0,000291733	0,0000004	428	*Overvalued*
	Moderat	0,000381803	0,0000005		*Overvalued*
	Optimis	0,000540185	0,0000008		*Overvalued*
TOBA	Pesimis	9,18	1.683	338	*Undervalued*
	Moderat	8,92	1.635		*Undervalued*
	Optimis	8,80	1.613		*Undervalued*
INDY	Pesimis	19,22	29.337	2.020	*Undervalued*
	Moderat	19,21	29.322		*Undervalued*
	Optimis	19,19	29.291		*Undervalued*

Source: Result of data processing (2023)

Based on table 4 above, we can know that in the pessimistic scenario, the intrinsic value of the NFCX stock is IDR 97,92, while the stock price on the market on September 12th is IDR 6.875, so it can be categorized as overvalued. The fair value of WIKA shares is IDR 0 while the market price is IDR 428. it can be said that WIKA shares are overvalued. The intrinsic value of TOBA shares is IDR 1.683, while the market price is IDR 338, so it can be categorized as undervalued. The fair value of INDY shares is IDR 29.337 when compared to the market price of IDR 2.020, it can be said to be undervalued. In the moderate scenario, the fair value of NFCX shares is

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IDR 96,01, while the share price on the market on September 12th is IDR 6.875, so it can be said to be overvalued. The intrinsic value of WIKA shares is IDR 0 while the market price is IDR 428, so the WIKA stock is categorized as overvalued. The actual value of TOBA is IDR 1.635, and the price of the market is IDR 338. If compared it can be categorized as undervalued. The fair value of INDY shares is IDR 29.322 when compared to the market price of IDR 2.020, it can be said undervalued. In the optimistic scenario, the actual stock value of NFCX is IDR 94,13 while the stock price on the market on September 12th IDR 6.875. can be said to be overvalued. The fair value of the WIKA stock is IDR 0, while the price in the market is IDR 428, so WIKA shares are categorized as overvalued. The intrinsic value of TOBA is IDR 1.635 and the market price is IDR 338. If compared, then TOBA can be categorized as undervalued. The fair value of INDY shares is IDR 29.291 if compared to the market price of IDR 2.020, then it can be said to be undervalued. Based on the calculation of the PER method, the investor's suggestion is to sell NFCX and WIKA shares, because the shares are overvalued. This means that they are too expensive and exceed the fair value of the stock, but investors should buy TOBA and INDY shares as they are classified as undervalued. Which means that the stock price is still potentially rising until it reaches its fair value.

Intrinsic Value Stock Relative Valuation – PBV Method

Table 5: Intrinsic Value Stock PBV Method

RV-PBV					
Kode Emiten	**Skenario**	**Nilai PBV**	**Nilai Intrinsik**	**Harga Pasar**	**Keputusan**
NFCX	Pesimis	3,73	25.646	6.874	*Undervalued*
	Moderat	3,70	25.418		*Undervalued*
	Optimis	3,64	24.996		*Undervalued*
WIKA	Pesimis	0,40	173	428	*Overvalued*
	Moderat	0,53	226		*Overvalued*
	Optimis	0,75	320		*Overvalued*
TOBA	Pesimis	1,28	431	338	*Undervalued*
	Moderat	1,25	421		*Undervalued*
	Optimis	1,23	416		*Undervalued*
INDY	Pesimis	8,71	17.313	2.020	*Undervalued*
	Moderat	8,70	17.304		*Undervalued*
	Optimis	8,70	17.288		*Undervalued*

Source: Result of data processing (2023)

Referring to table 5 above on the pessimistic scenario, the intrinsic value of NFCX is IDR 25.646 if compared with the market price on September 12th, 2023 IDR 6.874, then NFCX shares are undervalued. The fair value of WIKA shares is IDR 173 while for the price in the market is IDR 428, so WIKA stock is categorized as overvalued. The actual value of TOBA stock is IDR 431 when compared to the market value of IDR 338, then TOBA shares can be said to be undervalued. If the intrinsic value of INDY is IDR 17.313 and the market price is IDR 2.020, then it can be said that INDY shares are undervalued. Then, for the moderate

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scenario, the intrinsic value of NFCX shares is IDR 25.418, and for the market price on September 12th, 2023, IDR 6.874, it can be said to be undervalued. The fair value of the share of WIKA is IDR 226 when compared with the market price of IDR 428, the stock of WIKA is categorized as overvalued. The actual value of TOBA share IDR 421 while for the market value is IDR 338, it may be said TOBA is undervalued. INDY's intrinsic value is IDR 17.304, while the market price is IDR 2020, so it can be said to be undervalued.

In the optimistic scenario, if the actual value of NFCX is IDR 24.996 if compared with the price in the market on September 12th, 2023 IDR 6.874, then it can be said to be undervalued. WIKA's intrinsic value is IDR 320 while the market price is IDR 428, so WIKA's shares are categorized as overvalued. The fair value of TOBA shares is IDR 416 while the market price is IDR 338, so it can be said to be undervalued. The intrinsic value of INDY shares is IDR 17.288 compared to the market price of IDR 2.020, so INDY shares are undervalued. Based on the above statement, which can be concluded by applying the PBV method, it is preferable for investors to sell WIKA shares because there is a possibility that the price of WIKA stocks will continue to fall in later times. For NFCX, TOBA, and INDY stocks, it is better for the investor to buy the stocks, because it is possible that the stock price will continue to increase to reach the fair value of the stock.

Differential Test of Discounted Cash Flow Method with Relative Valuation

Table 6: Differential Test

Test Statistic FCFF and PER Method	
Z	0,000
Asymp. Sig (2-Tailed)	1,000
Test Statistic FCFF and PBV Method	
Z	-1,000
Asymp. Sig (2-Tailed)	0,317
Test Statistic PER and PBV Method	
Z	-1,000
Asymp. Sig (2-Tailed)	0,317

Source: Result of data processing (2023)

In the above table, can be seen for different tests using the wilcoxon signed ranks test between the FCFF method with PER the probability value obtained is 1,000 which means >0,05. So, it proves that H0 is accepted which means there is no significant difference in the fair valuation of stocks between the method FCFF with the method PER. Then the test results different between the FCFF and PBV methods, the probability value obtained is 0,317 which means >0,05. Then that proves that H0 is accepted, which means there is no significant difference in the valuation of stocks between the FCFF method and the PBV. And lastly, the test result is different from the PER and PBV methods. The probability value obtained is 0,317, meaning >0,05. So, it can be interpreted that there is no significant difference in the fair valuation of shares between the PER and PBV methods.

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CONCLUSION AND SUGGESTION

The results of this study using the DCF-FCFF method, show that in the pessimistic scenario NFCX shares are worth IDR 7.686 in undervalued conditions, TOBA shares are worth IDR 1.056 in undervalued condition, and INDY is worth IDR 34.868 in undervalued conditions, while WIKA is valued at IDR 4,81 in overvalued condition. Then in the moderate scenario NFCX is worth IDR 7.617 in undervalued condition, TOBA is worth IDR 1.031 in undervalue, and INDY is worth IDR 34.852 in undervalued condition, whereas WIKA is worth IDR 3,68 in overvalued condition. In the optimistic scenario, the value of NFCX shares is IDR 7.491 in an undervalued condition, TOBA is worth IDR 1.020 in an undervalued condition, and INDY is worth IDR 34.818 in an undervalued condition, and WIKA is worth IDR 2,60 in an overvalued condition. Furthermore, using the PER method, in the pessimistic scenario, NFCX stocks are worth IDR 97,92 in overvalued conditions, TOBA is worth IDR 1.683 in undervalued condition, INDY is worth IDR 29.337 in undervalued conditions and WIKA is worth Rp0 in overvalued conditions. Then, in the moderate scenario, NFCX is worth IDR 96,01 in an overvalued condition, TOBA is IDR 1.635 in undervalued condition, and INDY is worth IDR 29.332 in an undervalued condition, and WIKA is worth IDR 0 in an overvalued condition. In the optimistic scenario, NFCX shares are valued at IDR 94,13 in overvalued conditions, the TOBA shares are valued at IDR 1.613 in undervalued, and the INDY shares are worth IDR 29.291 in undervalued, and WIKA is worth Rp0 in overvalued conditions.

Using the PBV method, the pessimistic scenario of NFCX stocks is worth IDR 25.646 in undervalued conditions, TOBA is worth IDR 431 in undervalued conditions and INDY is worth IDR 17.313 in undervalued conditions, and WIKA is worth IDR 173 in overvalued conditions. Then, in the moderate scenario, NFCX is valued at IDR 25.418 in undervalued conditions, TOBA is IDR 421 in undervalued condition, and INDY is worth IDR 17.304 in undervalued condition, whereas WIKA is worth IDR 226 in overvalued condition. In the optimistic scenario, NFCX shares are valued at IDR 24.996 under undervalued, TOBA at IDR 416 under undervalued, and INDY at IDR 17.288 undervalued, and WIKA at IDR 320 overvalued.

The test results are different between the FCFF method with PER and PBV using the Wilcoxon signed ranks test. The test results were different between the FCFF method with PER, then FCFF with PBV, and PER with PBV, so there were no significant differences between these methods. For future studies, can also discuss about difference method for stock valuation. Next, it is hoped that more accurate data will be used so that the results obtained are closer to the actual values.

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