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## Research Article

### Can We Validate the Value? Valuing Automotive and Component Sub-Sector Companies Listed on the Indonesia STOCK Exchange during the Covid-19 Pandemic Crisis

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#### ABSTRACT

This study provides a comprehensive fundamental-based value analysis of firms using Discounted Cash Flow (DCF) and Relative Valuation (RV) approaches. This study reveals how these approaches behave in valuing firms during a crisis such as the one caused by the current covid-19 pandemic and how to validate the results as well as correct them if the results was invalid. The object of the study is companies in the automotive and component sub-sector listed in Indonesia Stock Exchange (IDX) in 2020. The company's historical financial data between 2016 and 2020 are used to predict its financial behavior over the next five years under three scenarios: optimistic, moderate, and pessimistic. From the study employing the DCF method, the following results were obtained: ASII and INDS stocks were overvalued in all scenarios, GJTL were undervalued in all scenarios, and SMSM were overvalued in pessimist and moderate scenarios while undervalued in optimist scenario. Correction upon intrinsic values of SMSM and ASII is required since the result from RV analysis imply that the DCF results of both companies are not entirely valid, which indicates that the pandemic crisis has significantly affected the value of both companies. Investment recommendations for both ASII and INDS were to sell the stocks while for both SMSM and GJTL were to buy the stocks.

**Keywords:** valuation, intrinsic value, discounted cash flow, relative valuation, pandemic

#### Background

In the era of rapid flow of information and swift change of market price, stock valuation has become a very popular topic among investors. Changes in market prices provide investors with fluctuating returns. Composite

Stock Price Index (IDX Composite) is a statistic describing how stock returns fluctuate globally on Indonesia Stock Exchange (IDX). In Figure 1 it can be inferred that stock prices and returns fluctuate daily with an unpredictable pattern.

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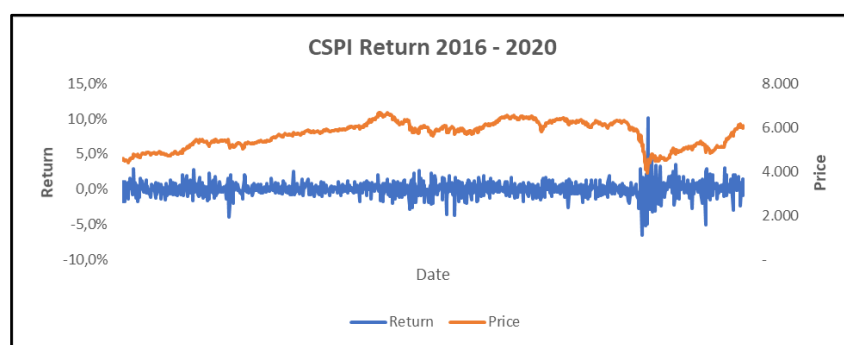


Figure 1. IDX Composite return fluctuations. Source: Yahoo Finance (processed data)

Due to the fluctuating nature of stock prices, a solid approach is required to be able to predict the fair value of a stock. Valuation analysis is crucial for investors in finding a fair price for a share prior to making investment decisions (Damodaran, 2012). Generally, there are two main approaches in stock valuation, namely technical and fundamental analysis. Technical analysis is based on changes in stock prices from time to time, while fundamental analysis focuses on fundamental factors that affect the economy and industry (Tandelilin, 2010). Fundamental analysis is considered to be more suitable for stock valuation because this method integrates factors that include the characteristics and financial condition of the company including cash flow, risk profile, and growth potential (Fibrianto & Hendrawan, 2018). Discounted cash flow (DCF) is a reliable method of fundamental analysis in calculating the long term value of the company (Ivanovska et al., 2014).

The phenomenon of stock fluctuations also occurs in companies operating in automotive and component sectors listed on the Indonesia Stock Exchange (IDX) in 2020. This sector is among the 5 industrial sectors that have been the focus of the "Making Indonesia 4.0" initiative since 2018. This initiative was launched by the Ministry of Industry as a strategy for implementing the Fourth Industrial Revolution (4IR), a program that carries a mission to make Indonesia one of the 10 largest economic powers in the world based on GDP (Gross Domestic Product) by 2030. This initiative can offer opportunities for the automotive and component sector to grow exponentially as well as increase its company value.

Based on this phenomenon and previous studies, this study aims at examining the intrinsic values of stocks in the automotive and component sectors in 2021 based on the company's financial data between 2016 and 2020. The results of this study can be used to make a strategic input for investors in making investment decisions, and for related companies to improve their future financial performance. This study is also expected to enrich the literature in financial disciplines, particularly regarding company valuation.

## Methods

There are 13 companies operating in the automotive and components sector that are listed on the IDX. This study employs purposive random sampling in which the objects of the study are selected for specific purposes based on the characteristics of the study. Two main criteria were used in determining the samples, namely Earnings Before Interest and Taxes (EBIT) and revenue growth. EBIT was used as a criterion because only companies with positive EBIT can be analyzed using the DCF method (Zemba & Hendrawan, 2018), while revenue growth was used as a criterion because DCF was considered less fitting to assess companies with negative growth (Damodaran, 2012). From these criteria, four companies were selected as objects of this study, namely PT. Astra International, PT. Gajah Tunggal Tbk, PT. Indospring Tbk, and PT. Selamat Sempurna Tbk.

## Discounted Cash Flow

The first step in DCF involved analysis of the company's financial behavior based on the

history of financial data from 2016 to 2020. The financial behavior that needs to be extracted for DCF analysis is the average annual revenue growth and the average portion of Operating Expenses (OPEX), Capital Expenditure (CAPEX), depreciation and/or amortization, and delta working capital against revenue. The financial behavior as the basis for projected revenue and Free Cash Flow to Firm (FCFF) of the company in the next 5 years. Terminal value was calculated by the component of FCFF value at the end of the projected year, constant growth assumption, and the weighted average cost of capital (WACC). WACC is derived from the company's latest capital structure, cost of debt, and cost of equity obtained through the Capital Asset Pricing Model (CAPM). Totalling all FCFF and terminal values projected to the present by using WACC as the discount rate will produce enterprise value (EV). Subtracting EV by debt and adding it to cash and cash equivalents will produce equity value. Dividing the equity value by the number of shares outstanding will produce the intrinsic value per share.

**Relative Valuation**

The intrinsic value obtained needs to be further validated using Relative Valuation (RV) using Price-Earnings Ratio (PER) and Price to Book Value (PBV) approaches. The valuation results are declared valid if the intrinsic values of PER and PBV are within the industry range (Fibrianto & Hendrawan, 2018). Industry range is the range between the smallest and largest PER and PBV in the industry referring to the Q4 2020 statistical data from the IDX.

**Growth Scenario**

Subsequently, EV was estimated through three scenarios, namely optimistic, moderate,

and pessimistic. The determiners of these scenarios included industrial growth, company growth, and the spread of the two. Industrial growth refers to GDP data because it is considered the most appropriate as a company's stable growth (Steiger, 2010). The industrial growth according to the cumulative average of GDP in the last 5 years was 0.34%. The company's growth is calculated from the growth of gross income, not net income, due to the consideration that the movement of gross income has a more relevant correlation with time (Damodaran, 2012). A pessimistic scenario refers to a condition in which the company experiences the lowest growth, where the growth is equivalent to whichever is smaller between industrial growth and company growth. A moderate scenario refers to a condition in which the company experiences normal growth, where the growth is equivalent to whichever is greater between industrial growth and company growth. An optimistic scenario refers to a condition in which the company experiences optimal growth, where the growth is equivalent to growth in the moderate scenario, complemented by the spread between industrial growth and company growth (Neaxie & Hendrawan, 2017). Terminal values were calculated with the assumption that the company's constant growth is equivalent to growth in the pessimistic scenario.

**Result**

**PT Indospring Tbk Share Valuation**

The financial behavior and average growth of PT Indospring Tbk (INDS) based on historical data from the company's financial statements for the 2016-2020 period as the basic assumption model that will be used for FCFF projections is presented in Table 1.

Table 1. Financial behavior of INDS based on historical data from 2016 to 2020 (IDR million)

	2016	2017	2018	2019	2020	Average
Revenue	253,953	381,516	362,865	310,143	261,315	Revenue growth
Growth	37.63%	50.23%	-4.89%	-14.53%	-15.74%	10.5%
						% of Revenues
OPEX	182,136	232,536	251,004	240,856	202,851	71.4%
Depreciation	99,163	81,672	92,405	-218,775	79,629	9,2%

	2016	2017	2018	2019	2020	Average
EBIT	-27,346	67,308	19,456	288,063	-21,164	
CAPEX	14,534	16,033	87,300	198,641	32,726	22.1%
Total Current Asset	981,694	1,044,178	1,134,664	959,368	1,001,967	
Cash and Equivalent	210,911	280,516	245,990	131,823	315,460	
Net Current liabilities	307,169	184,644	196,949	156,112	160,988	
Working Capital	463,614	579,018	691,725	671,434	525,519	
ΔWC	-29,285	115,403	112,708	-20,291	-145,915	-2.5%

Source: Financial Statements of PT Indospring Tbk (data processed)

Based on Table 1, the average annual growth of INDS revenue is 10.5%. The portion of OPEX to revenue is 71.4%, depreciation to revenue is 9.2%, CAPEX to revenue is 22.1%, and delta working capital to revenue is -2.5%.

The FCFE projection that is constructed based on the company's financial behavior will

be used to calculate the equity value. The results of the valuation for each scenario based on the equity value and INDS financial data in 2020 with the number of shares is 656,249,710, net income is IDR-21.84 Bio, book value of equity is IDR2.56 trillion, and WACC is 5.06% is presented in Table 2.

Table 2. INDS's valuation result

DCF FCFE						
Scenario	Intrinsic Value (IDR)	Market Price on 30 December 2020 (IDR)			Analysis	Deviation
Pessimist	764.05				Overvalued	-60.1%
Moderate	862.82	1915.00			Overvalued	-54.9%
Optimist	981.72				Overvalued	-48.7%
RV-PER						
Scenario	PER Company	PER Industry Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	-22.96				Undervalued	Valid
Moderate	-25.93	-190.00	-8.69	112.00	Undervalued	Valid
Optimist	-29.50				Undervalued	Valid
RV-PBV						
Scenario	PBV Company	PBV Industry Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	0.196				Undervalued	Valid
Moderate	0.221	0.16	1.10	3.07	Undervalued	Valid
Optimist	0.251				Undervalued	Valid

Based on Table 2, in DCF method, INDS's stocks were overvalued because the intrinsic values of INDS in all scenarios were below the market price on December 30, 2020 of IDR 1,915. The intrinsic value of INDS was IDR 764.05 in the pessimistic scenario with a deviation from the market price of -60.1%, while the intrinsic value of INDS in the moderate scenario was IDR 862.82 with a deviation

from the market price of -54.9%, and the intrinsic value of INDS in the optimistic scenario was IDR 981.72 with a deviation from the market price of -48.7%. As for RV PER method, INDS shares appeared to be undervalued because the intrinsic values of INDS PER in all scenarios were below the industry average of -8.69. The intrinsic value of PER INDS was -22.96 times in the pessimistic scenario, -25.93

times in the moderate scenario, and -29.50 times in the optimistic scenario. The intrinsic values of PER INDS in all scenarios were within the industrial range. In RV PBV method, INDS stocks were undervalued because the intrinsic values of INDS PBV in all scenarios were below the industrial average of 1.10. The intrinsic value of PBV INDS was 0.19 times in the pessimistic scenario, 0.22 times in the moderate scenario, and 0.25 times in the optimistic scenario.

The intrinsic values of PBV INDS across all scenarios were also within the industrial range.

#### PT Gajah Tunggal Tbk Share Valuation

The financial behavior and average growth of PT Gajah Tunggal Tbk (GJTL) based on historical data from the company's financial statements for the 2016-2020 period as the basic assumption model that will be used for FCFE projections is presented in Table 3.

Table 3. Financial behavior of GJTL based on historical data from 2016 to 2020 (IDR million)

	2016	2017	2018	2019	2020	Average
Revenue	3.195.293	2.464.119	2.453.836	2.796.942	2.673.993	Revenue growth
Growth	21.77%	-22.88%	-0.42%	13.98%	-4.40%	1.6%
						% of Revenues
OPEX	1.627.053	1.470.417	1.509.765	1.702.624	1,336,749	56.6%
Depreciation	689.159	658.801	2.973.216	545.232	714,597	43.1%
EBIT	879.081	334.901	-	549.086	622,647	
			2.029.145			
Total Capex	1.017.587	482.029	424.353	560.978	328,601	20.2%
Total Current Asset	7.517.152	7.168.378	8.673.407	8,097,861	7,624,956	
Cash and Equivalent	755.545	696.485	671.415	635,182	1,045,237	
Net Current liabilities	4.286.566	3.829.115	5.080.270	4,719,649	3,882,918	
Working Capital	2.475.041	2.642.778	2.921.722	2,743,030	2,696,801	
ΔWC	171.073	167.737	278.944	-178,692	-46,229	3.1%

Source: Financial Statements of PT Gajah Tunggal Tbk (data processed)

Based on Table 3, the average annual growth of GJTL revenue is 1.6%. The portion of OPEX to revenue is 56.6%, depreciation to revenue is 43.1%, CAPEX to revenue is 20.2%, and delta working capital to revenue is 3.1%.

The FCFE projection that is constructed based on the company's financial behavior will

be used to calculate the equity value. The results of the valuation for each scenario based on the equity value and GJTL financial data in 2020 with the number of shares is 3,484,408,600, net income is IDR-122.4 Bio, book value of equity is IDR6.85 trillion, and WACC is 8.71% is presented in Table 4.

Table 4. GJTL's valuation result

Scenario	Intrinsic Value (IDR)	DCF FCFE		Analysis	Deviation
		Market Price on 30 December 2020 (IDR)			
Pessimist	708.38	655.00		Undervalued	8.1%
Moderate	710.48			Undervalued	8.5%
Optimist	712.58			Undervalued	8.8%

RV-PER						
Scenario	PER Company	PER Industry Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	-20.16				Undervalued	Valid
Moderate	-20.22	-190.00	-8.69	112.00	Undervalued	Valid
Optimist	-20.28				Undervalued	Valid

RV-PBV						
Scenario	PBV Company	PBV Industry Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	0.360				Undervalued	Valid
Moderate	0.361	0.16	1.10	3.07	Undervalued	Valid
Optimist	0.362				Undervalued	Valid

Based on Table 4, in DCF method, GJTL's stocks were considered undervalued because the intrinsic values of GJTL in all scenarios was above the market price on December 30, 2020 of IDR 655. The intrinsic value of GJTL was IDR 708.38 in the pessimistic scenario with a deviation from the market price of 8.1%, the intrinsic value in the moderate scenario was IDR 710.48 with a deviation from the market price of 8.5%, and the intrinsic value in the optimistic scenario was IDR 712.58 with a deviation from the market price of 8.8%. As for RV PER method, GJTL's stocks were considered undervalued because the intrinsic values of GJTL PER in all scenarios were below the industrial average of -8.69. The intrinsic value of PER GJTL was -20.16 times in the pessimistic scenario, -20.22 times in the moderate scenario, and -20.28 in the optimistic scenario. The intrinsic

values of PER GJTL in all scenarios were within the industrial range. Furthermore, in RV PBV method, GJTL shares were considered undervalued because the intrinsic values of GJTL's PBV in all scenarios were below the industry average of 1.10. The intrinsic value of GJTL's PBV was 0.360 times in the pessimistic scenario, 0.361 times in the moderate scenario, and 0.362 times in the optimistic scenario. Similarly, the intrinsic values of GJTL's PBV in all scenarios were also within the industry range.

#### ***PT Astra International Tbk Share Valuation***

The financial behavior and average growth of PT Astra International Tbk (ASII) based on historical data from the company's financial statements for the 2016-2020 period as the basic assumption model that will be used for FCFF projections is presented in Table 5.

*Table 5. Financial behavior of ASII based on historical data from 2016 to 2020 (IDR billion)*

	2016	2017	2018	2019	2020	Average
Revenue	36,432	42,368	50,769	50,239	38,558	Revenue growth
Growth	-0.76%	16.29%	19.83%	-1.04%	-23.25%	2.2%
						% of Revenues
OPEX	20,492	22,961	25,108	24,952	25,688	55.2%
Depreciation	3,502	5,136	8,167	6,654	10,007	15.4%
EBIT	12,438	14,271	17,494	18,633	2,863	
Total Capex	7,102	9,894	13,644	12,198	4,726	21.3%
Total Current Asset	110,403	121,293	131,180	129,058	132,308	
Cash and Equivalent	29,357	31,574	25,193	24,330	47,553	
Net Current liabilities	62,023	71,459	90,526	73,637	55,173	
Working Capital	19,023	18,260	15,461	31,091	29,582	
ΔWC	-7,021	-763	-2,799	15,630	-1,509	0.1%

*Source: Financial Statements of PT Astra International Tbk (data processed)*

Based on Table 5, the ASII's average annual revenue growth is 2.2%. The portion of OPEX to revenue is 55.2%, depreciation to revenue is 15.4%, CAPEX to revenue is 21.3%, and delta working capital to revenue is -0.1%.

The FCFF projection that is constructed based on the company's financial behavior will

be used to calculate the equity value. The results of the valuation for each scenario based on the equity value and ASII financial data in 2020 with the number of shares is 40,484,000,000, net income is IDR-545 Bio, book value of equity is IDR195.45 trillion, and WACC is 4.69% is presented in Table 6.

Table 6. ASII's valuation results

DCF FCFF						
Scenario	Intrinsic Value (IDR)	Market Price on 30 December 2020 (IDR)			Analysis	Deviation
Pessimist	2943.00				Overvalued	-50.4%
Moderate	3028.64	5929.70			Overvalued	-48.9%
Optimist	3115.88				Overvalued	-47.5%
RV-PER						
Scenario	PER Company	PER Industry Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	-218.61				Undervalued	Invalid
Moderate	-224.98	-190.00	-8.69	112.00	Undervalued	Invalid
Optimist	-231.46				Undervalued	Invalid
RV-PBV						
Scenario	PBV Company	PBV Industry Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	0.61				Undervalued	Valid
Moderate	0.63	0.16	1.10	3.07	Undervalued	Valid
Optimist	0.65				Undervalued	Valid

Based on Table 6, by using of DCF method, ASII's stocks were overvalued because ASII's intrinsic values in all scenarios were below the market price on December 30, 2020 of IDR5,929.7. ASII's intrinsic value was IDR2,943.00 in the pessimistic scenario with a deviation from the market price of -50.4%, IDR3,028.64 in the moderate scenario with a deviation from the market price of -48.9%, and IDR3,115.88 in the optimistic scenario with a deviation from the market price of -47.5%. In the RV PBV method, ASII's stocks were considered undervalued because the intrinsic values of ASII's PBV in all scenarios were below the industrial average of 1.10. The intrinsic value of ASII's PBV was 0.61 times in the pessimistic scenario, 0.63 times in the moderate scenario and 0.65 times in the optimistic scenario. The intrinsic values of ASII's PBV in all scenarios

were within the industrial range. In the RV PER method, ASII's stocks were considered undervalued because the intrinsic values of ASII's PER in all scenarios were below the industrial average of -8.69. The intrinsic value of PER ASII was -218.61 times in the pessimistic scenario, -224.98 times in the moderate scenario, and -231.46 times in the optimistic scenario. The intrinsic values of PER ASII in all scenarios were below the minimum industrial range.

#### **PT Selamat Sempurna Tbk Share Valuation**

The financial behavior and average growth of PT Selamat Sempurna Tbk (SMSM) based on historical data from the company's financial statements for the 2016-2020 period as the basic assumption model that will be used for FCFF projections is presented in Table 7.

Table 7. Financial behavior of SMSM based on historical data from 2016 to 2020 (IDR million)

	2016	2017	2018	2019	2020	Average
Revenue	934,141	1,006,915	1,193,245	1,191,640	1,037,285	Revenue growth
Growth	7.43%	7.79%	18.51%	-0.13%	-12.95%	4.1%
						% of Revenues
OPEX	314,210	331,762	395,383	425,903	370,369	34.2%
Depreciation	92,334	112,209	111,809	123,809	98,318	10.1%
EBIT	527,597	562,944	686,053	641,928	568,598	
Total Capex	71,448	65,605	143,159	96,259	60,774	8.0%
Total Current Asset	1,454,387	1,570,110	1,853,782	2,138,324	2,294,976	
Cash and Equivalent	96,510	71,000	66,860	244,032	692,815	
Net Current liabilities	498,520	408,095	457,283	441,698	371,278	
Working Capital	859,357	1,091,015	1,329,639	1,452,594	1,230,883	
ΔWC	44,114	231,658	238,624	122,955	-221,711	7.3%

Source: Financial Statements of PT Selamat Sempurna Tbk (data processed)

Based on Table 7, the average annual growth of SMSM revenue is 4.1%. The portion of OPEX to revenue is 34.2%, depreciation to revenue is 10.1%, CAPEX to revenue is 8.0%, and delta working capital to revenue is 7.3%.

The FCFF projection that is constructed based on the company's financial behavior will

be used to calculate the equity value. The results of the valuation for each scenario based on the equity value and SMSM financial data in 2020 with the number of shares is 5,758,675,440, net income is IDR 412.53 Bio, book value of equity is IDR 2.65 trillion, and WACC is 4.85% is presented in Table 8.

Table 8. SMSM valuation results

DCF FCFF						
Scenario	Intrinsic Value (IDR)	Market Price on 30 December 2020 (IDR)			Analysis	Deviation
Pessimist	1551.38				Undervalued	14.6%
Moderate	1737.27	1354.03			Undervalued	28.3%
Optimist	1940.83				Undervalued	43.3%
RV-PER						
Scenario	PER Company	PER Industry Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	21.66				Overvalued	Valid
Moderate	24.25	-190.00	-8.69	112.00	Overvalued	Valid
Optimist	27.09				Overvalued	Valid
RV-PBV						
Scenario	PBV Company	PBV Industry Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	3.373				Overvalued	Invalid
Moderate	3.777	0.16	1.10	3.07	Overvalued	Invalid
Optimist	4.220				Overvalued	Invalid

Based on Table 8, employing DCF method, SMSM's stocks were considered undervalued

because SMSM's intrinsic values in all scenarios were above the market price on December 30,



2020 of IDR1,354.03. The intrinsic value of SMSM was IDR1,543.22 in the pessimistic scenario with a deviation from the market price of 14.6%, IDR1,737.27 in the moderate scenario with a deviation from the market price of 28.3%, and IDR1,940.38 in the optimistic scenario with a deviation from the market price of 43.3%. By using RV PER method, SMSM's shares were overvalued because the intrinsic values of SMSM's PER in all scenarios were above the industry average of -8.69. The intrinsic value of PER SMSM was 21.66 times in the pessimistic scenario, 24.25 times in the moderate scenario, and 27.09 in the optimistic scenario. The intrinsic values of PER SMSM in all scenarios were within the industrial range. As in the RV PBV method, SMSM's stocks were overvalued because the intrinsic values of SMSM's PBV in all scenarios were above the industrial average of 1.10. The intrinsic value of SMSM's PBV was 3.37 times in the pessimistic scenario, 3.77 times in the moderate scenario, and 4.22 times in the optimistic scenario. The intrinsic values of SMSM's PBV in all scenarios were above the maximum industrial range.

## Discussion

DCF analysis results upon every stock will return different intrinsic values for each scenario. Investors are advised to choose the yield with the lowest deviation between intrinsic value and market price. This is based on the opinion that DCF analysis is a valuation technique with intrinsic value results that are closest to market prices (Ivanovski et al., 2014). The following is a discussion of each analysis result.

### 1. PT. Indo Kordsa Tbk (INDS)

The lowest deviation between INDS's intrinsic value and its market price is in the optimistic scenario. According to this scenario, INDS stock is overvalued with an intrinsic value of IDR981.72 and a deviation of -48.7%. This conclusion is confirmed to be valid since the intrinsic values of the PER and PBV for INDS throughout all scenarios were within the industry range, hence the investment decision that can be recommended for INDS is to sell the stocks.

### 2. PT. Gajah Tunggal Tbk (GJTL)

The lowest deviation between GJTL's intrinsic value and its market price is in the pessimist scenario. According to this scenario, GJTL stock is undervalued with an intrinsic value of IDR708.38 and a deviation of 8.1%. This conclusion is confirmed to be valid since the intrinsic values of the PER and PBV for GJTL throughout all scenarios were within the industry range, hence the investment decision that can be recommended for GJTL is to sell the stocks.

### 3. PT. Astra International Tbk (ASII)

The lowest deviation between ASII's intrinsic value and its market price is in the optimist scenario. According to this scenario, ASII stock is overvalued with an intrinsic value of IDR3115.88 and a deviation of -47.5%. However, this result is not entirely valid since although the intrinsic values of the PBV throughout all scenarios were within the industry range, the intrinsic value of the PER throughout all scenarios has deviated from the lower bound of the industry range. Analysis upon the company's fundamentals, as presented in Table 5, show that the deviation is most likely caused by the decline of EBIT by 85% year-on-year from IDR18.6 trillion in 2020, as an implication from the deterioration in revenue and an increase of OPEX in 2020. The simulation by replacing ASII's revenue in 2020 with its average revenue from the past 5 years shows that ASII's intrinsic value is back within the industry range with consistent analysis results across all scenarios. This condition indicates that the COVID-19 pandemic crisis has significantly affected the company's performance.

In order to obtain proper business decisions, the invalid results need to be corrected locally (only upon deviant companies). Although deviations from industry range, in general, can also be affected by inaccurate growth analysis assumptions, changes in assumptions should not be made as it will change the global valuation results, where overall valid valuation results have been more dominant. Correction can be done by applying a margin of safety (MoS). MoS should be applied by investors if the DCF analysis gives dubious results, or in

this case, there are invalid results (Damodaran, 2012). Considering there are no standard provisions regarding the appropriate measure of MoS, the MoS value in this study will be derived

from the initial DCF analysis result, specifically from the intrinsic PER deviation. Based on the data in Table 3, the intrinsic PER deviation of each scenario can be presented in the Figure 2.

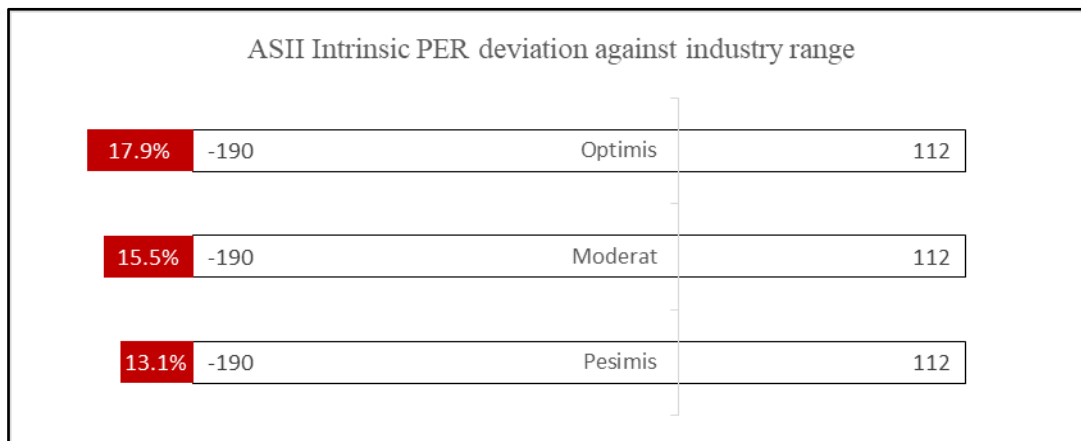


Figure 2. ASII's Intrinsic PER deviation against industry range

MoS will be derived from these deviations where the selection of deviations will depend mostly on the risk aversion level of investors. The higher the risk aversion level, the higher the MoS value will be. The researcher in this case will resolve the largest deviation (17.9%)

as MoS considering the researcher's objective is to correct the preceding intrinsic value in order to produce a valid PER value across all scenarios. The intrinsic value of ASII after being corrected by MoS can be illustrated by a graph in Figure 3.

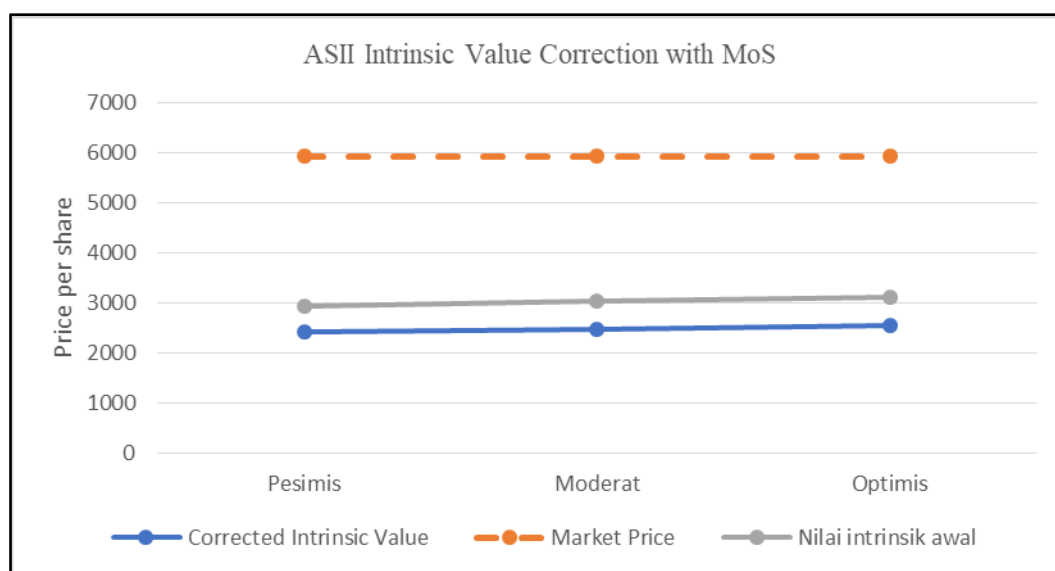


Figure 3. ASII's Intrinsic Value Correction with MoS = 17.9%

It can be seen from the Figure 3 that the new intrinsic value moves away from the market price, which confirms the overvalued result

in the previous analysis. The overall valuation results after correction are presented in Table 9.

Table 9. ASII's Valuation Results post Correction

DCF FCFF						
Scenario	Intrinsic Value (IDR)	Market Price December 30, 2020 (IDR)			Analysis	Deviation
Pessimist	2415,88				<i>Overvalued</i>	-59,3%
Moderate	2486,19	5929,7			<i>Overvalued</i>	-58,1%
Optimist	2557,80				<i>Overvalued</i>	-56,9%
RV-PER						
Scenario	Intrinsic PER	Industry PER Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	-179,46				<i>Undervalued</i>	Valid
Moderate	-184,68	-190	-8,69	112	<i>Undervalued</i>	Valid
Optimist	-190,00				<i>Undervalued</i>	Valid
RV-PBV						
Scenario	Intrinsic PBV	Industry PBV Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	0,50				<i>Undervalued</i>	Valid
Moderate	0,51	0,16	1,10	3,07	<i>Undervalued</i>	Valid
Optimist	0,53				<i>Undervalued</i>	Valid

Following the correction, the lowest deviation between ASII's intrinsic value and its market price is in the optimist scenario. According to this scenario, ASII stock is overvalued with an intrinsic value of IDR2557.80 and a deviation of -56.9%. This conclusion is confirmed to be valid since the intrinsic value of ASII's PER and PBV in all scenarios is within the industry range, therefore the investment decision that can be recommended is to sell the stocks.

#### 4. PT. Selamat Sempurna Tbk (SMSM)

The lowest deviation between SMSM's intrinsic value and its market price is in the pessimist scenario. According to this scenario, SMSM stock is undervalued with an intrinsic value of IDR1551.38 and a deviation of 14.6%. However, this result is not entirely valid since although the intrinsic values of the PER throughout all scenarios were within the industry range, the intrinsic value of the PBV throughout all scenarios has deviated from the upper bound of the industry range. Analysis

upon the company's fundamentals, as presented in Table 7, stemmed from a significant increase in cash and cash equivalents of 184% year-on-year from IDR244 billion in 2020. Through a simple simulation by replacing SMSM's cash and cash equivalents in 2020 with their average for the past 5 years showed that PBV SMSM's intrinsic value was within the industrial range with analysis results being consistently undervalued in all scenarios. This condition indicates that the COVID-19 pandemic crisis has significantly affected the company's performance.

In order to obtain proper business decisions, the invalid results need to be corrected using MoS as well. Based on the data in Table 4, the intrinsic PBV deviation of each scenario can be presented in the Figure 4.

Using the largest PBV deviation as MoS (27.3%), the intrinsic value of SMSM after correction can be illustrated by a graph in Figure 5.

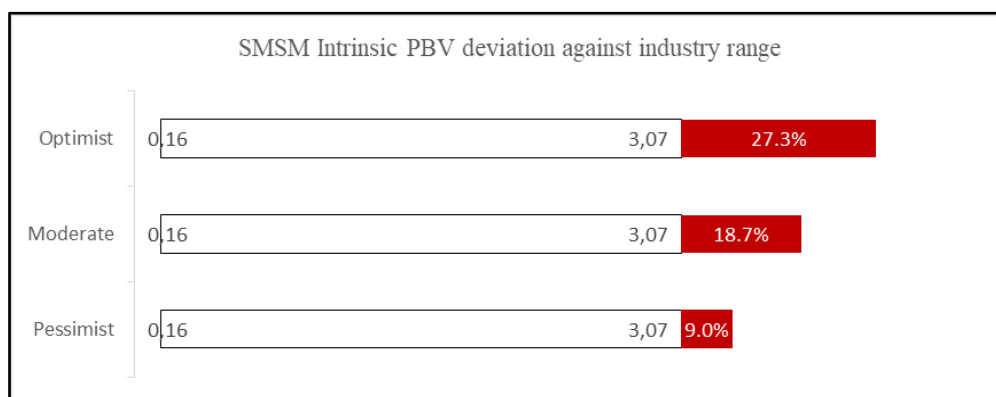


Figure 4. SMSM's Intrinsic PBV deviation against industry range

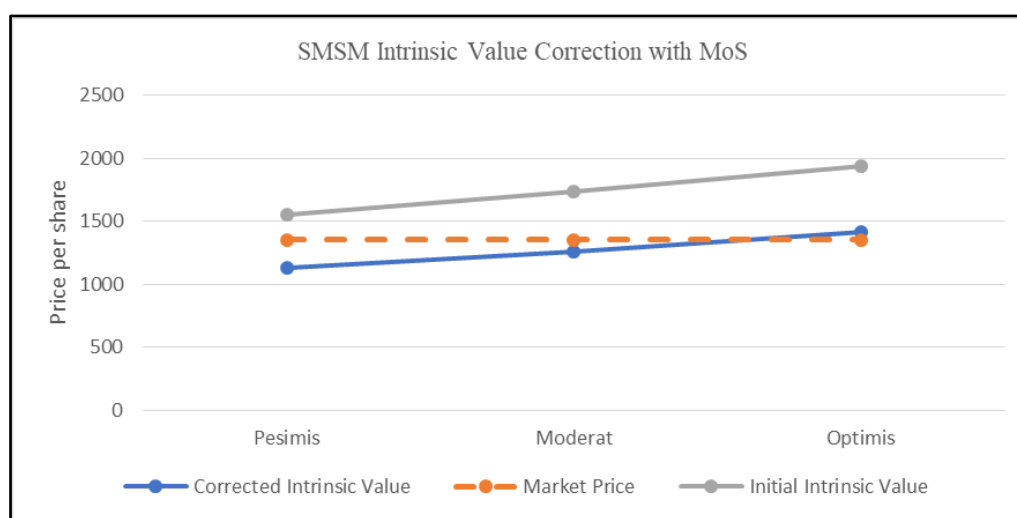


Figure 5. SMSM's Intrinsic Value Correction with MoS = 27.3%

It can be seen from Figure 5 that the new intrinsic value moves to a part of the market price limit, inflicting changes in the analysis results

for some scenarios. The results of the overall valuation after correction are presented in Table 10.

Table 10. SMSM's Valuation Results post Correction

DCF FCFF						
Scenario	Intrinsic Value (IDR)	Market Price December 30, 2020 (IDR)			Analysis	Deviation
Pessimist	1128,62				<i>Overvalued</i>	-16,6%
Moderate	1263,86	1354,03			<i>Overvalued</i>	-6,7%
Optimist	1411,94				<i>Undervalued</i>	4,3%
RV-PBV						
Scenario	Intrinsic PBV	Industry PBV Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	2,454				<i>Overvalued</i>	Valid
Moderate	2,748	0,16	1,10	3,07	<i>Overvalued</i>	Valid
Optimist	3,070				<i>Overvalued</i>	Valid

RV-PER						
Scenario	Intrinsic PER	Industry PER Q4-2020			Analysis	Condition
		The Lowest	Average	The Highest		
Pessimist	15,75				<i>Overvalued</i>	Valid
Moderate	17,64	-190	-8,69	112	<i>Overvalued</i>	Valid
Optimist	19,71				<i>Overvalued</i>	Valid

Following the correction, the lowest deviation between SMSM's intrinsic value and its market price is in the optimist scenario. According to this scenario, SMSM stock is undervalued with an intrinsic value of IDR1411.94 and a deviation of 4.3%. This conclusion is confirmed to be valid since the intrinsic value of ASII's PER and PBV in all scenarios is within the industry range, therefore the investment decision that can be recommended is to buy the stocks.

## Conclusion

The application of both the DCF method and relative valuation can complement each other for more comprehensive investment decision making. Of the four companies being the objects of this study, GJTL and INDS provided completely valid DCF analysis results, in both PER and PBV. The results concerning the SMSM analysis were not completely valid due to the intrinsic value of the PBV was above the market range upper bound. The results concerning the ASII analysis were not completely valid due to the intrinsic value of the PER was below the market range lower bound. The fact that several results were not completely valid indicated that there were abnormalities in market conditions and behaviors in 2020. This is most likely an implication of the Covid-19 pandemic that had been going on since March 2020.

Valuation results that are not completely valid raise doubts for investors in making business decisions. Therefore, it is necessary to make corrections upon the invalid results. Correction can be done globally by changing assumptions or locally using MoS. In valuations involving multiple companies, changes in assumptions should be made only if the overall valuation results give a more dominant invalid result. On the other hand, if the valid results are more dominant, local correction using MoS

would be wiser. In the valuation using DCF analysis, MoS can be derived from the deviation between the analysis results and the industry range.

This study has several limitations. The results of this study are only valid during 2021, considering the many dynamic factors that can affect industry and market conditions. Therefore, it is necessary to re-examine in the following year. This study only involved 4 of the 13 companies in the automotive and components sub-sector. Further studies can be conducted in a different industry or by involving more companies.

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