

Should Telkom Do IPO for Telkomsel?

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Keywords: DDM, FCFF, IPO, Relative Valuation.

Abstract: The objective of this research is to estimate the fair value of Telkomsel share price in the initial public offering plan using FCFF and DDM approach with the verification of the result by using Relative Valuation method with the PBV approach and Price to Earnings Ratio. This research used three scenarios, namely the pessimistic, the moderate, and the optimistic, with historical financial data from 2012-2017 used as the baseline for projections for 2018 – 2022 conditions. Outcomes from this research show that by using the DCF-FCFF method in every one of the three scenarios, Telkomsel's value is in the range of 80% to 93% of Telkom's (TLKM.ID) Market Price. Comparison with DDM valuation shows the FCFF valuation range extend in an acceptable range - on the other side, relative valuation method used is the PER and PBV approach, where the calculation for Telkomsel PBV is above Telco Industry market range and Telkomsel PER value is still within market range.

1 INTRODUCTION

Liberalization of the Indonesian telecommunication's industry began in 2000, with the enactment of Law No. 36 of 1999 concerning Telecommunications. Since then the Indonesian telecommunications industry has become open to the private sector and foreigners. Telkomsel, which is a subsidiary of Telkom, is a State-Owned Enterprise with an ownership structure of 65%, at that time the only provider of cellular telecommunications services owned by the government, had to compete freely with new cellular telecommunications operators entering the Indonesian cellular telecommunications industry, and must continue to innovate and improve efficiency so that they can compete with other operators or providers of cellular telecommunications services.

Previously the Indonesian cellular telecommunications market was dominated by three companies that had operating licenses from the government, namely Telkomsel, Indosat, and XL. However, now, the operator numbers have grown to become five cellular operators and three Fix Wireless Access (FWA) mobile operators, with the number of mobile cellular subscribers in Indonesia being 439 million customers (GSMA Global Report 2018) which currently exceeds the population of Indonesia.

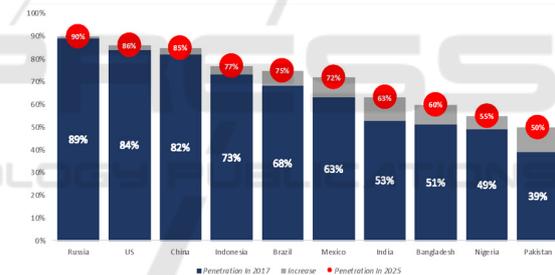


Figure 1: Countries with the unique penetration mobile subs largest in the world.

Cellular phone customers in Indonesia have a penetration rate above the population, GSMA in the Global Report 2018 issue the results of the unique calculation of subscribers in the country to be 73%. The penetration of Indonesia's cellular customer has the fourth position in the penetration of unique cellular customers throughout the world, other countries that have customer penetration above Indonesia are Russia, the United States, and China. Regarding unique customers growth, Indonesia still has room to grow compared to the three countries, where Indonesia still has 4% of space to grow while Russia, the United States, and China only have 1%, 2%, and 3%. The numbers above can also be an indicator that the telecommunications business still has a strong foundation. Regarding customer productivity, Indonesian cellular customers in the

past three years still have a reasonably positive customer productivity level compared to the average growth rate of customers worldwide. Which is presented in Figure 2, where % ARPU mobile subs growth from 2009 still experiencing negative growth, although in the past three years it has been able to withstand or slow down the rate of decline in its ARPU growth. Despite ARPU in Indonesia has declined, its growth rate remains above the growth rates of other operators in the World.

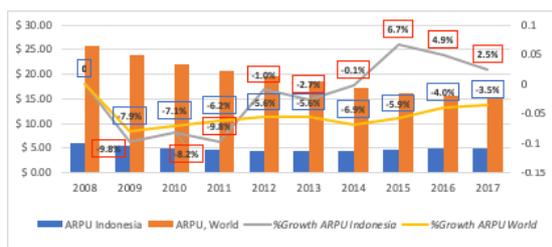


Figure 2: APRU Indonesia and World Growth 2008-2017.



Figure 3: Indonesia's Cellular customers and APRU 2008-2017.

Average Revenue Per User (ARPU) is an expression of income produced by customers or devices per unit of time in the telecommunications network. Usually, telecommunications sector use ARPU as a driver and to track the amount of revenue generated per user and also to assist in estimating future service revenues generated from the customer base. The graphs of growth in customer numbers and Indonesian ARPU directly show that there is still potential for growth of cellular business in Indonesia. This is evidently true if we go deeper into the competitive conditions of the telecommunications industry in Indonesia where the market penetration of the cellular industry is growing from 58.3% from 2008 to 10 years later to 165.7%. Telkomsel had a high level of superiority and was able to survive in the competitive Indonesia's cellular market, owing market share in the range of 42.1% to 49.2%, where this is entirely different from other operators in the competition, e.g., initially (2009) Indosat ranked second only own 26.3% market share. The following six years showed XL struggled hard to overtake Indosat's position - XL, which previously in 2009 was

third (20.8%), continuously becoming the second place in 2009-2013. The last three years (2015-2017) the second position was returned to Indosat, and 3 (three) (Hutchinson) passed XL to be in third place. Telkomsel's superiority with an average market share gap of 20% above other cellular operators is quite an exciting phenomenon to deepen, when the condition of the mobile cellular industry in the world is not in a very good growth condition, whereas Indonesia still has momentum for stable growth.

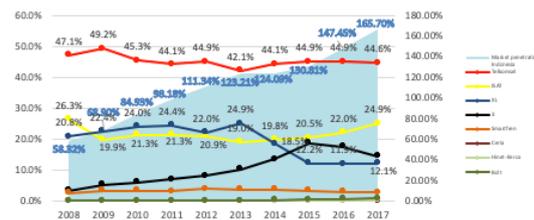


Figure 4: Indonesia Cellular market penetration vs. operator market share.

Looking at the condition of the comparison of the growth of the world and domestic cellular industries as described in the two figures above, if seen more deeply in Figure 4, over time, Telkomsel has a constant increase in the number of customers, and this represents its superiority in Indonesia's cellular market share.

Table 1: Performance Revenue, Net Income Telkomsel and EBITDA 2008-2017.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total Revenue	39.82	44.44	45.57	48.73	54.53	60.03	66.25	76.06	86.72	93.20
% Growth Revenue		11.6%	2.5%	6.9%	11.9%	10.1%	10.4%	14.8%	14.0%	7.5%
EBITDA	24.15	27.33	26.60	27.55	30.56	33.63	37.26	42.60	49.78	53.59
Net Income	11.42	13.16	12.37	12.82	15.72	17.36	19.40	22.37	28.20	30.38
% Growth Revenue		15.2%	-6.0%	3.7%	22.5%	10.5%	11.8%	15.3%	26.1%	7.7%
EBITDA Margin	60.7%	61.5%	58.4%	56.5%	56.0%	56.0%	56.2%	56.0%	57.4%	57.5%

Based on the above conditions, which are shown in Figure 1.5 and Table 1, the authors see it is possible for Telkomsel to get higher enterprise value when Telkomsel plan for an Initial Public Offering (IPO) in the years to come, while also improving alternative sources of funding and operational funding. The initial price of Telkomsel's IPO shares will affect the condition of secondary shares which will change based on the law of supply and demand. So if Telkomsel conducts an IPO, the condition of Telkomsel as the market leader will have a significant influence in gaining the trust of investors and shareholders. Wahyudi & Surya (2013) asserted in their 2012 research results that IPO benefits for companies in the stock market with the aim of carved-out, can significantly have higher incomes than the industry average during the first three years after the

IPO, and parent company also have a higher ROA in the first year after releasing share ownership in their subsidiary. With both the value of the shares of the subsidiary and the parent company increasing, the overall value of the company will rise, and shareholder value will increase.

This Telkomsel valuation will produce intrinsic value information which is then compared to the bid price to determine the position of purchase or sale of initial shares at the time of the IPO, one of which is an investment guide, so investors need to carry out fundamental analysis using financial data or valuing intrinsic value of company shares.

2 LITERATURE REVIEW

2.1 Corporate Value Theory

Maximizing company value is one of the essential things for the company, not only for the shareholders but also for the other stakeholders. Company value usually acts as an indicator of the performance of the company in the long term, and it also can be functioned as indicative measurement on company's health status, for example, companies that maximize their value, will have more value in creating jobs, treating their employees, and giving their customers more satisfaction.

The value of a company that has gone public is reflected in the market price of a company's stock, while the selling price can measure the value of a company that has not gone public if the company not only reflects the value of the company's assets but also covers the level of business risk, company prospects, management, environment effort, and other factors. With this condition, there are several ways to determine the value of a company, because the value of this company is one of the determining factors for investors to invest their capital. It's the assessment can be categorized into 3 (three) methods, namely:

1. The Economic Assessment Method.
The method comes from the idea that an asset can be assessed from how the asset produces economic value or benefits for the company in the future, one approach that includes the Discounted Cash Flow (DCF) and Economic Value Added (EVA)
2. Relative or Market Assessment Method.
Which departs from the value of an asset depends on the assessment of other components that make up the asset, by comparing with similar assets or

similar transactions, for example, Price To Equity, Price to Earning and EV / EBIT

3. Asset-based Method.
This method emphasizes the value of assets in determining the fair value of a company, particularly intangible assets, the commonly used approach is the Liquidation Model.

2.2 Stock Valuation

Stock valuation is a process used to determine the fair value of a stock. First, fundamental analysis is an analysis that considers multiple good factors concerning company performance, analysis of business competition, industry analysis, and economic analysis both macro and micro. The second analysis is technical analysis. Which is a technique that analyzes fluctuations in stock prices in a certain period. The purpose of this analysis is to find out whether a stock is in an overbought or oversold condition.

Damodaran (2012) says that fundamental analysis is appropriate for valuation of stock prices because fundamental analysis relates indicators related to the characteristics and financial condition of the company, both from the condition cash flow, risk profile and even growth potential, due to the varying focus areas of investors, where there are more investors looking at the quality of assets, the composition of capital and equity and even the future potential of the company. Some approaches from the stock valuation method according to Damodaran (2012), can be categorized as follows: "There are three approaches to valuation. The first, discounted cash flow valuation, relates the value of assets to the present value of the expected future cash flows on that asset. The second, relative valuation, estimates the value of assets relative to a common variable like earnings, cash flows, book value, or sales. The third, contingent claim valuation, uses option pricing models to measure the characteristics of these assets." The three approaches described as follows:

1. Discounted Cash Flow (DCF).
Discounted Cash Flow is a valuation method for determining the present value of an asset by discounting cash flow in the future, where assets are discounted based on the level of risk associated with cash flow, whereas the discounted cash flow method is a stock valuation method based on the concept of the time value of money. The Discounted Cash Flow method has three types of calculation approaches that can be used according to individual needs, namely Dividend

Discount Models, Free Cash Flow to Firm and Free Cash Flow to Equity stated in Neaxie & Hendrawan (2017).

2. **Relative Valuation.**
Relative valuation is one of the most commonly used asset valuation methods by comparing the same company. According to Damodaran (2012), relative valuation is a company assessment carried out by looking at how the market price of similar assets. Investors often decide whether a stock is cheap or expensive by comparing prices with similar stocks (usually within the peer group).
3. **Contingent Claim Valuation.**
Contingent claim valuation is the method of valuation of assets rated if it is in a certain condition, that is if the value of the underlying asset exceeds the predetermined value for the call option or less than the predetermined value for the put option. At present, there has been much development of this model option, and the pricing model option has been used to assess all assets that have the features mentioned above.

2.2.1 Discounted Cash Flow

Discounted Cash Flow approach can be described as follows:

- a. **Dividend Discount Models.**
DDM is a calculation model with discount dividends which is then used to calculate the intrinsic value of shares by discounting future dividend flows to their present value. It can be said that the value of a company (its share price) is the accumulation of all money distributed to shareholders in the form of dividends as long as the company stands. This is then discounted at a certain discount rate.
- b. **Free Cash Flow to Firm.**
Neaxie & Hendrawan (2017) argues that FCFF calculates the value of companies without debt, where operating costs have been excluded from tax and discounted using capital costs (WACC). FCFF can assess the amount of accounting cash flow after the company conducts operations and investment activities.
- c. **Free Cash Flow to Equity.**
FCFE is a value calculation model based on the remainder of the cash flow after payment of interest and principal loans, used for capital expenditure both for current operations and for future growth. FCFE which will be calculated

must be a value of cash flow remaining after calculating the value of reinvestment and additional working capital needed by the company to create future growth and repayment of debt installments.

Summarized by Neaxie & Hendrawan (2017) suggesting the proper use of FCFF and FCFE approaches, as will be presented in Table 2 below:

Table 2: FCFF Differences with FCFE.

FCFF	FCFE
1. FCFF used to calculate companies that have not to go public. 2. For companies listed public, according to the shareholder who is less interested in a stable dividend. 3. The valuation results are intended for large investors or shareholders majority as funders. 4. FCFF according to count companies with debt levels or high capital expenditure, as an example in company's high tech and telecommunications.	1. The FCFE approach is not recommended use for calculating values in companies high tech. 2. FCFE is right for calculating the cash flow for minority shareholders, where they focus on a stable flow of dividends. 3. FCFE is used to calculate the value of a company with the purpose of acquisition (taken over). 4. FCFE is suitable for calculating the value of a company with a possible level of debt.

2.2.2 Free Cash Flow to Firm

FCFF is the amount of cash flow available to all investors in a company, including common stockholders, bondholders, or preferred-stockholders, it also can be calculating company value without debt, where operating costs incurred from taxes and discounted using capital costs (WACC), calculated using the formula:

$$\begin{aligned}
 \text{FCFF} = & (\text{EBIT} \times (1 - \text{Tax})) \\
 & + \text{Depreciation} \\
 & - \text{Capex} \\
 & - \Delta\text{NWC}
 \end{aligned} \tag{1}$$

And then the value of the company can be calculated by:

$$\text{Value of Firm} = \sum_{n=1}^t \frac{\text{FCFF}_t}{(1 + \text{WACC})^t} \tag{2}$$

Whereas if there is some expected rate of return, the researcher uses FCFE Two-Stage Model:

$$\text{Value of the firm} = \sum_{t=1}^{t=n} \frac{\text{FCFF}_t}{(1 + \text{WACC})^t} + \frac{[\text{FCFF}_{n+1}/(\text{WACC} - g_n)]}{(1 + \text{WACC})^n} \quad (3)$$

2.2.3 Cost of Capital

The cost of capital is a cost that reflects all funding sources used by the company, including from funding sources that come from debt and equity, usually this capital cost in general termed as weighted average cost of capital (WACC), which can be defined as the average cost after tax of each source of capital used by companies to fund a project, where the weight of each post reflects the proportion of the total funding from each source. WACC is one of the main factors in calculating DCF valuations, where there is a change in the proportion of capital costs that can significantly influence the measured value.

WACC can be calculated by the following formula:

$$\begin{aligned} \text{WACC} &= \left[\text{cost of equity} \times \frac{\text{equity}}{\text{debt} + \text{equity}} \right] \\ &+ \left[\text{cost of debt} \times \frac{\text{debt}}{\text{debt} + \text{equity}} \right] \times (1 - \text{tax}) \end{aligned} \quad (4)$$

2.2.4 Dividend Discount Model

DDM is the calculation model with discount dividends which is then used to calculate the intrinsic value of shares by discounting future dividend flows to their present value. The Dividend Discount Model can be formulated as follows:

$$\text{Value Per Share of Stock} = \sum_{t=1}^{t=\infty} \frac{E(\text{DPS}_t)}{(1 + k_e)^t} \quad (5)$$

The following formula use for the variable dividend payout ratio, where the model is based on two stages of growth.

$$\begin{aligned} P_0 &= \sum_{t=1}^{t=\infty} \frac{E(\text{DPS}_t)}{(1+k_{e,hg})^t} + \frac{P_n}{(1+k_{e,hg})^n} \quad \text{where} \\ P_n &= \frac{\text{DPS}_{n+1}}{(k_{e,st} - g_n)} \end{aligned} \quad (6)$$

2.2.5 Relative Valuation

According to Damodaran (2012), relative valuation is a company carried out by looking at how the market price of similar assets. Investors often decide whether a stock is cheap or expensive by comparing prices with similar stocks (usually within the peer group).

a. The Price Earnings Ratio.

The estimating the intrinsic value of shares in company analysis can be done by utilizing two essential information components, namely earnings per share and earnings multiplier. The formula for determining the intrinsic value of shares through the approach Price Earnings Ratio (PER) is as follows:

$$\text{PER} = \frac{P_0}{\text{EPS}} \quad (7)$$

If the intrinsic value of a stock has been estimated, the next step is to compare the intrinsic value of the stock with its market price.

b. Approach Price per Book Value (PBV).

The relationship between stock market prices and book value per share can be used as an approach to determine a share value. Theoretically, the market value of stock must reflect the value of the book. PBV can be calculated using the following formula:

$$P / BV = \frac{P_0}{BV_0} = \frac{\text{ROE} \times \text{Payout ratio} \times (1 + g_n)}{k_e - g_n} \quad (8)$$

2.2.6 Previous Research

Based on previous research on related subjects and methods, we can see some previous studies that deal with the valuation of company values and valuation of stock prices for companies engaged in or related to telecommunication value chains. The similarities of some previous studies with this research is to analyze the intrinsic value of stock prices with fundamental analysis with the Discounted Cash Flow approach, while other methods used in previous studies include Relative Valuation, EBITDA Multiple, and Residual Income.

Zemba & Hendrawan (2018) states that on company valuation can using two approaches, the DCF method relies on the assumption that is built to perform projection or estimate of the future. Just like a forecast in common, the results can exceed or less than actual, and Relative Valuation that has three approaches of calculation, Price to Earnings Ratio, Price to Book Value, and Enterprise Multiple. The valuation will be compared in three comparison scenarios, in order to have view if it is growing much better than that it has been estimated or otherwise even worse than that. The Scenario can be stated as the optimistic scenario that obtained from the predicted growth of the industry, plus the difference between a history of the company's growth and history of industrial growth, plus half of the difference in the history of industrial growth and predicted growth of the industry, taken in half

because it is considered the probability of growth of the industry is not all affect the full at any one company, but there contributed to the growth of other companies in the same industry. Moderate scenario obtained from industrial growth predictions, plus the excess of the company's growth history and history of industrial growth. Pessimistic scenario obtained only from industrial growth projections, without considering factors that historical growth of the company which is usually always higher than the industry growth.

Research conducted by Saplista & Iryna (2008), has a foreign telecommunications companies as the object of research, while other studies have domestic companies as the object of research. There is a research that discusses stock valuation which aims to provide information about the intrinsic value of shares which is then compared with market prices to determine investment decisions. The research that discusses the comparison between intrinsic value and market value which then produces three stock conditions, namely undervalued, overvalued and fair valued conducted by Neaxie & Hendrawan (2017), show that in previous years the valuation research of Telecommunications sector companies was oriented as a comparison of company performance and company growth.

Valuation is crucial for investment decision making process. Investors and analysts can use different models and tools in order to determine stock intrinsic value, the research find that stock values calculated with DCF model are very close to average market prices which suggest that market prices oscillate near stock values, which follows to conclusion that DCF models are reliable tools for calculation of companies' enterprise values on long term. Analysis by using this model can get long-term picture for real stock value as well as enterprise value, which is solid base for investment decision-making.

Chirputkar, Kulkarni, Vadgama & Prabhu (2016) state on their research that valuation on telecommunication company can be using Market Capitalization and Enterprise Value Method, where the market capitalization method can be relevant to most of the operators are not listed in open market, meanwhile the enterprise valuation method is often used for operator's valuation due to debt component and its capital structures. Using Discounted Cash flow approach is most suitable to operators since it is based on cash flows of the company. Here the value of the firm is present value of cash flow during explicit forecast period, however in a DCF method, for discounting purpose, we need to calculate

discounting rate which is based upon weighted cost of capital from all sources.

The research conducted by Glaum and Friedrich (2006) stated that for telecommunications companies that tend to be oriented to cash flow, one of them is because telecommunications companies as service companies but also have the nature as infrastructure companies, so it is said that the most frequently used company valuation methods are DCF, while Relative Valuation is usually just a comparison. This is also stated by Wahyudi and Surya (2013), where there is a significant gap between DCF valuation and relative valuation. Both of these studies are studies that aim to assess the intrinsic value of shares with the same goal as this research, namely to determine the condition of the intrinsic value of shares or actual value through assumptions based on company fundamentals and can be considered suitable for use by telecommunications companies. The researcher uses the DCF valuation method, which uses Free Cash Flow to Firm and Dividend Discount Model and Relative Valuation.

Based on the information and research, the valuation will produce intrinsic value information which is then compared to the share price to determine the position of purchase or sale of initial shares at the time of the IPO, one of which is an investment guide, so investors need to carry out fundamental analysis using financial data or valuing intrinsic value of shares company. The purpose of this research is to estimate the fair value of Telkomsel share price in the initial public offering plan.

2.3 Thinking Framework

Fundamental Valuation of company value is based on assumptions and projections of the condition of the company, where in this study the historical data used is historical data from 2012 - 2017 as the basis for calculation, and then projections are made to determine future cash flow and its present value. Determination of future cash flow from this projection is carried out based on a choice of certain assumptions and scenarios, with underlying assumptions made that have different conditions where later alternative decisions and projections will be obtained stated by Ivanoska, Ivanovski, & Narasanov (2014).

These underlying assumptions use three scenarios of conditions, namely pessimistic conditions (below the industry growth rate), optimistic conditions (above industry growth rates) and moderate conditions. These conditions calculated after looking at data and information from situational and environmental data from the telecommunications

industry and business and moderate conditions are possible conditions to occur from the principal figures of the company. Pessimistic conditions are a condition in which the company is assumed to grow below the industry figure, which means it is a condition that is considered as the worst condition reference, while optimistic conditions are conditions in which the company's growth is above the industry figure.

The next process is the determination of valuation based on the Discounted Cash Flow method with the Free Cash Flow to Firm approach where previously the value will be searched for from Cost of Capital (WACC) of each condition, which is then calculated to obtain the equity value or called the intrinsic value of the company. Finally, a fair price per share for each of these conditions can be obtained. Another process in valuing this company is to perform the calculation of Discount Model Dividend as the second reference of the company's intrinsic value, which determines the level of dividend growth in each scenario with the same data used by FCF and determines the expected dividend rate in the future.

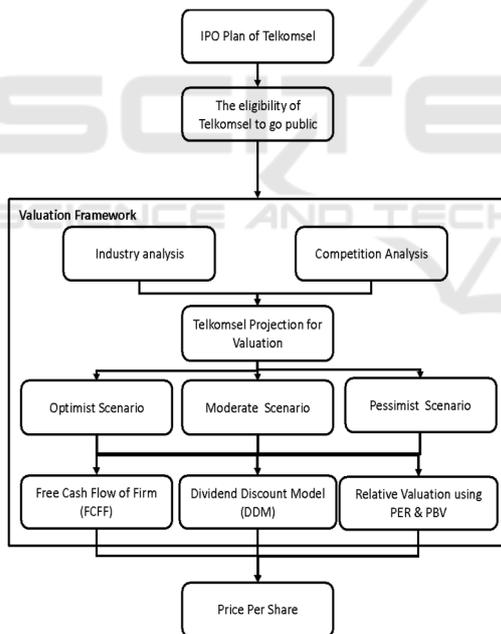


Figure 5: Thinking Framework.

As described earlier, the research framework can be presented as shown in Figure 5.

3 RESULTS AND DISCUSSION

3.1 Historical Performance Analysis

3.1.1 Growth Revenue per Service

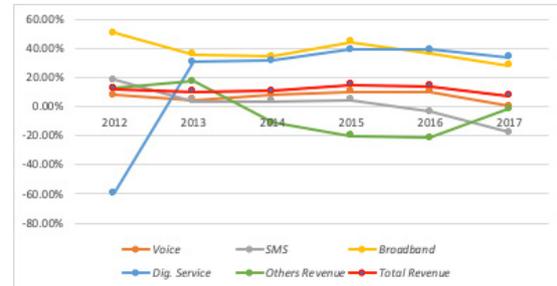


Figure 6: Growth Revenue per Service 2012-2017.

Figure 6 shows that the total revenue growth of Telkomsel has increased by trend successively each year enabling Telkomsel to experience significant growth amounting to 11.90% in 2012, 10.09% in 2013, and 10.36% in 2014, 14.80% in 2015, and 14.03% in 2016. However, later in 2017 Telkomsel experienced decreased growth in total revenue to 7.49%. Based on service to revenue contribution, the increase in Telkomsel's revenue growth essentially still supported by Voice service revenue, as evidenced in the year of 2012 when Telkomsel Voice service posted a revenue of 53.7% from total revenue and up until the year of 2017, the service still increasing plainly.

The most influential service in the changing of revenue growth in Figure 6 above is shown by the growth of Voice service in 2012 when the service had a growth rate of 7.86%, which then declined in 2013 to 4.51%. After that Voice service revenue increased again to 7.83% in 2014, 10.09% in 2015 and 10.06% in the following year, but in 2017, even though it still had positive growth it experienced a significant decline in growth at a rate of 0.21%, whereas in other services such as SMS, despite the steady growth rate in the period from 2013 to 2015, it experienced negative growth in 2016 amounted to -3.38% which was then in 2017 decreased by -17.82%. Other services which have a relatively high average growth in the period 2013 to 2017 are broadband services (at a growth rate of 35.7%) and digital services (at a growth rate of 34.7%).

3.1.2 Capital Expenses per Revenue

Based on Figure 7, there is a downward trend for CAPEX per revenue for the last three years. Where in

the year 2012, CAPEX per revenue was at 17.6%, growing at 24.7% from the previous year compared to revenue growth of 11.9%, in 2013 CAPEX per revenue grew to 20.7% where in that year the number of CAPEX issued by Telkomsel grew by 29.4% compared to revenue growth of 10.1%. In 2014 CAPEX per revenue experienced a re-growth to 22.9% with CAPEX growth of 22.3% from the previous year (the figure dropped by 7.1%), compared to revenue growth of 10.4%. Then in 2015, there was a decrease in Telkomsel CAPEX per revenue to 17.2%, this was due to the negative growth of CAPEX issued from the previous year by -13.9% even though the growth of revenue have increased to 14.8%.

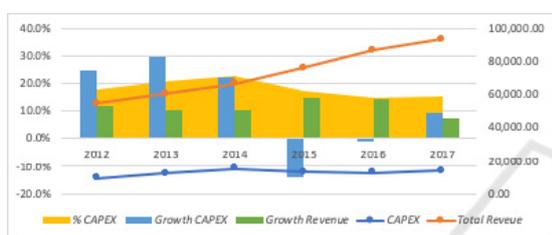


Figure 7: CAPEX per Revenue.

In 2016, CAPEX per revenue began to decline, where in that year, Telkomsel recorded CAPEX per revenue of 14.9% accompanied by a decrease in the number of CAPEX issued by -1.2% from the previous year, compared to Telkomsel revenue growth at 14%. And then the following year CAPEX per revenue was 15.1% with a CAPEX growth percentage of 9.5% compared to revenue growth of 7.5%.

Telkomsel CAPEX per revenue in 2012 to 2017 has an average of 18% with the most substantial value in 2015 of IDR 15.16 trillion (proportion of 22.9%) and second in 2017 with a nominal IDR 14.12 trillion (proportion of 15.1%). The average annual CAPEX growth in the 2012-2017 period is in the range of 11.8% with the condition of achieving revenue growth averaging 11.4%.

3.2 Revenue Projection

The projection scenario used for Telkomsel growth scenario for the next 5 years starting from 2018 to 2012, where in the preparation of the projection, growth assumptions are made using the necessary conditions in historical growth in each service along with its projection and then reduced or added by the average growth of service related in the telecommunications industry.

3.2.1 Pessimistic Scenario Projection

The revenue growth projection in the pessimistic scenario is obtained, for Voice service with a decrease in 2018 of -7.22% with nominal revenue of IDR 37.2 trillion, then the consecutive decrease in service to IDR 36.12 trillion in 2019, IDR 34.97 trillion in 2020, IDR 33.43 trillion in 2021 and IDR 31.85 trillion in 2022, which means a negative growth of -4.71% from the previous year. As for SMS service, the condition of decline in 2018 was -8.01% with nominal revenue service of IDR 9.97 trillion, then the progressive decrease in the service to IDR 8.19 trillion in 2019, IDR 6.4 trillion in 2020, IDR 4.55 trillion in 2021 and IDR 2.7 trillion in 2022, which means a negative growth of -40.63% from the previous year.

For Broadband services with revenue growth which increased in 2018 by 0.23% with nominal revenue of IDR 35.6 trillion, will provide additional revenue growth to IDR 39.66 trillion in 2019, IDR 43.80 trillion in 2020, IDR 47.57 trillion in 2021 and IDR 51.37 trillion in 2022, which means there is a growth of 7.98% from the previous year. In the Digital services, Telkomsel is projected to have service revenue growth in 2018 amounted to 2.27% with a nominal value of IDR 4.03 trillion, which in the following year added additional service revenue growth to IDR 4.57 trillion in 2019, IDR 5.14 trillion in 2020, IDR 5.67 trillion in 2021 and IDR 6.21 trillion in 2022, which means there is a growth of 9.54% from the previous year. The average EBIT from Telkomsel if calculated by this method will be IDR 38.44 trillion in 2018, IDR 39.21 trillion in 2019, IDR 39.99 trillion in 2020, IDR 40.39 trillion in 2021, and IDR 40.8 trillion in 2022.

3.2.2 Moderate Scenario Projection

The growth projection is obtained with the projection scenario used for the next five years starting from 2018 until 2022, where in the preparation of these projections, growth assumptions for Telkomsel are made using the necessary conditions in historical growth in each service. Voice service with a decrease in 2018 of -7.22% with nominal revenue of IDR 37.2 trillion, then the sequential decrease in service to IDR 36.48 trillion in 2019, IDR 35.66 trillion in 2020, IDR 34.43 trillion in 2021 and IDR 33.13 trillion in 2022, which means a negative growth of -3.77% from the previous year. As for SMS service, the condition of decline in 2018 was -8.01% with a nominal service of IDR 9.97 trillion, then the progressive decrease in the service to IDR 8.27 trillion in 2019, to IDR 6.53 trillion in 2020, IDR 4.68 trillion in 2021 and IDR

2.81 trillion in 2022, which means a negative growth of -40.04% from the previous year.

For Broadband service with growth in service revenue which increased in 2018 by 0.23% with nominal revenue of IDR 35.6 trillion, in the following year will provide additional service revenue growth to IDR 40.05 trillion in 2019, IDR 44.67 trillion in 2020, IDR 48.99 trillion in 2021 and IDR 53.42 trillion in 2022, which means there is a growth of 9.05% from the previous year. Telkomsel's digital service revenue is projected to have growth in 2018 service revenue amounted to 2.27% with a nominal value of IDR 4.03 trillion, which in the following year provided additional service revenue growth of IDR 4.62 trillion in 2019, IDR 5.24 trillion in 2020, IDR 5.84 trillion in 2021 and IDR 6.46 trillion in 2022, which means there is a growth of 10.63% from the previous year. The average EBIT from Telkomsel if calculated by this method will be IDR 38.44 trillion in 2018, IDR 39.59 trillion in 2019, IDR 40.78 trillion in 2020, IDR 41.6 trillion in 2021, and IDR 42.43 trillion in 2022.

3.2.3 Optimistic Scenario Projection

The growth projection is obtained by revenue projections in an optimistic scenario used for the next 5 years starting from 2018 to 2012, where the growth assumptions are made using the necessary conditions of historical growth in each service was then added to the average growth of service in the telecommunications industry. Voice service with a decrease in 2018 of -7.22% with nominal revenue of IDR 37.2 trillion, then the consecutive decrease in service to IDR 36.83 trillion in 2019, IDR 36.36 trillion in 2020, IDR 35.27 trillion in 2021 and IDR 34.11 trillion in 2022, which means a negative growth of -3.3% from the previous year. As for SMS service, the condition of decline in 2018 was -8.01% with a nominal service of IDR 9.97 trillion, then the progressive decrease in the service to IDR 8.35 trillion in 2019, becoming IDR 6.66 trillion in 2020, IDR 4.8 trillion in 2021 and IDR 2.89 trillion in 2022, which means a negative growth of -39.75% from the previous year.

Broadband service with growth in service revenue which increased in 2018 by 0.23% with nominal revenue of IDR 35.6 trillion will provide additional service revenue growth of IDR 40.44 trillion in 2019, IDR 45.54 trillion in 2020, IDR 50.19 trillion in 2021 and IDR 55 trillion in 2022, which means there is a growth of 10.21% from the previous year. The Digital service is projected to have growth in 2018 service revenue amounted to 2.27% with a nominal value of

IDR 4.03 trillion, which in the following year provided additional service revenue growth to IDR 4.66 trillion in 2019, IDR 5.34 trillion in 2020, IDR 5.98 trillion in 2021 and IDR 6.58 trillion in 2022, which means there is a growth of 10.97% from the previous year. The average EBIT from Telkomsel if calculated by this method will be IDR 38.44 trillion in 2018, IDR 39.81 trillion in 2019, IDR 41.58 trillion in 2020, IDR 42.62 trillion in 2021, and IDR 43.68 trillion in 2022.

3.3 Relative Valuation

Table 3: Relative Valuation.

Projections	PBV	PER
Pessimist	5.09	9.56
Moderate	5.53	10.38
Optimist	5.83	10.94

Based on Table 3 it can be seen Relative Valuation with the approach of PER and PBV values in the Pessimistic, Moderate and Optimistic Scenario. With the pessimistic scenario, Telkomsel has a PBV value of 5.09 times and a PER of 9.56 times, while the moderate scenario of Telkomsel has a PBV value of 5.53 times and PER of 10.38 times. Then in the optimistic scenario, Telkomsel has PBV value of 5.83 times and PER of 10.94 times.

3.4 Discussion

3.4.1 Free Cash Flow to Firm

Based on Table 4, it is explained that Telkom's Consolidate Revenue, compared to Telkomsel revenue is in range of 68.4% to 74.5% from year 2012 to 2017, where if we go to Net Income comparison, we will see that the Telkom's Net Income is more dependent to Telkomsel's performance where is recorded from 44.1% going exponentially increasing to 98.5% in the year 2017.

Table 4: Telkom and Telkomsel Comparison.

	2012	2013	2014	2015	2016	2017
TELKOM						
Revenue - Consolidate	71,253	77,143	82,967	89,696	102,470	116,333
Expenses	34,695	37,386	41,191	43,852	51,055	56,835
EBITDA	36,558	39,757	41,776	45,844	51,415	59,498
Net Income	15,044	17,435	18,369	20,174	22,800	28,617
TELKOMSEL						
% Revenue from TELKOM	68.4%	70.7%	72.4%	73.9%	74.2%	74.5%
% EBITDA from TELKOM	76.2%	77.4%	81.1%	81.2%	82.9%	83.7%
% Net Income from TELKOM	44.1%	50.2%	63.6%	96.1%	98.1%	98.5%

Table 5: Comparison of Telkomsel Valuation.

	Price	Value of Equity TLKM (in IDR Bio)	Value of Equity Telkomsel		
			Pessimist	Moderate	Optimist
Telkom					
Telkom Stock 1 Jan 2018	3980	401,184			
Telkom Stock 1 Jan 2019	3750	378,000			
Telkomsel					
FCFF Valuation					
Valuation - 2018 (IDR Bio.)			275,549	299,220	315,339
Valuation - 2019 (IDR Bio.)			311,098	337,823	356,021
% Value Telkomsel vs Telkom			82.3%	89.4%	94.2%
Market Confidence Level			126.6%	137.5%	144.9%

Based on Table 5 above, it is explained that Telkom's share price at the opening of the beginning of 2018 is at the price of IDR 3980, whereas Value of Equity based on market price is IDR 401.18 trillion, and at the beginning of the following year, namely 2019, the opening price of the beginning of 2019 fell to IDR 3750 and Value of Equity of IDR 378 trillion, this shows a decrease in Telkom's share price in the market of IDR 230 within one year.

For comparison with the results of the previous Telkomsel valuation where fair value was obtained in 2018, the calculation is done by involving the calculation of WACC, so that the figure value of Equity for the pessimistic scenario for 2019 is IDR 311.09 trillion, then for the moderate scenario the calculation of Value of Equity becomes IDR 337.82 trillion, and for the optimistic scenario to be IDR 356.02. If a comparison of carried Value of Equity is out by the two companies, where Telkom as a Telkomsel shareholder with a 65% share, then the market confidence level is 126.6% for the pessimistic scenario, 137.5% for the moderate scenario and 144.9% for optimistic scenarios.

3.4.2 Dividend Discount Model

Based on Table 6, it can be seen that the intrinsic value of Telkomsel shares in the Pessimistic scenario with the FCFF method is IDR 1509.28 while the DDM method is IDR 1402.68 with a value difference of 7.6%. For the Moderate scenario, the intrinsic value of Telkomsel's shares with the FCFF method is IDR 1638.93 while the DDM method is IDR 1515.01 with a value difference of 8.2%. For Optimistic scenario, the intrinsic value of Telkomsel's shares with the FCFF method is IDR 1727.22 while the DDM method is IDR 1519.19 with a difference in the value of 8.5%. In Value of Equity Pessimistic scenario, the value obtained by the FCFF method is IDR 275.58 trillion while the DDM method is IDR 256.08 trillion. In the moderate scenario, Value of Equity Telkomsel's with the FCFF method is IDR 299.22 trillion while the DDM method is IDR 276.59 trillion. On the optimistic scenario Value of Equity

using the FCFF method is IDR 315.33 trillion while the DDM method is IDR 290.5 trillion.

Table 6: Comparison of FCFF vs. DDM.

Scenarios	Pessimist	Moderate	Optimist
EV (IDR Bio)	275,548.76	299,220.11	315,338.78
Intrinsic Value of Shares (IDR)	1509.28	1638.93	1727.22
DDM Valuation			
EV (IDR Bio)	256,087.51	276,595.26	290,503.46
Intrinsic Value of Shares (IDR)	1402.68	1515.01	1591.19
Share Price Diff.	7.6%	8.2%	8.5%

3.4.3 Relative Valuation - PER and PBV

Based on the results of the calculation, we then process and analyze overall data of Telkomsel's stock valuation using the Relative method Valuation attached in the previous Table 4.14 using the pessimistic, moderate and optimistic scenario. The results showed that the PBV value in the pessimistic scenario was 4.97 times, the moderate scenario was 5.44 times, and the optimistic scenario was 5.75 times.

If we make a comparison with quarterly IDX statistical data (Q1 2018), it shows that the average value of PBVs in telecommunications companies is 1.33 times, with the lowest value in PBV, namely the value of PT. Bakrie Telecom Tbk. (BTEL) at -0.13 times and the highest PBV in PT. Telekomunikasi Indonesia (Persero) Tbk. (TLKM) at 3.24 times. This shows that the results of the research calculations are above the PBV range that is in the market at this time.

For the calculation of the Telkomsel PER, the results showed that the PER value in the pessimistic scenario was 7.0 times, the moderate scenario was 7.66 times, and the optimistic scenario was 8.1 times. If we make a comparison with quarterly IDX data (Q1 2018) which shows that the average PER value of telecommunications companies is 21.55 times, with the lowest value PER, namely PT. Smartfren Telecom Tbk. (FREN) at -1.72 times and the highest PER value in PT. XL Axiata Tbk. (EXCL) at 71.78 times. This shows that the results of research calculations are within the range of PER in the market at this time.

4 CONCLUSIONS

The study described how we calculate the fair value of the company and the stock price of Telkomsel using Free Cash Flow to Firm, Discount Model Dividend, and Relative Valuation methods. We calculated the fair value of the company and the intrinsic value of Telkomsel shares by using the Free

Cash Flow to Firm method in a pessimistic scenario, the moderate scenario and the optimistic scenario. If compared with the condition of the market value of PT. Telkom (TLKM) as the holding company at the beginning of 2019, the fair value of the Telkomsel is still in a favorable condition, where the confidence level of the Value of Equity TLKM is 126.6% for the pessimistic scenario, 137.5 % for moderate scenarios and 144.9% for optimistic scenarios.

Using the Dividend Discount Model method in a pessimistic scenario resulted in 5.2% difference compared to FCFF valuation, and for the moderate scenario resulted in 6.5% difference, while in the optimistic scenario resulted in 7.3% difference in intrinsic stock value from the FCFF valuation. The Relative Valuation method used is the PER (approach Price Earnings Ratio) and PBV (Price Book Value), to evaluate the fair value of the company and the intrinsic value of Telkomsel shares, which in the pessimistic scenario gives the PBV value of 4.97 times and PER of 7 times, while the moderate scenario of Telkomsel has PBV value of 5.44 times and PER of 7.66 times, then in the optimistic scenario Telkomsel has PBV value of 5.75 times and PER of 8.1 times. The calculation results, when compared with the market conditions in the IDX (statistical data for financial, quarterly) during Q1 2018 period in the telecommunications industry, will give the PBV above the market range, while the PER value is still within the range currently in the market.

Based on the results of the conclusions above, the authors can make several suggestions that can be taken into consideration in further writing. For companies, to develop and increase the value of shares in the market, especially for companies that have not made an initial offer (IPO), in addition to improving company performance with revenue and Net Income, the company should also consider alternatives to model the mapping of cost and expense of the companies for both OPEX and CAPEX in this company, of which this research shows the change in the proportion of expenses, which can indicate patterns of expenditure that are not effective.

For the next study, in order to gain significant result whether the valuation theory can be applied in any different context in Indonesia and telecommunication industry, the researcher should be able to describe the conditional assumption in the industry environments, not only counting the forecast based on historical financial numbers. This is critical because valuation is very dependent on the assumptions used so that the valuation between researchers might yield different results.

For investors, in addition to paying attention to the target stock price and enterprise value, we should consider the fundamental conditions and company performance outside the financial statement information, such as competitor condition and market awareness in other industry, as a comparison in decision making. Theoretically, in decision making, it is usually recommended to buy shares under the intrinsic value, but it must be noted that other conditions can support the sustainability of the company's business as well.

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