

Business Valuation Analysis Using the Discounted Cash Flow (DCF) and Price to Earnings Ratio (PER) Methods: Case Study on Telecommunication Subsector Companies Listed on Indonesia Stock Exchange (IDX)

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Abstract

This study aims to analyze business valuation in telecommunication subsector companies listed on the Indonesia Stock Exchange (IDX) using two valuation methods, namely Discounted Cash Flow (DCF) and Price to Earnings Ratio (PER). The data used in this study were obtained from the company's financial statements and stock market data. The results showed that based on the DCF method, PT Indosat Tbk (ISAT) and PT Smartfren Telecom Tbk (FREN) are overvalued, while PT XL Axiata Tbk (EXCL) and PT Telkom Indonesia (Persero) Tbk (TLKM) are undervalued. Meanwhile, based on the PER method, only ISAT shows an undervalued condition, while other companies are also classified as undervalued compared to the industry average. The differences in results between the two methods shows that the selection of valuation methods affects the interpretation of a company's stock value.

Keywords: Business valuation, discounted cash flow, price to earnings ratio, telecommunication subsector companies.

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1. Introduction

The capital market has an important role for a country's economy, where in macroeconomics, the capital market can function as a means of raising funds that can encourage investment growth and job creation (Dalimunthe, 2023). For investors, the capital market is an attractive place to invest because it can provide returns in accordance with their risk preferences (Farhan & Roroa, 2024). As for issuers, the capital market can provide an alternative to fulfill funding needs through Initial Public Offering (IPO) (Dewi & Arifardhani, 2024).

To determine whether or not a capital market instrument in the form of shares is worth investing in, an investor can conduct a stock valuation using technical analysis and fundamental analysis (Makkulau, AR, & Yuana, I (2021). Through company valuation activities, investors can determine whether the share price of a company reflects its intrinsic value. (Hanafi & Halim, 2016) explain that valuation using fundamental analysis is an analysis that takes into account many factors, namely company performance, competitive analysis, industry analysis, macro-micro economic and market analysis (Brigham & Daves, 2019). Meanwhile, technical analysis is a technique used to analyze stock prices within a certain time frame. In addition, technical analysis is also based on price movements making a certain pattern visible as a basis for making decisions to buy or sell shares (Wijayanti et al., 2020).

The commonly used valuation methods include cash flow-based, earnings-based, and industry comparison approaches (Ruminta, 2020). The three approaches provide different analytical frameworks, depending on the characteristics of the company and the purpose of the valuation. In the context of this study, researchers used a cash flow-based approach with the Discounted Cash Flow (DCF) method and an industry comparison approach with the Price to

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Earnings Ratio (PER) method. Both approaches and methods have their respective advantages in valuing companies based on their financial fundamentals (Damodaran, 2012).

Discounted Cash Flow (DCF) is one of the methods often used in calculating company valuation based on projected future cash flows discounted to present value. This method assumes that the value of a company depends on the company's ability to generate free cash flow (FCF) in the future, which is then discounted by the Weighted Average Cost of Capital (WACC) to obtain the company's intrinsic value (Ross et al., 2021). Meanwhile, the Price to Earnings Ratio (PER) method is a company valuation method that is done by comparing the stock price with earnings per share. PER is used to determine whether a stock is more expensive or cheaper compared to similar companies in the same industry. If a company's PER is higher than the industry average, the stock can be considered overvalued, and vice versa (Brealey et al., 2019).

The author through this research is interested in analyzing the valuation of companies in Indonesia that have been listed on the Indonesia Stock Exchange (IDX). The number of companies listed on the IDX currently reaches 951 companies divided into several sectors and subsectors (Bursa Efek Indonesia, 2024). So that the object of research is not too broad, the research study is limited to the telecommunications industry subsector (Kementerian Komunikasi dan Informatika Republik Indonesia, 2023).

The telecommunications industry in Indonesia has experienced rapid growth in recent decades. Increased internet penetration, 5G network expansion, as well as increased data consumption by the public have made this sector one of the strategic industries in the Indonesian capital market. According to a report from the (Kementerian Komunikasi dan Informatika Republik Indonesia, 2023) Indonesia has more than 200 million active internet users, driving demand for faster and more reliable telecommunications services.

However, despite the industry's rapid growth, the valuations of telecommunications companies on the Indonesia Stock Exchange (IDX) do not always reflect their financial fundamentals. Some companies may be trading at share prices higher than their intrinsic value (overvalued), while others are lower than their fair value (undervalued). This condition can be caused by various factors, such as high growth expectations, market speculation, and macroeconomic conditions that affect the industry (Bodie et al., 2020).

Telecommunications companies have unique characteristics in terms of valuation due to their infrastructure-based business model and large economies of scale (Wibowo, 2023). They require high capital investment for network expansion, but also have the potential for stable long-term revenue from customers. Therefore, the DCF approach is often used to assess their intrinsic value, while PER is used as a comparison method with peer companies (Fernández, 2020).

In the context of the Indonesian capital market, accurate valuations are becoming increasingly important given the increasing participation of retail investors (Hendra et al., 2025). According to data from the Indonesia (Bursa Efek Indonesia, 2024), the number of retail investors has increased significantly in recent years, driven by easier access to the stock market through online trading applications. However, many investors still rely on market trends and speculation in making investment decisions, without considering a company's fundamental valuation.

In addition, changes in industry regulations and policies also affect the valuation of telecommunications companies (Rini, 2019). For example, the implementation of 5G networks and policies related to frequency spectrum can significantly impact the revenue prospects and profitability of companies in the sector. Therefore, valuation analysis using appropriate methods can provide better insights for investors and other stakeholders (Harris & Raviv, 2020).

This study aims to analyze the valuation of telecommunications companies listed on the IDX using the DCF and PER methods. Case studies will be conducted on four major telecommunications companies in Indonesia, namely PT Indosat Tbk (ISAT), PT XL Axiata Tbk (EXCL), PT Smartfren Telecom Tbk (FREN), and PT Telkom Indonesia (Persero) Tbk (TLKM). The results of the analysis are expected to provide a clearer picture of whether the stocks of these companies are overvalued or undervalued compared to their intrinsic value.

2. Literature Review

2.1. Business Valuation

Business valuation is the process of determining the economic value of a company or business asset. Valuation is one of the fundamental analyses carried out by discounting the value of cash flows or using predetermined ratios, which aims to determine the intrinsic value of shares (Jumran & Hendrawan, 2021).

This valuation is important for investors, managers, and financial analysts to understand whether an investment is worth making. In valuation, there are various approaches that can be used, such as income-based, market-based, and asset-based approaches.

Income-based approaches, such as the Discounted Cash Flow (DCF) method, value a company based on future cash flows discounted to present value. Market-based approaches, such as the Price to Earnings Ratio (PER), compare a company's valuation with similar companies in the market. Meanwhile, the asset-based approach values the company based on the value of assets owned after deducting liabilities.

2.2. Discounted Cash Flow (DCF)

The DCF method is one of the most widely used approaches in business valuation because it considers future cash flows and the time value of money. (Susilawati et al., 2023) explained that the Discounted Cash Flow (DCF) method is a stock valuation method to project the value of future cash flows based on current values. These predictions are expected to provide an overview of financial growth, operating efficiency, capital costs and the expected time period for the company's growth. The theoretical basis used in this method is the entire value of the money flow in the company in the future (future value), this value if discounted is the fair value (present value).

The main steps in the DCF method include:

- a. Free cash flow (FCF) estimation: FCF projections are based on historical data and company growth expectations.
- b. Determining the discount rate: Usually use Weighted Average Cost of Capital (WACC) as the discount rate.
- c. Calculate the terminal value: Usually uses the Gordon Growth or exit multiple method.
- d. Determining the net present value (NPV): Using the net present value formula.

The DCF method provides a picture of the intrinsic value of the company that does not depend on the current market price, making it very useful in investment decisions.

2.3. Price to Earnings Ratio (PER)

PER is a valuation method used to value a company by comparing its share price to earnings per share (EPS). According to Halim (2018), Price Earning Ratio (PER) is a ratio or comparison between stock prices and company profits. PER basically gives an idea of the investor's willingness to pay a certain amount for each thousand of the company's profit.

PER is often used to compare valuations of companies in the same industry. If a company's PER is higher than the industry average, its stock may be considered overvalued, while if it is lower, it could be undervalued.

The advantage of the PER method is its simplicity, but it has the disadvantage of not considering future earnings growth. Therefore, PER is often used in conjunction with other methods such as DCF to get a more complete valuation picture.

2.4. Relevant Previous Research

In this study, the Discounted Cash Flow (DCF) and Price to Earnings Ratio (PER) methods are used to assess the valuation of telecommunication subsector companies listed on the Indonesia Stock Exchange (IDX). Before discussing further, it is important to review some previous studies that have examined this valuation method in various industrial contexts, including the following.

- a. (Wijayanti et al., 2020) who conducted research on stock valuation using the Discounted Cash Flow method in the financing institution subsector in Indonesia. The results of this study indicate that the condition of the share

price of the financing institution subsector is overvalued. The overvalued condition in the valuation results shows that the share price offered exceeds its fair price, so the right investment decision for this condition is not to invest in the company.

- b. (Susilawati et al., 2023) who conducted research on stock valuation analysis using the Discounted Cash Flow method at PT Unilever Indonesia Tbk 2017-2021. The results of this study indicate that the intrinsic value of UNVR shares is in an undervalue condition. The decision that should be taken on UNVR shares is that investors can purchase or increase their share ownership.
- c. (Azizah & Imron, 2020) conducted research related to fundamental analysis to assess the fair price with the DCF method of BUMN banking stocks on the Indonesia Stock Exchange. The results of this study indicate that BBRI and BBNI shares in 2015, 2016, 2017 and 2018 are in overvalued conditions, while in 2019 they are in undervalued conditions. Furthermore, BMRI in 2015 - 2019 was in an overvalued condition. BBTN shares in 2015, 2016, 2018 and 2019 are undervalued and in 2017 they are overvalued. Stocks that are in an undervalued condition should investors make a decision to buy these shares, while stocks that are in an overvalued condition investors should sell or not buy the company's shares because they are too expensive to buy.
- d. (Hasnia et al., 2023) conducted research related to the use of Price Earning Ratio as a basis for making stock investment decisions in coal sub-sector companies listed on the Indonesia Stock Exchange for the period 2020-2022. The results of this study indicate that based on the calculation of intrinsic value using PER and compared to the closing price, company shares that are undervalued include ADRO, BSSR, BYAN, GEMS, ITMG, MBAP, MYOH, and PTBA where investment decisions that can be taken are to buy shares or hold shares if they are already owned.
- e. (Prasetyo, 2018) who conducted research related to the analysis of stock valuation using the Price Earning Ratio (PER) method on PT Telekomunikasi Indonesia Tbk shares for the period 2011-2017. The results of this study indicate that the valuation of PT Telekomunikasi Indonesia Tbk shares using the Price Earning Ratio (PER) method is overvalued because the intrinsic value of the shares is less than the stock market value so that the decision that investors should take is to sell shares.

This research extends previous studies by applying DCF and PER simultaneously to telecommunication subsector companies on the IDX. Some of the main findings that distinguish this research from previous studies include:

- a. Most previous studies only used one of the valuation methods, while this study compares DCF and PER to get a more comprehensive perspective.
- b. In contrast to previous studies that mostly focus on the manufacturing and financial sectors, this study applies valuation to the telecommunications subsector, which has different business characteristics such as high investment in infrastructure and subscription-based revenue models.
- c. Some previous studies analyzed PER as a valuation indicator, but this study specifically compares the company's PER with the PER of the telecommunications subsector industry, thus providing additional insight for investors in understanding the relative valuation of stocks in this industry.

3. Research Method and Materials

This research is a quantitative research with a descriptive approach that aims to analyze the business valuation of telecommunication subsector companies listed on the Indonesia Stock Exchange (IDX). The data used in this study is secondary data obtained from:

- a. Company Financial & Annual Reports published on the IDX website (<https://idx.co.id/>): to obtain information related to free cash flow, net income, equity, and debt.
- b. Stock Market Data obtained from Yahoo Finance website (<https://finance.yahoo.com/>): to obtain information related to stock prices, stock beta, and market risk levels.

The population in this study were all companies belonging to the telecommunications subsector on the IDX, namely 18 companies. The sample in this study was selected using purposive sampling technique, which is a sampling technique with certain considerations (Sugiyono, 2019). The samples taken consider the following criteria:

- a. Have complete and accessible annual financial reports.
- b. Not experiencing a full trading suspension.
- c. Representing variations in market capitalization in the telecommunications industry subsector (large, medium and small).

Based on these criteria, the researchers chose four companies that were sampled in this study, namely:

- PT Indosat Tbk (ISAT)
- PT XL Axiata Tbk. (EXCL)
- PT Smartfren Telecom Tbk (FREN)
- PT Telkom Indonesia (Persero) Tbk. (TLKM)

This research uses two valuation methods, namely Discounted Cash Flow (DCF) and Price to Earnings Ratio (PER). The valuation results will be compared with the actual market price to determine whether the company's shares are undervalued, fairly valued, or overvalued. The formulas used in the DCF and PER valuation methods will be described as follows.

3.1. Discounted Cash Flow (DCF)

The DCF method calculates the intrinsic value of shares by discounting the Free Cash Flow (FCF) projection. The calculation uses the following formula (Ruslan, 2019):

$$\text{Intrinsic Value Per Share} = \frac{\text{Total Present Value} - \text{Net Debt}}{\text{Share Outstanding}}$$

Description:

Total Present Value = Present value of the company's total free cash flow projections expected in the future (Total Present Value = Total Present Value of Free Cash Flow + Present Value of Terminal Value).

Net Debt = Total debt net of company cash (Net Debt = Total Debt - Cash).

Share Outstanding = Number of shares outstanding.

3.2. Price to Earnings Ratio (PER)

The PER method is done by comparing the share price with earnings per share (EPS) with the following formula (Ruslan, 2019):

$$\text{Price to Earning Ratio} = \frac{\text{Stock Price}}{\text{Earning Per Share}}$$

The valuation results that have been calculated using the DCF and PER methods are then compared with the actual market price to determine whether the company's shares are undervalued or overvalued. The valuation criteria used are as follows:

- DCF: If the intrinsic value of the stock > market price then the stock price is considered undervalued, otherwise the stock price is considered overvalued.
- PER: If the company's PER < industry PER then the share price is undervalued, otherwise the share price is overvalued.

4. Results and Discussion

4.1. Valuation Results of Discounted Cash Flow (DCF) Method

This study conducted a valuation analysis of four large companies included in the telecommunications subsector and listed on the Indonesia Stock Exchange (IDX), using the Discounted Cash Flow (DCF) method. The DCF method is a fundamental approach that assesses the fair value of shares based on free cash flow projections discounted to the current value (Natalia, 2021). In this context, DCF provides an in-depth view of the viability of an investment based on the company's capacity to generate future cash flows.

The DCF approach is very relevant to use in valuing telecommunications sector stocks because companies in this sector generally have fluctuating cash flows and are capital intensive. Therefore, understanding how much cash flow projections a company can generate in the long term is very important to assess whether its stock price reflects its true fundamental value. In addition, the use of the right discount rate is crucial because it will determine how much future

value is converted to current value. Discount bias that is too high can underestimate the potential intrinsic value, while discounting that is too low can result in overvaluation.

In addition to providing an overview of investment feasibility, DCF also allows investors to measure the sensitivity of fair value to the company's growth and operational risk assumptions. In this study, each company was analyzed using cash flow projections based on historical financial statements and realistic assumptions about future performance (Apristiani & Rosyadi, 2024). This analysis is conducted to evaluate whether there is a mismatch between the stock market price and its fair value, and to identify investment opportunities that can be utilized by institutional and retail investors. With this analysis, it is expected that investors can avoid investment decisions based on speculation alone and switch to a more accurate fundamental-based approach that can be accounted for academically and practically. The Table 1 shows the results of stock valuation using the DCF method.

Table 1. Valuation results using the Discounted Cash Flow (DCF) method

Code	Company Name	Stock Price	Intrinsic Value (DCF)	Conclusion
ISAT	PT Indosat Tbk.	Rp 2.480	Rp 756	<i>Overvalued</i>
EXCL	PT XL Axiata Tbk.	Rp 2.250	Rp 4.285	<i>Undervalued</i>
FREN	PT Smartfren Telecom Tbk.	Rp 22	- Rp 19	<i>Overvalued</i>
TLKM	PT Telkom Indonesia (Persero) Tbk.	Rp 2.710	Rp 3.225	<i>Undervalued</i>

The results of the table show that there is a significant difference between the market price and the intrinsic value of the four companies analyzed. PT Indosat Tbk. (ISAT) has an intrinsic value of IDR 756, far below its market price of IDR 2,480. This indicates that ISAT shares are overvalued. The cause is likely due to market sentiment, such as expectations for 5G network growth, mergers and acquisitions, or other positive perceptions that have not been reflected in long-term cash flow fundamentals.

In contrast to ISAT, PT XL Axiata Tbk. (EXCL) is actually considered undervalued, with an intrinsic value of IDR4,285 which is almost twice the market price of IDR2,250. This finding implies that the market has not fully appreciated the potential for cash flow growth in this company. Efficient operational performance and the right investment strategy can make EXCL a promising investment opportunity.

PT Smartfren Telecom Tbk. (FREN) shows a negative intrinsic value of -IDR19, even though its market price is IDR22. This negative value indicates that the company's free cash flow projection is very low or even negative, most likely due to its high debt burden, thin profit margins, and other operational challenges. Thus, FREN is categorized as overvalued because the market price is not in line with its fundamental value.

PT Telkom Indonesia (Persero) Tbk. (TLKM) is undervalued, with an intrinsic value of IDR3,225 which is higher than its market price of IDR2,710. As a state-owned company and a dominant player in the Indonesian telecommunications industry, TLKM shows high cash flow stability and a diversified business model. These results indicate long-term growth potential for investors who prioritize a fundamental approach in making investment decisions. The DCF results show that fundamental valuation can provide a different perspective from market perception. This emphasizes the importance of investors conducting an in-depth analysis of financial performance and cash flow projections before making investment decisions. DCF-based valuation is better able to capture the essence of a business entity's economic value in the long term.

4.2. Valuation Results of Price to Earnings Ratio (PER) Method

In addition to looking at PER values quantitatively, it is also important to consider the qualitative context that influences these numbers (Muhammad, 2024). Factors such as revenue growth rate, operational efficiency, and macroeconomic conditions can influence investor perceptions of stocks in the telecommunications subsector. For example, although the PER values of ISAT and EXCL indicate that both are undervalued, differences in financial performance, capital structure, and business expansion strategies can produce very different results when viewed through the eyes of investors (Halim, 2018).

In the case of FREN, a negative PER value reflects that the company is experiencing earnings pressure, and investors need to carefully assess whether the loss is temporary or reflects deeper structural problems. Meanwhile, TLKM, a state-owned company with a dominant position in the market, actually has a low PER because investors likely

consider its growth potential to have reached saturation point. Therefore, PER analysis must be viewed holistically by combining qualitative and quantitative factors. This aims to make investment decisions more accurate and in accordance with the risk profile of each investor. The results of the valuation analysis of four telecommunication subsector companies listed on the Indonesia Stock Exchange (IDX) using the Price to Earnings Ratio (PER) method can be displayed in the following table:

Table 2. Valuation results using the Price to Earnings Ratio (PER) method

Code	Company Name	Company PER	Industry PER	Conclusion
ISAT	PT Indosat Tbk.	16.29	20.43	<i>Undervalued</i>
EXCL	PT XL Axiata Tbk.	16.24	20.43	<i>Undervalued</i>
FREN	PT Smartfren Telecom Tbk.	-8.09	20.43	<i>Undervalued</i>
TLKM	PT Telkom Indonesia (Persero) Tbk.	10.93	20.43	<i>Undervalued</i>

The analysis results show that all companies have PER values below the average industry subsector, which is 20.43. In the traditional framework, a PER value lower than the industry average indicates that the stock is undervalued, or priced lower than similar companies.

ISAT and EXCL have almost the same PER values, which are around 16, indicating that both companies are relatively undervalued. This is interesting because the results of the DCF method show a big difference between the two. Therefore, it is important for investors not to rely on just one method, but to combine several approaches to get more comprehensive results.

The most complex condition is seen in FREN, which has a negative PER of -8.09. A negative PER indicates that the company is recording a loss, making it technically difficult to assess its stock valuation using the PER approach. Therefore, although the table shows undervalued status, the assessment of FREN needs to be carried out with a more careful approach, paying attention to the financial stability and prospects of the company as a whole.

TLKM, with a PER of 10.93, strengthens the DCF valuation results that this stock is classified as undervalued. Although it is a market leader and has profit stability, TLKM shares have not been fully appreciated by the market. This opens up opportunities for long-term investors looking for companies with strong fundamentals and relatively low risk. The PER method provides an additional dimension of analysis that is relative to the industry. When combined with the DCF approach, investors can obtain a more comprehensive valuation picture (Sudibyo, 2022). In this case, the integration of both methods shows that EXCL and TLKM shares offer the best investment opportunities, while FREN requires special attention, and ISAT shows a caution signal because its price is too high compared to its fair value (Koller et al., 2020).

5. Conclusion

Based on the results of data analysis and discussion that has been carried out, the following conclusions can be drawn in this study.

- a. Based on the valuation results using the Discounted Cash Flow (DCF) method, ISAT and FREN companies are in an overvalued condition, while EXCL and TLKM are in an undervalued condition.
- b. Based on the valuation results using the Price to Earnings Ratio (PER) method, all companies, namely ISAT, EXCL, FREN, and TLKM, show undervalued conditions compared to the average of other telecommunications subsector industries.
- c. There are differences in results between the DCF and PER methods in valuing a stock, indicating that investors should consider more than one method in stock valuation analysis.

Furthermore, based on the results of the study, the researchers in this study can provide some suggestions to several parties, including the following.

- a. For Investors: It is recommended not to rely on only one valuation method in making investment decisions, but to combine several methods to get a more accurate picture.
- b. For Companies: Company management can increase transparency in financial reports and provide more detailed information regarding long-term growth strategies to attract investors with appropriate risk profiles.

- c. For Academics: Further studies can be conducted by considering other factors such as market sentiment, telecommunications innovation, and the impact of macroeconomics on the valuation of telecommunications companies.

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