

Ika Yanuarti

Valuation Of Start-Up Company Using Real And Financial Assets Rate Of Return

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VALUATION OF START-UP COMPANY USING REAL AND FINANCIAL ASSETS RATE OF RETURN

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Abstract

The objective of this research is to analyse and describe the valuation of start-up company using the Discounted Cash Flow Analysis. There are several combination of discount rates, including combination of beta, risk free rate and market return. There are several market returns applied in the calculation of the discount rate, such as gold price, crude oil, property price index and IDX composite. The object of research is PT. XYZ, which is a start-up company engaged in the field of software (System & Mobile Application). The results showed that PT. XYZ is a start-up that has a systematic risk (Beta) of 5.1 point, which is lower than the average beta of hi-tech start-up companies. The fair value of PT. XYZ is Rp 3,729,416,128,911. Using a confidence level of 95%, the deviation of company's value is between Rp102,726,286,407 and Rp7,356,105,971,415. It is concluded that valuing the start-up using real and financial asset return as a benchmark will provide high fair value. The reason is the return in those assets are lower because of lower risk. The lower rate of return will make the value of the start-up company higher. Therefore, investors will request the start-up company to provide higher value.

Keywords: Discounted Cash Flow; Market Return; Systematic Risk.

1. Introduction

The number of a start-up in Indonesia has been increasing and it reached 1,750 companies in 2018. Indonesia becomes the 4th out of 182 other countries in the world after United States, India, and United Kingdom and it is the 1st in South Asia in terms of number of start-up. It is predicted to grow at around 5 to 6.5 times (Marketplus, 2017). The growth of start-up was supported by the growth in technology related to the internet user in the world. At the end of 2017, the internet user in Asia is the 2nd biggest in the world, i.e. 48.7% with the population of 2,023,630,194 people. Indonesia becomes the 3rd biggest

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internet user country in Asia that is 7.1% with 143,260,000 people (<http://www.startupranking.com/countries>).

PT. XYZ is a technology-based start-up company whose growth is very dependent on internet users. This is because PT. XYZ is engaged in the software industry (System & Application). PT. XYZ was established in 2016 but only in about 8 months, PT. XYZ has been able to achieve Break Even Point (BEP) and even its revenue growth has reached more than double by the end of 2017. PT. XYZ continues to grow and develop rapidly as a healthy company with the absence of debt while PT. XYZ was established. The vision of PT. XYZ is being the best company to empower people and businesses through technology with the mission of providing opportunities for everyone to improve their quality of life and business through the use of digital technology, helping companies / organizations to interact better and more personally with their customers through mobile apps, took an active role in developing start-ups (new entrepreneurs) in the field of technology. PT. XYZ strongly supports the development of technology and its application in business, including supporting start-ups and other entrepreneurs to implement technology in their daily lives such as the use of easy mobile apps.

Determining the fair value of a start-up company is not easy because there are various limitations in determining the fair value of a start-up company as follows. First, even though a start-up company is able to generate profits in the short term, it is not certain that the company can survive for a long time because start-up companies are considered not stable, especially in the initial stages. Second, the lack of historical start-up company data and the fact that many start-up companies are funded by the private capital of their founders, networking capabilities that also influence venture capital company funding decisions and the high likelihood of start-up companies failing to make start-up company discount rates unequalled with other stable companies. Finally, information obtained by investors also greatly influences the determination of a start-up company's fair value. The lack of information that can be accessed by venture capital companies through the founder is also crucial here.

The methods of determining fair value include the first one is the economic valuation method, the second is the relative valuation method (market / relative valuation method), and the last is the asset-based valuation method (Djaja, 2017). Valuation using the relative valuation method is generally carried out by comparing the components of forming an asset. Asset-based valuation methods put more emphasis on the value of assets to determine the company's fair value. Valuation is more carried out by converting all tangible and visible assets into cash and adding up all assets owned by the company as the fair value of all assets owned by the company.

Of all the methods of determining the fair value of the most appropriate and accurate company used to date, the economic valuation method is the cash flow approach model, or what we call the Discounted Cash Flow method. The method is based on presenting the company's future cash flow valuation using the required rate of return or cost of capital that represents the risk of the company. This rate of return / cost of capital is

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usually represented by WACC (weighted average cost of capital) by calculating the company's cost of debt and the cost of equity. Cost of debt is usually represented by bank interest rates and cost of equity is represented by CAPM (Capital Asset Pricing Method).

In CAPM, there is a beta that represents the total risk of the company against existing market risk. However, it is considered inappropriate if the risk of start-up companies is only seen from the beta that is usually used by companies that are already stable. Through this study, researchers present the determination of the company's fair value by using the Discounted Cash Flow method with a beta adjusted to the start-up company's business plan, research conducted at PT. XYZ.

Before investing in start-up company, investors are usually comparing with the other investment assets such as real assets and financial asset. Real assets are including crude oil, gold, and property. Financial asset such as stock. Investors will ask the minimum return of investment from start-up company equal as the return on the real asset or financial asset. Therefore, the rate of return of those assets will be used as a discount rate of start-up company's cash flow. The higher the return of the real or financial asset, the more they will expect for the value of start-up company. The higher rate of return shows that the investment asset is riskier.

1.1. Research problem

PT. XYZ will need a lot of money to make further developments since PT. XYZ is a technology-based start-up and in its growth period. Therefore, PT. XYZ must be able to conduct a proper assessment of the fair price of the company which is the basis for making decisions in conducting investment cooperation later. An appropriate method of determining fair value is required to be able to determine the fair value of PT. XYZ before investment cooperation is carried out. The method used in determining the fair value of a mature company cannot be compared to the method for determining the fair value of a start-up company. One of them is the DCF method. An adjusted beta is needed that can cover all the risks of a start-up company. This is because risks in start-up companies cannot be equated with risks in other companies that are already stable.

Based on the identification and limitation of the problem, the main issues that can be formulated are as follows:

1. What are the results of adjusted beta calculations adjusted using the company's business plan assessment scheme and discussions with the founder and management team at PT. XYZ?
2. How are the results of the calculation of determining the company's fair value using the Discounted Cash Flow method with adjusted beta and various combination calculations in the component calculation variables?
3. What is the fair value of PT. XYZ using each of the market return of real asset?

1.2. Research objectives

Based on the formulation of the problem outlined above, the purpose of the research conducted by the author is as follows:

1. Providing adjusted beta calculation results using the company's business plan assessment scheme and discussions with the founder and management team at PT. XYZ.
2. Provide the results of calculations and the translation of the determination of the company's fair value using the Discounted Cash Flow method with adjusted beta various combinations of calculations in the component calculation variables.
3. Provide the investors the fair value of PT. XYZ using the market rate of return as a benchmark of investment.

1.3. Research significance

This research will provide guidelines for technology-based start-up in determining the fair value of the company and become a reference in determining the right nominal to be negotiated in the investment process by investors. It will also become a reference for technology-based start-up companies in determining the right method in calculating and increasing company value through a combination of factors that can affect the company's adjusted value.

2. Literature review

Some assets are easier to value compared to other assets, the details of an asset's valuation vary from one asset to another, and the uncertainty related to the estimated value varies for each different asset, but the core principles of valuation remain the same (Damodaran, 2006). The economic valuation method has a rationale from an investor's perspective on profit potential by looking at the potential cash flow that will be obtained from the company where the investor invests in the future while considering the uncertainty factor that can be reflected through the cost of capital. Some economic valuation methods commonly used are the Discounted Cash Flow (DCF) model, the Economic Value Added (EVA) model, and the Real Option model (Djaja, 2017). The basis of the Discounted Cash Flow approach is the present value rule where the value of any asset is the present value of the expected future cash flows that can be generated by the asset. With the following formula:

$$\text{Value} = \sum_{t=1}^{t=n} \frac{CF_t}{(1+r)^t}$$

Where,

n = the life of the asset

CF = cash flow in period t

r = discount rate that reflects the level of risk from the estimated cash flow.

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Cash flows can vary from one asset to another, dividends per share, coupons (interest) and the fair value of bonds and after-tax cash flow on a project. Discount rate functions as a risk from the estimation of existing cash flows (Damodaran, 2002). The analysts estimate company growth also based on other information that can be useful in predicting the growth of a company in the future, such as:

- i. Specific information about the company that was published after the last income statement was issued.
- ii. Other information related to macroeconomics that can affect the company's growth in the future.
- iii. Information from competitors about the company's future prospects.
- iv. Private information from the company.
- v. Public information other than company income.

The DCF method is the most appropriate method by using a discount rate that is align with the stage of the company. In addition to getting more actual company value, it is necessary to do a company assessment using more than one technique. Assessing a closed company is not easy, especially a technology-based company. A value cannot be known with certainty, various analysts may be entitled to justify their own judgment and that is not wrong. The valuation of a business is very dependent on professional judgment and available data, which also often varies between analysts (Blake, 2016).

3. Research Methodology

The object of this research is PT. XYZ, which is a company engaged in the field of software (System & Application) with the main product being a mobile apps builder. The risk-free rate used in this study are BI 7-day Reverse Repo Rate and Interest Rate of Indonesian Government Bonds obtained from the official website of the Bank Indonesia. Free cash flow of start-up companies obtained from the company's financial statements in 2016 and 2017. The data for Crude Price Oil and Gold Price are from investing.com. The Property Price is from the Index of Residential Price (www.bi.go.id) and the stock price is from Indonesia Composite Index (www.idx.co.id).

This research also uses primary data such as interview with the CEO to determine the lifespan of the firm. Data analysis is performed by calculating the company's fair value using the Income Approach or commonly known as the Economic Approach Method. Income Approach is part of the company's fair value calculation method which has flexibility as its strengths and weaknesses. Income Approach allows analysts to use unlimited assumptions in calculating fair value. This approach is very commonly used to assess early-stage technology companies and the most common model used in the Income Approach is the Discounted Cash Flow model (Blake, 2016).

The research is a descriptive research. In descriptive research the first step taken is to determine goals precisely and specifically to ensure the data collected is relevant to the research (Kothari, 2004). The ultimate goal of descriptive research is to provide researchers with an overview of aspects related to an interesting phenomenon from an individual, organization, industry, or other perspective. Data obtained through descriptive research one of which serves to provide an understanding of the characteristics of a group in certain situations (Sekaran & Bougie, 2010).

4. Analysis and discussion

Based on the information from CEO, it can be concluded that PT. XYZ has an infinite lifespan because PT. XYZ is designed to continue to develop with very high sustainability. This can be seen from the expansion that has been planned and currently being carried out by PT. XYZ. The stable growth used is the growth rate of the global economy of 3.7%, not the growth rate of the Indonesian GDP (domestic economy) because PT. XYZ has a target to go global by 2025. According to (Damodaran,2002), there are three stage of growth and it is assumed that the initial period phase will last for 5 years. After passing through the initial period phase, growth is assumed to decline in a prudent manner for 10 years until then reaching the final phase with a steady growth onwards. After calculating all the variables needed, the next step is to calculate PT. XYZ's Free Cash Flow to Equity with the following results:

Figure 1 Free cash flow to equity

<i>Net Income</i>	Rp	6,147,200,018	
<i>Capital Expenditure</i>	Rp	1,098,244,454	-
	Rp	5,048,955,564	
<i>Depreciation</i>	Rp	79,484,965	+
	Rp	5,128,440,529	
<i>Change in Net Working Capital</i>	Rp	1,667,142,958	-
<i>Free Cash Flow to Equity</i>	Rp	3,461,297,571	

Source: Author's synthesis

In 2017, PT. XYZ's Free Cash Flow to Equity amounted to Rp 3,461,297,571. There are 3 risk free rates used in the calculation of Cost of Equity in this study. First, the author uses the Geomean BI 7-day reserve repo rate (April 2016 - December 2017) of 4.78%. Data obtained from the official website of Bank Indonesia (www.bi.go.id) with data sources from the Ministry of Communication. This risk-free rate will become Rf1. Second, the authors use a risk-free rate from sources contained in the journal of 7.20%. This risk-free

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rate is obtained from the results of a survey conducted used by 41 countries in 2017 (Fernandez et.al, 2017). This risk-free rate will be R_f2 . Third, the interest rate of Government Bonds in Indonesia that will mature on January 25, 2018, i.e. 4.74%. This figure was obtained from the official website of Bank Indonesia (www.bi.go.id) on the latest info page that was updated on October 20, 2017 with data sources from the Ministry of Communication. Through this data it is revealed that the interest rates on government bonds with serial numbers VR0026, VR0027, and VR0031 from October 25, 2017 to January 25, 2018 that mature on January 25, 2018 are the average interest rates for 3-month Treasury Bills on October 19, 2017. This risk-free rate will become R_f3 .

Market risk for the calculation of risk premium is obtained from Geomean from real and financial asset returns 2016-2017. The first market risk (R_{m1}) is obtained by calculating Geomean from Indonesia's historical crude oil price within the range of 2016-2017. The second market risk (R_{m2}) obtained by calculating the Geomean of the IDX Composite Index with a time span of 2016 - 2017. The third market risk (R_{m3}) obtained by calculating the Geomean of Indonesia's historical gold price within the range of 2016-2017. The fourth market risk (R_{m4}) in get by calculating Geomean from Indonesia's historical residential property price index with a time span of 2016 - 2017. The fifth market risk (R_{m5}) was obtained from a survey of Professor Pablo Fernandez. In its survey entitled "Discount Rate (Risk-Free Rate and Market risk Premium) used for 41 countries in 2017: a survey", market risk for Indonesia in 2017 was 16.10%. The data used to calculate market risk is monthly IDX Composite Index with various periods and different calculation methods. The Discounted Cash Flow formula used to calculate the fair value of PT. XYZ with formula as follow:

$$\text{Firm Value} = \sum_{t=1}^{t=5} \frac{FCFE_t (1+g_{high})^{(t-1)}}{(1+ke)^t} + \sum_{t=6}^{t=15} \frac{FCFE_t (1+g_t)}{(1+ke)^t} + \frac{FCFE_{terminal} (1+g_{stable})}{(1+ke)^{15} (ke - g_{stable})}$$

Where,

- t = period of PT. XYZ
- $FCFE_t$ = Free Cash Flow to Equity in period t
- $FCFE_{terminal}$ = Free Cash Flow to Equity in terminal year
- g_{high} = Growth of PT. XYZ in the initial period (high Growth) phase
- g_{stable} = PT. XYZ's growth in the final period (stable growth) phase
- g_t = PT. XYZ Growth in the transition period (declining Growth)
- ke = Cost of Equity PT. XYZ

Table 1 Three types of risk-free

Risk-free code	Description	Rate
Rf1	BI 7-day Reverse Repo Rate	4.78%
Rf2	Risk free by Pablo Fernandez	7.20%
Rf3	Interest Rate of Indonesian Government Bonds	4.74%

Source: www.bi.go.id

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As shown in table 1, there are three types of risk free that will be use in the computation of cost of equity. BI 7-day reverse repo rate and the Indonesian Government Bond give the almost similar return, i.e. 4.78% and 4.74%, while the risk-free rate using the survey of Pablo Fernandez gives the highest risk-free rate. The higher the risk-free rate will give the higher cost of equity.

Based on table 2 above, the highest annual geometric mean of real assets return is crude oil, i.e. 30.98% while gold and property have the annual geometric return is below 10%. It means that the risk of the crude oil is the highest, while the lowest risk is property asset. The price of oil is affected by the currency exchange of a country. The appreciation of currency will increase the demand for oil and vice versa. The financial asset rate of return is 16.81% as shown by the return of IDX Composite and almost the same as risk market based on the survey of Pablo Fernandez.

Table 2 Annual geometric mean of real and financial asset

Market Risk Code	Description	Rate
Rm1	Annual Geometric Mean Crude Oil	30.98%
Rm2	Annual Geometric Mean IDX Composite.	16.81%
Rm3	Annual Geometric Mean Gold	9.06%
Rm4	Annual Geometric Mean Property	7.79%
Rm5	Risk market by Pablo Fernandez	16.10%

Source: Author's synthesis

Based on table 2 above, the highest annual geometric mean of real assets return is crude oil, i.e. 30.98% while gold and property have the annual geometric return is below 10%. It means that the risk of the crude oil is the highest, while the lowest risk is property asset. The price of oil is affected by the currency exchange of a country. The appreciation of currency will increase the demand for oil and vice versa. The financial asset rate of return is 16.81% as shown by the return of IDX Composite and almost the same as risk market based on the survey of Pablo Fernandez. After adjusting for the outlier, i.e. 27,232,880,215,281 and 95,190,030,388,985, then it gives the final descriptive statistic result of the firm's value as shown below.

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Figure 2 Adjustment of the beta coefficient

Category	Subcategory	Adjustment of the beta coefficient					Result
		+1	+0.5	0	-0.5	-1	
Technology	Maturity of technology	Technology still in initial experimental phase	Technology successful on a laboratory scale	Technology successful in pilot plant	Technology successful in demo plant	Technology successful in technical application	-1
	Advantages compared to competitive technologies	No advantages identified	Advantages not clearly identifiable	Costs or quality advantages identifiable	Costs and quality advantages identifiable	Significant costs and quality advantages identifiable	0
	Reputation of scientist	No reputation Poor reputation	Poor reputation	Moderate reputation	Good reputation	Very good reputation	1
	Patent protection	No patent application	First patent application filed	Basic patent close to being granted	Basic patent granted	Extensive portfolio of granted patents	1
Total score in technology category							1
Products	Product benefits	Product benefits not identifiable	Product benefits not clearly identifiable	Product benefits clearly identifiable	Product benefits confirmed by first clients	Product benefits confirmed by numerous clients	-0.5
	Unique selling proposition	Unique selling proposition not identifiable	Unique selling proposition not clearly identifiable	Unique selling proposition clearly identifiable	Unique selling proposition confirmed by first clients	Unique selling proposition confirmed by numerous clients	0.5
	Scalability	Very low scalability	Low scalability	Moderate scalability	High scalability	Very high scalability	-1
	Competition	Currently strong competition	Potentially strong competition	Moderate competition	Low competition	Long-term low competition	1
Total score in product category							0
Implementation	Business plan	Business plan unjustifiable	Business plan with open questions	Business plan plausible	Business plan occasionally proven	Business plan frequently proven	-1
	Technical development plan	Technical development plan unjustifiable	Technical development plan difficult to justify	Technical development plan justifiable	Technical development plan likely to be feasible	Technical development plan very likely to be feasible	-1
	Marketing plan	Marketing plan unjustifiable	Marketing plan difficult to justify	Marketing plan justifiable	Marketing plan likely to be feasible	Marketing plan very likely to be feasible	-1
	Business development plan	Business development plan unjustifiable	Business development plan difficult to justify	Business development plan justifiable	Business development plan likely to be feasible	Business development plan very likely to be feasible	1
Total score in implementation category							-2
Organisation	Competences of the management team	Management team with major flaws	Management team with some flaws	Management team is complete	Management team is complete and competent	Management team is complete and very competent	1
	Headquarters location	Headquarters location problematic	Headquarters location can be improved	Headquarters location is fine	Headquarters location has advantages	Headquarters location has many advantages	-0.5
	Competences of advisory board	Very low level of competences of advisory board/ consultants	Low level of competences of advisory board/ consultants	Moderate level of competences of advisory board/ consultants	High level of competences of advisory board/ consultants	Very high level of competences of advisory board/ consultants	0
	Process efficiency	Process inefficient	Process not very efficient	Process efficient	Process very efficient	Process exceptionally efficient	0.5
Total score in organization category							1
Finances	Sales plan	Sales plan unjustifiable	Sales plan difficult to justify	Sales plan justifiable	Sales plan conservative	Sales plan very conservative	-0.5
	Costs plan	Costs plan unjustifiable	Costs plan difficult to justify	Costs plan justifiable	Costs plan conservative	Costs plan very conservative	1
	Profitability	Fundamentally low profitability	Risk of low profitability	Average profitability	Currently high profitability	Fundamentally high profitability	-1
	Liquidity plan	Financial resources for next year are not secured	Financial resources for next year are secured	Financial resources for next 2 years are secured	Financial resources for next 3 years are secured	Financial resources for next 4 years are secured	-1
Total score in finance category							-1.5

Source: Author's synthesis

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The basic beta of high technology-based start-up company is 6.6., then it will be adjusted by -1.5, becomes 5.1, which is lower than the average beta of hi-tech start-up companies. The adjustment of beta includes several aspects, such as technology, products, implementation, organization, and finances. The lower beta imply that the systematic risk of the company is low compared to other companies in the same industry.

Table 3 Cost of equity with combination of three types of risk free and five types of market risk

Risk free code	Risk free rate	Risk Premium Code	Risk Premium	Adjusted β	Cost of Equity
Rf1	4.78%	Rp1	26.19%	5.10	138.37%
Rf1	4.78%	Rp2	12.03%	5.10	66.13%
Rf1	4.78%	Rp3	4.27%	5.10	26.58%
Rf1	4.78%	Rp4	3.01%	5.10	20.12%
Rf1	4.78%	Rp5	11.32%	5.10	62.50%
Rf2	7.20%	Rp6	23.78%	5.10	128.46%
Rf2	7.20%	Rp7	9.61%	5.10	56.22%
Rf2	7.20%	Rp8	1.86%	5.10	16.67%
Rf2	7.20%	Rp9	0.59%	5.10	10.22%
Rf2	7.20%	Rp10	8.90%	5.10	52.59%
Rf3	4.74%	Rp11	26.24%	5.10	138.55%
Rf3	4.74%	Rp12	12.07%	5.10	66.31%
Rf3	4.74%	Rp13	4.32%	5.10	26.76%
Rf3	4.74%	Rp14	3.05%	5.10	20.30%
Rf3	4.74%	Rp15	11.36%	5.10	62.68%

Source: Author's synthesis

Since there are 3 types of risk free and 5 types of market return, then it will give 15 combination cost of equity. The lowest is 10.22%, which is the combination of risk free based on survey and the market return of property asset. The highest cost of equity is 138.55%, which is the combination of risk-free rate based on Government bond and the market return of crude oil.

Table 4 The computation result of firm's value

Free Cash Flow	Discount Rate	Firm Value
Rp 3,461,297,571	CoE1 138.37%	Value of the firm 1 Rp 15,954,334,063
Rp 3,461,297,571	CoE2 66.13%	Value of the firm 2 Rp 265,290,020,612
Rp 3,461,297,571	CoE3 26.58%	Value of the firm 3 Rp 7,096,344,289,213

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Rp 3,461,297,571	CoE4	20.12%	Value of the firm 4	Rp 16,218,136,669,885
Rp 3,461,297,571	CoE5	62.50%	Value of the firm 5	Rp 332,055,992,605
Rp 3,461,297,571	CoE6	128.46%	Value of the firm 6	Rp 20,532,698,096
Rp 3,461,297,571	CoE7	56.22%	Value of the firm 7	Rp 503,489,582,544
Rp 3,461,297,571	CoE8	16.67%	Value of the firm 8	Rp 27,232,880,215,281
Rp 3,461,297,571	CoE9	10.22%	Value of the firm 9	Rp 95,190,030,388,985
Rp 3,461,297,571	CoE10	52.59%	Value of the firm 10	Rp 652,215,039,186
Rp 3,461,297,571	CoE11	138.55%	Value of the firm 11	Rp 15,886,844,559
Rp 3,461,297,571	CoE12	66.31%	Value of the firm 12	Rp 262,482,820,705
Rp 3,461,297,571	CoE13	26.76%	Value of the firm 13	Rp 6,951,065,055,347
Rp 3,461,297,571	CoE14	20.30%	Value of the firm 14	Rp 15,820,596,182,044
Rp 3,461,297,571	CoE15	62.68%	Value of the firm 15	Rp 328,360,146,984

Source: Excel calculation, 2019

Table 4 above shows about 15 fair value of PT. XYZ using DCF method with 15 combination cost of equity. There are two outliers in the 15-fair value, i.e. Rp27,232,880,215,281 and Rp95,190,030,388,985 that will be excluded in the computation.

Table 5 Descriptive Statistics

Descriptive Statistics 3	
Mean	3,729,416,128,911
Standard Error	1,664,525,650,447
Median	332,055,992,605
Mode	
Standard Deviation	6,001,532,582,012
Sample Variance	36,018,393,332,955,000,000,000,000
Kurtosis	1
Skewness	2
Range	16,202,249,825,327
Minimum	15,886,844,559
Maximum	16,218,136,669,885
Sum	48,482,409,675,843
Count	13
Largest (1)	16,218,136,669,885
Smallest (1)	15,886,844,559
Confidence Level (95.0%)	3,626,689,842,504

Source: Excel Calculation, 2019

The computation result above will be analysed by using the descriptive statistic. After adjusting for the outlier, then it gives the final descriptive statistic result of the firm's value as shown below. The average (mean) of the series firm's value is Rp3,729,416,128,911. The lowest result of firm value is Rp15,886,844,559 while the highest value is Rp16,218,136,669,885. The lowest value is based on the return of crude oil as the crude oil rate of return is the highest. The highest the rate of return, the lowest the fair value. The highest value is based on the market return of property, since the rate of return of property is the lowest. The lowest the rate or return, the highest the fair value. If the investors have the assumption of crude oil investment, then they will expect that PT. XYZ has the value between Rp15,886,844,559 and Rp20,532,698,096. If gold asset as a benchmark of investment, then the value of PT. XYZ is between Rp6,951,065,055,347 and Rp7,096,344,289,213. If property as a benchmark, then the value is Rp15,820,596,182,044 and Rp16,218,136,669,885. However, if the stock investment as a benchmark, then the expected value of PT.XYZ is between Rp262,482,820,705 and Rp503,489,582,544. The value based on the reference survey is between Rp332,055,992,605 and Rp652,215,039,186. If the actual value is below than the expected value, then investors will bear the opportunity loss. However, if it is exceeding that expected value, then investors will gain.

5. Conclusions

Based on the computational results fair value of PT.XYZ using the Discounted Cash Flow method, the conclusions that can be drawn from this study are as follows:

1. The adjustment beta of PT.XYZ is 1.5 points, lower compared to the systematic risk of high-tech start-up companies in general.
2. The growth estimate by the CEO of PT.XYZ is 150%, whereas the affiliate partner staff states that the growth of PT.XYZ will be greater than 100% based on the large number of affiliates. Finance staff stated that PT.XYZ's growth could still reach 202% based on a personal analysis of PT.XYZ's financial statements from 2016 to 2017.
3. The average fair value of the company PT. XYZ using the Discounted Cash Flow method with adjustments to the beta of PT. XYZ and various combinations in determining the discount rate is Rp3,729,416,128,911. Investors will have the range of fair value which show the minimum value that they expect to receive based on their investment preferences. If the actual value is below than the expected value, then investors will bear the opportunity loss. However, if it is exceeding that expected value, then investors will gain.

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