

Startup Valuation PT Kioson Komersial Indonesia Tbk

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Abstract— Valuation would be made on PT Kioson Komersial Indonesia Tbk, which was the first Indonesian startup company to be listed on Indonesian Stock Exchange (IDX). Kioson's business is socio-commerce business by implementing an O2O (online to offline) business model. Kioson works with MSMEs to reach markets that have not been reached by the digital world. The purpose of the Valuation is to estimate the Equity Value and Value per Share of PT Kioson Komersial Indonesia Tbk, as well as the potential and fairness of the Value per Share of PT Kioson Komersial Indonesia Tbk. Method used in this valuation is Discounted Cash Flow (DCF) method using two cash flow models, which are Free Cash Flow to Firm (FCFF) and Free Cash Flow to Equity (FCFE). Valuation divided by two periods, which are plan period with 10years-length and the terminal period after the 10th year. Cost of Equity calculated by Capital Asset Pricing Model (CAPM) and Cost of Capital calculated by Weighted Average Cost of Capital (WACC). Based on the valuation results, with Cost of Equity value is 12.74% and Cost of Capital value is 12.59%, the Equity Value of PT Kioson Komersial Indonesia Tbk is Rp4,333,727,166,420 or rounded up to Rp4,333,728,000,000 and Value per Share of The PT Kioson Komersial Indonesia Tbk is Rp6,667. The result is greater than Rp2,910 as the Kioson's Value per Share on December 31st, 2017. It indicates that Kioson's share price would increase in the future. However, by doing 10.000 iteration on Monte carlo Simulation, Kioson's Value per Share of Rp2,910 is a reasonable value with a probability reached 94.96%.

Index Terms— Valuation, Startup, Kioson, Discounted Cash Flow, FCFF, FCFE, WACC, Monte Carlo.

1 INTRODUCTION

Digital developments, especially internet, have impacts on the emergence of lines of business such as e-commerce (online retail), financial technology, and technology-based businesses (startup). Furthermore, digital developments also put pressure on conventional stores or companies to evaluate their business model and start creating innovations through digital and technology^[2].

In Indonesia, there was a interesting startup compan which listed on Indonesia Stock Exchange (IDX) on October 5th 2017. Tito Sulistio, Director of IDX, explain that Kioson became a pioneer of startup company that listed on IDX through IPO. Kioson's Chief Executive Officer (CEO), Jasin Halim, said that the moment of IPO was important because it could strengthen the commitment to reduce gap between undeserved market and digital world^[3].

Kioson's share price significantly increasing in less than two weeks from Rp450/share on October 5th, 2017 to Rp3,310 on October 19th, 2017 (Ahmad Nabhani, 2017). Startup Valuation is interesting because a lot of startup valuations are considered to generate high value. The valuation would be made on the first Indonesian startup company that listed on IDX, which is PT Kioson Komersial Indonesia Tbk. Kioson is also one of the startups that has great opportunities in the future with its business model, O2O, but also has a high risk.

2 FRAMEWORK

2.1 Startup

A Start-up is an early-stage company that just started to operate. Startup companies have an unstable market. The challenge to do the valuation on Startup Companies is the availability and accessibility of data because startup company is a

young firm that has little or even no historical data and it is difficult to find similar companies. Value of Startup Company is based on potential company's growth in the future. Data and assumptions tend to have fairly large errors^[4].

2.2 Valuation

Based on International Glossary of Business Valuation Term, business valuation is an action or process in determining the equity value of an entity or its share ownership. An entity is a commercial, industrial, service or investment company (or a combination of both), carrying out economic activities^[11].

2.3 Income Approach

According to the International Glossary of Business Valuation Terms, Income Approach is a method commonly used to determine the indication of the value of a business, business ownership, or intangible assets using one or more methods to convert some of the benefits that might be obtained into one value^[12].

The Income approach shows an indication of a value by converting future cash flow into one present value. According to Hitchner^[11] Income Approach estimates the fair value of a company's market based on income, cash flow, and dividend payment of the company. Income Approach shows the current fair value of the profits of a business that will be obtained in the future. Future profits will discounted to the present value of the rate of return that represents company's risk^[11].

In the income approach, there are three methods that can be used, which are Discounted Cash Flow (DCF) method, Capitalized Cash Flow (CCF) method, and Excess Cash Flow method. Each method depends on the present value of a company's cash flow in the future where in general, the cash flow

is estimated based on historical data^[11].

2.4 Discounted Cash Flow Method

Discounted Cash Flow Method is a multiple-period valuation method that converts a future series of cash flow into value by reducing it into present worth at rate return (discount rate) that reflects risk. Cash flow could be after-tax, debt-free, or some other measure deemed appropriate and as adjusted by the analyst. Future income or cash flow typically determined through projection provided by the Company^[11].

The value of a firm can be determined by forecasting the future financial performance of the business and identifying the surplus cash flow or earnings that generated by the business. Those future returns computed to present value by consider the risks that associated with company's operations. Discounted Cash Flow (DCF) analysis is the procedure by which cash flows are used as a measure of the returns generated by business^[12].

Two-stages model on Discounted Cash Flow is designed to value a firm that is expected to grow much faster than a mature firm in the initial period and would be stable after that period^[4]. Discounted Cash Flow generally has two stages. First stage, is a forecast of a specific number of years. Second, is estimating the terminal value as the company estimated to be going concern. The Discounted Cash Flow computed by formula as^[5]:

$$\text{Value of the Firm} = \sum_{t=1}^{t=n} \frac{FCFF_t}{(1+k_c)^t} + \frac{\text{Terminal Value}}{(1+k_c)^t} \quad (\text{Eq.1})$$

where:

$$\text{Terminal Value} = \frac{EBIT_{n+1}(1-t)(1-\frac{g}{ROIC})}{\text{Cost of Capital}_n - \text{Stable Growth Rate}^t} \quad (\text{Eq.2})$$

In the Equation.1, $FCFF_t$ means Free Cash Flow on year t , and k_c is the discount rate. The discount rate would be weighted average cost of capital if we use Free Cash Flow to Firm. While on Free Cash Flow to Equity, the discount rate would be cost of equity^[5].

In the Equation.2, Terminal Value would use EBIT, growth on EBIT, ROIC, and WACC (Weighted Average Cost of Capital) if we use FCFF. While on FCFE, we would use Net Income, growth on Net Income, ROE, and Cost of Equity. There are three ways to find terminal value, one is to assume a liquidation of the firm's assets in the terminal year and estimate what others would pay for the assets that the firm has accumulated at that point. The other two approaches value the firm as a going concern at the time of the terminal value estimation. One applies a multiple approaches to estimate the value in the terminal year. The other assumes that the cash flows of the firm will grow at a constant rate forever – a stable growth rate^[5].

In theory, Free Cash Flow to the Firm (FCFF) model would yield the same equity value as the results of Free Cash Flow to

Equity (FCFE) model^[4].

2.5 Free Cash Flow to Firm

Free Cash flow to the Firm represents cash available to satisfy all investors holding claims to firm's resources including stockholders, lenders, and preferred stockholders. Enterprise cash flow is calculated before the source of financing are determined. Cash flow is based operating and investment activities, but not from financing activities, because this represents the cash flow available to compensate all those providing funds to the company^[8]. The formula to calculate free cash flow is:

$$\begin{aligned} \text{FCFF} &= \text{EBIT} (1-\text{Tax}) \\ &+ \text{Depreciation \& Amortization} \\ &- \text{Capital Expenditure} \\ &- \Delta \text{ Net Working Capital} \end{aligned} \quad (\text{Eq.3})$$

Depreciation and Amortization are not actual cash outlays and added to operating income in calculating cash flow. Capital Expenditure refers to investment activities. Net working capital is defined as current operating assets (excluding cash balances in order to meet normal operating requirements) less current operating liabilities^[8].

2.6 Free Cash Flow to Equity

Free Cash Flow to Equity is the cash flow remaining for re-investing in the firm after the firm satisfies all obligations including debt payments, capital expenditures, change in net working capital, and preferred dividends payments^[8]. The formula to calculate Free Cash Flow to Equity is:

$$\begin{aligned} \text{FCFE} &= \text{Net Income} \\ &+ \text{Depreciation \& Amortization} \\ &- \text{Capital Expenditure} \\ &- \Delta \text{ Net Working Capital} \\ &+ \text{New Loan} \\ &- \text{Loan Repayments} \end{aligned} \quad (\text{Eq.4})$$

2.7 Weighted Average Cost of Capital

According to Donald M. DePamphilis^[8], "The weighted average cost of capital (WACC) is the broadest measure of the firm's cost of funds and represents the return that a firm must earn to induce investors to buy its common stock, preferred stock, and bonds". The WACC computed using a weighted average of the firm's cost of equity (k_e), pretax cost of debt (i), and cost of preferred stock (k_{pr}):

$$\text{WACC} = \left[\left(\frac{E}{D+E+PR} \right) \times k_e \right] + (1-t_i) \left[\left(\frac{D}{D+E+PR} \right) \times k_d \right] + \left[\left(\frac{PR}{D+E+PR} \right) \times k_{pr} \right] \quad (\text{Eq.5})$$

where:

- D = Debt Value
- E = Equity Value
- PR = Preferred Stock Value
- k_d = Cost of Debt

k_e = Cost of Equity
 k_{pr} = Cost of Preferred Stock

2.8 Capital Asset Pricing Model

Capital Asset Pricing Model (CAPM) was introduced by Jack Treynor, William Sharpe, John Lintner and Jan Mossin independently, building on the earlier work of Harry Markowitz on diversification and modern portfolio theory. In theory, Capital Asset Pricing Model (CAPM) is employed to set the investor required rate of return on a risky security given the non-diversifiable firm-specific risk, as the systematic risk will be eliminated in a well-diversified portfolio^[9]. The results of the CAPM are widely used for describe the risks and returns of portfolios and for performance measurement^[16]. Capital Asset Pricing Model (CAPM) is a model that describes the relationship between risk and return, and uses β variable as one variable to describe the risk^[17]. CAPM can be defined as follows:

$$k_i = R_f + \beta_i [E(R_m) - R_f] \quad (\text{Eq.6})$$

where:

k_i = Cost of Equity
 R_f = risk free rate
 β_i = Beta Portfolio
 $E(R_m)$ = Portfolio Return
 $[E(R_m) - R_f]$ = Risk Premium

2.9 Monte Carlo

There are several methods to deal with uncertainty in the financial model. Monte Carlo simulation is the most popular method used because it is flexible and simple. Monte Carlo simulation calculates various scenario models repeatedly with the value of profitability distribution determined by author. Basically, there are two sources of information can be used to measure variables in model risk analysis, available data and expert opinions^[14].

3 METHODOLOGY

The Valuation used Income Approach with Discounted Cash Flow Method, while cash flow would be calculated by Free Cash Flow to Firm (FCFF) and Free Cash Flow to Equity (FCFE). Due to market competition conditions, valuation used two-stages Discounted Cash Flow (DCF) method consist of Explicit Period and Terminal Period. Valuation done by these following steps: (1) Collect data to determine assumptions such as financial reports, annual reports, market overview, and data related to cost of equity and Weighted Average Cost of Capital calculation; (2) Determine assumptions for financial projection based on historical data and/or market overview, and conditions that we estimated in the future; (3) Create financial projection through spreadsheet that interpreted business simulation; (4) Calculate FCFF and FCFE; (5) Calculate Cost of Equity with Capital Asset Pricing Model (CAPM) and

Cost of Capital with Weighted Average Cost of Capital (WACC); (6) Calculate Equity Value and Value per share with two cash flow model, Free Cash Flow to Firm and Free Cash Flow to Equity; (7) Run monte carlo simulation by multiply the company's growth assumptions with random number (on excel use "RAND()") and then set up data table that will iterate 10.000 valuation results. The next step is calculate the average and standard deviation on the 10.000 iterations. The last step is calculate Z value by dividing the difference from the average and the standard deviation with the target value to be achieved. Based on the Z Value, the results of the probability to achieve a value are obtained by using the "NORMSDIST (Z)" formula in excel.

4 VALUATION RESULTS

4.1 Company Profile

PT Kioson Komersial Indonesia Tbk is socio-commerce startup company that implemented O2O as a business model. Kioson provides digital platform (software and hardware) to support Micro, Small, and Medium Enterprises or MSME(s) with partnership basis or individual agents who have access throughout Indonesia. Kioson provide various services to be used by partners for transactions. At the end of 2017, Kioson has 30.000 partners^{[7],[15]}.

4.2 Business Opportunities

Indonesia's e-commerce market size estimated would grow at 39% per year (10-years CAGR) until 2025^[18]. Internet Penetration in Indonesia also estimated would be expanded^[6]. Furthermore, mobile payments transaction value in Indonesia estimated would be increasing up to 85% Compounding Annually Growth Rate (CAGR) until 2021^[1]. While until 2028, global online payments market revenue would be estimated grow on 10% CAGR^[10]. Based on six similar startup companies, their revenues grew between 6% to 250%.

The McKinsey report^[8] states that the growth and expansion of online trade would be supported through companies by build a good logistics infrastructure, encourage non-cash transactions, and support MSMEs to move online. Kioson undertakes infrastructure and logistics issues by reaching out to undeserved market through cooperation with MSMEs or individual agents to become Kioson's partners. This can also encourage MSMEs to move online. Kioson also works with Bank Negara Indonesia (BNI) so people can easily create bank accounts with kiosk agents and also could encourage people to switch to non-cash transactions.

Kioson has great opportunities to target unbanked people and those who have not familiar with digital world. Kioson comes with an O2O business model so the expansion will be easier to do. Internet penetration in Indonesia is also expected to expand and would give a positive impact to Kioson.

4.3 Assumptions

The assumptions used refer to e-commerce, mobile pay-

ment, and financial technology growth. Assumptions also determine by considering the growth of similar companies with Kioson. Reinvestments on Fix Assets and Intangible Assets refer to sales growth and assumptions on fix assets turnover and intangible assets turnover.

4.4 Free Cash Flow

The results of Free Cash Flow to Firm (FCFF) as follows:
(in million Rupiahs)

Year	FCFF	Year	FCFF
2018	4.656	2023	161.041
2019	(25.892)	2024	222.010
2020	(18.099)	2025	299.666
2021	7.611	2026	439.191
2022	35.469	2027	692.361

Table-1. Free Cash Flow to Firm
Source: Author (2018)

The results of Free Cash Flow to Equity (FCFE) as follows:

(in million Rupiahs)

Year	FCFE	Year	FCFE
2018	(344)	2023	175.556
2019	174.568	2024	201.777
2020	242.073	2025	186.715
2021	272.955	2026	312.649
2022	235.544	2027	550.977

Table-2. Free Cash Flow to Equity
Source: Author (2018)

4.5 Cost of Capital

Cost of Capital would be calculated by Weighted Average Cost of Capital (WACC), while Cost of Equity would calculated by Capital Asset Pricing Model (CAPM). The results of Cost of Equity calculated by CAPM defined as follows:

$$\begin{aligned}
 k_e &= R_f + \beta_i[E(R_m) - R_f] - RDBS \\
 &= 7.3317\% + 1.006 \times (7.62\%) - 2.26\% \\
 &= 12.74\%
 \end{aligned}$$

With Cost of Equity 12.74% (as the results of CAPM), WACC would be 12.59% as shown in Table-3 below.

	Proportion	Cost of Capital	Weighted
Debt	3,0%	7,81%	0,24%
Equity	97,0%	12,74%	12,36%
		WACC	12,59%

Table-3. Weighted Average Cost of Capital
Source: Author (2018).

4.6 Equity Value

Free Cash Flow to Firm (FCFF) would be discounted by Cost of Capital of 12.59% for 10years and 8.32% on terminal

period with estimated stable growth of EBIT is 3%. Kioson's Equity Value based on Free Cash Flow to Firm defined as follows:

(in million Rupiahs)

Years	FCFF	PVIF @ 12,59%	Present Value (PV)
2018	4.656	0,8882	4.135
2019	(25.892)	0,7888	(20.425)
2020	(18.099)	0,7006	(12.681)
2021	7.611	0,6223	4.736
2022	35.469	0,5527	19.603
2023	161.041	0,4909	79.052
2024	222.010	0,4360	96.794
2025	299.666	0,3872	116.040
2026	439.191	0,3439	151.050
2027	692.361	0,3055	211.494
Present Value Explicit Period			649.800
Terminal Value	12.373.139		
PVIF		0,3055	
Present Value Terminal Period			3.779.591
Corporate Value (Operational)			4.429.391
(+ Non-Operational Assets			-
(+ Cash on Dec 31th 2017			39.336
Corporate Value			4.468.727
(-) Debt Value			(135.000) -
Equity Value			4.333.727
Shares Outstanding (millions of shares)			650
Share Price			Rp6.667

Table-4. Equity Value (FCFF)
Source: Author (2018)

Free Cash Flow to Equity (FCFE) would be discounted by Cost of Equity of 12.74% for 10years and 9% on terminal period with estimated stable growth of Net Income is 4%. Kioson's Equity Value based on Free Cash Flow to Equity defined as follows:

(in million Rupiahs)

Years	FCFE	PVIF @ 12,74%	Present Value (PV)
2018	(344)	0,8870	(305)
2019	174.568	0,7868	137.345
2020	242.073	0,6979	168.933
2021	272.955	0,6190	168.960
2022	235.544	0,5491	129.326
2023	175.556	0,4870	85.497
2024	201.777	0,4320	87.163
2025	360.715	0,3832	138.212
2026	502.649	0,3399	170.832
2027	384.977	0,3015	116.055
Present Value Explicit Period			1.202.018
Terminal Value	10.258.035		
PVIF		0,3015	
Present Value Terminal Period			3.092.374
Equity Value (Operational)			4.294.391
(+ Non-Operational Assets			-
(+ Cash on Dec 31th 2017			39.336
Equity Value			4.333.727
Shares Outstanding (millions of shares)			650
Share Price			Rp6.667

Table-5. Equity Value (FCFE)
Source: Author (2018)

4.7 Monte Carlo Simulation

Monte Carlo Simulation will help to find the probability to achieve the target of equity value or share price of Kioson. At the end of the year 2017, Kioson's stock price is Rp2,910. So, with Rp2,910 as the target to achieved, the probability to get the target is 94.96% as the result of Monte Carlo Simulation with assumptions that we had determined.

5 CONCLUSION

Valuation done by Income Approach with Discounted Cash Flow Method by consider the company's business prospects in the future. The value of the company depends on the assumptions used. Thus, it becomes a challenge for management in estimating factors that influence company's value. The Cash Flow will calculated by Free Cash Flow to Firm (FCFF) and Free cash Flow to Equity (FCFE) so the assumptions, especially on terminal period, could be more controlled. The Valuation would divided by two periods, Explicit Period and Terminal Period. The assumptions refer to e-commerce, mobile payment, and financial technology growth and also consider growth of similar companies. The result of Cost of Equity is 12.74% and the result of Cost of Capital is 12.59%. Based on the Valuation, the Equity Value of PT Kioson Komersial Indonesia Tbk is Rp4,333,727,166,420 or rounded up to Rp4,333,728,000,000 or Rp6,667 per share (with 650millions shares outstanding). This value is greater than Rp2,910 as the Kioson's share price on December 31st, 2017. It indicates that Kioson's share price is undervalue and predicted would increase in the future. However, the Value per Share of Rp2,910 is a reasonable value with a probability reached 94.96% as the result of Monte Carlo Simulation.

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