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VALUATION BUSINESS IN PEER TO PEER LENDING WITH DISCOUNTED CASH FLOW (DCF) METHOD

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Abstract:

Start-up companies are businesses that are now very popular in Indonesia. To support the business moving fast, these businesses need investors by offering the company's fair value. With similar but not the same calculation, in which start-up companies have different financial indicators and financial assumptions with conventional companies, in this case, the valuation is included innovation value and disruption probability. This research is a descriptive study which is based on case studies in the research object. The object of research is PT ABC, a company engaged in the field of Financial Technology. Data collection is done by collecting secondary data from the company and observation during the internship. The analysis is done by conducting a sensitivity analysis with the DCF method using Microsoft Excel. Valuation is also very closely related to Financial Projection to predict the state of the industry peer to peer landing in the future. The data shows that the enterprise value is Rp. 46,084,735,403,742. Then, EV/Revenue is 1,748 times, and the percentage of raise is 100%. According to DCF Valuation, the author suggests investors invest in the company. Because the valuation is very good.

Keywords:

Start-up Valuation, Fintech, Discounted Cash Flow (DCF), Financial Projection, Innovation Value, Disruption Probability, and Sensitivity Analysis

Introduction

A startup is a company initiated by a founder or individual entrepreneur to look for repeatable and measurable business models. The founders designed the startup to effectively develop and validate a scalable business model (Robehmed, 2013). The startup is a very popular business in Indonesia. Proven in 2018, Indonesia's creative economy agency recorded 992 start-ups in

Indonesia. Therefore, funding is very important to develop business in startups, so startups in Indonesia are looking for investors who want to invest their funds. So, company valuation is needed as a basis for investors to invest in a start-up company which is a plan or carry out a company action.

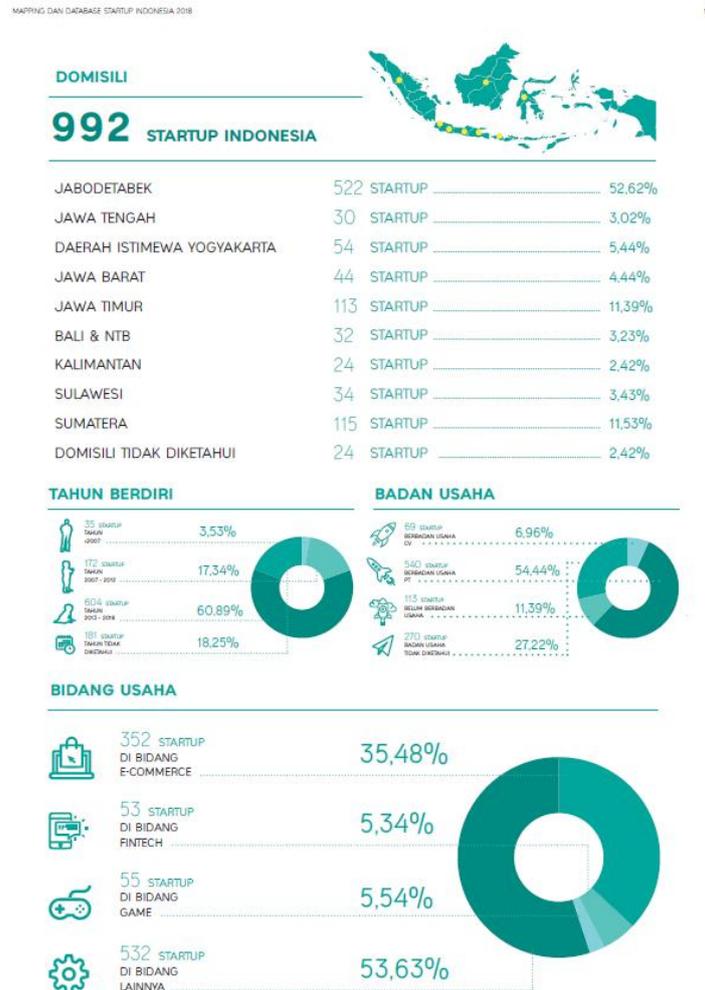


Figure I. Domicile of Indonesia Start-up

(Zaky, 2018)

The importance of valuation is set based on IFRS 13 about fair value measurement. With the device, it is hoped that start-ups in Indonesia can do their company valuations appropriately to receive funding from investors to support the speed of business development.

PT ABC is a start-up company in the field of fintech. The company has the vision to bring happiness into life. The company ensures that all stakeholder components, from farmers to consumers, can be happy because of the company. Our efforts to make this happen are by applying technology, empowering local communities, increasing labors' income, creating new entrepreneurs in rural areas, and collaborating with others. (PT ABCs' Company Profile)

Business Issue

PT ABC conducts its business to obtain income in 2 ways, 1.) by opening investment projects. 2) manage the capital that has been invested to get a return to each party. The company has

successfully carried out 112 projects, employs 1,900 labors, owns 500 hectares of land, and 35,000 supplies.

This company is facing funding problems in its business operations so that it runs smoothly due to cashflow turnover that is so fast. The company's valuation is needed so that the company gets funding from outside the business, then investors can decide to invest in this company. Venture capital provides equity financing for small businesses and is often risky in return for a share of company ownership (Damodaran, 2011). In another opinion says that investors as providers of funds need to assess the due diligence of the companies they will invest. Also, investors expect a profitable product and an attractive ratio of income to equity, which makes management have to manage the source of the surplus successfully and sustainably (Pohl, 2017)

The author chooses the DCF method as company valuation and compares it with similar businesses. Then do a sensitivity analysis on the feasibility of investing in this company. Company valuation plays an important role in determining the proportion of equity maintained by founders and investors, as well as determining the basis for future fundraising if needed (Bell, 2014).

Literature Review

Start-up Company

The start-up companies are temporary organizations or partners formed to find business models regularly and measured (Blank, 2012). The origin of start-up companies in the field of technology then develops in other fields such as new investment services and funding which we call financial technology or fintech (Robehmed, 2013).

The start-up is a human institution design that creates something new under extreme conditions and serenity. It doesn't say about what size of the company or what sector of the industry, it just says we're trying to do institution-building when we don't know what we don't know (Ries, 2011).

The term start-up describes a company in the early stage of the business lifecycle with a high degree of innovation looking for capital resources. The difference to other companies in their early stage is the level of innovation and outstanding growth potential (Achleitner, 2018).

Based on the opinions above, the author concludes that Start-up is a digital-based start-up business that aims to provide existing social solutions to the community and has a rapid business development on funding from investors who invest their funds in the start-up itself.

Business Valuation

Company valuation is commonly used to determine the precise value of one company at a time. One of the reasons why companies assess their value is because of the requirement from impending investors or the investor to do the valuation by themselves or to maximize the company's value and estimating the effects of various alternative strategies (Brigham, 2004).

A valuation is a process of determining the fair market value of a company in a national context, meaning that the valuation is a) time-specific, b) there is no negotiation, and c) there is no exposure to the open market (Divestopedia, 2016).

Discounted Cash Flow Valuation

The importance of using cash flows in valuation is stressed where analysts ranked free cash flow and operating cash flow as number one and two respectively when ranking accounting variables in order of importance (Imam, 2008). Discounted Cash Flow models measure the intrinsic value of a company and are based on the rationale that the current value of an asset is equal to the present value of all expected future cash flows (Lopez, 2008). Discounted cash flow valuation estimates the value of any asset by discounting the expected cash flow on that asset at the rate that reflects their riskiness (Damodaran, 2011). The only path that will be used is to value the entire firm, including equity and any other claims in the firm (from bondholders, preferred stockholders, etc). There are three major variables functioned by the value of the company: the expected net cash flows, the expected growth of the cash flows, and the required rate of return (Ivanovska, 2014). The value of the firm is obtained by discounting expected cash flow to the firm at the weighted average cost of capital. The formula of the calculation showed below (Curry, 2018):

$$DCF Formula = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} \dots + \frac{CF_n}{(1+r)^n}$$

Explanation:

CF_1 = Cash Flow year 1
 n = year n
 r = Discounted Rate

All of the respondents which consisted of investment banks in the US used DCF as the standard to evaluate a company, even though they think that this method is not suitable in every situation (Brotherson, 2014).

4 elements are calculating fair value, i.e. cash flow from existing assets, estimated growth rate, discount rate, terminal value. The four stages in the assessment of startup companies include (Samonas, 2015):

Stages 1: estimate cash flow in year 5 in the future. The period is adjusted by the company's management and predicted with free cash flow growth average obtained geometrically using the following formula.

$$Geometric\ mean = \left[\frac{Earnings_0}{Earnings_{-n}} \right]^{\frac{1}{n}} - 1$$

Where:

-n = revenue in year n for the last year

Stage 2: The discount rate (return) can be calculated using the Weight Average Cost of Capital (WACC). Calculated WACC, we need to know the beta, To use this approach, the beta of comparable companies is taken from Bloomberg and the unlevered beta for each company is calculated (Corporate Finance Institute, 2020)

$$Unlevered\ Beta = Levered\ Beta / ((1 + (1 - Tax\ Rate) * (Debt / Equity)))$$

The average of the unlevered betas is then calculated and re-levered based on the capital structure of the company that is being valued (Corporate Finance Institute, 2020)

$$Levered\ Beta = Unlevered\ Beta * ((1 + (1 - Tax\ Rate) * (Debt / Equity)))$$

After we get the beta, we can calculate the WACC, Discounted rate or Cost of Capital can be calculated using the weighted average or can be called the Weighted Average Cost of Capital (WACC) (Djaja, 2017). The WACC formula is:

$$WACC = \frac{E}{V} K_e + \frac{P}{V} K_{ps} + \left(\left(\frac{D}{V} K_d \right) x (1 - t) \right)$$

Where:

- E = market value of the firm's equity (market cap)
- D = market value of the firm's debt
- P = market value of the firm's preferred stock
- V = total value of capital (equity plus debt)
- E/V = percentage of capital that is equity
- D/V = percentage of capital that is debt
- P/V = percentage of capital that is preferred stock
- Ke = cost of equity (required rate of return)
- Kd = cost of debt (yield to maturity on existing debt)
- Kps = cost of preferred stock
- T = tax rate

Stage 3: The cash flow assessment at the end of the forecast period can be sought by calculating the terminal value. There are various approaches to calculating the terminal value. Amongst the most common approaches are (Samonas, 2015):

- Exit Multiples, Where the terminal value is calculated using comparable company multiple like EBITDA or EBIT (e.g. the terminal value of the company should be worth 5 times its EBITDA)

Stage 4: To calculate the sensitivity analysis, we can use the NPV formula. The NPV formula is used to determine the present value of the project by (Samonas, 2015):

$$NPV = -Cf_0 + \sum_{i=1}^T \frac{Cf_i}{(1+r)^i}$$

Where:

- Cf_0 = Cash flow in the beginning
- Cf_i = Cash flow in year i
- i = years i
- r = Discounted Rate

Research Methodology

The research is a case study research with the descriptive method in a start-up company (PT ABC) in December 2019 – March 2020. Aims to describe what currently applies. There is an attempt to describe, record, analyze, and interpret the conditions that currently occur or exist (Mardalis, 2010). In other words, descriptive research aims to obtain information about the current situation and see the relationship between the variables that exist. This study does not test hypotheses or does not use hypotheses, but only describes information as it is following the variables studied. Data collected through descriptive research one of which serves to

provide an understanding of the characteristics of a group in certain situations (Sekaran, 2010). The analysis is done by conducting a sensitivity analysis with the DCF method using Microsoft Excel with flexibility assumption as advantageous or disadvantageous based on google analytics. Therefore, this approach is very commonly used to assess early-stage technology companies (Blake, 2016).

Study Analysis

Assumption of Revenue

The assumption of Revenue is using the data from google analytics. The author chooses the order data from PT ABC's customer's annual visit then forecasting the target growth with geometric mean then accepted by management. The target growth is more or less 20% in the next five years. After forecasting the growth, author, and management breakdown with conversion rate as a result of the ordered customer. The conversion rate is the percentage of visitors who order the goods/service from digital businesses.

Table 1: Assumption of Revenue

Assumptions	Start-up year						Terminal year
	2019	2020	2021	2022	2023	2024	2025
Site Traffic (Avg monthly visits)							
Total Monthly Visits	13.52						
	8	16.280	19.626	23.702	28.675	34.756	42.201
<i>Growth Rate</i>		20,3%	20,6%	20,8%	21,0%	21,2%	21,4%
Site Traffic (Annual)							
	1						
	2						
Total Annual Visits	162.336	195.357	235.510	284.421	344.106	417.067	506.413
Conversion Rates							
Total Monthly Visits	22,6%						
		22,4%	22,2%	22,0%	21,8%	21,6%	21,3%
Orders Placed							
Total Orders Placed	36.652	43.733	52.254	62.524	74.922	89.909	108.055
Order Details							
Average item Price (gross)	1.170	1.170	1.170	1.170	1.170	1.170	1.170
# of items per order	246	516	1.083	2.274	4.775	8.594	15.469
Average markdown	0,06%	0,06%	0,06%	0,06%	0,06%	0,06%	0,06%
Average promotion/discount	0,06%	0,06%	0,06%	0,06%	0,06%	0,06%	0,06%

Cost of Return (Gross return of investment)	0%	0%	0%	0%	0%	0%	0%
Average Gross order value	287.1 51	603.01 7	1.266.3 36	2.659.3 05	5.584.5 41	10.052.1 74	18.093.9 14
Average Net order value	286.8 21	602.32 4	1.264.8 81	2.656.2 51	5.578.1 26	10.040.6 27	18.073.1 29
Customers							
Churn Rate	26%	26%	26%	26%	26%	26%	26%
Opening an active customer base	0	27.057	52.259	77.154	103.11 4	131.430	163.398
Plus new customers	36.65 2	43.733	52.254	62.524	74.922	89.909	108.055
	36.65		104.51	139.67	178.03		
Subtotal	2	70.790	3	8	5	221.339	271.453
Less churned customers	(9.595)	(18.53 1)	(27.359)	(36.564)	(46.605)	(57.941)	(71.060)
Closing the customer base	27.05 7	52.259	77.154	103.11 4	131.43 0	163.398	200.393

(Author's Analysis and Management Decision)

After we calculate the customers who order, we could calculate how many products they order in PT ABC. The price per order management decides Rp. 1,170, - with churn rate 26%, then with management's assumption partners, the management estimates the growth of item per order is 110% in year two until year four and 80% in year five and year six, because the company had been agreed with many partners. The average markdown charge and giving discount or promo is 0.06%.

Assumption of Expense

There are two types of expense in PT ABC, that are: marketing expenses, and general and administration (G&A) expenses. the company also estimated expenses will be growing 75% in 2021, 80% in 2023, and 80% in 2025. The data is collected by the author directly from management and the author does a discussion with management.

From the assumption above, we can conclude that management in PT ABC estimating the marketing expense (cost per click) is Rp. 548,84 per click. The management does not estimate the growth, because the price does still sustain in the same value for the last 12 months.

The company estimates that any growth in 2021, 2023, and 2025, because the operational needs to expand or it will develop a new project business. thus, the company needs a new human resource and employee's quality.

Assumption of Current Asset and Current Liabilities

Current Assets

The management of the company is estimated 180 of the account receivable days, and the company has office rent Rp. 2,799,291,866 with 12 months period while used 4 months. Then, the company also estimating rent will be growing 75% in 2021, 80% in 2023, and 80% in 2025.

With assumption, the company will move a building or rising expense. And the company does not have an inventory.

Current Liabilities

While current liabilities, the company estimated the fund will be liquified on 182 days or 2 days after account receivable earned. Because it refers to Otoritas Jasa Keuangan (OJK) policy about market exchange settlement period article 2 paragraph 2.

Assumption of Capital expenditure and Financing

Capital Expenditure

The company's Fixed assets will be increasing by 50% in 2022 and 75% in 2025 with the assumption that the company will be expanding its business every 2 years. And the company has not done any acquisition yet as long as five years. And management had to estimate the depreciation according to the type of fixed assets

Financing

In financing, the interest rate is according to the BI (Bank of Indonesia) rate published for loan investment. The rate is 10,02% in January 2020. Then, the company had a debt issue Rp. 1,421,435,059, - and invested Rp. 7,735,722,402, -

Assumption of Valuation

The valuation of the company has three items. The first item is the Tax rate, the tax rate is according to the percentage of income tax in Indonesian tax or 25%. The second is the Discounted Rate, the discount rate could be calculated by weight average cost of capital (WACC). With detailed below:

Table 2: WACC Calculation

WACC	
Capital Structure	
Debt to Total Capitalization	86,82%
Equity to Total Capitalization	13,18%
Debt / Equity	658,90%
Cost of Equity	
Risk-Free Rate	7,48%
Equity Risk Premium	7,08%
Levered Beta	0,48
Cost of Equity	10,91%
Cost of Debt	
Cost of Debt (before tax)	5,01%
Tax Rate	25,00%
After-Tax Cost of Debt	3,76%
WACC	4,70%

(Damodarasn, 2020)

According to WACC Calculation above, the author gets debt to total capitalization (debt /equity + liability) 86,82% and equity to total capitalization 13,18% (Equity / equity + Liability). Then the cost of equity we can calculate using the risk-free rate on market bond data. The data stated 7.48% on March 13, 2020. And equity risk premium (7.08%) can be used Damodaran's calculation updated period January 1, 2020.

Calculating *beta* is a bit more complicated case not – listed company, that is, a private company (Samonas, 2015). the management of the company decides to calculate based on beta from a similar company to find unleveraged *beta* then process according to the framework above. Thus, the unleveraged beta of the company earns 0.08, and leverage *beta* is 0.48.

The cost of equity result is 10.91%. Calculating Cost of Debt is the cost of debt before tax or percentage of interest expense (5.01%) times 75% (1-tax rate). The result is 3.76%. After calculating these items, we got 4.70% of WACC.

After calculating WACC, we can calculate terminal value exit multiple. It is pretty different to calculate the terminal value. The author compares the terminal value of comparable companies with EV/EBITDA. The result of the calculation is 31.92 times.

Income Statement Projection

Table 3: Income Statement Projection

	Startup year 2019	2020	2021	2022	2023	2024	Terminal year 2025
Income Statement (in million)							
		151%	151%	151%	152%	116%	116%
Gross Revenue	10.525	26.372	66.171	166.271	418.403	903.781	1.955.146
Discounts, Promotions, Markdowns	(12)	(30)	(76)	(191)	(481)	(1.038)	(2.246)
Net Revenue	10.513	26.341	66.095	166.080	417.922	902.742	1.952.900
Variable Operating Expenses							
Marketing	89	107	129	156	189	229	278
Total Variable Costs	89	107	129	156	189	229	278
Contribution							
Margin	10.423	26.234	65.966	165.924	417.733	902.513	1.952.623
<i>Margin</i>	99,15%	99,59%	99,80%	99,91%	99,95%	99,97%	99,99%
Fixed Operating Expenses							
General & Administrative	8.126	8.971	14.299	14.766	24.712	24.712	43.782
Total	8.126	8.971	14.299	14.766	24.712	24.712	43.782
EBITDA	2.297	17.263	51.667	151.159	393.021	877.802	1.908.841
<i>Margin</i>	21,9%	65,5%	78,2%	91,0%	94,0%	97,2%	97,7%
Depreciation	689	1.377	2.066	3.088	3.457	3.827	4.965

Interest	71	142	142	142	142	142	142
Earnings Before Tax	1.537	15.743	49.458	147.929	389.422	873.833	1.903.733
Taxes	384	3.936	12.365	36.982	97.355	218.458	475.933
Net Income	1.153	11.808	37.094	110.947	292.066	655.374	1.427.800

Dividends Paid	0	0	0	0	0	0	0
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(Author's Analysis and Management Decision)

According to Income statement projections above, we can describe as follows:

1. In the actual year, the company earned net revenue Rp. 10,512,517,225 for one year. And will grow 151% - 152% during the next 4 years and 116% in year five and six.
2. Variable operating expenses is Rp. 89,095,886 and growing like revenue. Thus, the contribution margin is 99.15% on the actual year, and still stable in the next 5 years. And for fixed operating expenses is Rp 8,126,240,933 and the EBITDA margin is 21,9% actual years. For forecasting it will be fluctuating, the details could see in table 3.
3. After less all the expenses, the company will earn net income Rp. 1,152,936,280 in the current year and will fluctuate in the next 5 years. The details can see in table 3 above.

Table 4: Unlevered Free Cash Flow

	Startu p year 2019	2020	2021	2022	2023	2024	Termina l year 2025
Valuation (in million)							
Free Cash Flow							
Earning Before Tax	1.537	15.74	49.458	147.92	389.42	873.833	1.903.7
Interest	71	142	142	142	142	142	142
EBIT	1.608	15.88	49.601	148.07	389.56	873.975	1.903.8
Less Taxes	(402)	(3.97)	(12.40)	(37.01)	(97.39)	(218.49)	(475.96)
Less Capex	(2.819)	(2.81)	(2.819)	(4.228)	(4.228)	(4.228)	(7.399)
Plus Depreciation	689	9)	2.066	3.088	3.457	3.827	4.965
Less Changes in Working Capital	(1.720)	9)	218	315	1.380	2.657	5.171
Unlevered Free Cash Flow	(2.643)	11.40	36.666	110.22	292.78	657.737	1.430.6
)	5	8	2	2	44	

(Author's Analysis and Management Decision)

Based on the data above, we can conclude that the company has minus unlevered Free cash flow in the actual year (2009) because it still develops the business. but in the next 5 years, unlevered free cash flow will be rapidly growing.

Table 5: DCF Valuation

DCF Valuation		
NPV of Forecast	4,70%	1.900.866.956.035
Terminal Value (EBITDA multiple)	31,9x	60.938.615.394.745
NPV of Terminal Value		<u>44.183.868.447.707</u>
Total Enterprise Value		46.084.735.403.742
EV/Revenue (2020E)		1748x
% of Business Retained after raise		100,0%

(Author's Analysis and Management Decision)

Then based on unlevered free cash flow above, we can calculate the valuation of the company using the DCF method. The data shows that The NPV of the forecast with a discounted rate of 4.7% is Rp. 1,900,866,956,035 and terminal value with 31.9 time is Rp. 60,938,615,394,745 resulting Rp. 44,183,868,447,707 of The NPV of Terminal Value. The enterprise value is Rp. 46,084,735,403,742. Then, EV/Revenue is 1,748 times and percentage of raise is 100%

Conclusion and Recommendation

Conclusion

The company is rapidly growing, it is proven by the data showing that the enterprise value is Rp. 46,084,735,403,742. Then, EV/Revenue is 1,748 times, and the percentage of business retained after raise is 100%. the growth of costumers based on google analytics is pretty goods. The churn rate has 26%. It is implicating that the company still has many loyal customers. After discussing with the head of finance and accounting PT ABC, the management decides to sell a maximum of 25% of the ownership or Rp. 11,521,183,850,935.5, -

Recommendation

The research is using Discounted Cash Flow with sensitivity analysis, so it is recommended for further research to use other methods such as real options method, book value method, etc. so that many investors consider investing in PT ABC.

The company should do many collaborations with other institutions for growing its performance especially in revenue. If the revenue growing rapidly, it will automatically make a perfect valuation. Thus, the company will be easy to be a unicorn startup.

According to DCF Valuation, the author suggests investors invest in the company. Because the valuation is very good. We can see on the data showing for one year established, the company could be giving Rp. 46,084,735,403,742 of the valuation.

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