



## Start-up fintech valuation (financial capital)

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### ABSTRACT

In today's modern era, technological advances have supported the financial world in creating financial technology (fintech). One example of a fintech business is Peer to Peer Lending (P2P Lending) or Online Loans. In Indonesia, this business is growing rapidly and has good prospects, so it is hoped that P2P Lending companies can take the floor on the Indonesia Stock Exchange (IDX) to be able to attract foreign and domestic investors. One of the first fintech companies in Indonesia is Danamas. Danamas is registered and has total assets of Rp. 729,927,465,119. Before taking the floor on the IDX, it is necessary to calculate the correct valuation for Danamas. This study aims to calculate the valuation of Danamas as a fintech company. This research was conducted by processing Danamas financial report data for 2018-2020. The valuation method used is a combination of the Damodaran method and The First Chicago method with the Pre-tax Profit Margin history as a reference for obtaining estimated profits for the next 5 years. The results of this study are the company's value of Rp. 739,852,225,899. This is a positive valuation result because the company's value is greater than the total value of its assets.

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## INTRODUCTION

In today's modern era, information and communication technology is developing very rapidly. The development is considered a solution for the existing people's problems. The role of information technology in everyday life is as a support for people's activities that can answer the demands of faster, easier, cheaper, and save more time work. The development of this technology is also utilized in all aspects of activities in human life, one of which is in the aspect of online financial service activities or better known as Financial Technology or abbreviated as Fintech. Fintech is a renewal of the financial services industry that utilizes the use of technology (Otoritas Jasa Keuangan, 2017). Fintech products are generally in the form of a system built to run specific financial transaction mechanisms, to speed up and facilitate aspects of the financial services they provide. There are 103 fintech companies registered with OJK as of January 2022.

One of fintech start-up companies in Indonesia is PT Pasar Dana Pinjaman or known as Danamas. Danamas is a subsidiary of PT Sinar Mas Multiartha Tbk which is the first financial technology (fintech) company that has obtained a business license for information technology-

based lending and borrowing services (peer-to-peer lending / P2P) based on a decision letter from Otoritas Jasa Keuangan (OJK) No. KEP-49/D.05/2017 dated 6 July 2017. The products offered by the company are logistics company loans, cash loans, factoring, Micro, Small, and Medium Enterprise (MSME) Farmers and Breeders, Multifinance, and credit sales. Danamas has a huge business opportunity as a funding solution for businesses that want to develop, especially information technology & telecommunications-based businesses. Danamas currently has total assets of IDR. 729,927,465,119 with company services covering 33 provinces in Indonesia and obtained ISO 27001:2013 certificate for Information Security Management System (ISMS) on 11 September 2020.

A big company such as Danamas does not rule out the possibility of being listed on the Indonesia Stock Exchange (IDX), because this step will benefit Danamas as an Information technology-based lending and borrowing company that requires trust for both lenders and borrowers. In addition, companies will have the opportunity to gain access to funding from the stock market, a well-known corporate image, and lower taxes. Fintech companies get support from the Government, Otoritas Jasa Keuangan (OJK), and Bank Indonesia (BI) which was conveyed by the Minister of Finance at the Indonesia Fintech Summit (IFS) 2021. In December 2019 the number of accumulated loans increased by 259.56 % YoY from IDR 22,666,069,500,288 to IDR 81,497,510,828,317, in 2020 the number of accumulated loans increased 91.3% YoY from IDR 81,497,510,828,317 to IDR 155,902,554,218,280 and until the end of 2021 the accumulated loan amount increased 89.8% to IDR. 295,852,575,285,377 (Otoritas Jasa Keuangan, 2021). With the massive increase in the accumulation of fintech loans and line with the development of the fintech business, the Government hopes that fintech companies will be able to go on the stock exchange to attract foreign and local investors in the Indonesian stock market.

Judging from the rapid development of the fintech business and support from the Government, this is a big opportunity for Danamas to take advantage of listing on the Indonesia Stock Exchange so that Danamas will get capital funding from releasing shares in the public which can be used to expand Danamas's p2p lending financing. Even achieve financing that corporate lenders cannot achieve so that Danamas can expand its business market share. However, to be able to find out how much the company value is suitable for Danamas, we need to calculate its valuation. Because valuation is a process that connects risk and profit to determine how valuable an asset is (Damodaran, 2012). But calculating the start-up company particularly important to be aware of and understand the different underlying determinants that affect the valuation of start-ups (Köhn, 2018)

(Subroto & Sukarno, 2019) conducted a study and analysis of the valuation of Venture B which is a subsidiary of PT Telekomunikasi Indonesia Tbk. The method used to calculate the valuation was combining the Damodaran and The First Chicago methods. The result obtained with this method was Venture B can become a large and feasible company for PT Telekomunikasi Indonesia Tbk if Venture B is given investment funds by PT Telekomunikasi Indonesia Tbk, even in the worst-case venture B company value will exceed the total equity invested by PT Telekomunikasi Indonesia Tbk.

Likewise, (Reinfeld, 2018) calculated the valuation of an online marketplace start-up company, Airbnb. The method used to calculate the valuation was combining the Venture Capital Method and The First Chicago Method, which results in an appropriate firm value for an Airbnb company of \$38.7 billion or \$131 per share with 294 million shares outstanding.

In the research (Azka & Faturohman, 2020) they evaluated Venture V which is a subsidiary of PT Telekomunikasi Indonesia Tbk. The method used to solve the problem in this paper is a risk-based new venture valuation technique. The result shows that Company V is in milestone 2, with approximately the valuation is 83,16 billion IDR. If market validation is complete and normal risk is applied, the valuation of Company V will reach 568,23 billion IDR starting from year 3, month 5.

The results of research from (Montani et al., 2020) are clear that in order to calculate the valuation of a startup company cannot use the traditional valuation method which requires a lot of adjustments and improvisation in it due to the limitations of the company's historical data. Thus, a new method was born that was appropriate for calculating startup company valuations, namely The Real Option Method (ROM), The Venture Capital Method (VCM), The First Chicago Method (FCM) and The Modified DCF Method (MDCFM).

Based on the problems above, the purpose of the research is to find an appropriate company valuation before the company is listed on the Indonesia Stock Exchange. In this study, the author makes PT Pasar Dana Pinjaman (Danamas) because Danamas is fullfill the requirement to be listed in Indonesian Stock Exchange (IDX) and Danamas is the first fintech startup in Indonesia owned by the largest conglomerate company, PT Sinar Mas Multiartha Tbk and also Danamas has also been registered by OJK and listed as the organizer of Inovasi Keuangan Digital (IKD).

### RESEARCH METHOD

The methodology used in this study is using a quantitative approach. The quantitative approach is done by calculating the value of the company with a combination of the Damodaran and The First Chicago method. Actually, it becomes difficult to choose the optimal calculation in start-up, as all of them have very poor accounting data or still do not have any, (Stankevičienė & Žinytė, 2011) But as Danamas is start-up that registered in OJK, all data are available for analysis and collected from secondary data. Secondary data is obtained through the company's internal financial statements and holding company's financial statements that have gone public. The company's financial statements used are historical data on the Danamas company's financial statements from 2018-2020 which are obtained from the Danamas website that have been audited. For the holding company's financial statements, using the financial statements of PT Sinarmas Multi Artha Tbk are obtained from the Indonesia Stock Exchange. The following steps will be taken to calculate the valuation of Danamas

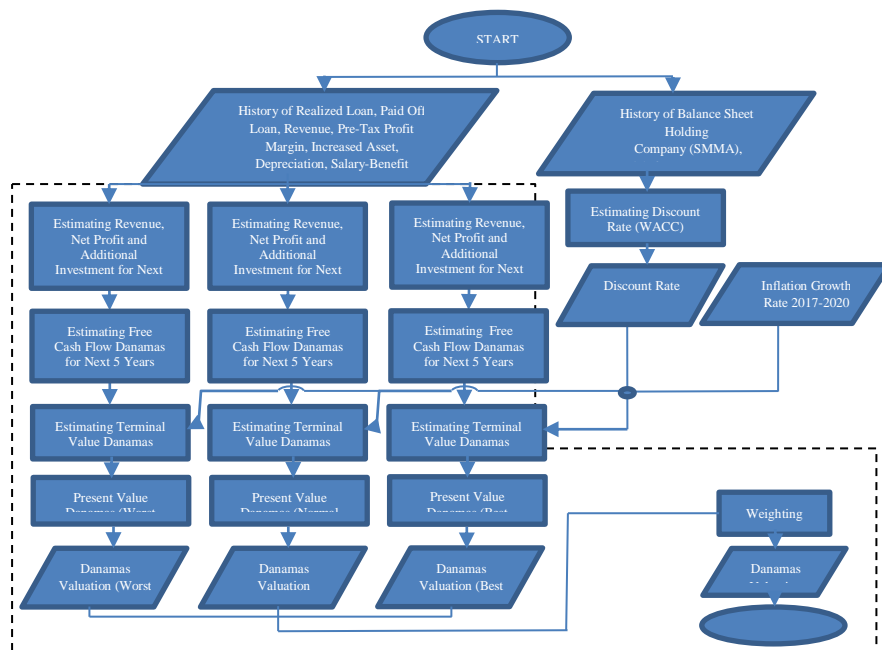


Figure 1. Valuation Step Flowchart

## RESULT AND DISCUSSIONS

### Danamas Valuation (Normal Condition)

The steps in calculating valuation using the Damodaran method are estimating revenue, estimating profit, estimating additional investment which the main purpose is to get free cash flow. The bottom-up approach will be used in all estimating value because this approach is more suitable for the company whose income will be estimated based on company assets owned. The bottom-up method approach is compatible for company which its revenue will be estimated based on company's assets and this method will prevent the overestimation of cash flows.

### Estimated Revenue

To Value a company, the first what we have to do is estimating the future revenue (Russell, 2016). Danamas in a year could realize a loan of IDR 2,347,259,851,202 in 2020. Since 2017 realized loans of Danamas had grown an average of 25% with an average loan performance of 89.74% and an average Danamas revenue of 2.5% of paid loans. Referring to the historical data for 3 years of Danamas, it is obtained that Danamas's revenue expectations for the next 5 years are as follows.

**Table 1.** Estimation of Danamas Revenue for Next 5 Years

	2021 (IDR)	2022 (IDR)	2023 (IDR)	2024 (IDR)	2025 (IDR)
Estimated Realized Loans (Growth Average 25%)	2,934,074,814,003	3,667,593,517,503	4,584,491,896,879	5,730,614,871,099	7,163,268,588,873
Estimated Paid Loans (Paid Loans Performance Average 89.74%)	2,633,119,935,384	3,291,399,919,229	4,114,249,899,037	5,142,812,373,796	6,428,515,467,245
Revenue (2.5% Average from Paid Loans)	65,900,404,775	82,375,505,969	102,969,382,461	128,711,728,076	160,889,660,096

In Table 1, we can see estimation of Danamas revenue Since 2017 until 2020, realized loans of Danamas had grown an average of 25%. We can assume linearly next realized loans of Danamas. It means, it will grow 25% each year. So that in 2021 realized loans become IDR 2,934,074,814,003 until in 2025 become IDR 7,163,268,588,873. Then, for obtaining estimated paid loans we can assume that it is 89.74% from estimated realized loans (89.74% is average of paid loans performance 2017-2020). So that in 2021 paid loans become IDR 2,633,119,935,384 until in 2025 become IDR 6,428,515,467,245. After we obtain estimated paid loans, estimated revenue will be obtained with 2.5% from paid loans (2.5% is average of paid loans 2017-2020). So that in 2021 revenue become IDR 65,900,404,775 until in 2025 become IDR 160,889,660,096.

### Estimated Profit

Estimation of Danamas's profit for next 5 years will be estimated using historical average of pre-tax profit margin from 2018 until 2020. The historical average of pre-tax profit margin is 0.19, which is shown in the table 2 below.

**Table 2.** Average of historical Pre-Tax Profit Margin 2018-2019

	2018 (IDR)	2019 (IDR)	2020 (IDR)
Revenue	26,380,884,007	50,393,473,095	46,243,937,349
Profit Before Tax	13,999,599,558	880,358,033	741,573,416
Pre-Tax Profit Margin Average	0.530	0.017	0.023
		0.19	

Revenue and profit before tax were obtained from Danamas financial report, to get pre-tax profit margin we can divide profit before tax with revenue (A. F. Martins, 2017). Then, value of pre-tax profit margin from 2018 until 2020 we calculate its average and we get the average is 0.19.

After obtaining historical average of pre-tax profit margin and estimated revenue, then we can obtain estimated operating profit for 5 next years which seen on Table 3 below.

**Table 3. Estimated Operating Profit Danamas 2021-2025**

	2021 (IDR)	2022 (IDR)	2023 (IDR)	2024 (IDR)	2025 (IDR)
Estimated Revenue	65,900,404,775	82,375,505,969	102,969,382,461	128,711,728,076	160,889,660,096
Historical Average of Pre-tax Profit Margin 2018-2020	0.19	0.19	0.19	0.19	0.19
Estimated Operating Profit	12,557,738,099	15,697,172,624	19,621,465,779	24,526,832,224	30,658,540,280

Estimated operating profit is obtained by multiplying the estimated revenue with historical average of pre-tax profit margin. So that in 2021 estimated operating profit become IDR 12,557,738,099 until 2025 become IDR 30,658,540,280. After we obtain estimated operating profit, we can calculate estimated net profit by subtracting estimated operating profit with tax (Camilleri, 2015). The tax percentage rate used is 25% according to the provisions based on article 17 section 1 part b of Law No. 36 of 2008 concerning income tax. The estimated net profit Danamas for 2021-2025 will be seen in Table 4 Below.

**Table 4. Estimated Net Profit Danamas 2021-2025**

	2021 (IDR)	2022 (IDR)	2023 (IDR)	2024 (IDR)	2025 (IDR)
Estimated Operating Profit	12.557.738.099	15.697.172.624	19.621.465.779	24.526.832.224	30.658.540.280
Tax (25%)	3.139.434.525	3.924.293.156	4.905.366.445	6.131.708.056	7.664.635.070
Estimated Profit After Tax (Net Profit)	9.418.303.574	11.772.879.468	14.716.099.334	18.395.124.168	22.993.905.210

### Additional Investment

Danamas in its operations for the next 5 years has a budget plan to always update equipment, software, and other business supports with a budget of IDR 3,000,000,000 where the value is assumed to increase along with the inflation rate used, which is 2.78%. 2.78% is average of inflation rate from 2017-2020. Estimated additional investment Danamas for the next 5 years will be shown in Table 5 below.

**Table 5. Estimated Additional Investment 2021-2025**

	2021 (IDR)	2022 (IDR)	2023 (IDR)	2024 (IDR)	2025 (IDR)
Estimated Additional Investment	3,000,000,000	3,082,500,000	3,167,268,750	3,254,368,641	3,343,863,778

From the estimated additional investment, we will be able to estimate the cost of depreciation per year. To obtain the cost of depreciation, we will use the straight-line method where the residual value is estimated at 10% with a useful life of 4 years because the assets are in the form of group 1 tangible assets according to Law No. 36 of 2008. Estimated cost of Depreciation will be shown in Table 6 below.

**Table 6. Estimated Cost of Depreciation from Danamas 2021-2025**

	2021 (IDR)	2022 (IDR)	2023 (IDR)	2024 (IDR)	2025 (IDR)
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Estimated Additional Investment	3,000,000,000	3,082,500,000	3,167,268,750	3,254,368,641	3,343,863,778
Cost of Depreciation from Additional Investment in Current Year	675,000,000	693,562,500	712,635,469	732,232,944	752,369,350
Accumulated Cost of Depreciation from Last Year that Still Counted	1,575,660,154	1,619,240,237	2,524,917,268	3,455,500,418	4,083,533,119
Depreciation	2,250,660,154	2,312,802,737	3,237,552,737	4,187,733,362	4,835,902,469

Cost of Depreciation in 2021 is obtained from adding accumulated cost of depreciation in 2020 that still counted with cost of depreciation in 2021 and so on. So that, we can obtain the depreciation value in 2021 is IDR 2,250,660,154 until depreciation value in 2025 is IDR 4,835,902,469.

After obtaining estimated profit after tax and additional investment with its depreciation, then we can estimate Danamas's free cash flow for next 5 years

$$FCF_t = OCB_t - I_t \dots\dots\dots(1)$$

Where,

$FCF_t$  = Free cash flow on t periode

$OCB_t$  = Operating cash flow on t periode

$I_t$  = Investment on t periode

In equation (1), the free cash flow in a period can be obtained by subtracting the operating cash flow with additional investment in the same period (Fernández, 2007). Operating cash flow can be obtained by adding profit after tax with cost of depreciation. In table 7 below we can see the result of estimated free cash flow from 2021 until 2025.

**Table 7.** Estimated Free Cash Flow Danamas 2021-2025

	2021 (IDR)	2022 (IDR)	2023 (IDR)	2024 (IDR)	2025 (IDR)
Profit After Tax	9,418,303,574	11,772,879,468	14,716,099,334	18,395,124,168	22,993,905,210
Dep.	2,250,660,154	2,312,802,737	3,237,552,737	4,187,733,362	4,835,902,469
$OCB_t$	11,668,963,728	14,085,682,205	17,953,652,071	22,582,857,530	27,829,807,679
Investment ( $I_t$ )	3,000,000,000	3,082,500,000	3,167,268,750	3,254,368,641	3,343,863,778
FCF	8,668,963,728	11,003,182,205	14,786,383,321	19,328,488,889	24,485,943,901

According to equation (1),  $OCB$  value in a year is obtained by summing profit tax and depreciation in a year and  $FCF$  in a year will be obtained by summing  $OCB$  and investment value in a year.

### Discount Rate Estimation

The discount rate that will be used in this valuation is the value of the Weighted Average Cost of Capital (WACC) from PT Sinar Mas Multiartha Tbk which acts as the holding company and the largest provider of capital from Danamas so that the expected rate of return obtained by PT Sinar Mas Multiartha Tbk as a provider of capital Danamas is at least as big as its cost of capital. The weight of debt and equity is determined based on the capital structure of PT Sinar Mas Multiartha Tbk in 2020. The Capital Structure PT Sinar Mas Multiartha Tbk from its financial report will be shown on Table 8 Below.

**Table 8.** Capital Structure PT Sinar Mas Multiartha Tbk

Capital Structure	2020 (IDR. Million)	Weight
Short Term Debt	33,253,110	55.05%

Long Term Debt	4,228,652	7.00%
Total Debt	37,481,762	62.05%
Equity	22,922,244	37.95%
Total Company Capital	60,404,006	100%

The cost of debt is estimated based on the average data by weighting the interest on short-term and long-term debt of PT Sinar Mas Multiartha Tbk. The following is the average weighting of interest on short- and long-term debt of PT Sinar Mas Multiartha Tbk from its financial report.

**Table 9.** Cost of Debt PT Sinar Mas Multiartha Tbk.

Debt	Interest Rate	Weight
Short Term		
Bank Loan	12.75%	9.06%
Deposit and Deposit from Other Bank	5.99%	90.94%
<i>Cost of Short Term Debt</i>	6.60%	100%
Long Term		
Securities	12.05%	100%
<i>Cost of Long Term Debt</i>	12.05%	100%

The cost of equity is calculated using the Capital Asset Pricing Model (CAPM) method because The CAPM is most widely used asset pricing model that measures risk-return relationship (Hazny et al., 2020) with the formula:

$$k_E = r_f + \beta x (r_m - r_f) \dots \dots \dots (2)$$

The value of  $r_f$  (risk-free interest rate) uses data on the average interest rate since Danamas was established, the value of  $\beta$  (Beta) uses the slope of the annual data from the historical stock price of PT Sinar Mas Multiartha Tbk and IDX Composite price since Danamas was founded and the value of  $r_m$  (Market Risk Level) uses growth IDX Composite price since Danamas was established. The Table 10 below is an estimated Cost of Equity.

**Table 10.** Cost of Equity PT Sinar Mas Multiartha Tbk

Description	Data
Risk-free Interest Rate ( $r_f$ )	4.30%
Beta ( $\beta$ )	0.005433
Market Risk ( $r_m$ )	-1.98%
Premium Risk ( $r_m - r_f$ ),	-6.28%
Cost of Equity	4.27%

According in formula (2), the result of cost of equity on table 10 is 4.27% that's mean PT Sinar Mas Multiartha Tbk has to get return minimum 4.27% from its equity value if PT Sinar Mas Multiartha Tbk invests using its equity for investment. After obtaining cost of debt and cost of equity, then The WACC calculation will be seen on Table 11 below.

**Table 11.** WACC PT Sinar Mas Multiartha

Description	Weight	Cost	Weighted Cost
Cost of Short-Term Debt	55.05%	6.60%	3.63%
Cost of Long-Term Debt	7.00%	12.05%	0.84%
Cost of Equity	37.95%	4.27%	1.62%
Cost of Capital (WACC)			6.10%

For obtaining Cost of capital with WACC method, we can multiply each cost of debt with its weighted and add with result of multiplying cost of equity with its weighted (Fernández, 2007). In Table 11 shown PT Sinar Mas Multiartha’s cost of capital is 6.10% and is assumed to be constant for the next 5 years. PT Sinar Mas Multiartha has to get return 6.10% fo all investment if company doesn’t want get loss.

**Terminal Value Estimation**

To estimate the terminal value of Danamas, it is assumed that cash flow growth will continue to grow with the concept of The Perpetuity Growth approach (Miller, 2018). This concept assumes that economic growth is in line with population growth, where the increasing population of people in a country certainly requires consumption and resources to survive which continues to grow. With this approach, the growth rate is assumed to use the inflation rate of Indonesia as the country where Danamas operates its company. The inflation rate uses the average inflation rate from 2017 since Danamas started operating, which is 2.78%. The discount rate will use the value of the cost of capital that we have calculated with a WACC of 6.10% and the amount of free cash flow for the 5th year of IDR 24,485,943,901. The following is the estimated of the Danamas terminal value.

$$Terminal\ Value = \frac{FCF_n (1+g)}{(r-g)} \dots\dots\dots(3)$$

**Table 12.** Estimated Terminal Value of Danamas

Description	Value
Free Cashflow on 5 <sup>th</sup> year (FCF <sub>5</sub> )	IDR 24,485,943,901
Inflation Growth (g)	2.78%
Dsicount Rate (r)	6.10%
Danamas Terminal Value	IDR 758,031,721,106

In according to formula (3), Danamas terminal value is IDR 758,031,721,106 which means this is the value of Danamas's current cash flows in the future from all future cash flows assuming that Danamas's cash flows in year 5 are IDR 24,485,943,901 with inflation growth and the discount rate remaining as it is today.

**Present Value Danamas**

After estimating free cash flow, discount rate and terminal value, the next step is to calculate Danamas's valuation by adding up the entire estimated value of free cash flow with the estimate Danamas's terminal value that has been changed into present value (Gleason et al., 2022)The following is the result of Danamas's valuation in Table 13.

**Table 13.** Estimated Valuation of Danamas

Description	2021 (IDR)	2022 (IDR)	2023 (IDR)	2024 (IDR)	2025 (IDR)
Free Cashflow	8,668,963,729	11,003,182,205	14,786,383,321	19,328,488,889	24,485,943,900
Terminal Value					758,031,721,106
Total Cashflow	8,668,963,729	11,003,182,205	14,786,383,321	19,328,488,889	782,517,665,006
Present Value of Total Cashflow	8,170,559,593	9,774,342,137	12,379,862,152	15,252,336,085	581,992,289,340
Danamas Valuation	627,569,389,308				

All of the estimated free cash flow from 2021 until 2025 is changed into its present value and sum with present value of terminal value, then the valuation will be obtained. Danamas's valuation is IDR 627,569,389,308 where this value needs to be adjusted because this only value on normal condition. The adjustment of Danamas's valuation will be simulated using the First Chicago method.

### The First Chicago Method

The previous calculation of valuation is the calculation in the normal scenario where the worst and best scenarios of Danamas will be calculated as follows.

### The Worst Scenario

The worst-case scenario is assumed that the realized loan only grows by 10%, with a paid loan rate of 79.74% and of 2.18% of the total paid loan. This percentage is considered the lowest percentage that has happened to Danamas since Danamas was founded. Then pre-tax profit margin value which used is the smallest value that Danamas has ever produced. For the amount of additional investment, depreciation, the value of Danamas assets, and tax rate will be the same as in the normal scenario.

The discount rate and growth rate used are the same as in the normal scenario because in this worst-case scenario it is assumed that the state of the holding company, market conditions, and the economic environment of Danamas are considered the same, only that Operational Danamas works in the worst-case scenario. The calculation steps carried out in the worst scenario are the same as the calculation steps in the normal scenario so that the value of the Danamas terminal in the worst scenario is IDR 57,635,619,534. Then the cash flow expectations and the value of Danamas's valuation in the worst conditions will be shown in the Table below.

**Table 14.** Estimated Cash Flow and Danamas Valuation 2021-2025 in The Worst-Case Scenario

Description	2021 (IDR)	2022 (IDR)	2023 (IDR)	2024 (IDR)	2025 (IDR)
Free Cashflow	-162,299,285	-123,952,647	780,603,065	1,714,715,707	2,351,524,775
Terminal Value					72,798,107,350
Total Cashflow	-162,299,285	-123,952,647	780,603,065	1,714,715,707	75,149,632,125
Present Value of Cashflow	-152,968,223	-110,109,562	653,557,948	1,353,102,170	55,892,037,202
Danamas Valuation			57,635,619,534		

### The Best Scenario

The best scenario is assumed that the realized loan grows to 48.57%, with a percentage of the paid loan of 98.96% and revenue of 2.71% of the total paid loan. This percentage is considered the highest percentage that has happened to Danamas since Danamas was founded. Then the pre-tax profit margin value used is 0.53, which is the largest pre-tax profit margin value that Danamas has ever for the amount of the additional investment, depreciation, the value of Danamas assets and the tax rate will be the same as in the normal scenario.

The discount rate and growth rate used are the same as in the normal scenario because in the best scenario is assumed that the holding company, market conditions, and the economic environment of Danamas are considered the same, only that Operational Danamas works in the best scenario. The calculation steps carried out in the best scenario are the same as the calculation steps in the normal scenario so that the value of the Danamas terminal in the best scenario is IDR 4,600,066,604,088. Then the expected cash flow and the value of Danamas's valuation in the best conditions will be shown in the Table below.

**Table 15.** Estimated Cash Flow and Danamas Valuation 2021-2025 on The Best Scenario

Description	2021 (IDR)	2022 (IDR)	2023 (IDR)	2024 (IDR)	2025 (IDR)
Free Cashflow	36.516.820.422	54.596.637.046	82.328.046.871	123.143.723.038	183.059.968.041
Terminal Value					5.667.139.613.043
Total Cashflow	36.516.820.422	54.596.637.046	82.328.046.871	123.143.723.038	5.850.199.581.085
Present Value of Cashflow	34.417.361.378	48.499.261.403	68.928.949,57	97.174.148.551	4.351.046.883.099
Danamas Valuation	4.600.066.604.088				

## Final Valuation

From three Danamas scenarios, the following valuation results are obtained.

**Table 16. Danamas Valuation from each Scenario**

Scenario	Valuation (IDR)
The Worst	57.635.619.534
Normal	627.569.389.308
The Best	4.600.066.604.088

To find the final valuation result of Danamas, the probability of each scenario must be estimated. The probability of the best-case scenario is 0.1 because to get results like the best-case scenario, Danamas has to work extra hard every year. The probability of the normal scenario is 0.4 and the worst scenario is 0.5 because these two scenarios are very likely to happen. The worst-case scenario is 0.1 higher than the normal scenario because the worst scenario has more possibility to occur than the normal scenario, considering the results of the average performance of Danamas in pre-tax profit margin for 3 years that have happened before where 2 of 3 years value out of its average that is 0.19. Following is the Final Results of the Danamas Valuation.

$$\begin{aligned}
 \text{Danamas Valuation} &= \text{Probability Worst Scenario} \times \text{Worst Scenario Valuation} + \\
 &\quad \text{Probability Normal Scenario} \times \text{Normal Scenario Valuation} + \\
 &\quad \text{Probability Best Scenario} \times \text{Best Scenario Valuation} \dots\dots\dots(4) \\
 &= (0,5 \times \text{Rp } 57.635.619.534) + (0,4 \times \text{Rp } 627.569.389.308) + \\
 &\quad (0,1 \times \text{Rp. } 4.600.066.604.088) \\
 &= \text{IDR } 739,852,225,899
 \end{aligned}$$

In according formula (4), The Danamas valuation is IDR 739,852,225,899 which this valuation is greater than the book value of Danamas, which is Rp 729,927,465,119, meaning that Danamas has good performance and company prospects. So, Danamas have to keep confident for listing in Indonesian Stock Exchange. This research in the line with research (Subroto & Sukarno, 2019) which their research obtained proper valuation for their company in communication sector. The difference with previous research is in company sector.

## CONCLUSION

Danamas has positive valuation result, it means Danamas has good prospect and good performance. Danamas can easily obtain many potential investors and compete with other fintech company if Danamas is listed in Indonesia Stock Exchange. Danamas will get new funding sources to develop the company, have a good image of the company, and get tax incentives which in the end the company can have more competitiveness and longer business continuity. The managerial implication that can be put forward to maintain and even increase Danamas the value is to make the estimated values in each scenario of the company's condition become the company's reference value in maintaining performance. If in the future the company runs according to the normal scenario consistently 5 years, then we will know the amount of company value generated, as well as the worst and best scenarios, we will know how bad the company value is if the company's performance goes like the worst scenario and we will also know how good the company's value is if the company runs like best scenario. However, it is necessary to notice again the valuation of each of these scenarios when the state of the country with an assumed inflation rate of 2.78% and a discount rate of 6.10% because if the inflation rate and/or discount rate in the future change, the company's valuation will also change. This is an important consideration for companies that will be listed on the stock exchange to consider the global condition of the world, the economic

condition of the country where Danamas's business takes place, and the state of the stock market in that country.

## References

- Azka, G. R., & Faturohman, T. (2020). Internal Startup Valuation of PT Telekomunikasi Indonesia, Tbk by applying Risk-based New Venture Valuation Technique (Case Study: Company V). *European Journal of Business and Management Research*, 5(1). <https://doi.org/10.24018/ejbmr.2020.5.1.214>
- Bellman, L., & Lind, H. (2019). Valuation standards and methods: are Sweden's (still) different? *Journal of European Real Estate Research*, 12(1), 79–96. <https://doi.org/10.1108/JERER-04-2018-0020>
- Camilleri, D. (2015). Hotel valuations earning multipliers – terminal value: Malta's scenario. *Journal of Property Investment & Finance*, 33(3), 212–241. <https://doi.org/10.1108/JPIF-09-2013-0057>
- Crosby, N., Devaney, S., & Law, V. (2011). Benchmarking and valuation issues in measuring depreciation for European office markets. *Journal of European Real Estate Research*, 4(1), 7–28. <https://doi.org/10.1108/17539261111129443>
- Damodaran, A. (2012). *Investment valuation: Tools and techniques for determining the value of any asset* (Vol. 666). John Wiley & Sons. <https://www.wiley.com/en-us/Investment+Valuation:+Tools+and+Techniques+for+Determining+the+Value+of+Any+Asset,+3rd+Edition-p-9781118011522>
- Fernández, P. (2007). Valuing companies by cash flow discounting: ten methods and nine theories. *Managerial Finance*, 33(11), 853–876. <https://doi.org/10.1108/03074350710823827>
- Freeman, M. C., & Groom, B. (2013). Biodiversity valuation and the discount rate problem. *Accounting, Auditing & Accountability Journal*, 26(5), 715–745. <https://doi.org/10.1108/AAAJ-02-2013-1226>
- French, N. (2011). Valuing in the downturn: understanding uncertainty. *Journal of Property Investment & Finance*, 29(3), 312–322. <https://doi.org/10.1108/14635781111138118>
- French, N., Crosby, N., & Thorne, C. (2021). Pricing to market: market value – the enigma of misunderstanding. *Journal of Property Investment & Finance*, 39(5), 492–499. <https://doi.org/10.1108/JPIF-05-2021-0041>
- French, N., & Gabrielli, L. (2018). Pricing to market. *Journal of Property Investment & Finance*, 36(4), 391–396. <https://doi.org/10.1108/JPIF-05-2018-0033>
- Gleason, K., Kannan, Y. H., & Rauch, C. (2022). Fraud in startups: what stakeholders need to know. *Journal of Financial Crime*, 29(4), 1191–1221. <https://doi.org/10.1108/JFC-12-2021-0264>
- Grajkowska, A. (2011). Valuing intellectual capital of innovative start-ups. *Journal of Intellectual Capital*, 12(2), 179–201. <https://doi.org/10.1108/14691931111123386>
- Hazny, M. H., Mohamad Hasim, H., & Yusof, A. Y. (2020). Mathematical modelling of a shariah -compliant capital asset pricing model. *Journal of Islamic Accounting and Business Research*, 11(1), 90–109. <https://doi.org/10.1108/JIABR-07-2016-0083>
- Hu, Y., Tian, X., & Zhu, Z. (2016). Market transaction characteristics and pricing effect of accounting valuation models. *China Finance Review International*, 6(1), 2–31. <https://doi.org/10.1108/CFRI-05-2015-0036>
- Jones, C., & Dunse, N. (2015). The valuation of an airport as a commercial enterprise. *Journal of Property Investment & Finance*, 33(6), 574–585. <https://doi.org/10.1108/JPIF-07-2015-0048>
- Kandinskaia, O., & López Lubián, F. (2021). Assessing value of a digital company: Uber's IPO 2019. *The CASE Journal*, 17(4), 588–624. <https://doi.org/10.1108/TCJ-08-2020-0111>
- Köhn, A. (2018). The determinants of startup valuation in the venture capital context: a systematic review and avenues for future research. *Management Review Quarterly*, 68(1), 3–36.
- Martins, A. (2011). The valuation of privately held firms and litigation: a case study. *International Journal of Law and Management*, 53(3), 207–220. <https://doi.org/10.1108/17542431111133436>
- Martins, A. (2013). Small businesses, share buybacks, tax auditing and the use of valuation methods. *Journal of Applied Accounting Research*, 14(1), 74–85. <https://doi.org/10.1108/09675421311282559>
- Martins, A. F. (2017). Accounting information and its impact in transfer pricing tax compliance: a Portuguese view. *EuroMed Journal of Business*, 12(2), 207–220. <https://doi.org/10.1108/EMJB-11-2016-0029>
- Miller, T. W. (2018). Terminal values for firms with growth opportunities: explaining valuation and IPO price behavior. *Studies in Economics and Finance*, 35(2), 244–272. <https://doi.org/10.1108/SEF-03-2016-0078>
- Montani, D., Gervasio, D., & Pulcini, A. (2020). Startup Company Valuation: The State of Art and Future Trends. *International Business Research*, 13(9), 31. <https://doi.org/10.5539/ibr.v13n9p31>
- Otoritas Jasa Keuangan. (2017). *Financial Technology - P2P Lending*. www.ojk.go.id

- Otoritas Jasa Keuangan. (2021). *Statistik Fintech*. www.ojk.go.id
- Reinfeld, P. (2018). *Start-Up Valuation: Solving the Valuation Puzzle of New Business Ventures*. Paris: HEC Paris.
- Reitmaier, C., & Schultze, W. (2017). Enhanced business reporting: value relevance and determinants of valuation-related disclosures. *Journal of Intellectual Capital*, 18(4), 832–867. <https://doi.org/10.1108/JIC-12-2016-0136>
- Russell, M. (2016). The valuation of pharmaceutical intangibles. *Journal of Intellectual Capital*, 17(3), 484–506. <https://doi.org/10.1108/JIC-10-2015-0090>
- Stankevičienė, J., & Žinytė, S. (2011). Valuation Model of New Start-Up Companies: Lithuanian Case. *Verlas: Teorija Ir Praktika*, 12(4), 379–389. <https://doi.org/10.3846/btp.2011.39>
- Subroto, C. G., & Sukarno, S. (2019). Start-up Valuation for Internal Corporate Venture of PT Telekomunikasi Indonesia Tbk (Case Study: Venture B). *European Journal of Bussines and Management Research*, 4(5).
- Tarim, E. (2022). Valuations, marketing and uncertainty: a field study of financial analysts and salespeople. *Qualitative Research in Financial Markets*, 14(4), 526–549. <https://doi.org/10.1108/QRFM-01-2021-0012>