

STOCK PRICE VALUATION ANALYSIS USING FREE CASH FLOW TO EQUITY AND RELATIVE VALUATION METHOD CASE: BANK JAGO TBK. (ARTO)

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Abstract

Purpose – this paper aims to calculate the intrinsic value of ARTO (PT. Bank Jago Tbk.). **Design/Methodology/Approach** – the stock valuation calculated using free cash flow to equity method and relative valuation method. **Findings** – based on the calculation, it is expected that the results of the valuation will be below the market value. **Practical Implications** – the findings may help related parties including investors to consider carefully before deciding their investment on the company. **Originality/Value** – to the author's best knowledge, little equity research has been done for digital banking in Indonesia especially on the value of ARTO.

Keywords: digital banking valuation, free cash flow to equity, relative valuation, ARTO.

Introduction

Financial sector is one of sector that requires high physical interaction although new technologies have been introduced such as automated teller machine (ATM), electronic data capture (EDC) and mobile banking.

When the pandemic happened, it triggers the provider of financial services to provide services that minimizes physical contact between customers and the providers of financial services. This is where digital banking is getting interesting because its convenience and practicality. Digital banking requires only the use of the mobile phone. Customer could do transaction that previously cannot be done online such as making bank account or submit for loan.

PT. Bank Jago Indonesia is one of the provider digital banking services that can catch this opportunity well, through the Jago app, Bank Jago gives attractive digital banking services to the customer. This is also reflected in the movement of the share price of the company, which continues to experience above - average increase, since acquired by a senior Indonesian banker, Jerry NG, in 2019 through PT. Metamorphosis Indonesian Ecosystem as well as Sugito Walujo through Wealth Track Technology Limited.

The share price rises continuously, and in December 2020, PT. Dompot Karya Anak Bangsa (GoPay) also instills capital in Bank Jago. As of December 16, 2019, the share price share of the company (ARTO) is Rp. 2,200 per share. Recently, to be

precise on September 9, 2021 or no up to 2 years after, the share price is Rp. 14,000 per share.

The share price uptrend of ARTO still continue in 2022. As of January 17, 2022, ARTO shares traded with the price of Rp. 18,650 per share. This thing make ARTO's market capitalization is IDR 256 trillion and enter to the fifth position of top company with biggest capitalization on the Indonesia Stock Exchange.

This thing is getting attention from various party because capitalization of ARTO can beat companies that fundamentally better than ARTO. For examples, ASII (PT. Astra International Tbk.) with market capitalization of IDR 226 trillion, BBNI (PT. Bank Negara Indonesia Tbk.) with market capitalization IDR 132 trillion or HMSP (PT. HM Sampoerna Tbk.) with market capitalization of IDR 111 trillion.

Formulation of the problem

Knowing the movement price of ARTO during 2019-2021 which rose significantly, author wants to know the 'fair' price of ARTO, using concepts in valuation.

With this paper, author hopes to answer the following questions; how much is the intrinsic shares value of PT. Bank Jago Tbk. using free cash flow to equity method and relative valuation method.

Stock valuation is the process of determining the current (or projected) worth of a stock at a given time period. After doing it, we can know that the price formed in the market, whether it is reasonable, overvalued or undervalued compared with the valuation obtained.

Methods

Every asset, including financial asset, has value. Every asset could be appraised, however, a number of assets are easier to appraise compared to other assets. For example, to appraise the asset of real estate property need different information compared with valuation of a traded shares by public (Damodaran, 2002).

Discount rate used to calculate the present value of future cash flow (Ross et al, 2016). Cost of equity is the return that equity investors require on their investment in the firm (Ross et al, 2016). In general, equity financing is more expensive than debt financing.

According to Damodaran (2006), when doing growth estimation, it can be done through a number of approaches as following:

1. Do estimation growth based on existing historical data.
2. Do estimation based on the data obtained from other party, as analysts have expertise, experience or own more access to a company.
3. Using relevant fundamental parameters/indicators to the business of a company, such as economic growth of a country.

Free Cash Flow to Equity (FCFE) measure how much lots of cash left to equity shareholders, after done all payments of expenses, reinvestment, and debt. FCFE consists of net income, capital expenditures, working capital and debt. FCFE often used

by analysts to determine value from a company. FCFE is also getting popular used as valuation method as an alternative to dividend discount model, especially if certain company pay no dividends.

Research conducted based on analysis from company financial report in the period 2016-2020 or for 5 years. As companies listed on the Indonesia Stock Exchange, financial reports of ARTO can be accessed by the public. Author got the financial report ARTO from official company website that is <https://jago.com/>.

Author does necessary data collection, in this case is financial report acquired from company website. The author also collects supporting data about company from various electronics sources.

Author does historical data retrieval of share price movement ARTO from www.finance.yahoo.com, the author also adds review literature from text book, as well as statistical economic data from related agency.

Data obtained will be processed by the author as well as value calculation using free cash flow to equity method as well as done comparison to other companies which are also listed on the Indonesia Stock Exchange or relative valuation method.

The Digital Bank

In a simple term, bank is an institution that aim to lend money to borrower and receive money from the lender in the economics (Freixas X. & Rochet, J. C, 2008). According to Merton (1993), a financial system that already grow and well function facilitate the efficient allocation of household life cycle and efficient allocation from physical capital to the most productive use in business sectors. In other words, banks do not only work as intermediary, but also plays role an important in capital allocation in the economic system.

Digital technology progress in banking and finance industry is a strategic issue at the moment. The strategic issue involves opportunity development for the business of the bank and also a threat for the current banking business (Dermine, 2016; Marinč, 2013). According to Lipton et al. (2016), in the future there will be a banking system where digital technology not only operate basic bank functions as financial intermediary and financial service providers, but also more than that as a finance advisor. The customer and the bank can interact real-time through mobile devices used by customers. Digital banking involves highly automated processes, web-based services, and can be take advantage of the API (Application Programming Interface) so that provide cross-institutional services to support transaction. It makes the user can access their financial information through desktop, mobile & ATM services (Vaidya, 2018). Most banks in Indonesia, have adopt digital banking technology and make it as the main strategy (Price Waterhouse and Coopers, 2018).

Customers in Asia are changing in how they interact with banks. They tend to more open in exploring and using digital channel to fulfil their financial needs. Customers are also very open to interact with non-bank institutions that provide service such as fintech or non-bank payments services. Incumbent banks need to respond to the

change of landscape if they want to stay in this industry and achieve sustainable growth (Barquin, et al, 2018).

Analysis and Discussion

Author does financial projection for ARTO, including its report profit & loss and balance sheet for 5 years (2022-2026). Following is the profit projection for ARTO (2022-2026):

Table 1
Profit & Loss Projection of ARTO 2022-2026

Item	2021	2022F	2023F	2024F	2025F	2026F
Interest Income	525.540	578.094	635.903	699.494	769.443	846.387
Sharia Income	126.879	139.567	153.524	168.876	185.764	204.340
Interest Expenses	- 62.476	- 68.724	- 75.596	- 83.156	- 91.471	- 100.618
Sharia Expenses	- 205	- 226	- 248	- 273	- 300	- 330
Net Interest and Sharia Income	589.738	648.712	713.583	784.941	863.435	949.779
Other Operating Income	44.129	48.542	53.396	58.736	64.609	71.070
Provision for Impairment Loss	- 92.346	- 101.581	- 111.739	- 122.913	- 135.204	- 148.724
General and Administrative Expenses	- 342.336	- 359.453	- 377.425	- 396.297	- 416.112	- 436.917
Personnel Expenses	- 181.651	- 190.734	- 200.270	- 210.284	- 220.798	- 231.838
Other Expenses	- 7.031	- 7.383	- 7.752	- 8.139	- 8.546	- 8.974
Total Other Operating Expenses	- 623.364	- 659.150	- 697.186	- 737.632	- 780.659	- 826.453
Other Operating Expenses-Net	- 579.235	- 610.608	- 643.790	- 678.897	- 716.050	- 755.382
Operating Income	10.503	38.104	69.793	106.045	147.385	194.397
Non Operating Expenses-Net	1.369	1.437	1.509	1.585	1.664	1.747
Income Before Income Tax	9.134	36.667	68.284	104.460	145.721	192.649
Income Tax Benefit	76.890	0	0	0	0	0
Pajak Penghasilan	-	- 8.067	- 15.022	- 22.981	- 32.059	- 42.383
Net Income	86.024	28.600	53.261	81.479	113.663	150.266

Based on table above, the numbers on the 2021 financial report are using actual numbers based on ARTO official financials release, the 2022-2026 numbers are projection. On the table above, author assumes interest income, sharia income as well as other operating income grow stably by 10% per year.

Meanwhile for expenses, author assumes increase annually by 5%. Based on the calculation the operating income will grow by 263% in 2022, 83% in 2023, 52% in 2024, 39% in 2025 and 32% in 2026, leading to net income listed on the table on after reduced by tax. For the balance sheet, the author has also made projection for 5 years, as following:

Table 2
Assets Projection of ARTO 2022-2026

	2021	2022F	2023F	2024F	2025F	2026F
Assets						
Cash	9.986	10.985	12.083	13.291	14.621	16.083
Current Account in Bank Indonesia	225.715	248.287	273.115	300.427	330.469	363.516
Current Accounts in other Banks	13.990	13.990	13.990	13.990	13.990	13.990
Less: Allowance for Impairment Loss	- 29	- 29	- 29	- 29	- 29	- 29
Total Current Accounts with Other Banks-Net	13.961	13.961	13.961	13.961	13.961	13.961
Placement in Bank Indonesia and Other Banks	1.168.780	1.285.658	1.414.224	1.555.646	1.711.211	1.882.332
Third Parties Securities	1.807.750	1.988.525	2.187.378	2.406.115	2.646.727	2.911.399
Add: Unamortised Premium	90.879	99.967	109.964	120.960	133.056	146.362
Total Securities-Net	1.898.629	2.088.492	2.297.341	2.527.075	2.779.783	3.057.761
Securities Purchase under Resale Agreements	2.743.027	2.743.027	2.743.027	2.743.027	2.743.027	2.743.027
Third Parties Loans	3.221.101	3.543.211	3.897.532	4.287.285	4.716.014	5.187.615
Related Parties Loans	100.000	100.000	100.000	100.000	100.000	100.000
Third Parties Sharia Financing	2.047.853	2.252.638	2.477.902	2.725.692	2.998.262	3.298.088
Less: Allowance for Impairment Losses	- 127.171	- 139.888	- 153.877	- 169.265	- 186.191	- 204.810
Total Loans and Sharia Financing-Net	5.241.783	5.755.961	6.321.557	6.943.713	7.628.084	8.380.893
Prepaid Expenses	34.248	34.248	34.248	34.248	34.248	34.248
Fixed Assets	175.159	183.917	193.113	202.768	212.907	223.552
Accumulated Depreciation	- 31.282	- 34.410	- 37.851	- 41.636	- 45.800	- 50.380
Fixed Assets-Net	143.877	149.507	155.262	161.132	167.107	173.172
Intangible Assets	525.211	551.472	579.045	607.997	638.397	670.317
Accumulated Amortisation	- 28.936	- 31.830	- 35.013	- 38.514	- 42.365	- 46.602
Intangible Assets-Net	496.275	519.642	544.033	569.484	596.032	623.715
Foreclosed Assets-Net	78.462	80.424	82.434	84.495	86.607	88.773
Deferred Tax Assets	77.528	0	0	0	0	0
Other Assets	180.151	180.151	180.151	180.151	180.151	180.151
Total Assets	12.312.422	13.110.342	14.071.436	15.126.650	16.285.301	17.557.632

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Table 3
Liability and Capital Projection of ARTO 2022-2026

Liabilities, Temporary Syirkah Funds and Equity						
Liabilities						
Liabilities Due Immediately	221.998	0	0	0	0	0
Deposits						
Current Account						
Third Parties	54.379	59.817	65.799	72.378	79.616	87.578
Related Parties	322.977	355.275	390.802	429.882	472.871	520.158
Total Current Accounts	377.356	415.092	456.601	502.261	552.487	607.736
Savings						
Third Parties	1.247.220	1.755.654	2.112.990	2.538.953	3.047.695	3.656.133
Related Parties	52.655	57.921	63.713	70.084	77.092	84.801
Total Savings	1.299.875	1.813.575	2.176.702	2.609.037	3.124.787	3.740.935
Time Deposits						
Third Parties	1.844.288	2.288.925	2.783.498	3.267.646	3.732.098	4.165.197
Related Parties	45.692	50.261	55.287	60.816	66.898	73.587
Total Time Deposits	1.889.980	2.339.186	2.838.786	3.328.462	3.798.995	4.238.785
Deposits from Other Banks	50	50	50	50	50	50
Taxes Payable	12.769	8.067	15.022	22.981	32.059	42.383
Lease Liabilities	63.642	54.096	45.981	39.084	33.222	28.238
Other Liabilities	75.403	79.173	83.132	87.288	91.653	96.235
Employee Benefits Liabilities	11.533	12.110	12.715	13.351	14.018	14.719
Total Liabilities	3.952.606	4.721.348	5.628.989	6.602.514	7.647.272	8.769.081
Temporary Syirkah Funds						
Deposits						
Mudharabah Time Deposits						
Third Parties	110.360	110.360	110.360	110.360	110.360	110.360
Related Parties	1	1	1	1	1	1
Total Mudharabah Deposits	110.361	110.361	110.361	110.361	110.361	110.361
Total Temporary Syirkah Funds	110.361	110.361	110.361	110.361	110.361	110.361
Equity						
Share Capital	1.385.625	8.485.562	8.485.562	8.485.562	8.485.562	8.485.562
Additional Paid-In Capital	7.099.937					
Statutory Reserves	9.000	9.000	9.000	9.000	9.000	9.000
Capital Deposits Funds						
Other Comprehensive Income	1.739	1.913	2.104	2.315	2.546	2.801
Remeasurement of Employee Benefits Liabilities	- 404					
Revaluation Surplus of Fixed Assets	8.103	8.103	8.103	8.103	8.103	8.103
Accumulated Deficit/Retained Earnings	- 254.545	- 225.945	- 172.684	- 91.205	22.458	172.724
Total Equity	8.249.455	8.278.633	8.332.086	8.413.775	8.527.669	8.678.190
Total Liabilities and Equity	12.312.422	13.110.342	14.071.436	15.126.650	16.285.301	17.557.632

As discount rate used in FCFE method, cost of equity obtained from the calculation using following formula:

Cost of Equity = Risk-Free Rate of Return + Beta × (Market Rate of Return - Risk-Free Rate of Return)

For the risk-free value the Savings Bonds Retail (SBR010) was used, namely 5.1%. The risk-premium value for Indonesia from the Damodaran site was used, namely 6.12%. Beta value obtained from Yahoo Finance (5Y Monthly) namely of 1.17. Based on these data so the cost of equity calculation is as following:

$$\begin{aligned} \text{Cost of Equity} &= 5.1\% + (1.1 \times 6.12\%) \\ &= 12\% \end{aligned}$$

According to Damodaran (2002), the FCFE calculation uses the formula as following:

$$\text{Free Cash Flow to Equity} = \text{Net Income} - (\text{Capital Expenditures} - \text{Depreciation}) - (\text{Change in Working Capital}) + (\text{New Debt Issued} - \text{Debt Repayment})$$

Moreover, Damodaran specify the calculation for financial services firms/banking, as following:

$$\text{Free Cash Flow to Equity} = \text{Net Income} - (\text{Capital Expenditures} - \text{Non Cash Factor}) - \text{Increase in Other Assets} + (\text{New Debt Issued} - \text{Debt Repayments})$$

Following is the results of FCFE calculations based on the projection for 5 years:

Table 4
FCFE of ARTO 2022-2026

FCFE					
Item	2022F	2023F	2024F	2025F	2026F
Net Income	28.600	53.261	81.479	113.663	150.266
+Non Cash Factors					
Provision for Impairment Loss	101.581	111.739	122.913	135.204	148.724
Depreciation	34.410	37.851	41.636	45.800	50.380
Total NCF	135.991	149.590	164.549	181.004	199.104
NI+Total NCF	164.591	202.851	246.028	294.666	349.371
-Capital Expenditure					
Securities	180.775	198.853	218.738	240.612	264.673
Loans	322.110	354.321	389.753	428.729	471.601
Loans (Syariah)	204.785	225.264	247.790	272.569	299.826
Placement in Other Banks	0	0	0	0	0
Total Capex	707.670	778.437	856.281	941.909	1.036.100
-Increased in Other Assets					
Cash	999	1.098	1.208	1.329	1.462
Current Account (BI)	22.572	24.829	27.312	30.043	33.047
Current Account (Other Bank)	0	0	0	0	0
Fixed Asset	8.758	9.196	9.656	10.138	10.645
Other Assets	0	0	0	0	0
Total Increased in Other Assets	32.328	35.123	38.175	41.510	45.154
+New Debt					
Current Account	37.736	41.509	45.660	50.226	55.249
Savings	513.700	363.128	432.334	515.751	616.147
Time Deposits	449.206	499.600	489.677	470.533	439.790
Total Funds	1.000.641	904.237	967.671	1.036.510	1.111.186
Interbank Loans	0	0	0	0	0
Securities	0	0	0	0	0
Loans Received	- 9.546	- 8.114	- 6.897	- 5.863	- 4.983
Other Liabilities	3.770	3.959	4.157	4.364	4.583
Total Liabilities	- 5.776	- 4.156	- 2.741	- 1.498	- 401
Total New Debt	994.865	900.081	964.930	1.035.012	1.110.785
FCFE	419.457	289.372	316.501	346.259	378.901
PV Factor	0,892857143	0,797193878	0,711780248	0,635518078	0,567426856
Discounted Cash Flow	374.516	230.685	225.279	220.054	214.999
Total PV of FCFE	1.050.534				
Terminal Value					6.315.015
PV of Terminal Value	3.583.309				
Total PV of Value of the Firm	4.633.843				
Number of Shares	13.277.410.898				
Value of Equity/Share	349,0020226				

Based on the calculation above, there are some points to be highlighted:

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1. PV Factor was using previous calculation, that is, the cost of equity of 12%, which is used to calculate the present value of FCFE.
2. *Terminal values* obtained with use calculation as following:

$$P_n = \frac{FCFE_{n+1}}{k_{e,sg} - g_n}$$

The FCFE component will be using the last FCFE in 2026. Then the cost of equity using 12% meanwhile the assumption of the stable growth is 6% every year.

3. PV of FCFE and PV of Terminal were added to get the value from the company at 4,633,843 (million).
4. The value obtained then divided by the total outstanding shares namely 13,277,410,898 shares. So, the fair value obtained using FCFE calculation for ARTO is IDR 349/shares.

In relative valuation method, author will compare the PER value, with the companies in the same industry, in this case is banking. Following is the PER data of most banking companies listed on the Indonesia Stock Exchange:

Table 5
PER of Indonesia's Banking Industry 2017-2021

	2017	2018	2019	2020	2021
EMITEN					
ARTO					2.469,53
BMRI	18,09	13,76	13,03	17,56	11,69
BBNI	13,56	10,93	9,52	35,07	11,53
BBTN	12,49	9,58	107,29	11,40	7,71
BBCA	23,16	24,79	28,85	30,76	28,64
BBRI	15,36	13,83	15,66	27,57	17,27
BBKP	39,63	16,72	12,07		
BDMN	20,30	21,25	10,43	30,46	14,60
BNGA	11,39	6,55	6,60	12,33	5,87
BNII	9,91	6,77	8,52	20,82	15,38
BNLI	21,34	19,45	23,64	117,36	44,99
BRIS		52,03	43,32	10,18	24,16
BTPN	11,58	11,03	10,04	14,32	7,92
INPC	18,56	18,26		51,00	
MAYA	28,61	91,64	110,74	814,60	
MEGA	17,89	21,30	22,08	16,67	14,72
NISP	9,89	7,44	6,60	8,95	6,10
PNBN	11,38	8,86	9,70	8,27	8,99

To get the value of the stock based on relative valuation method, the calculation is to multiply average EPS value during projection period with the latest PER year 2021, as following:

Table 6
Relative Valuation of ARTO

Item	2022F	2023F	2024F	2025F	2026F
Net Income	28.600	53.261	81.479	113.663	150.266
Shares Outstanding	13.277.410.898	13.277.410.898	13.277.410.898	13.277.410.898	13.277.410.898
Earnings Per Share	2,15	4,01	6,14	8,56	11,32
Average EPS	6,44				
PER 2021	2.469,53				
Share Value	15.893,96				

Based on the calculation, the value obtained is at Rp. 15,893 per share.

Conclusions and Recommendations

By using the free cash flow to equity method, the fair value of ARTO shares is Rp. 349/share. Looking at the last price of ARTO's shares on 30/05/2022, it was at a value of Rp 9,125 per share. When compared with the calculation, the value of ARTO's shares in the market is overvalued compared to its intrinsic value.

By using the relative valuation method, the fair value of ARTO's shares is Rp. 15,893/share. Looking at the last price of ARTO's shares on 30/05/2022, it was at a value of Rp 9,125 per share. When compared with the calculation, the value of ARTO's shares in the market is undervalued compared to its intrinsic value.

Based on the results of the study and the drawn conclusions, the authors can provide the following suggestions: 1). This research can be used by investors who already have an ARTO stock portfolio and potential investors as consideration in their investment allocation and investment decisions in the future. 2). This research can also be used for comparison of similar studies using other methods of valuation. 3). ARTO's share price in the market is influenced by various factors and reflects investors' expectations for the future and sustainability of the company. Profit growth and improvements in other fundamental aspects are expected to continue in line with high expectations of investors who expect favorable returns from ARTO shares.

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