

Valuation Analysis of HYBE Co., Ltd.

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Abstract - HYBE Co. Ltd is considered as a strong player in the Korean entertainment industry since they record an all-time highest operating profit of 130.1 billion won in 2020, surpassing all of the other publicly-listed companies in the industry, namely SM, YG and JYP Entertainment. However, a lot of investors claim that HYBE Co., Ltd. 's stocks are overvalued. This study aims to estimate the intrinsic value per share of HYBE Co. Ltd., and determine whether the share price of the company is undervalued or overvalued. The methodology that is used for this research is Discounted Cash Flow with Free Cash Flow to the Firm method. The result of the valuation is an intrinsic value for HYBE Co., Ltd. of KRW109,677, which is less than the market share price of KRW160,000. Therefore, the company is overvalued by the market, in which the author will provide recommendations for investors.

Keywords - Free Cash Flow to the Firm, HYBE Co., Ltd, Valuation

I. INTRODUCTION

The rapid rise in popularity of the Korean Wave (Hallyu) of South Korean entertainment, music, and culture, is sweeping the globe. It becomes more than just a cultural phenomenon; it has a significant economic impact in Korea. HYBE Co., Ltd. is one of the leading entertainment companies in South Korea based on revenue, as HYBE recorded an all-time high operating profit of 130.1 billion won in 2020. However, despite performing the best compared to other companies from the same industry, the company is said to be overvalued by a lot of analysts. The reason is because of the high market capitalization compared to other companies from the same industry that went public way before them. The company gained a high enthusiasm from the stock market due to the high expectation of the company's boy group BTS that is on the rise to increase the company's financial performance. Due to HYBE's reliance on BTS' presence for its financial performance, financial sustainability is doubted. Especially because some of the BTS members will have to halt activities soon to enlist in the Korean military.

Hence, the research topic that needs to be reviewed and solved, according to the description, is to compute the intrinsic value of HYBE Co., Ltd. using the Free Cash

Flow to the Firm method, and determining whether the company is overvalued or undervalued by the market. Moreover, the goal is also to be able to make and suggest a recommendation to HYBE Co., Ltd. shareholders.

II. METHODOLOGY

The author gathers data for this study utilizing quantitative technique. The quantitative strategy collects primary data from HYBE Co., Ltd. annual report, to gain the financial data on the intrinsic value. Other sources for this research were obtained from numerous reference books, journal articles, and websites. The author relies on secondary data in this study. Because the company is publicly traded, the data is primarily derived from its annual financial reports, Yahoo Finance, Bloomberg, and the company's website. The author forecasts HYBE Co., Ltd. financial position from 2021 to 2025 to arrive at the intrinsic value.

After gathering all necessary data, data analysis can begin. The Discounted Cash Flow (DCF) Method based on Free Cash Flow to Firm will be used to assess the intrinsic value of HYBE Co., Ltd. Before the computation can be performed, certain elements of the DCF formula must be specified. These elements include the Weighted Average Cost of Capital (WACC) which encompasses the cost of debt after tax, cost of equity, weight of equity and weight of debt, beta, risk free rate. Moreover, growth rate, FCFF forecast from 2021 to 2025, and terminal value are also calculated.

A. Free Cash Flow to the Firm Method

In contrast to free cash flow to equity, which is after interest payments and loan cash flows, free cash flow to the firm is a cash flow after taxes and reinvestment needs but before any debt payments (Damodaran, 2012). The formula is as stated below:

$$\text{Free Cash Flow to Firm} = \text{NOPAT} - \text{CAPEX} - \text{Change in Working Capital}$$

Where,

$$\text{NOPAT} = \text{Operating Profit} \times (1 - \text{Tax})$$

B. Weighted Average Cost of Capital

WACC is the average cost of capital for debt and equity (David Frykman, Jakob Tolleryd, 2012). The WACC is the rate at which future cash flows of a corporation are discounted in order to get a current value for the business. The following formula is used to compute it:

$$\text{WACC} = (\text{Weight of equity} \times \text{Cost of Equity}) + (\text{Weight of Debt} \times \text{Cost of Debt})$$

- Cost of Equity

The cost of equity is the percentage return demanded by the owners of a corporation (Investopedia Stock Analysis, 2015). The formula used in the calculation is as stated below:

$$\text{Cost of Equity} = \text{Risk Free Rate} + (\text{Beta} \times \text{ERP})$$

The risk-free rate is obtained from worldgovernmentbonds.com website, for South Korea's central bank rate which is 0.5% (last modified in May 2020). While the company's beta will be calculated using Sector-Average beta by averaging the beta of HYBE's competitors, namely SM Entertainment, YG Entertainment and JYP Entertainment.

- **Cost of Debt After Tax**

According to Damodaran (2012), "The cost of debt gauges the firm's present cost of borrowing money to finance its assets. In principle, it should be a consequence of the lender's perception of the firm's default risk."

$$\text{Cost of Debt} = \text{Cost of Debt Before Tax} \times (1 - \text{Tax Rate})$$

- **Weight of Equity**

$$\text{Weight of Equity} = \frac{\text{Market Value of Equity}}{\text{Capital}}$$

Where,

$$\text{Market Value of Equity} = \text{Share Price} \times \text{Number of Shares Outstanding}$$

- **Weight of Debt**

$$\text{Weight of Debt} = \frac{\text{Market Value of Debt}}{\text{Capital}}$$

Where,

$$\text{Market Value of Debt} = \text{PV of Debt} + \text{PV of Interest Expense}$$

C. Growth Rate

The cash flow value is forecasted using the growth rate.

$$\text{Growth rate} = \frac{\text{Ending Value} - \text{Beginning Value}}{\text{Beginning Value}}$$

The forecasted growth rate is calculated by subtracting the base year growth rate from 0.5 percent, then dividing by 5 and rooting by the respective years using the following formula:

$$\text{Forecasted Growth Rate} = \frac{g - (g - 0.5\%) \times n}{5}$$

Where:

g = growth rate of the base year

n = respective year

The 0.5% is the growth rate forecasted at Terminal Year, and is taken from South Korea's 10 years Government Bond.

D. Terminal Value

According to Damodaran (2012), "Because you cannot estimate cash flows indefinitely, you usually impose closure in discounted cash flow valuation by terminating your estimates of cash flows at some point in the future and then computing a terminal value that reflects the firm's value at that point."

$$\text{Terminal Value} = \frac{\text{FCFF at Year 5} \times (1 + g)}{(WACC - g)}$$

E. Intrinsic Value per Share

The value of equity is divided by the number of outstanding shares to arrive at the intrinsic value per share. The calculation formula will be as follows:

$$\text{Intrinsic Value per Share} = \frac{\text{Value of Equity}}{\text{Number of Shares Outstanding}}$$

III. RESULTS

Using growth rate assumption, the author creates a financial statement projection. The estimation period of the valuation is limited to 5 years. The total value that has been discounted is then calculated using HYBE's WACC, which is 5.9376407% as presented in Table I.

TABLE I WEIGHTED AVERAGE COST OF CAPITAL CALCULATION

DAMODARAN'S SPREADSHEET TO COMPUTE WACC	HYBE Co., Ltd.
Inputs	COST OF CAPITAL
Company	HYBE Co., Ltd.
Country of incorporation	KOREA
Industry (US)	Entertainment
Industry (Global)	Entertainment
Do you have operating leases?	Yes
If synthetic rating, input the type of company	2
MARKET VALUE OF EQUITY = MARKET CAPITALIZ	5,766,080,000
MARKET VALUE OF DEBT	337,099,814
CAPITAL = EQUITY + DEBT	6,103,179,814
WEIGHT OF EQUITY	94.48%
WEIGHT OF DEBT	5.52%
WACC = WEIGHTED AVERAGE COST OF CAPITAL	5.9376407%
COST OF EQUITY	6.22%
RISK FREE RATE	0.5%
BETA	0.86
ERP = EQUITY RISK PREMIUM	6.65%
COST OF DEBT AFTER TAX	1.13%
COST OF DEBT BEFORE TAX	1.50%
TAX RATE	25%

Then, the DCF formula with Free Cash Flow to the Firm method is used in the calculation. The results are exhibited in Table II.

TABLE II FREE CASH FLOW TO THE FIRM CALCULATION

YEAR	2019	2020	BASE YEAR	2021	2022	2023	2024	2025	TERMINA L YEAR
			0	1	2	3	4	5	
EBITDA (KRW)	109, 182, 004	168, 144, 248	168,144, 248	240, 955, 588	319, 512, 356	389, 490, 200	433, 115, 929	435, 281, 509	437,457,91 6
Growth Rate		54.0 0%	54.00%	43.3 0%	32.6 0%	21.9 0%	11.2 0%	0.50 %	0.50%
LESS Depreciation & Amortization	9,31 3,08 3	34,9 47,1 94	34,947,1 94	50,0 80,3 43	66,4 07,6 26	80,9 51,8 60	90,0 19,0 56	90,4 69,1 51	90,921,497
EBIT	99,7 52,7 35	130, 133, 041	130,133, 041	186, 484, 425	247, 282, 408	301, 440, 845	335, 204, 407	336, 880, 429	338,564,83 1
LESS TAX	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
NOPAT = EBIAT	74,8 14,5 51	97,5 99,7 81	97,599,7 81	139, 863, 319	185, 461, 806	226, 080, 634	251, 403, 305	252, 660, 322	253,923,62 3
LESS CHANGE IN WORKING CAPITAL		972, 923, 469	9,729,23 5	13,9 42,2 76	18,4 87,7 61	22,5 36,8 49	25,0 61,1 40	25,1 86,4 46	25,312,378
LESS CAPEX			522,268	748, 426	992, 429	1,20 9,78 5	1,34 5,29 0	1,35 2,01 7	1,358,777
EQUALS FCFF				125, 172, 617	165, 981, 616	202, 333, 999	224, 996, 875	226, 121, 860	4,179,247,6 11
WACC				5.94 %	5.94 %	5.94 %	5.94 %	5.94 %	5.94%
PRESENT VALUE OF FCFF				118, 156, 886	147, 897, 010	170, 183, 705	178, 638, 597	169, 469, 312	3,132,179,3 31

To form the company intrinsic value, the present value of FCFF will be added together. The firm value will then be divided by the number of outstanding common shares to determine the intrinsic value per share. HYBE Co., Ltd. has an intrinsic value per share of KRW160,000.

TABLE III VALUATION RESULT

Value of Operating Assets	3,916,524,842
-/- Debt (31/12/2020)	343,127,859
+/- Cash and Cash Equivalents (31/12/2020)	380,243,932
Value of Equity	3,953,640,915
Shares outstanding	36,048
Intrinsic value per share (Korean Won)	109,677
Closing Price 31/12/2020	160,000
Downside	-45.88%
Recommendation	Sell

Finally, the intrinsic value per share is compared to the market share price to see if it is undervalued or overvalued. The market share price of HYBE Co., Ltd. on 30 December 2020 is KRW160,000. Which indicates that HYBE Co., Ltd is below market price, meaning that it is overvalued.

IV. DISCUSSION

The Discounted Cash Flow valuation calculation using FCFF method shows that the intrinsic value of HYBE Co., Ltd is lower than their market price. This shows that the firm is overvalued.

Overvalued stock means that the market is more bullish about the firm than it is actually valued fundamentally. For investors, buying overvalued stock means that they are overpaying for the stock, which could be one of their risks to lose money.

Moreover, the company is still dependent on the boy group BTS, which has become their biggest source of income, generating 84.7% of their revenues in 2020. As HYBE Co., Ltd's main source of revenue, the absence of BTS may damage the company's financial performance in the following years.

V. CONCLUSION

In conclusion, using the FCFF valuation method, HYBE Co., Ltd.'s intrinsic value per share is KRW109,677 which is less than the market share price of KRW160,000 per share. Therefore, HYBE Co., Ltd is overvalued by the market.

Considering the result, the author advises existing investors to sell their shares because the price of HYBE Co., Ltd. is higher than its intrinsic worth.

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