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Analysis and Valuation of WiseTech Global Based on Combined CAPM and WACC Valuation

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Abstract: This paper provides a detailed analysis and valuation of WiseTech Global (WTC), a prominent growth firm in the Australian information technology industry, utilising the Capital Asset Pricing Model (CAPM) and the Weighted Average Cost of Capital (WACC). The research establishes WTC's classification as a growth firm based on quantitative and qualitative criteria, highlighting its exceptional performance metrics, including a compound annual growth rate (CAGR) significantly above its industry average. In addition, the CAPM model is applied to calculate the return on equity, while both the return on equity and debt is incorporated in the WACC calculation to assess WTC's overall capital cost. The analysis forecasts WTC's growth rates for both the short and long term, predicting future free cash flows (FCF) and using a Discounted Cash Flow (DCF) model for valuation. The results indicate that WTC may be overvalued by the market, leading to a recommendation for short selling its equity, questioning the assumption that "growth companies inherently have superior future investment potential."

Keywords: WiseTech Global, CAPM, WACC, Growth Firm, DCF Valuation.

1. Introduction

Valuing growth companies, particularly within the rapidly evolving technology sector, has become an important focus in financial research due to their potential for high returns and significant market influence [1]. Traditional valuation methods often fail to capture the complexities of these companies, such as their high growth rates and market volatility. Although previous studies have explored various models for growth firm valuation, there remains a research gap in applying a combined approach using both the Capital Asset Pricing Model (CAPM) and Weighted Average Cost of Capital (WACC) to achieve a more comprehensive analysis. This study examines WiseTech Global (WTC), a leading growth firm in the Australian IT industry, aiming to address the specific challenges of accurately valuing its stock. By applying CAPM, the cost of equity and WACC can be estimated to assess overall capital costs, the paper seeks to determine intrinsic value and investment potential of WTC. As such, this study not only provides a detailed valuation of WTC but also offers broader insights into growth firm valuation, guiding future research and investment decisions in the technology sector.

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2. Criteria for Growth Firms and WTC Analysis

In order to accurately categorize WTC as a typical growth firm and to ensure its representativeness, three quantitative criteria and one qualitative criterion have been applied [1]. According to Table 1, several key ratios confirm that WTC exhibits characteristics typical of a growth firm. The growth firms often exhibit significantly higher growth rates compared to their industry averages due to their smaller size and market opportunities, leading to rapid expansion [1]. However, this rapid growth also results in greater sensitivity to external factors, making these firms more volatile. WTC's compound annual growth rate (CAGR) is approximately 20%, which significantly exceeds the IT industry average of 6.5% [2]. Notably, five-year data suggest that WTC has maintained a consistent growth rate, which appears to challenge the typical volatility associated with growth firms [1]. The information technology sector has been less affected in recent years, further highlighting WTC's strong performance.

Table 1: WTC Financial Summary (TTM as of 30th June) [3]

	06/19	*06/20*	*06/21*	*06/22*	*06/23*
Revenue growth	\	23.30%	18.19%	24.59%	29.20%
Profit margin (growth profit/ TR)	80.86%	64.01%	82.77%	85.37%	84.62%
Annualised growth in revenue (CAGR)	23.76%				
EPS	17.67	15.58	35.04	56.04	72.91
Dividend/fully franked	3.45	3.3	6.55	11.15	15
DPR	19.52%	21.18%	18.69%	19.90%	20.57%

Additionally, growth firms usually experience increasing profit margins as of their improving efficiencies, and this trend is typical for firms that are heavily investing in expansion, which may initially reduce margin stability but is expected to improve as scale and efficiencies increases. The table suggest WTC has an improving profit margin from 64% to 85% strongly support WTC being a growth firm. Furthermore, the low dividend payout ratio (DPR) supports WTC may prioritize reinvestment to support further growth resulting in a reinvestment rate that exceeds DPR which is another feature of growth firm. Aside from the quantitative ratio analysis, over 85% of the broad directors in WTC are experienced in merge and acquisition, reflecting the strategy for WTC that its emphasis on growth by acquisition, a common strategy for growth companies [1]. Nevertheless, the qualitative criteria are highly sensitive to individual case and therefore is less reliable compared to the quantitative scales. All quantitative and qualitative selection criteria suggest that WTC is a representative growth company that warrants further study.

3. Application of CAPM and WACC Models

3.1. Principle and Calculation of Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) is a financial model that establishes the relationship between a firm's systematic risk (usually measured in terms of beta) and the expected rate of return on its securities [4].

$$\mathbb{E}(r_i) = rf + \beta_i [\mathbb{E}(r_{mkt}) - r_f] \quad (1)$$

Before estimating the equity cost of capital, it is essential to recognize the assumptions underlying the CAPM, which may affect its practicality and credibility. These assumptions include investors are risk-averse; capital markets are perfect, with no transaction costs or investment taxes; investors can

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borrow at the risk-free rate; and all investors possess identical information, expectations regarding market performance, and share the same investment horizon [5]. To ensure accuracy, share prices adjusted for stock splits and dividends were obtained from Morningstar [3], and the yields on Commonwealth Government Bonds were obtained from S&P Capital IQ [6].

For the purpose of variable calculation and selection for the CAPM, the risk-free rate (r_i) refers to the expected rate of return for a risk-free asset [7]. For the stock valuation of WTC, the r_i is determined by the ten-year Commonwealth Government bond. The ten-year maturity, representing the longest-term bond, offers a stable rate over an extended period, which is appropriate given that businesses generally do not have a set maturity. It is typical of equity investments to be long-term in nature, and this bond provides an objective basis for the analysis of the market and the formulation of forecasts. Furthermore, it is the industry standard adopted by numerous sectors in Australia. The most recent yield, as of 11 August 2024, is 4.067% [8].

The market risk premium represents the excess return of the entire market relative to the risk-free rate [9] and is expressed as $\mathbb{E}(r_{mkt}) - r_f$. The Australian Competition and Consumer Commission estimates a long-term market risk premium of 6.5% [10].

Beta (β) measures systematic or market risk and reflects the tendency of WTC's stock excess return to change, on average, in response to a 1% increase in the excess market return [11]. As per Morningstar [3], WTC has a beta of 1.13, indicating that for every 1% increase in the market risk premium, WTC's stock is expected to increase by 1.13%. Since this value exceeds 1, WTC is subject to greater systematic risk compared to the overall market. By substituting the determined values into the CAPM formula, the r_i is calculated to be 11.4%.

3.2. Principle and Calculation of Weighted Average Cost of Capital (WACC)

The Weighted Average Cost of Capital (WACC) is a critical financial metric that represents the average rate of return a company is expected to pay to finance its assets through a combination of debt and equity. It is a weighted average because it reflects the relative contributions of each source of capital—debt and equity—to the overall capital structure of the firm [12]. The WACC is used as the discount rate in financial models, such as the DCF, as it represents the minimum return that a company must earn on its existing assets to satisfy its creditors, owners, and other providers of capital.

$$WACC = W_d r_d(1 - t) + W_e r_e \quad (2)$$

For the purpose of variable calculation and selection for WACC, WTC's proportion of market value that is financed by debt (W_d). This is calculated by its market value of debt divided by the total company value. According to Morningstar [3], WTC has a market value of debt of 225 million and market value of equity of approximately 26485.51 million until 31st of June 2023. However, the long-term debt is used here to ensure consistency and representativeness for long-run, the debt capacity varies depending on company's plan and financial situation. The W_d for WTC is 0.8%, indicating there are 0.8% of the total company value is contributed by debt.

The return on debt (R_d) for WTC refers to the interest rate the company pays on its borrowed funds. This rate is obtained from the yield on WTC's most recent long-term bond, which is 5% [13]. The return on debt is a crucial component because it represents the cost of debt financing for the company. WTC has consistently maintained a 5% return on debt in recent years, which implies that this rate is a reliable estimate for current and future debt costs.

The corporate tax rate (T) applicable to WTC is 30%, as set by Australian tax law [14]. This rate is relevant in the WACC calculation because interest payments on debt are tax-deductible, effectively reducing the R_d by the tax shield amount. The after-tax R_d is therefore calculated as $r_d(1 - t)$. WTC's weight of equity (W_e) represents the proportion of the company's market value that is financed

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by equity. This is calculated by dividing the market value of equity by the total company value. With a market value of equity at $26,485.51 million and total company value, the W_e for WTC is 99.2%, indicating that the vast majority of the company's value is financed through equity. It is important to note that equity values can fluctuate significantly based on stock market conditions, making We a dynamic variable that can change over time [15].

The cost of equity (R_e) represents the return required by equity investors to compensate for the risk of investing in the company. This is often estimated using the CAPM, as calculated earlier is 11.4%. By substituting the relevant values, the final leveraged WACC for WTC is determined to be 11.33%. This rate reflects the blended cost of the company's capital from both debt and equity sources and serves as the discount rate in the DCF analysis.

4. Short-Term and Long-Term Growth Projections for WTC

4.1. Short-Term Growth Rate

Prior to projecting WTC's future growth rates, a review of the company's performance over the past five years was carried out to ensure consistency in the valuation process. WTC has exhibited robust profitability and effective utilization of equity to generate returns, as demonstrated by a relatively stable return on equity (ROE), with an CAGR of 23.82% (as shown in Table 2). This figure is used as the basis for estimating WTC's short-term growth over the next five years.

Table 2: The CAGR Calculation for WTC in Past 5 Years

WTC						
TTM(30th June)	06/19	06/20	06/21	06/22	06/23	CAGR
Revenue Growth		23.30%	18.19%	24.59%	29.20%	23.82%

4.2. Long-Term Growth Rate

The prevailing view among market analysts is that long-term growth should ideally fall between the projected inflation rate and the nominal gross domestic product (GDP) growth rate. This estimate is predicated on the assumption that if a company's growth rate is in alignment with or exceeds the inflation rate, its real growth will remain at a minimum of 0%. However, it is imperative that a company's growth rate remains below that of the nominal GDP growth rate. This is because no business can realistically be expected to outperform the broader economy on a consistent basis over the long term [16]. It can thus be concluded that WTC's long-term growth rate should be situated between the long-term inflation rate of 2.5%, derived from the Reserve Bank of Australia's average target inflation range [17], and the long-term nominal GDP growth rate of 4.878%, calculated from the expected real GDP growth rate using the Fisher equation [18].

Accordingly, WTC's estimated long-term growth rate is around 4.878%, aligning with the market's potential for real growth. It is important to recognize that these growth projections rely on the accuracy of current market and industry forecasts, assuming WTC will maintain its current strategies and projects. Various assumptions are made for estimating WTC's future free cash flow (FCF). Assuming WTC maintains operation on a going concern. Additionally, assuming it continues to operate in the same capital structure and financial strategy. Further Assumes WTC's all FCF related factors including EBIT, depreciation, capital expenditure and change in working capital, are expected to grow at 5% for the initial five years, after which they will grow at a steady rate of 4.878% indefinitely.

The two-stage approach acknowledges that WTC's short-run growth rate cannot be sustained perpetually. The accuracy of the estimated FCF is supported by WTC's ability to maintain relatively

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stable growth, even during the severe economic disruptions caused in recent years. However, minor volatility has not been fully accounted for in these estimates. WTC's projected future FCF are presented in Table 3 and include cash flows up to and beyond 2028. The cash flows beyond 2028 will be utilized in the subsequent part to determine the perpetuity (terminal) value for long-term FCF. It is important to note that WTC has already reported its FCF for 2023 as $834 million [3].

Table 3: Estimated Free Cash Flow and Relevant Value

TTM (yr)	2023	2024	2025	2026	2027	2028	After 2028
Unlevered FCF (mil)	834.20	779.47	965.14	1,195.04	1,479.70	1,832.16	1,921.53
					Terminal Value		29,761.48
Present Value (FCF)	834.20	700.12	778.63	865.95	963.06	1,071.06	17,398.30
PV FCF	(–) Debt*	Value of Equity	No. Shares	DCF Price Per Share		Market Price (12/31/23)	
21,777mil	225 mil	21,552,124,883	333,386,838	*64.65*		*75.37*	

5. Valuation Analysis and Investment Recommendations

The Discounted Cash Flow (DCF) model is a well-established and widely used valuation method, based on the rule that a firm's intrinsic value (IV_0) equals the present value of all expected FCF. This valuation is conducted using a two-stage DCF model, incorporating both short-term and long-term growth phases. This approach recognizes that WTC's elevated short-term growth rate is unsustainable in the long run as the company progresses through its business life cycle and eventually matures [3]. Given that the declaration date for the 2024 final has not yet occurred, it is assumed that WTC will continue on its current trajectory, with the 2024 value estimated based on 2023 data and relevant assumptions.

Using the inputs calculated above, WTC's terminal value is determined to be $29,761 million, and its final intrinsic value is calculated to be $21,777 million [3]. After deducting $225 million in debt, the equity value is estimated at approximately $21.55 billion. This valuation is further corroborated by the market capitalization of WTC, which is $25,127.37 million [3]. Dividing this equity value by the total number of shares outstanding (333,366,838) yields a DCF price per share of $64.65. However, the stock price as of December 29, 2023, was $75.37, suggesting that the market has potentially overvalued WTC's equity and future potential [3]. This discrepancy may arise from the underlying assumptions used throughout this analysis, which may limit the valuation's credibility and representativeness.

6. Conclusion

The valuation analysis of WiseTech Global (WTC) using CAPM and WACC reveals significant insights into its current market position. The Discounted Cash Flow (DCF) model, applied with a blended WACC of 11.33%, indicates that WTC's intrinsic value is lower than its current market price, suggesting potential overvaluation. This finding is particularly important for investors, as it challenges the common assumption that growth firms, such as WTC, always offer superior future returns due to their high growth rates. While the study provides a comprehensive evaluation, it acknowledges limitations such as the assumption of stable performance and market conditions, which may not hold true in a dynamic market environment. Additionally, the assumption that WTC's growth

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will immediately transition to a perpetual rate after five years is a simplification that may not fully capture the company's potential volatility. To enhance future valuation models, introducing additional growth segments and considering potential external shocks would provide a more nuanced understanding. Overall, the analysis supports a recommendation to short sell WTC's equity, as the market may be overestimating its future growth potential, making this a crucial case study for investors in growth firms.

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