



ANKOLI CONSULTANT: A CASE STUDY ON THE USE OF BOTTOM-UP BETA AND MARKET VALUE OF DEBT FOR ESTIMATING THE COST OF CAPITAL OF A FIRM

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ABSTRACT

This Case study discusses corporate valuation using Capital Asset Pricing Method (CAPM). CAPM provides an initial framework to answer the relationship between the risk and the expected return of an investment. The Beta calculated is the systematic risk affecting the firm, varying from security to security. CAPM has multiple applications, including allocation of capital for the real asset, financial investment, capital expenditure, corporate restructuring, and portfolio evaluation. In this case, we are trying to understand the firm's valuation for merger and acquisition. To have a systematic understanding, we will use the CAPM model, and the Beta will be calculated from two different methods Historical and Bottom-Up beta. In addition, applying market value weights for the cost of capital is also used.

KEYWORDS: Capital Asset Pricing Method; CAPM, Historical (levered) Beta; Bottom-Up beta; Market Value Weight.

INTRODUCTION

Corporate valuation has evolved from a normative to a positive approach which explains how to estimate companies' values as a significant part of corporate finance. The capital Asset Pricing Model is a simple linear relationship between the anticipated return and the systematic risk involved in a security or portfolio [11]. CAPM is favoured for its simplicity and efficient tool for understanding the concept of portfolio theory and asset pricing. It predicts the return which is expected on securities. Return on security is a positive linear relation of the market Beta. The market Beta explains the cross-section of expected returns [1]. It identifies two types of risk affecting the firm. Systematic risk is affected by the market, and unsystematic risk is specific to the company. The systematic risk is measured by Beta, which shows the sensitivity of return on security to the market return. The level of sensitivity differs from security to security [7].

Multiple uses can be derived from CAPM. It helps to allocate capital for real investments like machinery and factories and financial investment. It can assist in making decisions regarding capital expenditure, corporate restructuring, financing, investment, and judging a portfolio [2]. This model is being applied by a consultancy firm named Ankoli Consultant to assist their client Mr Ahuja regarding the firm's valuation to suggest decisions regarding merger and acquisition accordingly.

Ankoli Consultant is a renowned equity research firm with having far and wide reach of clients. Most of the clientele of Ankoli have a long-term perspective toward equity investments. They have earned their reputation as a client-driven fundamental

equity research firm with a nonsense policy. Investors with Ankoli have cherished fine-tuned advice from the firm to decipher the nitty-gritty of identifying undervalued and overvalued stocks. The main USP of Ankoli is to provide information on the overpriced stock with the equal vigour and interest that people usually have for sharing information on undervalued securities. Over the years, the firm earned its reputation and was quite popular among its niche clientele. The business was consistent and doing fine, but they are not at the peak of performance.

One of the prominent investors among the clients of the firm is Mr Ahuja. He sees some potential in a firm named Zebra Line Limited. He wants to invest in the firm. Zebra Line Limited which is in some rough straits for some time and may be open for sale in the future. However, Ankoli's main business is never Mergers and Acquisitions. But when requirements demand, they never shy away from contributing by providing their valuation tips to them. Ahuja is a client who wants Ankoli to value the Zebra in their peculiar style using fundamentals.

Zebra line's main business is auto ancillary manufacturing unit. The other line of business is battery manufacturing, and the third area of business is the inverter (for power backup). The sales distribution is 50, 30, and 20 (all in percentages) in the three lines of business.



LITERATURE REVIEW

In the present times, corporate valuation is of great importance. Knowing the worth of an enterprise is of fundamental importance not only to the management but also to the investors, owners, and market observers. The company valuation helps in the negotiation of the price of an enterprise while conducting a commercial transaction [5]-[6]. The shift towards value-based management has caused an increase in demand for corporate valuation. This situation is essential in a market driven by mergers and acquisitions, ever-increasing transaction volume, false evaluation, and misinterpretation [4]-[8]. Contemporary enterprise financial management is concerned about maximizing its value.

The Capital Asset Pricing Method is considered one of the most widely used and essential contributors in finance. The expected return is determined by their corresponding level of systematic risk or Beta [1]-[3]. The foundation of this model is laid by Markowitz and Tobin. Markowitz was the first to establish a system to gauge portfolio risk and find out a portfolio’s anticipated risk and return [2]. The CAPM explains the tradeoff

which exists between the risks and the return. It measures the risk of an asset as the covariance of its return on the overall market [9]. The model predicts that the expected return on two assets is linearly related to the covariance of the return on the given asset with the return on the market portfolio [10].

DATA

The following additional information is provided for Zebra Line Limited.

- The risk-free rate is 6.5%, and MRP is 4%. The corporate tax rate is 25%.
- Beta (market levered Beta) is 1.1.
- Lambda for the Zebra Line is .32. Inflation in the US is 2% and in India is 6%. A 3.5% rate can be taken for US risk-free rate and 5.23% for US Equity Risk Premium. The country risk premium for India is 3.23%.
- Tax rate 25%
- The current D-E ratio is 50%.
- Data for Bottom-up beta calculation

BL1: Auto-ancillary Unit		
Firm Name	D/E Ratio	Levered Beta
Leo Ltd	.65	2.10
Royal Enterprise	.78	1.90
FCA Tech	1.20	1.85
Lexus Engineering	.59	1.65
Isuzu	.90	1.78

BL2: Battery M/F Units		
Firm Name	D/E Ratio	Levered Beta
Lento Enterprise	.85	.75
Amara Batteries	.89	1.50
Su-Kam Power	.75	2.00
Base Corp	1.22	1.85
HBL Power	1.30	.86

BL3: Invertor M/F Units		
Firm Name	D/E Ratio	Levered Beta
Renutron	1.10	1.10
Sharp	1.25	1.20
Enertech	.74	.98
Voltronix	.69	.85
Maxicon	.86	.99



ISSUES TO BE SOLVED

Consider you are a Senior Analyst working in Ankoli Consultant. Analyze and suggest to the client whether they should go ahead with the Merger and Acquisition of Zebra Line Ltd. Use the Capital Asset Pricing method to validate your suggestion.

Question 1: Compare Beta estimated by both the methods

- Historical levered Beta (given)
- Bottom-Up beta

Question 2: Use both the estimate of Beta in the following methods of estimating the cost of equity. Compare the results of the cost of equity.

- Equity Market Premium (EMP) or Market Risk Premium (MRP) from the given data (regarding S&P BSE 500 as the market index)
- EMP using country risk premium

Question 3: Calculate the cost of debt if the interest coverage ratio is 3.2 (for Zebra Line).

Question 4: If the annual interest expense is 11.50 cr, the Face Value of accumulated debt is 110 cr, average maturity period of the debt is 11 years, calculate the market value of the debt.

Question 5: Calculate discounting rate for Zebra Line if the market value of equity is 625 cr.

Question 6: Revise the discounting rate if the Sales Mix is as follows (45, 35, and 20% in the three lines of business, respectively).

Question 7: Revise the discounting rate if the target capital structure (Debt ratio) is 55%.

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