Calcualtion of beta

It is a simple and very useful indicator that all traders and investors should be aware of. Calculation of beta value of stocks is essential with many trading/investing strategies especially with Capital Asset Pricing Model (CAPM), which describes how much risk that one can take to get a desirable return or vice versa. Many financial sites, broker sites and trading platforms offer real-time and daily beta value of stocks. When calculating the beta value, the volatility of the market is taken as 1 and the beta of stock is calculated as how much the stock price moved in comparison to this market volatility. The value can take one of the following forms.

1)Negative beta: This is an interesting but rare condition where the price of the stock moves in reverse direction to the market movement. Usually no stock has prolonged negative beta value as most (all) them move with the market. 2)Zero beta: This is another rarity, where the price of stock stays same over time irrespective of market movement. This can sometimes happen in sideways moving markets, where no major economic/industry/company news is coming up. 3)Beta less than one: This happens when the stock price moves less in comparison of market. Many blue-chip and large-cap company stocks have beta value less than one, which make them qualify for low-risk investments. But these stocks tend to offer low-returns; and are not so suitable for short-term trading.

4)Beta of one: This happens when the stock price movement is same as that of market. This is true for many index-linked stocks and funds. 5)Beta greater than one: Beta exceeds one when the stock price movement surpass market movement. Many fast growing, mid and small-cap company stocks have beta higher than one. These stocks tend to offer better return for high-

risk taken, but many of them are less suitable for long-term investing. Remember, very high beta levels may indicate low liquidity causing increase in volatility. Knowledge of beta value is essential from a trader's perspective as many experts believe that about 70 percent of stock price movements are withrespectto market changes.

In general it is believed that investing in instruments with high beta is good in rising markets and investing in low beta instruments is good in falling markets. Advantages of beta value includes: simplicity in calculation, easy to apply and helpful in finding right trading instruments. Disadvantages of beta value includes: as it is based on historical data there is no guarantee of future returns, not applicable for newly issued stocks, does not distinguish bearish and bullish trends and it do not consider the value of the instrument. 2. 1 The regression approach for measuring Beta You need to gather historical data about the stock and the market You can use annual data, monthly data, weekly data or daily data. You need at least thirty (30) observations of historical data. Hopefully, the period over which you study the historical returns of the stock is representative of the normal condition of the firm and its relationship to the market.

If the firm has changed fundamentally since these data were produced (for example, they have merged with another firm or have divested itself of a major subsidiary) there is good reason to believe that future returns will not reflect the past…and this approach to beta estimation SHOULD NOT be used…. rather, use the ex ante approach. Characteristic line of Regression The characteristic line is a regression line that represents the relationship between the returns on the stock and the returns on the market over a

period of time. The slope of the Characteristic Line is the Beta Coefficient The degree to which the characteristic line explains the variability in the dependent variable (returns on the stock) is measured by the coefficient of determination. (also known as the R^2 (r-squared or coefficient of determination)). If the coefficient of determination equals 1. 0, this would mean that all of the points ofobservationwould lie on the line.

This would mean that the characteristic line would explain 100% of the variability of the dependent variable. The alpha is the vertical intercept of the regression (characteristic line). Many stock analysts search out stocks with high alphas. (refer to exhibit 1 to 10 : fig. a & b) 2. 2 Beta value from historical values of stocks by regression | Company | Beta Value(Levered) | Beta Value(Unlevered) | | DLF Ltd. | 2.

5 | 1. 36 | | Larsen & Toubro Ltd. | 1. 56 | 1. 16 | | Jaiprakash associates Ltd. | 2. 14 | 0.

92 | | Unitech Ltd. | 2. 31 | 0. 84 | | Housing Development & Infrastructure Ltd. | 2. 2 | 1. 37 | | Ackruti City Ltd.

| 0. 6 | 0. 37 | | Ahluwalia Contracts | 1. 4 | 1. 36 | | Ansal Properties & Infrastructure Ltd. | 2. 45 | 1.

46 | | Consolidated Construction Consortium | 1. 4 | 1. 13 | | Hindustan Construction Company Ltd. | 2. 02 | 0. 81 | Unlevered Beta A type of metric that compares the risk of an Unlevered company to the risk of the market. The Unlevered beta is the beta of a company without any debt.

Unlevering a beta removes the financial effects from leverage. The formula to calculate a company's Unlevered beta is: [pic] Where: BL is the firm's beta with leverage. Tc is the corporate tax rate. D/E is the company's debt/equity ratio. Expected return using the Capital Asset pricing Model A model that describes the relationship between risk and expected return and that is used in the pricing of risky securities. [pic] The general idea behind CAPM is that investors need to be compensated in two ways: time value ofmoneyand risk. The time value of money is represented by the risk-free (rf) rate in the formula and compensates the investors for placing money in any investment over a period of time.

The other half of the formula represents risk and calculates the amount of compensation the investor needs for taking on additional risk. This is calculated by taking a risk measure (beta) that compares the returns of the asset to the market over a period of time and to the market premium (Rm-rf). Appendix 7. 1 Formulae: (1) Holding Period return (2) Unlevered Beta [pic] (3) CAPM [pic] Bibliography Books referred to:) Financial Management: Theory, Concepts ; problems - R. P. Rustagi 2) CorporateFinance: Principles ; Practice - Denzil Watson ; Antony Head 3) Investment Analysis ; Portfolio Management - Prasanna Chandra Websites referred: www. investopedia.

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htm www. investorwords. com www. google. com www. articlesbase. com in.

finance. yahoo. com www. bseindia. com www. nseindia. com

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the Investment