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CALCULATIONS

BACKGROUND

The dividend discount model estimates the intrinsic value of an equity using the present value of forecasted dividends. The first step in the process is to project a potential earnings stream using explicit earnings estimates for the current and following year and for the subsequent year, FY3, if available, plus an estimate of the long-term growth rate for those earnings. From this projected earnings stream, a dividend payment schedule is derived and discounted to the present value.

DISCOUNT RATE ASSUMPTIONS

The model uses the risk-free rate of the 10-year treasury bond plus a risk premium (also known as the market's required rate of return) as the discount rate. The risk premium is calculated using a base risk premium for the issue's country and multiplying this value by the applied beta. The country risk premium is calculated by using capitalization-weighted forecasted dividends and expected growth rates to determine an implied market return on equity. The risk-free rate is then subtracted to calculate the risk premium.

MODEL STAGES

DDM is based on a three-stage dividend discount model consisting of a growth, transition, and mature or steady-state stage. (Before the growth stage, there are years FY1 and FY2. The dividends in these years naturally enter into the PV calculation.) The length of the growth and transition periods depends on whether the equity is classified as explosive growth, high growth, average growth, or slow/mature growth. This classification is based on the normalized distribution of the forecasted growth rate for all equities. Explosive growth equities are at the high end of the distribution, whose growth rate is significantly above the normalized mean or median, while those at the low end of the distribution are classified as slow/mature growth issues. Equities at the high end of the distribution have shorter growth periods with longer transition periods, while those at the low end have longer growth periods with shorter transition periods.

- **Growth Stage**: During the first year of the growth stage, if there is an explicit EPS forecast for FY3, use that forecast. If there is no explicit forecast for FY3, the EPS in FY3 is set as FY2 * (1 + long-term growth rate). During the remaining years of the growth stage (if growth years = 9, then number of remaining growth years = 8), EPS grows at the long-term growth rate. In this initial stage, the earnings per share grow at the long-term growth rate for the stated number of growth years starting with next year's estimate. An explicit EPS forecast is also used, if available. The model initially sets the length of the growth stage to three years for explosive growth, five years for high growth, seven years for average growth, and nine years for slow growth. The growth rate defaults to the mean secular growth rate. You can modify any of these values.
- **Transition Stage**: Following the growth stage, the model assumes that the earnings growth rate for the firm approaches the rate that applies to the general market for all mature issues. Firms with an above average growth rate assumption in the growth stage begin to see a linear decrease in their growth rate to arrive at the mature stage growth rate. Firms with a below average growth rate assumption in the growth stage see a linear increase in their growth rate to arrive at the mature stage rate. The model applies the same linear increase or decrease to the payout ratio to arrive at the mature stage payout ratio, which defaults to 45%.

  The default length of the transition period is 14 years for explosive growth issues, 12 years for high-growth issues, 10 years for average growth issues, and 8 years for slow-growth issues. In general, issues with high growth rates should have shorter growth periods and longer transition periods, while slow growth issues should have longer growth periods and shorter transition periods.

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DEFINITIONS

Term	Definition
Earnings/share FY1	The estimated earnings per share for the current fiscal year (fiscal year one).
Earnings/share FY2	The estimated earnings per share for the subsequent fiscal year (fiscal year two).
Earnings/share FY3	The estimated earnings per share for fiscal year three. If a forecast estimate is not available, the model extrapolates the data via the company's long-term growth rate.
Dividends/share FY1	The expected dividend to be paid out in the current year.
Growth Years	The number of years the company experiences increasing earnings (growth stage).
Transitional Years	The number of years the growth rate and payout rate linearly increase or decrease.
Long Term Growth Rate	The Bloomberg consensus estimated annual growth rate projected over the next five years.
Closing Price	The last price for the security. This value updates automatically when you access DDM.
Bond Rate	The yield of the 10-year treasury security. If such a security is not available, then a long-term swap rate is used.
Country Premium	The market return minus the risk-free rate. For more information, see *EQRP <Help>*.
Applied Beta	The percentage change in the price of an equity for a one percent change in the benchmark index.
Risk Premium	The average additional return required by an investor as compensation for investing in equities rather than a risk-free instrument. Risk premium is the product of country premium and applied beta. For more information, see *EQRP <Help>*.
Payout during Growth yrs	The assumed payout ratio during the growth years. Defaults to the dividends per share in FY1 divided by that year's earnings per share to a maximum of 75%.
Payout at Maturity	The dividend payout rate in the mature stage.
Growth Rate at Maturity	The earnings growth rate in the mature stage. It is calculated as (Bond Rate + Risk Premium) * (1 - Payout Ratio).
Currency	The currency of the analysis. If the trading currency differs from the currency of the estimates, the Dividend Discount Model screen displays a warning message that it could not compute. In such cases, the user may enter his/her own assumptions (e.g., re-enter the same value as appears in one of the fields), and the screen will compute. Alternatively, if the equity has a corresponding ADR, the user may wish to examine that.
Theoretical Price	The value of the security computed by the dividend discount model using the following formula: PV = D1/(1+R) + D2/[(1+R)^2] + D3/[(1+R)^3]...DK/[(1+R)^K] where:

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