The four factors of value are

the expected level of cash flows,

the riskiness of cash flows,

the timing of cash flows,

and the returns available on alternative, similar investments.

Rule of 72 72/% interest... don’t use the decimal form. = years it takes to double may money.

Time Value of Money formula

PV = FV/(1+i)n

(FV/PV) (1/n) -1

PV 50000 FV 100000 n=27

For Bonds use TVM equation… excel =PV(r,n, pmt, fv)

Present Value formula

PV = FV(1/(1+i)n)

When does the APR equal the effective interest rate? (B) when the compounding period is annual

Effective Interest Rate

r(effective rate) = (1+i(stated Interest rate)/n(number of compounding periods)n) – 1

r=(1+(i/n))n – 1

1+.02

Net Present Value (NPV)

where

Ct = net cash inflow during the period t

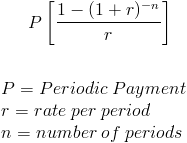
Co= total initial investment costs

r = [discount rate](http://www.investopedia.com/terms/d/discountrate.asp), and

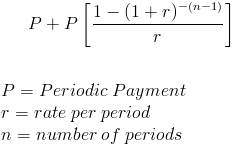
t = number of time periods

Payment of perpetuity PV= PMT/r or PV\*R=PMT

Present value of an annuity

P = PMT x ((1 - (1 / (1 + r) ^ n)) / r)  
  


Pv of an annuity due



What does the nominal interest rate factor in? (D) opportunity cost and inflation

real rate = nominal rate – inflation rate

What is amortization? (D) spreading out the principal payments of a loan over time

When should the Fisher equation be used to calculate nominal interest rate? (B) when there are large inflation rates

Fisher equations

(1 + i) = (1 + r) × (1 + π).

Fisher Equation for Interest Rates

(1 + real rate of interest) × (1 + inflation rate) = (1 + nominal rate of interest)

(1 + *r*\*) × (1 + *π*) = (1 + *r*)

Yield to maturity use time value for money in excell

 Yield to maturity(YTM) = [(Face value/Bond price)1/time period]-1

Bond Valuation. Must use excell PV on excel pv(rate,nper,payment,parvalue)

Or this wayhus, the PV of the cash flows is as follows:  
  
Year One = $70 / (1.05) to the 1st power = $66.67  
Year Two = $70 / (1.05) to the 2nd power = $ 63.49  
Year Three = $70 / (1.05) to the 3rd power = $ 60.47  
Year Four = $70 / (1.05) to the 4th power = $ 57.59  
Year Five = $1,070 / (1.05) to the 5th power = $ 838.37  
  
prices, by convention, are quoted as a percentage of the par value. In our above example, the result of $917.73 would be quoted as 917.73 / 1,000 = .91773 = 91.77%

Or PV=PMT/r or preferred stock Ppref=PMTor (D)/R D= Dividend

What is the market multiples approach used to measure? (B) present value of stock

Why is the dividend discount model (DDM) of limited use? (C) Future dividend payments are uncertain.

Price of Stock (Prefered % \*ParValue)/annual return %

If investors require a 6% annual return on an 8% preferred stock with a par value of $100, what should the stock's price be?

**CORRECT ANSWER**

(C) $133.33

**EXPLANATION**

We have a 8% preferred stock and investors require a 6% rate of return. Since par is assumed to be $100, our stock pays $8 in dividends per year. Our expected price would be (.08 x $100) ÷ .06 = $133.33.

Company A's most recent dividend was $2.60, dividend growth is expected to be 4% per year, and investors require 8%. What should the stock's price be?

**CORRECT ANSWER**

(D) $67.60

**EXPLANATION**

Since the dividend stream for this stock is growing at a constant rate, the stock price can be calculated as follows: $2.60 x (1 + .04) ÷ (.08-.04) = $67.60

dividend(1+expected growth%)/(required%-expected growth%)

CAPM

Ke=Rf+*B*(Rm-Rf) OR rs= Rf+[Rm – Rf] \**B*

Ke= Cost of Equity Or = rs

Rf=Risk Free Rate

Rm=Market Rate, rate of profit that you get from the general market. or the market rate of a system

*B*= Beta the higher risk rate.

Premium is Rm-Rf

the relationship between the return for a given stock and the nondiversifiable risk for that stock

The cost of capital is the rate of return that a firm must supply to its investors.

WACC Wighted Average Cost of Capital wdrd(1-T) + wpsrps+wsrs

(% of debt)(after-tax cost of debt)+(% of preferred stock)(cost of preferred stock)+(% of common stock)(cost of common stock)

Or

(% of debt)(before-tax cost of debt)(1-T)+(% of preferred stock)(cost of preferred stock)+(% of common stock)(cost of common stock)

Or

 The WACC takes the return from each component and then appropriately weights it based on the percentage used for financing.

Cost of Dept

((Dept \* Ri) - Rtax(Dept \* Ri))/Dept

Or

### After-Tax Cost of Debt *rd* − (*rd* × T) = *rd* × (1 − T)

 the cost of debt, preferred stock, and common stock multiplied by the percentage of each component used for financing

|  |  |  |
| --- | --- | --- |
| Table 4.1 Components of WACC | | |
| **Variable** | **=** | **Definition** |
| **rd** | = | Interest rate on firm’s debt; or the return on debt |
| **rd(1−T)** | = | After-tax cost of debt |
| **rps** | = | Return on preferred stock |
| **rs** | = | Return on common stock |
| **wd** | = | Weight (%) of debt used by company |
| **wps** | = | Weight (%) of preferred stock used by company |
| **ws** | = | Weight (%) of common stock used by company |
| **WACC** | = | Weighted average cost of capital |
| **DPS** | = | Dividend of preferred stock |
| **PPS** | = | Price of preferred stock |
| **g** | = | Growth rate of dividends of common stock |
| **P0** | = | Price in time zero of a share of common stock |
| **D0** | = | Dividend in time zero |
| **D1** | = | Dividend in time 1 |

Marginal Dept Cost

the cost of new issuance of debt

Cost of Preferred stock

Dividend divined by price of preferred stock.

The cost of debt is the after-tax cost of raising long-term funds through borrowing

Ri \* Dept - Rtax(Ri \* Dept)

Flotation costs are the costs of issuing and selling a security. Typical costs include both underwriting and administrative costs.

Dividend Yield:

Dividend/Share Price

Which model for calculating the cost of equity uses the following formula? (C) the dividend discount model, rs=(D1\P0) +g P0 is the price of the share of stock now, D1 is our expected next dividend, rs is the required return on common stock, and g is the growth rate of the dividends of common stock.

Which model for calculating the cost of equity looks at the relationship between the return for a given stock and the nondiversifiable risk for that stock using beta (β)?Capm

Which method for calculating the cost of equity makes an estimation based on historic data about cost of debt? (A) the debt plus risk premium model

DDM Dividend Discount Model (DDM)

Or DDM is (Dividendamount(1+divgrowthrate)/ share Price) +divgrowthrate)

$2(1 + .05) ÷ $17 + .05 = .1735 = 17.35%

All three models should be used together.

**EXPLANATION**

Each method has its strengths and weaknesses, and all are subject to the quality of the inputs. The dividend discount model (DDM) is very sensitive to the estimation of the growth rate. Capital asset pricing model (CAPM) depends upon an accurate estimate of the firm's beta. D+RP assumes that the risk premium is accurate. Often, the best method is to calculate all three results and make an informed judgment based on those results.

How does financial leverage increase risk? (D) Debt increases the variability of potential returns.

**Degree of Operating Leverage = %change in EBIT/ %change in Revenues**

**Degree of financial leverage**. Degree of financial leverage is calculated by dividing the percent change in net income by the percent change in EBIT. In this scenario, the firm's degree of financial leverage is 3. %change/%Change inEBIT

**Degree of total leverage** is calculated by dividing the percent change in net income by the percent change in revenues. In this scenario, the firm's degree of total leverage is 1.6. %change in income/ %change in revenues.

DEGREE of Total Leverage

PI =Present Value of Future Cash Flows / Initial Costs

PI doesn't work as well if the initial investment is spread out over time, or if the cash flows aren't ordinary, which is why NPV is preferable.

IRR = NPV when NPV = 0

In our IRR example, we used a hurdle rate of 10%. But what if the inflows could only be reinvested at 8%? To calculate MIRR, we would use the 8%. Lucky for us, spreadsheets have a function to do this quite easily:

=MIRR(cash flows from period 0 to n, rate for outflows, reinvestment rate)

Project A MIRR (reinvested at 8%) = 12.89%

Cash conversion cycle. Inv conv+RecConv-PayableConv

Trade discounts

% /(100-%)(don’t use the dec) \* (365/(finaldate-cutoffdate)

Given 4/10 net 30

4/(100-4)\*(365/20)