* **Proxy** - grant of authority allowing someone else to vote your stock.
* **Proxy Fight** - group other than mgmt. solicits authority to vote shares to replace mgmt.
* **Treasury Stock** - Shares of stock repurchased by a corporation.
* **Red Herring** - Prospectus, named b/c of red letters.
* **Tombstone Ads** - Announcements of new issues that appear as ads in financial press.
* **Prospectus** - Potential investors learn of the information concerning the firm and its new issue from it
* **Syndicate** - Group of bankers who pool efforts to underwrite a security
* **Seasoned Equity Issue (SEO)** - A new public equity issue from a company with equity previously outstanding.
* **Green Shoe Provision** - Allows members of the underwriting group to purchase additional shares at the offering price.
* **Par Value** - Stated value on a stock certificate
* **IPO vs SEO** - IPOs tend to experience returns of 7-8% less than non-issuing companies over 5 years. Questions market efficiency.
* **Capital Surplus** - Amount of directly contributed equity capital in excess of par value
* Current market borrowing rate - cost of debt to a corporation at any point in time w/o tax considerations.
* Empirical evidence suggests that upon announcement of a new equity issue, current stock prices drop because: mgmt. thinks stock is overpriced.
* During the waiting period, te firm can issue a preliminary prospectus which contains information very similar to the final prospectus without a price nor with SEC approval.
* **Investment bankers**: evaluate type of security to issue and how to issue it, aid in pricing and selling the new issue, engage in market stabilization. They do not offer checking accounts to firms or act as brokers to both individuals and institutional clients.
* Entrepeneurs generally give venture capitalists an equity position and usually positions on the board of directors in return for funding.
* Book value of shareholders equity is represented by the sum of par value of common stock, capital surplus and accumulated retained earnings.

**Flow-To-Equity Approach to Capital Budgeting**

"Calculating the levered cash flow after interest expense, the cost of equity capital for a levered firm, and then discounting the levered cash flows by the cost of equity capital."

1 Calculating levered cash flows
2 Calculating $R_s$ (discount rate)
3 Valuation

**Typical Negative Covenant of a Loan Document include:**

* Limitations are placed on the amount of dividends a company may pay.
* Firm may not pledge any of its assets to other lenders
* Firm may not merge with another firm
* Firm may not sell or lease its major assets without approval by lender
* Firm may not issue additional long-term debt
* Positive covenant = MUST do. Negative covenant = limit actions.

**MMI:**

* Value of unlevered firm = value of levered firm
* One capital structure is as good as another
* Leverage does not affect value of firm
* Capital structure changes do not affect stockholders welfare
* Does not hold in presence of taxes b/c levered firms pay less taxes compared to unlevered firms.
* Stock price of firm does not vary with amount of debt since # of shares is reduced as debt increases.

**MMI with taxes:**

* Capital structure affects firm value
* By raising debt-to-equity ratio, firm can lower its taxes and increase value
* Firm value is maximized at an all debt capital structure

**MMII:**

* Expected return on equity is positively related to leverage
* Required return on equity is a linear function of the firms debt-to-equity ratio
* Risk to equity increases with leverage

**WACC & more:**

* Use of firm's overall WACC to select investments is theoretically acceptable when systemic risk of projects are equal to systemic risk of firm.
* If project risk is different than firm risk, must calculate project discount rate based on project risk.

**Misc.:**

* Professionally managed mutual funds do not outperform a market index. This supports the efficient market hypothesis.
* In efficient markets, stock price should change with arrival of new info., avg returns are higher in January, growth stock returns are lower than value stock returns.
* If a **debenture is subordinated**, it must give preference to specified creditors in the event of a default.
* **pecking order or long-term financing strategies**: (1) Internal financing, (2) long term borrowing, (3) new common equity.
* Leverage works to increase EPS for high levels of EBIT because interest payments on the debt stay fixed, leaving more income to be distributed over less shares.
* **Internal financing** is the major source of long term financing for US firms.
* "In recent years external equity has been a small percentage of total source financing. Some managers argue this is b/c financial managers think stock prices are too low, even though this is inconsistent with efficient markets."
* When shareholders pursue selfish strategies such as taking large risks or paying excessive dividends, these will result in positive agency costs as bondholders impose various restrictions and covenants which will diminish firm value.
* When stocks with the same expected return are combined equally into a portfolio the expected return of the portfolio is equal to the average expected return of the stocks.
* Most mutual funds under perform the index. These findings support the efficient markets hypothesis.
* Historic mean market risk premium = 9.5%

**Indirect costs of bankruptcy:**

* Large Risks - Firm ranks all projects and takes project which results in the highest expected value of the firm's stock.
* Under investment - Firm turns down positive NPV projects, stockholders contribute full amount of investment but stockholders & bondholders share in benefits of project.
* Born principally by stockholders

**DEBT:**

* **Callable Debt** may be redeemed before maturity at the issuer's discretion.
* **Sinking Fund**: fund where corporation makes regular payments for orderly retirement of long-term debt.
* Debt issued with protective and restrictive covenants may be issued at a **lower** interest rate than normal.
* Cost of debt to a corporation is the firm's current market borrowing rate.
* WACC is adding the weighted average after tax cost of debt to the weighted average cost of equity.
* An arbitrage situation to an investor would be a bank setting its rate on risk-free borrowing (loans) below its rate on lending (savings).
* Debt level that maximizes value of a firm is when the increase in the present value of distress costs from an additional dollar of debt is equal to the increase in the present value of the debt tax shield.
* Increasing debt: increases # of creditors, increased cost of equity, WACC declines.
* A firm might choose all equity financing to maintain low debt so they can respond to new competitors, price competition & take advantage of new investment opportunities.

**Cost of Equity (COE):**

* Using COE, you can evaluate projects with a similar risk as the firm if the firm is all-equity. If firm is not all-equity, need to calculate a WACC, which includes the cost of debt financing, to calculate a discount rate for use in cap. budgeting.
* Estimates of the COE for publicly traded firms are notoriously imprecise because of beta estimates and estimates of market premium. Look at confidence intervals.

**Efficient Market Hypothesis:**

* Equilibrium rates of return prevail
* Firm securities sell at their "fair" value
* Investors should expect normal returns
* Current market prices reflect available info
* Current market prices reflect current value of securities
* No excess profit from using available info.

**Book value of a firm's stock can exceed its market value for several reasons:**

Example 1: First, market may believe entrenched mgmt. will burn through available resources of firm w/o creating value. Firm's market value will be less than book value but mgmt. is unwillin gto liquidate.

Example 2: Book value of equity might overstate true value of assets. Though unusual, it is possible.

**3 Explanations for why Value firms earn higher returns than Growth firms:**

**1 Data Mining** - Look hard enough and you'll see a pattern. Does not violate market efficiency, has no predictive power.

**2 Profit opportunity/mispricing** - For some reason, value firms are priced too low. Violates market efficiency, might have predictive power; depends on if you feel it can be arbitraged away.

**3 Poor asset pricing model** - Value is a proxy for some risk factor omitted from model. Does not violate market efficiency, will continue in the future.

**In the future, equity risk premium will be smaller than it is today. Two camps: one says because investors will have a more sensible view of risk other says lower returns will come as a nasty shock to investors. Discuss.**

1 because investors have grown more tolerant of risk - i.e. they used to demand larger returns. Future returns will be lower but investors are aware of lower reward for risk.

2 Investors are overly optimistic about future - high valuations are a result of this. Future returns will be low b/c of this irrational exuberance.

**Using CAPM estimate a reasonable rate of return for a company where T-Bills = 4%, beta = 1.3:**

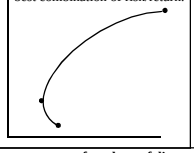
* Use historic market risk premium = 9.5%.
* CAPM = riskless rate + beta(market risk premium)
* CAPM = 4% + 1.3(9.5%) = 16.35%

**Coke CAPM:**

$R_f$ = short term (30-day) T-Bill rate
$E(R_m)$ = $R_f$ + short horizon expected equity risk premium mean
B = coefficient of X

**According to CAPM a rational investor should allocate portfolio as:**

* Invest in a combination of value-weighted market potfolio and risk-free assets to yield the efficient frontier which is the best combination of risk/return.



**Market Cap:** Share Price x # of shares

**EPS:** $\frac{\text{Earnings}}{\text{\# of shares}}$

**Market-to-book:** $\frac{\text{Market Cap}}{\text{Common equity}}$

**P/E ratio:** $\frac{\text{Share Price}}{\text{EPS}}$

**Hurdle Rate:**

* If preferred stock is similar in risk to common stock, COE is a reasonable hurdle rate.
* If preferred stock is less risky, firm's overall COC would need to be revised downward.
* Small amount of debt has small effect on overall COC.

**Firm has zero debt in cap structure. Overall cost of capital = 10%. Firm is considering 60% debt. Interest rate on debt = 8%. What is cost of equity capital in new structure?**

**Cost of Equity, no taxes:**

$R_s$ = cost of equity
$R_B$ = cost of debt (8%)
$R_0$ = cost of cap. for unlevered firm (10%)
B = debt
S = equity

$$R_s = R_0 + \frac{B}{S}(R_0 - R_B)$$

$$13\% = 10\% + \frac{60}{40}(10\% - 8\%)$$

**Firm with one asset = $100mil. 10mil. shares stock outstanding @ $5/ share. How can cash holdings exceed value of commoon stock?**

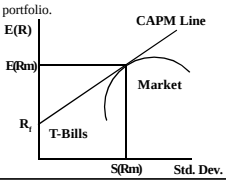
* Firm must have $50mil. of debt (i.e. $100 cash = $50 equity + $50 debt).

**Value vs Growth**

* If book value/stock price = high and EPS = high, value stock. (BV/SP > 1, high)

**You regress returns of stock portfolio on returns of market portfolio. Result $R^2$ is 100% What about beta and expected return of stock portfolio? What about where portfolio will plot in st. dev space...:**

* This says nothing about the expected return and beta of a portfolio.
* For example, all combinations of the risk-free asset & the market portfolio will yield $R^2$s that are 100% but also have different returns and betas. However, all portfolios will plot along CAPM line which is defined as the risk free rate of return and the market portfolio.




**Relationship between stock returns and size on one hand and market-to-book ratios on the other:**

* small outperform large and value firms (high book-to-market) outperform growth (low book-to-market).
* No relation between beta and returns (after controlling for size and book-to-market ratios).
* CAPM predicts returns should be related to beta and nothing else.
* Relations between size/book-to-market and stock returns run counter to CAPM predictions.

**Why are IPOs underpriced? How does this cost the firm?**

* Offering price is usually paid by institutional investors who are allocated shares at offering.
* First exchange price is price at open of trading.
* Exchange price is 10-15% higher than offering price, on avg.
* If firm could issue at exchange price, would get 10-15% more money.
* This 10-15% is "money left on the table" and represents a cost to issuing firms.

**CAPM**

$$E(R_i) = R_f + B_i[E(R_m) - R_f]$$

Expected Return = Current Risk-Free Rate + Risk Premium

**Captial Structure**

EBIT= $2mil., taxes= 34%, shares outstanding = 1mil., COC= 15%, COD= 10%.

**If firm converts $4mil. of equity to debt, what would be annual after tax cash flow to owner if he owns all debt and equity?**

Since owner has all equity and bonds, annual after tax cash flow would be $1.456mil. $400,000 from interest on bonds ($4mil. x 10%) and $1.056mil. as shareholder.

| | |
|---|---|
| Earnings | 2,000 |
| Interest expense | 400 |
| Earnings after interest | 1,600 |
| Taxes | 544 |
| Earnings after tax & interest | 1,056 |
| Total cash flow (I + EAT&I) | 1,456 |

**What will be the percentage change in the stock price?**

$V_U$ = Value Unlevered firm
$T_C$ = Tax rate (34%)
$R_0$ = cost of cap. (15%)

$$V_U = \frac{EBIT \times (1 - T_C)}{R_0}$$

$$\$8.8/share = \frac{\$8.8mil}{1mil.\ shares} \qquad \$8.8mil. = \frac{2 \times (1 - 0.34)}{0.15}$$

According to MM1 (with taxes), value of firm will increase by $1.36mil. ($4mil. x 0.34) thus, new value will be $10.16mil. New share price will be $10.16 ($10.16mil./ 1mil. shares). 15.4% change in stock price. ($10.16/$8.8)

Note that the $4mil. debt issue will retire 393,914 shares ($4mil./$10.15). This leaves 606,086 shares at $10.15/ share - total value of $6.16mil.

**What is the firm's overall WACC if it does the swap? Explain, damnit! Your life depends on this!!**

$R_B$ = cost of debt (10%)
$R_S$ = cost of equity (17.14%)
$T_C$ = tax rate (34%)
B = debt ($4mil.)
S = equity ($6.16mil.)

$$WACC = 12.99\% = \frac{4}{10.16}(10\%)(1 - 34\%) + \frac{6.16}{10.16}(17.14\%)$$

$$R_S = 17.14\% = 15\% + \frac{4}{6.16}(1\text{-}0.34)(15\% - 10\%)$$

$$V_L = V_U + T_C B = 8.8 + 0.34(4) = 10.16$$

$$V_L = B + S \qquad S = V_L - B = 10.16 - 4 = 6.16$$

**BETA:**

* Beta measures how an asset covaries w/ market.
* Low beta = 0.2, high beta = 2.3, zero beta = rate of return of risk-free investment
* Correlation between two stocks = -1 <= correlation <= 1
* If correlation bewteen 2 stocks is +1, the portfolio containing them will have variance = to square of weighted average of the 2 std. devs.
* Levered firm beta > unlevered firm beta
* For a multi-product firm, if project beta different from overall firm beta, project should be discounted at a rate equal to its own beta.
* Security market line = expected return to beta
* Beta T-bills = 0, Beta stock index = 1, 50/50 mix = beta of 0.5

**Telescoping Tube Co.**

$R_{B1}$ = cost of debt 1 (11%)
$R_{B2}$ = cost of debt 2 (8%)
$T_C$ = tax rate (34%)
B = debt ($2.5mil.)

$$\frac{B(T_C)(R_{B2}) + B(R_{B1} - R_{B2})}{R_{B1}}$$

$$\frac{2.5(34\%)(8\%) + 2.5(11\% - 8\%)}{11\%} = \$1.3mil.$$

**Firm issues $500 mil. to retire equity. What is the new cost of equity and WACC? Share cost = $14/share, 230 mil. shares. Tax rate = 40%, cost of debt = 8%, cost of cap. = 15%**

**1 Calculate Value of firm**

$V_L$ = Value Levered firm
$V_U$ = Value Unlevered firm ($14x230mil.=$3,420mil.)
$T_C$ = Tax Rate (40%)
B = debt (500mil.)

$$V_L = V_U + T_C B$$

$$\$3,420 = \$3,220 + (0.40)(\$500)$$

**2 Value of equity (S)**

$$S = V_L - B \qquad \$2,920 = \$3420 - \$500$$

**3 Cost of Equity, with taxes (MM2):**

$R_S$ = cost of equity
$R_0$ = cost of cap. for unlevered firm (15%)
$R_B$ = cost of debt (8%)
$T_C$ = tax rate (40%)
B = debt ($500mil.)
S = equity ($2,920mil.)

$$R_s = R_0 + \frac{B}{S}(1 - T_C)(R_0 - R_B)$$

$$15.72\% = 15\% + \frac{500}{2920}(1\text{-}0.4)(15\% - 8\%)$$

**4 WACC:**

$R_B$ = cost of debt (8%)
$R_S$ = cost of equity (15.72%)
$T_C$ = tax rate (40%)
B = debt ($500mil.)
S = equity ($2,920mil.)

$$WACC = \frac{B}{B+S}(R_B)(1 - T_C) + \frac{S}{B+S}(R_S)$$

$$14.12\% = \frac{500}{3420}(8\%)(1 - 40\%) + \frac{2920}{3420}(15.72\%)$$