EQUITY ANALYSIS

A. EQUITY VALUATION MODELS

- **Intrinsic Value of Investments**

  $P = (CF_1/(1+r_1)) + (CF_2/(1+r_2)^2) + \ldots + (CF_n/(1+r_n)^n)$

  Problem with This Model for Equity:
  - Irregular & Unpredictible Cash Flows
  - No Definite Date of Maturity for Common Stock
  - Discount Rate is not directly observable
- NOTE: In performing any analysis of Equity, there is *Forecasting Risk* that the Analyst is wrong
- Ways to MINIMIZE Forecasting Risk
  - Use SCENARIO Analysis – with ranges & probabilities of valuation
  - Use SENSITIVITY Analysis – to see how important each variable is to the Valuation
  - Use SIMULATION Analysis – Monte Carlo Method

- **Dividend Discount Model**

  $P_{CS} = [D_1/(1+r_{CE})^1] + [D_2/(1+r_{CE})^2] + \ldots + [D_\infty/(1+r_{CE})^\infty]$

  Problems:
  1. Must Forecast Dividends correctly out to ∞
  2. Must choose the Appropriate Discount Rate (Cost of Equity)

  Simplifications of the Dividend Discount Model

  Constant Dividend Model (like a Preferred Stock)

  $P_{pfd} = (D_1/r_{pfd})$

  Constant Growth Dividend Model (dividends grow at g, constant rate, forever)

  $P_{CS} = [D_1 / (r_{CE} - g_D)]$

  Can Re-write the Constant Growth Dividend Model as follows (r – implied rate of return – Cost of Equity)

  $R_{implied} = [(D_1/P_{CS}) + g_D]$

  Earnings Model

  $P/E_1 = [K / (r_{CE} - g_E)]$

- **Determining the Appropriate Discount Rate (2 Methods)**

1. **Traditional Build-Up Approach**

$r_{CE} = (1+r_{rrf})(1+E(inflation))(1+r_{eq.risk\ premium}) - 1$

$r_{CE} = (1+r_{rf})(1+r_{eq.risk\ premium}) - 1$

Note: r_{rf} is usually thought to be the nominal secular growth rate of the economy over the long term, modified over the short run by current monetary policies & social attitudes toward savings – similar to a 0 coupon treasury with a Horizon = duration of the stock

Note: r_{erp} is usually between 3 & 8 % and is related to the psycholigical factors of the investors, the business & financial risk of the firm, the liquidity of the stock, and the exchange rate & country risks.

a.) Business Risk & Operating Leverage

- Business Risk: the uncertainty associated with income flows caused by the nature of the business. It depends upon the volatility of EBIT.
  - BREAKEVEN: $R = PQ$
  - Then Figure out accounting break even $EBIT = R - C$
  - But this simple analysis isn't enough… Try to use DOL & OLE
  - $DOL = [\%\Delta CF_{operation} / \%\Delta Sales] \rightarrow OLE = [\%\Delta EBIT / \%\Delta Sales]$
  - $DOL = [(P-q)Q / CF_{operations}] \rightarrow OLE = [(P-v)Q / EBIT]$
  - $DOL = [1 + ((FC_{cash})/CF_{operation})] \rightarrow OLE = [1 + ((CFC+Depr)/EBIT)]$

b.) Financial Risk & Financial Leverage

- Financial Risk: uncertainties introduced by the way that a firm is financed.
  - $DFL = [\%\Delta CF / \%\Delta CF_{operations}] \rightarrow FLE = [\%\Delta EBT / \%\Delta EBIT]$
  - $DFL = [CF_{operation} / CF] \rightarrow FLE = [EBIT/EBT]$

NOTE: TOTAL LEVERAGE (Operating & Financial)

- $DTL = DOL * DFL \rightarrow TLE = OLE * FLE$
- $DTL = [\%\Delta CF/\%\Delta Sales] \rightarrow TLE = [\%\Delta EBT/\%\Delta Sales]$

HENCE: Risk (Operating & Financial) is a Factor of 3 Things

SALES
Operating Leverage
Financial Leverage

c.) Liquidity of Stock

- Liquidity can be measured by certain things.
- MV S/O
- # Shareholders
- Trading Turnover

- EQUITY RISK PREMIUM can then be determined using a cross-sectional REGRESSION Anaysis using the following form:

$r_{eq.\ risk\ premium} = b_0 + b_1$ (Coefficient of Variation of Sales)(Op. Lev.)(Fin.Lev.) + b_2 (liquidity)

2. **Security Market Line Approach**

- In Modern Portfolio Theory, all components of risk are summarized by SYSTEMATIC MARKET RISK that is measured by Beta (which is a measure of risk of a stock relative to that of the stock market as a whole.)
- Security Market Line, defined by CAPM, defines the REQUIRED Return on a Stock in terms of its Beta
- $r_{CE} = r_{rf} + B_s(r_m - r_f)$
- This model can then be used to find the implied discount rate for the Dividend Discount Pricing Model to determine the intrinsic value of a stock.
- PROBLEMS: how to determine the appropriate Equity Risk Premium for a Market as a whole (using Ibbotson data).

3. **Accounting Based Beta Approach**
   - A problem with SML is that it relies on HISTORICAL Beta as being a good estimate of its future Beta.
   - One Approach is to try to develop a BETA that is based upon current financial Data
   - IGNORE

Applying Dividend Discount Models to Growth Stocks

1. **Three Stage Dividend Discount Model**
   - Make Assumptions about the stages of development; High Growth, Deceleration of Growth, Stable Growth
   - Use a Computer to Determine future dividends
2. **H-Model (2 Stage Dividend Discount Model)**
   - Assumes ONLY 2 Stages of Growth: High & Stable
3. **Growth Duration Model**
   - Compare Relative P/E between the Stock & Market

Advantages & Disadvantages of the Dividend Discount Valuation Model

- PRO
  - Simplicity
  - Able to distinguish Over Valued & Under Valued Firms
- CON
  - Models Apply ONLY to Dividend Paying Stocks
  - Risk is not an EXPLICIT Function of the market → Largely subjective measure of risk
  - Small Errors of g & r can result in HUGE errors (therefore, only good to come up with a range)

OTHER VALUATION METHODS

1. **P/E Ratios**
   - If Investors have LOW Confidence, tends to be about **7-9**
   - If Investors have HIGH Confidence, tends to be about **15-18**
2. **Dividend Yields**
   - For Market, Tends to fall toward **3%** when there is Excessive Optimism, and up to **6%** during periods of Pessimism. In normal times, **3.5-4.5%**
3. **Price/Sales Ratios**
   - Sales are less prone to Manipulation than Earnings
   - For Large Firms, should be **.4 - .8**
4. **Price/Asset Value Ratios**
   - S&P 500 between 1.5 –2.0 Price to Book. When pessimistic 1.0-1.5 & when optimistic, 2.0-3.0 Price to Book
   - PROBLEM: Book Value is Arbitrarty derived from Accounting Conventions. Liquidation might be a little better, but useful ONLY if thinking about breaking up the firm.
   - **TOBIN's Q-RATIO** has been used to measure Values.
     - $Q = [(V_E + V_D) / V_A]$
     - Qs under 1 would be considered a bargain. Qs over 1 could indicate overvaluation if the firm's management is underutilizing the assets.

GENERAL FREE CASH FLOW VALUATION MODEL

$V_A = V_D + V_{CE} + V_{pfd}$

$V_{CE} = V_A - V_D - V_{pfd}$

$P_{CS} = (V_{CE} / N_{CS})$

Valuing the Firm's Total Debt

Use a Financial Calculator to determine Price for a Bond

$V_D = [DS_1/(1+r_D)^1] + [DS_2/(1+r_D)^2] + \ldots + [DS_n/(1+r_D)^n]$

Valuing the Firm's Preferred Stock

$V_{pfd} = (D_{pfd}/r_{pfd})$

Valuing the Firm: Defining Free Cash Flow to the Firm

$FCF = CF_{operations}$ + Interest Expense – Net Cash Used for Investing – Cash Retained for Business Purpose

FCF = Cash Interest Expense + Net Cash Used for Financing

FCF = EBIT(1-t) + DEPR – ΔNWA – CAPEX + (t*Interest)

EBIT = Earnings before Interest & Taxes, including Gains from Sale of Assets
t = Effective Income Tax Rate
DEPR = Depreciation & other NON CASH Expenses
ΔNWA = Adjustments to Revenues, expense, taxes, & cash for business purposes – BOOK calls this Δ Working Capital
CAPEX = Capital Expenditures, other investments, & increases in LTA
Interest = Interest Expense

$FCF^* = EBIT(1-t) + DEPR – ΔNWA – CAPEX$

Valuing the Firm: Defining the Discount Rate

Try to find the UNLEVERED Discount Rate (but it is SUBJECTIVE)

$r_U = (1+r_{rf})(1+r_{Op.\ Risk\ Prem}) - 1$

can try to find it using Modigliani-Miller

$r_{CE} = r_U + (r_U - r_D)(1-t)(V_D/V_{CE}) + (r_U - r_{pfd})(V_{pfd}/V_{CE}) \rightarrow r_{CE} = r_{rf} + B_{CS}(r_m - r_{rf})$

This Might be Too Simplistic with many assumptions (such as Historical → Future)

FCF v. DDM: FCF to the Firm FCF to CE

- In theory, FCF & DDM should produce the same value for the common shares of a publicly traded firm. However, in practice, they usually produce different valuations. Which is Better?
- Most analysts prefer using the FCF over the DDM.
- FCF focus on the key factors: Ability to generate cash from operations, uses of corporate cash, and level of operating risk. More or less ignore the distibutional & financing issues.

B. CORPORATE FINANCE

- Many issues that bear on the valuation of a firm require knowledge of how businesses make financial decisions.
- How a firm determines whether to raise capital by issuing debt or equity **(Capital Structure)**
- How Dividend Policy is determined
- Criteria firms use in making investment decisions

Cost of Capital

- The return on assets required to keep the value of the firm in equilibrium is called the firm's Weighted Average Cost of Capital (r_W) because it represents the AFTER-TAX Cost of each element of the capital structure (debt, preferred equity & common equity) weighted by the percentage of the market value of the firm that is comprised of each source of capital.

$r_W = [(1\text{-}t)r_D V_D + r_{pfd}V_{pfd} + r_{CE}V_{CE}] / [V_D+V_P+V_{CE}] \rightarrow r_W = [(1\text{-}t)(r_D)(V_D/V_A)] + [(r_{pfd})(V_{pfd}/V_A)] + [(r_{CE})(V_{CE}/V_A)]$

- r_W is the WACC which is the Discount Rate that should be used when Discounting the UNLEVERAGED FCF of the firm
- NOTE: Can Determine the Cost of Equity in 1 of **3** Ways
    1. **Traditional Build Up**
       $r_{CE} = (1+r_{rf})(1+r_{eq.\ risk\ prem.}) - 1$
    2. **Implied Rate**
       $r_{CE} = [(D_1/P_{CS}) + g_D] = [\text{Dividend Yield}][1+g_D] + g_D$
    3. **CAPM**
       $r_{CE} = r_{rf} + B_{CS}(r_M - r_{rf})$

Determining the Optimal Capital Structure

- Optimal Capital Structure is defined as that which will maximize the value of the firm
- ***Proposition I of the Modigliani-Miller Theorum***: The VALUE of a Firm does NOT depend upon its capital structure in a world where no taxes are paid.
- ***Proposition II of the Modigliani-Miller Theorum***: In a world without taxes, the firm's WACC will be unaffected by the Capital Structure
- When Taxes are INTRODUCED things change dramatically: The Optimal Tax Structure would be 100% DEBT (due to the Tax Shield & the inherent savings) for both VALUE & WACC
- Why, in reality, is 100% debt not the norm? Cost of Financial Distress are higher than predicted in the model.
- **STATIC Theory of the Capital Structure** suggest that debt is beneficial up to a point, beyond which the costs of potential financial distress begin to outweigh the debt benefits.
- If Market of Corporate Finance is Efficient, it is to be presumed that the CURRENT Capital Structure of a Firm is its Optimal Capital Structure. In Conclusion,
    - The Higher the Corporate Tax Rate, the greater the Incentive to use debt in the capital structure
    - The Greater the Operating Risk, the lower the Optimal Debt:Equity Ratio will be due to the cost of Financial Distress
    - Management's Attitude toward risk may also affect how they view the costs of financial distress

Capital Structure Puzzle by Stewart Myers

- Rejects STATIC Theory of Capital Structure: Not the Way the World Works
- Develops **Pecking Order Theory**: Firms prefer to raise the funds that are needed to finance desirable investment projects in the following order:
    1. Internally Generated Funds
    2. If Internal funds are insufficient to finance all worthwhile investments, the firm will issue DEBT first & then EQUITY

Valuing the Common Equity of a Public Firm using the Special Form FCF Model

$V_{CE} = [FCF_1^*/(1+r_W)^1] + [FCF_2^*/(1+r_W)^2] + \ldots + [FCF_\infty^*/(1+r_W)^\infty]$

$P_{CS} = (V_{CE}/\#_{CS})$

- Like the Dividend Discount Model, the Special Form FCF faces the Eternity Problem. But if assume constant growth, can make the assumptions.

$V_{CE} = [FCF_1^*/(r_W - g_{FCF})] - V_D - V_{pfd}$

STEPS in the Analysis

1. *Find the FCF_1^* of the Firm*
2. *Find r_{CE}*
3. *Find r_W*
4. *Find V_D*
5. *Use Special Form of the FCF Model*
6. *Determine Value of Common Shares*

C. SUMMARY OF VALUATION MODELS

1. **General Form of the FCF using the Leveraged FCF**
   $\mathbf{V_{CE} = [FCF_1/(r_L - g_{FCF})] - V_D - V_{pfd}}$
2. **General Form of the FCF using the Unleveraged FCF**
   $\mathbf{V_{CE} = [FCF_1^*/(r_U - g_{FCF})] - V_D - V_{pfd}}$
3. **Special Form of the FCF**
   $\mathbf{V_{CE} = [FCF_1^*/(r_W - g_{FCF})] - V_D - V_{pfd}}$
4. **Dividend Discount Model**
   $\mathbf{V_{CE} = [D_1 / (r_{CE} - g_D)]}$

CFA Exam tends to concentrate on the DDM & Special Form FCF to value CE

D. HISTORICAL APPROACH TO FORECASTING Earnings & Sales

1. ***Perform an Industry Analysis***

Demographic & Social Changes

- Age Distribution of the Population & Influence on Industry
- Distribution of Income which affect type of products in demand
- Distribution of the Industrial Mix (move from Smokestack toward high tech)
- Regional Employment Patterns
- Changing Lifestyles

Governmental Impacts

- Regulations which have varying impacts (EPA, OSHA, FCC, etc.)
- Taxation & Subsidies (note: Effective Tax Rate, not Statutory, is used in the analysis)

Industry Life Cycle Analysis

- Growth (Formative, Rapid, Mature) – Maturity – Decline

Industry Financial Ratios

- ROA = (NI/TA)
- Debt:Eq = (LTD/TD)
- Payout Ratio = (Div./NI)
- P/E Ratio = (P_{CS}/EPS)
- Div. Yld. = (Div_{ps}/P_{CS})
- ROE = (NI/Equity)

2. ***Forecast Sales***
   - Main Purpose of performing an Industry Analysis is to be able to forecast the probable future Sales of firms operating in it.
   - Usually, use Regression relating it to GDP and other things
   - Also, when forecast Sales, should try to forecast BOTH Volume & Price Separately
3. ***Forecast EBDIT margin of Target Entity***
   - $EBDIT_{margin}$ = (EBDIT/Sales)
   - EBDIT margin depends upon Many Factors:
     - *Capacity Utilization Rate*
     - *Unit Labor Costs*
     - *Inflation*
     - *Competition*
       -Barriers to Entry
       -Degree of Current Competition in the Industry
       -Availability of Substitute Products
   - EBDIT can often be determined by a Multiple Regression:

$\Delta EBDIT_{margin} = b_0 + b_1\Delta$ Cap. Util. Rate + $b_2\%\Delta$ Unit Labor Costs

$EBDIT_1 = EBDIT_0 + \Delta EBDIT$

4. ***Forecast Depreciation Expenses***
   - Since it is largely an imbedded cost, based on past capital expenditures dwarfing current investments, this can usually be forecasted by extrapolating the past 15-20 years into the future. However, if new investments are so large, relative to total fixed assets, this is not a good thing to do.
5. ***Forecast Interest Expenses***
   - Usually done by Extrapolating the past historical trend.
6. ***Forecast Income Tax Rate***
   - Assume the future rate will be similar to the past, so long as tax laws are expected to be constant.

7. ***Forecast the Changes in NWA***
   - Using the average of the past Business Cycle of (NWA/Sales)
   - Δ WC = Δ Sales * $(NWA/Sales)_{Historical}$
8. ***Forecast New Investments***
   - What the firm should be doing in the future
   - New Investments = Δ Sales * $(Fixed\ Assets/Sales)_{Average}$
9. ***Forecast Earnings & Unleveraged Cash Flows***
   NI = $[(Sales*EBDIT_{margin}) – DEPR – INT] * (1-t)$
   $FCF^{*} = [(Sales*EBDIT_{margin})(1-t)] – \Delta NWA – CAPEX + (t)(DEPR)$
10. ***Forecast Common Dividends***
   DIV_1 = NI * Avg. Payout Ratio

CAVEATS to HISTORICAL ANALYSIS

Historical is not always the best predictor of future success. But Historical Analysis should be performed because:

a.) Professional Standards require an analysis of past trends
b.) Critical analysis of history can lead to worthwhile conclusions about value in many circumstances
c.) Continuity of historical relationships are the norm, while deviation from history is exceptional

E. FORECASTING GROWTH & THE FINANCIAL APPROACH

- One way to forecast Growth is through a Historical Analysis
- Another Approach is a measure of a firm's ability to finance its own growth internally: the financial approach
- **(NI/Share) = ROCE * BV_{Share}**
- Internal Growth Rate = ROCE * Earnings Retention Ratio
- g = ROCE (1-K)

F. ANALYZING ROE WITH DUPONT

ROE = NI / Equity
ROE = [NI/Sales]*[Sales/Equity]
ROE = [NI/Sales]*[Sales/Assets]*[Assets/Equity]
ROE = [EBT/Sales]*[Sales/Assets]*[Assets/Equity]*[NI/EBT]
ROE = [Pretax Profit Margin] * [Asset Turnover] * [Financial Leverage Ratio] * (1-t)

Asset Based Version

ROE = [(EBIT/Sales)(Sales/Assets) – (Int.Exp./Assets)]*[Assets/Equity]*[NI/EBT]
ROE = [(EBIT/Assets) – (Int.Exp./Assets)]*[Assets/Equity]*[NI/EBT]
ROE = [Pretax ROA – Int. Exp. Rate] * [Financial Leverage Ratio] * [1 – t]

Sales Based Version

ROE = [EBIT/Sales]*[Sales/Assets]*[Assets/Equity]*[EBT/EBIT]*[NI/EBT]
ROE = (Op. Profit Margin) * (Asset Turnover) * (Financial Leverage Ratio) * (1-t)
ROE = $(ROA_{pre\text{-}tax})$ * (Compound Leverage Factor) * (1-t)

Thus, ROE is based on **5 Factors**

1. ***Operating Profit Margin***
   - Measured as EBIT/Sales; Influenced by →
   - Degree of Competition (higher competition → lower Operating profit margin
   - Business Cycle: will improve when the good times roll
   - Strategy of Firm: Volume Seller (low margin) OR Margin/Niche Strategy
2. ***Asset Turnover***
   - Measured as Sales/Assets : Influenced by →
   - Technology of Product Production & Distribution
   - Management's Ability to EFFICIENTLY utilize its asset base
   - Business Cycle
3. ***Financial Leverage***
   - Measured by Asset/Equity → since Assets = Debt + Equity → FLR = 1 + (Debt/Equity) = A/E
   - Credit Market Conditions
   - Management's Attitude towards Debt
   - Industry Characteristics
4. ***Cost of Debt***
   - In Asset Based → Int.Exp./Asset : in Sales Based → EBT/EBIT
   - Measure Cost of Management's Choice Regarding the Amount of Financial Leverage to Employ
   - Depends on Management's Financial Strategy & the Level of Interest Rates
5. ***Tax Burden***
   - Measured by Tax Retention Rate → NI/EBIT = 1 – t
   - Function of Tax Code & Effectiveness of Tax Strategy
   - Computing Depreciation, Depletion, Amortization
   - Recognition of Revenues
   - Measuring Tax Deductible Costs
   - Tax Credits

NOTE Also the

Compound Leverage Factor = (EBT/EBIT)(Assets/Equity) = (Interest Burden)(Financial Leverage)

Caveats on the Usefulness of ROE

1. ***Timing***
   - Firms may sacrifice earnings in the short run to get long-term benefits.
2. ***Risk***
   - Magnitude of ROE does not measure the risk taken to obtain it. ROE is usually enhanced through the use of Financial Leverage (which increases risk)
   - May try to use Return on Invested Capital instead
   - ROIC = [(EBIT)(1-t)/(Debt + Equity)
3. ***Valuation***
   - Use Net Book Value of Equity. High ROE may be misleading. Might convert to True ROE
   - $ROE_{True} = (FCF)/(Net\ Assets_{Market\ Value})$
   - Can't generally obtain data for this
4. ***Volatility***
   - ROEs fluctuate in response to cyclical & random forces.

PRACTICAL PROBLEMS WITH VALUATION MODELS

1. ***Dividend Discount Models***
   - Very sensitive to small changes in Discount Rate & Growth Rate (which are difficult to predict)
2. ***FCF Models***
   - WACC is objectively, but FCF^* is difficult to determine from accounting data
   - Assumes increases in Working Capital are equal to that which is required to maintain existing operations, which may not be true
   - Assumes firms invest up to the point where the last dollar invested produces a return = WACC
   - Assumes Current Capital Structure is Optimal
3. ***Economic Earnings Based Models***
   - Theoretically useful, but accrual accounting has faults

Company Analysis v Stock Selection

- Good Firms are not necessarily good investments

Growth Stock Investing → philosophy that good firms are good investments. Invest in the best firms in the best industries (to make your pile, be in style)

Value Investing → philosophy that undervalued stocks are good investments

Growth Companies: have management capability & opportunity to undertake investments projects that produce rates of return that are greater than WACC (can't last forever)

Growth Stocks: stocks with above-average expected rates of return relative to risk. Need not be growth companies

Defensive Companies: not likely to react sharply to a decline in the general level of economic activity

Defensive Stocks: low Betas, regardless of the nature of the firm

Cyclical Companies: sales & earnings rise & fall with fluctuations in business cycle

Cyclical Stocks: high beta stocks that rise & fall with bull & bear markets

Speculative Companies: firms whose business involve great risk

Speculative Stock: overpriced stocks whose returns might be abnormally low because of valuation

G. EVALUATING MANAGEMENT

Economic Value Added Analysis

- Good Management invests ONLY in projects that will Enhance the Value of the Firm
- Invest in IRR or NPV projects that have better than required risk analysis
- **TRADITIONAL** Measures of Management Performance
  - Financial Ratio Analysis
    - EBIT/TA
    - NI/TA
    - $NI/Equity_{Book\ Value}$
    - But are poor: subject to manipulation and no account of Risk
  - Tobin's Q-Ratio
    - If less than 1, stock is a bargain: but > 1 not necessarily over valued
    - $Q = (D + E)_{FMV}/Assets_{Replacement\ Value}$
  - EVA Analysis
    - Based on ECONOMIC Profits rather than ACCOUNTING Profits
    - $EVA = NOPAT - r_W(\text{Total Capital}) = (r_C - r_W)(\text{Total Capital})$
    - $r_C = (NOPAT/\text{Total Capital})$
    - NOPAT can be calculated in either the Top-Down or Bottom-Up Method

    Step 1. Calculate NOPAT. Develop a company-specific format designed to produce a good approximation of the NOPAT

Top-Down	**Bottom-Up**
Gross Sales	Operating Income Before Tax
Increase in LIFO	Increase in LIFO
Implied Interest Expense on Op. Leases	Implied Interest Expense on Op. Lease
Other Operating Income	Amortization of Goodwill
(CGS)	Increase in Bad Debt Reserve
(SG&A Expenses)	**Adjusted Pretax Operating Profit**
(Depreciation)	(Cash Operating Taxes)
Adjusted Pretax Op. Profit	**NOPAT**
(Cash Operating Taxes)	
NOPAT	

    Step 2. Determine the Total Capital of the Firm. Can use either Asset Approach or Financing Approach. Need to make Company Specific Adjustments so that they are inter-company comparable.

    Step 3. ***Determine the Firm's Cost of Capital***. Use WACC

    Step 4. ***Calculate the EVA of the Firm***
  - MVA Analysis
    - $MVA = \text{Total Capital}_{Market\ Value} - \text{Total Capital}_{Book\ Value}$
    - $\text{Management Performance} = f(\Delta\ MVA)$
    - Tough to Calculate. In theory, $MVA = [EVA_1/(1+r_W)^1] + [EVA_2/(1+r_W)^2] + \ldots + \infty$
  - PROBLEMS with Value Added Performance Measures
    - Economic Profits are based on the Adjusted Accounting Data with lots of Analyst Subjectivity

- Cash Flow Return on Investment (CFROI)
  Step 1. Determine the Average Life of the Firm's Assets
  Step 2. Calculate the Target Firm's Cash Flow
  Step 3. Calculate the Firm's Gross Cash Investment
  Step 4. Estimate the Value of the Firm's non-depreciating assets at the time the life expires
  Step 5. Adjust all Historical data to reflect current prices
  Step 6. Calculate the CFROI →
  $\text{Gross Cash Inv.} = \Sigma \{[\text{Gross CF}_t/(1+r_{CFROI})^t] + [E(\text{Term. Value of Non-depreciating assets} / (1+r_{CFROI})^n]$
  Step 7. Compare the CFROI with an appropriate Benchmark

H. ARTICLES

In Search of Excellence & Excellence Revisited by Clayman

- From the date firms were recognized as EXCELLENT according to their ratios, those ratios began to deteriorate (underperformed) → Extrapolating past trends does not work.
- Excellent: rated as Growth Stocks, while Poor are Value Stocks… Tends to be a Value Market
- Depends on the Market Vogue

Managing Growth

- Slow growth is generally bad while overheated growth can lead to financing problems
- A Firms **sustainable growth rate → $g^* = ROE(1-K)$**

Equity Valuation by McLaughlin

- Denying Efficient Market: Stocks fluctuate above & below their true value and thus it is possible to buy undervalued stocks and sell overvalued ones
- Types of VALUE (rather than Price)
- **Asset Value**: Replacement (not required anymore under FASB 33 & tough to determine) or Liquidation (Need lots of Data on Current Values of All Assets to be appraised)
- **On-going Concern Value**: P/E – DDM – CAPM – SML
- **Strategies for Stock Selection**
  - **Sector Rotation**
    - Defensive (food, tobacco, soft drinks) do best in Late Expansion Business Cycle
    - Interest Sensitive (Utilities, Banks) do best in Early Recovery Business Cycle
    - Consumer Durables (Autos, Appliances) do best in Middle Recovery/Expansion
    - Capital – Do best in LATE Recession, just before recovery
  - **Market Timing**
    - Technical Analysis Approach
    - Valuation Approach
    - Economic Forecasting
    - Problem: High Cost Strategy, and in efficient market, should not work
  - **Screens**
    - Find Stocks that meet certain statistical tests (author likes this approach)

Valuation of Common Stock by Graham

- Market's Expectations of future earnings growth are not derived from past performance
- Why bother Analyzing: Concensus can be wrong: analysts can be right

Competitive Strategy by Porter

In the Long Run, Rates are Driven down to equal risk-free assets + some minimum business premium. Only in the absence of strong competition can above average returns be earned

Competitive Forces

1. ***Ease of Entry & Exit (Barriers to Entry)***
   - Large Capital Requirements
   - Economies of Scale
   - Secure Distribution Channels
   - Strong Brand Identification
   - High Switching Costs
   - Government Policy
   - Proprietary Product Differences
   - Expected Retaliation
   - Absolute Cost Advantages (Proprietary Learning Curve – Access to Low Cost Imputs – Proprietary Low-cost product design)
2. ***Rivalry between Existing Competitors***
   - Number of Competitors
   - Relative Strength of Competitors
   - Industry Growth
   - Fixed Costs / Value Added
   - Perishable Products or High Storage Costs
   - Product Differences (Commodity or Differentiated)
   - Large Incremental Additions (Capacity)
   - Diverse Competitors (Foreign, Size, Strategic Importance of Certain Markets)
   - Switching Costs
   - Informational Complexity
   - High Exit Barriers
3. ***Pressures from Substitute Products***
   - Inter-Industry Competition
4. ***Bargaining Power of Buyers*** (Leverage & Sensitivity to Prices)
   - Volume of Purchases as a Percentage of Sales
   - Profitability of the Buyer
   - Percentage of Buyer Cost that is Represented by the Product (how hard he'll bargain)
   - Buyer Information
   - Threat Toward Backward Integration
   - Products' Impact on the Buyer's Business
   - Switching Costs
   - Ability to Influence Others (end-users)
5. ***Bargaining Power of Suppliers***
   - Relative Size of Suppliers v Buyers
   - Importance of the Buyer to the Seller
   - Switching Costs
   - Forward Integration Threat
   - Degree of Organization (Cartel – Oligopoly)
   - Supply of Supplier's Product
   - Government Control

Generic Strategies

1. ***Low-Cost Producer***
   - Most Efficient Producers ONLY can Make a Profit. Must Establish Leadership
   - Large Scale Production
   - Vigorous Cost Control
   - Large Capital Investment
   - Proprietary Technology
   - RISKS: Requires Standardization & Long Production runs (reduce flexibility). Technology can make for quick obsolescence
2. ***Product Differentiation***
   - Can Either be REAL Different or PERCEPTIVE Different
   - Raise Switching Costs by raising brand loyalty & allowing a premium price to be charged
   - RISKS (lose to low cost because more of a commodity)
3. ***Focusing on a Niche***
   - Avoid MASS Market. Focus only a Niche Segment but be the Leader in it.

I. VALUING CLOSELY HELD & INACTIVELY TRADED FIRMS

1. Establish a Fair Market Value of the Enterprise, as you would with another investment (Methods Include)
   - ADJUSTED Book Value Approach
   - MARKET Approach (similar companies & values)
   - DISCOUNTED Cash Flow Approach
2. Adjust this Base Value for the Fact that there is a LIQUIDITY problem & MARKETIBILITY Discount
   - The Difference between the Public Market Equivalent Value of a firm and its Private Market Value is the Dollar Discount for lack of Marketability
   - $V_A^* = (1-d_{market})V_A$
   - Marketability Discounts vary between 0 to 60% (usually between **35-50**%)
   - Depend on Attractiveness of Industry
   - Cost of Taking Firm Public
   - Likelihood of Firm going Public
   - Size of Firm
   - Existence of Generally Accepted Valuation Formulas
   - Existence of PUT Rights
   - Competitive Nature of Business
   - Size of Dividend Payments
   - Information Access
   - Restrictive transfer Provisions
3. Adjust for potential CONTROL Premiums or Minority Discounts
   - $d_{Minority}$ are usually between **25-67**%
   - FACTORS:
   - Cumulative v Non-cumulative Voting Rights
   - Contractual Restrictions
   - Governmental Regulations
   - Distribution of Ownership
   - Relation between Majority & Minority
   - Articles of Incorporation

J. COMPANY TAKE-OVERS & RESTRCTURING

Reasons for Restructurings

1. ***Increase the Use of Interest Tax Shields***
2. ***Re-deploy the Firm's Assets***
3. ***More Efficient use of CashFlow***

Preventing Unfriendly Takeovers

1. ***Have Charter require Supermajority to approve mergers & have staggered elections for Board***
2. ***Initiate an Exclusionary Self-tender (to all but unfriendly)***
3. ***Adopt Poison Pills (like Share Rights Plan)***
4. ***LBO***
5. ***Negotiate a Lock up***

Fighting Unfriendly Takeovers

1. ***Repurchase or Standstill Agreements***
2. ***Sell-off the Crown Jewels***
3. ***Seek a White Knight***

Stock v Cash Acquisition Factors

1. ***Sharing of Gains between Target firm & Acquiring Firm's Shareholders***
2. ***Tax Effects of Mergers (most Stock Mergers are Tax Free)***
3. ***Control Considerations***

Returns of Take-overs

Most Evidence suggest the S/H of ACQUIRED firms gain substantially while S/H of ACQUIRED firms tend to earn little, if any, extra returns. Why?

Rosey Scenario Syndrome
Whale Swallows Minnow Syndrome
Empire Building Syndrome
Efficient Market Syndrome

K. VENTURE CAPITAL

Characteristics

1. Returns are High
2. Risks are High
3. Investments are Illiquid
4. Less Efficient (Expertise Pays)
5. Ventures are Entrepreneurial so they must be advised on certain things
6. Difficult to Value
7. Usually Require Additional Financing

Role of Venture Capital Investment Firm

1. EARLY STAGE
   - Seed Finance (usually <$50,000) – No VC involvement
   - Start-up Financing –No VC Involvement
   - 1st Stage Financing – Maybe VC, but usually ANGELS
2. EXPANSION STAGE
   - Some operating history, with a Viable Product
   - **2nd Stage Financing – though growing, still unprofitable**
   - **3rd Stage Financing – large, used to finance a big expansion – VC love this**
   - Mezzanine Financing – Preparing for Public Offering
3. TURNAROUND
   - Provide Capital to restructure.
4. LBOs
   - Lead investors to purchase the firm's assets
5. COUNSEL
   - Build a Management Team to run the large business
   - Construct a Long-term Business Plan (focus product oriented entrepreneur toward business)

Benefits of Venture Capital

Provide lots of Expertise: only 10-20% failures in their portfolios, compared to 50% failure of all emergings

Venture Capital Fund Management Process

1. Follow a Sound Investment Strategy (stick to industries in which have knowledge, and stay with certain types of stage management)
2. Have a Good Deal Flow Generation Capability (only 1 in 100 deals is worth doing; thus need to attract lots of good potential deals to sift through)
3. Effective Deal Screening (want to eliminate 90-95% of the deals quickly so that detailed analysis & time can be devoted to the rest)
4. Perform DUE DILIGENCE on Firms that Pass the Screen
   - Determine Strength of Management
   - Know nature of Product & Market
   - Financial Projections
   - Intuitive Analysis
   - Assess Current Firm Employee's Abilities
   - Assess Investment Outlook
5. Value the Target Firm
6. Structure the Investment in the Target

Investing in VC Funds

1. Diversification (Stage of Development – Industry – Region – Vintage Year)
2. Timing of Returns
3. Commitments & Fundings

L. VALUATION OUTSIDE THE US

P/E & P/Book are useless inter-nationally due to ACCOUNTING & CULTURAL Differences
Focus on Cash Flow

M. EVALUATING DISTRESSED & BANKRUPT FIRMS

2 Types of Investors who Invest in Bankrupt & Distressed Firms

1. **Investors who Own by Default**
2. **Investors Seeking out this type of Investment in a B/R firm**

Very Risky to Invest here: Seek reason for Distress

1. Financial Distress (firm can generate cash, but it's capital structure provides a crushing debt burden) Ok to invest in these when try to change Capital Structure
2. Operational Distress (firm can't generate cash) Bad Investment

When Firm Files for Bankruptcy, it is Valued like an IMBEDDED Call Option