

Financial statement analysis essay sample

[Finance](#), [Financial Analysis](#)



Technical analysis - study of collective market segment, as expressed in buying/selling of assets to predict future behaviour * Based on the idea that prices are determined by supply and demand * Individuals who trade affect the prices

* Better informed individuals = buy in larger volumes

* Key assumption: efficient markets hypothesis does not hold - market prices reflect both rational and irrational behavior * Uses share price and trading volume data to project a target price * Not concerned with identifying the reasons for trading, but only what trades have occurred * Advantage: actual price and volume data is observable, can be applied to the prices of assets that do not produce future cash flows (dividends or interest), such as commodities, can be used when fraud occurs * Disadvantages: limited in markets where price and volume data might not truly reflect supply and demand (e. g. illiquid markets and markets that can be manipulated; currency market)

Fundamental analysis - attempts to determine the intrinsic value of an asset

* Uses financial statements

* Data used is subject to assumptions/restatements

* Require subjective judgment

Line Charts

* Simplest technical analysis chart

* Prices of each period as a continuous line

Bar Charts

* Display high/lows for each trading period

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- * Often include opening price
- * Each period displayed as a vertical line with
- * Closing price is dash on the right side of the line
- * Opening price is dash on the left side of the line

Candlestick Charts

- * Same data as bar charts, but there is a box around opening/close instead of a line; box can be:
 - * Clear - closing price is higher than opening
 - * Filled in - closing price is lower than opening

Point and figure charts

- * Useful in identifying changes in direction of price movements
- * Drawn on graph paper; price is on y-axis
- * Price increments chosen = box size for the chart
- * Unique characteristic: x-axis represents change in direction (not unit of time)

Volume charts - typically displayed below price charts with each period's volume shown as a vertical line

Relative strength analysis - to perform this, you need to calculate the ratios of an asset's closing prices to benchmark values and draws a line chart of the ratios

- * Increasing trend outperforming benchmark (positive relative strength)
- * Decreasing trend underperforming the benchmark (negative relative strength)

Trendlines

- * Identifies whether a trend is continuing/reversing
- * Breakdown/breakup can signify end of the previous trend
- * Represent level of support resistance
- * Support level – buying prevents further price decrease
- * Resistance level – selling prevents further price increase
- * Breakdown/breakout tend to occur at important prices or historical high/lows

Uptrend

- * Prices are constantly reaching higher highs
- * Prices are retracting to higher lows
- * Demand is increasing relative to supply
- * Trendline connects increasing lows in price
- * Breakdown – price crosses uptrend by a significant amount

Downtrend

- * Prices are consistently declining to lower lows
- * Prices are retracting to lower highs
- * Supply (selling pressure) increasing relative to demand
- * Trendline connects decreasing highs in price
- * Breakout – price crosses downtrend by a significant amount

Change in polarity – belief that breached resistance levels support levels and breached support levels resistance levels

Reversal patterns for uptrends – when a trend approaches a range of prices but fails to continue beyond that range * E. g. head and shoulders pattern –

demand that drives the uptrend fades, especially if each of the highs occurs on decreasing volume * Indicates weakening in the buying pressure that has been driving uptrend * Uses size of head and shoulders to project price target for ensuing downtrend * Size = difference between head (highest price reached) and neckline (support level to which the price retracted after the left shoulder and head have formed) * E. g. Double (or triple) top - similar to head and shoulders pattern as it shows a slowing down of the buying pattern driving the uptrend * Size of a double/triple top pattern can be used to project a price target for the next downtrend

Reversal patterns for downtrends

* E. g. inverse head and shoulders, double bottom and triple bottom * Can be analyzed the same way as the reversal patterns for uptrends

Continuation patterns - pause in a trend rather than a reversal Triangles - forms when prices reach lower highs and higher lows over a period of time * Buying/selling pressure have become roughly equal

* Do not imply a change in direction of the trend

* Size of the triangle can be used to set a price target, assuming price breaks out of the triangle and the previous trend continues Rectangles - forms a range between a support level and a resistance level * Suggests prevailing trend will resume and can be used to set a price target

Flags and pennants - rectangles and triangles that appear on short term price charts

Price-Based Indicators

Moving average lines - the mean of the last n closing prices * Used to smooth fluctuations in a chart of any time series

* Often viewed as support/resistance levels

* Makes changes in trends easier to see

* Longer period = ST fluctuations removed from the line; may obscure changes in a price trend

* Short term and long term periods can be used together

* Golden cross - ST crosses above LT; signals uptrend " buy" * Dead cross - ST crosses below LT; signals downtrend " sell"

Bollinger bands - constructed based on std. dev of closing prices over the last n periods * Can draw high/low bands a number of std. dev above and below the n-period moving average * Bands move away from one another when price volatility increases * Bands move closer together when price volatility decreases * Useful for indicating when prices are extreme by recent standards on either high/low side * Prices at or above upper Bollinger band overbought market - one that is too high and likely to decrease in the near term * Prices at or below the lower Bollinger band oversold market - one that is too low and likely to increase in the near term * Possible strategy: buy when at the lower band, sell at upper band * An example of contrarian strategy - buys when most traders are selling and sells when most traders are buying * Contrarians believe markets get overbought/oversold because investors buy/sell at the wrong times, so it can be profitable to trade in the opposite direction

Oscillators

* Group of tools technical analysts use to identify overbought/oversold markets * Based on market prices, but scaled so that they 'oscillate' around a given value or between two values * Extreme high values = overbought market

* Extreme low values = oversold market

* Can be used to identify convergence or divergence of oscillator and market values * Convergence - oscillator shows same pattern as prices * Price trend is likely to continue

* Divergence - oscillator shows different pattern than prices * Indicates potential change in the price trend

Examples of Oscillators

1. Rate of Change Oscillator (ROC) - also known as a momentum oscillator * Difference between latest closing price and the closing price n periods earlier x 100 * Oscillates around 0

* Buy = oscillator changes from negative to positive during uptrend * Sell = oscillator changes from positive to negative during downtrend * IF they use the ratio of Current price to the past price in place of the difference, ROC oscillates around 100

2. Relative strength index (RSI)

* Based on ratio of total price increases to total price decreases over a given period * Oscillates between 0-100

* High (> 70) = overbought

* Low (<30) = oversold

3. Moving average convergence/divergence (MACD)

* Drawn using exponentially smoothed moving averages, which place a greater weight on more recent observations * “ MACD line” - difference between two exponentially smoothed moving averages of the price * “ signal line” - exponentially smoothed moving average of the MACD line * oscillate around 0 (not bounded)

* points where two lines cross = trading signals

* buy = crossing line above smoother line

* sell = MACD line crossing below signal line

4. Stochastic Oscillator

* Calculated from latest closing price and highest & lowest prices reached in a recent period * Sustainable uptrend prices tend to close nearer to the recent high * Sustainable downtrend prices tend to close nearer to the recent low * Bound by 0-100

* %K line difference between latest price and recent low as a percentage of the difference between recent high and low * %D line 3 period average of %K line

Non-Price-Based Indicators

* Technical indicators above assume investor sentiment is reflected in price and volume data * Analysts can also look at indicators of investor sentiment and capital flows to gain insight into potential emerging trends * Sentiment indicators - can be used to discern the views of potential buyers & sellers * Bullish - investors expect increasing prices

- * Bearish - investors expect decreasing prices
- * Can include opinion polls - measure investor sentiment directly, as well as measures that are based on market data:
 - * Put-call ratio - put volume divided by call volume
 - * Extremely high ratios = bearish sentiment (oversold)
 - * Extremely low ratios = bullish sentiment (overbought)
 - * Volatility Index (VIX) - calculated by the Chicago Board Options Exchange
 - * High values investors fear declines
- * Mostly interpret the VIX in a contrarian way, viewing a predominantly bearish investor outlook as a bullish sign, and a predominantly bullish investor outlook as a bearish sign
- * Margin debt
 - * Info available because brokers are required to report this data
 - * Suggests aggressive buying and strong positive sentiment
 - * Increases = aggressive buying by bullish margin investors
 - * As margin investors reach their limits of margin credit, their ability to buy decreases and can cause prices to decline
 - * Margin debt is directly correlated with market prices
 - * Also a useful flow of funds (see below) indicator
- * Increasing margin debt = buying
- * Decreasing margin of debt = selling
- * Short interest ratio
 - * Suggests strong negative sentiment
 - * Shares sold short = strong negative sentiment
- * Short interest - number of shares investors have borrowed and sold short
 - * Must be reported by brokers
- * High short interest ratio = expect stock price to decrease and implies

future buying demand when short sellers must return their borrowed shares

* Analysts divided about how the ratio should be interpreted

Short interest ratio = short interest / average daily trading volume

Flow of funds

* Used to observe changes in the supply of securities and the demand for them

1. Arms Index (Short term trading index - TRIN)

* Measure of funds flowing into advancing/declining stocks

TRIN = (# advancing issues/ # declining issues) / (volume advancing / volume declining) * TRIN = 1; flowing evening to advancing/declining stocks

* TRIN > 1; majority of volume is in declining stocks

* TRIN < 1; volume is in advancing stocks

2. Margin Debt

* Increasing = buying

* Decreasing = selling

3. Mutual fund cash position

* Ratio of mutual funds cash : total assets

* Uptrends = invest cash quickly because cash earns only the risk free rate of return and thus decreases fund returns * Downtrends = fund cash

balances increase overall fund returns * Mutual fund cash positions tend to:

- * Increase when the market is falling
- * Decrease when the market is rising
- * Contrarian indicator
- * High mutual fund cash ratio = mkt prices likely to increase * Low mutual fund cash ratio = mkt prices reflect their purchases

4. New Equity Issuance (IPO) and Secondary Offerings

- * Add to supply of stocks
- * Because issuers tend to sell new shares when stock P are high, increases in issuance of new shares may often coincide with market peaks

Cycle Periods

- * 4 year presidential cycles
- * 10 year decennial patterns
- * 54-year Kondratieff wave
- * Elliot wave theory

Elliott Wave Theory

- * Financial mkts can be described by interconnected cycles * Upward = 5 waves
- * Downward = 3 waves
- * If prevailing trend down, downward moves have 5 waves and upward has 3
- * Each wave is composed of smaller waves of the same general form * Size of waves correspond with fibonacci numbers (0, 1, 1, 2, 3, 5, 8...) * Useful for estimating price
- * Converge to 0. 618 or 1. 618 as numbers in the sequence get larger

Intermarket analysis - analysis of interrelationships among the market values of major asset classes (i. e. stocks, bonds, commodities, currencies, etc.) * Relative strength ratios are useful for determining which are outperforming others

Bullish| Bearish|

* Margin debt outstanding| * Short interest ratio * Put/call ratio for stock index|

Std dev = Bollinger bands

RSI (relative strength index) = price increases vs. decreases
Stochastic oscillators = highest/lowest prices

MACD oscillators = exponentially smoothed averages; current prices greater impact

Study Session 5 - Assigned Reading #18 - Understanding Business Cycles

RECAP Business cycle (4 stages)

1. Expansion - rGDP increasing

* Increasing output, employment, consumptions, investment and inflation 2.

Peak - rGDP stops increasing, begins decreasing

3. Recession (contraction) - rGDP decreasing

4. trough - rGDP stops decreasing and begins increasing

Inventory-to-sales ratio

* expansion peak, inventory to sales increase from buildup * trough

core inflation - removes volatile (food and energy) goods from index

Deflation - negative growth

Disinflation - downward growth, but inflation remains greater than zero

Hyperinflation - extreme inflation

Laspeyres index - tends to be biased upward because it represents actual consumption of base period * substitution bias

* quality improvement bias

* new goods bias

reducing substitution bias

-use Paasche index - current consumption weights for basket of prior and current basket of goods - Fisher price index - geometric mean of Laspeyres and Paasche index

| Business cycle cause| Solution|

Neoclassical| Technology| Nothing - temporary deviations from LR

equilibrium| Keynes| Expectation of business owners| "downward sticky"

wages can not increase short run aggregate supply therefore must use

increase aggregate demand (monetary or fiscal policy)| New Keynes|

Expectation of business owners| "downward sticky" prices of productive

inputs additional barriers therefore same| Monetarist | Inappropriate

monetary decisions External shocks Inappropriate decreases in money supply|

Steady and predictable increases in MS| Austrian| Government intervention

(i. e. decrease interest rates)| n/a| New Classical| Real external

shocks Introduced RBC - real economic variables| Applies utility theory Policy

makers should not try to solve business cycles because they represent real

external shocks|

Cost-push inflation vs. Demand-Pull inflation

See diagram on page 161 and 162 in book 2

Note cost push GDP initially declines, but demand pull GDP initially increase

Lagging indicators| Coincident Indicators| Leading Indicators| * building permits * new orders, nondefence capital goods| * industrial production * increased personal income| * consumer/industrial loans * CPI * Unemployment rate|

Study Session 11 - Assigned Reading #36 - Capital Budgeting

Capital budgeting - process of identifying and evaluating capital projects; where the CF to the firm will be received during a period > 1 year

Capital Budgeting Administrative steps:

1. Idea generation

* Generate good project ideas

* Can come from managers, divisions, employees, etc.

2. Analyzing project proposals

* Make a cash flow forecast for the proposals and analyze to assess its future profitability 3. Firm-wide budget

* So that you can prioritize so that the timing is aligned with the company's strategic plan 4. Monitoring decisions and conducting a post-audit

* Compare results to projected results and explains deviations

Categories of Capital Budgeting Projects

Type| Description| Analysis required?|

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Replacement projects to maintain the business| Should existing operations continue? If so, what should be maintained?| No.| Replacement projects for cost reduction| Should usable, but obsolete equipment be replaced?| Yes - detailed.| Expansion projects| Projects that are taken on to grow the business; require an explicit forecast of future demand.| Yes - very detailed.| New product/market development| Entails a complex decision-making process due to the large uncertainty involved| Yes - very detailed.| Mandatory projects| Mandatory by government/insurance - generate no new revenue, but accompany new revenue producing projects undertaken by the company.| | Other projects| e. g. R&D| Difficult to analyze with capital budgeting assessment methods.|

Capital Budgeting Process's 5 Key Principles

1. Decisions are based on CF, not accounting income

* Relevant CF to consider are incremental cash flows - the CF that will occur if the project is taken * Sunk costs should not affect the capital budgeting decision * Externalities - the effects the acceptance of a project may have on other firm's cash flows within other segments * E. g. cannibalism - new sales take from existing sales * E. g. positive externality - when taking on a project has a positive effect on another company segment * Conventional CF pattern - one sign change in the series of CF * Unconventional CF pattern - more than one sign change in the series of CF

2. Cash flows are based on opportunity costs

* Opportunity costs - CF that a firm will lose by undertaking the project under analysis * These are CF generated by an asset that the firm already

owns that would be gone if the firm undertakes the project in question 3.

Timing of cash flows

4. Cash flows are analyzed on an after-tax basis

5. Financing costs are reflected in the project's required rate of return * Do not consider financing costs specific to the project when estimating incremental cash flows; discount rate used in the capital budgeting analysts already takes into account the firm's cost of capital

Independent projects - projects that are unrelated to each other, can be evaluated separately and can both be accepted Mutually exclusive projects - only one project can be selected, not more than one out of the group Internal Rate of Return (IRR) - discount rate that makes the present value of the expected incremental after-tax cash inflows equal to the initial cost of the project * $PV \text{ inflow} = PV \text{ outflow}$

IRR decision rule:

If $IRR > \text{cost of capital}$ (i. e. required rate of return) accept the project If $IRR < \text{cost of capital}$ (i. e. required rate of return) reject the project

Payback period (PBP) - number of years it takes to recover the initial cost of an investment * Measure of liquidity

* Disadvantages: does not take into account TVM or payments beyond the payback period, which means the terminal/salvage value is not considered *

Payback period is useless as a measure of profitability

Discounted payback period - uses the present values of the project's estimated CF to calculate the amount of time it takes a project to recover its initial investment

Discounted payback period > payback period (without discount) due to TVM

Profitability index (PI) - present value of a project's future cash flows / initial cash outlay: $PI = PV / Co = (1) + (PV/Co) = 1 + (NPV/Co) = (Co+PV)/(Co)$

* If $PI > 0$: accept the project (> 0 signifies that NPV is positive) * $IRR > \text{cost of capital}$

* If $PI < 0$: reject the project (<0 signifies NPV is negative) * $IRR < \text{cost of capital}$

NPV Profiles - graph that shows a project's NPV for different discount rates * X intercept = IRR

* Crossover rate - rate where $NPV A = NPV B$

* If greater cash flows come late in a project's life, the discount rate falls faster initially until the crossover point

| Advantages| Disadvantages|

NPV| * Direct measure of the expected increase in the value of the firm *

Theoretically the best method| * Does not consider the size of the project (relative size of the input - e. g. what is NPV is 1 for $Co = \$200$ | IRR| *

Measures profitability as a percentage, showing the return on each dollar

invested * We can tell how much below the IRR (estimated return) the actual project could fall before we reach a negative NPV| * For mutually exclusive

projects, can results can differ from what NPV indicates * Projects can have multiple IRRs or no IRRs|

Capital budgeting considerations:

1. Location - EU use payback more or equal to NPV, IRR methods 2. Size - larger = more likely to use discount methods like NPV, IRR 3. Public vs. Private - private = payback, public - NPV, IRR 4. Management education - higher education will use NPV, IRR

Relationships between NPV and stock price

* Positive NPV will cause an increase in stock price

Study Session 11 - Assigned Reading #37 - Cost of Capital * Taxes affect the cost of debt, but not the cost of preferred/common shares * Because the corporate rate on debt is tax deductible * A company increases its value and creates wealth for its shareholders by earning more on its investments in assets than what is required by those who provide the capital for the firm *

Upward sloping MC of capital curve

* Downward sloping investment opportunity schedule

* Optimal capital budget - where the MC of capital curve intersects the investment opportunity schedule * Wacc is the appropriate discount rate for projects that have the same level of risk * Higher risk higher wacc

* Lower risk lower wacc

* Another assumption is that the capital structure will stay the same

Cost of debt = market interest rate (YM) or new (marginal) debt, not the coupon rate on the firm's existing debt | Cost of debt * (1-t) | Cost of preferred stock | Preferred dividends / mkt price of preferred stock | Cost of equity capital (common stock) There are 3 ways to find this | 1. CAPM: $K = r_f + \beta(E(r_{mkt}) - r_f)$ Or 2. dividend discount model * Rearrange: Price = dividend $(1+g) / (\text{cost of equity capital} - \text{growth rate})$ Or 3. Bond yield plus risk premium Cost of equity capital = bond yield + risk premium | * for other questions pertaining to cost of equity, you do not need to calculate Div1. Only when they specify the dividend discount model do you need to use Div1 in the numerator.

$$g = (\text{ROE})(1 - \text{payout rate})$$

$$g = (\text{ROE})(\text{retention})$$

Project beta - measure of its systemic (i. e. market) risk

* We can use beta to estimate its required return on equity * We can also use beta to adjust for differences between a specific project's risk and the average risk of a firm's projects

Pure-play method - a method to find a project's beta that involves finding the beta of a company or group of companies that are purely engaged in a business similar to that of the projects and are therefore comparable *

Greater debt financing = higher beta for the firm

* Be careful because the project beta calculated using the pure-play method is not necessarily related in a predictable way to the beta of the firm that is performing the project

UNLEVERING/LEVERING BETA - PAGE 44

Problems with estimating beta of a comparable company equity

1. beta is estimated using historical returns data (sensitive to the time used and frequency)
2. affected by the index chosen to represent the market return
3. betas are believed to revert to 1 over time; need to adjust for this
4. estimates of beta of small cap firms may need to be adjusted upward to reflect risk inherent in small firms that is not captured by the usual estimation methods

Disadvantages of the CAPM model

- * does not take into consideration country risk premium (CRP) - the risk associated with investing in a developing country
- * general risk of the developing country is represented in its sovereign yield spread

CRP = sovereign yield spread * (annualized std. dev of equity index of developing country / annualized std. dev of sovereign bond mkt in term so fhte developed mkt currency)

Soverign yield spread = bond yield - t-bill yield

CAPM now becomes = $r_f + \beta(E(r_{mkt}) - r_f + CRP)$

Break points - points where the components of a company's WACC changes

Break point = amount of capital at which the component's WACC changes / weight of the component in the capital structure

Floataion costs - fees charged by investment bankers when a company raises external equity capital * you need to take into account the capital

structure (specifically the proportion of equity that the firm has) to calculate the flotation amount. E. g. if a project requires 180K and finances the project with 60% equity 40% debt and the flotation cost for equity is 4%, the flotation costs will be: $(0.60)(180,000)(0.04) = 4,320$ * recall that the initial outlay is negative, and so is the flotation cost, so: $CF_0 = -(\text{initial outlay} + \text{flotation cost})$ negative of the sums

* (risk free rate) α (WACC) α (1/tax rate)

Study Session 11 - Assigned Reading #38 - Measures of Leverage Leverage

- the amount of fixed costs a firm has

Business risk - risk associated with a firm's operating income and the result of uncertainty about a firm's revenues and the expenditures necessary to produce those revenues Business risk = sales risk + operating risk

Sales risk - uncertainty about a firm's sales

Operating risk - additional uncertainty about operating earnings caused by fixed operating costs (greater FC: VC proportion = greater risk) Financial risk

- additional risk that the equity holders bear when a firm uses fixed cost (debt) financing * when a firm introduces debt, it takes on fixed expenses in the form of interest payments

When a firm takes on more debt, they:

1. Increase ROE
2. Increase the rate of change for ROE

Degree of operating leverage (DOL) - percentage change in operating income (EBIT) that results from a given percentage change in sales $DOL =$

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percentage change in EBIT / percentage change in Sales $DOL = \frac{Q(P - VC)}{Q(P - VC) - FC}$

$DOL = \frac{\text{Sales} - TVC}{\text{Sales} - TVC - FC}$

* DOL depends on the level of sales

Degree of financial leverage - percentage change in net income (EPS) to the percentage change in EBIT $DFL = \frac{\text{percentage change in EPS}}{\text{percentage change in EBIT}}$

$DFL = \frac{EBIT}{EBIT - \text{interest}}$

* Use of FL increases risk and potential reward to common shareholders

Operating Leverage | Financial Leverage |

$\% \Delta \text{ in EBIT} / \% \Delta \text{ in sales} \mid \% \Delta \text{ in net income (or EPS)} / \% \Delta \text{ in EBIT} \mid \mid$

* If not FC, Operating leverage = 1

* If no interest cost, financial leverage = 1

Degree of total leverage (DTL) - combines the degree of operating leverage and financial leverage * Measures the sensitivity of EPS (net income) to a change in sales

$DTL = DFL * DOL$

Why is ROE larger when a firm takes on debt?

When a firm takes on debt, they incur a fixed interest expense that is proportionate to the amount of debt that they take on. While this decreases net income, the lower net income value is spread over a much smaller number of shareholder's equity, thereby magnifying ROE.

Breakeven quantity of sales - quantity of sales where revenue = total costs, so that NI = 0

Contribution margin = Sales/unit - VC/unit

$QBE = TC / (\text{sales/unit} - VC/\text{unit})$

$= (\text{fixed operating cost} + \text{fixed financing cost}) / (\text{sales/unit} - VC/\text{unit})$

Operating breakeven quantity of sales - where only fixed operating costs (ignore fixed financing costs)

$QOBE = \text{fixed operating cost} / (\text{unit price} - \text{unit VC})$

Important Formulas Degree of operating leverage = $EBIT / \text{sales} = Q (\text{Punit-UVC}) / [Q(\text{Punit-UVC}) - \text{TFC}]$

Degree of financial leverage = $\text{Net income (or sales)} / EBIT = EBIT / (EBIT - \text{interest exp})$

Degree of total leverage = $DOL * DFL$
 ROE: $EBIT - \text{interest} = EBT - \text{Taxes} = EBT * (1 - \text{tax rate}) = NI$
 $ROE = NI / \text{Equity}$

Study Session 11 - Assigned Reading #39 - Dividends and Share Repurchases

Cash dividends - repayable to shareholders in cash; has 3 forms
 1. Regular dividends - company pays out profits consistent to a schedule
 2. Special dividends/extra dividend/irregular dividend - when favorable circumstances allow the firm to make one-time cash payments to shareholders in addition to regular dividends
 3. Liquidating dividends - when a company goes out of business and distributes the proceeds to shareholders * These are treated as

a return of capital and amounts over what the investor is allowed is treated as a capital gain

* After a dividend is issued, the stock price should drop by the amount of the dividend

Stock dividends - paid out in new stock, rather than cash

* Since there are more share outstanding, the value of each share is less *

Ex. A 20% stock dividend 1 old stock = 1.2 new stock

Stock split - divide existing shares into multiple shares; increase stock number, but does not increase shareholder value because stock price and EPS are adjusted proportionally * More shares

* Stock price falls (because value is split between more shares) * No change in owner's wealth

* Ex. 3 to 1 stock split 1 old share = 3 new shares

* Stock prices tend to rise after a stock split or stock dividend * Increase because they are perceived as a positive sign from management about future earnings * If a report of good earnings does not follow a stock split/stock dividend, prices tend to revert to original levels * Stock splits and dividends reduce liquidity due to higher percentage of brokerage fees on lower priced stocks

Reverse stock splits - reverse of stock splits; results in fewer share O/S, but a higher stock price; shareholder wealth is unchanged because although there are less # shares o/s, there is a higher stock price * Companies can do this because investors typically consider a stock price < \$5/share less than

investment grade * Company within financial distress situations whose stock has fallen dramatically may declare a reverse stock split to increase the stock price

Effects on financial ratios

Cash dividends decrease in assets (cash) and decrease in shareholder's equity (retained earnings) * Decrease cash decrease liquidity ratio

(i. e. debt-to-asset) * Decrease in retained earnings decrease debt-to-equity ratio

Stock dividends, stock splits, and reverse stock splits have no effect on a company's leverage or liquidity ratios, as they do not change the value of a company's assets or shareholder's equity, but simply changes the number of shares

A B = (C - 2days) C D

A declaration date - board of directors approve the dividend

**to receive the dividend, an individual must buy the stock C - 3 days

B ex-dividend date - first day a share of stock trades without the dividend; stock prices should fall the amount of the dividend, but in actuality, the price may be closer to the after-tax value of the dividend * Cutoff date for receiving the dividend and occurs 2 days before the holder-of-record date * If you buy the share on (or after) the ex-dividend date, you will not receive the dividend

C holder-of-record date - date where the shareholders of record are designated to receive the dividend

D payment date - dividend checks are mailed out/electronically transferred

Share repurchase - transaction in which a company buys back shares of its own common stock; can be done in 3 ways: 1. Buy in the open market - purchase at the prevailing market price * Authorized by board of directors for a certain number of shares * Gives the company flexibility in the timing of purchase 2. Buy a fixed number of shares at a fixed price - making a tender offer to repurchase a specific number of shares at a premium to the current price 3. Repurchase by direct negotiation - negotiate directly with a large shareholder to buy back a block of shares, usually at a premium to the market price * Results in an increase in wealth for the seller, and an equal decrease in wealth for the remaining firm shareholders

* Share repurchase increase in EPS

* Share repurchase by company funds reduce interest income and earnings *

Share repurchase with borrowed funds increase interest costs, which will reduce earnings directly by the after tax cost of interest; relativity of decrease in earnings and the number of shares repurchased will determine the effect of an increase or decrease in EPS * If after-tax cost of borrowed funds > earnings yield, EPS will fall * If after-tax cost of borrowed funds < earnings yield, EPS will increase

Earnings per share with borrowed debt

= [total earnings (without debt) - after tax cost of funds] / [total shares after buyback]

Share repurchases and their impact on the book value of a share of stock * If

BVPS > repurchase price BVPS increase

* If BVPS < repurchase price BVPS decrease

Study Session 11 - Assigned Reading #40 - Working Capital Management

Primary sources of liquidity| Secondary sources of liquidity| * Cash from day-

to-day activities * Short-term investments (trade credits from vendors, line of credit from banks) * Unlikely to change the company's normal operations| *

Liquidating ST/LT assets, negotiating debt agreements, filing for bankruptcy, reorganizing the company * Will likely change the company's financial structure & operations|

* A company's liquidity improves when cash flows in more quickly and flows out more slowly * Factors that weaken a company's liquidity are called drags and pulls on liquidity * Drags on liquidity - delay/reduce cash inflows, or increase borrowing costs * e. g. uncollected AR, bad debt, obsolete inventory (longer to sell/sharp discounts), tight ST credit due to economic conditions * Pulls on liquidity - accelerate cash outflows

* e. g. paying vendors earlier than what is optimal, changes in credit terms that require repayment of outstanding balances * Some company's have weak liquidity positions, due to factors that affect the company/industry

Measures of Liquidity

Current Ratio= CA/CL| * Best known measure of liquidity * If <1, company has negative working capital and is probably facing a liquidity crisis| Working capital ratio= CA-CL

Quick Ratio (or acid test ratio) = $(\text{cash} + \text{ST marketable securities} + \text{receivables}) / (\text{CL})$ | * More stringent measure of liquidity because it does not include inventory and other assets that aren't as liquid | Receivables turnover = $\text{credit sales} / \text{average receivables}$ | * Desirable = close to industry norm | Number of days of receivables (average collection period or average days' sales outstanding) = $365 / \text{receivables turnover}$ = average receivables / average day's credit sales | * Desirable = close to industry norm * Collection period too high = customers slow in paying bills; too much capital is tied up in assets * Collection period too low = firm's credit policy is too rigorous, which may be hampering sales | Inventory turnover = $\text{COGS} / \text{average inventory}$ |

* Measures a firm's efficiency with processing and inventory management | Average inventory processing period (or number of days of inventory) = $365 / \text{inventory turnover}$ = average inventory / average day's COGS | * Desirable = close to industry norm * Too high = too much capital tied up in inventory; could point that inventory is obsolete * Too low = firm has inadequate stock on hand, which could hurt sales | Payables turnover ratio = $\text{purchases} / \text{average trade payables}$ | | Payables payment period (or number of days payables) = $365 / \text{payables turnover}$ = average payables / average day's payables | * Average amount of time it takes the company to pay its bills |

Operating cycle - average # of days it take to turn raw materials into cash proceeds from sales Operating cycle = days of inventory + days of receivables

Cash conversion cycle (aka net operating cycle) - time it takes to turn the firm's cash investment back into cash, in the form of collections from the sales of that inventory
Cash conversion cycle = (avg. days of receivables) + (avg. days of inventory) - (average days of payables) * High cash conversion cycles = undesirable

* Implies an excessive amount of investment in working capital

Short-term securities that can earn interest

* T-bills, ST fed. agency securities, bank certificates of deposit, banker's acceptances, time deposits, repurchase agreements, commercial paper, money market mutual funds, adjustable-rate preferred stock

* Adjustable-rate preferred stock has a dividend rate that is reset quarterly to current market yields and offers corporate holders a tax advantage because a percentage of the dividends received are exempt from federal tax

* ST borrowing (from banks or from issuing commercial paper) is also used to manage daily cash positions

$\% \text{ Discount} = (\text{face value} - \text{price}) / (\text{face value})$

$\text{Discount basis yield} = [(\text{face value} - \text{price}) / (\text{face value})] * (360/\text{days to maturity}) = \% \text{ discount} * (360/\text{days to maturity})$

$\text{Holding period yield} = (\text{face value} - \text{price}) / (\text{price})$

$\text{Money market yield} = [(\text{face value} - \text{price}) / (\text{price})] * (360/\text{days to maturity})$
 $= \text{Holding period yield} * (360/\text{days to maturity})$

Bond equivalent yield = $[(\text{face value} - \text{price}) / (\text{price})] * (365/\text{days to maturity}) = \text{HPY} * (365/\text{days to maturity})$

% discount | Holding period yield |

= $(\text{face value} - \text{price}) / (\text{face value})$ | $(\text{face value} - \text{price}) / (\text{price})$ | Deviations:

1. Discount basis yield = $x(360/\text{days to maturity})$ | Deviations: 1. Money

market yield = $x(360/\text{days to maturity})$ 2. Bond equivalent yield =

$x(365/\text{days to maturity})$ |

* “ 2/10 net 60” term = if the firm pays within 10 days, it will get a 2% discount, otherwise, the net amount is due in 60 days from the invoice

If the company does not take the discount, what is the cost involved? Cost of

trade credit = $[1 + ((\% \text{ discount}) / (1 - \% \text{ discount}))^{(365/\text{days past discount})}] -$

1

Sources of short term funding from banks

1. Line of Credit

Uncommitted line of credit - extends an offer of credit for a certain amount

but may refuse to lend if the circumstances change Committed (regular) line

of credit - charges a fee, typically term is less than a year, interest rates are

in terms of ST reference rates (LIBOR or the US prime rate + margin)

Revolving line of credit - for longer terms (can be year); most secure

Bankers acceptances - used by firms that export goods; guarantee from the

bank that that the goods will be paid for upon receipt of the goods - the

exporting company can sell this acceptance at a discount to generate

immediate funds Factoring - actual sale of receivables at a discount from the

face value; price depends on how long it is until the receivables are due, the creditworthiness of the firm's credit customers, and the firm's collection history

2. Non-bank sources of ST financing

Finance companies - typically used by smaller firms with poor credit; cost of funding is higher than other sources, typically used by firms that are unable to get ST funding from the bank

Commercial paper - issued from large creditworthy companies; interest costs are less than the rate they get from the bank

Study Session 11 - Assigned Reading #41 - Financial Statement Analysis

Proforma BS/IS - forward looking statements that are constructed based on assumptions

- * Begins by identifying a driver of income and balance sheet items

Constructing sales-driven pro forma FS:

1. Estimate relationship b/w changes in sales and changes in sales-driven income statement and balance sheet items
2. Estimate future tax rate, interest rates on debt, lease payments, etc.
3. Forecast sales for the period of interest
4. Estimate fixed operating costs and fixed financial costs
5. Integrate estimates into pro-forma statements

Estimating sales

- * One approach: calculate average compound growth rate of sales over a 5 or 10-year period; use the calculated growth rate for the pro forma
- * More

complex method - regression analysis to estimate the relationship between GDP growth and growth in firm sales * Surplus = (L+OE) - A

* We can use this to pay off debt

Study Session 11 - Assigned Reading #42 - The Corporate Governance of Listed Companies: A Manual for Investors

Corporate governance - set of internal controls, processes, and procedures by which firms are managed * Defines rights, roles, responsibilities of management, board of directors, shareholders

Good corporate governance seeks:

- * Board of directors protects shareholder interest
- * Firm acts lawfully and ethically in dealings with shareholders * Rights of shareholders are protected and that they have a voice in governance * Board acts independently from management
- * Proper procedures and controls cover management's day-to-day operations
- * Firm's financial, operating, and governance activities are reported to shareholders in a fair, accurate, and timely manner

Study Session 13 - Assigned Reading #47 - Market Organization Structure

Functions of the financial system

1. Allow entities to save/borrow money, raise equity capital, manage risks, trade assets currently or in the future, and trade based on their estimates of asset values
2. Determine the returns (i. e. interest rates) that equate the

total supply of savings with the total demand for borrowing 3. Allocate capital to its most efficient uses

* Best at fulfilling the roles when the markets are liquid, transaction costs are low, information is readily available, and when regulation ensures the execution of contracts *