Steps to Financial Analysis of A Small Business

1. **Normalize Financial Statements**
2. **Calculate Return on Owner's Equity: ROE**
3. **Calculate Asset Investment: AI**
4. **Calculate Return on Asset Investment: ROAI**
5. **Calculate Financial Leverage**
6. **Calculate Cost of Debt: COD**
7. **Calculate Tax Rate**
    - ♦ ***Alternative Method for Calculating ROE***
8. **Calculate Asset Investment Turnover**
9. **Calculate Operating Margin**
    - ♦ ***Alternative Method for Calculating ROAI***
10. **Calculate Sustainable Growth Rate: SGR**

Pre-Analysis Preparation (Normalization)

1. **Normalize Financial Statements:** to reflect the actual or "normal" operating conditions remove items that are not part of the capital structure of the company.
    - Ensure that assets are properly valued and that depreciation represents an actual decline in useful life. [As a general rule of thumb, depreciation can be calculated as 10% of Fixed Assets]
    - Inventory should all be sellable.
    - Deferred income taxes are added to owner's equity.
    - Adjust accounts receivable by eliminating uncollectable amounts - all accounts receivables should be collectable!
    - Remove notes receivable and intangible assets [get rid of things not part of the **capital structure** of the company].
    - Adjust the business' operating statement to reflect a "realistic" owner's compensation level (it should not be excessive).
    - Eliminate extraordinary income and expenses from the operating statement; example: fire, land sale/purchase, selling of large assets i.e., building, machinery. All income and expenses should be ordinary.

Profitability or Earnings Power Analysis (Return on Asset Investment)

2. Calculate Return on Owner's Equity: ROE

ROE = Net Income / Owner's Equity

- ROE Meaning: for every $1 of equity that is invested, $ROE is received.
- Owner's Equity includes retained earnings (what owner has left in the business), any preferred and common stock (owner's investments), and any Equity Appreciation Unit (EAU) plan contributions.
- ROE will be maximized if a small business maximizes its Return on Asset Investment (ROAI), uses debt effectively, and uses effective tax planning to decrease the impact of taxes on total profit.
- Maximizing ROE benefits the owner.
- ROE should be evaluated over time for a small business and compared to a standard (eg: an industry average (SIC) or a goal established by management).
- Average ROE for a small business in the top quartile = 30-40%; want at least 20%.
- Note: (1) ROE would be high if Owner's Equity is small (but positive), (2) ROE is not computed for a negative Net Worth.

3. Calculate Asset Investment: AI

AI = Interest Bearing Debt + Owner's Equity (+ Differed Income Tax if not paid in the current period or year**)**

Interest Bearing Debt = Long-term debt + Revolving Line of Credit

- Asset Investment indicates the amount of money that is required to capitalize a particular business (the capitalization that is available to managers to generate income).

4. Calculate Return on Asset Investment: ROAI

ROAI = Earnings Before Interest and Taxes / Asset Investment = EBIT / AI

- ROAI is the Earning Power of a business and determines whether or not adequate return is being earned on the assets that have been purchased by the business regardless of its amount of debt; measures what management has been doing with its assets.
- Earnings does not include investment income.
- To be in the top quartile (1/4) of all small businesses, a firm must have a ROAI of at least 29%. The top quartile have ROAI's in the range of 29% to 100%.
- **Strategies for increasing ROAI: Keep ROAI greater than Cost of Debt!**
    - Increase Revenue
    - Decrease Expenses
    - Decrease Amount Invested

By order of importance:

- Raise Prices
- Decrease variable costs.
- Increase sales by changing the hours of a business operation, targeted marketing efforts, implementing a better product/service mix, examining why customers buy etc...
- Decrease fixed costs through better purchasing and increased productivity.
- Decrease asset investment if possible, however, most small businesses are undercapitalized for this option.

5. Calculate Financial Leverage: Leverage

Leverage = Interest Bearing Debt / Owner's Equity

- Leverage Meaning: for every $1 that is invested, $Leverage is borrowed. [$Leverage + $1 = Cost of Capital]
- Leverage indicates the risk being assumed by the owner of a business.
- Assumes that the business has an ROAI > Cost of Debt (COD). This relationship is especially important to monitor when interest rates are fluctuating.
- Leverage should be evaluated by comparing it with industry averages.

6. Calculate Cost of Debt: COD

COD = Interest Expense / Interest Bearing Debt

- The Cost of Debt for a small business should be compared to its ROAI and with an industry average.
- **Determine "Cushion" or "Spread": Cushion = ROAI - COD**
  - Debt can be borrowed at COD if prime rate does not increase by more than Cushion or
  - Debt can be borrowed at ROAI if interest rates are not expected to increase at all.
  - If Cushion is negative, need to liquidate Owner's Equity, increase ROAI.
- **Question: "At what rate can a company safely borrow money?"**
  - Answer: "At ROAI - COD - Some Cushion on COD (*for safety*)."

7. Calculate Tax Rate

Tax Rate = Income Tax / Income Before Taxes

[Income Before Taxes = Net Income + Income Tax]

- The Tax Rate should be compared to an industry average to assess whether adequate tax planning has taken place.
- The lower the Tax Rate, the higher ROE.

- ***Alternative Method for Calculating ROE***

  ROE = (1 - Tax Rate) [(ROAI + (Leverage X {ROAI - COD})]

  - (1 - Tax Rate) is an indication of the tax planning that has been done by the small business owner.
  - ROAI is the fundamental measure of the small business' productivity.
  - (ROAI - COD) indicates whether or not Leverage is being used successfully by the firm.
  - (Leverage X {ROAI - COD}) provides the gain or loss that has resulted from using financial leverage.

8. Evaluate Impact on Debt and Equity Capital Structure

Earning or Loss on Debt = Interest Bearing Debt / Spread = IBD / Spread (*or Cushion*)

Portion of Net Income Generated Through the Use of Debt = [(Earnings or Loss on Debt X (1 - Tax Rate)) / Net Income] X 100

Earning or Loss on Equity = Owner's Equity x ROAI

Net Gain or Loss on Equity versus Debt = Earning or Loss on Equity + Earning or Loss on Debt

- Need to look at the equity and debt distributions not just profits to determine how much debt can be carried by the organization.

9. Calculate Asset Investment Turnover: AIT

Asset Investment Turnover = Sales / Asset Investment = Sales / AI (*see above*)

- Asset Investment Turnover provides a measure of the use of assets and should be evaluated over time for a small business and compared to an industry average.

10. Calculate Operating Margin: OM

Operating Margin = Earnings Before Interest and Taxes / Sales = EBIT / Sales

- Operating Margin measures the operating profitability of a business and indicates which costs can actually be controlled.
- Operating Margin is the single most important factor for a small business. Watch this value very closely in type B (flexibility) companies!

- ***Alternative Method for Calculating ROAI - Analyzing ROAI***

  ROAI = Asset Investment Turnover X Operating Margin = (Sales / AI) X (EBIT / Sales)

  - For A companies - Efficiency: concentrate on getting AIT as high as possible
  - For B companies - Flexibility: concentrate on getting OM as high as possible

Sustainable Growth Rate

11. Calculate Sustainable Growth Rate (as a percentage of sales): SGR

SGR = [P (1-R) (1+L)] / [T-(P) (1-R) (1+L)]

- **P** = Profit margin on sales after taxes = Profit after taxes / Sales = Net Income / Sales
- **R** = Return to owners = Distribution of net profits to owners / Net Profit = Dividends / Net Income [0.4 for Wisconsin]
- **L** = Leverage = Interest Bearing Debt / Owner's Equity
- **T** = Ratio of Assets to sales = Total Assets / Sales
- SGR is a measure of what rate a small business can grow and be able to generate enough cash in the future to repay its obligations. Growing faster than what can be sustained can result in business failure.
- **High SGR**: If Actual Growth is < SGR, reduce SGR by: increasing price or increasing capital investment.
- **Low SGR**: If Actual Growth is > SGR, increase SGR by: diversifying or marketing aggressively and increasing sales volume.
- Many companies that fail, do so in the period (month or year) that they have their highest sales.
- Other means to finance growth:
    - Increase debt (to finance growth)
    - Increase operating efficiency
    - Increase sales
    - Reduce profit returned to owners

Steps to Cash Flow Management for Business Liquidity

"Small Business Management is Cash Management!" - Dr. Robert W. Pricer

1. **Calculate Permanent Capital: PC**
2. **Calculate The Total Amount of Net Fixed Assets: NFA**
3. **Calculate Working Capital Available: WCA = PC - NFA**
4. **Calculate Operating Capital Needs: OCN**
5. **Calculate Operating Capital Available: OCA**
6. **Calculate Working Capital Required: WCR = OCN - OCA**
7. **Calculate Net Balance Position: NBP = WCA - WCR**

Net Balance Position (calculation)

1. **Calculate Permanent Capital: PC**

   PC = Interest Bearing Debt + Owner's Equity

   Interest Bearing Debt = Long-Term Debt (include revolving line of credit but not current portions) **+ Differed Income Taxes**

   - Permanent capital is the source of capital that is available to invest in fixed assets and working capital to support the business over the operating period.

2. **Calculate The Total Amount of Net Fixed Assets: NFA**

   Net Fixed Assets = (land, building, machinery, and equipment) - (accumulated depreciation)

3. **Calculate Working Capital Available: WCA**

   WCA = Permanent Capital - Net Fixed Assets = PC - NFA

   - Working Capital Available is the capital that is used to run the business on a daily basis.
   - WCA must be greater than cash outflow so that Accounts Payable and Inventory are met.

4. **Calculate Operating Capital Needs: OCN**

   OCN = An Assumed Minimum Cash Balance Level + Accounts Receivable + Average Inventory + Add additional current assets that are common in the specific industry being analyzed

   Assumed Minimum Cash Balance Level = (Sales / 365) X 5

5. **Calculate Operating Resources / Operating Capital Available: OCA**

   OCA = Accounts Payable + Taxes Payable + Wages Payable + …Other Payable Liabilities...

6. **Calculate Working Capital Required: WCR**

WCR = Operating Capital Needs - Operating Capital Available = OCN - OCA

7. Calculate Net Balance Position: NBP

NBP = WCA - WCR

- **NBP** is the fundamental measure of liquidity of a business.
- If NBP is positive, the firm is liquid or will likely have sufficient cash. If NBP is very positive, the firm has excess current assets that aren't working for the business.
- If NBP is negative, the firm is not liquid and will have cash flow problems (typically due to a high growth rate).

Strategies to increase a business' NBP:

1. Decrease accounts receivable by the amount of the negative NBP.
2. Decrease inventory by the amount of the negative NBP.
3. Increase permanent capital by the amount of the negative NBP.
4. Increase accounts payable.
5. Decrease the minimum amount of cash required for business operations.
6. Pay suppliers later
7. Pay wages later

1. ↓ Reducing Collection Periods

Sales per day = Sales/365
X = Account Receivable/Sales per day = number of days that sales are sitting in A/R
Y = NBP/Sales per day = number of days that collection period needs to be reduced by.
Collect in X - Y days.

2. ↓ Shorten Average Age of Inventory

IU = Inventory Used = Inventory Cost per day = Cost of Goods Sold/365 days
IOH = Inventory/Inventory Cost per day = number of days that company has inventory on hand
D = NBP/Inventory Cost per day = number of days to shorten inventory holding by
Target number of days to hold inventory = IOH - D.

3. ↑ Defer Payment Periods

CEPD = Cash expenses/365 = cash expenses per day = sales - NI - Non-Cash Expenses
Non interest bearing spontaneous liability/expense per day = number of days that expenses have to be paid
$DT_{NIBSCL = NIBSCL / CEPD}$
Deferment = NBP/CEPD = number of days that payments need to be deferred
Increase Deferment By:

- Negotiate longer payment terms
- Pay workers later
- Hold withholding tax forms longer
- Do not pay suppliers early

4. ↑ Increase Cash Conversion Cycle: CCC

Cash conversion cycle is the measure of how often a business collects. Any expenditure today, comes back as revenue in CCC days.

$CCC_{current}$ = Collection Period (from 1 above) + Inventory On Hand (IOH from 2 above) - DT_{NIBSCL}

NIBSCL = Non-Interest bearing spontaneous current liabilities / CEPD (from 3 above)

If the above recommendations are implemented, then a new CCC should be calculated:

$CCC_{new} = (X - Y) + (IOH - D) + (DT_{NIBSCL} + Deferment)$

Steps to Calculating Break-Even

1. **Calculate VC as a percent of sales: VC%**
2. **Calculate Contribution Margin: CM**
3. **Calculate Break Even: BE**
4. **Calculate Safety Margin: SM**
5. **Calculate Operating Leverage: OL**

1. Calculate Variable Costs (VC) as a percent of sales

VC% = [Variable Costs / Sales] * 100

- For each dollar of sales, VC% goes to Variable Cost.

2. Calculate Contribution Margin: CM

CM = 1 - VC%

- CM is the amount left to cover Fixed Cost.

3. Calculate Break Even: BE

BE = FC / CM

- Break Even is the number of units to sell to have zero profits

4. Calculate Safety Margin: SM

SM = BE / Sales

- Safety Margin is the percent of sales above break even.

5. Calculate Operating Leverage: OL

OL = CM / Net Income (NI)

- Operating Leverage is the degree of fixed costs that a company has.
    - **High Operating Leverage Means:**
        - High proportion of FC/TC. Ex. GM (**insourcing**: most products built inside company)
        - FC > VC meaning more capital is used, therefore, a more risky business.
        - You make less profit up to BE (sales lower until BE), then it goes up drastically.
        - HOL = High B/E = High FC = High Margin (profit) = High Risk = Smaller CM = Once you reach BE, a smaller % of each $ falls to the bottom line (profit). Therefore, the strategy is to insource more and make your BE as high as possible.
        - Smaller businesses can't compete in HOL industries.
    - **Low Operating Leverage:**
        - High proportion of VC/TC.
        - FC < VC meaning less of a risky venture.
        - Convert FC to VC (which is what most small businesses do, therefore, most small businesses are LOL)

- LOL = High VC = Low Capital = Low Margin (profit) = Low B/E
- Make profit on every unit, but stays constant across time. Ex. Chrysler (**outsourcing**: use outside suppliers to do most of the work.)
- The strategy is to outsource more.