3. ANALYSIS OF FINANCIAL STATEMENTS

Analysis of Financial Statements:
A company's financial statements need to be studied for signs of financial strengths and weaknesses and then compared to (or benchmarked against) the industry.

Basic Financial Statements:
1. Balance Sheet
2. P/L or Income Statement
3. Cash Flow Statement
4. Statement of Retained Earnings (or Shareholders' Equity Statement)

Fundamental Accounting Equation:
1. Assets +Expense = Liabilities + Shareholders' Equity + Revenue
2. (Expense & Revenue are Temporary P/L accounts the others are Permanent Balance Sheet Accounts)
3. Left Hand Items increase when debited. Right Hand items increase when credited.
4. For every journal entry, the Sum of Debits = the Sum of Credits

Balance Sheet:
1. A balance sheet is a 'static snapshot' at one point in time
2. Balance sheet items or accounts are 'permanent accounts' that continue to accumulate from one accounting cycle to the next.
3. Balance sheet items are recorded on historical cost basis, i.e., the balance sheet neglects any increase in value of assets resulting from inflation and reports assets and liabilities at their book value.
4. Constant Rupee Approach: In constant rupee approach, two balance sheets of the same company for different times are compared at a specific time and inflationary adjustments are made.

Assets (Left Hand Side):
1. Assets are economic and business resources that are used in generating revenue for the organization. They can be tangible (inventory) or intangible (patent, brand value, license).
2. Some assets are classified as current (cash, accounts receivable) and others are fixed (machinery, land, and building). There are also long-term assets (property, loans given) and contingent assets, the value of which can only be assessed in future (legal claim pending, option).
3. Current Assets = Cash + Marketable Securities + Accounts Receivable + Pre-Paid Expenses + Inventory
4. The accounts receivable aging schedule is a listing of the customers making up total accounts receivable balance. Most businesses prepare an accounts receivable aging schedule at the end of each month. Analyzing your accounts receivable aging schedule may help you identify potential cash flow problems.
5. Inventory value (at any instant in time) is a very controversial figure which depends on inventory valuation methodology (i.e. FIFO, LIFO, Average Cost) and Depreciation Method (i.e. Straight Line, Double Declining, Accelerated). Companies have the flexibility that they can use one methodology for preparing the financial statements & the different methodology for tax purposes.

Liabilities (Right Hand Side):
1. Liabilities are sources which are use to acquire the resources OR obligations to outside creditors Obligations to shareholders known as Equity.
2. Liabilities can be short term debts, long term debt, equity, retained earnings, contingent, unrealized gain on holding of marketable securities
3. Current Liabilities = Account Payables + Short Term Loans + Accrued Expenses

4. Net Working Capital = Current Assets – Current Liabilities
5. Total Equity = Common Equity + Paid In Capital + Retained Earnings (Retained Earnings is NOT cash always)
6. Total Equity represents the residual excess value of Assets over Liabilities:
7. Assets –Liabilities = Equity = Net Worth
8. Only cash account represents real cash which can be used to pay your bills!!

Profit & Loss account or Income Statement:

1. An income statement is a "flow statement" over a period of time matching the operating cycle of the business, which reports the income of the firm.
2. Right hand side receipts (revenues) are added. Left hand side payments (expenses) are subtracted.
3. P/L Items or Accounts are 'temporary' accounts that need to be closed at the end of the accounting cycle.
4. Sales revenue – Cost of Goods Sold = Gross Profit (Revenue)
5. Cost of Goods Sold is a very controversial figure that varies depending on Inventory Valuation Method (i.e., FIFO, LIFO, and Average Cost) and Depreciation Method (Straight Line, Double Declining, and Accelerated). Depreciation is treated as an expense (although it is non-cash)
6. Gross Revenue – Admin & Operating Expenses = Operating Revenue
7. Operating Revenue – Other Expenses + Other Revenue = EBIT (Earning Before Interest and Tax)
8. EBIT – Financial Charges & Interest = EBT
9. Note: Leasing Treatment– EBT – Tax = Net Income
10. Net Income – Dividends = Retained Earnings
11. Net Income is NOT cash (it can't pay for bills)

Cash Flow Statement:

1. A cash flow statement shows the cash position of the firm and the way cash has been acquired or utilized in an accounting period.
2. A cash flow statement separates the activities of the firm into three categories, which are operating activities, investing activities and financing activities.
3. Operating Cash Flow Statement can be obtained by using two approaches:
    a. Direct
    b. Indirect.
4. A cash flow statement can be derived from P/L or Income Statement and two consecutive year Balance Sheets.
5. A cash flow statement is not prepared on accrual basis but rather on cash basis: Actual cash receipts and cash payments.
6. The net income is obtained from the Income Statement of a period of time matching the operating cycle of the business. Generally: Revenue – Expense = Income
7. In order to arrive as the cash flows resulting from operating activities
8. Increases in current assets are cash payments (-), i.e., cash outflow
9. Increases in current liabilities are cash receipts (+), i.e., cash inflow
10. Right Hand Side Receipts are added.

Statement of Retained Earnings or Shareholders' Equity Statement

1. Total Equity = Common Par Stock Issued + Paid In Capital + Retained Earnings
2. Retained Earnings is the cumulative income that is not given out as Dividend; it is NOT cash)

Cash Flow Statement items (Indirect Cash Flow Approach**):**

1. Net Income
2. Add Depreciation Expense
3. Subtract Increase in Current Assets: Cash, Inventory
4. Add Increase in Current Liabilities: A/c Payable
5. Increase in A/c Payable 500
6. Cash Flow from Operations
7. Cash Flow from Investments all cash sale and purchases of non-current assets and marketable securities
8. Cash Flow from Financing includes all cash changes in loans, leasing, and equity etc.
9. Net Cash Flow from All Activities should match the difference of two closing balance.

LIQUIDITY & SOLVENCY RATIOS:

1. **Current Ratio = Current Assets / Current Liabilities**
   A ratio of (2:1) is considered ideal.

2. **Quick/Acid Test ratio = (Current Assets – Inventory) / Current Liabilities**
   The quick ratio measures the liquidity and points out the inventory piling problem

3. **Average Collection Period = Average Accounts Receivable / (Annual Sales/360)**
   Also known as **Days Sales Outstanding**,
   Average collection period shows in how many days the Accounts receivables of the company are converted into cash.

PROFITABILITY RATIOS:

The profitability ratios show the combine effects of liquidity, asset management, and debt management on operating result.

1. **Profit Margin (on sales) = [Net Income / Sales] X 100**
   The higher the ratio, the better it is. Most of the companies compare this ratio to the previous years' ratios to assess if the company is better off.

2. **Return on Assets = [Net Income / Total Assets] X 100**
   It shows the profitability of the company against each dollar invested in total assets.
   To find if the assets have been used efficiently enough to generate profits.

3. **Return on equity = [Net Income/Common Equity]**
   This ratio shows that for each dollar in equity how much profit is generated by the company.

ASSET MANAGEMENT RATIOS:

These measures show how effectively the firm has been managing its assets.

1. **Inventory Turnover = Sales / inventories**
   Inventory turnover shows the number of times the inventories are replenished within one accounting cycle. The inventory turnover confirms whether or not the major portion of the current assets of the firm is tied up in inventory. This ratio is also used in measuring the operating cycle and cash cycle of the firm. A higher turnover is desirable as it reflects the liquidity of the inventories.

2. **Total Assets Turnover = Sales / Total Assets**
   To measure how effectively a company has used its total assets to generate revenues

DEBT (OR CAPITAL STRUCTURE) RATIOS:

1. **Debt-Assets = Total Debt / Total Assets**
   The greater the proportion of debt in the financing mix, the less willing creditors, and investors would be to provide more finances to the company. In Pakistan, the debt to assets ratio is prescribed in prudential regulations by the State Bank of Pakistan as a guideline for the banks (creditors). A ratio greater than 0.66 to 1 is considered alarming for the providers of funds.

2. **Debt-Equity = Total Debt / Total Equity**
   Another commonly used ratio, debt to equity, explicitly shows the proportion to debt to equity. A ratio of 60 to 40 is used for new projects to raise funds.

3. **Times-Interest-Earned = EBIT / Interest Charges**
   Times-interest-earned reflects the ability of a company to pay its financial charges (interest). Conceptually, the interest charges are to be paid from the **earnings before interest and taxes**. A ratio of 4 to 1 shows that the company covers the interest charges 4 times, which is generally considered satisfactory. A high **times-interest-earned** ratio is a good sign, especially for the creditors.

MARKET VALUE RATIOS:
These ratios give management an indication of what equity investors think of the company's past performance & future prospects

1. **Earning Per Share (EPS) = Net Income / Average No of Common Shares Outstanding**

2. **Price Earning Ratio (PE) = Market Price per share / Earnings per share**
   This ratio reflects the optimism, or lack thereof, investors have about the future performance of the company.

3. **Market /Book Ratio = Market Price per share / Book Value per share**
   Market to book ratio gives an indication how equity investors regard the company's value. This ratio is also used in case of mergers, acquisition or in the event of bankruptcy of the firm.

Ratios help us to compare different businesses in the same industry and of a similar size.

Limitations of Financial Statement Analysis (FSA):
Despite the fact that ratios are a useful analysis tool, there are certain limitations, which are important for an analyst to understand before applying this tool, in order to make his analysis more meaningful.

1. FSA is generally an outdated (because of Historical Cost Basis) post-mortem of what has already happened. It is simply a common starting point for comparison. Use Constant Rupee /Dollar analysis to account for inflation.

2. FSA is limited by the fact that financial statements are "window dressed" by creative accountants. **Window dressing refers to the understatement or overstatement of financial facts.**

3. Different companies use different accounting standards for Inventory, Depreciation, etc. therefore comparing their financial ratios can be misleading

4. FSA just presents a few static snapshots of a business' financial health but not the complete moving picture.

5. It's difficult to say based on Financial Ratios whether a company is healthy or not because that depends on the size and nature of the business.

Difference in Focus:
Financial Statements are prepared by financial accountants with a certain perspective, however the financial managers—the end users of these financial statements, have a different focus to draw meaningful conclusions out of these statements. These differences are listed below

Financial Accounting (FA) Focus:
1. Use Historical Value (assets are booked at original purchase price)
2. Follow Accrual Principle (calculate Net Income based on accrued expense and accrued revenue)
3. How to most logically, clearly, and completely represent the financial data.

Financial Management (FM) Focus:
1. Use Market Value (assets are valued at current market price)
2. Follow Incremental Cash Flows because an Asset's (and a Company's) Value is determined by the cash flows that it generates.
3. How to pick the best assets and liabilities portfolios in order to maximize shareholder wealth.

FM Measures of Financial Health:

M.V.A (Market Value Added):
Market Value Added is a measure of wealth added to the amount of equity capital provided by the shareholders. It can be determined by the following equation

MVA (Rupees) = Market Value of Equity – Book Value of Equity Capital
Following are the characteristics of **MVA**
1. It is a cumulative measure, i.e., it is measured from the inception of the company to date.
2. Market Value is based on market price of shares.
3. It shows how much more (or less) value the management has succeeded in adding (or reducing) to the company in the eyes of the general public / market.
4. It is used for incentive compensation packages for CEO's and higher level management.
5.

E.V.A (Economic Value Added) = EBIT (or Operating Profit) – Cost of Total Capital
Economic Value Added focuses on the managerial effectiveness in a given year.

EVA has the following characteristics
1. It is measured for any one year.
2. It is relatively difficult to calculate because Operating Profit depends on Depreciation Method, Inventory Valuation, and Leasing Treatment, etc. Also, a combined Cost of Total Capital (Debt and Equity) is difficult to compute.

Interest Formulas(Present Value and Discounting)

1. **Future Value (FV) = Present Value (PV) + (PV x i x n)** **where i = simple rate of interest**
   i. n = no. of years
2. **Future Value (FV) = Present Value (PV) x $(1+i)^n$** **where i = Compound rate of interest**
3. **Future Value (FV) = Present Value (PV) x $(1+i/m)^{nxm}$** **where m = intervals per year**
4. **Future Value (FV) = Present Value (PV) x $e^{i \times n}$** **where i = Continuous Compound Exponential Interest rate And e = 2.718**

Annuity & Perpetuity:

Annuity (FV) = CCF x $([(1+i/m)^{nxm}-1)/i]$ **where CCF = Constant Cash Flow**

Perpetuity (PV) = CCF/i where CCF = Constant Cash Flow