Formulas

Activity Ratios

- Working Capital Turnover = Net Sales / Average Working Capital
- Fixed Assets Turnover = Net Sales / Average Fixed Assets
- Total Asset Turnover = Net Sales / Average Total Assets
- Inventory Turnover = Cost of Goods Sold / Average Inventory
- Receivable Turnover = Net Credit Sales / Average Accounts Receivable
- Payable Turnover = Total Purchases / Average Accounts Payable
- Days of Inventory on Hand = (Average Inventory / Cost of Goods Sold) x 365
- Days of Sales Outstanding = (Average Accounts Receivable / Net Credit Sales) x 365
- Number of Days Payable = (Average Accounts Payable / Total Purchases) x 365

Note: *In the above formulas, "Net Sales" refers to total sales minus any discounts, returns or allowances. "Cost of Goods Sold" refers to the cost of materials and labor used to produce goods sold. "Average Working Capital" is the average of current assets minus current liabilities over a period of time.*

Profitability Ratio

- Gross Profit Margin = (Revenue - Cost of Goods Sold) / Revenue
- Operating Margin = Operating Income / Revenue
- Pre-tax Margin = Pre-tax Income / Revenue
- Net Profit Margin = Net Income / Revenue
- EBITDA Margin = EBITDA / Revenue
- Cash Flow Margin = Cash Flow from Operations / Revenue
- EBIT Margin = EBIT / Revenue
- Return On Assets (ROA) = Net Income / Average Total Assets
- Return On Equity (ROE) = Net Income / Average Shareholders' Equity
- Return On Capital (ROC) = EBIT / (Total Assets - Current Liabilities)
- Return On Invested Capital (ROIC) = EBIT * (1 - Tax Rate) / (Total Invested Capital)
- Return On Common Equity (ROCE) = Net Income - Preferred Dividends / Average Common Equity
- Return On Total Capital = EBIT / (Total Capital)
- Operating ROA = Operating Income / Average Total Assets

Note: *In the above formulas, "EBIT" refers to Earnings Before Interest and Taxes, and "EBITDA" refers to Earnings Before Interest, Taxes, Depreciation, and Amortization. "Total Invested Capital" is the sum of total debt and total equity. The tax rate should be used for formulas that include EBIT or EBITDA.*

Solvency Ratio

- Debt to Assets Ratio = Total Debt / Total Assets
- Debt to Capital Ratio = Total Debt / (Total Debt + Total Equity)
- Debt to Equity Ratio = Total Debt / Total Equity
- Financial Leverage = Total Assets / Total Equity
- Fixed Charge Coverage Ratio = (EBIT + Fixed Charges) / (Fixed Charges + Interest Expense)
- EBIT Interest Coverage Ratio = EBIT / Interest Expense
- EBITDA Interest Coverage Ratio = EBITDA / Interest Expense
- Cash Flow to Total Debt = Operating Cash Flow / Total Debt

Note: *In the above formulas, "EBIT" refers to Earnings Before Interest and Taxes, "EBITDA" refers to Earnings Before Interest, Taxes, Depreciation, and Amortization, and "Fixed Charges" refers to fixed expenses such as lease payments, insurance, and taxes.*

Credit Ratios

- EBIT Interest Coverage Ratio = EBIT / Interest Expense
- EBITDA Interest Coverage Ratio = EBITDA / Interest Expense
- EBITDA Less Capex Investment = EBITDA - Capital Expenditures
- Debt to Equity Ratio = Total Debt / Total Equity
- Cash Flow Available for Debt Service = Operating Cash Flow - Capex - Taxes - Changes in Working Capital
- Debt Service Coverage Ratio (DSCR) = Net Operating Income / Total Debt Service
- Loss Given Default = (Total Debt - Recovery Amount) / Total Debt
- Fixed Charge Coverage Ratio = (EBIT + Fixed Charges) / (Fixed Charges + Interest Expense)
- Capitalization Ratio = Total Debt / (Total Debt + Total Equity)
- Debt Ratio = Total Debt / Total Assets
- Debt to Tangible Equity Ratio = Total Debt / Tangible Equity
- Debt to Total Capital Ratio = Total Debt / (Total Debt + Total Equity)
- Cash Flow to Total Debt = Operating Cash Flow / Total Debt
- Liabilities to Assets Ratio = Total Liabilities / Total Assets

Note: *In the above formulas, "EBIT" refers to Earnings Before Interest and Taxes, "EBITDA" refers to Earnings Before Interest, Taxes, Depreciation, and Amortization, "Capex" refers to Capital Expenditures, and "Fixed Charges" refers to fixed expenses such as lease payments, insurance, and taxes. "Net Operating Income" is calculated as the income generated by the property minus the operating expenses.*

The Efficiency Ratio

- Inventory Turnover = Cost of Goods Sold / Average Inventory
- Assets Turnover = Net Sales / Average Total Assets
- Account Receivable Turnover = Net Sales / Average Accounts Receivable
- Working Capital Turnover Ratio = Net Sales / Average Working Capital
- Account Payable Turnover = Total Purchases / Average Accounts Payable
- Fixed Assets Turnover Ratio = Net Sales / Average Fixed Assets

Note: *In the above formulas, "Net Sales" refers to sales revenue minus returns and allowances, "Cost of Goods Sold" refers to the cost of producing or acquiring the goods sold during the period, "Average Inventory" is calculated as the average of beginning and ending inventory for the period, "Average Total Assets" is calculated as the average of beginning and ending total assets for the period, "Average Accounts Receivable" is calculated as the average of beginning and ending accounts receivable for the period, "Average Working Capital" is calculated as the average of beginning and ending working capital for the period, "Total Purchases" refers to the cost of purchases made during the period, "Average Accounts Payable" is calculated as the average of beginning and ending accounts payable for the period, and "Average Fixed Assets" is calculated as the average of beginning and ending fixed assets for the period.*

Liquidity Ratio

- Current Ratio = Current Assets / Current Liabilities
- Quick Ratio = (Cash and Cash Equivalents + Marketable Securities + Accounts Receivable) / Current Liabilities
- Cash Ratio = (Cash and Cash Equivalents) / Current Liabilities
- Defensive Interval Ratio = (Cash and Cash Equivalents + Marketable Securities + Accounts Receivable) / (Operating Expenses / 365)
- Time Interest Earned Ratio = Earnings Before Interest and Taxes (EBIT) / Interest Expense
- Capex To Opex Cash Ratio = Capital Expenditures / Operating Cash Flow
- Operating Cash Flow Ratio = Operating Cash Flow / Total Debt
- Working Capital = Current Assets - Current Liabilities
- Cash to Operating to Current Liabilities = (Cash and Cash Equivalents) / Current Liabilities
- Average Days Sales Outstanding (DSO) = (Accounts Receivable / Net Sales) x 365
- Average Days Payable Outstanding (DPO) = (Accounts Payable / Cost of Goods Sold) x 365
- Average Days Inventory Outstanding (DIO) = (Average Inventory / Cost of Goods Sold) x 365
- Cash Conversion Cycle = DIO + DSO - DPO

Note: *In the above formulas, "Operating Expenses" refers to the total expenses incurred to run the business, "EBIT" refers to Earnings Before Interest and Taxes, "Net Sales" refers to sales revenue minus returns and allowances, "Cost of Goods Sold" refers to the cost of producing or acquiring the goods sold during the period, "Capital Expenditures" refers to the amount spent on acquiring or improving long-term assets such as property, plant, and equipment, and "Total Debt" refers to the total amount of debt owed by the company.*

Performance Ratio

- Cash Flow to Revenue = Operating Cash Flow / Net Sales
- Cash Return on Assets = Operating Cash Flow / Average Total Assets
- Cash Return on Equity = Operating Cash Flow / Average Total Equity
- Cash To Income = Operating Cash Flow / Net Income\
- Cash Flow Per Share = Operating Cash Flow / Total Shares Outstanding
- Debt Payment = Total Debt / Number of Payments per Year
- Investing and Finance = Cash Flow from Investing Activities + Cash Flow from Financing Activities
- Interest Coverage = Earnings Before Interest and Taxes (EBIT) / Interest Expense
- Debt Coverage = Operating Cash Flow / Total Debt Service
- Re-Investment = Cash Flow from Operating Activities - Dividends - Capital Expenditures

Note: *In the above formulas, "Operating Cash Flow" refers to the cash generated from the company's core business operations, "Net Sales" refers to sales revenue minus returns and allowances, "Average Total Assets" is calculated as the average of beginning and ending total assets for the period, "Average Total Equity" is calculated as the average of beginning and ending total equity for the period, "Net Income" refers to the total profit earned by the company after accounting for all expenses, "Total Shares Outstanding" refers to the total number of shares issued by the company, "Total Debt" refers to the total amount of debt owed by the company, "Number of Payments per Year" refers to the number of times per year the company makes debt payments, "Cash Flow from Investing Activities" refers to the cash generated or used in investing activities, such as the purchase or sale of long-term assets, "Cash Flow from Financing Activities" refers to the cash generated or used in financing activities, such as the issuance or repayment of debt or the payment of dividends, "EBIT" refers to Earnings Before Interest and Taxes, and "Total Debt Service" refers to the total amount of principal and interest payments due on the company's debt.*

Valuation Ratio/Multiples

- EV/Revenue = Enterprise Value / Revenue
- EV/EBITDA = Enterprise Value / Earnings Before Interest, Taxes, Depreciation, and Amortization
- EV/EBIT = Enterprise Value / Earnings Before Interest and Taxes
- EV/Sales = Enterprise Value / Sales
- EV/Invested Capital = Enterprise Value / (Total Debt + Shareholders' Equity - Cash and Cash Equivalents)
- EV/(EBITDA-Capex) = Enterprise Value / (Earnings Before Interest, Taxes, Depreciation, and Amortization - Capital Expenditures)
- EV/Free Cash Flow (FCF) = Enterprise Value / Free Cash Flow
- EV/CFO = Enterprise Value / Cash Flow from Operations
- EV/FCFF = Enterprise Value / Free Cash Flow to Firm
- EV/UFCF = Enterprise Value / Unlevered Free Cash Flow
- EV/EBITDAR = Enterprise Value / (Earnings Before Interest, Taxes, Depreciation, Amortization, and Rent)
- EV/Enterprise FCF = Enterprise Value / (Operating Cash Flow - Capital Expenditures)
- EV/Capacity Measure = Enterprise Value / Total Capacity
- EV/Operating FCF = Enterprise Value / Operating Free Cash Flow
- P/E Ratio = Price per share / Earnings per share
- P/S Ratio = Price per share / Sales per share
- P/B Ratio = Price per share / Book value per share
- PEG Ratio = P/E ratio / Annual earnings growth rate
- PEGY Ratio = (P/E ratio / Annual earnings growth rate) + Dividend yield
- P/CF Ratio = Price per share / Cash flow per share
- Price/Tangible Book Value = Price per share / Tangible book value per share
- Dividend Yield Ratio = Annual dividends per share / Price per share

- Dividend Payout Ratio = Annual dividends per share / Earnings per share
- Price To Cash Earnings = Price per share / Cash earnings per share
- P/AFFO = Price per share / Adjusted Funds From Operations (AFFO) per share
- P/FFO = Price per share / Funds From Operations (FFO) per share
- EV/FCFF = Enterprise Value / Free Cash Flow to the Firm
- Trailing P/E = Price per share / Trailing earnings per share
- Forward P/E Ratio = Price per share / Estimated earnings per share for the next 12 months

Note: *In the above formulas, "Enterprise Value" is calculated as the sum of the company's market capitalization, total debt, and minority interest minus cash and cash equivalents, "Revenue" refers to the total sales revenue of the company, "EBITDA" refers to Earnings Before Interest, Taxes, Depreciation, and Amortization, "EBIT" refers to Earnings Before Interest and Taxes, "Free Cash Flow" refers to the cash generated by the company after accounting for capital expenditures, "Cash Flow from Operations" refers to the cash generated by the company from its core operations, "Free Cash Flow to Firm" refers to the cash generated by the company after accounting for capital expenditures and taxes, "Unlevered Free Cash Flow" refers to the cash generated by the company before accounting for debt and taxes, "Book Value" refers to the value of the company's assets as recorded on its balance sheet, "Cash Earnings" refers to the cash generated by the company from its operations, excluding non-cash items, and "AFFO" and "FFO" refer to Adjusted Funds From Operations and Funds From Operations, respectively, which are commonly used measures of cash flow for real estate investment trusts (REITs). It's important to note that these formulas are just a few examples of the many financial ratios and metrics that can be used to analyse a company's financial performance, and that different industries and companies may have their own unique metrics that are more relevant to their specific operations and financial goals.*