

# **Financial Analysis - Handbook**

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# **1 Introduction**

The investing strategy is based on a multi-step analysis that increasingly looks more closely into the company. There will be 5 different phases all together:

1. Phase 1: First Impression
2. Phase 2: Management
3. Phase 3: Moat
4. Phase 4: Deep Dive (Ratio Analysis)
5. Phase 5: Intrinsic Value

This multi-step process serve as multiple layers that should protect from naively putting money into a company that does not deserve your attention. After each step of the analysis, you should ask yourself if this company is still a company you want to further research and in the end put money into. With each step, you become more knowledgeable and in the end should be able to determine if you want to invest into the company or not.

## **2 Phase 1: First Impression**

The first part of the analysis should give you a short checklist to figure out if a certain company deserves your further attention. This part of the analysis is best done in two steps: At first, just go along these points and talk your way through them. If the company already looks not attractive anymore, move on to another company. Otherwise, write your thoughts out on these points.

### **2.1 The Company**

Give a little summary of what the company does and sells in a few sentences. This includes the products the company sells and its brands. This summary does not have to be too elaborate, but should give you a first impression what awaits you with this company.

### **2.2 General Information**

Here some basic information concerning the stock and the company goes.

## 2.3 Stock Categories

Peter Lynch characterizes stocks into 6 different categories:

1. Slow Growers/Sluggards: Slow growers are those stocks that have a slow growth rate i.e. a low upward slope of earnings and revenue growth. The growth is usually between 2-5% CAGR and lower than the industry average. These sluggards may once were fast growers, but couldn't maintain their growth rate as they grew bigger and can be characterized by the size and generosity of their dividend.

the only reason to buy these stocks are dividends. These stocks generally give a decent dividend (about 2-4%) and are a good asset during the recession as it's very unlikely for their stock to crash too hard.

2. Stalwarts: These stocks have an average growth rate as that of industry and are usually mid to large companies. They have an earnings growth rate better than the Sluggards and can be typically between the 8-12 percent CAGR range.

investors can get an adequate return from these stocks if they hold these stocks for a long time. They generally end up being two-baggers to four-baggers i.e. they can give you 2-4 times returns in long run. Peter Lynch advised that it is good to have a few stalwarts in your portfolio.

3. Fast Growers: The fast growers are everyone's first choice. These stocks are generally aggressive companies and they grow at an impressive rate of 15-25% per year. They are fast-growth stocks and grow at a comparatively faster rate compared to the industry average and competitors. However, Peter Lynch advises that one should be open-eyed when they own a fast grower. There is a great likelihood for the fast growers to get hammered if they run out of steam or if their growth is not sustainable.
4. Cyclical: The Cyclical are those stocks that grow at a very fast pace during their favorable economic cycle. They can be distinguished from the fast growers as the cyclical keeps on expanding and contracting and again repeating the same cycle. On the other hand, the fast growers keep on growing consistently. The cyclical companies tend to flourish when coming out of a recession into a vigorous economy.

Generally, Automobiles, Metals, Tourism, etc are examples of the cyclical industry. The stock charts of these companies tend to be cyclical and go up & down over different phases of time.

Peter Lynch advises the investors to own the cyclical only on the right part of the cycle i.e. when they are expanding. If bought at the wrong phase, it may even take them years before they perform. Timing is everything while investing

in cyclical stocks and investors need to be able to detect the early signs that the industry is picking up or falling down.

5. Turnarounds: The turnarounds are characterized as potential fatalities that have been badly hammered by the market for one or more of a variety of reasons but can make up the lost ground under the correct circumstances.

Holding turnarounds can be very profitable if the management is able to turn the company as these stocks can be bought at a very low valuation by the investors. However, if the management fails to bring back the company on track, it can be very troublesome for the investors.

6. Asset Plays: The asset plays are those stocks whose assets are overlooked by the market and are undervalued. These assets may be properties, equipment, or other real assets that the company is holding but which is not valued by the investors when there has been a general market downturn. The real value may be worth more than the market capitalization of the company.

Many of the Public sector units are key asset plays because of the real estate property they are holding.

Peter Lynch understands the worth of the asset plays. He suggests owning a few of these stocks in your portfolio as they are most likely to add a lot of value to your portfolio. However, the biggest significant factor while picking these stocks is to carefully estimate the right worth of the assets. If you are able to do it, you can pick valuable gems.

## **2.4 Shareholder Structure**

It is always interesting to see who is invested in a stock. The shareholder structure consists of institutions, funds and insider trading.

## **2.5 Circle of Competence**

You now know what the company does. Before proceeding and wasting any more time, be honest with yourself: Do you think that you are capable of understanding the company and the industry it operates in? If the answer is not a clear yes, look for another industry/company. And don't invest in something just because someone/everyone else says so or it is a hot topic in industry, e.g. bitcoin or AI. If this company or industry is not in your circle of competence, move on to another company.

## **2.6 Meaning**

The most important thing of all is that you actually want to own the company. If you are not absolutely sure if this industry/company aligns with your values, you should not buy the stock and should not even bother with analyzing it any further. Don't be too strict but if you feel from the very start that this stock is not something for you, don't push it. There are thousands of other stocks that might be better suited for you. So answer the following questions:

- Does the company fit my values/interests?
- Why would I like to own this company?

## **2.7 Moat**

Any company that you want to invest in must have a moat. This can be one of the following moats:

- Brand
- Secret
- Toll
- Switching
- Pricing

Identify the kind of moat the company is in. Make sure that the company fulfills at least one of the moats. If the company ticks more than one box, it is even better.

## **2.8 Management**

Although good and bad management can be identified via the numbers, it is always good to get a first impression on the people who run the company. This analysis can be as easy as googling the CEO and listening to his voice and words. It does not have to be a thorough and long analysis. But would you trust this person/these people to run the company? Trust your guts! If something feels odd, move on to another company.

## **2.9 Competition**

Who are the competitors of this company?

## **2.10 Future**

Investing in a company only makes sense, if the company has a future. Although this is guess work, based on the information you gained so far estimate whether the company/industry will still be relevant in the future, say in 10 years from now. Explain why you think so. Does the company have any goals set for the next years that it wants to achieve? At what phase of its growth is the company right now? What is the competitive advantage of this company compared to a competitor?

## **2.11 Invert the story**

There is always something that can go wrong or something we have overlooked during analysis. That is why it is important to understand the other side, like the competitors etc. Ask yourself what could go wrong for the company to become a bad investment.

## **2.12 Analyst Ratings**

It is also very interesting what analysts predict for the company/stock. If there is a big difference between your prediction and the one from the analysts, then you should figure out the reason behind the difference. Always assume that these specialists know something that you don't. For the rest of the time, do not let these numbers distract from a thorough financial research.

## **2.13 First Decision**

After all these previous steps, you have to make a decision if you want to proceed with investigating this company or if you want to stop the analysis right there. If anything does not seem right, stop right here and look for another company to analyze. But save the progress you have made for this company. Maybe at a later point in time, you want to deep dive into this company.

In case all the points above suggest that this company is a good investment, proceed with the low-level analysis.

# **3 Phase 2: Management**

We start the deep-dive into the company with analyzing if the company is well lead. This process is backed up with numbers and should give us a foundation to find out if this company is really something worth putting your money in.

## **3.1 Rule 1: Low Debt**

Here, we want to find out if the debt is manageable.

### 3.1.1 Rule 1.1: Debt-to-Equity (D/E) Ratio

The Debt-to-Equity Ratio (D/E) should be  $D/E = \frac{\text{Long Term Debt} + \text{Notes Payable}}{\text{Equity}} \leq 0.5$ . This means that the company can pay back all the money it owes (i.e. Long Term Debt and Notes Payable) with less than half of its equity.

### 3.1.2 Rule 1.2: Debt-to-FCF (D/FCF) Ratio

The Debt-to-FCF ratio (D/FCF) should be  $D/FCF = \frac{\text{Long Term Debt} + \text{Notes Payable}}{\text{FCF}} \leq 3$ . This means that simply by operating the business we are able to pay our debtors in under 3 years.

### 3.1.3 Rule 1.3: Liabilities-to-Equity (L/E) Ratio

The Liabilities-to-Equity (L/E) should be  $L/E = \frac{\text{liabilities}}{\text{equity}} \leq 0.8$ . This means that the company can pay all its liabilities with less than 80% of its equities.

## 3.2 Rule 2: High Current Ratio

The Current Ratio =  $\frac{\text{Current Assets}}{\text{Current Liabilities}}$  should be between 1.5 and 2.5.

## 3.3 Rule 3: Strong and consistent Return on Equity (ROE)

The Return on Equity  $ROE = \frac{\text{Net Income}}{\text{Equity}}$  should be consistently above 8% over the last years.

## 3.4 Character Traits

A great leader/CEO/management team has the following qualities:

- Owner-Oriented: His personal interests directly align with the shareholders of the business and should be focused long-term.
- Honesty: If something goes wrong, he clearly describes what went wrong and what can be done about it.
- Driven: He is driven to change the world. He uses a Big Audacious Goal (BAG) to motivate himself. This BAG should be easily spotted.
- Humility: He gives praise to others and negates his own contributions.

All of these characteristics should be easily identifiable.



### 3.5 Red Flags

There are also some big red flags for CEOs and management:

- The CEO wants to expand his empire. Usually he unnecessarily diversifies by buying other businesses.
- Huge compensation with bonus packages.
- Management sets unrealistic goals.

If the CEO/management has any of the described attributes, you should keep your distance.

## 4 Phase 3: Moat

If a company has a moat this shows in the Big 5 Numbers:

1. Return on Invested Capital (ROIC):  $ROIC = \frac{\text{Net Income}}{\text{Total Assets}}$
2. Equity growth rate
3. Earnings-Per-Share (EPS) growth rate:  $EPS = \frac{\text{Earnings}}{\text{Shares}}$
4. Sales/Revenue growth rate
5. Free Cash Flow (FCF) growth rate:  $FCF = \text{Operating Cash Flow} + \text{CAPEX}$

All of these numbers must be consistently  $\geq 10\%$  over the last 10 years. Then check the 9-/5-/3-/1-year growth rate to an understanding of the direction the company is going:

- Return after n years =  $\left( \frac{\text{Current Value}}{\text{Initial Value n years ago}} \right)^{\frac{1}{n}} - 1$

## 5 Phase 4: Deep-Dive (Ratio Analysis)

This includes the ratio analysis for income statement, balance sheet and cash flow statement. This should be the absolute last step before you would buy a stock and should only be done if the lights for all the other key numbers are already on green. Since this is a very laborious task, make sure that you have the go from all the previous steps of analysis. It should be the last check to find something in the numbers that doesn't add up.

## 5.1 Income Statement - Ratio Analysis

### 5.1.1 Gross-Profit Margin Ratio (GPMR)

The Gross-Profit Margin Ratio (GPMR) is calculated as  $GPMR = \frac{\text{Gross Profit}}{\text{Revenue}}$ .

**Meaning:** If a company's GPMR is  $0.70 = 70\%$ , this tells us that every time the company sells its products for 100\$, it makes 70\$ in gross profit.

### 5.1.2 EBITDA Margin Ratio (EBITDA Margin)

Earnings before interest, taxes, depreciation, and amortization (EBITDA) is calculated as  $EBITDA = \text{Earnings before interest and tax} + \text{depreciation} + \text{amortization}$ . EBITDA is an earnings measures that focuses on the essentials of a business: its operating profitability and cash flows.

The EBITDA Margin Ratio is calculated as  $EBITDA \text{ Margin} = \frac{EBITDA}{\text{Revenue}}$ . It is a performance metric that measures a company's profitability from operations. That makes it easy to compare the relative profitability of two or more companies of different sizes in the same industry. Calculating a company's EBITDA margin is helpful when gauging the effectiveness of a company's cost-cutting efforts. The higher a company's EBITDA margin is, the lower its operating expenses are in relation to total revenue.

**Meaning:** If a company's EBITDA margin is  $0.60 = 60\%$ , this tells us that every time the company sells its products for 100\$, it makes 60\$ in EBITDA.

### 5.1.3 Operating Margin Ratio (OMR)

The Operating Margin Ratio (OMR) is calculated as  $OMR = \frac{\text{Income from Operations}}{\text{Revenue}}$ .

**Meaning:** If a company's OMR is  $0.50 = 50\%$ , this tells us that every time the company sells its products for 100\$, it makes 50\$ in operating profit.

### 5.1.4 Net Income Margin Ratio (NIMR)

The Net Income Margin Ratio (NIMR) is calculated as  $NIMR = \frac{\text{Net Income}}{\text{Revenue}}$ .

**Meaning:** If a company's NIMR is  $0.30 = 30\%$ , this tells us that every time the company sells its products for 100\$, it makes 30\$ in profit.

### 5.1.5 Interest Coverage Ratio (ICR)

The Interest Coverage is defined as  $ICR = \frac{\text{Income from Operations}}{\text{Interest Expense}} \geq 5$ . This is a very important ratio for minimizing your risk. If a company cannot pay for its interest expenses, it is heading for trouble fast.

**Meaning:** If a company's ICR is 30, this tells us that the company would be able to pay the interest expenses as much as 30 times from the operating income.

## 5.2 Balance Sheet - Ratio Analysis

### 5.2.1 Profitability Ratios

**Return-on-Equity (ROE)** The Return-on-Equity (ROE) is given as  $ROE = \frac{\text{Net Income}}{\text{Equity}} \geq 8\%$  for the last years.

- Net Income is found on the Income Statement.
- Equity is found on the liability column of the Balance Sheet.

**Meaning:** If a company's ROE is  $0.15 = 15\%$ , this tells us that the company has made a return of 15\$ for every 100\$ the company has retained from previous earnings or initial investments.

**Return-on-Assets (ROA)** The Return-on-Assets (ROA) is defined as  $ROA = \frac{\text{Net Income}}{\text{Total Assets}} \geq 6\%$  for the last years.

- Net Income is found on the Income Statement.
- Total Assets is found on the asset column of the Balance Sheet.

**Meaning:** This ratio isn't that important to calculate if the company has very little debt, e.g. a debt/equity ratio of 0.5 or less. It is important for a company with a lot of debt. The ROA will always be lower than the ROE if the company has debt.

### 5.2.2 Liquidity Ratios

**Current Ratio (CR)** The Current Ratio (CR) is defined as  $CR = \frac{\text{Current Assets}}{\text{Current Liabilities}}$  should be between 1.5 and 5.

- Current Assets is found on the asset column of the Balance Sheet.
- Current Liabilities is found on the liability column of the Balance Sheet.

**Meaning:** This key ratio compares the company's expectation for cash inflow (current assets) and cash outflow (current liabilities) during the next twelve months. This number should be greater than 1 because if we do not get more money in than out within the next twelve months, we will be forced to take on debt or relinquish more equity, i.e. selling more stock to raise money. A current ratio of above 5 may also indicate bad money management, as cash could be put to better use elsewhere.

**Acid Test Ratio (ATR)** The Acid Test Ratio (ATR) is defined as  $ATR = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}} > 1.5$ .

- Current Assets is found on the asset column of the Balance Sheet.
- Inventory is found on the asset column of the Balance Sheet.

- Current Liabilities is found on the liability column of the Balance Sheet.

**Meaning:** This key ratio is also called the *skeptic liquidity measure*. It is quite conservative as we do not include the inventory. The question is: Assuming that we do not sell anything from our inventory, do we still expect to receive more in than we need to pay out during the next twelve months? The key ratio is for the conservative investor. The less you know about the company, the more you should prefer this key ratio over the current ratio.

### 5.2.3 Efficiency Ratios

**Inventory Turnover Ratio (ITR)** The Inventory Turnover Ratio (ITR) is defined as  $ITR = \frac{\text{Cost of Revenue}}{\text{Inventory}} > 4$ .

- Cost of Revenue is found on the Income Statement.
- Inventory is found on the asset column of the Balance Sheet.

**Meaning:** The higher the number, the more efficient the company is in turning the inventory into sales.

**Accounts Receivable Turnover Ratio (ARR)** The Accounts Receivable Turnover Ratio (ARR) is defined as  $ARR = \frac{\text{Turnover}}{\text{Accounts Receivables}}$  should be between 5 and 7.

- Turnover is actually the revenues of the business found on the Income Statement.
- Accounts receivable is found on the asset column of the Balance Sheet.

**Meaning:** Suppose the turnover ratio is 3.41. This means if the company makes a sale, it typically takes  $\frac{365}{3.41} = 107$  days for them to receive payment from their customer. A higher ratio means the company gets their money a lot faster from vendors.

**Accounts Payable Turnover Ratio (APR)** The Accounts Payable Ratio (APR) is defined as  $APR = \frac{\text{Cost of Revenue}}{\text{Accounts Payable}}$  should be between 2 and 6.

- Cost of Revenue is found on the Income Statement.
- Accounts Payable is found on the liability column of the Balance Sheet.

**Meaning:** This key ratio looks at how a company handles its credit obligations. Suppose the turnover ratio is 2.45. This means it typically takes the company  $\frac{365}{2.45} = 149$  days to repay their suppliers. We want a high accounts payable turnover ratio. A ratio of between 2 and 6 is typically a sign of an efficient company that is satisfying bargaining power and at the same time having no problem paying its obligations to suppliers.

### 5.2.4 Solvency Ratios

**Debt-to-Equity Ratio (D/E)** The Debt-to-Equity Ratio (D/E) is defined as  $D/E = \frac{\text{Long Term Debt} + \text{Notes Payable}}{\text{Equity}} < 0.5$ .

- Long-Term Debt is found on the liability column of the Balance Sheet.
- Notes Payable is found on the liability column of the Balance Sheet.
- Equity is found on the liability column of the Balance Sheet.

**Meaning:** There is nothing wrong with a little debt. Debt can sometimes make things go a little faster. Too much debt, on the other hand, can undermine the very existence of a business. Thus, this key ratio should be as as low as possible. This key ratio comprises of the interest-bearing debt, i.e. the debt we should pay interest on. This is why this key ratio is composed of long-term debt and notes payable. This is debt that you typically have acquired from the bank. It is the most expensive debt to obtain.

Suppose the D/E-ratio is  $0.20 = 20\%$ . This means that every time the shareholders own 100\$ in equity, they also owe 20\$ in debt that the company is paying interest on. This key ratio should definitely be below 0.5.

**Liabilities-to-Equity Ratio (L/E)** The Liabilities-to-Equity (L/E) Ratio is defined as  $L/E = \frac{\text{Total Liabilities}}{\text{Equity}} < 0.8$ .

- Total Liabilities is found on the liability column of the Balance Sheet.
- Equity is found on the liability column of the Balance Sheet.

**Meaning:** Suppose the L/E ratio is  $0.47 = 47\%$ . This means that every time the shareholder has 100\$ in equity, the company would have to pay out 47\$ at some point in the future. This key ratio includes all liabilities, meaning the interest-bearing debt, which is the most expensive, and interest-free liabilities such as accounts payable. It is for more conservative investors and should be below 0.8 to be considered low-risk.

## 5.3 Cash Flow Statement - Ratio Analysis

### 5.3.1 FCF-to-Revenue Ratio (FCFR)

The FCF-to-Revenue Ratio (FCFR) is defined as  $FCFR = \frac{\text{FCF}}{\text{Revenue}} \geq 5\%$  for the last years.

**Meaning:** If a company has a FCFR of  $0.13 = 13\%$ , this tells us that every time the company sells its products for 100\$, 13\$ will be available as cash for the shareholders. This key ratio measures how much cash will go directly to the owners. This means that as much as 13\$ from 100\$ of sales could be paid directly to the shareholders as dividends.

### 5.3.2 Investing-Cash-Flow-to-Operating-Cash-Flow Ratio (ICFOCF)

The Investing-Cash-Flow-to-Operating-Cash-Flow Ratio (ICFOCF) is defined as  $ICFOCF = \frac{\text{Investing Cash Flow}}{\text{Operating Cash Flow}}$ .

**Meaning:** If a company has a ICFOCF of  $0.53 = 53\%$ , this tells us every time the company makes 100\$ in cash from its operations, 53\$ in cash are spent on maintaining and investing in the company's growth. All this cash will only be used for new equipment, so the investor would not get this cash out for himself. Thus, if we have 2 companies that are equally valuable, we should prefer the one with the lower ICFOCF key ratio. If the investing cash flow is negative, this means that the company is investing, if the investing cash flow is positive, this means that the company sold a formerly held asset which results in an inflow of cash.

## 6 Phase 5: Intrinsic Value

What we are really interested in is to find out the intrinsic value of a company, basically knowing the fair price for the company. Then, all we have to do is wait until the stock price goes below the Margin-of-Safety in order to have a safety buffer in case our predictions are not solid.

### 6.1 Rule 1: Low Price-to-Earnings (P/E) ratio

The P/E ratio should be  $P/E = \frac{\text{Market Price per Share}}{\text{Earnings Per Share (EPS)}} < 15$ . This guarantees a return of at least  $\frac{1}{15} = 6.67\%$ .

### 6.2 Rule 2: Low Price-to-Book (P/B) ratio

The P/B ratio should be  $P/B = \frac{\text{Market Price per Share}}{\text{Book Value per Share (BVPS)}} < 1.5$ . The BVPS is defined as  $BVPS = \frac{\text{Equity}}{\text{Shares}}$ .

### 6.3 Rule 3: Sum-of-the-Parts (SOTP) Valuation Method

The sum-of-the-parts valuation (SOTP) is a process of valuing a company by determining what its aggregate divisions would be worth if they were spun off or acquired by another company. It is also known as breakup value analysis.

The valuation provides a range of values for a company's equity by aggregating the standalone value of each of its business units and arriving at a single total enterprise value (TEV). The equity value is then derived by adjusting the company's net debt and other non-operating assets and expenses.

The formula for SOTP is as follows:  $SOTP = N_1 + N_2 + \dots + ND - NL + NA$  with:

- $N_1$ : value of first segment
- $N_2$ : value of second segment

- *ND*: net debt
- *NL*: nonoperating liabilities
- *NA*: nonoperating assets

More information can be found at:

- <https://www.investopedia.com/terms/s/sumofpartsvaluation.asp>
- <https://www.investopedia.com/terms/b/breakup-value.asp>

## 6.4 Rule 4: DCF Valuation Method

Discounted Cash Flow (DCF) Analysis Description:

1. Determine the current (base year) free cash flow:  $BYFCF = \text{Operating Cash Flow} + \text{CAPEX}$ .
2. Estimate the free cash flow for the next 10 years:  $FCF_n = BYFCF \cdot (1 + GR)^n$ .
3. Estimate the discount factor for the next 10 years:  $DF_n = (1 + DR)^n$ .
4. Calculate the discounted value of FCF for the next 10 years:  $DFCF_n = \frac{FCF_n}{DF_n}$ .
5. Calculate the discounted perpetuity free cash flow (beyond 10 years):  $DPCF = \frac{BYFCF \cdot (1+GR)^{11} \cdot (1+LGR)}{DR-LGR} \cdot \frac{1}{(1+DR)^{11}}$ . The long-term growth rate (LGR) should be at 3%.
6. Calculate the intrinsic value:  $\text{Intrinsic Value} = (\sum_{i=1}^n DFCF_n) + DPCF$ .
7. Calculate the Intrinsic Value Per Share =  $\frac{\text{Intrinsic Value}}{\text{Common Shares Outstanding}}$ .
8. Buy at a Wide Margin of Safety (MOS):  $\text{MOS} = 0.5 * \text{Intrinsic Value Per Share}$ . The Margin of Safety should be 50% lower than the intrinsic value. If the market price goes below half of the intrinsic value per share, this is a buy signal.

Discounted Cash Flow (DCF) Analysis Calculation:

- Discount Rate (DR): The higher the DR, the more risk there is to the company.
- 10% discount rate: if low risk of investment; we compare different growth rates.
- 15% discount rate: if medium risk of investment; we compare different growth rates.
- 20% discount rate: if high risk of investment; we compare different growth rates.

## 7 Conclusion

After all these steps you should have a good picture of the company and its profitability. Hopefully you identified the company as a good investment and all you have to do is to wait for the price to reach the Margin of Safety. This usually only happens when there is a certain event. This can be a company-specific event, a industry-wide event or a full recession. Just be patient and wait for the right moment to load up the truck.