

Foundations of Accounting & Finance

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Lecture – 19

Ratio Analysis Part I - Analysis of financial statements

Introduction

Our focus till now has been on the three financial statements: the income and expenditure statement, the balance sheet, and the cash flow statement. Now, the question arises: what do we do with these three statements? What can we extract from them? We can determine the profit and cash balance of the company on a specific day, understand its profit over a period, and track the flow of cash. However, to make informed decisions, we need to conduct an initial analysis of the financial statements, known as ratio analysis.

Need for Ratio Analysis

The need for ratio analysis arises from the fact that one has to gain insights into the financial performance of a company. Simply knowing that a company has made a profit, say ₹50,000, may not provide sufficient information to assess its performance. For instance, if the company's sales amounts to ₹10 lakhs, then the profit of ₹50,000 represents only about 5 percent of sales.

Similarly, understanding the relationship between sales and capital investment is crucial. If the capital investment is ₹100 lakhs and the sales are ₹10 lakhs, it implies that sales constitute only 10 percent of the capital invested. These forms of calculations are known as ratio analysis.

Ratio analysis allows us to examine various aspects such as capitalization, profitability, efficiency in terms of turnover, and liquidity. Different stakeholders, such as shareholders and debt providers, focus on specific ratios to assess the company's performance and risk. This comprehensive approach aids in interpretation and decision-making.

Analysis of financial statements involves conducting ratio analysis across different periods, typically spanning 4 to 5 years. This longitudinal analysis helps identify trends, compare performance with competitors, and assess areas for improvement or optimization.

Transition from financial accounting to finance

Now, as we conclude the financial accounting section, let us discuss some basic ratios. It is essential to note that these ratios are not sacrosanct. These ratios will have to be designed or

articulated based on the entity and the purpose you are analyzing. Based on entity and purpose some of these ratios can also be designed. Consequently, we move on to the next step, examining a couple of ratios.

But why do I call this a transition? In our accounting sessions, we focused on three fundamental financial statements: the balance sheet, the income and expenditure account (or statement), and the cash flow statement. Balance sheet gives you what is the asset and what is the liability you own as on a day or income and expenditure statement gives you list of transactions. These documents provide a snapshot of the current financial situation. However, they only offer raw data. To gain insights, we need to analyse these statements.

Now why do you need to analyze?

Firstly, to assess the overall performance of the enterprise. For instance, if you're a creditor, your primary concern is the company's ability to repay the loan and interest. Similarly, if you are a supplier extending credit terms, you are concerned about when and if you will receive payment.

Each stakeholder has unique concerns regarding the entity's financial health. Analysing financial statements helps address these concerns and provides insights into the entity's performance and financial obligations.

Why is financial analysis necessary? At its core, financial analysis involves examining a company's financial statements to gauge its overall performance and financial health. This process provides crucial insights into the enterprise's profitability, operational efficiency, and asset utilization.

Consider this scenario: You are a credit provider or a loan provider to a company. Your primary concern is not just the company's overall performance but whether it can repay the loan and cover the interest. Similarly, if you are a supplier extending credit for raw materials, you want assurance that you will receive timely payments. Financial analysis helps answer these critical questions by assessing the company's ability to meet its financial obligations.

Now, let us focus on the key elements of financial analysis. It typically involves analysing three main financial statements: the balance sheet, income statement, and cash flow statement. These documents provide a comprehensive snapshot of the company's financial position, revenue generation, and cash flow management, respectively.

One fundamental aspect of financial analysis is evaluating profitability, overall performance, liquidity and asset utilization. Profitability measures the company's ability to generate profits, while performance analysis sheds light on how efficiently it operates. Asset utilization assesses whether the company's assets are effectively deployed to generate revenue.

Further, liquidity analysis is crucial. A company may be profitable but can face challenges if it lacks sufficient liquid cash to meet its short-term obligations. Therefore, assessing liquidity ensures the company's ability to honour its commitments promptly.

To conduct a thorough analysis, various financial ratios are employed. While there's a standard set of ratios, analysts may need to customize their approach based on specific circumstances and industry benchmarks. These ratios offer quantifiable measures of a company's financial health, aiding stakeholders in decision-making.

Lastly, it is essential to address the question of resources. Where do analysts obtain the necessary tools for financial analysis? Textbooks provide set of ratios. However, it's important to note that financial analysis is not limited to a predefined set of ratios; these are only indicative set of ratios.

I. Ratios relevant to the capital providers (Debt)

As a debt provider, the primary interest lies in understanding two key aspects: the composition of the capital and specific ratios relevant to evaluating the company's ability to meet its debt obligations.

1) Debt to equity ratio

Understanding the composition of capital involves assessing the proportion of equity and debt.

$$\text{Debt to equity ratio} = \frac{\text{Long term liabilities}}{\text{Shareholders equity}}$$

To illustrate this concept, let us consider a straightforward scenario.

Equity shareholders, who essentially represent the owners of the enterprise, invest capital into the company. For instance, if I contribute \$100 as equity capital, my maximum potential loss is limited to this amount. This is because, as an equity shareholder, my liability is restricted to the \$100 I initially invested in the company. Even if the company were to close down, my loss would remain capped at this initial investment.

However, let's introduce another scenario where the company decides to borrow \$800, thus bringing the total capital to \$900. In such a case, the risk for the debt provider significantly increases. Should the company underperform, the equity shareholder would still only stand to lose their initial \$100 investment. Conversely, the debt provider risks losing the entire \$800 or a substantial portion thereof.

Now, let us examine a scenario where the equity shareholder contributes a larger sum, say \$10,000, and the debt remains at \$800. In this case, the relative safety of the debt provider's investment increases. This is because the equity shareholder, having invested a larger amount, and are likely to take greater care in managing the company's affairs. Consequently, the risk for the debt provider

is mitigated, as the equity shareholder's substantial investment provides a buffer against potential losses.

While there can be instances where the debt exceeds the equity, it is generally preferred to maintain a higher proportion of equity relative to debt. This preference stems from the fact that both debt and equity come with associated costs. Therefore, as a capital provider, it is crucial to analyse the debt-to-equity ratio to measure the level of safety associated with the debt component. By understanding this ratio, a debt provider can make informed decisions regarding their investments and determine an appropriate level of risk tolerance.

Benchmarks for debt equity ratio

Determining benchmarks for the debt equity ratio can be somewhat nuanced, as it heavily depends on the specific industry being analyzed. While some textbooks may provide rough benchmarks, I prefer not to prescribe a universal benchmark. Instead, the appropriate ratio varies based on the nature of the industry under consideration and the purpose.

For asset-intensive industries such as refineries, higher levels of debt may be more common. In contrast, service industries like IT firms, often maintain minimal debt levels, with a predominant focus on equity. This disparity arises because service industries typically require fewer tangible assets compared to asset-intensive sectors.

Therefore, the ideal debt equity ratio fluctuates across different industries. While there are some general standards, they are not universally applicable. When referring to debt, I specifically mean long-term borrowing, encompassing all such liabilities. Conversely, when discussing equity, I include all funds attributable to equity holders, comprising equity share capital alongside retained earnings and reserves and surplus.

2) Interest coverage ratio

When assessing the financial health of a company as a debt provider, one crucial aspect to consider is the safety of our capital. We evaluate whether the equity provider has a significant investment compared to the debt. A higher equity stake indicates a stronger commitment from the equity holder, reducing the risk of mismanagement or default. This ensures that the equity holder is incentivized to effectively operate the company.

On the contrary, equity holders are primarily concerned with receiving timely interest and principal repayments. Timely payments, especially in scenarios where principal repayments are in instalments, are essential for maintaining financial stability.

To understand the company's ability to meet its debt obligations, we employ the interest coverage ratio. This ratio, calculated by dividing the profit before interest and tax (PBIT) by the interest expenditure, indicates how many times is the interest covered by the profits of the entity. A higher ratio suggests that the company is in a comfortable position to pay its interest obligations.

It is important to note that while profit does not directly equate to cash, it needs to be converted into cash eventually to fulfil financial commitments. Therefore, we analyse whether the profit before interest and tax (PBIT) is sufficient to cover interest payments, ensuring the company's capability to service its debt.

$$\text{Times interest earned} = \frac{\text{Profit before interest and tax (PBIT)}}{\text{Interest expenditure}}$$

Example

Let us consider an example. Suppose a company has borrowed a significant amount, say 10,000 crores, with repayments of 1000 crores scheduled annually, alongside incurring interest expenditure on this debt.

To assess the company's ability to meet its debt obligations within the immediate period, we examine whether the profit before interest and tax (PBIT) is sufficient to cover both the interest expenditure and the principal due.

For instance, if the profit before interest and tax (PBIT) substantially exceeds the interest expenditure and principal repayment, the company demonstrates its ability to service its interest payments and principal due within the current period.

As a debt provider, analysing these ratios is necessary. A favourable debt-to-equity ratio, along with strong interest coverage and timely repayment debt, assures the safety and reliability of our investment. With the profit before interest and tax (PBIT) comfortably surpassing the interest expenditure and principal repayments, we can rest assured of receiving our interest payments promptly and in full.

Decision-making of debt providers by using debt-equity ratio

As a debt provider, the decision-making process will be based on three fundamental aspects: the debt-to-equity ratio, the level of risk involved, and the expected return on investment. These factors determine whether I extend additional debt to a borrower and the interest rate that I should charge.

The interest rate on debt is closely tied to the risk characteristics associated with the investment. Simply put, the safer the investment, the lower the interest rate, and vice versa. Risk and expected return are inherently linked; higher risk typically warrants a higher expected return.

Consider investing in a fixed deposit with a popular bank round the corner. The interest rate offered is relatively low, around 5.5% to 6%, reflecting the low risk associated with the investment. Conversely, investing in the volatile stock market entails higher risk and consequently, a higher expected return.

The level of cushion or safety net in the investment impacts the interest rate demanded by the debt provider. A substantial cushion implies lower risk, leading to a comparatively lower interest rate.

Conversely, a tight financial position demands a higher interest rate to compensate for the increased risk undertaken by the lender.

It is essential to note that interest rates are not standardized; they are subject to negotiation based on the risk profile of the investment. The negotiation process revolves around aligning the interest rate with the perceived level of risk. Ultimately, interest rates are determined by assessing the risk profile of the borrower and the investment opportunity.

II. Ratios relevant to the capital providers (Equity)

In our discussion so far, we have covered aspects from the standpoint of debt providers. Now, let us shift our focus to equity providers.

1) Debt to equity ratio

As an equity provider, the debt-to-equity ratio holds significant importance. Let us explore why this ratio matters from the perspective of equity providers.

Example

Let us consider two companies: Company A and Company B. Company A has an equity capital of \$100, while Company B has \$60. Company A has a debt of \$0, while Company B has a debt of \$40. The total capital for both companies is \$100.

Now, let's assume the debt interest rate is 10%. Suppose both companies make a profit before interest and tax of \$10. Company A pays no interest, while Company B pays \$4 in interest (10% of \$40).

After deducting interest, Company A's profit before tax is \$10, and Company B's is \$6. Assuming a 50% tax rate, Company A's profit after tax (PAT) is \$5, and Company B's is \$3.

Calculating the return on equity (ROE), we find that it's 5% for both companies.

Now, let us consider a scenario where there is a downturn due to a COVID-like situation. The profit before interest and tax for both companies drop to \$8. However, the interest remains the same: \$0 for Company A and \$4 for Company B.

After accounting for interest, Company A's profit before tax is \$8, and Company B's is \$4. With the same tax rate, Company A's profit after tax becomes \$4, while Company B's is \$2.

This results in a return on equity of 4% for Company A and 3.33% for Company B.

In another scenario, if the profit before interest and tax drops to \$6 due to a severe downturn, Company A's profit before tax becomes \$6, while Company B's is \$2. After applying the tax rate, Company A's profit after tax is \$3, and Company B's is \$1.

This leads to a return on equity of 3% for Company A and 1.66% for Company B.

In essence, when there is a downturn, the equity holder bears the risk, while the debt holder's returns remain constant. Hence, equity holders are concerned about the debt-to-equity ratio, as high debt levels increase their risk, especially during economic downturns.

2) Earnings Per Share (EPS)

Equity holders are interested in another aspect: earnings per share (EPS). But what exactly is EPS? It is the profit after tax divided by the number of equity shares, also known as the number of shares outstanding.

$$\frac{\text{Net income}}{\text{No. shares outstanding}}$$

Let us clarify this further. EPS represents how much profit each share of the company's stock earns. For example, if a company has 10,000 shares and generates a certain profit after tax, we can calculate how much each share has earned. Remember, the profit after tax exclusively belongs to the equity holders. So, EPS gives us a clear picture of the earnings attributable to each share in the company.

3) Price to Earnings Multiple

As an equity holder, understanding the market price is crucial. Market price, can be easily accessed on platforms such as NSE India or BSE India, and reflects the performance of a company's earnings. However, what interests me more is the price-to-earnings multiple, often referred to as the P/E ratio or P/E multiple.

So, what exactly is the price-to-earnings multiple? It is a simple calculation: divide the market price by the earnings per share (EPS). For instance, let us consider a stock and imagine the price as of today Rs. 1545.40 per share. If we approximate the basic EPS to be around 51 for the entity, then the P/E ratio would be calculated as 1545.40 divided by 51, resulting in approximately 30.30.

$$\frac{\text{Market price per share}}{\text{Net income per share}}$$

This means that the market price is roughly 30.30 times the EPS. By having both the EPS and market price, we can easily determine the price-to-earnings multiple. While the P/E ratio may fluctuate frequently, I can still have a ballpark figure to work with. In this case, knowing that the P/E ratio is around 30 and the EPS is around 51 provides a useful range for analysis.