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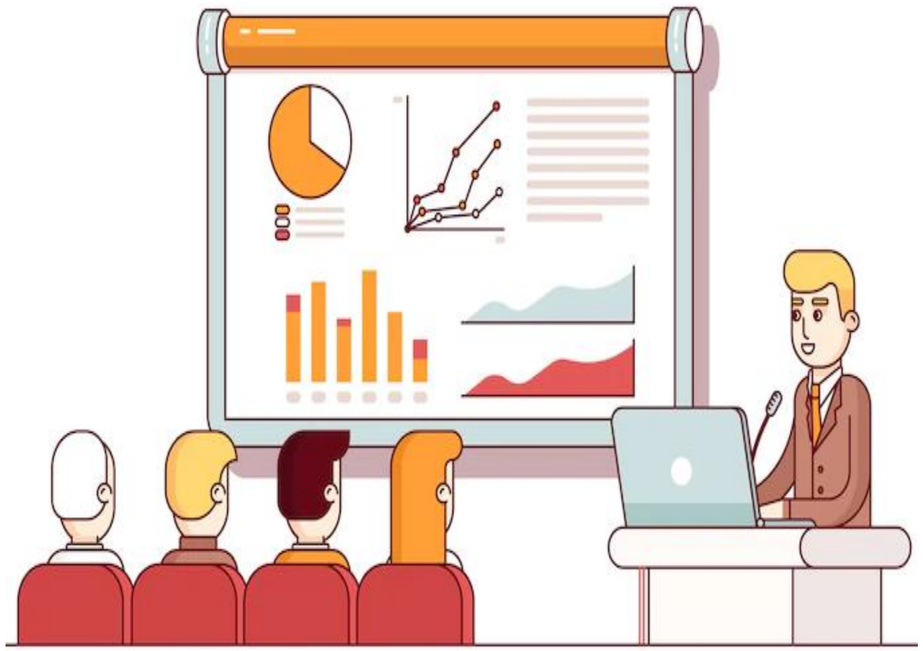
Financial Modelling and Forecasting Training



About The Knowledge Academy

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Course Syllabus

- **Module 1:** Financial Modelling Overview
- **Module 2:** Short Primer in the Accounting of Financial Statements
- **Module 3:** Financial Statement Modelling
- **Module 4:** Forecasting Performance
- **Module 5:** Business Valuation

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Module 01

Financial Modelling Overview

1. What is Financial Modelling?
2. Inputs and Outputs of Simple Financial Model
3. Financial Modelling Process of More Complex Models
4. Excel as a Tool of Modelling: Capabilities and Limitations

What is Financial Modelling?

- *Financial modelling is the process of creating a comprehensive representation of a company's income and expenses in a spreadsheet format.*
- *This enables the calculation of the potential effects of future events or decisions.*
- *Company executives rely on financial models for various purposes, with financial analysts primarily utilising them to evaluate and predict the impact of upcoming events or executive choices on the company's stock performance.*

What is Financial Modelling?

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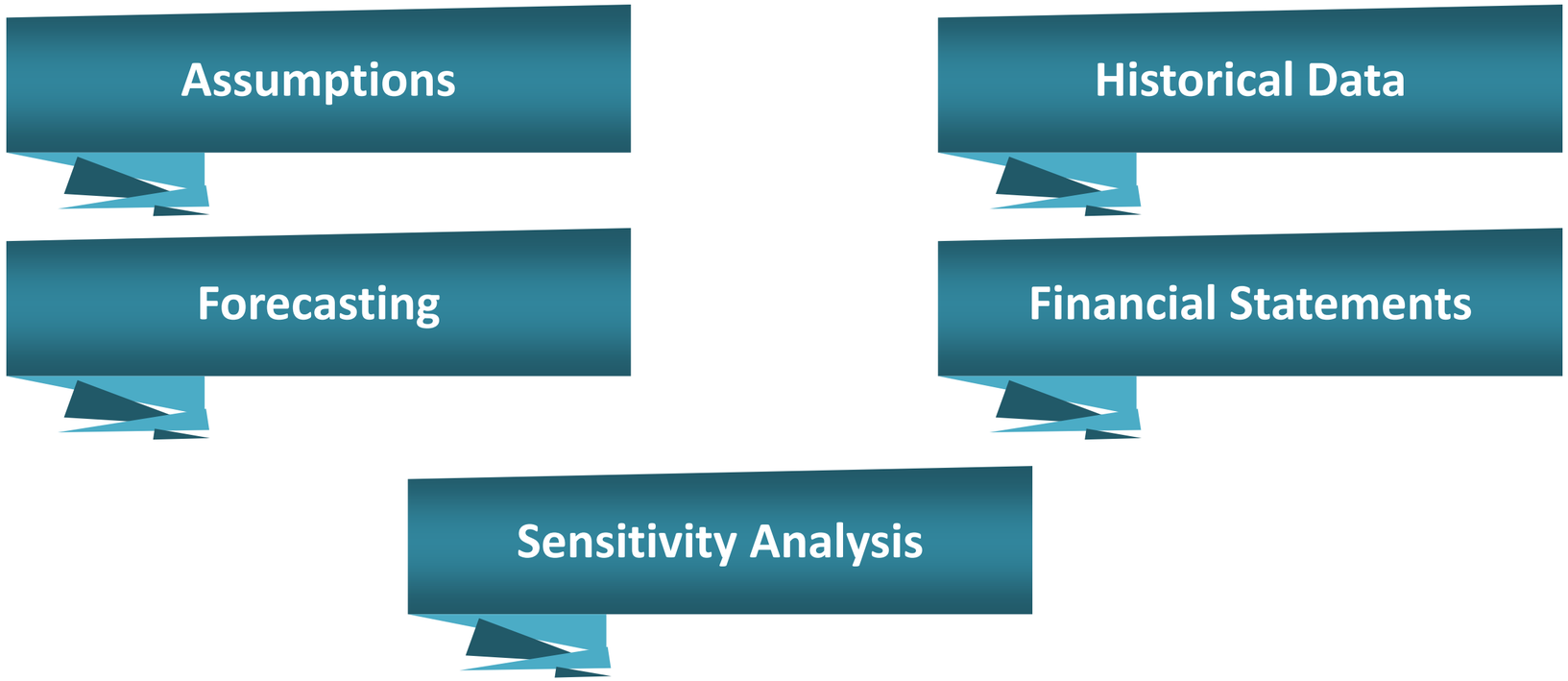
- ***The key components of financial modelling typically include:***



What is Financial Modelling?

1. Assumptions

- Identifying and documenting the assumptions that drive the model, such as revenue growth rates, cost structures, interest rates, and market trends.

What is Financial Modelling?

2. Historical Data

- Gathering and analysing historical financial information, including income statements, balance sheets, cash flow statements, and other relevant data to understand past performance.

What is Financial Modelling?

3. Forecasting

- Using historical data and assumptions, projecting future financial performance.
- This involves estimating revenues, expenses, cash flows, and other key financial metrics over a specific time horizon.

What is Financial Modelling?

4. Financial Statements

- Creating pro forma financial statements, including income statements, balance sheets, and cash flow statements, based on the forecasted figures.

- These statements provide a comprehensive view of the financial position and performance of the entity being modelled.

What is Financial Modelling?

5. Sensitivity Analysis

- Assessing the impact of changes in key variables or assumptions on the financial outcomes.
- This analysis helps identify the sensitivity of the model to different factors and enhances decision-making under various scenarios.

Inputs and Outputs of Simple Financial Model

- A simple financial model typically takes various inputs and generates corresponding outputs to analyse the financial performance or forecast the future financial position of a company or project.

- The specific inputs and outputs can vary depending on the purpose and complexity of the model, the following are some examples:

Inputs

1. ***Revenue:*** The expected or historical revenue generated by the company.

2. ***Cost of Goods Sold:*** The direct costs associated with producing or delivering the product or service.

3. ***Operating Expenses:*** The general and administrative expenses incurred by the company, such as salaries, rent, utilities, marketing expenses, etc.

Inputs and Outputs of Simple Financial Model

4. ***Capital Expenditures:*** Investments in long-term assets like equipment, property, or machinery.

5. ***Depreciation and Amortisation:*** The allocation of the cost of long-term assets over their useful lives.

6. ***Working Capital:*** The current assets and liabilities required to support the day-to-day operations, including accounts receivable, inventory, accounts payable, etc.

7. ***Tax Rate:*** The applicable tax rate for the company.

Inputs and Outputs of Simple Financial Model

8. ***Discount Rate:*** The rate used to discount future cash flows to their present value, often used in valuation models.

9. ***Financing Assumptions:*** The sources and costs of financing, such as interest rates, loans, equity investments, etc.

10. ***Growth Rates:*** Assumptions regarding the growth of revenue, expenses, or other financial metrics.

Inputs and Outputs of Simple Financial Model

Outputs

1. ***Net Income:*** The difference between total revenue and total expenses, before taxes.

2. ***Earnings Before Interest and Taxes:*** The operating profit of the company before deducting interest and taxes.

3. ***Earnings Before Interest, Taxes, Depreciation, and Amortisation:*** Similar to Earnings Before Interest and Taxes but excludes the impact of non-cash expenses like depreciation and amortisation.

4. ***Cash Flow:*** The net cash generated or used by the company during a specific period.

Inputs and Outputs of Simple Financial Model

5. ***Balance Sheet:*** A snapshot of the company's financial position at a specific point in time, including assets, liabilities, and equity.

6. ***Financial Ratios:*** Various ratios like profitability ratios (e.g., gross margin, net margin), liquidity ratios (e.g., current ratio, quick ratio), and return ratios (e.g., return on assets, return on equity).

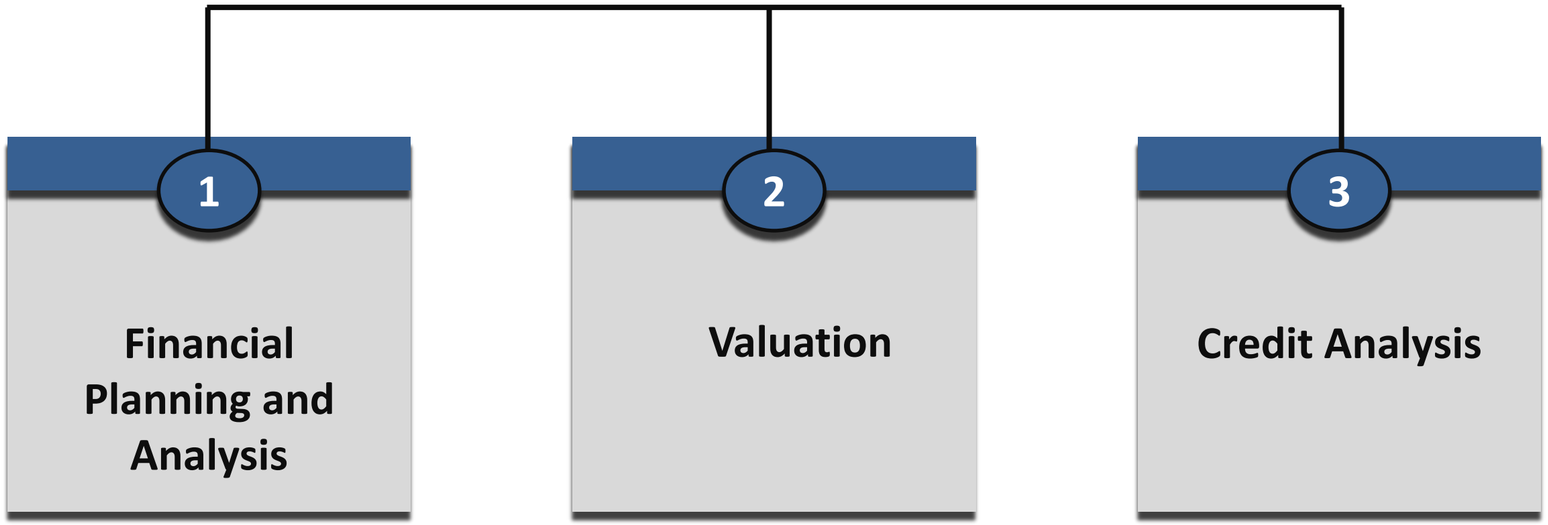
7. ***Valuation Metrics:*** Estimates of the value of the company or project, such as discounted cash flows, price-to-earnings ratio, or market multiples.

Financial Modelling Process of More Complex Models

- Complex models used in Project Finance (long-term infrastructure finance) can span dozens of spreadsheets with hundreds of rows, inputs, and assumptions, and are generated by financial analysis firms that specialise in those models.

Financial Models Complexity

- The properties of the financial model you are developing should be derived from its purpose and constraints. The following are the most prevalent reasons for developing financial models:



Financial Modelling Process of More Complex Models

1. ***Financial Planning and Analysis:*** Models are used by economic departments in businesses and institutions to anticipate budgets for specific projects or operations.

2. ***Valuation:*** Analysts utilise valuation models to value firms and projects in order to make investment recommendations.

3. ***Credit Analysis:*** models used in financial organisations such as banks and investment firms to assess the downside risks of a company or project, as part of the debt landing or investment process.

Financial Modelling Process of More Complex Models

(Continued)

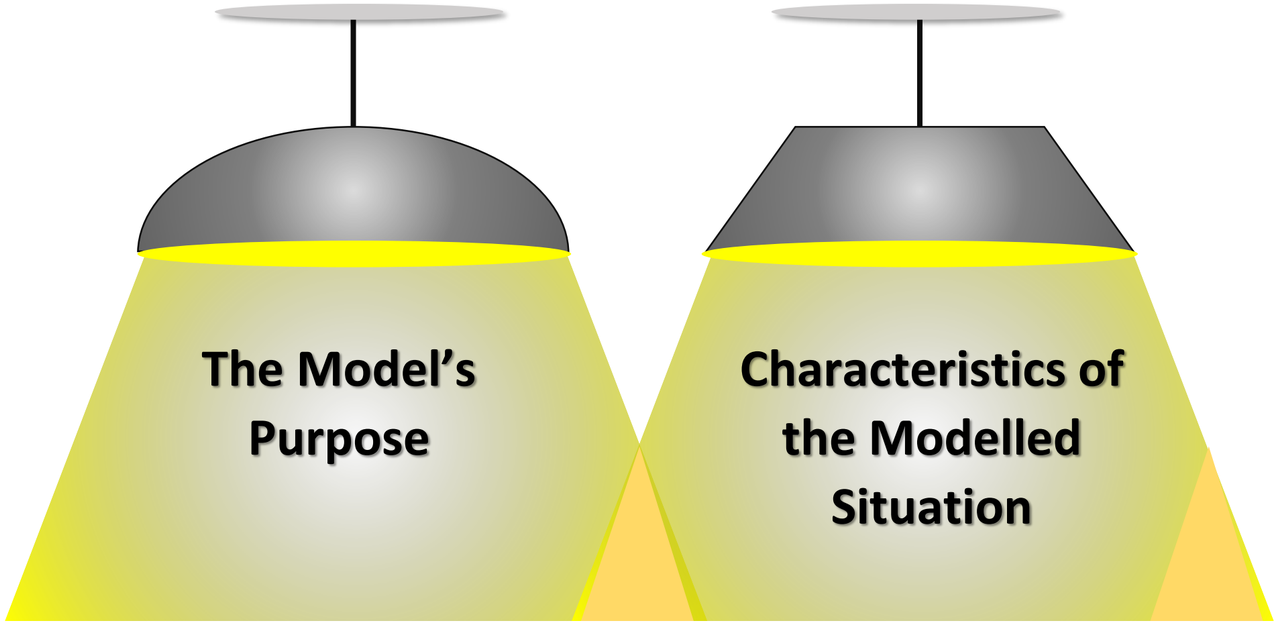
- ***These popular applications of financial models have various limits that affect the model's potential complexity:***

Limitation	Financial Planning and Analysis	Valuation and Credit Analysis
Quantity of data	Depending on the company's data gathering ability, a large amount of very granular data is typically acquired.	Private company analysis: the quantity of data provided by the company being analysed, which is usually not very granular. Public firm analysis consists primarily of public reports as well as industry analysis reports and data.
Quality of data	Mostly high-quality historical data and relatively solid micro-level estimates based on the company's experience in its area.	High-quality (audited) but limited historical data, micro-level estimates vary depending on the analyst's expertise and knowledge, as well as the data provided by the company being analysed.
Time	There is usually ample time to construct and maintain extremely complicated models.	Analysts typically cover a large number of companies and do not have the time to develop highly complicated models.

Financial Modelling Process of More Complex Models

Modelling Duration

- ***The model's complexity is also affected by its duration. The model's duration decision parameters are as follows:***



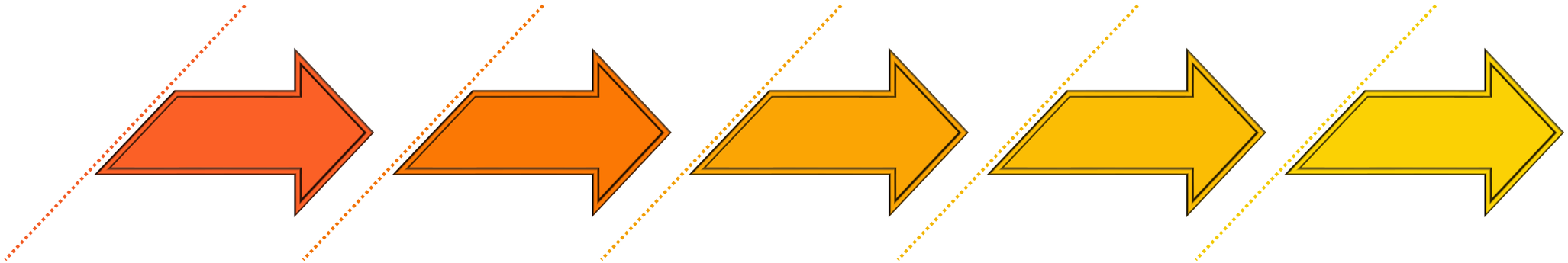
Financial Modelling Process of More Complex Models

Modelling in complexity Layers

- Building a financial model can be done using "complexity layers" - this method is highly efficient when time is limited or not all of the essential data is accessible.
- The logic is to start with a simple model and then grow and complicate its many aspects.
- With this method, you will get a model output relatively quickly, and accuracy should improve as you add details.
- ***Then you should probably stop adding complexity:***
  - You have run out of relevant information.
  - You cannot make assumptions about the additional layer.
  - The model is becoming too complex, and updates would take far too long.

Excel as a Tool of Modelling: Capabilities and Limitations

Capabilities



01
Data storage and Organisation

02
Calculations

03
Charting and Graphing

04
Simulations

05
Predictive Modeling

Excel as a Tool of Modelling: Capabilities and Limitations

1. ***Data Storage and Organisation:*** Excel can be used to store and organise large amounts of data in a variety of formats. This data can then be easily accessed and manipulated for analysis.

2. ***Calculations:*** Excel can be used to perform a wide variety of calculations, including simple arithmetic operations, statistical functions, and financial calculations. This makes it a powerful tool for data analysis.

3. ***Charting and Graphing:*** Excel can be used to create charts and graphs to visualise data. This can be helpful for understanding the data and communicating the results of the analysis to others.

4. ***Simulations:*** Excel can be used to develop simulations to test hypotheses and explore the impact of different variables on a system. This can be a valuable tool for decision-making.

5. ***Predictive Modelling:*** Excel can be used to build predictive models to forecast future outcomes. This can be helpful for making decisions about things like inventory, sales, and marketing.

Excel as a Tool of Modelling: Capabilities and Limitations

Limitations

01	02	03	04
Programming	Statistical Analysis	Data Management	Model Complexity

Excel as a Tool of Modelling: Capabilities and Limitations

1. ***Programming:*** Excel is not a programming language, so it cannot be used to create complex algorithms or applications. For this, you would need to use a programming language.

2. ***Statistical Analysis:*** Excel is not a statistical software package, so it is not ideal for performing advanced statistical analysis. For this, you would need to use a statistical software package.

3. ***Data Management:*** It can be difficult to manage large datasets in Excel. If you have a lot of data, you may need to use a database management system (DBMS).

4. ***Model Complexity:*** It can be difficult to create complex models in Excel. If you need to create a complex model, you may need to use a specialised modelling software package.

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Module 02

Short Primer in the Accounting of Financial Statements

1. Accounting Equation
2. Balance Sheet
3. Income Statement
4. Cash Flow Statement
5. Articulation of Income Statement, Balance, Sheet, and Cash Flow Statements
6. Financial Statement Analysis: Ratio Analysis

Accounting Equation

- The accounting equation, also known as the basic accounting equation or balance sheet equation, is a fundamental principle in accounting that states a company's assets are equal to the sum of its liabilities and shareholder's equity. This equation ensures that the balance sheet remains balanced by maintaining a correspondence between debits and credits.

- In a company's balance sheet, which is a financial statement, two main columns represent its financial position: assets and liabilities. Assets are the valuable resources owned and controlled by the company, while liabilities represent the obligations or debts owed to external parties, typically in the form of money.

- The third column on the balance sheet is shareholder's equity, which indicates the portion of the company's assets that is attributable to the owners or shareholders. It reflects how the company is financed, either through investment by shareholders or retained earnings.

Accounting Equation

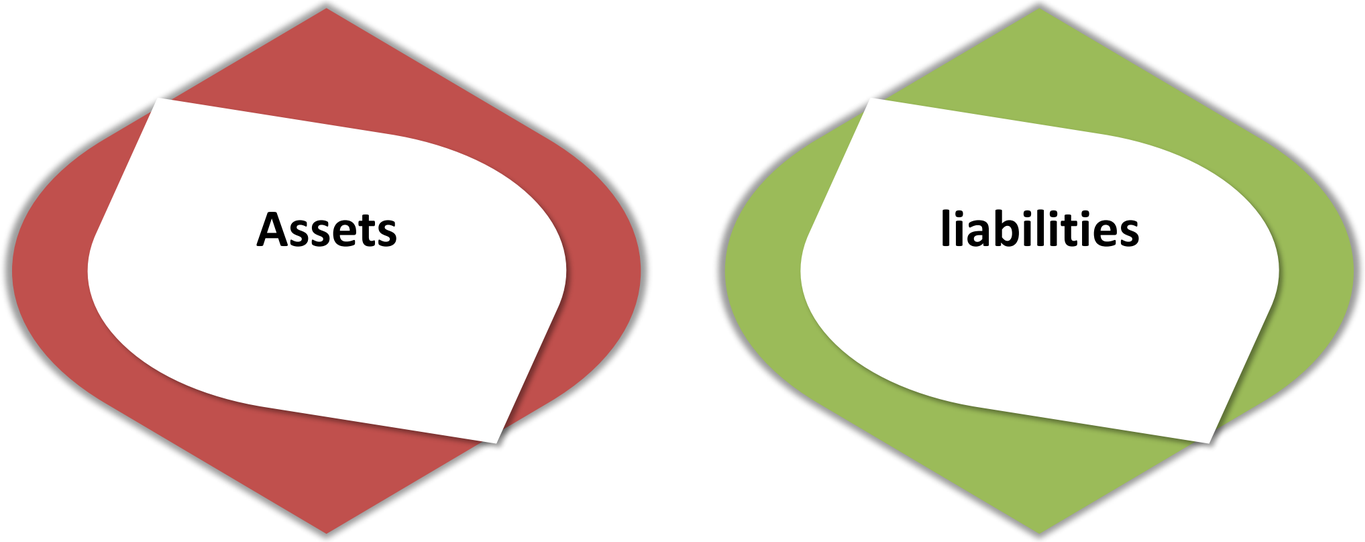
(Continued)

- The accounting equation serves as a framework for understanding the relationship between assets, liabilities, and shareholder's equity. It provides a clear demarcation between these components and helps to maintain accurate financial records and balance the books.

Balance Sheet

- A balance sheet is a financial statement that reports a company's assets, liabilities, and shareholder equity at a specific point in time. It is one of the three core financial statements (income statement and cash flow statement being the other two) used for evaluating the performance of a business.

- ***The balance sheet is divided into two main sections:***



Income Statement

- The income statement, also referred to as the profit and loss (P&L) statement or the statement of revenue and expense, is a vital financial statement that reports a company's financial performance over a specific accounting period.
- It provides information about the company's revenue, expenses, gains, and losses during that period.
- Together with the balance sheet and cash flow statement, the income statement forms one of the three major financial statements used to assess a company's financial health.
- The income statement offers valuable insights into various aspects of a company's operations.
- It helps evaluate the efficiency of management by analysing the company's revenue generation, cost management, and profitability.

Income Statement

(Continued)

- By comparing the revenue and expenses, one can identify sectors or activities that may be underperforming or contributing significantly to the company's profits.

- Additionally, the income statement enables benchmarking against industry peers to assess the company's performance in relation to competitors.

Cash Flow Statement

- A cash flow statement is a financial statement that presents consolidated information about the cash inflows and outflows of a company.
- It encompasses the cash received from ongoing operations and external investment sources, as well as the cash used for business activities and investments during a specific period.
- The cash flow statement is considered to be the most straightforward financial statement as it tracks the cash generated by the business through three main categories: operations, investment, and financing.
- The combination of these segments is referred to as net cash flow. Investors can use the cash flow statement's three sections to assess the value of a company's stock or its overall financial health.

Cash Flow Statement

(Continued)

- **Key Takeaways**:
  - The cash flow statement provides an overview of all cash inflows and outflows in a company.
  - It consists of three sections: cash flow from operations, cash flow from investment, and cash flow from financing.
  - Cash flow from operations reflects transactions from the company's core business activities.
  - Cash flow from investment accounts for gains or losses from investments made by the company.
  - Cash flow from financing summarises the cash used for debt and equity transactions.

Articulation of Income Statement, Balance, Sheet, and Cash Flow Statements

- The articulation of financial statements refers to the process of verifying the coherence and precision of the information presented in a company's financial statements. It entails aligning and cross-referencing the figures and data reported in different financial statements to ensure consistency and accuracy.

- The purpose of articulation is to obtain a comprehensive and accurate depiction of a company's financial position. By ensuring that the figures in one statement correspond to those in another statement, potential errors or discrepancies can be identified and rectified. This process is essential for providing reliable and trustworthy financial information to stakeholders, aiding in decision-making, and enabling investors to make well-informed choices regarding their investments

Financial Statement Analysis: Ratio Analysis

- Ratio analysis is a quantitative approach used to analyse a company's financial statements, such as the balance sheet and income statement.
- It involves comparing various line items to gain insights into the company's liquidity, operational efficiency, profitability, and solvency.
- Ratio analysis is a fundamental tool in equity analysis and is useful for evaluating a company's performance over time and comparing it to industry peers.
- External parties often use ratio analysis to establish benchmarks related to risk. While ratios provide valuable information, it is important to consider them alongside other metrics to obtain a comprehensive understanding of a company's financial health.
- Examples of ratio analysis include the current ratio, gross profit margin ratio, and inventory turnover ratio.

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Module 03

Financial Statement Modelling

1. How Financial Models Work?
2. Collecting and Analysing Historical Data
3. Selecting the Key Forecast Drivers
4. Modelling the Income Statement
5. Modelling the Balance Sheet
6. Modelling Interest and Circular References
7. Modelling the Cash Flow Statement

How Financial Models Work?

- Financial models are constructed from previous data, assumptions, and computations that work in tandem to forecast the future.
- Financial models are more than just spreadsheets.
- While Excel is frequently used to develop a financial model, there are important features to a financial model and how it operates.
- ***The main characteristics of how a model works are that it:***

How Financial Models Work?

1. ***Is Dynamic:*** Each input influences the calculations and outcomes, or output. Models are designed to be dynamic and flexible in order to understand the impact of factors.

2. ***Displays Forecasts:*** Forecasts are used to forecast the future based on several circumstances that could occur. For example, what will your company's cash flow be in ten years if it grows at a 5% annual rate?

3. ***Relationship-driven:*** When you modify one input, numerous variables change in response to that single change.

4. ***Is it Structured:*** Financial models come in various forms, but they all have inputs, situations, calculations, and outputs.

Collecting and Analysing Historical Data

- The first step in financial statement modelling is to collect historical data.
- This data can be obtained from the company's financial statements, as well as other sources, such as industry reports and analyst research.
- The data should be cleaned and organised so that it is easy to understand and analyse.
- Once the data has been collected, it can be analysed using a variety of statistical and financial techniques.
- The goal of the analysis is to identify trends and patterns in the data that can be used to forecast future financial performance.

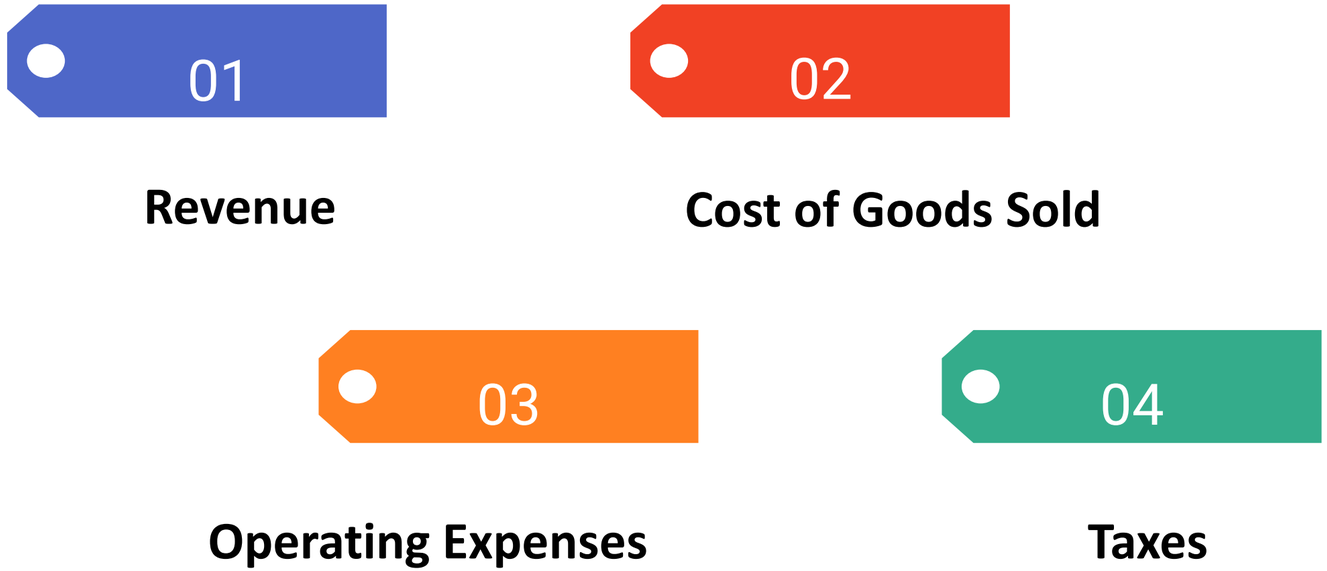
Collecting and Analysing Historical Data

(Continued)

- The results of the analysis can be used to make strategic decisions about the company.
- For example, the company may decide to invest in new products or services, expand into new markets, or acquire another company.
- Financial statement modelling is a powerful tool that can be used to improve the decision-making process.
- By collecting and analysing historical data, companies can gain a better understanding of their financial performance and make more informed decisions about the future.

Selecting the Key Forecast Drivers

- The key forecast drivers are the factors that will have the greatest impact on a company's future financial performance.
- ***These factors can vary depending on the industry and the company's specific business model, but some common key forecast drivers include:***



Selecting the Key Forecast Drivers

1. Revenue

- The amount of revenue a company generates is a key driver of its profitability.
- Revenue can be affected by a number of factors, such as the company's product mix, pricing, and marketing efforts.

2. Cost of Goods Sold

- The cost of goods sold is the cost of the materials and labor used to produce a company's products.
- This cost can be affected by a number of factors, such as the cost of raw materials, labor costs, and manufacturing efficiency.

Selecting the Key Forecast Drivers

3. Operating Expenses

- Operating expenses are all of the costs associated with running a business, other than the cost of goods sold.
- These expenses can include things like marketing, sales, general and administrative costs.

4. Taxes

- The amount of taxes a company pays can vary depending on its income, the tax rates in the countries where it operates, and the types of deductions it is eligible for.

Modelling the Income Statement

- Modelling the income statement is a process of forecasting a company's future revenue, expenses, and profits.
- This information can be used to assess the company's financial health and to make investment decisions.
- There are a number of steps involved in modelling the income statement.
- First, you need to gather historical financial data for the company. This data can be found in the company's annual report or 10-K filing.
- Once you have the historical data, you can identify the key revenue and expense drivers. These are the factors that have the biggest impact on the company's profits.
- Once you have identified the key drivers, you can start to forecast the company's future revenue and expenses.

Modelling the Income Statement

(Continued)

- This can be done by using historical trends, industry data, and your own judgment.
- Once you have forecasted the revenue and expenses, you can calculate the company's future profits.
- Modelling the income statement is a complex process, but it can be a valuable tool for investors.
- By forecasting a company's future financial performance, you can make better investment decisions.

Modelling the Income Statement

(Continued)

- ***Here are some of the steps involved in modelling the income statement:***
  - Gather historical financial data.
  - Identify the key revenue and expense drivers.
  - Forecast the company's future revenue and expenses.
  - Calculate the company's future profits.
  - Analyse the results and make investment decisions.

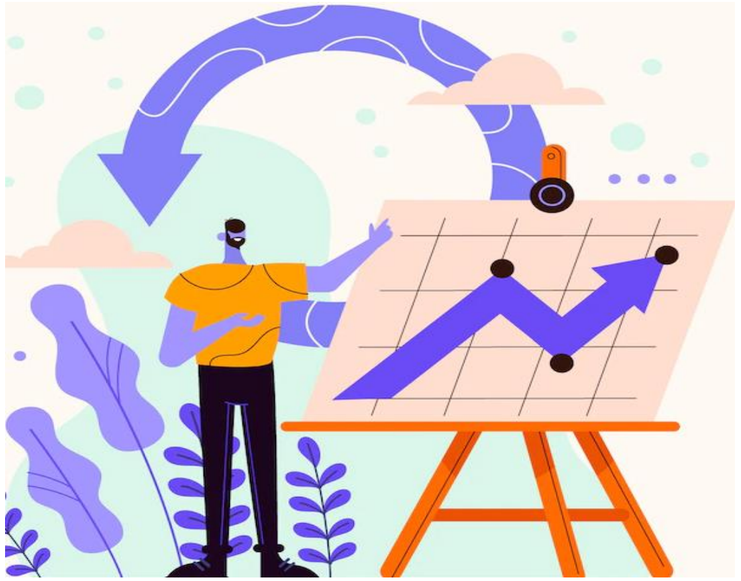
Modelling Interest and Circular References

- Interest is a cost that is incurred when a company borrows money.
- It is calculated as a percentage of the amount borrowed and is paid over a period of time.
- Interest expense is an expense that is reported on a company's income statement.
- Circular references are a type of error that can occur in financial statement models.
- They occur when a formula in a cell refers to another cell that contains the same formula.
- This can cause the model to become unstable and produce inaccurate results.
- There are a number of ways to deal with circular references in financial statement models.

Modelling Interest and Circular References

(Continued)

- One way is to use the iteration function in Excel.
- This function will repeatedly calculate the values in the model until the results converge.
- Another way to deal with circular references is to break the circularity by using a different formula.



Modelling Interest and Circular References

(Continued)

- ***When modelling interest, it is important to consider the following factors:***
- The interest rate.
- The amount borrowed.
- The term of the loan.
- The frequency of payments.

Modelling Interest and Circular References

(Continued)

- It is also important to consider the impact of interest expense on the company's financial statements.
- Interest expense is a non-cash expense, which means that it does not reduce the company's cash balance.
- However, it does reduce the company's net income.
- Circular references can be a challenge to deal with in financial statement models.
- However, there are a number of ways to overcome these challenges.
- By understanding how circular references work and how to deal with them, you can create accurate and reliable financial statement models.

Modelling the Cash Flow Statement

➢ *The following are some tips for modelling the cash flow statement:*

01	Gather the Necessary Data
02	Identify the Cash Flows from Operating Activities
03	Identify the Cash Flows from Investing Activities
04	Identify the Cash Flows from Financing Activities
05	Calculate the Net Change in Cash and Cash Equivalents
06	Prepare the Cash Flow Statement

Modelling the Cash Flow Statement

(Continued)

- ***The following are some examples of how to use the cash flow statement:***

1. ***To Assess a Company's Ability to Generate Cash:*** The cash flow statement can be used to assess a company's ability to generate cash. A company that is generating more cash than it is using is in a strong financial position.

2. ***To Understand a Company's Use of Cash:*** The cash flow statement can be used to understand a company's use of cash. A company that is using cash to invest in new assets is growing. A company that is using cash to repay debt is becoming more financially secure.

3. ***To Assess a Company's Financial Flexibility:*** The cash flow statement can be used to assess a company's financial flexibility. A company that has a lot of cash on hand is more financially flexible than a company that does not have a lot of cash on hand.

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Module 04

Forecasting Performance

1. Designing a Dashboard Like Control Panel
2. Statistical Methods Used for Forecasting
3. Forecasting Sales
4. Forecasting Costs
5. Forecasting CAPEX and Depreciation
6. Forecasting Working Capital and Funding Needs

Designing a Dashboard Like Control Panel

- A dashboard-like control panel is developed with the appropriate financial indicators that must be monitored based on the specific problem that the model is required to solve.
- This is the interface for measuring and visualising KPIs (key performance indicators) that is extremely useful.
- Size A4 .
- Knowing what information we will offer is crucial because of the limited space available. The problem that the model must address (the model output) and the key performance metrics that determine this output ultimately direct this choice.

Designing a Dashboard Like Control Panel

(Continued)

- ***Categorised by individual business areas:***
  - In the sales area: selling prices and sales volume.
  - In the finance area: profits and revenues.
- ***The most important Key Performance Indicators (KPIs):***
  - The Days Inventory Outstanding (DIO).
  - The Days Sales Outstanding (DSO).
  - The Days Payable Outstanding (DPO).
  - The gross margin assuming constant sales prices.

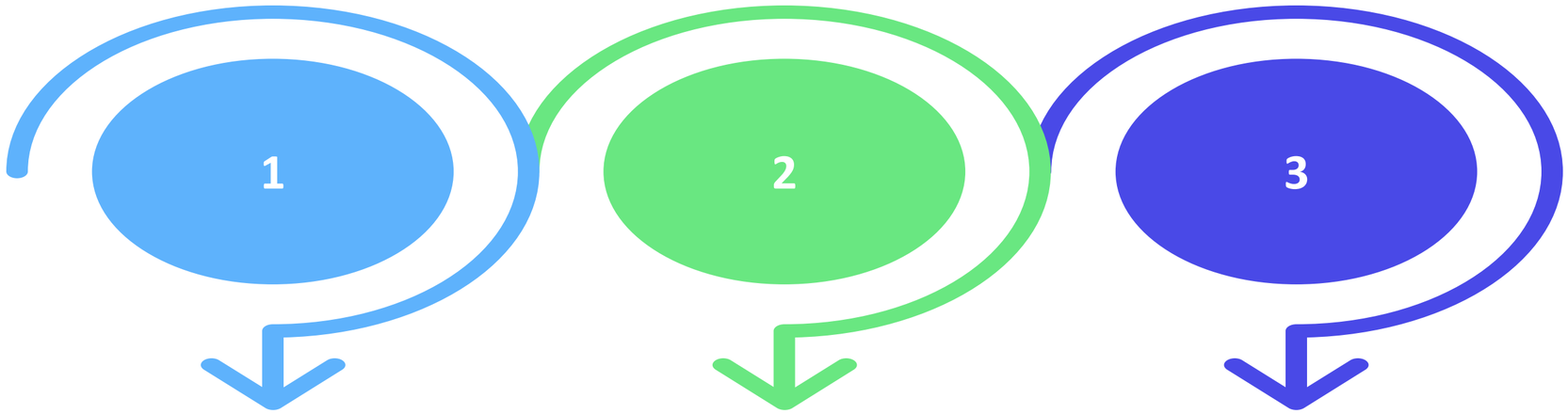
Designing a Dashboard Like Control Panel

(Continued)

- ***Typical Structure***
  - The growth rate of the sales volume of the long and flat products.
  - Main Inputs.
  - Main Outputs.

Statistical Methods Used for Forecasting

- *The following are approaches to forecasting:*



Statistical Methods Used for Forecasting

1. ***Extrapolation Techniques***
    - Analysis of time series.
    - Make the implicit assumption that the past is a reasonable predictor of the future.
        - Applicable to established and reliable enterprises like water and gas utilities.
    - The use of this technique to industry sectors undergoing growing levels of structural change may yield poor results.
2. ***Causative Techniques***
    - Analysis of Regression.

Statistical Methods Used for Forecasting

(Continued)

- Make an effort to comprehend the fundamental relationships that govern market dynamics.
  - This insight, together with a set of future assumptions, serves as the foundation for the forecast.
- Because the underlying relationships are frequently predicted based on past data, these strategies are useful when only minor, incremental changes in assumptions are expected in the future.

3. Judgmental Techniques

- Modellers are frequently requested to generate a forecast for a new product or market where no historical data is available.

Statistical Methods Used for Forecasting

(Continued)

- In these circumstances, forecasting can become judgmental and highly subjective.
  - While projections can be enhanced by reviewing the results of market research and examining the experiences of comparable or related items in other markets and nations, forecasting becomes more of an art than a science.

Forecasting Sales

- Most businesses rely on advanced applications to complete their work because of the complex mathematical formulae used for sales forecasting.

1. ***Existing Business;***
    - Since there is a sales history, much simpler.
    - The forecast represents the organisation's business plan and how sales are trending, either up or down.
2. ***Start-up Business;***
    - More Complex.
    - To produce the sales forecast, the break-even point could be used as a starting point.
    - The sales volume at which a company's total revenue and total expenses are equal is known as the break-even point.

Forecasting Sales

(Continued)

- ***Bottom-up vs Top-down Forecasting:***
- The revenue forecasts discussed so far are the so-called “bottom-up”;
  - Forecasts since they contain the units that will ultimately be sold.
- Sometimes referred to as "top-down“;
  - forecasting an alternative forecast total revenue without considering the various components of total revenue.
- When dealing with an uncertain future market;
  - many modellers use both top-down and bottom-up methodologies. It is frequently advisable to use a variety of methods to increase the confidence in a forecast. For instance, the profits of a newly established business.

Forecasting Costs

1. ***Costs of Goods Sold:*** The forecast for Costs of Goods Sold and sales are closely connected. The level of sales directly affects how much it costs to produce items.

➢ ***Calculation***

- To calculate the cost of goods forecast;
  - Calculate it indirectly by estimating gross profit and forecasting the percentage of gross profit margin.
    - COGS = Sales − Gross Profit = Sales − Sales × Gross Profit Margin (%) = Sales × (1 − % GPM).
- Use the unit costing approach to directly calculate it.
  - Cost of Goods Sold = Number of Units Sold × Cost per Unit.
  - sometimes referred to as a standard cost.

Forecasting Costs

2. *Selling General Administrative & Operating Expenses*

- ***OPEX***
  - Contain 17 categories, such as payroll, cleaning, etc., and are distributed across various departments depending on the industry.
- ***Approaches***
  - You have to calculate each cost for a new business from scratch.
  - The per cent-of-sales technique and comprehensive regression analysis are two options for an older business.

Forecasting Costs

(Continued)

- ***Fixed and Variable***
  - Fixed costs are expenses that a business must cover regardless of the volume of its sales
  - Includes rent, utilities, insurance, service costs (such as accounting fees), utilities (e.g., electricity consumed in the offices and not during production), and salaries Variable costs depend on the volume of production.
  - They are lower when output or sales are lower and greater when production or sales are higher.
  - Includes raw materials, labour (mostly paid on an hourly basis), utilities (such as electricity related to the operation of machinery for production purposes), packing, and delivery expenses.

Forecasting CAPEX and Depreciation

- Capital Expenditures (CAPEX) are the purchases of fixed assets such as buildings, office equipment, furniture and fittings, computers, motor vehicles, and so on.
  - Fixed assets are objects that are not for resale and have a longer economic life than a year.
  - CAPEX is a cash flow item (cash flow from investing activities); depreciation affects financial statements (balance sheet and income statement).
    - It is critical for a financial modeler to comprehend the distinctions between all three.
  - Depreciation rates differ amongst fixed asset categories.
    - The term during which an asset is depreciated under International Financial Reporting Standards (IFRS) is its projected useful life.

Forecasting CAPEX and Depreciation

(Continued)

- The estimated useful life is the amount of time an asset will be used to create revenue for the company.

- Depreciation rates under IFRS differ from those used for income tax purposes, which vary according on the nation in which the company operates.

Forecasting Working Capital and Funding Needs

- In accounting terms, working capital is defined as the sum of current assets and current liabilities.
- When we talk about working capital in this book, we mean commercial working capital, which is defined as.
  - Commercial Working Capital = Accounts Receivable + Inventory Accounts Payable.
- Why are businesses running out of cash?
  - Because its operations are going well and it is expecting rapid expansion.
  - The more cash it has locked up in working capital and the greater its funding requirements.

Forecasting Working Capital and Funding Needs

(Continued)

- ***When forecasting working capital, we shall always do it as follows:***

1. We will estimate revenue and annual turnover.
2. As previously indicated, we shall forecast the cost of commodities sold directly or indirectly.
3. Assumptions will be made concerning future Days Sales Outstanding, Days Payable Outstanding, and Days Inventory Outstanding.
4. We will forecast accounts receivable, accounts payable, and inventories based on the statistics from the preceding steps.

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Module 05

Business Valuation

1. Valuation Approaches
2. Applying the DCF Method
3. Calculation of Free Cash Flows
4. Calculating the Weighted Average Cost of Capital
5. Estimating the Terminal Value
6. Enterprise Value Adjustment

Valuation Approaches

- *There are three main approaches to valuing a business: the asset approach, the income approach, and the market approach:*

Valuation Approaches

1. ***Asset Approach:*** This approach values the business based on the value of its assets, less the value of its liabilities. This approach is often used for businesses that are not profitable or that have few intangible assets.

2. ***Income Approach:*** This approach values the business based on the present value of its future earnings or cash flows. This approach is often used for businesses that are profitable and have a history of generating cash flow.

3. ***Market Approach:*** This approach values the business based on the prices paid for similar businesses in recent transactions. This approach is often used for businesses that are publicly traded or that have been sold recently.

Applying the DCF Method

- The discounted cash flow (DCF) method is a valuation method that uses the present value of future cash flows to determine the value of an asset. The discounted cash flow method is based on the idea that the value of an asset is the present value of all future cash flows that it will generate.

- ***To calculate the discounted cash flow value of an asset, you need to:***

  - Estimate the future cash flows that the asset will generate.

  - Choose a discount rate. The discount rate is the rate of return that you expect to earn on an investment of similar risk.

  - Calculate the present value of the future cash flows.

Calculation of Free Cash Flows

- Free cash flow (FCF) is a measure of a company's cash flow available after accounting for capital expenditures and working capital changes. Free cash flow is a valuable metric for investors because it provides a more accurate picture of a company's financial health than net income.

- ***There are two main ways to calculate Free cash flow:***

  - ***Operating Cash Flow Minus Capital Expenditures:*** This is the most common way to calculate Free cash flow . Operating cash flow is the cash flow generated from a company's core business operations. Capital expenditures are the cash outflows used to acquire or maintain long-term assets, such as property, plant, and equipment.

Calculation of Free Cash Flows

(Continued)

- Net income plus non-cash expenses minus changes in working capital: This method is more complex, but it provides a more comprehensive view of a company's Free cash flow . Net income is the company's profit after accounting for all expenses, including taxes. Non-cash expenses are expenses that do not require a cash outflow, such as depreciation and amortisation. Changes in working capital are the changes in a company's current assets and liabilities, such as accounts receivable and inventory.

Calculating the Weighted Average Cost of Capital

- The weighted average cost of capital (WACC) is a measure of a company's cost of capital, taking into account the relative proportions of debt and equity used to finance the company.
- weighted average cost of capital is used in capital budgeting to determine the discount rate for future cash flows.
- weighted average cost of capital is used to calculate the present value of a company's future cash flows.
- The present value is the amount of money that would be needed today to generate the same stream of future cash flows.
- The higher the weighted average cost of capital, the lower the present value of the company's future cash flows.
- There are a number of factors that can affect a company's weighted average cost of capital, including the company's industry, its financial leverage, and its risk profile.

Calculating the Weighted Average Cost of Capital

(Continued)

- A company in a high-growth industry with a lot of debt will typically have a higher WACC than a company in a low-growth industry with little debt.
- The weighted average cost of capital is an important input into the discounted cash flow (DCF) method of business valuation.
- The discounted cash flow method calculates the value of a company by discounting its future cash flows to the present day. The weighted average cost of capital is used as the discount rate in the discounted cash flow calculation.
- The discounted cash flow method is a widely accepted method of business valuation.
- It is relatively easy to understand and it is based on sound financial principles.
- However, the discounted cash flow method can be sensitive to the assumptions that are made about the company's future cash flows and the weighted average cost of capital.

Estimating the Terminal Value

- The terminal value is the present value of a company's future cash flows beyond a certain point in time. It is used in discounted cash flow (DCF) analysis to calculate the value of a company.

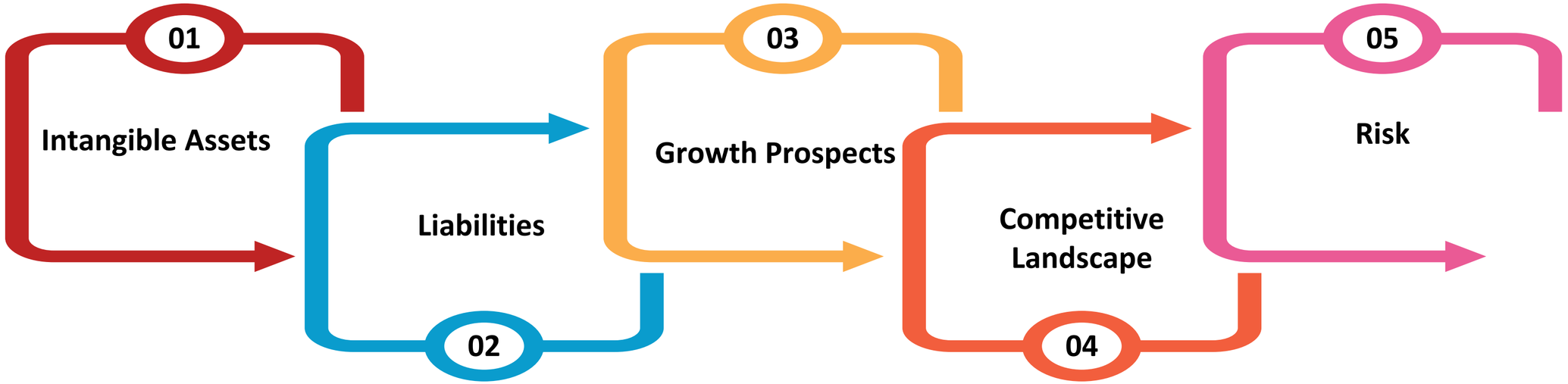
- ***There are two main methods for estimating the terminal value:***

  - The perpetuity growth method: This method assumes that the company's cash flows will grow at a constant rate in perpetuity.

  - The exit multiple methods: This method assumes that the company will be sold at a certain multiple of its earnings or cash flow in the future.

Enterprise Value Adjustment

- Enterprise value adjustment is a process of adjusting the enterprise value of a company to reflect specific factors that may not be fully captured by traditional valuation methods.
- These factors can include intangible assets, such as brand value or customer relationships, or liabilities, such as environmental remediation costs.
- ***The following are some of the most common factors that may be adjusted in an enterprise value calculation:***



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