

Financial Management

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This certifies that
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was awarded a program diploma in
Financial Management
by completing the following courses:

- Accounting Principles
- Financial Performance
- Financial Concepts
- Investment Essentials

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1. Accounting Principles



Welcome to Accounting Principles!

Accounting is a glorious but misunderstood field. The popular view is that it's mostly mind-numbing number-crunching; it certainly has some of that, but it's also a rich intellectual pursuit with an abundance of compelling issues.

Accountants are often stereotyped as soulless drones laboring listlessly in the bowels of corporate bureaucracies. But many accountants will tell you that it's people skills, not technical knowledge, that are crucial to their success. And although it's often thought of as a discipline of pinpoint exactitude with rigid rules, in practice accountants rely heavily on best estimates and educated guesses that require careful judgment and strong imagination.

Accounting can be defined as “the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by users of the information.”

In this course, you will learn the important **Accounting Equation** and you will get to know the three most important accounting statements: The **Income Statement**, the **Balance Sheet**, and the **Statement of Cash Flow**.

2. Basic Principles



Accounting rests on a small set of fundamental principles. People often refer to these fundamentals as **Generally Accepted Accounting Principles (GAAP)**. These standards vary in detail across the globe and are typically overseen by governmental regulators and the private accounting profession in a country.

Here we will highlight the eight most important principles:

Accounting Principles

Revenue Principle	Expense Principle	Matching Principle	Cost Principle
Objectivity principle	Continuity Assumption	Unit-of-Measure Assumption	Separate Entity Assumption

1. Revenue Principle

The revenue principle, also known as the realization principle, states that **revenue is earned when the sale is made**, which is typically when goods or services are provided. A key component of the revenue principle, when it comes to the sale of goods, is that revenue is earned when legal ownership of the goods passes from seller to buyer. Note that revenue isn't earned when you collect cash for something.

2. Expense Principle

The expense principle states that an **expense occurs when the business uses goods or receives services**. As is the case with the revenue principle, if you receive some goods, simply receiving the goods means that you've incurred the expense of the goods. Similarly, if you received some service, you have incurred the expense. It doesn't matter that it takes a few days or a few weeks to get the bill. You incur an expense when goods or services are received.

3. Matching Principle

The matching principle is related to the revenue and the expense principles. The matching principle states that when you recognize revenue, you should **match related expenses with the revenue**.

For example, if you own a hot dog stand, you should count the expense of a hot dog and the expense of a bun on the day you sell that hot dog and that bun. In other words, match the expense of the item with the revenue of the item.

Accrual-based accounting is what you get when you apply the revenue principle, the expense principle, and the matching principle. In a nutshell, accrual-based accounting means that you record revenue when a sale is made and record expenses when goods are used or services are received – not when you send or receive cash.

4. Cost Principle

The cost principle states that amounts in your accounting system should be quantified or measured by using **historical cost**.

For example, if your business owns a building, that building shows up on your balance sheet at its historical cost; you don't adjust the values in an accounting system for changes in a fair market value.

5. Objectivity Principle

The objectivity principle states that accounting reports should use **objective and verifiable data**. In other words, accounting systems and accounting reports should rely on subjectivity as little as possible. An accountant always wants to use objective data (even if it's bad) rather than subjective data (even if the subjective data is arguably better).

6. Continuity Assumption

Accounting systems assume that a business will **continue to operate** in the future. Unless there is evidence to the contrary, the accountant

assumes that the business will continue to operate indefinitely. If a business won't continue, it becomes very unclear how one should value assets if the assets have no resale value.

7. Unit-of-Measure Assumption

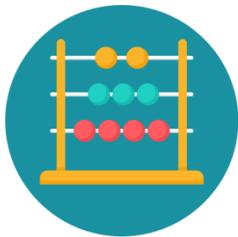
The unit-of-measure assumption assumes that a business's **domestic currency** is the appropriate unit of measure for the business to use in its accounting.

For example, the unit-of-measure assumption states that U.S. businesses should use U.S. dollars and European businesses should use Euro in their accounting.

8. Separate Entity Assumption

The separate entity assumption states that a business entity is **separate** from its business owner. The separate entity assumption enables one to prepare financial statements just for the sole business.

3. Accounting Equation



The **basic accounting equation** is the foundation of all accounting concepts. It represents the relationship between the assets (what a business owns), liabilities (what it owes to others), and owner's equity (the difference between assets and liabilities). It is defined as: **Assets = Liabilities + Owners' Equity**.

Assets

An **asset** is anything in a business that has some sort of financial value and can be converted to cash. Assets are the products you have stocked in your warehouse (they're converted into cash as you sell them), the cash in your register and all the equipment in your firm. Assets can be grouped into two categories depending on how quickly you can convert them into cash:

- **Current assets** are assets that can be converted into cash within one year – like checks, invoices, or store inventory. Assets that you can quickly convert into cash also are called liquid assets.
- **Fixed assets** are assets that take more than a year to be converted into cash. In most cases property, plants and equipment are fixed assets.

Here's a list of the most common kinds of business assets:

Cash	Cash includes money and money equivalents such as checks, money orders, or bank deposits.
Accounts receivable	Accounts receivable represent the money that your clients and customers owe you for purchasing your products or services. When you allow a customer to buy your goods today and pay later, you're creating a receivable. If you work strictly on a cash basis (e.g. at a hot dog stand), you don't have any receivables.
Inventory	Inventory comprises all the products that you purchase or manufacture to sell to customers, as well as raw materials and supplies used in operations. If you run a grocery store, your inventory consists of all your store items.
Prepaid expenses	When you pay for a product or service in advance, you create an asset known as a "prepaid expense". Examples include a prepaid maintenance contract on a typewriter or an insurance policy with a one-year term paid in advance.
Equipment	Equipment is the wide variety of property that your organization purchases to carry out its operations. Examples include desks, chairs, or computers.
Real estate	Real estate includes assets such as the land, buildings, and facilities that your company owns, occupies, and utilizes. Some companies have little or no real estate assets, and others have sizable ones.

An asset is a resource with economic value for an individual or corporation There are two types of assets: 1. current assets and 2. fixed assets.

Liabilities

Liabilities are money owed to others outside your organization. They may include the money you owe to the company that delivers your office supplies, the payments you owe on the construction loan that financed your warehouse expansion, or the mortgage on your corporate headquarters building. In short, assets put money in your pocket, and liabilities take money out! As with assets, there are also two types of liabilities:

- **Current liabilities** are to be repaid within one year, for example, money for employee paychecks.
- **Long-term liabilities** are to be repaid in a period longer than one year, for example, the mortgage on the company's facility.

Here are common business liabilities, from both the current and long-term categories:

Accounts payable	Accounts payable are the obligations owed to the many individuals and organizations that have provided goods and services to your company. Examples include money owed to your computer network consultant and an out-of-house marketing advertising agency.
Notes payable	Notes payable represent loans made to your company by individuals or organizations, for example, a loan secured from a large bank.
Accrued expenses	Sometimes a company incurs an expense but has no immediate plans to reimburse the individual or organization that's owed the money. Examples include future wages to be paid to employees and utility bills.
Bonds payable	When companies issue bonds to raise money to finance large projects, they incur obligations to pay back the individuals and organizations that purchase them.
Mortgages payable	When companies purchase property, they often do so by taking out mortgages – long-term real estate loans, secured by the property itself.

Liabilities are binding obligations that are payable to another person or entity. There are two types of liabilities: 1. current liabilities and 2. long-term liabilities.

Owners' Equity

Owners' Equity is the money that remains when you take all your company's assets and subtract all your liabilities. Owners' equity represents the owners' direct investment in the firm or the owners' claims on the company's assets. Another way of expressing a company's owners' equity is its **net worth**. Net worth is simply a snapshot of your company's financial health for a particular period of time. Here are the two common types of owners' equity:

- **Paid-in capital:** The money that people invest in a company. When companies such as Facebook or Volkswagen offer to sell shares of stock, investors provide paid-in capital to the companies when they pay money to buy the stock.
- **Retained earnings:** A company's earnings that are held within the company. The money gets reinvested, not paid out to shareholders as dividends.

Although owners' equity generally is positive, it can go negative when a company takes on large amounts of debt – for example, to acquire another company.

Owner's equity, often called net assets, is the owners' claim to company assets after all of the liabilities have been paid off. Finally, there are two types of owner's equity: 1. paid-in capital and 2. retained earnings.

The Equation

$$\text{Assets} = \text{Liabilities} + \text{Owners' Equity}$$

Owned resources Financial obligations Owners' claims

The basic accounting equation (Assets = Liabilities + Owners' Equity) is similar to any other equation: A change to one side of the equation causes a change in the other. Therefore, every financial transaction you make results in not one, but two entries to your accounting records – noted as **double-entry bookkeeping**.

Rules of the Accounting Equation:

- Both sides of the Basic Accounting Equation should be equal and balance.
- Every business transaction should change at least two accounts. It means that in every value received, another value is given up.

Example: Susie's Sushi

For example, let's take a look at Susie's Sushi restaurant: When Susie's Sushi buys a big yellowfin tuna to slice up for customers, it affects her accounting equation.

Let's assume that Susie's Sushi starts with assets (inventory) of \$1,000, liabilities (accounts payable) of \$500, and owners' equity of \$500. Her equation would look like this:

$$\begin{aligned} \text{Assets} &= \text{Liabilities} + \text{Owners' Equity} \\ \$1,000 &= \$500 + \$500 \end{aligned}$$

When Susie purchases that yellowfin tuna from the local fish market for \$100, and the fish market agrees to bill her for it, she acquires an asset (inventory). She also takes on a liability of \$100 — the money owed to the fish market (accounts payable). After this transaction, the accounting equation now looks like this:

$$\begin{aligned} \text{Assets} &= \text{Liabilities} + \text{Owners' Equity} \\ \$1,100 &= \$600 + \$500 \end{aligned}$$

As you can see, Susie added \$100 of inventory to her assets, but she simultaneously added a payable of \$100 to her liabilities. The owners' equity doesn't change. As this example shows, every transaction on one side of the accounting equation results in a transaction on the other side of the accounting equation.

The basic accounting equation is: $\text{Assets} = \text{Liabilities} + \text{Owners' Equity}$

4. The Income Statement



The **Income Statement**, also referred to as Profit and Loss (P&L) Statement, is one of the three most important financial statements. The Income Statement shows managers and investors whether a company has **made or lost money** during a specific period of time.

Profit and Loss

The income statement, also called the profit and loss statement (P&L), presents the results of a company's operations for a given period – a quarter, a year, etc. The income statement presents a summary of the revenues, gains, expenses, losses, and net income or net loss of an entity for the period.

This statement is similar to a moving picture of the entity's operations during the time period specified. In most cases, the income statement is the first financial statement prepared because the net income or loss must be calculated before other financial statements can be prepared.

Keep in mind that the income statement shows revenues, expenses, gains, and losses; it does not show cash receipts (money you receive) nor cash disbursements (money you payout).

The key item listed on the income statement is the net income or loss. A company's net income for an accounting period is measured as follows:



Let's break this down:

- **Revenues** are inflows or other enhancements of assets of an entity or settlement of its liabilities (or both) during a period, based on production and delivery of goods, provisions of services, and other activities that constitute the entity's major

- operations. Examples of revenues are sales revenue, interest revenue, and rent revenue.
- **Expenses** are outflows or other uses of assets during a period as a result of delivering or producing goods, rendering services, or carrying out other activities that constitute the entity's ongoing major or central operations. Examples are cost of goods sold, salaries expense, and interest expense.
 - **Gains** are increases in owners' equity (net assets) from peripheral or incidental transactions of an entity and from all other transactions and events affecting the entity during the accounting period, except those that result from revenues or investments by owners. Examples are a gain on the sale of a building and a gain on lawsuits.
 - **Losses** are decreases in owners' equity (net assets) from peripheral or incidental transactions of an entity and from all other transactions and events affecting the entity during the accounting period except those that result from expenses or distributions to owners. Examples are losses on the sale of investments and losses on lawsuits.
 - **Net Income** is the excess of all revenues and gains for a period over all expenses and losses of the period. Net loss is the excess of expenses and losses over revenues and gains for a period.

The income statement presents the results of a company's operations for a given time period.

Single-Step Example

There are two income statement formats that are generally prepared: The single-step statement and the multi-step statement.

The **single-step income statement** uses only one subtraction to arrive at net income:

$$\text{Net Income} = (\text{Revenues} + \text{Gains}) - (\text{Expenses} + \text{Losses})$$

An extremely condensed income statement in the single-step format would look like this:

**Sample Products Co.
Income Statement
For the Five Months Ended May 31, 2018**

Revenues & Gains	\$108,000
Expenses & Losses	<u>90,000</u>
Net Income	<u><u>\$ 18,000</u></u>

The **heading** of the income statement conveys critical information. The name of the company appears first, followed by the title “Income Statement.” The third line tells the reader the time interval reported on the profit and loss statement.

Since income statements can be prepared for any period of time, you must inform the reader of the precise period of time being covered (for example: Year Ended May 31 or Month Ended May 31.)

A sample income statement in the single-step format with more details would look like this:

Sample Products Co.	
Income Statement	
For the Five Months Ended May 31, 2018	
Revenues & Gains	
Sales revenues	\$100,000
Interest revenues	5,000
Gain on sales of assets	3,000
Total revenue & gains	108,000
 Expenses & Losses	
Cost of goods sold	75,000
Commissions expense	5,000
Office supplies expense	3,500
Office equipment expense	2,500
Advertising expense	2,000
Interest expense	500
Loss from lawsuit	1,500
Total expenses & losses	90,000
Net Income	\$ 18,000

Multi-Step Example

An alternative to the single-step income statement is the **multiple-step income statement** because it uses multiple subtractions in computing the net income shown on the bottom line.

The multiple-step statement segregates the operating revenues and operating expenses from the nonoperating revenues, nonoperating expenses, gains, and losses. The multiple-step income statement also shows the **gross profit** (net sales minus the cost of goods sold).

Here is a sample income statement in the multiple-step format:

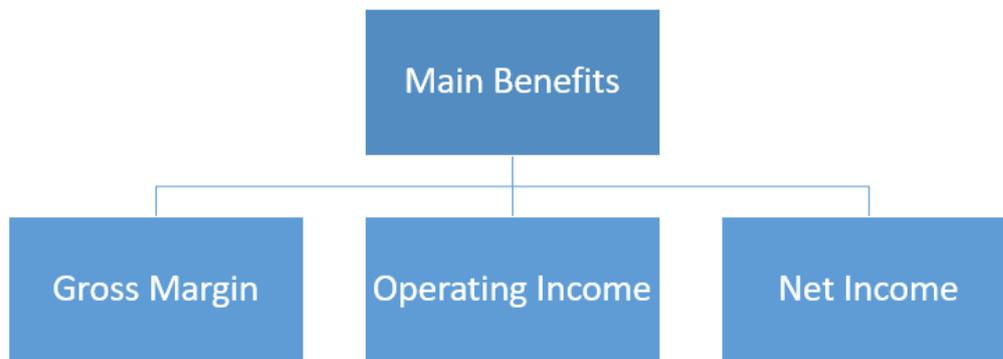
Sample Products Co.		
Income Statement		
For the Five Months Ended May 31, 2018		
Sales		\$100,000
Cost of goods sold		<u>75,000</u>
Gross profit		<u>25,000</u>
Operating expenses		
Selling expenses		
Advertising expense	2,000	
Commissions expense	<u>5,000</u>	7,000
Administrative expenses		
Office supplies expense	3,500	
Office equipment expense	<u>2,500</u>	<u>6,000</u>
Total operating expenses		<u>13,000</u>
Operating income		<u>12,000</u>
Non-Operating or other		
Interest revenues		5,000
Gain on sale of investments		3,000
Interest expense		(500)
Loss from lawsuit		<u>(1,500)</u>
Total non-operating		<u>6,000</u>

Using the above multiple-step income statement as an example, we see that there are three steps needed to arrive at the bottom line Net Income:

- Cost of goods sold is subtracted from net sales to arrive at the **gross profit**:
 $\$100,000 - \$75,000 = \$25,000$
- Operating expenses are subtracted from gross profit to arrive at **operating income**:
 $\$25,000 - \$13,000 = \$12,000$
- The net amount of nonoperating revenues, gains, nonoperating expenses and losses is combined with the operating income to

arrive at the **net income (or net loss)**:
 $\$12,000 + \$6,000 = \$18,000$

There are **three main benefits** to using a multiple-step income statement instead of a single-step income statement:



- The multiple-step income statement clearly states the gross profit amount. Many readers of financial statements monitor a company's **gross margin** (gross profit as a percentage of net sales). Readers may compare a company's gross margin to its past gross margins and to the gross margins of the industry.
- The multiple-step income statement presents the subtotal **operating income**, which indicates the profit earned from the company's primary activities of buying and selling merchandise.
- The bottom line of a multiple-step income statement reports the net amount for all the items on the income statement. If the net amount is positive, it is labeled as **net income**. If the net amount is negative, it is labeled as **net loss**.

5. The Balance Sheet



A **Balance Sheet** shows what the business is **worth at a given point in time**. The purpose of the balance sheet is to provide an idea of a company's financial position. It does so by outlining the total assets that a company owns, the amounts that it owes to lenders (liabilities), as well as the amount of equity.

Financial Position

The balance sheet, also called the **statement of financial position**, reports a company's financial position based on its assets, liabilities, and equity at a single moment in time.

Unlike the income statement, the balance sheet does not report activities over a vast time frame. The balance sheet is essentially a **picture** of a company's resources, debts, and ownership on a given day.

This is why the balance sheet is sometimes considered less reliable or less telling of a company's current financial performance. Annual income statements look at performance over the course of 12 months whereas the balance sheet only focuses on the financial position of one day.

The Balance Sheet reports a firm's financial position at a single moment in time.

The balance sheet is basically a report version of the accounting equation (also called the balance sheet equation) where assets always equal liabilities plus shareholder's equity.

In this way, the balance sheet shows whether the resources controlled by the business (**assets**) are financed by debt (**liabilities**) or shareholder investments (**equity**). Investors and creditors generally look at the statement of financial position for insight as to how efficiently a company can use its resources and how effectively it can finance them.

Accountants usually prepare **classified balance sheets**. “Classified” means that the balance sheet accounts are presented in distinct groupings, categories, or classifications. An outline of a balance sheet using the balance sheet classifications is shown here:

Example Company Balance Sheet December 31, 2018	
<u>ASSETS</u>	<u>LIABILITIES & OWNER'S EQUITY</u>
Current assets Investments Property, plant, and equipment Intangible assets Other assets Total assets	Current Liabilities Long-term liabilities Total liabilities Owner's equity Total liabilities & owner's equity

Example

Most accounting balance sheets classify a company's assets and liabilities into distinctive groupings such as Current Assets; Property, Plant, and Equipment; Current Liabilities; etc. These classifications make the balance sheet more useful.

Like all financial statements, the balance sheet has a heading that display's the company name, the title of the statement and the time period of the report:

Example Company Balance Sheet December 31, 2014			
<u>ASSETS</u>		<u>LIABILITIES</u>	
Current assets		Current liabilities	
Cash	\$ 2,100	Notes payable	\$ 5,000
Petty cash	100	Accounts payable	35,900
Temporary investments	10,000	Wages payable	8,500
Accounts receivable - net	40,500	Interest payable	2,900
Inventory	31,000	Taxes payable	6,100
Supplies	3,800	Warranty liability	1,100
Prepaid insurance	1,500	Unearned revenues	1,500
Total current assets	<u>89,000</u>	Total current liabilities	<u>61,000</u>
Investments	<u>36,000</u>	Long-term liabilities	
Property, plant & equipment		Notes payable	20,000
Land	5,500	Bonds payable	<u>400,000</u>
Land improvements	6,500	Total long-term liabilities	<u>420,000</u>
Buildings	180,000		
Equipment	201,000	Total liabilities	<u>481,000</u>
Less: accum depreciation	<u>(56,000)</u>		
Prop, plant & equip - net	<u>337,000</u>		
Intangible assets		<u>STOCKHOLDERS' EQUITY</u>	
Goodwill	105,000	Common stock	110,000
Trade names	<u>200,000</u>	Retained earnings	229,000
Total intangible assets	<u>305,000</u>	Less: Treasury stock	<u>(50,000)</u>
Other assets	<u>3,000</u>	Total stockholders' equity	<u>289,000</u>
Total assets	<u>\$ 770,000</u>	Total liabilities & stockholders' equity	<u>\$ 770,000</u>

The notes to the sample balance sheet have been omitted.

One thing to note is that just like in the accounting equation, total assets equal total liabilities and equity. This is always the case. In this example, total assets are \$770,000 and total liabilities plus stockholders' equity are \$770,000 as well.

The balance sheet gives us an idea of a firm's financial position:

- The company has total assets of \$770,000 – such as \$2,100 in cash, \$40,500 in accounts receivable and \$337,000 in property, plant & equipment.
- The company has liabilities of \$481,000 (\$61,000 current liabilities plus \$420,000 long-term debt). The company has equity of \$289,000.
- The firm's total assets equal the firm's total liabilities and equity. This is not only true for this company but for all balance sheets.

Now that the balance sheet is prepared and the beginning and ending cash balances are calculated, the **statement of cash flows** (next chapter) can be prepared.

6. The Cash Flow Statement



The **Cash Flow Statement**, also called the Statement of Cash Flows, reports the **cash generated and used** in a specific time period. The term cash flow generally refers to a company's ability to collect and maintain adequate amounts of cash to pay its upcoming bills.

Cash Flows

The cash flow statement, also called the **statement of cash flows**, reports the cash generated and used during the time interval specified in its heading. The cash flow statement shows investors and creditors what transactions affected the cash accounts and how effectively and efficiently a company can use its cash to finance its operations and expansions.

This is particularly important because investors want to know the company is financially sound while creditors want to know the company is liquid enough to pay its bills as they come due. In other words, does the company have good cash flow?

The cash flow statement reports the cash generated and used in a specific time period.

Cash inflows and outflows are classified into three activities:



- **Operating activities** refer to the main operations of the company such as the rendering of professional services, acquisition of supplies, selling of inventories, and others. In general, operating activities refer to those that involve current assets and current liabilities.
- **Investing activities** may be summed up as: “where the company puts its money for long-term purposes”, such as the acquisition of property, plant, and equipment; and investment in long-term securities. In general, investing activities include transactions that involve non-current assets.
- **Financing activities** refer to: “where the company gets its funds”, such as investment of the owner/s, and cash proceeds from a bank loan and other long-term payables. In general, financing activities include those that affect non-current liabilities and capital.

Because the income statement is prepared under the **accrual** basis of accounting, the revenues reported may not have been collected. Similarly, the expenses reported on the income statement might not have been paid. You could review the balance sheet changes to determine the facts, but the cash flow statement already has integrated all that information. As a result, smart business people and investors utilize this important financial statement.

Example

On January 2, 2014 Matt invests \$2,000 of his personal money into his sole proprietorship, Good Deal Co. On January 20, Good Deal buys 14 graphing calculators for \$50 per calculator—this is about 50% less than the selling price Matt has observed at the retail stores. The total cost to

Good Deal for all 14 calculators is \$700. Good Deal has no other transactions during January.

Matt prepares the Cash Flow Statement for his new business as of January 31, 2014. Like all financial statements, the statement of cash flows has a heading that display's the company name, the title of the statement and the time period of the report. It also lists the operating, investing and financing activities:

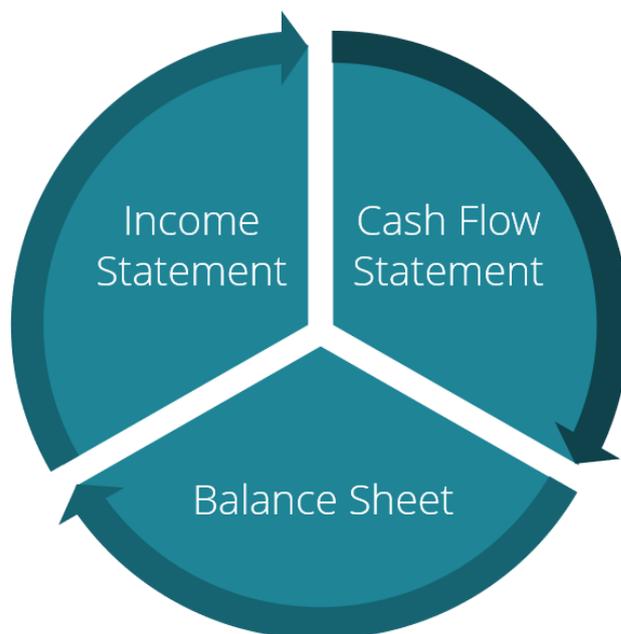
Good Deal Co.	
Statement of Cash Flows	
For the Month Ended January 31, 2014	
Operating Activities	
Net income	\$ 0
Increase in inventory	<u>(700)</u>
Cash provided (used) in operating activities	(700)
Investing Activities	
	0
Financing Activities	
Investment by owner	<u>2,000</u>
Net increase in cash	1,300
Cash at the beginning of the month	0
Cash at the end of the month	<u><u>\$1,300</u></u>

The cash flow statement reports that Good Deal's **operating activities** resulted in a decrease in cash of \$700. The decrease in cash occurred because the company increased its inventory by \$700 during January. The **financing activities** section shows an increase in cash of \$2,000 which corresponds to the increase in Matt Jones, Capital (Matt's investment in the business). The net change in the Cash account from the owner's investment and the cash outflow for inventory is a positive \$1,300.

This net change of \$1,300 is verified at the bottom of the cash flow statement. There was \$0 cash on January 1, but on January 31, the Cash balance is \$1,300.

7. Analyzing the Statements

The financial statements are interconnected: assets and liabilities on the **balance sheet** will increase or decrease based on the incomes and expenses from the **income statement** and the **cash flows** from the cash flow statement.



Analyzing the Income Statement:

Investors and creditors closely monitor a firm's net income because it indicates the firm's ability to sell goods and services for more than they cost to produce and deliver. Investors buy stock when they believe that future earnings will improve and lead to a higher stock price. Lenders also rely on future earnings to provide the resources to repay loans.

Analyzing the Balance Sheet:

Assessment of a company's **assets** is important to its creditors and its prospective investors because assets provide a basis for judging whether the company has sufficient resources available to operate. Investors are interested in a company's **liabilities** because of the

concerns of whether the company has sufficient sources of cash to pay its debts. If a business does not pay its creditors, the creditors may force the sale of assets sufficient to meet their claims. **Stockholders' equity** is important to banks because creditors' claims legally come before those of owners. If a firm goes out of business and its assets are sold, the proceeds of that sale must be used to pay back creditors such as the banks before the owners receive any money. Thus, creditors consider stockholders' equity a protective "cushion."

Analyzing the Cash Flow Statement:

Many analysts believe that the cash flow statement is particularly useful in predicting future cash flows that may be available for payment of debt to creditors and dividends to investors. Bankers often consider the Operating Activities section to be most important because it indicates the company's ability to generate cash from sales to meet its current cash needs. Any amount of leftover can be used to pay back the bank debt or expand the company. Stockholders will invest in a company only if they believe that it will eventually generate more cash from operations than it uses so that cash will become available to pay dividends and expand.

8. Conclusion



In this course, you learned the basics of Accounting. Accounting – also called the “language of business” – is the measurement, processing, and communication of financial information about economic entities – such as businesses and corporations.

From the large, multi-national corporation down to the corner beauty salon, every business transaction will have an effect on a company's financial position. The financial position of a company is measured by the following items:

- **Assets** (what it owns)
- **Liabilities** (what it owes to others)
- **Owner's Equity** (the difference between assets and liabilities)

The **Basic Accounting Equation** is an accounting principle and rule which states that the business resources (assets) are attributable to the amount owed to creditors (liabilities) and capital invested by the owners (equity). It is formulated as:

$$\text{Assets} = \text{Liabilities} + \text{Owner's Equity}$$

The most widely used financial statements are:

- **Income Statement** (an accounting of revenue, expenses, and profit for a given period)
- **Balance Sheet** (a statement that summarizes the assets and liabilities at a given date)
- **Statement of Cash Flow** (a report with all transactions that involved or influenced cash)

The financial statements are heavily interconnected as the assets and liabilities on the balance sheet will increase or decrease based on the incomes and expenses from the income statement and the cash flows from the cash flow statement.

Basic Financial Concepts

1. Introduction



Welcome to Basic Financial Concepts!

This course emphasizes and develops a basic understanding of financial concepts, financial tools, and major decision areas related to the financial management of a business or organization.

Finance is a broad term that describes activities associated with banking, leverage or debt, credit, capital markets, money, and investments. Basically, finance represents money management and the process of acquiring needed funds. Finance also encompasses the oversight, creation, and study of money, investments, assets, and liabilities that make up financial systems.

We'll discuss concepts like Dollar Cost Averaging (DCA) and Diversification, which are especially useful for individual investors. We will also plunge into some of the more complex academic explanations – like the Efficient Market Hypothesis or the Capital Asset Pricing Model (CAPM). Many of the concepts in finance originate from micro and macroeconomic theories.

Since individuals, businesses, and government entities all need funding to operate, the finance field includes three main sub-categories: personal finance, corporate finance, and public finance.

- **Personal Finance** involves analyzing the current financial position of individuals to formulate strategies for future needs within financial constraints. Financial strategies depend largely on the person's earnings, living requirements, goals, and desires.
- **Corporate Finance** refers to financial activities related to running a corporation. For example, a large company may have to decide whether to raise additional funds or startups may receive capital from angel investors.
- **Public Finance** includes tax, spending, budgeting, and debt issuance policies that affect how a government pays for the services it provides to the public. The federal government helps prevent market failure by overseeing the allocation of resources and economic stability.

This course is directed toward the businessperson who must have financial knowledge but has not had advanced formal training in finance – perhaps a newly promoted middle manager or a marketing manager of a small company who must know some basic finance concepts. The entrepreneur or sole proprietor also needs this knowledge; he or she may have brilliant product ideas, but not the slightest idea about financing.

2. Risk-Return and TVM



The risk-return tradeoff states that higher risk is associated with greater probability of higher return and lower risk with a greater probability of smaller return. Time value of money (TVM) is the idea that money that is available at the present time is worth more than the same amount in the future.

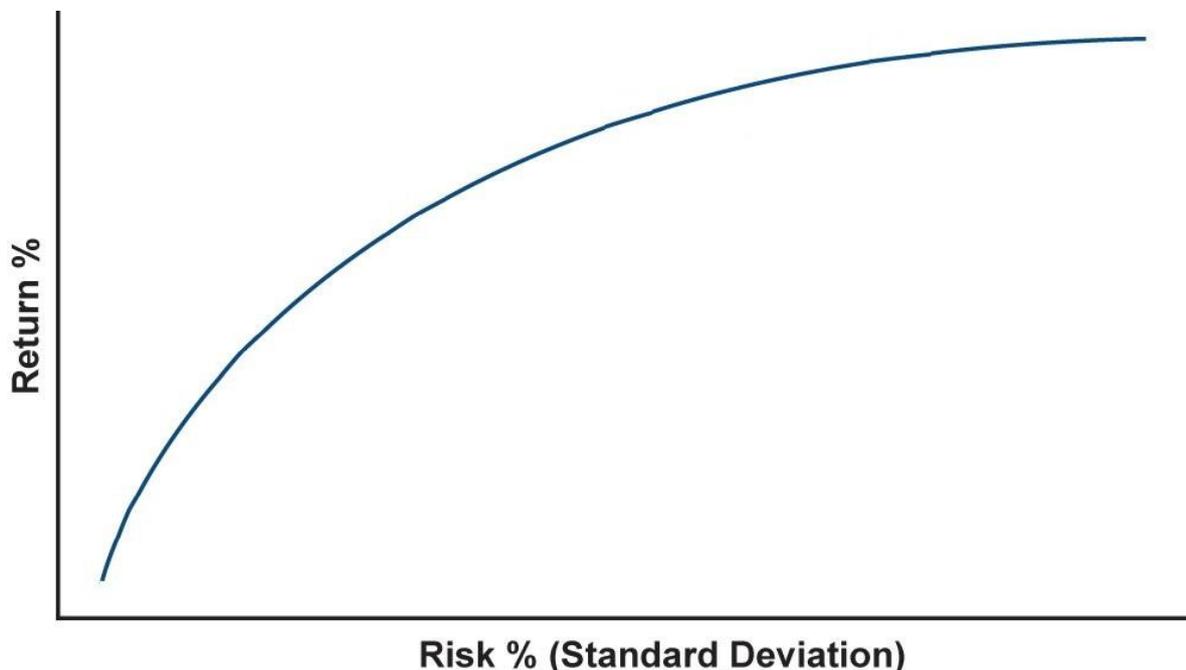
Risk and Return

The Risk-Return Tradeoff could easily be called the “ability-to-sleep-at-night test.” While some people can handle the equivalent of financial

skydiving without batting an eye, others are terrified to climb the financial ladder without a secure harness.

Depending upon factors like your age, income, and investment goals, you may be willing to take significant financial risks in your investments, or you may prefer to keep things much safer. Deciding what amount of risk you can take while remaining comfortable with your investments is very important.

In the investing world, the dictionary definition of risk is the chance that an investment's actual return will be different than expected. Technically, this is measured in statistics by standard deviation. Risk means you have the possibility of losing some, or even all, of your original investment.



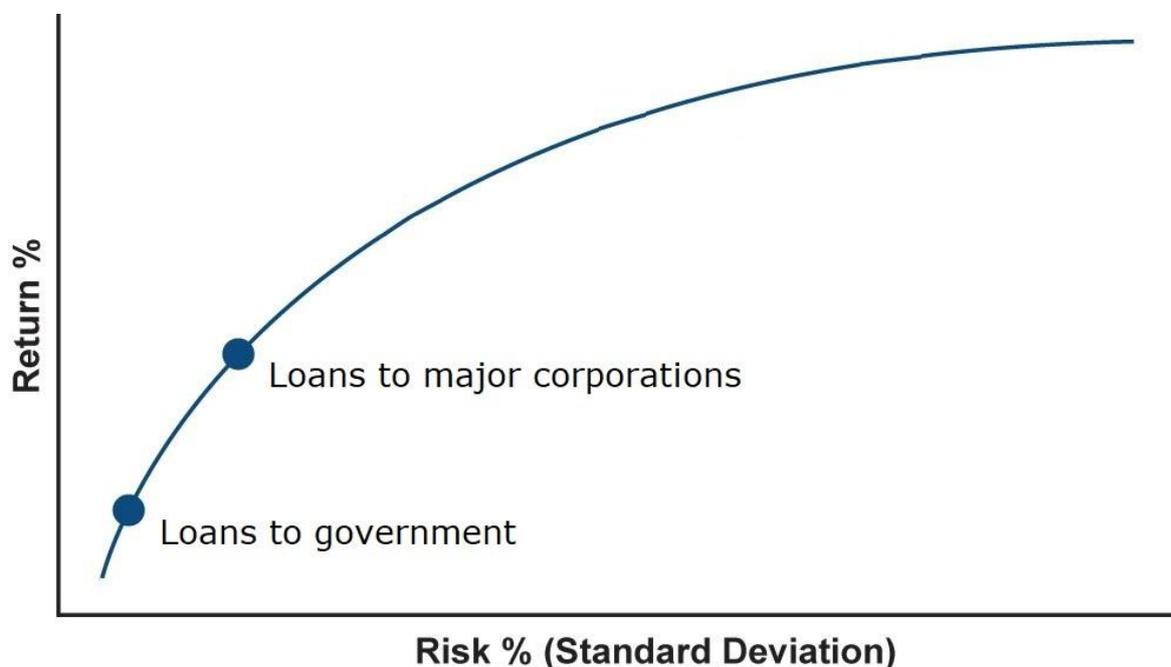
Low levels of uncertainty (low risk) are associated with low potential returns. High levels of uncertainty (high risk) are associated with high potential returns. The risk/return tradeoff is the balance between the desire for the lowest possible risk and the highest possible return. This is demonstrated graphically in the chart below. A higher standard deviation means a higher risk and higher possible return.

The risk-return tradeoff states that the potential return rises with an increase in risk. It is also called the “ability-to-sleep-at-night test.”

Example

It's crucial to keep in mind that higher risk does NOT equal greater return. The risk-return tradeoff only indicates that higher risk levels are associated with the possibility of higher returns, but nothing is guaranteed. At the same time, higher risk also means higher potential losses on an investment.

On the lower end of the scale, the risk-free rate of return is represented by the return on **government securities** because their chance of default is next to nothing. If the risk-free rate is currently 6%, this means, with virtually no risk, we can earn 6% per year on our money.



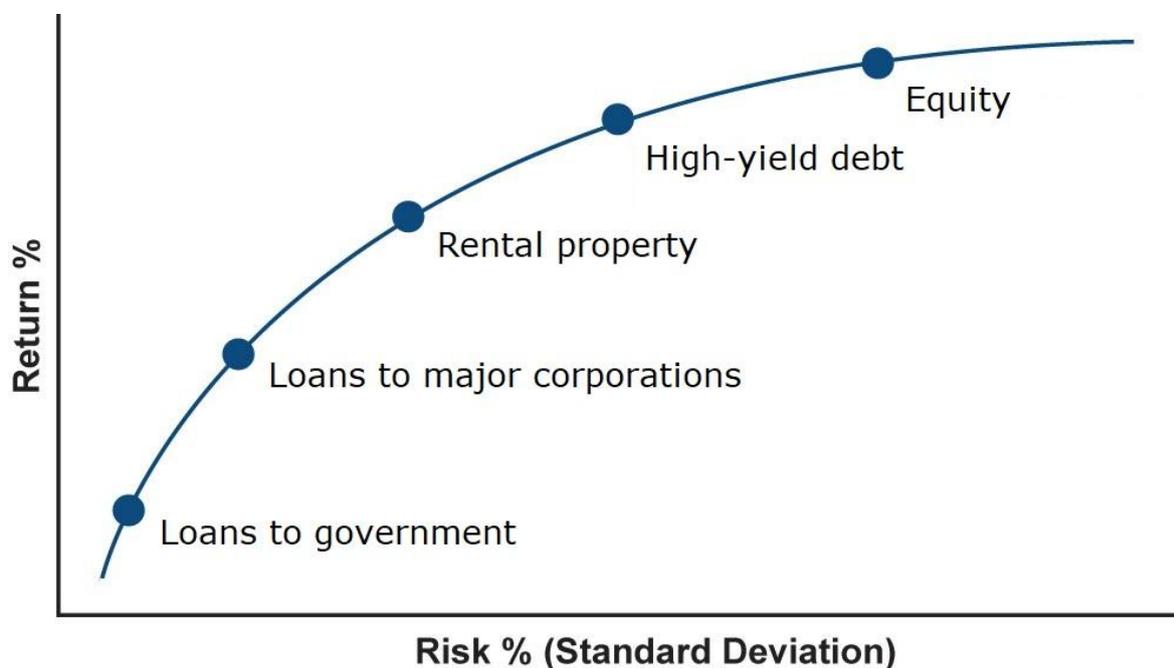
The common question arises: who wants to earn 6% when **investment-grade corporate bonds** average 12% per year over the long run? The answer to this is that a corporate bond carries more risk. The return on corporate bonds is not 12% every year, but rather -5% one year, 25% the next year, and so on. An investor still faces substantially greater risk and volatility to get an overall return that is higher than a predictable government security. We call this additional return the **risk premium**, which in this case is 6% (12% – 6%).

Determining what risk level is most appropriate for you isn't an easy question to answer. Risk tolerance differs from person to person. Your decision will depend on your goals, income, and personal situation.

Progression

There are various **classes of possible investments**, each with their own positions on the overall risk-return spectrum. There is considerable overlap of the ranges for each investment class.

The general progression is: government debt – major corporations debt – property – high-yield debt – and equity. All this can be visualized by plotting expected return on the vertical axis against risk (represented by standard deviation upon that expected return) on the horizontal axis. This line starts at the risk-free rate and rises as risk rises.



Loans to government

On the lowest end is short-dated loans to the government. The lowest of all is the risk-free rate of return. However, there are also longer-term loans to the government, such as 3-year bonds. The range width is larger and follows the influence of increasing risk premium required as the maturity of that debt grows longer. Nevertheless, the highest end of the range is still comparatively low compared to the ranges of other investment types discussed below.

Loans to major corporations

Following the lowest-risk investments are short-dated loans to major corporations with the highest credit ratings. The further away from perfect the credit rating, the higher up the risk-return spectrum that particular investment will be. Longer-term debt from those same well-rated corporations is higher up the range because the maturity has increased.

Rental property A commercial property that the investor rents out is comparable in risk or return to a low-investment grade. Industrial property has higher risk and returns, followed by residential.

High-yield debt After the returns upon all classes of investment-grade debt come the returns on speculative-grade high-yield debt (also known as “junk bonds”). These may come from mid and low rated corporations and less politically stable governments.

Equity Equity returns are the profits earned by businesses after interest and tax. Even the equity returns on the highest rated corporations are notably risky. Small-cap stocks are generally riskier than large-cap; companies that primarily service governments tend to be less volatile than those in other industries.

Time Value of Money

The time value of money (TVM) is one of the most fundamental theories in finance. It states that a dollar today is worth more than a dollar in the future.

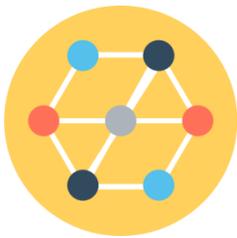
The time value of money draws from the idea that rational investors prefer to receive money today rather than the same amount of money in the future because of money’s potential to grow in value over a given period of time. For example, money deposited into a savings account earns a certain interest rate and is therefore said to be compounding in value.

Further illustrating the rational investor’s preference, assume you have the option to choose between receiving \$10,000 now versus \$10,000 in two years. It’s reasonable to assume most people would choose the first option.

Despite the equal value at the time of disbursement, receiving the \$10,000 today has more value and utility to the beneficiary than receiving it in the future due to the opportunity costs associated with the wait. Such opportunity costs could include the potential gain on interest were that money received today and held in a savings account for two years.

The time value of money (TVM) is the idea that money received in the present is more valuable than the same sum in the future because of its potential to be invested and earn interest.

3. Diversification, DCA and Assets



There are a variety of techniques that organizations will use during the identification process to establish solid strategies to manage risks. Diversification, Dollar Cost Averaging (DCA), and Asset Allocation are three of the most essential risk-management techniques.

Diversification

Many individual investors can't tolerate the short-term fluctuations in the stock market. Diversifying your portfolio is the best way to smooth out the ride.

Diversification is a risk-management technique that mixes a wide variety of investments within a portfolio in order to minimize the impact that any one security will have on the overall performance of the portfolio. Diversification lowers the risk of your portfolio. Academics have complex formulas to demonstrate how this works, but we can explain it clearly with an example:

Suppose that you live on an island where the entire economy consists of only two companies: one sells umbrellas while the other sells sunscreen. If you invest your entire portfolio in the company that sells umbrellas, you'll have a strong performance during the rainy season, but poor performance when it's sunny outside. The reverse occurs with the sunscreen company, the alternative investment; your portfolio will be high performance when the sun is out, but it will tank when the clouds roll in.

Chances are you'd rather have constant, steady returns. The solution is to invest 50% in one company and 50% in the other. Because you have diversified your portfolio, you will get decent performance year-round instead of having either excellent or terrible performance depending on the season.

There are three main practices that can help you ensure the best diversification:



- **Spread your portfolio among multiple investment vehicles** such as cash, stocks, bonds, mutual funds and perhaps even some real estate.
- **Vary the risk in your securities:** You're not restricted to choosing only major company stocks. In fact, it would be wise to pick investments with varying risk levels; this will ensure that large losses are offset by other areas.
- **Vary your securities by industry:** This will minimize the impact of industry-specific risks.

Diversification is the strategy of investing in a variety of securities in order to lower the risk involved with putting money into few investments.

Diversification is a powerful component in helping you reach your long-range financial goals while minimizing your risk. At the same time, diversification is **not** a guarantee against a loss. No matter how much diversification you employ, investing involves taking on some risk.

Dollar Cost Averaging (DCA)

If you ask any professional investor what the hardest investment task is, he or she will likely tell you that it is picking bottoms and tops in the market. Trying to time the market is a very tricky strategy. Buying at the

absolute low and selling at the peak is nearly impossible in practice. This is why so many professionals preach about **Dollar Cost Averaging (DCA)**.

Although the term might imply a complex concept, DCA is actually a fairly simple and extremely useful technique. Dollar cost averaging is the process of buying, regardless of the share price, a fixed dollar amount of a particular investment on a regular schedule. More shares are purchased when prices are low, and fewer shares are purchased when prices are high. The cost per share over time eventually averages out. This reduces the risk of investing a large amount in a single investment at the wrong time.



Let's analyze this with an example. Suppose you recently got a bonus for your hard work, and now you have \$8,000 to invest. Instead of investing the lump sum into a mutual fund or stock, with DCA, you'd spread the investment out over several months. Investing \$1,000 a month for the next eight months, "averages" the price over eight months. So one month you might buy high, and the next month you might buy more shares because the price is lower, and so on.

This plan is also applicable to the investor who doesn't have that big lump sum at the start but can invest small amounts regularly. This way you can contribute as little as \$25-50 a month to an investment like an index fund. Keep in mind that dollar cost averaging doesn't prevent a

loss in a steadily declining market, but it is quite effective in taking advantage of growth over the long term.

There are a few things investors should understand before starting their own dollar cost averaging plan:

- Dollar cost averaging is a strategy that is better suited for investors with a lower risk tolerance and a long-term investment horizon.
- Next, the strategy is no guarantee of good returns on your investment. Dollar cost averaging into an investment that continues to fall each and every month is not a wise move.
- Finally, investing involves risk and your own due diligence, so you should only dollar cost average into an investment that you understand and are comfortable with.

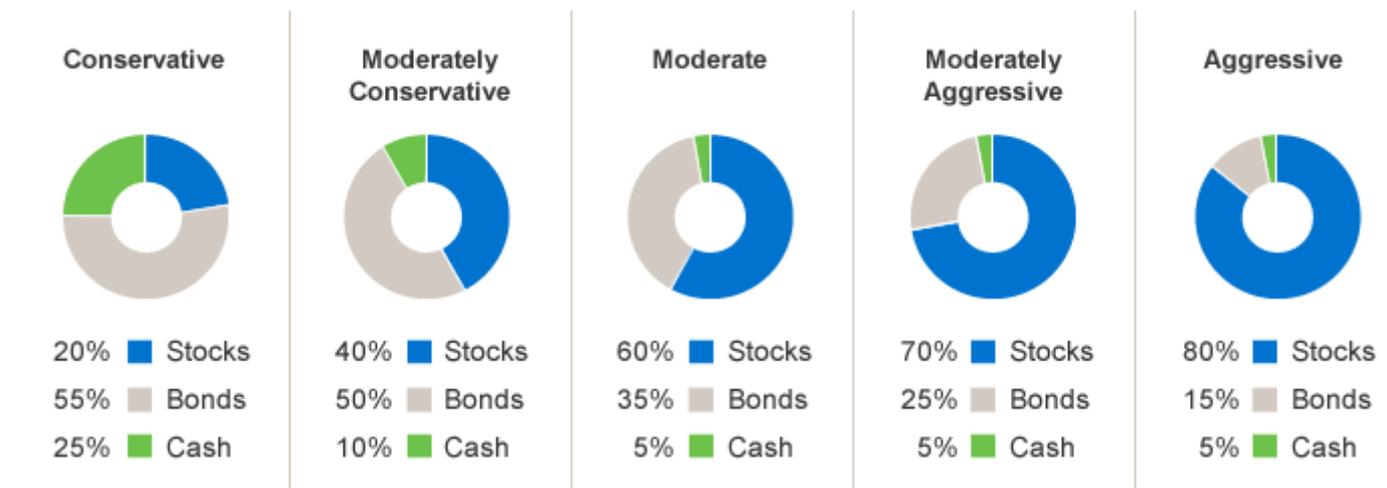
Asset Allocation

It's no secret that throughout history common stock has outperformed most financial instruments. If an investor plans to have an investment for a long period of time, his or her portfolio should be comprised mostly of stocks. Investors who don't have this kind of time should diversify their portfolios by including investments other than stocks.

For this reason, the concept of **asset allocation** was developed. Asset allocation is an investment portfolio technique that aims to balance risk and create diversification by dividing assets among major categories such as bonds, stocks, real estate, and cash. Each asset class has different levels of return and risk, so each will behave differently over time. At the same time that one asset is increasing in value, another may be decreasing or not increasing as much.

The underlying principle of asset allocation is that the older a person gets, the less risk he or she should take on. After you retire, you may have to depend on your savings as your only source of income. It follows that you should invest more conservatively because asset preservation is crucial at this time in life.

Examples of different investor profiles by asset allocation:



Determining the proper mix of investments in your portfolio is extremely important. Deciding what percentage of your portfolio you should put into stocks, mutual funds, and low-risk instruments like bonds and treasuries isn't simple, particularly for those reaching retirement age.

Asset allocation is an investment strategy that aims to balance risk and reward by apportioning a portfolio's assets according to an individual's goals, risk tolerance, and investment horizon.

4. Market Investing Theories



In this chapter, we will discuss three essential market investing theories: the Random Walk Theory developed by Maurice Kendall and Burton Malkiel, the Efficient Market Hypothesis formulated by Eugene Fama, and the Optimal Portfolio Concept originated by Harry Markowitz.

Random Walk Theory

Random Walk Theory gained popularity in 1973 when Burton Malkiel wrote "A Random Walk Down Wall Street", a book that is now regarded as an investment classic. Random walk is a stock market theory that states that the past movement or direction of the price of a stock or

overall market cannot be used to predict its future movement. Originally examined by Maurice Kendall in 1953, the theory states that stock price fluctuations are independent of each other and have the same probability distribution, but that over a period of time, prices maintain an upward trend.

In short, random walk says that **stocks take a random and unpredictable path**. The chance of a stock's future price going up is the same as it going down. A follower of random walk believes it is impossible to outperform the market without assuming additional risk. In his book, Malkiel preaches that both technical analysis and fundamental analysis are largely a waste of time and are still unproven in outperforming the markets.

Malkiel constantly states that a **long-term buy-and-hold strategy** is the best and that individuals should not attempt to time the markets. Attempts based on technical, fundamental, or any other analysis are futile. He backs this up with statistics showing that most mutual funds fail to beat benchmark averages like the S&P 500.

Random Walk Theory is the idea that stocks take a random and unpredictable path.

While many still follow the preaching of Malkiel, others believe that the investing landscape is very different than it was when Malkiel wrote his book in the 1970s. Today, everyone has easy and fast access to relevant news and stock quotes. Investing is no longer a game for the privileged. Random walk has never been a popular concept with those on Wall Street, probably because it condemns the concepts on which it is based such as analysis and stock picking.

It's hard to say how much truth there is to this theory; there is evidence that supports both sides of the debate. However, it is an important theory every investor should know.

Efficient Market Hypothesis

Efficient Market Hypothesis (EMH) is an idea partly developed in the 1960s by Eugene Fama. It states that it is impossible to beat the market because prices already incorporate and reflect all relevant information. This is also a highly controversial and often disputed theory. Supporters of this model believe it is pointless to search for undervalued stocks or

try to predict trends in the market through fundamental analysis or technical analysis.

Under the efficient market hypothesis, any time you buy and sell securities, you're engaging in a game of chance, not skill. If markets are efficient and current, it means that **prices always reflect all information**, so there's no way you'll ever be able to buy a stock at a bargain price.

The Efficient Market Hypothesis states that prices fully reflect all available information and it is impossible to beat the market on a risk-adjusted basis.

This theory has been met with a lot of opposition, especially from technical analysts. Their argument against the efficient market theory is that many investors base their expectations on past prices, past earnings, track records and other indicators. Because stock prices are largely based on investor expectation, many believe it only makes sense to believe that past prices influence future prices.

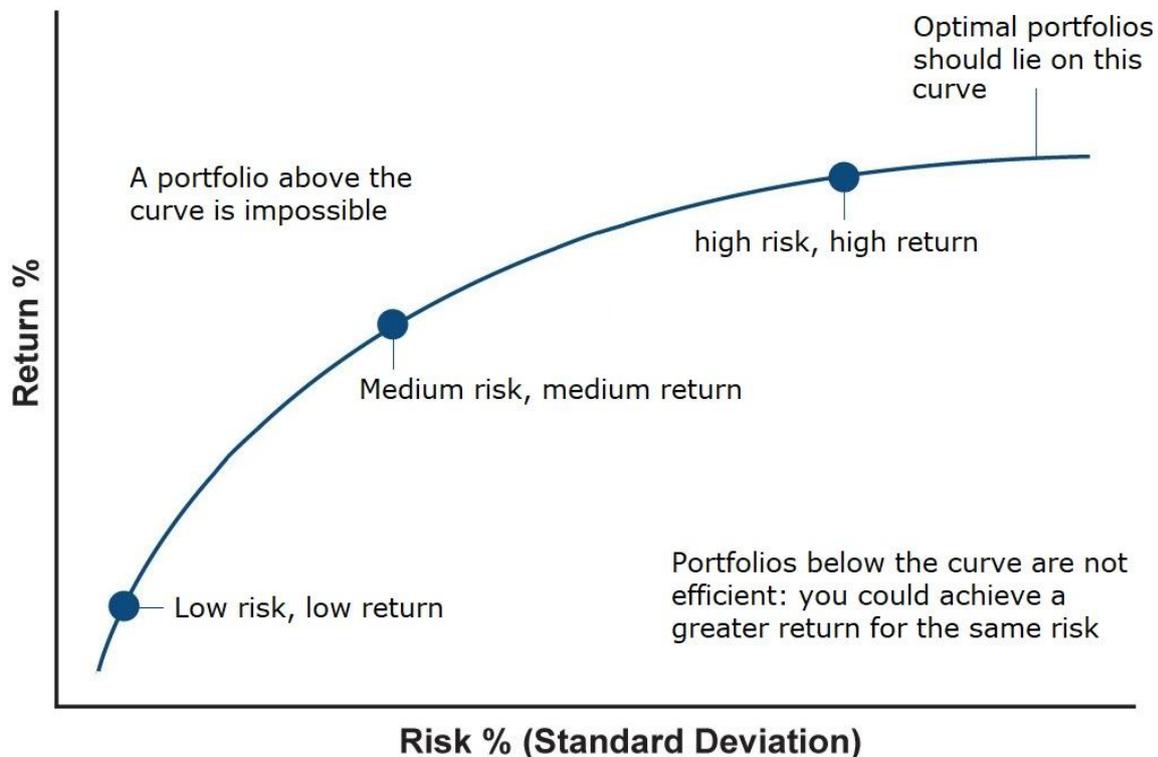
Optimal Portfolio Concept

The **Optimal Portfolio** concept falls under the modern portfolio theory. The theory assumes that investors fanatically try to minimize risk while striving for the highest return possible. The theory states that investors will act rationally, always making decisions aimed at maximizing their return for their acceptable level of risk.

The optimal portfolio was used in 1952 by Harry Markowitz, and it shows us that it is possible for different portfolios to have varying levels of risk and return. Each investor must decide how much risk they can handle and then allocate (or diversify) their portfolio according to this decision.

The chart below illustrates how the optimal portfolio works. The optimal-risk portfolio is usually determined to be somewhere in the middle of the curve because as you go higher up the curve, you take on proportionately more risk for a lower incremental return. On the other end, low risk/low return portfolios are pointless because you can achieve

a similar return by investing in risk-free assets, like government securities.



You can choose how much volatility you are willing to bear in your portfolio by picking any other point that falls on the efficient frontier. This will give you the maximum return for the amount of risk you wish to accept. Optimizing your portfolio is not something you can calculate in your head. There are computer programs that are dedicated to determining optimal portfolios by estimating hundreds (and sometimes thousands) of different expected returns for each given amount of risk.

The Optimal Portfolio concept assumes that investors try to minimize risk while striving for the highest return possible.

5. Capital Asset Pricing Model (CAPM)



The Capital Asset Pricing Model (CAPM) describes the relationship between systematic risk and expected return for assets, particularly stocks. CAPM is widely used throughout finance for pricing risky securities and generating expected returns for assets given the risk of those assets and cost of capital.

Definition

The Capital Asset Pricing Model (CAPM) was developed in 1952 by Harry Markowitz and fine-tuned over a decade later by other economists and investors, including William Sharpe. CAPM describes the **relationship between an investor's risk and the expected return**. It is designed to help model the pricing of higher-risk securities.

According to the CAPM theory, the expected return of a particular security or a portfolio is equal to the rate on a risk-free security plus a risk premium. If the security or portfolio does not either meet or exceed the required return, then the investment should not be entered into.

CAPM uses the following formula:

$$\text{Expected Return} = \text{Risk Free Rate} + \text{Beta} \cdot (\text{Market Return} - \text{Risk Free Rate})$$

- **Expected return:** The expected return of a capital asset over time, given all of the other variables in the equation. “Expected return” is a long-term assumption about how an investment will play out over its entire life.
- **Risk-free rate:** The the risk-free rate is typically equal to the yield on a 10-year US government bond. The risk-free rate should correspond to the country where the investment is being made, and the maturity of the bond should match the time horizon of the investment. The professional convention, however, is to typically use the 10-year rate no matter what, because it's the most heavily quoted and most liquid bond.
- **Beta:** The beta is a measure of a stock's risk (volatility of returns) reflected by measuring the fluctuation of its price changes relative to the overall market. In other words, it is the stock's sensitivity to market risk. For instance, if a company's

beta is equal to 1.5 the security has 150% of the volatility of the market average. However, if the beta is equal to 1, the expected return on a security is equal to the average market return. A beta of -1 means security has a perfect negative correlation with the market.

- **Market return premium (market return – risk-free rate):** From the above components of CAPM, we can simplify the formula to reduce “expected return of the market minus the risk-free rate” to be simply the “market risk premium”. The market risk premium represents the additional return over and above the risk-free rate, which is required to compensate investors for investing in a riskier asset class. Put another way, the more volatile a market or an asset class is, the higher the market risk premium will be.

Example

In order to properly understand the CAPM equation, let's take a look an example:

We assume that the current **risk-free rate is 5%**, and the American stock market index S&P 500 is expected to bring in **returns of 12% over the next year**. You are interested in evaluating the return that Joe's Oyster Bar, Inc. (JOB) will have over the same time period (**expected return**). You have determined that the **stock's Beta value is 1.9**, and the overall stock market has a beta of 1.0. This means that JOB carries a higher level of risk than the overall stock market. Because of this extra risk, we should expect a higher potential return than the market's 12% anticipated return. We can calculate the expected return of JOB as follows:

Expected Return = Risk-Free Rate + Beta * (Market Return – Risk-Free Rate)

$$\text{Expected Return} = 5\% + 1.9 * (12\% - 5\%)$$

$$\text{Expected Return} = 18.3\%$$

CAPM tells us that Joe's Oyster Bar has a required rate of return of 18.3%. An investor who buys JOB stock should be getting at least 18.3% in return on his or her investment. If you have reason to believe that JOB will not be able to produce those returns for you over the specified time period, then it's best to invest your funds elsewhere.

One important add-on to the CAPM theory is that high-beta shares typically provide the highest returns. Over a longer period of time, though, high-beta shares tend to be the worst performers during bear markets (a period marked with falling stock prices). Thus, while you may receive high returns from high-beta shares in a given window of time, there is no guarantee that the CAPM return will be realized.

Advantages and Limitations

CAPM is most often used to determine what the fair price of an investment should be. When you calculate the risky asset's rate of return using CAPM, that rate can then be used to discount the investment's future cash flows to their present value and thus arrive at the investment's fair value.

There are assumptions behind the CAPM formula that have been shown not to hold in reality:

- First, the model assumes that a riskier asset will yield a higher return. But this is not necessarily true. A risky asset could decline in value.
- Second, historical data determines beta. The model assumes this historical data an accurate predictor of future results. But the asset's future volatility may not necessarily reflect its past volatility.

Considering the critiques of the CAPM and the assumptions behind its use in portfolio construction, it might be difficult to see how it could be useful. However, the underlying concepts of CAPM can help investors understand the relationship between expected risk and reward as they make better decisions about adding securities to a portfolio.

Despite the aforementioned drawbacks, there are numerous advantages to the application of CAPM, the most important one being its easy-of-use. CAPM is a simplistic calculation that can be easily stress-tested to derive a range of possible outcomes to provide confidence around the required rates of return.

No model is perfect, but each should have a few characteristics that make it useful and applicable. CAPM, while criticized for its unrealistic assumptions, provides a more useful outcome than most other financial

models. It is easily calculated and stress-tested, and when used in conjunction with other aspects of an investment mosaic, it can provide unparalleled yield data that can support or eliminate a potential investment.

6. Conclusion



The world of investing and finance can be a chaotic and confusing place. We hope that this course has given you some basic knowledge about investing in financial markets and about different investment strategies suitable to your risk profile. Let's recap what we've learned in this course:

- **Risk-Return Tradeoff** is the balance between the desire for the lowest possible risk and the highest possible return. Higher risk equals greater possible return.
- **Diversification** lowers the risk of your portfolio.
- **Dollar cost averaging (DCA)** is a technique by which, regardless of the share price, a fixed dollar amount is invested on a regular schedule.
- **Asset allocation** divides assets among major categories in order to create diversification and balance the risk.

Also, we introduced three of the most important market investing theories and the widely used capital asset pricing model (CAPM):

- The **Random Walk Theory** says that stocks take a random and unpredictable path.
- The **Efficient Market Hypothesis (EMH)** says it is impossible to beat the market because prices already incorporate and reflect all relevant information.
- The **Optimal Portfolio Concept** attempts to show how rational investors will maximize their returns for the level of risk that is acceptable to them.

- The **Capital Asset Pricing Model (CAPM)** describes the relationship between risk and expected return and serves as a model for the pricing of risky securities.

Investment Fundamentals

1. Introduction



Welcome to Investment Fundamentals!

This course aims to demystify the process of investing and to give you a basic introduction. To get ready to invest you will need to reflect upon a number of fundamental things about both yourself and the world of investments.

In short, investing can be defined as the act of committing money or capital to an endeavor with the expectation of obtaining an additional income or profit. In even simpler words: investing means **putting your money to work for you**.

There are many different ways you can go about making an investment. This includes putting money into stocks, bonds, mutual funds, or real estate (among many other things), or starting your own business. Each of these vehicles has positives and negatives, but the goal is always to put your money to work so it earns you an additional profit. Even though this is a simple idea, it's the most important concept for you to understand.

This course takes you through:

- Getting ready to invest, including goal setting and understanding the impact of cost and risk
- The importance of asset allocation and the different asset classes
- The different types of investment management
- Looking after your investments over time

From taking this course you will understand the fundamentals of investing and the key steps needed to begin to work with your financial adviser to develop your investment plan. The most important rule: The value of investments, and the income from them, may fall or rise and investors may get back less than they invested.

2. Prepare to Invest



If you don't have any experience investing on your own, getting started can be rather intimidating, confusing, and overwhelming. In this chapter, we will discuss some things all starting investors should keep in mind while getting ready to buy their first stock.

Saving and Investing

Saving for the deposit on a new car or next year's holiday is different from investing to achieve a long-term goal, such as building up a retirement pot or paying school fees.



Saving generally involves putting money into a bank account or money market fund that is relatively **safe** and pays a fixed, although typically low, rate of interest. However, a savings plan may not earn you wealth enhancing returns over the long term and taking into account the impact of inflation the real purchasing power of your money will likely decline.

Investing, on the other hand, can help you to both create and preserve your wealth. By taking an appropriate level of **risk** you may have the opportunity to earn potentially higher long-term returns. The value of investments may fall or rise and investors may get back less than they invested. Quite simply, you invest to create and preserve wealth.

Remember: saving and investing are two different concepts.

Becoming a successful investor requires both planning and discipline:

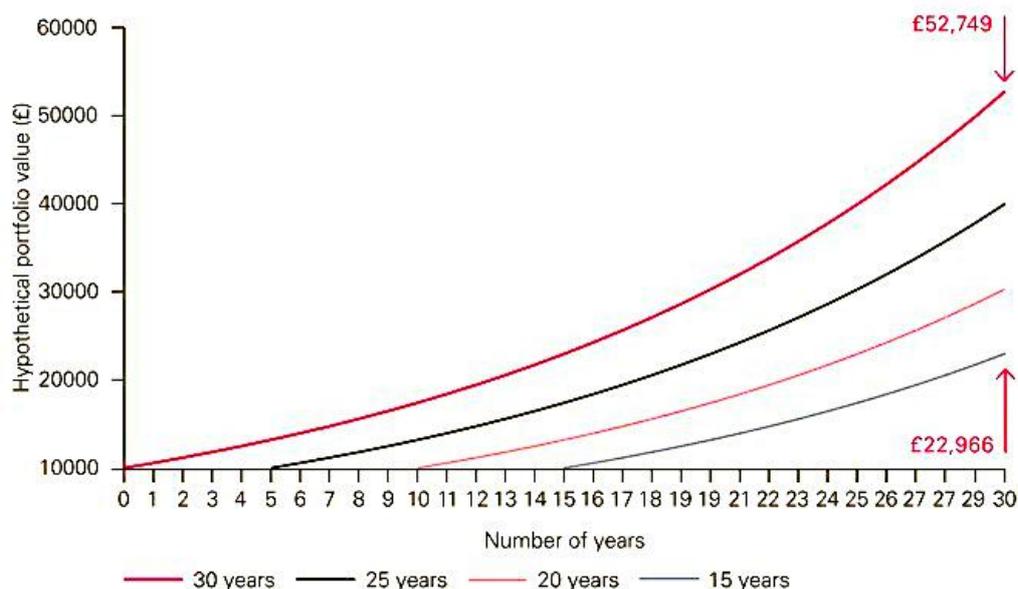
- **Planning** means thinking carefully about everything you need to consider when developing your investment plan. You have to define your goals, understand asset allocation, and look after your investments over time.
- **Discipline** means keeping market movements into perspective, recognizing the potential impact of risk and regularly rebalancing your portfolio. It is also important to live within your means and decide how much you will set aside for investing before you start to develop your plan.

Compounding

People have different goals at different stages of their lives. For example, if you are retired, you may simply want to maximize the amount of income you receive. Whereas, your longer-term focus might be building financial security for you and your family. Whatever your goals and your time frame for investing, it is important to be realistic about what you can afford to invest and how best to manage your investments.

The old saying ‘time is money’ sums up precisely why it’s so important to **invest for the long term**. That’s because the effects of “compounding” the returns you receive from your investments over time can be significant. **Compounding** is the engine that powers long-term investment returns. It happens as you reinvest your returns, then reinvest the returns on those returns, and so on.

This chart illustrates the power of compounding over time:

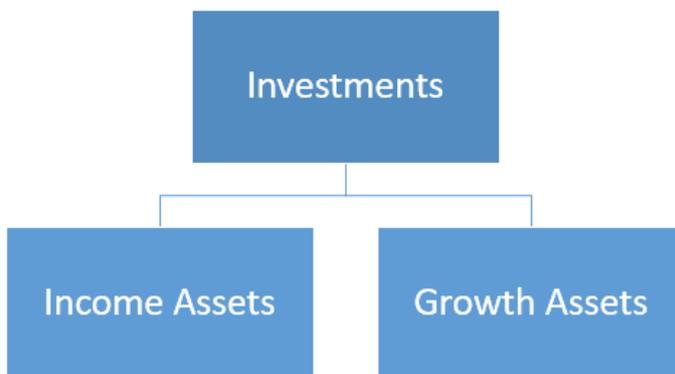


This hypothetical graph shows the growth of a £10,000 initial investment over different time periods. For simplicity, the graph assumes a 6% annual income. It demonstrates that the longer you hold your investment while reinvesting your income, the bigger the potential impact. For example, over thirty years, the initial investment would have grown to £52,749 if all income had been reinvested. In comparison, over a fifteen-year period, the initial investment would only have grown to £22,996. As this is a hypothetical example it does not reflect any particular investment.

It is important to remember that forecasts are not a reliable indicator of future performance and the value of investments and the income from them may rise as well as fall.

Income or Growth

Investments can be divided into “income assets” and “growth assets”. One of the key investment decisions you need to make during the planning stage is whether you require income, growth or a bit of both from your investments.

**Income Assets:**

These assets primarily provide returns in the form of income and include cash investments, rental of property, or ownership of a business. Income assets tend to provide more stable, but lower returns. If your primary need is for income, you may benefit from holding a higher proportion of income assets.

Growth Assets:

Growth assets are designed to grow your investment and include investments such as shares. They tend to carry higher levels of risk, yet have the potential to deliver higher returns over longer investment time frames. In general, growth assets are expected to provide returns in the form of capital growth. For example, as a shareholder, you may receive income in the form of a dividend on the shares you own. However, the majority of the return usually comes from changes in the value of the company over time, as determined by its share price.

Having decided whether you require more income or more growth from your investments, you can go on to working with your financial adviser to develop your investment plan.

Reducing Risk

A number of specific risks can affect your investments. As part of developing your investment plan, you should understand the potential risks. One of the ways to define risk is the likelihood that an investment's actual return will differ from expectations.

There are six different risk categories:



- **Country risk:** Political upheaval, financial troubles, or natural disasters can weaken a country's financial markets.
- **Currency risk:** The risk that changes in currency exchange rates cause the value of an investment to decline.
- **Inflation risk:** Inflation can erode the value or purchasing power of your investments.
- **Liquidity risk:** The chance that an investment may be difficult to buy or sell.
- **Market risk:** Market risk is the risk that investment returns will fluctuate across the market in which you are invested.
- **Short fall risk:** Short fall risk is a possibility that your portfolio will fail to meet your longer-term financial goals.

Spreading your money across a range of investments is one of the best ways to reduce risk and protect against sudden falls in any particular market, sector, or individual investment. With a **diversified portfolio** of investments, returns from better-performing investments can help offset those that underperform.

Diversification alone does not ensure you will make a profit, nor protect you fully against losses in a declining market. But it can reduce the risk

of experiencing a serious loss of wealth as the result of being over-committed to a single investment.

You can spread your potential risk by investing in a mix of investments. That way, when some investments are underperforming, other investments can carry the load and help to even out the ups and downs in your portfolio.

3. Asset Allocation



Asset allocation is the rigorous implementation of an investment strategy that attempts to balance risk versus reward by adjusting the percentage of each asset in an investment portfolio according to the investor's risk tolerance, goals and investment time frame.

Equity



Equities, also sometimes called stocks or shares, represent ownership in a company. This ownership gives you the right to share in that company's future financial performance.

Of the major asset types equities, bonds, property, and cash, history has shown that equities have the highest potential to deliver strong returns over the long-term. That's why many people who invest for the long run make equities the biggest portion of their portfolios. But remember that equities can be volatile.

When a company is doing well, it may decide to pay out some of its profits by distributing dividends to shareholders. Or it might reinvest those profits in the business in the hope of increasing future sales –

which, in turn, may increase the value of your shares. But if the company runs into trouble, the value of your holding could drop or even be wiped out. It is important to remember that the value of investments, and the income from them, may fall or rise and investors may get back less than they invested.

Many companies decide to make payments – called dividends – to their shareholders on a regular basis. The level of dividend payments is determined by both the company's earnings and its management strategy.

An equity investment is money invested in a company through the purchase of its shares. Equity investors purchase shares in the expectation that they will rise in value in the form of capital gains and/or generate capital dividends from the company.

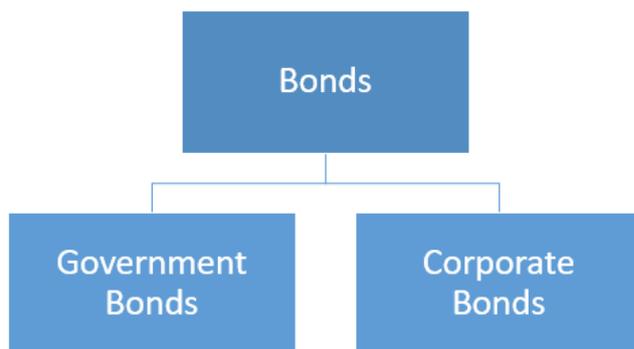
Bonds



A **bond** is a loan made to the bond's issuer, which could be a company, a government, or some other institution.

Bonds can be useful in a portfolio as they provide income, typically paid twice a year. Bonds are issued for a set period and when that period expires – in other words when the bond reaches its maturity – the issuer will repay the face value of the bond. You may include bonds in your portfolio to help offset some of the volatility of equities. As bonds typically offer regular payments of a fixed amount of interest, they are sometimes called **fixed interest investments**.

Bonds can be divided into two groups: government bonds and corporate bonds.



- **Government bonds**, also called gilts, are generally assumed to have a zero risk of default as they are backed by the government. The interest rate paid (or 'coupon') is therefore relatively low.
- Companies also issue bonds (called **corporate bonds**). These provide credit to help finance a variety of operations, as an alternative to issuing shares or borrowing from a bank. As you would expect, corporate bonds tend to be safer when issued by reputable companies and riskier when issued by weak companies. Typically, financially stronger companies issue bonds that pay less interest than those offered by financially weaker companies.

For example, a start-up biotechnology firm might issue a five-year bond which pays a high rate of interest because it is deemed to be more risky. It has to pay this rate of interest in order to persuade investors to take on the higher risk involved. Bonds like these are therefore called 'high yield bonds' and are sometimes called 'junk bonds'. However, a large stable FTSE 100 company making solid long-term profits might pay a substantially lower rate of interest because it is perceived as being relatively safe. These are often referred to as 'investment grade bonds'.

Credit rating agencies, such as Standard & Poor's or Moody's, rate bond issuers according to their credit-worthiness, in the same way that individuals are given a credit score by banks. These ratings can be a useful starting point for understanding the credit-worthiness of a bond.

Property



For most people, their major investment in **property** will be owning their own home. As home ownership represents a significant proportion of an investors' wealth, many people will decide that this gives them a high enough proportion of property in their portfolio.

However, for investors who want to increase their exposure to property, it is possible to diversify into commercial property. This can be done through specialist property funds which are run by professional managers (in the same way as equity or bond funds).

These funds may invest within a single country or internationally, in a variety of different types of property, such as office space, retail outlets or industrial property. These funds earn returns from both rents on the property they own and potential gains in the value of that property.

Where and what you buy will affect your return on investment significantly. Here are some tips to help you identify a good investment property:

- Familiar markets: Consider buying an investment property in an area you are familiar with as it will take you less time to research. Check recent sale prices in the area to give you an idea of what you can expect to pay for local properties.
- Growth suburbs: Look for areas where high growth is expected, where there is potential for capital gains.
- Rental yield: Look for areas where rents are high compared to the property value.
- Low vacancy rates: Find out about the vacancy rates in the neighbourhood. A high vacancy rate may indicate a less desirable area, which could make it harder to rent the property out, or sell it in the future.
- Planning: Find out about proposed changes in the suburb that may affect future property prices. Things like new developments or zoning changes can affect the future value of a property.

Cash Investments



A **cash investment** is a short-term obligation, usually fewer than 90 days, that provides a return in the form of interest payments. Cash investments generally offer a low return compared to other investments but are associated with very low levels of risk.

Cash investments include:

- **Savings Account:** Some people consider a savings account as an investment alternative for cash. Money held in the account is insured by the Federal Deposit Insurance Corporation (FDIC), however, the interest rate on these accounts is minimal. The average interest return on a savings account is only 0.09%. Investors that want the option to access their money any time but also require a slightly higher rate of return typically will put their cash in a high yield savings account, offered through local banks.
- **Money Market:** This is a very short-term security that usually has a maturity of fewer than six months. They are very liquid investments that pay variable interest rates. Money market accounts generally have a slightly higher interest rate return than a cash savings account. Examples of money market instruments include commercial paper and treasury bills.
- **Certificate of Deposit (CD):** A CD functions like a bond in that it makes periodic interest payments to investors and funds are held for a predetermined period of time. But unlike bonds that can be sold prior to the maturity date, funds in a CD are locked in if held with a bank. Withdrawing the money will incur a penalty.

While cash investments tend to be the **least volatile** of the major asset classes, historically they tend to provide the lowest returns. That's why they are often used as places to keep emergency funds and to save for short-term objectives such as car and home purchases. Volatility is the extent to which asset prices or interest rates fluctuate over time. Volatility is often used to assess the potential risk associated with an investment.

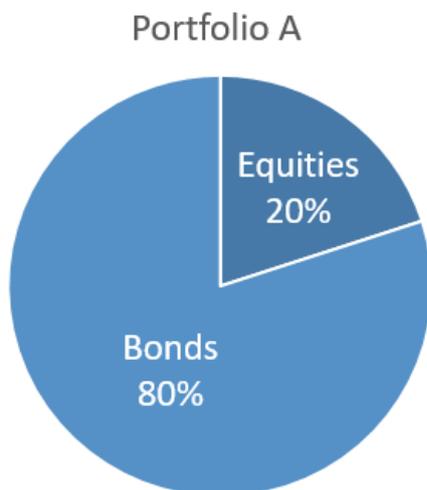
Cash investments are usually undertaken by investors who need a temporary place to keep their cash while researching other investment products. Investors benefit from the low-risk yield and high liquidity of cash investments. Interest rates tend to be low but an investor has access to his or her money within a short period of time.

Investor Types

Every investor will have different goals and their asset allocation will reflect this. The examples below highlight how different types of investors may choose to structure their investment mix.

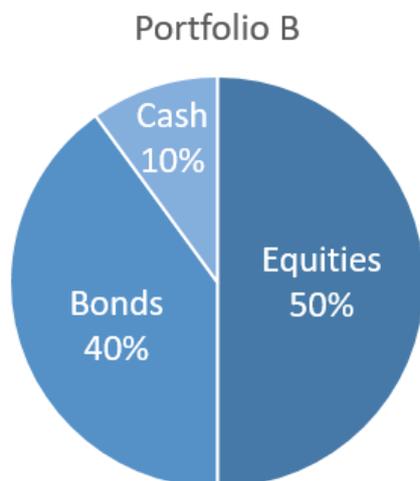
Example 1: The wary investor

An investor in her 30s is saving for retirement, and you might expect her to meet her goal by investing primarily in equity-based funds. But she's wary of the stock market and inexperienced with investing and sees that equities have suffered recent declines. She finds that she's most comfortable with a portfolio that includes 20% equities and 80% bonds.



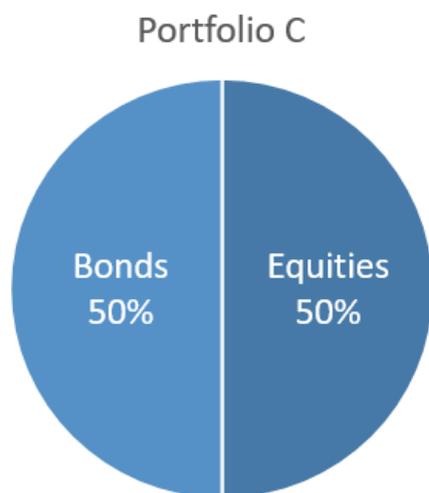
Example 2: The dual-income couple

A dual-income married couple in their 40s wants to build up additional savings for retirement in about 20 years. A portfolio that consists of 70% equities and 30% bonds might be appropriate. However, the husband's job (which provides nearly half of their income) has become unstable, and they're anxious about their economic future. So they may settle on a more conservative asset allocation of 50% equities, 40% bonds, and 10% cash.



Example 3: The recently retired couple

A newly retired couple in their 60s first considered a portfolio of 30% equities and 70% bonds. However, they believe their retirement benefits are ample for their income needs, and they want to build a larger estate to benefit their grandchildren. So they decide on a more aggressive asset allocation – consisting of 50% equities and 50% bonds. Here, the additional risk is expected to generate higher long-term returns.



Investment markets move in cycles, reflecting the underlying strength of the economy, industry trends and investor sentiment. Asset classes have performed quite differently in the last decades, which shows the importance of diversifying an investment portfolio. The basic principle is simple: combining asset classes that tend not to rise or fall together can potentially reduce your overall risk.

4. Investment Management



There are a number of ways you can invest your money in the asset classes we have discussed in the previous chapter. One of the most popular options is the use of pooled funds with the help of professional investment management companies.

Pooled Funds

Mutual funds offer a way for a group of investors to effectively pool their money so they can invest in a wider variety of investment vehicles and take advantage of professional money management through the purchase of one mutual fund share.

When you buy a mutual fund share, you're investing in stocks, bonds and other securities that are held within the fund. For example, a German equity fund is likely to hold a wide number of stocks from a broad set of different German industry sectors.

The mutual fund then passes along the profits (and losses) of those investments to its shareholders. So if a mutual fund does well, you benefit. But, they're not risk-free.



Advantages:

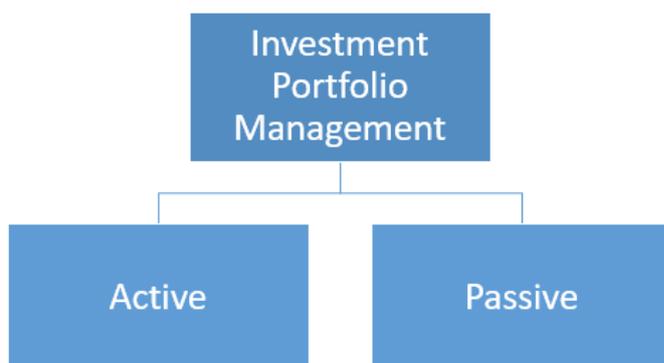
- **Diversification:** The holdings of a single pooled fund can range from a few securities to hundreds. This diversification can reduce the risk of loss due to problems in a particular company or industry.
- **Professional management:** Fund managers have access to extensive research, market information, and skilled traders.
- **Liquidity:** Shares in a pooled fund can be bought and sold on any business day, so investors have relatively easy access to their money.

Disadvantages:

- **Diversification penalty:** While diversification eliminates the risk from owning a single security whose value plummets, it also limits the potential for making a significant gain if a security's value increases dramatically. And, most importantly, diversification does not protect you from a loss caused by an overall decline in the financial markets.
- **Not bespoke:** Pooled funds are not bespoke investment portfolios. As a result, they may meet their investment objectives perfectly, but still not meet yours.
- **No guarantees:** As with many other investments, the value of a pooled fund will fluctuate, so it's possible for investors to lose money if they sell shares for less than they paid for them.

Active and Passive Managers

In broad terms, investment funds are managed in one of two ways – active or passive:



Active managers aim to beat, rather than simply match, the return of a market index or benchmark. There are several techniques managers may use. Typically, this is done by taking a top-down or a bottom-up approach.

- **Top-down managers** start by looking at economic trends to help them predict which sectors will prosper in the future. After zeroing in on particular industries, they try to identify their most promising companies.
- **Bottom-up managers** look for outstanding companies in any industry. They assume that a great company will do well even if it's in an industry that's not currently thriving.

Passive managers aim to closely match the returns of a market index or benchmark. Passive management is a style of management associated with **exchange-traded funds (ETFs)** where a fund's portfolio mirrors a market index (like the Dow-Jones, NASDAQ, etc). They do this by either purchasing all the shares in the chosen index or a representative sample of securities which aims to replicate the performance of the index. Therefore, passive managers do **not** attempt to beat the market. This is why ETFs have significantly lower fees and commissions than actively managed mutual funds.

Sustainable Investing

Sustainable Investing, also known as **Socially Responsible Investing (SRI)** or ethical investing, is any investment strategy which seeks to consider both financial return as well as social/environmental good.

In general, socially responsible investors encourage corporate practices that they believe promote environmental stewardship, consumer protection, human rights, and racial or gender diversity. Some SRIs avoid businesses perceived to have negative social effects such as alcohol, tobacco, fast food, gambling, pornography, weapons, fossil fuel production, or the military.

The areas of concern recognized by the SRI practitioners are sometimes also summarized under the heading of **ESG (Environmental, Social, and Governance) Investing**.

What Considerations Go Into Sustainable Investing?

 Environmental	 Social	 Governance
Carbon emissions	Diversity & workplace policies	Board structure
Energy efficiency	Labor standards	Board composition
Water scarcity	Supply chain management	Executive compensation
Waste management	Product safety and usefulness	Political contributions & lobbying
Pollution mitigation	Customer privacy	Bribery and corruption policies & oversight
	Community impact	Strategic sustainability oversight

These are examples of ESG criteria but not a complete list.

For the investor, eco-friendly investing is a way to get peace of mind. If you're fully invested in sustainable companies, you don't have to worry that your wealth is working to benefit any companies that are actively destroying the environment or exploiting lax regulations in other countries. Eco-friendly investing also gives you the opportunity to foster innovation at companies that have green initiatives and rely on sustainable energy.

On the company level, there are clear returns for sustainability. For today's investors, "eco-friendly" and "sustainable" are more than just buzzwords: Many sustainable funds have been shown to match or even outperform the traditional market!

Just as there are multiple ways to manage a traditional portfolio, there are multiple ways to invest sustainably. You can either invest in sustainable funds and specific companies by yourself, or you can rely on an advisor.

Sustainable Investing, Socially Responsible Investing (SRI), and ESG-Investing are investment strategies that seek to consider financial return as well as social and environmental good.

5. Monitoring your Investments



A number of factors will influence your portfolio and your investment choices over time. That's why it is important to understand the nature of markets. This background knowledge will enable you to react to market changes and to adjust your portfolio when necessary.

Market Movements

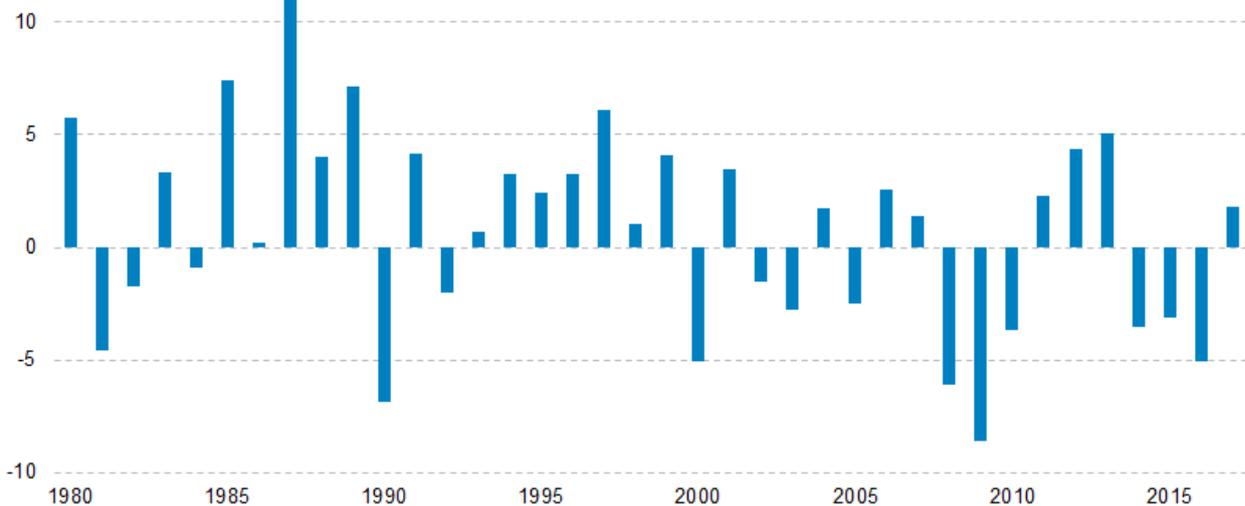
The assets you invest in will **rise and fall over time** as markets are affected by economic, social and political events. But always remember that it's in the nature of markets to fluctuate, sometimes quite dramatically. It's often impossible to explain market movements until long after the dust has settled. In other words, it is important not to lose sight of your investment objective and speak to your financial adviser before deciding to change your investment approach based on market moods.

Timing the markets for the best time to invest – buying and selling tactically for profit – is far easier said than done. Trying to pick the top and the bottom of the market is not easy. It's hard to sell when everyone is buying. If you sell out at the bottom (which many investors do) you risk being out of the market when it rallies. Even professional fund managers find it difficult to consistently time the markets.

This chart shows just how erratic the stock market can be, and shows the performance of the S&P 500 Index (the index which tracks the share prices of the 500 largest US companies) in January from 1980 to 2017.

S&P 500 performance in January [1980-2017]

Index month returns (%)



However, despite the market's ups and downs over the decades, the index averaged approximately 9.8% per year total return. This represents solid performance for investors focused on the long term.

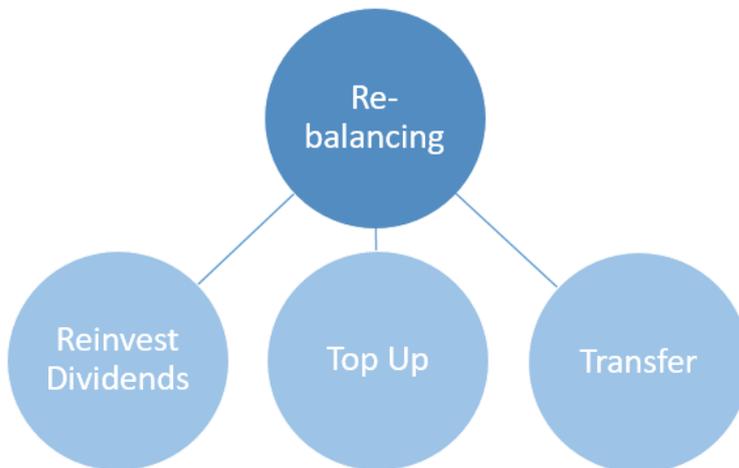
A popular strategy to benefit from the solid long-term performance of the stock market is spreading your investments over several months and years. This way, you avoid the risk of placing a large one-time investment at the wrong moment.

Review and Rebalance

You should review your portfolio at least annually to make sure your asset allocation stays on track. You may decide to review your portfolio, for example, if your personal situation has changed, or market conditions have altered. If you do not review and adjust your portfolio in light of changing circumstances, you risk not achieving your investment goals.

During your review, you may decide to **rebalance** your portfolio – that is, change the proportion of assets you hold. This will involve selling some investments and buying others. When you rebalance, you need to think carefully about the costs and tax implications. In most cases, such as buying equities or bonds, you will have brokerage costs – and with some pooled funds you may be asked to pay an initial charge or an exit charge. You may also have a capital gains tax liability if a sale of assets means you go above your annual allowance.

If you need to make changes, you could consider **rebalancing in three ways**:



- **Reinvest dividends:** Direct dividends or capital gains from the asset sector that has exceeded its target into one that has fallen short.
- **Top up:** Add money to the asset sector that has fallen below its target percentage.
- **Transfer:** Move funds between asset classes. Shift money out of the asset sector that has exceeds its allocation target into the other investments.

6. Conclusion



In this course, you learned the basics of investing money. In simple words, investing means putting your money to work for you. You learned that each investor is different in his/her risk tolerance and that there is more than one strategy that can be used to invest successfully.

With an understanding of your investment goals, time frame, and risk, you can begin to create an asset allocation for your portfolio. Asset allocation simply means deciding how to spread your money across the different asset classes (including equities, bonds, property, and cash) and how much you want to hold in each. It also means selecting a mix of asset classes that reflects your objectives, time frame, and attitude to risk:

- **Equities:** Potential for capital growth, and may offer income through the payment of dividends. You can choose to invest in national and overseas companies.
- **Bonds:** Can provide a steady and reliable income stream with potential for capital growth and usually offers a higher interest rate, or yield, than cash. Includes government bonds (gilts), overseas government bonds, and company loans (corporate bonds).
- **Property:** Provides the benefits of diversification through access to properties in retail, office, industrial, tourism and infrastructure sectors. You can invest in both national and international property.
- **Cash Investments:** May be suitable for short-term needs, such as an impending down payment on a new home. Usually includes higher interest-paying securities, as well as bank and building society accounts or term deposits (a cash deposit at a financial institution that has a fixed term).

Remember that investing successfully is about knowing what you want, understanding your time frame for investing and your attitude to risk, and then making a plan to help you achieve your objectives. You should review your plan regularly and rebalance your investment portfolio when necessary.

Finally, always keep an eye on costs. The power of compounding means that you could end up with a much bigger pot of money over the longer term.

Financial Performance

1. Introduction



Welcome to Financial Performance!

The ability to evaluate the financial position of a business is a valuable skill for any manager to have – whether you are choosing a supplier or considering a strategic partnership with a company.

Many organizations can appear successful despite deep structural problems with the way they are financed and managed. Just think for a moment about the consequences of working with a supplier or partner organization who goes bust, or who, despite appearing credible, never seems able to deliver on their promises because of hidden financial problems within their own organization.

Very few managers take the time and trouble to learn how to make a simple financial assessment of another organization, even though doing so is straightforward and the necessary information can usually be obtained online either free of charge or for only a few dollars.

This course explains the tools used to assess the financial performance of an organization. These are known as '**key financial ratios**' and they help you interpret financial information in a way that can aid you in making the right decisions when choosing who to work with or sell to. This information can also give you a valuable insight into how well an organization is managed at the highest level.

A key financial ratio is calculated by comparing certain values taken from an organization's **financial statements**, including the income statement,

balance sheet, and cash flow statement. Before you can fully understand financial ratios you must have a clear and accurate appreciation of how each of these statements is derived and what it can tell you. If you are not already familiar with these statements we recommend to run our “**Accounting Principles**” course first.

2. Types of Financial Ratios

Ratio analysis is a tool that was developed to perform quantitative analysis on numbers found on financial statements. Ratios help link different financial statements together and offer figures that are comparable between companies and across industries and sectors.

Ratio analysis is one of the most widely used fundamental analysis techniques. Generally speaking, these ratios can be grouped into five different categories. In the following chapters, we will discuss each ratio in detail:



- **Liquidity Ratios** measure a company’s ability to pay off its short-term debt obligations
- **Profitability Ratios** show a company’s ability to generate profits from its operations

- **Solvency Ratios** quantify the firm's ability to repay long-term debt
- **Efficiency Ratios** measure the effectiveness of the firm's use of resources
- **Market Ratios** estimate the attractiveness of a potential or existing investment

Financial ratios are not useful unless they are **benchmarked** against something else, for example past performance or another organization in the same business area. Whilst you can compare the ratios of organizations in different industries, this is usually of limited value because of differences in market conditions, capital requirements, and competition. However, comparing ratios for potential suppliers, partners, acquisitions, or competitors can provide you with useful data to help with decision making.

Key financial ratios allow for useful comparisons between:

- Organizations in the same industry sector
- Different time periods for the same organization
- An organization and its industry average

3. Liquidity



Liquidity Ratios evaluate a firm's ability to meet its short-term financial obligations. If it does not have enough short-term assets to cover short-term obligations, or if it does not generate enough cash flow to cover costs, it may face problems. Here are the two most common liquidity ratios:

Current Ratio

The **Current Ratio** measures a firm's ability to pay off its short-term liabilities with its current assets. The current ratio is an important

measure of liquidity because short-term liabilities are due within the next year.

This means that a company has a limited amount of time in order to raise the funds to pay for these liabilities. Current assets like cash, cash equivalents, and marketable securities can easily be converted into cash in the short term. This means that companies with larger amounts of current assets will more easily be able to pay off current liabilities when they become due without having to sell off long-term, revenue-generating assets.

The current ratio is calculated by dividing current assets by current liabilities:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

The current ratio helps investors and creditors understand the liquidity of a company and how easily that company will be able to pay off its current liabilities. This ratio expresses a firm's current debt in terms of current assets. So a current ratio of 4 would mean that the company has 4 times more current assets than current liabilities.

A higher current ratio is always more favorable than a lower current ratio because it shows the company can more easily make current debt payments.

Example:

Alberto's Pizzeria is applying for loans to build a large terrace. Alberto's bank asks for the balance sheet so they can analysis the pizzeria's current debt levels. According to Alberto's balance sheet, the pizzeria reported \$100,000 of current liabilities and only \$25,000 of current assets. Alberto's current ratio would be calculated like this:

$$\$25,000 / \$100,000 = 0.25$$

As you can see, the pizzeria only has enough current assets to pay off 25 percent of its current liabilities. This shows that Alberto's Pizzeria is highly leveraged and highly risky. Banks would prefer a current ratio of at

least 1 or 2, so that all the current liabilities would be covered by the current assets. Since the pizzeria's ratio is so low, it is unlikely that it will get approved for the loan.

Quick Ratio

The **Quick Ratio** or Acid Test Ratio measures the ability of a company to pay its current liabilities when they come due with only quick assets. Quick assets are current assets that can be converted to cash within 90 days or in the short-term. Cash, cash equivalents, short-term investments or marketable securities, and current accounts receivable are considered **quick assets**.

The acid test of finance shows how well a company can quickly convert its assets into cash in order to pay off its current liabilities. It also shows the level of quick assets to current liabilities.

The quick ratio is calculated by dividing quick assets (cash, cash equivalents, short-term investments, and current receivables) by current liabilities:

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

Higher quick ratios are more favorable for companies because it shows there are more quick assets than current liabilities. A company with a quick ratio of 1 indicates that quick assets equal current assets. This also shows that the company could pay off its current liabilities without selling any long-term assets. An acid ratio of 2 shows that the company has twice as many quick assets than current liabilities.

Obviously, as the ratio increases so does the liquidity of the company. More assets will be easily converted into cash if need be. This is a good sign for investors, but an even better sign to creditors because creditors want to know they will be paid back on time.

Example:

Let's assume Jim's Clothing Store is applying for a loan to remodel the storefront. The bank asks Jim for a detailed balance sheet, so it can compute the quick ratio. Jim's balance sheet included cash of \$10,000, accounts receivable of \$5,000, stock investments of \$1,000, and current liabilities of \$15,000.

The bank can compute Jim's quick ratio like this:

$$(\$10,000 + \$5,000 + \$1,000) / \$15,000 = 1.07$$

As you can see Jim's quick ratio is 1.07. This means that Jim can pay off all of his current liabilities with quick assets and still have some quick assets left over.

4. Profitability



Profitability Ratios are financial metrics that are used to assess a business's ability to generate profit. Profitability ratios focus on a company's return on investment in inventory and other assets. Here are four of the key ratios that investors consider when judging how profitable a company should be:

Profit Margin

The **Profit Margin Ratio**, also called the Return on Sales Ratio, compares the earnings reported by a business to its sales. It is a key indicator of the financial health of an organization.

Creditors and investors use this ratio to measure how well a company can convert sales into net income. Investors want to make sure profits are high enough to distribute dividends while creditors want to make sure the company has enough profits to pay back its loans. An extremely low-

profit margin formula would indicate the expenses are too high and the management needs to budget and cut expenses.

The profit margin ratio formula can be calculated by dividing net income by net sales:

$$\text{Profit Margin Ratio} = \frac{\text{Net Income}}{\text{Net Sales}}$$

The profit margin ratio directly measures what percentage of sales is made up of net income. In other words, it measures how much profits are produced at a certain level of sales.

This ratio also indirectly measures how well a company manages its expenses relative to its net sales. That is why companies strive to achieve higher ratios. They can do this by either generating more revenues while keeping expenses constant or keep revenues constant and lower expenses. Since most of the time generating additional revenues is much more difficult than cutting expenses, managers generally tend to reduce spending budgets to improve their profit ratio.

Example:

Peter's Fishing Shop is an outdoor fishing store that selling lures and other fishing gear to the public. Last year Peter had the best year in sales he has ever had since she opened the business 10 years ago. Last year Peter's net sales were \$1,000,000 and his net income was \$100,000.

Here is Peter's Profit Margin Ratio:

$$\$100,000 / \$1,000,000 = 10\%$$

As you can see, Peter only converted 10 percent of his sales into profits. Contrast that with this year's numbers of \$800,000 of net sales and \$200,000 of net income:

$$\$200,000 / \$800,000 = 25\%$$

This year Peter may have made fewer sales, but he cut expenses and was able to convert more of these sales into profits with a ratio of 25 percent.

Return on Assets (ROA)

The **Return on Assets Ratio (ROA)** compares the net earnings of a business to its total assets. In other words, the Return on Assets Ratio measures how well a company can manage its assets to produce profits during a period.

Since company assets' sole purpose is to generate revenues and produce profits, this ratio helps both management and investors see how well the company can convert its investments in assets into profits. In short, this ratio measures how profitable a company's assets are.

The return on assets ratio formula is calculated by dividing net income by average total assets:

$$\text{Return on Assets Ratio} = \frac{\text{Net Profit}}{\text{Total Assets}}$$

The return on assets ratio measures how effectively a company can earn a return on its investment in assets. In other words, ROA shows how efficiently a company can convert the money used to purchase assets into net income or profits.

A positive ROA ratio usually indicates an upward profit trend as well. ROA is most useful for comparing companies in the same industry as different industries use assets differently. For instance, construction companies use large, expensive equipment while software companies use computers and servers.

Example:

Charlie's Construction Company is a growing construction business that has a few contracts to build storefronts in downtown Chicago. Charlie's balance sheet shows total assets of \$200,000. During the current year, Charlie's company had a net income of \$2,000,000. Charlie's return on assets ratio looks like this:

$$\$200,000 / \$2,000,000 = 10\%$$

As you can see, Charlie's ratio is 10 percent. In other words, every dollar that Charlie invested in assets during the year produced \$10 of net income. Depending on the economy, this can be a healthy return rate no matter what the investment is.

Investors would have to compare Charlie's return with other construction companies in his industry to get a true understanding of how well Charlie is managing his assets.

Return on Equity (ROE)

The **Return on Equity Ratio (ROE)** measures the ability of a firm to generate profits from its shareholders' investments in the company. In other words, the return on equity ratio shows how much profit each dollar of common stockholders' equity generates.

This is an important measurement for potential investors because they want to see how efficiently a company will use its money to generate net income. ROE is also an indicator of how well management is at using equity financing to fund operations and grow the company.

To calculate the return on equity, simply divide net income by shareholder's equity. The formula is:

$$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Shareholder's Equity}}$$

ROE is a profitability ratio from the investor's point of view—not the company. In other words, this ratio calculates how much money is made based on the investors' investment in the company, not the company's investment in assets or something else.

That being said, investors want to see a high return on equity ratio because this indicates that the company is using its investors' funds

effectively. Higher ratios are almost always better than lower ratios but have to be compared to other companies' ratios in the industry. Since every industry has different levels of investors and income, ROE can't be used to compare companies outside of their industries very effectively.

Many investors also choose to calculate the return on equity at the beginning of a period and the end of a period to see the change in return. This helps track a company's progress and ability to maintain a positive earnings trend.

Example:

Toms Tool Company is a retail store that sells tools to construction companies across the country. Tom reported net income of \$100,000. Tom also had \$50,000 common shares outstanding during the year. Tom would calculate her return on common equity like this:

$$\$100,000 / \$50,000 = 2$$

As you can see, Tom's ROE is 2. This means that every dollar of common shareholder's equity earned about \$2 this year. In other words, shareholders saw a 200 percent return on their investment. Tom's ratio is most likely considered high for his industry. An average of 5 to 10 years of ROE ratios will give investors a better picture of the growth of this company.

Return on Investment (ROI)

Return on investment (ROI) calculates the profits of an investment as a percentage of the original cost. In other words, it measures how much money was made on the investment as a percentage of the purchase price. It shows investors how efficiently each dollar invested in a project is at producing a profit.

The ROI calculation is one of the most common investment ratios because it's simple and extremely versatile. Managers can use it to compare performance rates on capital equipment purchases while investors can calculate what stock purchases performed better.

The return on investment formula is calculated by subtracting the cost from the total income and dividing it by the total cost:

$$\text{Return on Investment} = \frac{(\text{Investment Revenue} - \text{Investment Cost})}{\text{Investment Cost}}$$

Generally, any positive ROI is considered a good return. This means that the total cost of the investment was recouped in addition to some profits left over. A negative return on investment means that the revenues weren't even enough to cover the total costs. That being said, higher return rates are always better than lower return rates.

Example:

Let's look at Richard's Brokerage House for example. Richard is a stockbroker who specializes in penny stocks. Richard made a somewhat risky investment in a liquid metals stock last year when he purchased 8,000 shares at \$1 per share. Today, a year later, the fair market value per share is \$3.50. Richard sells the share and uses an ROI calculator to measure his performance.

$$(\$28,000 - \$8,000) / \$8,000 = 2.5$$

As you can see, Richard's return on investment is 2.5. This means that Richard made \$2.50 for every dollar that he invested in the liquid metals company. This investment was extremely efficient because it increased by 250%.

5. Leverage



Leverage Ratios, also called Solvency Ratios or Debt Ratios, measure a company's ability to sustain operations indefinitely by comparing debt levels with equity, assets, and earnings. Leverage ratios focus more on the long-term sustainability of a company. The two most important solvency ratios are:

Debt Ratio

The **Debt Ratio** measures the proportion of assets paid for with debt. One can use the ratio to reach conclusions about the solvency of a business. A high ratio implies that the bulk of company financing is coming from debt; this is a risky financial structure since the borrower is at risk of not being able to pay for the associated interest expense or paying back the principal. A low debt ratio reflects a conservative financing strategy of using only equity to pay for assets.

The debt ratio is calculated as total liabilities divided by total assets. The formula is:

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

Lenders and creditors use the debt ratio to estimate the amount of lending risk they will incur by extending credit to an organization. They are more likely to lend when the debt ratio is closer to 0% than when the ratio is closer to 100% (or more).

Example:

Jim's Guitar Shop is thinking about building an addition onto the back of its existing building for more storage. Jim consults with his banker about applying for a new loan. The bank asks for Jim's balance to examine his overall debt levels. The banker discovers that Jim has total assets of \$100,000 and total liabilities of \$25,000. Jim's debt ratio would be calculated like this:

$$\$25,000 / \$100,000 = 0.25$$

As you can see, Jim only has a debt ratio of 0.25. In other words, Jim has 4 times as many assets as he has liabilities. This is a relatively low ratio and implies that Jim will be able to pay back his loan. Jim shouldn't have a problem getting approved for his loan.

Debt to Equity Ratio

The **Debt to Equity Ratio** compares a company's total liabilities to total equity. It shows the percentage of company financing that comes from creditors and investors. A higher debt to equity ratio indicates that more creditor financing (bank loans) is used than investor financing (shareholders).

The debt to equity ratio is calculated by dividing total liabilities by total equity:

$$\text{Debt to Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Total Equity}}$$

Each industry has a different debt to equity ratio benchmarks, as some industries tend to use more debt financing than others. A debt ratio of 0.5 means that there are half as many liabilities than there is equity. In other words, the assets of the company are funded 2-to-1 by investors to creditors. A debt to equity ratio of 1 would mean that investors and creditors have an equal stake in the business assets.

A lower debt to equity ratio usually implies a more financially stable business. Companies with a higher debt to equity ratio are considered riskier to creditors and investors than companies with a lower ratio. Unlike equity financing, a debt must be repaid to the lender. Since debt financing also requires debt servicing or regular interest payments, debt can be a far more expensive form of financing than equity financing. Companies leveraging large amounts of debt might not be able to make the payments.

Example:

Assume a company has \$300,000 of bank lines of credit. The shareholders of the company have invested \$1.2 million. Here is how you calculate the debt to equity ratio:

$$\$300,000 / \$1,200,000 = 0.25$$

Creditors view a higher debt to equity ratio as risky because it shows that the investors haven't funded the operations as much as creditors have. This could mean that investors don't want to fund business operations because the company isn't performing well.

6. Efficiency



Efficiency Ratios, also called Activity Ratios, measure how well companies use their assets to generate income. Efficiency ratios often look at the time it takes companies to collect cash from clients or the time it takes companies to convert inventory into cash. Here are the two most common efficiency ratios:

Asset Turnover Ratio

The **Asset Turnover Ratio** compares the sales of a business to the book value of its assets. In other words, this ratio shows how efficiently a company can use its assets to generate sales. A high turnover level indicates that an entity uses a minimal amount of working capital and fixed assets in its daily operations.

The asset turnover ratio gives investors and creditors an idea of how a company is managed and uses its assets to produce products and sales.

To calculate the asset turnover ratio, divide sales by total average assets:

$$\text{Asset Turnover Ratio} = \frac{\text{Sales}}{\text{Total Average Assets}}$$

This ratio measures how efficiently a firm uses its assets to generate sales, so a higher ratio is always more favorable. Higher turnover ratios mean the company is using its assets more efficiently. Lower ratios mean that the company isn't using its assets efficiently and most likely have management or production problems.

For instance, a ratio of 1 means that the net sales of a company equal the average total assets for the year. In other words, the company is generating 1 dollar of sales for every dollar invested in assets.

Like with most ratios, the asset turnover ratio is based on industry standards. Some industries use assets more efficiently than others. To get a true sense of how well a company's assets are being used, it must be compared to other companies in its industry.

Example:

Sally's Tech Company is a tech start-up company that manufactures a new tablet computer. Sally is currently looking for new investors and has a meeting with an angel investor. The investor wants to know how well Sally uses her assets to produce sales, so he asks for her financial statements. The financial statements reports sales of \$20,000 and total average assets of \$80,000.

The total asset turnover ratio is calculated like this:

$$\$20,000 / \$80,000 = 0.25$$

As you can see, Sally's ratio is only 0.25. This means that for every dollar in assets, Sally only generates 25 cents. In other words, Sally's start-up is not very efficient with its use of assets.

Inventory Turnover Ratio

The **Inventory Turnover Ratio** shows how effectively inventory is managed by comparing the cost of goods sold with the average inventory for a period. This measures how many times the average inventory is "turned" or sold during a period. In other words, it measures how many times a company sold its total average inventory dollar amount during the year. A company with \$1,000 of average inventory and sales of \$10,000 effectively sold its 10 times over.

To calculate inventory turnover, divide the ending inventory figure into the annualized cost of sales:

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Inventory}}$$

When there is a low rate of inventory turnover, this implies that a business may have a flawed purchasing system that bought too many goods, or that stocks were increased in anticipation of sales that did not occur. In both cases, there is a high risk of inventory aging, in which case it becomes obsolete and has little residual value.

When there is a high rate of inventory turnover, this implies that the purchasing function is tightly managed. However, it may mean that a business does not have the cash reserves to maintain normal inventory levels, and so is turning away prospective sales. The latter scenario is most likely when the amount of debt is unusually high and there are few cash reserves.

Example:

Donny's Furniture Company sells industrial furniture for office buildings. During the current year, Donny reported cost of goods sold on its income statement of \$1,000,000. Donny's inventory was \$4,000,000. Donny's turnover is calculated like this:

$$\$1,000,000 / \$4,000,000 = 0.25$$

As you can see, Donny's turnover is 0.25. This means that Donny only sold a quarter of its inventory during the year. It also implies that it would take Donny approximately 4 years to sell his entire inventory or complete one turn. In other words, Donny does not have very good inventory control.

7. Market



Market Ratios are used to analyze stock price trends and help figure out a stock's current and future market value. In other words, market ratios show what investors should expect to receive from their investment. Here are the most important market ratios that investors tend to analyze:

Earnings per Share (EPS)

The **Earnings per Share Ratio** (EPS Ratio) measures the amount of a company's net income that is theoretically available for payment to the holders of its common stock. A company with a high earnings per share ratio is capable of generating a significant dividend for investors, or it may plow the funds back into its business for more growth; in either case, a high ratio indicates a potentially worthwhile investment, depending on the market price of the stock.

To calculate the ratio, subtract any dividend payments due to the holders of preferred stock from net income, and divide by the average number of common shares outstanding during the measurement period. The calculation is:

$$\text{Earnings per Share} = \frac{(\text{Net Income} - \text{Preferred Dividends})}{\text{Number of Common Shares Outstanding}}$$

It is very worthwhile to track a company's earnings per share ratio on a trend line. If the trend is positive, then the company is either generating an increasing amount of earnings or buying back its stock. Conversely, a declining trend can signal to investors that a company is in trouble, which can lead to a decline in the stock price.

Example:

ABC Company has a net income of \$1,000,000 and also must pay out \$200,000 in preferred dividends. It has both bought back and sold its own stock during the measurement period; the weighted average number of common shares outstanding during the period was 400,000 shares. ABC's earnings per share ratio is:

$$(\$1,000,000 - \$200,000) / 400,000 = \$2.00 \text{ per share}$$

As you can see, the EPS for the year is \$2. This means that if ABC Company distributed every dollar of income to its shareholders, each share would receive 2 dollars.

Price to Earnings Ratio

The **Price to Earnings Ratio (P/E Ratio)** calculates the market value of a stock relative to its earnings by comparing the market price per share by the earnings per share. In other words, the price-earnings ratio shows what the market is willing to pay for a stock based on its current earnings.

The P/E Ratio helps investors analyze how much they should pay for a stock based on its current earnings. Companies with higher future earnings are usually expected to issue higher dividends or have appreciating stock in the future.

The price-earnings ratio formula is calculated by dividing the market value price per share by the earnings per share:

$$\text{Price to Earnings Ratio} = \frac{\text{Current Market Price per Share}}{\text{Earnings per Share}}$$

A company with a high P/E ratio usually indicated positive future performance and investors are willing to pay more for this company's shares. A company with a lower ratio, on the other hand, is usually an indication of poor current and future performance.

Example:

The Island Corporation stock is currently trading at \$50 a share and its earnings per share for the year is 5 dollars. Island's P/E ratio would be calculated like this:

$$\$50 / \$5 = 10$$

As you can see, the Island's ratio is 10. This means that investors are willing to pay 10 dollars for every dollar of earnings.

Dividend Yield

The **Dividend Yield Ratio** shows the number of dividends that a company pays to its investors in comparison to the market price of its stock. Thus, the dividend yield ratio is the return on investment to an investor if the investor were to have bought the stock at the market price on the measurement date.

To calculate the ratio, divide the annual dividends paid per share of stock by the market price of the stock at the end of the measurement period. The basic calculation is:

$$\text{Dividend Yield Ratio} = \frac{\text{Cash Dividends per Share}}{\text{Market Value per Share}}$$

Investors use the dividend yield formula to compute the cash flow they are getting from their investment in stocks. In other words, investors want to know how much dividends they are getting for every dollar that the stock is worth.

A company with a high dividend yield pays its investors a large dividend compared to the fair market value of the stock. This means the investors are getting highly compensated for their investments compared with lower dividend-yielding stocks.

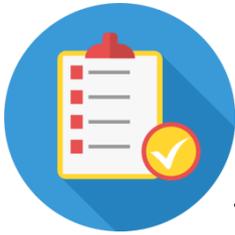
Example:

Stacy's Bakery is an upscale bakery that sells cupcakes and baked goods in Beverly Hills. Stacy's is listed on a smaller stock exchange and the current market price per share is \$15. As of last year, Stacy paid \$15,000 in dividends with 1,000 shares outstanding. Stacy's yield is computed like this:

$$\$15 / \$15 = 1$$

As you can see, Stacy's yield is one dollar. This means that Stacy's investors receive 1 dollar in dividends for every dollar they have invested in the company. In other words, the investors are getting a 100 percent return on their investment every year Stacy maintains this dividend level.

8. Conclusion



The more you know about how an organization is performing financially, the easier it will be for you to make informed management decisions about it. Financial ratios can be a great tool in your analysis toolbox as a manager or investor to evaluate the strength, profitability, and quality of a business.

Key financial ratios can help you to find out:

- Is an organization solvent?
- Is it profitable?
- How well is it managed?

Making a simple financial assessment of another organization is straightforward and the necessary information is readily available. This means that you can compare the performance of the organization with its previous track record and with the performance of other similar organizations. You can also make comparisons to see how profitable the business is, how efficiently it is performing, and whether it is able to pay its bills on time.

This ability to evaluate the financial position of another organization is a valuable skill for any manager to have, whether you are choosing a supplier, considering a strategic partnership, or deciding how much credit to extend to a customer.

Remember, the ability to communicate in the language of finance becomes more of an asset the higher you progress up through the levels of management, even if accounting and finance is not your specialty.