

## 1.1.2 – Business Organisations

**3 Types of Firms:** Sole trader, partnerships & corporations/companies.

**Sole trader** is a business owned and run by one person; most common but not much sale revenue.

Advantages: Cheap & easy to set up

Disadvantages: 1. No separation of ownership & control. Owner has unlimited liability for the firm's debt. 2. Life of sole trader is limited to life of the owner, it is very difficult to transfer ownership.

**Partnership** is a business owned and run by more than one person. Typically used when the reputation of the firm is based on the reputation of the owners. Like law firms, medical practices, accounting firms.

Advantages: 1. Can have a strong reputation based on that of the partners. 2. Cheaper & easier to set up than a corporation.

Disadvantages: 1. All of the partners are liable for the firm's debts – a lender can require any partner to repay the firm's debts. 2. Partnership normally ends with the death or withdrawal of a partner.

**Corporation** is a legal entity that is separate from its owners. Not as many as sole traders but the most dominant business form.

Disadvantages: More costly to set up than previous 2.

Advantages: 1. Separation of control and ownership allows for external investors. 2. Owners have limited liability for the firm's debt. 3. Corporation exists indefinitely & ownership is easily transferred. 4. Due to the separation of ownership – corporations can afford to take on massive risks.

## 1.1.3 – Types of Companies

**3 types of companies:** Private companies, Public companies & Listed public companies.

**Private companies** are restricted to 50 non-employee shareholders. Not required to appoint an external auditor. Are denoted by "Pty Ltd". About 2 million.

**Public companies** are allowed to have unlimited shareholders. Are required to appoint an external auditor and submit statements to ASIC (Australian Securities and Investment Commission). Denoted by "Ltd". About 200,000.

**Listed public companies** are public companies that are listed on the ASX (Australian Stock Exchange). About 2000.

**Ownership of a company** is referred to as equity and is divided into shares. Owners are referred to as shareholders, they are entitled to dividends in proportion to the number of shares they own. Owners do not exercise day-to-day control over the firm, the shareholders elect a board of directors who oversee the running of the company and hire managers to run the company. Separation of ownership and control is an advantage as it enables them to raise large amounts of money from non-controlling shareholders who have very little liability. As a result, they dominate the economy.

### 3.4.3 – The Pure Expectations Theory

The RBA targets the cash rate, and continually buys and sells bonds to keep the cash rate equal to the target. As a result of market forces, changes in the cash rate then affect longer term rates.

#### **Pure Expectations Theory:**

##### Assumptions:

- Borrowers and lenders are indifferent b/w short, medium & long term securities. They will use whichever materials give the best value; high interest rates for lenders & low interest rates for borrowers.
- The capital market is perfect – eg there are no transaction costs. Means that market participants can move b/w different maturities w/o incurring costs.

This means if you expect the short-term interest rate to increase above the long-term interest rate then you will choose a series of successive short-term investments instead of one long-term investment.

As people exploit this opportunity, lenders will increase the interest rate of long-term investments until they are high enough to attract investors, at this point short term investments don't receive more than long-term investments.

##### Predictions:

- Long term rates will be determined by investor expectations regarding future short term rates – they will be the geometric average of expected future short term rates.

### 3.4.4 – The Liquidity Premium Theory

This theory addresses the issue of upwards sloping yield curves being labelled 'normal' because they are the most commonly observed shape.

If the Pure Expectations Theory were correct then a flat yield curve would be most common. The other force in action is the liquidity premium.

**Liquidity Premium Theory:** upward sloping yield curve caused by an increase in risk for long-term investments. These risks include; interest rate risk (changes in interest rates can cause large change in the value of long term compared to short term securities), default risk or inflation risk.

##### Assumptions:

- Because of the greater risk associated with long term investments, investors have a preference for short term (more liquid) investments
- Some borrowers will still want to borrow long term. Long term borrowers will have to offer investors a liquidity premium to attract investors

This means that there is an upward bias of the observed yield curve compared to 'Pure Expectations' yield curve. There is a higher and higher premium for the longer term securities. This means that the observed yield curve is more upward sloping than that of the 'Pure Expectations' yield curve, however, there can still be flat, downward sloping or curved yield curves – there will just be an upward bias.

##### Predictions:

### 8.4.1 – The Normal Distribution

Graph the range of possible return as a normal distribution. Return is the mean. Risk is standard deviation.

### 8.4.2 – Shape of the Normal Distribution

Only need to know mean (or expected return) and standard deviation to graph the distribution. The lower the SD the less variable the returns.

Confidence Intervals: In a normal distribution, about 2/3 of values are within +/- 1 SD, 95% within +/- 2 SD & over 99% are within +/- 3 SD.

### 8.4.3 – Interpreting the Normal Distribution

The flatter the curve the more variability. The further right the middle of the curve – the higher expected return.

### 8.4.4 – Realised and Expected Return from a Portfolio

**Portfolio:** investment that comprises two or more financial assets.

**Portfolio realised return:** Weighted average of the realised returns from the shares in the portfolio.

**Portfolio expected return:** Weighted average of the expected returns from the shares in the portfolio.

In both cases, each value is 'weighted' by the significance of its contribution to the average that is being estimated.

### 8.5.1 – Creating a Portfolio of Shares

**Portfolio Risk:** less than the weighted average of the risk from the shares in the portfolio.

**Diversification:** the key to risk adverse investing. Taking shares from different industries so some risk can cancel each other out.

### 8.5.2 – Correlation

**Correlation:** measures the strength of the r/ship b/w any two stocks. It is scaled so it always has a value b/w -1 and +1. Tells us how often returns tend to move in the same direction, and how often they tend to move in opposite directions.

If correlation is +1 shares are perfectly correlated; returns on shares always move in the same direction.

If correlation is b/w 0-1, shares are positively correlated, they tend to move in the same direction but don't always

## 11.1.4 – Option Terminology C

### Moneyiness

- **In-the-money:** Call options – exercise price is less than the asset price. You can buy something for less than its worth. Put option – exercise price is greater than the asset price. You can sell something for more than it is worth. Either way, exercising the option would result in a positive payoff.
- **Out-of-the-money:** Call option – exercise price is more than asset price. Put option – exercise price is less than the asset price. Either way, exercising the option would result in a negative payoff (can't happen in real world).
- **At-the-money:** Call and put options – exercise price is equal to the asset price. Exercising the option would result in a zero payoff.

Let X = the exercise price  
and let S = the asset price

Type	If...	The option is...
CALL	$X < S$	In-the-money
PUT	$X > S$	In-the-money
Either	$X = S$	At-the-money
CALL	$X > S$	Out-of-the-money
PUT	$X < S$	Out-of-the-money

For bottom 2. You would get a negative payoff, so in the real world this actually means that the option wouldn't be exercised and the option writer would receive the premium fully as profit.

## 11.1.5 – Option Markets

Options are traded in two different ways:

- **Exchange Traded Options (ETOs):** are standardised (only available for certain underlying assets, in certain quantities and with certain maturity dates; standardisation allows a liquid market to develop) and traded on an organised exchange (like ASX).
- **Over-The-Counter Options (OTC Options):** are customised options sold through dealers. Flexible depending on the needs of the option holder and option writer.

The most common options in Australia are American call and put options written over a range of different shares listed on the ASX. Then these options are also traded on the ASX. A standard option contract gives the option holder the right to buy or sell 100 shares. The options are still quoted on a 'per share' basis.

**CBA Call Option**  
Exercise Price: \$57.01  
Premium: \$1.375

This means this option contract will cost  $100 \times \$1.375 = \$137.50$  to buy today and will give you the right to buy 100 shares at \$57.01 per share before or on the expiration date.