



CORPORATION LIMITED

Introduction to  
Futures

Options

# Who We Are...

Sydney Futures Exchange Limited (SFE), a subsidiary of SFE Corporation Limited, is the 10th largest financial futures and options exchange in the world, the 2nd in Asia and the premier futures exchange in Australia and New Zealand. SFE provides futures and options on the four most actively traded markets – equities, interest rates, commodities and currencies.

The major products traded on SFE include: the benchmark Australian Equity Index Futures product – the 'SFE SPI 200™', the 3 and 10 Year Treasury Bond Futures products, the 7th and 11th most actively traded bond futures product in the world, and the 90 Day Bank Bill Futures, the 5th most actively traded short term interest rate futures product.

Trading on the Sydney Futures Exchange occurs 24 hours a day and can be carried out by phone, the internet or direct terminal access, via your accredited futures broker.

During 2001, on average more than 141,000 futures and options contracts were traded each day, with an annual turnover of nearly 37 million contracts. The annual nominal value of this trading activity exceeded \$A11.2 trillion – substantially larger than Australia's gross national product and the turnover of the Australian equity market and second only in turnover to the Australian foreign exchange market.

SFE Corporation Limited is a public company whose shareholders include many of Australia's and the world's leading banks, brokers and other financial institutions. In April 2002, SFE listed on the Australian Stock Exchange for likely inclusion in the S&P/ASX 200<sup>†</sup>.

<sup>†</sup> 'S&P/ASX 200' is a trademark of Standard and Poor's. The trademark is used under licence by the Sydney Futures Exchange.

# SFE Futures & Options

SFE futures and options are an alternative form of investment product for traders and investors, both professional and private. What distinguishes futures and options from stocks, bonds or other traditional investment products is the ability to undertake a comparatively large position for a very small initial outlay, much like margin lending improves the potential for increased profits.

However, the risk of loss is substantial when trading futures and options. This document provides investors with the information required to ensure a well managed introduction to futures and options. You will learn how to enter a trade, and simultaneously place a 'Stop Loss' order, designed to minimise possible losses whilst allowing you to maintain your position and participate in the opportunity for unlimited gains. You will also learn how to buy options, the very nature of which guarantees that your maximum loss cannot exceed the cost paid for the options, (whilst the potential loss from selling options is considerable). And you will also be provided with a list of experienced client advisors who can help evaluate your particular investment profile and requirements and oversee your introduction to the SFE futures and options market much like a financial advisor.

## What are the Benefits of Trading Futures and Options?

### Leverage

Refers to the ability to take on a relatively large exposure to the market using futures and options for a relatively small initial outlay. This means that small price movements in the underlying stock or bond can provide you with the opportunity for substantial returns. This is similar to the 'leverage' experienced when you buy a house. Imagine paying 10% deposit on a house worth \$100,000 and borrowing the remainder from a bank. If the property increases in value by 5% in one year, the return on your initial investment of \$10,000 is 50% ( $100,000 \times 0.05 = \$5,000$  – bank charges). Futures and options provide a similar form of 'Leverage'.

### Make money from both a rising or a falling market

Unlike traditional investment products which provide money making opportunities only when the market is going up, with futures and options you can also make money when the market goes down. To profit from a rising market you buy futures at a lower price and then sell at a higher price. To make a profit from a falling market you can similarly sell futures, and then buy them back at a lower price.

### Develop Strategies

Futures and options also provide a trader with the opportunity to exploit trends and variations in the marketplace that are not possible with traditional traded products. By combining different options or futures, traders can create a wide range of potential profitable scenarios regardless of the direction of the market. Some of these are discussed in this document.

### Hedging

By entering into a futures or options contract you can also protect the value of your portfolio (exposure to the market). This is also described in more detail later in this document.

# What are SFE SPI 200™ Index Futures?

SFE SPI 200™ Index Futures enable you to trade movements in Australia's benchmark stock index, the S&P/ASX 200 Index† in a single transaction. This means that you can get exposure to Australia's top 200 companies without the need to buy and sell shares in every company in the index. This provides significant savings in transaction costs and provides a cost efficient means to get exposure to the broader Australian market.

## VALUE OF A FUTURES CONTRACT

To work out the exact value of the SFE SPI 200™ Index Futures contract you multiply the SFE SPI 200™ Index level (e.g. 3,500) by \$25, which is the value of each point. In this case the value of the contract would be \$87,500. You can buy a future if you expect the market to rise, or sell the future if you expect the market to fall. For every point that the market moves in your favour you will gain \$25.

$$\begin{aligned} 1 \text{ index point} &= \$25 \\ \text{Contract Value} &= \\ & \$25 \times \text{SFE SPI 200}^{\text{TM}} \\ & \text{Index Level} \end{aligned}$$

## LEVERAGE

The real appeal of using futures is the leverage they provide. This is because for each futures contract you enter into you only have to initially outlay to your broker a small proportion of the total value of your exposure. In the case of one SFE SPI 200™ Index Futures contract an initial outlay of \$2,500\* to your broker provides you with approximately \$87,500 worth of exposure to the Australian share market.

## WHAT ARE DEPOSITS AND MARGINS?

When opening an account to trade futures and options your broker will ask you for an initial deposit to launch the account (this deposit will vary by broker and client and is retrievable when contracts are closed out if they are not eroded by loss). In addition to this deposit they will ask for enough money to cover the initial margin for each futures or options contract you wish to buy or sell. In the example above, the \$2,500 that you initially outlay to your broker is called the initial margin.

At the end of each day, your broker marks-to-market your open futures positions. This is the process by which your broker will add and deduct your gains and losses from your account balance. During volatile trading your broker might mark-to-market your positions more frequently than once a day.

If your margin deposit falls below a certain level (as determined by your brokerage firm) your broker will ask you to deposit additional money to your account to bring your margin back up to the required minimum. This is called a variation margin. In the event that you have made a profit from your futures position you are able to withdraw money from your broker.

## EXPIRATION OF A FUTURES CONTRACT

All futures contracts are quoted with an expiration month (also known as contract month). SFE SPI 200™ Futures have expiration months of March, June, September and December. Broadly speaking when you enter into a futures contract you are trading an agreement about how

many and at what price you will buy or sell the underlying product in the expiration month. The exact day when the future expires is known as the expiry date or last trading date.

If you do hold your futures contract until expiry then you must settle your position. In the case of SFE SPI 200™ Index Futures this is done via a cash payment.

## CLOSING OUT

In most cases, traders do not hold their open futures position until expiry. Instead, traders normally close out their futures positions by offsetting them with another trade. To offset a position the holder of a bought contract sells futures and the holder of a sold position buys futures. By offsetting a futures contract, the trader cancels any obligation they have made by entering into the original futures contract. The difference between the price of the futures contract when the trade was initiated and the price when it is offset is the net gain or loss on the trade.

To close out your position  
the buyer sells futures and  
the seller buys futures.

† S&P/ASX 200 is a trademark of Standard and Poors. The trademark is used under licence by Sydney Futures Exchange.

\* The actual initial margin varies between approximately 2-10%. Brokers work this out depending on your total exposure, products and their assessment of your financial position.

# Directional Trading Using Futures

## Bullish View – How do you profit from a rising share market using futures?

### Answer

Buy a SFE SPI 200™ Index Futures contract and then sell the contract when the price has risen. This is also known as going long a futures contract.

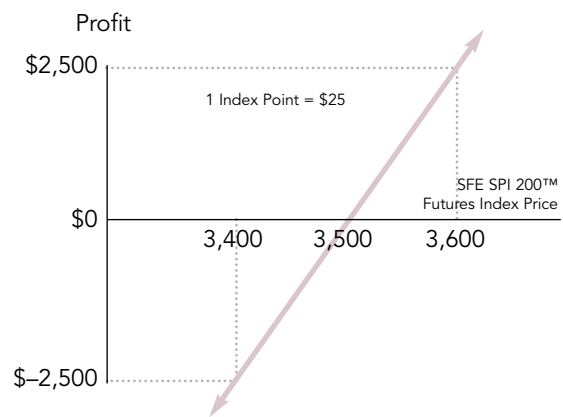
### Example

Buy a SFE SPI 200™ Index Futures contract when the price is 3,500 points and then sell a SFE SPI 200™ Index Futures when the price has risen.

If the SFE SPI 200™ Index Futures contract price increased by 100 points to 3,600 points then the value of your exposure would have increased to \$90,000 (ie 3,600 x \$25). In this case you have effectively made \$2,500\* or a 100% profit on your initial margin outlay of \$2,500\*. To realise your gain you simply sell your futures contract at the higher level.

## Profit from a Rising Market

Profit diagram if you buy 1 SFE SPI 200™ Index Futures at 3,500 points



## Bearish View – How do you profit from a falling share market?

### Answer

Sell a SFE SPI 200™ Index Futures contract and then buy the contract when the price has fallen. This is also known as going short a futures contract.

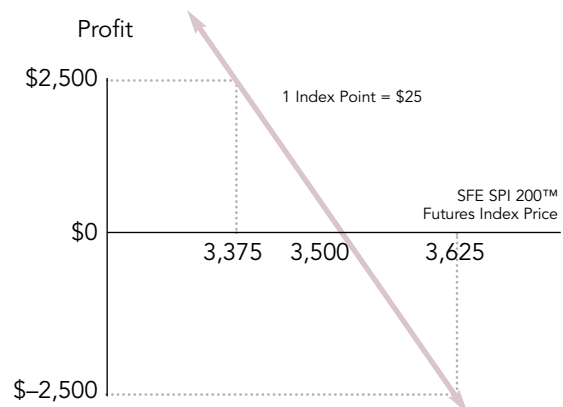
### Example

Sell a SFE SPI 200™ Index Futures contract when the price is 3,500 points and then buy a SFE SPI 200™ Index Futures when the price has fallen.

By paying your broker an initial margin of \$2,500\* you can sell a SFE SPI 200™ Index Futures contract. Unlike when you bought the futures contract, this time you make a profit if the market falls. If the SFE SPI 200™ Index Futures price decreases by 125 points to 3,375 points you are able to close out your futures contract by buying at the lower level. If you originally sold the contract at 3,500 and bought at 3,375 you would have made a profit equal to \$3,125 (ie 125 x \$25) or a 125% profit on your initial margin of \$2,500\*.

## Profit from a falling Market

Profit diagram if you sell 1 SFE SPI 200™ Index Futures at 3,500 points



\* The actual initial margin varies between approximately 2-10%. The initial margin is worked out by your broker and is dependant on your total exposure, products and their assesment of your financial position.

# Using Futures to Protect the Value of your Portfolio (Hedging)

4

If you own a portfolio of stock and believe that the market is going to fall but do not want to sell (for either cost or tax reasons) you can safeguard the value of your portfolio by selling SFE SPI 200™ Index Futures. This act of protecting your portfolio is known as hedging.

When you implement a hedging strategy using futures any decrease (increase) in the value of your share market portfolio will be countered by an increase (decrease) in the value of the futures contract.

## WHY DO THIS?

- To eliminate/reduce your exposure to the market without incurring the transaction costs of selling your entire portfolio of stock
- To lock in a buying and selling price for your stock market portfolio
- To lock in a particular return for an equity portfolio (eg a trader may have achieved their target return for a period and they want to lock this in. By trading a futures contract they do not have to sell their shares)

## HOW DO YOU LOCK IN THE VALUE OF YOUR SHAREMARKET PORTFOLIO WITHOUT SELLING ALL YOUR SHARES?

### Answer

Sell SFE SPI 200™ Index Futures – By selling a SFE SPI 200™ Index Futures you can lock in the value of your portfolio for the life of the futures contract.

### Example

Assume you hold a portfolio that approximately tracks the S&P/ASX 200 Index<sup>†</sup> worth \$90,000 and that the current level of the futures contract is 3,500 points. You expect that the market will drop by approximately 5% within the month. To avoid this you could sell your portfolio and re-enter the market when you have more confidence that the market will continue to rise. By doing this you would incur significant transaction costs, both on the sale and the re-purchase of the portfolio.

The alternative is to sell futures. Not only are futures transaction costs lower than those associated with portfolio liquidation, but the selling process is faster. Another benefit of using futures is that the original portfolio is maintained.

The first step is to determine how many futures contracts will be required to hedge the portfolio. With the SFE SPI 200™ Index Futures price at 3,500 points, one futures contract is worth \$87,500 (3,500 points x \$25). To determine the number of contracts that will be required, divide the value of the portfolio by the face value of the futures contract, which in this case is  $\$90,000/\$87,500 = 1.03$ . Rounding down to the nearest whole number, 1 futures contract will be required to provide an adequate hedge for this portfolio. The investor should therefore sell 1 SFE SPI 200™ Index Futures contract to hedge this portfolio.

Assume that your prediction turned out to be correct and your market portfolio dropped by 5% and lost \$4,500 and assume that the futures price fell by 185 points to 3,315 points. At this time you could choose to close out the position by buying back the 1 futures contract. Since you sold the futures contract at 3,500 points and you bought at 3,315, the profit on the futures transaction is \$4,625 (ie 185 points x \$25).

Accordingly, even though the market and value of the portfolio declined \$4,500, the short futures position increased in value by \$4,625, offsetting the equity loss.

<sup>†</sup> 'S&P/ASX 200' is a trademark of Standard and Poor's. The trademark is used under licence by the Sydney Futures Exchange.

# What are SFE Options?

For many traders, SFE SPI 200™ Options are the trading vehicle of choice to get exposure to the Australian share market. This is because options can provide you with the opportunity to trade the direction of a market whilst limiting the down side risk to the initial price of the option (known as the premium). There are two types of options, calls and puts.

The buyer of a call option buys the right, but not the obligation, to buy a futures contract at a particular price on or before a particular date. The buyer of a put option buys the right, but not the obligation, to sell a futures contract at a particular price on or before a particular date.

Confused? Well the following descriptions of the characteristics of an option, and the terms used for describing the trading of options will help with your understanding of the options market.

## CHARACTERISTICS OF OPTIONS

### Premium

This is the price of the call or put option

### Contract size

Each SFE SPI 200™ Option contract represents 1 SFE SPI 200™ Index Futures contract

### Expiry day

The last day the option can be traded

### Expiry Month

The month in which the option contract expires

### Exercise

The act of converting the option into the futures contract

### Exercise Price (also called Strike Price)

The price at which an option holder has the right to buy (in the case of a call option) or sell (in the case of a put option) the underlying futures contract. Options are listed with multiple exercise prices.

## TERMS FOR DESCRIBING OPTIONS

### In-the-Money

A call option is in-the-money when the underlying futures price is greater than the exercise price. A put option is in-the-money when the exercise price of the option is greater than the price of the underlying futures contract. Options that are in-the-money have 'intrinsic value' equalling the difference between the exercise price of the option and the market price of the underlying futures price.

### At-the-Money

An option where the underlying futures price equals the exercise price.

### Out-of-the-Money

A call option is out-of-the-money if the exercise price is greater than the underlying futures price. A put option is out-of-the-money if the underlying futures price is greater than the strike price.

## WHAT INFLUENCES THE PRICE OF OPTIONS?

Three major variables influence the premium for any given option:

### Intrinsic Value

The relationship between the exercise price and the current price of the underlying futures contract. If an option can be exercised at a profit (known as an 'in-the-money' option) it commands a higher premium than an option that will not deliver a profit (an 'out-of-the-money' option).

### Time Value

An option with a long period of time remaining until expiration commands a higher premium than an option with a short time to expiry because it has more time in which to become profitable. Time value is determined by subtracting intrinsic value from the option premium. (ie Time value = option premium – intrinsic value).

### Volatility

Of the underlying market/futures contract. The greater the volatility the higher the premium. In a volatile market, the option stands a greater chance of becoming profitable to exercise over the life of the option.

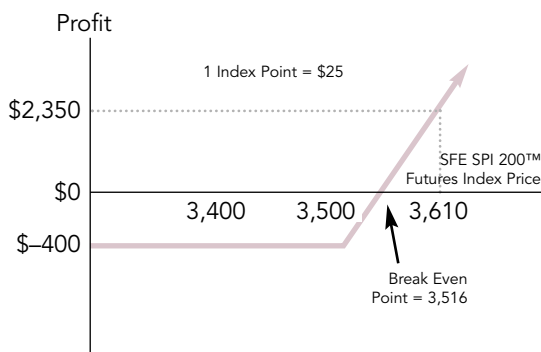
## EXERCISING OPTIONS

SFE options may be exercised on any business day up to and including the Last Trading Day (expiry day). Only 'in-the-money' and 'at-the-money' options are automatically exercised at expiry. Note that generally traders do not exercise their options but sell them to realise their gain or loss.

# Directional Trading Using Options

## Profit from a Rising Market

Profit diagram at expiry if you buy a 3,500 call option.



## How do you Profit from a Rising Market?

### Answer

Buy a SFE SPI 200™ Index Call Option.

### Example

Buy a 3,500 SFE 200™ Index Call Option for a price of 16 points.

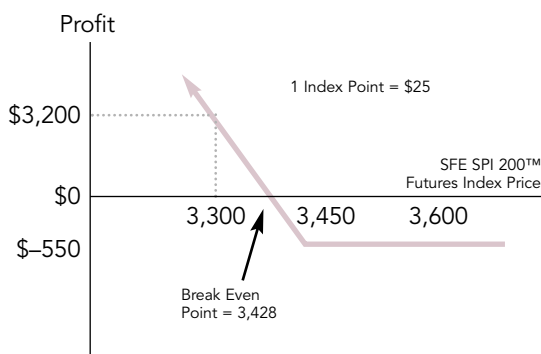
By paying your broker the price of the option (premium) = \$400 (ie 16 points x \$25) you have bought the right to buy a futures contract for 3,500 before the option expires.

The diagram to the left shows the potential profit or loss on the strategy for different index futures prices at expiry. Since you paid \$400 for the option you will need the futures price to be above the break-even point of 3,516 to make a profit on the option. The diagram shows that while the futures price is below 3,516 points the call option buyer would make a loss. The most the call option buyer can lose is the price of the option worth \$400.

The maximum profit to the buyer is unlimited. If by the expiry date the futures contract price had risen to 3,610 points, then your profit would be \$2,350. ( $\$2,750 - \$400$ ).

## Profit from a Falling Market

Profit diagram at expiry if you buy a 3,450 put option.



## How do you Profit from a Falling Market?

### Answer

Buy a SFE SPI 200™ Index Put Option.

### Example

Buy a 3,450 SFE SPI 200™ Index Put Option for a price of 22 points.

By paying your broker the price of the option (premium) = \$550 (ie 22 points x \$25) you have bought the right to sell a futures contract for 3,450 points before the option expires.

The diagram to the left shows the potential profit or loss on the strategy for different index futures prices at expiry. Since you paid \$550 for the option you will need the futures price to be below the break-even point of 3,428 to make a profit on the option. The diagram shows that while the futures price is above 3,428 points the put option buyer would make a loss. The most the call option buyer can lose is the price of the option worth \$550.

The maximum profit to the buyer is unlimited although the minimum index level is 0. If by the expiry date the futures contract price had fallen to 3,300 points, then your profit would be \$3,200.

# Other Ways to Use SFE Options

## Using Options as Hedging Instruments

If you hold a Futures position or position in the underlying stock, and are concerned about a short term fall in their value you can use options to provide you with downside protection.

### HOW DO YOU PROTECT A LONG FUTURES POSITION?

#### Answer

Buy put options. During a market fall the increase in the price of the put option will counter the fall in the value of the long futures position.

#### Example

You have bought a SFE SPI 200™ Index Futures contract (gone Long) for 3,550 points and want to protect yourself from a significant fall in the futures price. You could either place a 'Stop Loss' order with your broker, but that could result in you being 'closed-out' just before the market rallies. An alternative is to buy one put option with an exercise price of 3,500. This allows you to sell your futures contract for 3,500 points no matter how far the market falls. Whilst you would make a small loss, it would be capped. This option would protect your bought position until its expiry date. Likewise the put option would protect you against losses in an underlying stock position.

### HOW DO YOU PROTECT A SHORT FUTURES POSITION?

#### Answer

Buy call options. During the market rise the increase in the price of the call option will help counter the fall in the value of the short futures position.

#### Example

If you have sold a SFE SPI 200™ Index Futures contract (gone Short) for 3,400 points and you want to protect yourself from a significant rise in the futures price. You could buy one call option with an exercise price of 3,450 to ensure that you can sell if the market rises significantly. This allows you to at least close out your current bought futures position by selling at 3,450 points. Whilst you would make a small loss, it would be capped. This option would protect your bought position until its expiry date.

## Selling (Writing) Options

For every option that someone buys there is a seller. The seller receives the price of the option (premium) up front when the option is bought. This strategy carries substantial risk if you do not have an underlying futures contract position to cover the option. This is because if the option is exercised it could result in unlimited losses. Because of this, uncovered positions will require a margin payment for each sold option and this will be marked-to-market for the life of the option.

However, selling options can earn extra income without you taking unnecessary risks.

### HOW DO YOU EARN EXTRA INCOME BY SELLING OPTIONS?

#### Answer

Sell options against existing futures position or a portfolio of stocks. These are then known as 'covered options'.

#### Example

Assume you have a bought SFE SPI 200™ Index Futures position. The current price is 3,400 points and you would be happy to sell and close out this position at 3,500 points. You find out that SFE SPI 200™ Call Options with an exercise price of 3,500 expiring in 3 months are worth around 30 points. You instruct your broker to sell 1 of these options. You now have the obligation to sell at 3,500 points should the buyer of the call option exercise the option. For undertaking this obligation you have received \$750 (\$25 x 30 points) in premium.

## Option strategies

By combining different options, traders can create a wide range of potential profit scenarios. To find out more about options strategies contact your futures and options broker.



## FURTHER INFORMATION

For further information about the SFE products and contract specifications, go to [www.sfe.com.au](http://www.sfe.com.au).

## OFFICES

SFE Corporation Limited  
30 Grosvenor Street  
Sydney NSW 2000 Australia  
Telephone: +61 2 9256 0555  
Facsimile: +61 2 9256 0666

This information is subject to change. Readers should seek their own professional advice in assessing the effect of the information in their circumstances. Futures and options trading involves the potential for both profits and losses and only licensed brokers and advisers can advise on this risk. SFE Corporation Limited and its related corporations (SFE) accept no liability for errors or omissions, including negligence, or for any damage loss or claim arising from reliance on the information. The document is not a substitute for the relevant SFE Business Rules and in the case of inconsistency, the Business Rules prevail.