

Module 7: Protect your shares

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Contents

Topic 1: Introduction	3
The put buyer's rights	4
Topic 2: How does it work?	5
Outcome 1 - share price falls	5
Outcome 2 - share price rises	6
Profits and losses	6
At expiry:.....	7
Topic 3: Exiting the position	7
Exercise your option	8
Sell your option.....	9
Roll your position	9
Topic 4: Which put should I buy?	11
Expiry month.....	13
Summary.....	14
When to use the protective put	14
Profits and losses	14
Option prices used in this module	14



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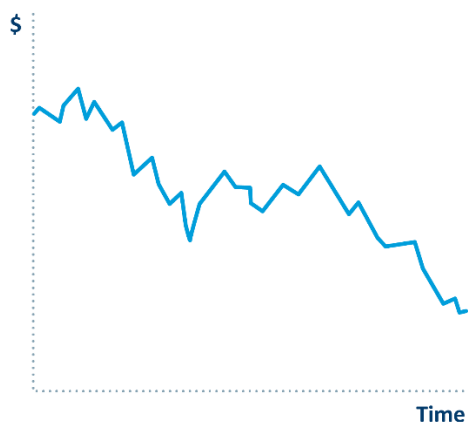
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Topic 1: Introduction

There will be times when you think shares you hold may fall in value.

Share investors who fear a fall in the share price typically consider two alternatives:

- Sell their shares
- Ride out the fall, and hope the price recovers



Options offer you another alternative, the ability to protect your shares without having to sell them.

Selling your shares eliminates the possibility of further loss, but has disadvantages:



- You may incur a capital gains tax (CGT) liability
- If the share price rises, you miss out on the increase.

	Limits risk	Keeps exposure to rising share price
Sell shares	✓	✗
Hold shares	✗	✓
Buy puts to protect shares	✓	✓

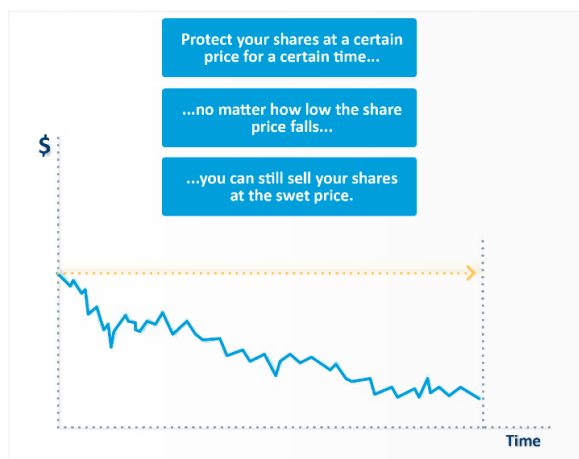
Buying put options to protect your shares overcomes these problems:

- You don't have to sell your shares
- You maintain exposure to a rise in the share price.

The put buyer's rights

Put options give you:

- the right
- for the life of the contract
- to sell shares
- for a specified price.



No matter how low the share price falls during the life of the option, your shares are protected at that level.

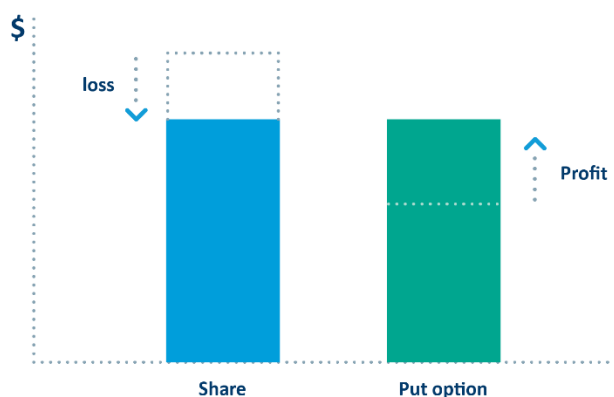
If the price falls, you can exercise your right to sell the shares - or you can keep your shares and sell the option, which will have risen in value.

If the share price rises, you don't have to sell your shares, and all you have lost is the cost of the option.

Buying put options to protect your shares has a similar purpose to buying insurance for your house or car.

Using puts to protect your shares is a hedging strategy.

Hedging means taking a position in one market that offsets the risk you are exposed to in another market. The aim is that the profit you make in one market will compensate for a loss you suffer in the other.



In this case, your option position may offset the risk of your share position. If the share price falls, your put option should increase in value, limiting your overall loss.

Topic 2: How does it work?

Assume you hold 1000 XYZ shares trading at \$10.00.

You are concerned the share price will fall over the next couple of months (but still have a bullish view of the stock in the long term), so you buy the following option:

XYZ June \$10.00 Put @ \$0.34

- Right to sell
- 1000 XYZ shares
- For \$10.00 per share
- At any time up until the expiry date in June
- The option premium is \$0.34 per share

XYZ June \$10.00 Put option @ \$0.34

Buying this option gives you:

- the right, but no obligation
- to sell
- 1000 shares in company XYZ
- for \$10.00 per share
- at any time up until the option expiry date in June.

For this option, you pay \$0.34 per share i.e. \$340 for the option.

Outcome 1 - share price falls

If the share price falls, your put option will increase in value.

Assume at expiry the share price has fallen to \$9.00.

	XYZ shares	XYZ June \$10.00 put
Opening value	\$10.00	\$0.34
Value at expiry	\$9.00	\$1.00
Profit / loss	-\$1.00	\$0.66
Net position	-\$0.34	

The \$0.66 profit on the option offsets the \$1.00 loss on the shares, resulting in a net loss of \$0.34.

Your net loss is \$0.34:

- a loss of \$1.00 on the shares
- a profit of \$0.66 on the option.

This is the maximum loss you will make, no matter how low the share price falls. The lower the share price is at expiry, the more your put will be worth.

Outcome 2 - share price rises

If the share price rises, you are still able to benefit.

Your shares increase in value, while your put loses value. However, the loss from the option is limited to the premium paid, while there is no cap on the increase in the value of your shares.

	XYZ shares	XYZ June \$10.00 put
Buy price	\$10.00	\$0.34
Price at expiry	\$11.00	\$0.00
Profit / loss	\$1.00	-\$0.34
Return of investment (%)	\$0.66	

The put option expires worthless, but your shares benefit from the price rise, resulting in a net profit of \$0.66.

Assume at expiry the share price has risen to \$11.00. Your net profit is \$0.66:

- a profit of \$1.00 on the shares
- a loss of \$0.34 on the option.

The higher the share price rises, the greater your profit.

Profits and losses

In working out your profit/loss, you must take into account both the shares and the option position. The simplest way is to work out the profit/loss on the option and stock positions separately:

$$\left(\begin{array}{c} \text{Share position} \\ \text{Share price at expiry} - \text{Share price on opening} \end{array} \right) + \left(\begin{array}{c} \text{Option position} \\ \text{Intrinsic value} - \text{Premium paid} \end{array} \right) = \text{net profit / loss}$$

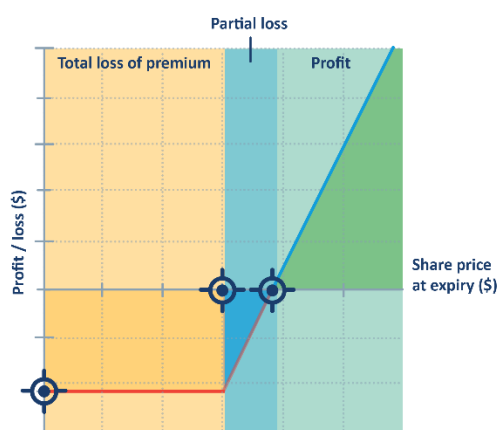
- profit/loss on the shares is the difference between the share price at expiry and the share price at the time you entered the strategy
- profit/loss on the option at expiry is the option's intrinsic value less the premium you paid.

	XYZ shares	XYZ \$10.00 put option
Value on opening	\$10.00	\$0.34
Value at expiry	\$9.25	\$0.75
Profit / loss	-\$0.75	\$0.41
Net profit / loss	-\$0.34	

Adding the two gives you your net profit/loss. Assume on opening XYZ is at \$10.00 and the XYZ \$10.00 put is bought for \$0.34. At expiry the stock is \$9.25. You will need to calculate the intrinsic value of the put option at expiry as part of the calculation.

At expiry:

- Breakeven point = share price at time of entering strategy + premium paid.
- Potential loss is limited.
- Potential profit is unlimited, as there is no limit to the possible increase in the value of your shares.



This is one of the few bought option strategies where the best result is for the option to expire worthless. Remember the analogy of buying insurance for your house or car - the best result is that you do not need to call on your insurance.

Topic 3: Exiting the position

Once you have bought your put, you have a choice:

- Exercise the option
- Close out your position by selling the option
- Roll your position



These alternatives are available to you at any time up until the option expires.

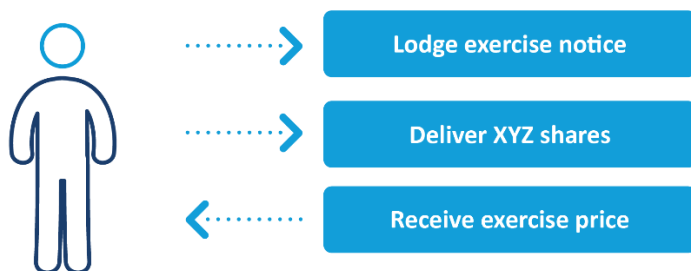
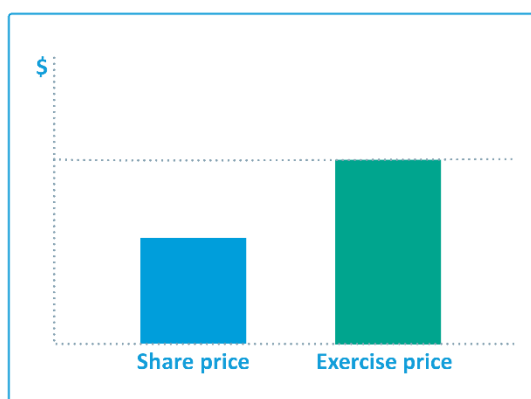
If the share price has fallen, your choice depends on whether you want to continue holding the shares, and whether you want continued protection.

If the share price at expiry is above the exercise price, you need take no action. The option will expire worthless, but your shares have benefited from the increase.

Exercise your option

At expiry, you may hold a long term bearish view on the stock, and want to sell out. In this case, you can exercise your put.

For the **XYZ June \$10.00 Put option @ \$0.34**



You deliver your shares and receive the exercise price, \$10.00. Your effective sale price is \$9.66, the exercise price less the premium you paid, \$0.34 (no matter how low the share price has fallen).

You don't need to wait until expiry to act. If you decide to sell your shares, you can exercise your option at any time.

Sell your option

XYZ June \$10.00 Put option @ \$0.34

Assume at expiry the share price has fallen to \$9.00. Your put option will be worth intrinsic value - \$1.00.

You can sell the option, and realise a profit of \$0.66. You should also consider your view on XYZ:

- If you think the share price is unlikely to fall further, you may decide to keep your shares.
- If you remain bearish on XYZ, you may decide to sell your shares.

You don't have to wait until expiry to sell your option - but bear in mind that as soon as you close out your position, you are unprotected.

Roll your position

If you don't want to sell your shares, but remain concerned about a fall in share price, you can extend your protection by rolling your option position.



This involves:

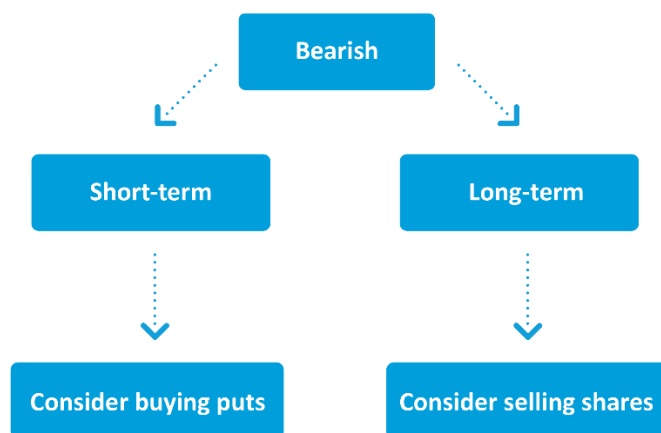
- selling your June put option, and
- buying a put with a later expiry month

Assume that close to expiry:

- the shares are at \$9.80
- your June \$10.00 put is worth \$0.22.

You roll your position by:

- selling your June put for \$0.22, and
- buying a July \$10.00 put for \$0.38



The roll costs you \$0.16 (\$0.38 - \$0.22) for the right to lock in a sale price for your shares for an extra month.

By rolling your position you have extended your protection for a month, at a cost of \$0.16.

Having protection in place constantly is not cost-effective, as the premiums you pay soon mount up.

In addition, if you are continually bearish on a stock, you should ask yourself whether you would be better off selling the stock.

Buying puts to protect a shareholding is generally regarded as a temporary measure against short-term market weakness.

Topic 4: Which put should I buy?

The choice of option comes down to how much you are prepared to pay for protection, and how much protection each option offers. The better the protection, the more expensive the premium.

Level of protection

High

Low



Level of protection

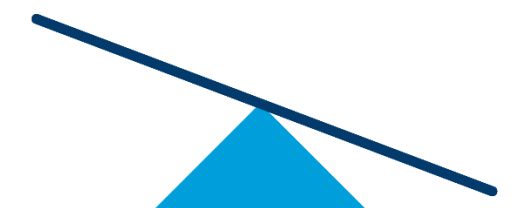
Cheap

Expensive

Level of protection

High

Low



Level of protection

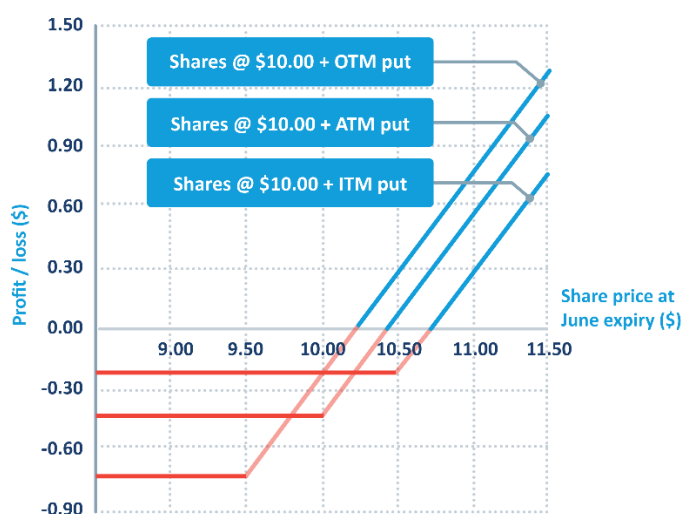
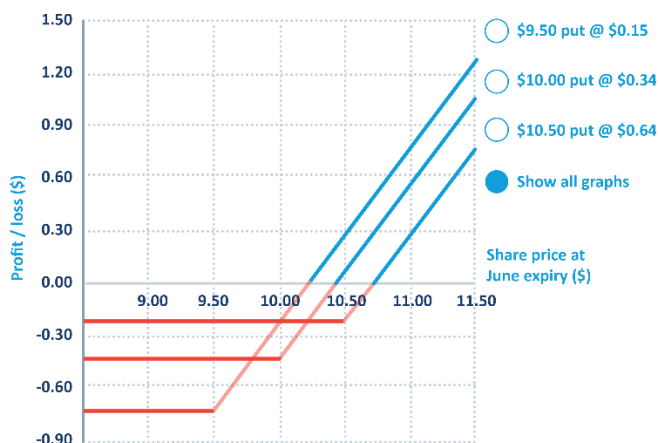
Cheap

Expensive

Assume XYZ shares are at \$10.00 in early May.

You consider the following puts:

- June \$10.50 put @ \$0.64 [in the money (ITM)]
- June \$10.00 put @ \$0.34 [at the money (ATM)]
- June \$9.50 put @ \$0.15 [out of the money (OTM)]



The higher the exercise price, the better your protection, as you lock in a higher sale price for your shares.

However, the higher the exercise price, the more the option costs. If the share price rises, and you do not end up using the protection, the option will expire worthless and you lose the premium you paid.

The more expensive the option, the higher the share price has to rise for you to break even (breakeven = share price + premium paid).

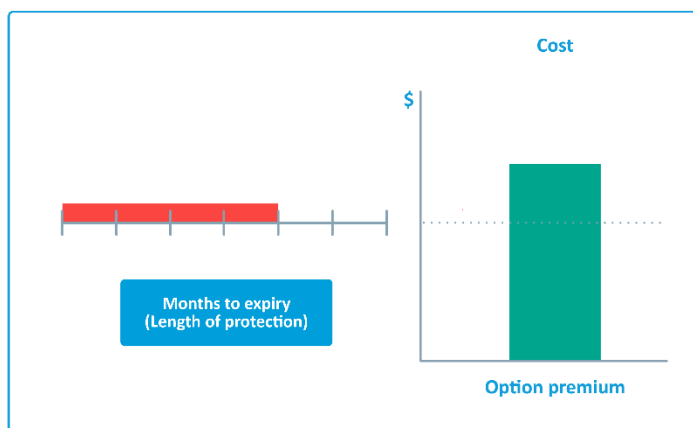
The ITM put provides the best protection, enabling you to sell your shares at \$10.50, but the premium is the highest. The share price needs to rise to \$10.64 for you to breakeven.

The OTM put costs you only \$0.15, but the sale price you guarantee for your shares is \$9.50 - \$0.50 below the current market price.

The ATM option may provide a good balance between the level and cost of protection. It secures a sale price equal to the current share price, and costs you \$0.34. The breakeven point is \$10.34.

Expiry month

The longer the term of the option, the longer your shares are protected. However, the longer the term, the more the option will cost you.



As a rule of thumb, you should match the term of the option to the period you believe the share price will be weak. If your bearish outlook extends beyond the short term, ask yourself whether you should be holding the shares. Buying long term puts can be expensive. You may be better off selling the stock.

Summary

When to use the protective put

Buying a put to protect your shares has a similar purpose to insuring your house or car.

When you fear a short market downturn, but do not want to sell your shares, buying puts may be appropriate.

Buying puts locks in a minimum sale price for your shares and gives you time to decide whether to sell your shares.

If the share price falls, your put will increase in value. You can:

- exercise the option and sell your shares at the exercise price, or
- sell your option at a profit and maintain your shareholding.

Profits and losses

Your losses are limited in the event of a share price fall.

If the share price rises, there is no limit to your potential profits, as your shares will increase in value. All you lose is the premium you paid for the option.

The higher the exercise price of the put option, the better your protection - but the more the option will cost you.

Option prices used in this module

Practical examples of option strategies are given throughout this module.

Option prices used in the examples were calculated using a binomial pricing model.

Unless specified otherwise, prices are based on the following:

- Underlying stock price: \$10.00
- Volatility: 25%
- Risk free interest rate: 6%
- Days to expiry: 52
- The stock does not go ex-dividend during the life of the option

Keeping these assumptions constant in all examples should make it easier to compare the different strategies presented.