Introduction

Welcome to this tutorial on Learning About SGX-listed Specified Investment Products.

If this is the first time you are going through an online course, you should go through the **Online Courseware Help**, which is accessible through the button located on the top right of your screen.

It will take about 60 minutes to complete this tutorial, which provides all the information required for you to gain a **basic understanding** of Specified Investment Products listed on SGX-ST and SGX-DT markets in Singapore. There are **seven** modules in the tutorial.

- Introduction to SGX Listed Specified Investment Products
- Warrants and Options
- Exchange Traded Funds (ETFs)
- Exchange Traded Notes (ETNs)
- Futures
- Certificates
- Callable Bull/ Bear Contracts

You can exit a module before you finish viewing it. When you revisit the module, you can either restart the module or resume from where you stopped. After completing the tutorial, there will be a short quiz to affirm your understanding of the topics covered.

You need to view all the modules before you may proceed to the questions.

Ready to get on with the course?
Click Next at the bottom right.

What are the Key Features of Warrants and Options

Click on each tab to learn the key features of Warrants and Options.

Conversion ratio (applicable to warrants only)

The number of warrants needed to exercise into 1 unit of the underlying asset (e.g. share).

A warrant with a conversion ratio of 5 means that 5 warrants are needed to convert into 1 unit of the underlying asset.

What are the Main Differences Between Structured Warrants and Options

A comparison between structured warrants and options is illustrated below.

Click on each factor to learn more.

Structured Warrants	Options
Financial institution, like an investment bank, unrelated to the issuer of the underlying securities	Developed by an exchange

What are the Main Differences Between Structured Warrants and Options

A comparison between structured warrants and **options** is illustrated below.

Click on each factor to learn more.

Structured Warrants	Options
Bullish view: Investors can buy a call warrant	Bullish view: Investors can buy a call option or sell a put option
Bearish view: Investors can buy a put warrant	Bearish view: Investors can buy a put option or sell a call option

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Structured Warrants	Options
Wide range of exercise prices and expiry dates which are determined by the issuers	Contracts are standardised with limited expiry periods and exercise prices

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Structured Warrants	Options
Primarily cash settled	Currently there are only options on futures on SGX-DT and they are cash settled

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Structured Warrants	Options
Limited to initial investment	Potentially unlimited for short sales

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Issuer	Trading Mechanism	Product Features	Settlement	Maximum Liability	Margin Requirements

Structured Warrants	Options
None	Applicable to an option seller but not option buyers

In-the-money, At-the-money, or Out-of-the-money

A structured warrant or an option is said to be in-the-money, at-the-money, or out-of-the-money depending on the spot price of the underlying security relative to the strike price.

A call warrant is in-the-money, when the strike price is below the spot price of the underlying. That is, the call warrant still has positive intrinsic value:

	Call (Right to Buy)	Put (Right to Sell)	Intrinsic Value
In-the-money	Strike price < spot price of underlying	Strike price > spot price of underlying	Positive value
At-the-money	Strike price = spot price of underlying	Strike price is = spot price of underlying	No value
Out-of-the money	Strike price > spot price of underlying	Strike price is < spot price of underlying	No value

Click to open Example.

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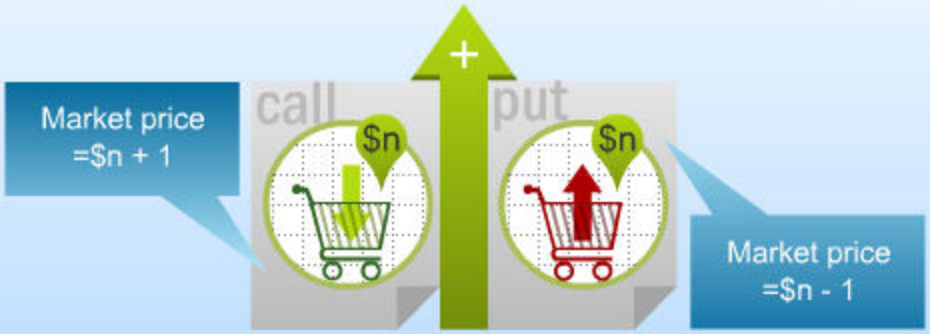
The intrinsic value of the warrant/option is the difference between the spot price of the underlying asset and the strike price.

Intrinsic
Call: (Spot price – Strike Price) or 0, whichever is greater.
Put: (Strike Price – Spot Price) or 0, whichever is greater.

In-the-money			
At-the-money	Strike price = spot price of underlying	Strike price is = spot price of underlying	No value
Out-of-the money	Strike price > spot price of underlying	Strike price is ‹ spot price of underlying	No value

Click to open Example.



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Spot Price of Underlying Share	S$1.00	
Warrant on the Underlying Share	**Call**	**Put**
Strike Price	S$0.80	S$0.80
Intrinsic value	S$0.20 [S$1.00 – S$0.80 (Spot Price of Share -Strike Price of Call)] In-the-money Holder can buy the underlying share at a price lower (S$0.80) than the spot price of S$1.00	0 Out-of-money Holder will not exercise his right the underlying share at S$0.80 when he can sell the underlying share at its current market price of S$1.00

Quick Question

Select one of the options below.

A Warrant or Option is said to be in-the-money when its:

- ○ Intrinsic value is zero
- ○ Intrinsic and time value is zero
- ◉ Intrinsic value is positive
- ○ Intrinsic and time value are positive

Feedback

Correct. Well done!
A call warrant is in-the-money, when the strike price is below the spot price (market price) of the underlying. That is, the call warrant still has positive intrinsic value.

A put warrant is in-the-money, when the strike price is more than the spot price of the underlying. That is, the put warrant still has positive intrinsic value.

Understanding the Features and Risks: 101 to Making Good Investment Decisions

Different investment products have different features and risk characteristics. In making your investment decisions, you need to understand the product features and assess whether you can afford the possible loss.

However, you should remember that **higher risk does not necessarily lead to higher returns**. Understanding the features of the product you invest in is the way to go to have better control over your investments and increasing your chances of making money out of them!

Components of a Warrant Price

The value of a warrant can be broken into 2 components:

Value of Warrant = Intrinsic Value + Time Value

The intrinsic value fluctuates with the underlying asset price and is the difference between the spot price of the underlying asset and the strike price of the warrant.

Time value is the amount of premium above the intrinsic value. It decreases over the life of the warrant or option, and is **zero on expiry date**.

Factors that Influence the Warrant Price

The value of a warrant or an option is determined by mathematical pricing models, based on many factors including

- underlying asset price
- exercise price of warrant
- implied volatility of the underlying asset
- time to expiry of warrant
- dividend yield of the underlying asset
- prevailing interest rate

The key factors affecting the value of the warrant after it is listed are displayed.
Click on each factor to learn more.

Key Factors	Change in Warrant Value		Explanation
	Call	Put	
Underlying Asset Price Increases			
Implied Volatility of Underlying Asset Increases			
Time to Expiry of Warrant Decreases			

Components of a Warrant Price

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Value of Warrant = Intrinsic Value + Time Value

Value of a warrant or option arising from the time left to maturity. It derives its value from the possibility of future favourable movements in the price of the underlying. At-the-money or out-of-the-money warrants or options have the entire price made up of the time value. The longer the time to expiry, the larger the time value.

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Implied volatility measures expectations in the movement of the underlying asset price. The greater the implied volatility of the underlying asset, the higher will be the implied volatility of the warrant. A warrant with higher implied volatility has a higher warrant price because it has a greater possibility of reaching or exceeding its exercise price.

- Underlying Asset Price Increases
- Implied Volatility of Underlying Asset Increases
- Time to Expiry of Warrant Decreases

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- time to expiry of warrant

The key factors affecting the value of t
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Period of time remaining until expiry of warrant/option.

Key Factors	Change in Warrant Value		Explanation
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Implied Volatility of Underlying Asset Increases			
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The key factors affecting the value of the warrant after it is listed are displayed.
Click on each factor to learn more.

Key Factors	Change in Warrant Value		Explanation
	Call	Put	
Underlying Asset Price Increases	↑	↓	An upside movement in the underlying asset makes a call warrant/option more valuable and a put warrant/option less valuable.
Implied Volatility of Underlying Asset Increases	↑	↑	The higher the price fluctuation of the underlying asset, the greater the potential for the warrant/option to trade in-the-money.
Time to Expiry of Warrant Decreases	↓	↓	The shorter the time to expiry, the lesser the possibility that the underlying asset's price moves in favour of the warrant holder. All else being equal, this results in a lower time value of the warrant.

Quick Question

Select True or False.

If I expect the stock price to go up, I should buy a put warrant.

- ○ True
- ◉ False

Feedback

Correct. Well done!
You should buy a call warrant if you have a bullish view.

What are the Main Risks Associated with the Trading of Warrants and Options

The table displays the risk factors associated with warrants and options.

Leverage	• Warrants/options are leveraged instruments. • Returns can be magnified if the underlying asset moves in the direction favourable to the warrant/option holder's view. • Losses can also be high if the underlying moves against the warrant/option-holder's view.
Issuer Risk	• Warrant/Option holders are unsecured creditors of issuers. • No preferential claim to any assets that an issuer may hold in the event the issuers are unable to fulfil their obligation.
Market Risk	• Value of the warrants or options is susceptible to prevailing market forces, including demand and supply of the warrants or options.
Liquidity Risk	• For warrants, the market-maker may be the only participant buying and selling the contracts and there may be circumstances where investors may not be able to buy or sell warrants at the prices desired.
Foreign Exchange Risk	• If the underlying asset is denominated in a currency different from the currency of the warrant/option price, foreign exchange rate fluctuations will also affect the price of the warrant/option.

Click on the icon to view the payoff profile of the respective warrant/option.

Long Call Warrant/Option

Long Put Warrant/Option

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Most derivatives are leveraged. When you buy a leveraged product, you get a large exposure in the underlying for a relatively small cost. This feature is also known as "gearing".

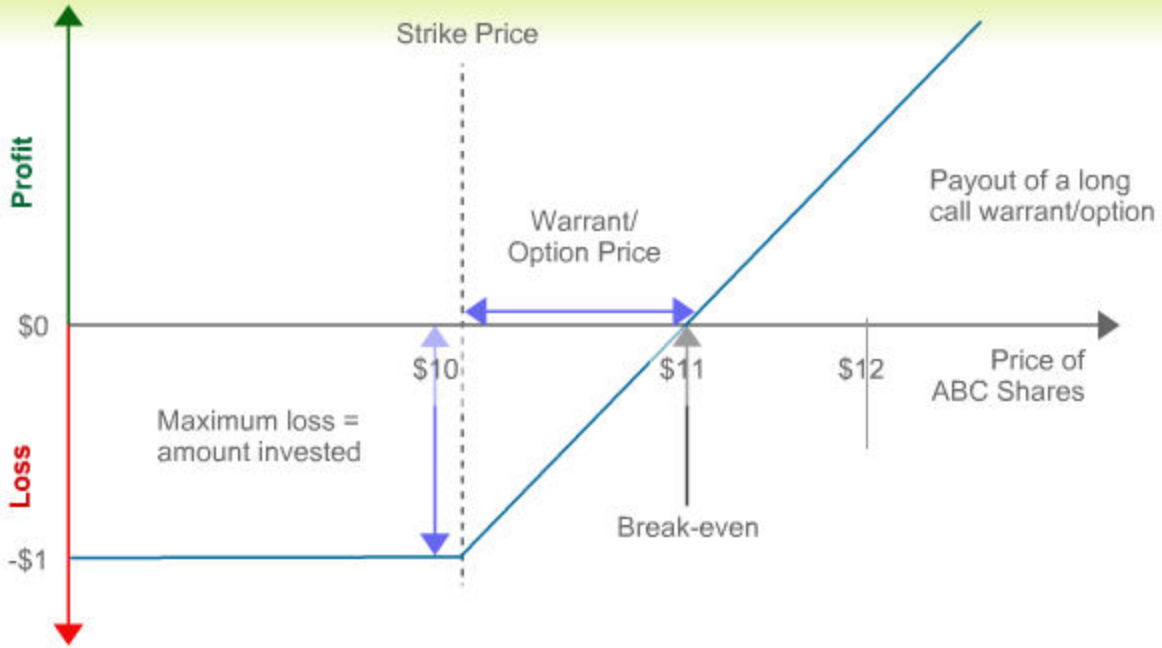
Do note that leverage works both ways: **while the gains are multiplied, the potential for losses is also magnified**. A small percentage change in the price of the underlying will result in a larger percentage change in the price of a derivative.

Click on the icon to view the payoff profile of the respective warrant/option.

Long Call Warrant/Option

Long Put Warrant/Option

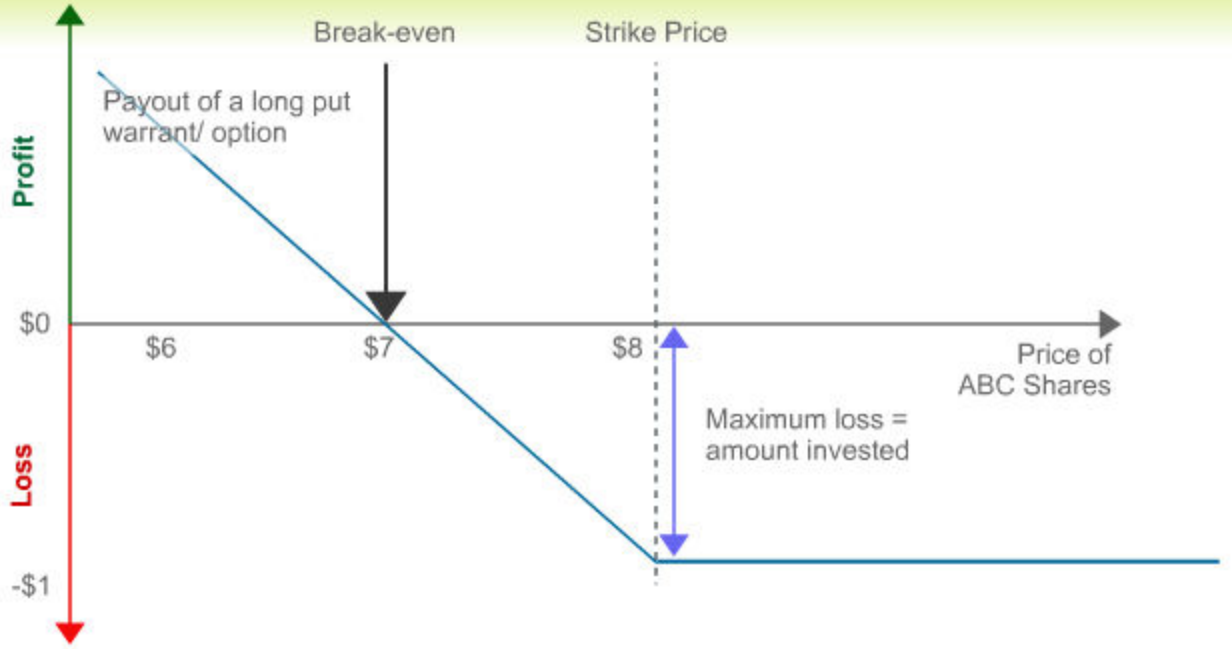
Long Call Warrant/Option



Explanation

Suppose a 3-month 1:1 call warrant on ABC shares, with an exercise price of $10 was priced at $1 at issue. The profit on this call warrant increases correspondingly with the increase in ABC stock price, above $11. Theoretically, there is no upper cap on the profit. When the stock price drops below $11, a loss occurs and reaches the maximum loss of $1 (the amount invested) when the stock price reaches the strike price of $10 and the call warrant becomes out-of-the-money and has no value at expiry.

Long Put Warrant/Option

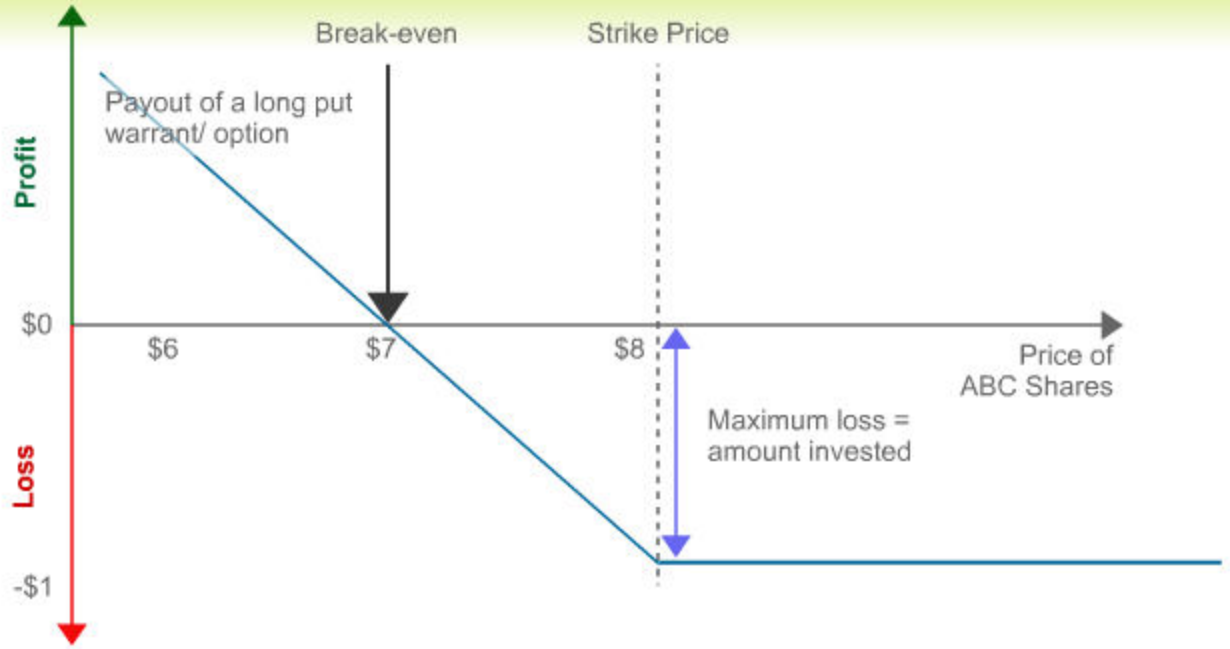


Explanation

Suppose a 6-month 1:1 put warrant on ABC shares, with exercise price of $8 was priced at $1 at issue. The profit on this put warrant increases correspondingly with the decrease in ABC stock price, below $7. The theoretical maximum profit is $7 when the stock is near $0 in value.

When the stock price rises above $7, a loss occurs and reaches the maximum loss of $1 (the amount invested) when the stock price reaches the strike price and the put warrant becomes out-of-the-money and has no value at expiry.

Long Put Warrant/Option



this put warrant increases correspondingly with the decrease in ABC stock price, below $7. The theoretical maximum profit is $7 when the stock is near $0 in value.

When the stock price rises above $7, a loss occurs and reaches the maximum loss of $1 (the amount invested) when the stock price reaches the strike price and the put warrant becomes out-of-the-money and has no value at expiry.

Because warrants and options are closely linked to stocks, an investor sometimes forgets that warrants and options have expiry dates. **They have no value after expiry.**

Quick Question

Match the different warrant and option types with their features.

Drag the green dots next to Warrant/Option Types to the respective Factors.

Warrant/Option Types	Factors
European style	Option to sell the underlying
American style	Exercised only on expiration
Call	Exercised any time before and on expiration
Put	Option to buy the underlying

Reset Submit

Feedback

Correct. Well done!

Click Close × the close button on the top right of the screen to return to the menu page.

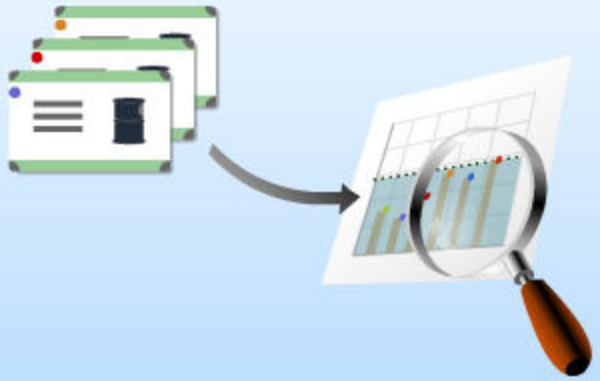
Exchange Traded Funds (ETFs) – Key Features

Click on each tab to learn the key features of Exchange Traded Funds (ETFs).

What it is | Net asset value (NAV) of ETFs

What it is

- An investment fund listed and traded on a stock exchange.
- Gives investors exposure to different asset classes like stocks, bonds and commodities etc.
- A passive instrument aimed at replicating the performance of an underlying index. They are not expected to outperform or underperform the index and would provide returns very similar to the performance of the index over the long run.
- Investors can buy or sell units of the ETF through a broker at market price throughout the trading day.



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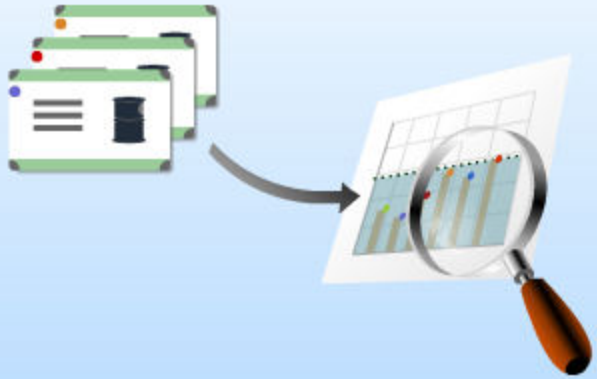
An **index** is a compilation of several prices of financial instruments such as stocks or bonds into a single number (e.g. STI index).



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An investment fund invests the pooled funds of individual investors according to pre-set investment objectives. Through an investment fund, individual investors are able to afford to hire professional fund managers, achieve portfolio diversification, diversification, gain access to performance of a basket of investments (such as constituent stock of STI in the case of STI ETF), and lower expenses through economies of scale.

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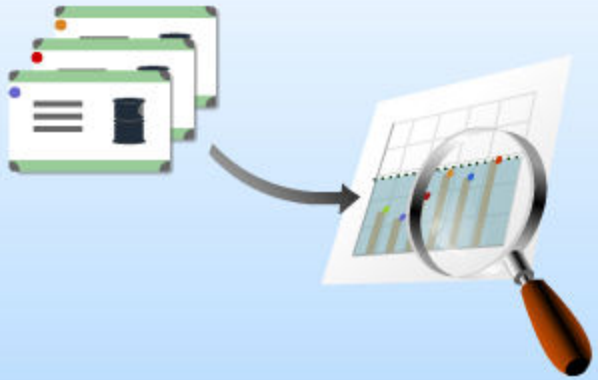

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What it is | Net asset value (NAV) of ETFs

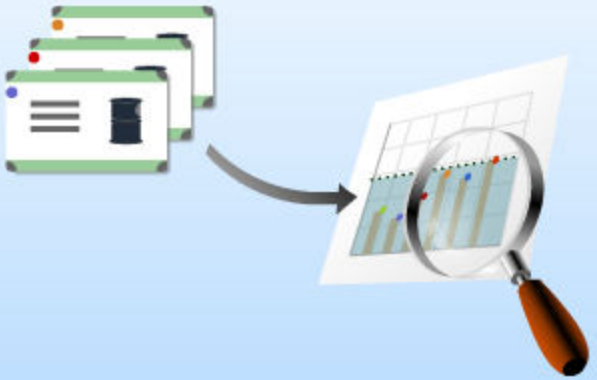
Net asset value (NAV) of ETFs

- The NAV of an ETF reflects the fair value of an ETF unit.
- Net Asset Value (NAV) is calculated as follows:

$$\text{NAV per unit} = \frac{\text{Total fund assets - Total fund liabilities}}{\text{Number of outstanding ETF units.}}$$

NAV is calculated once at the end of the each trading day and published daily.

- However, since ETFs are listed securities, they are traded at the market price rather than the net asset value.
- The traded price of an ETF may deviate from its NAV due to the demand and supply situation in the marketplace.
- Apart from the end of day NAV, most ETFs provide an indicative NAV calculated periodically throughout the trading day. This indicative NAV is sometimes known as IOPV (Indicative Optimised Portfolio Value).
- To give investors the closest estimate of the fair value of the ETF, the ETFs listed on SGX-ST have the NAVs or IOPVs published on:
  - SGX Website; or
  - SGXNET announcements; or
  - Issuers' ETF website



How ETFs Track an Index

The ETFs listed on SGX-ST can be generally divided into 2 kinds:

1. Cash-Based ETFs
2. Synthetic ETFs

The difference in these 2 types of ETFs is the replication method used to track the performance of the underlying asset.

Type of ETFs	Replication Method
Cash-Based ETFs	• Direct Replication • Statistical or Representative Sampling
Synthetic ETFs	• Synthetic Replication

How ETFs Track an Index

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1. Cash-Based ETFs
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An ETF that uses derivatives to track the performance of the underlying index.

The difference in the asset.

Type of ETFs	Replication Method
Cash-Based ETFs	• Direct Replication • Statistical or Representative Sampling
Synthetic ETFs	• Synthetic Replication

Direct replication

ETF directly invests in the **same constituents** and in the **same proportion** as the underlying index to closely track the performance of the underlying index.

Components of underlying index:

Components of ETF:

Statistical or Representative Sampling

- ETF invests in a **selected** number of **constituents** of the underlying index to track the performance of such index.

Components of underlying index:

Components of ETF:

- This method is commonly used when the issuer wishes to employ physical replication but the index has too many constituents, making it difficult to acquire and manage the proportion of all the index constituents.

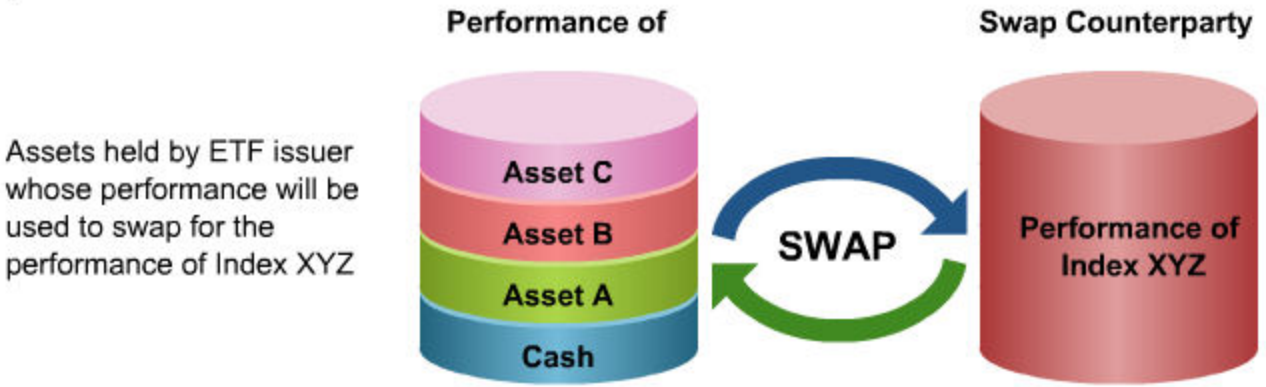
Counterparty risks may exist in cash based ETF if the cash based ETF were to enter into securities lending transaction as the fund is exposed to the credit risk of the counterparty who borrow the securities. Securities lending transactions are entered into to generate lending revenues which can be used to offset the impact of fund expenses on the performance of the ETF.

Synthetic Replication

- Typically do not invest in the constituents of the benchmark index
- Involves the use of derivatives to replicate the performance of the index.
- An ETF that adopts the synthetic replication method may:

(i) Hold cash and/or a basket of securities that are **not** the **constituents** of the stocks of the underlying index and use derivatives such as swaps to exchange the performance of the basket of securities with the performance of the index.

For example:



- Synthetic replication methods allow the issuer to minimise tracking error, but this is done with a cost.
- The ETF will be exposed to the credit risk of the counterparty when swaps are used by the issuer to exchange the performance of the assets held by the ETF for the performance of the underlying index.

Quick Question

Select one of the options below.

_____ ETFs use swap or derivatives to replicate the index.

- ○ Full replicated.
- ○ Representative sampling.
- ◉ Synthetic replicated.
- ○ None of the above.

Feedback

Correct. Well done!
Fully replicated ETF directly invests in the same constituents and in the same proportion as the underlying index to track the performance of the underlying index. Representative sampling ETF Invests in a selected number of constituents of the underlying index to track the performance of such index. Synthetic replication ETF uses some form of swap or derivatives to replicate the index.

Long and Short ETFs

Depending on the strategy which investors intend to adopt, investors may choose between long and short ETFs. Click on each of the following types of ETFs to learn more.

Long only one-to-one index tracking ETFs	• Tracks the movement of the underlying index in the **same direction**.
Short ETFs: (also known as Inverse ETFs or Bear ETFs)	• Value of the ETFs will rise when the **underlying** index **falls**. • Use short selling, derivatives, and other leveraged investment techniques to achieve the inverse (opposite) performance of the underlying index. • Most of such ETFs are only intended to track the underlying index on a daily basis. • If the underlying index drops in value by 3% in a day, the short ETF is expected to increase in value by 3% for that day.

Click on the icon to view an example on the cumulative effect.

Depending on the strategy which investors intend to adopt, investors may choose between long and short ETFs. Click on each of the following types of ETFs to learn more.

This example explains the effect of accumulating gains and losses on the value of a short ETF.

Day	1	2	3	4	Cumulative Change
Daily Change		-5%	-5%	+5%	
Underlying Index	1,000	950	902.5	947.62	-5.23%
Short ETF	1,000	1,050	1,102.5	1047.38	4.738%

Since the index has fallen by about 5.23% since the first day, the short ETF should have increased by about 5.23% above the value of the index.

However, from this example, we see that the value of the short ETF has also gain 4.738% since the first day. Such is the cumulative effect on short ETFs.

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Click on the icon

A derivative is a type of financial contract whose value is **dependent** upon or **derived** from other **underlying assets**. The underlying assets of a derivative contract can be anything, including:

- Financials - Both Physical (such as currency, equity) and Intangible (such as interest rates, equity index)
- Metals (such as copper, aluminium, zinc)
- Agricultural and farm outputs (such as rubber, coffee)
- Energy (such as fuel oil)

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Daily Change		-5%	-5%	+5%	
Underlying Index	1,000	950	902.5	947.62	-5.23%
Short ETF	1,000	1,050	1,102.5	1047.38	4.738%

Since the index has fallen by about 5.23% since the first day, the short ETF should have increased by about 5.23% above the value of the index.

However, from this example, we see that the value of the short ETF has also gain 4.738% since the first day. Such is the cumulative effect on short ETFs.

Click on each tab to learn more about derivatives.

Definition

This tutorial covers SGX-listed derivative products or products with derivatives embedded in them. But, what are derivatives?

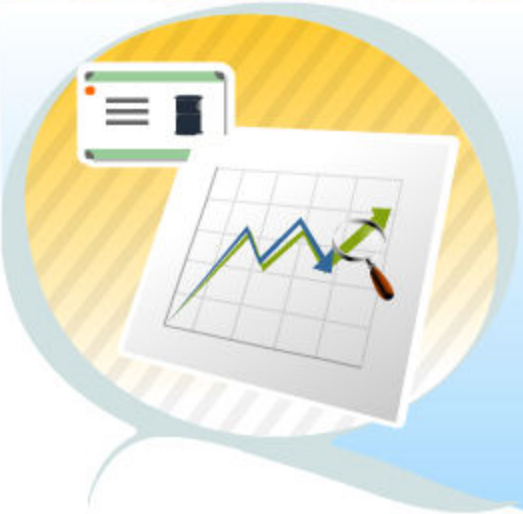
A derivative is a type of financial contract whose value is dependent upon or derived from other underlying assets. The underlying assets of a derivative contract can be anything, including:

1. Financials – Both physical (e.g. currency, equity) and Intangible (e.g. interest rates, equity index)
2. Metals (e.g. copper, aluminium, zinc)
3. Agricultural and farm outputs (e.g. rubber, coffee)
4. Energy (e.g. fuel oil)

When you buy a derivative contract,

- You do not own the underlying assets because your investment is not used to buy the underlying assets.
- You are taking a view on how much the value of the underlying asset will go up or down.

Quick Question



Select one of the options below.

Short ETFs have its value ___ when the underlying index increases.

- (•) decrease
- ( ) unchanged
- ( ) increase at the same rate
- ( ) increase at a higher rate

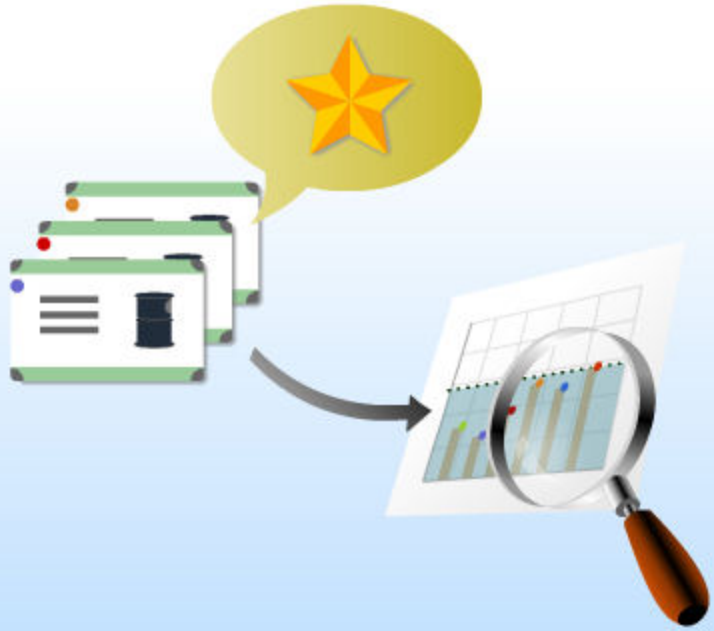
Feedback

Correct. Well done!
Investors who expect the index to fall can buy these Short ETFs, whose values increases when the underlying index decreases.

ETFs – Advantages

Compared to unlisted unit trusts, ETFs are appealing to investors in two aspects:

- **Low distribution expenses**: ETFs are traded like stocks, listed on the SGX. Investors pay brokerage commission in the range of 0.25% to 0.50% for each trade. Unit trusts, on the other hand, typically charge the buyer of the unit trust 3% to 5% of sales charges.
- **Price transparency**: ETFs are traded at known prices throughout a trading day. Unit trusts are priced less frequently, at most daily. Some unit trusts are priced even less frequently, at most monthly.



ETFs – What are the Key Risk Factors

The key risk factors for ETFs are displayed. **Click each factor to learn more.**

Risks	Description
Market risk	The day-to-day potential for an investor to experience losses from fluctuation in prices of the underlying securities/ assets.
Tracking error	ETF fund manager may not able to exactly replicate the performance of the underlying asset.
Counterparty risk	Some ETFs may use financial derivatives (e.g. swap arrangement with a third party) to achieve its investment objective. If any counterparty fails to perform its obligations under the derivative transition, the ETF may suffer losses.
Liquidity Risk	The market-maker may be the only participant buying and selling the units and there may be circumstances where investors may not be able to buy or sell units at the prices desired.
Foreign Exchange Risk	Investor may be exposed to fluctuations in foreign exchange rates which increase or erode investment returns on the ETF. For example, if the ETF is denominated in USD and the assets in which the ETF holds are denominated in a currency other than USD, the investor is exposed to fluctuation in foreign exchange rate between USD and this currency.

Quick Question

Select True or False for each of these sentences about ETFs that use synthetic replication.

	True	False
They invest in a basket of securities that may not be the constituent stock of the underlying asset.	◉	○ ✓
They may engage in derivatives to track the performance of the underlying index.	◉	○ ✓
They may subject investors to a certain element of counterparty risk.	◉	○ ✓

Feedback

Correct. Well done!

Click Close × the close button on the top right of the screen to return to the menu page.

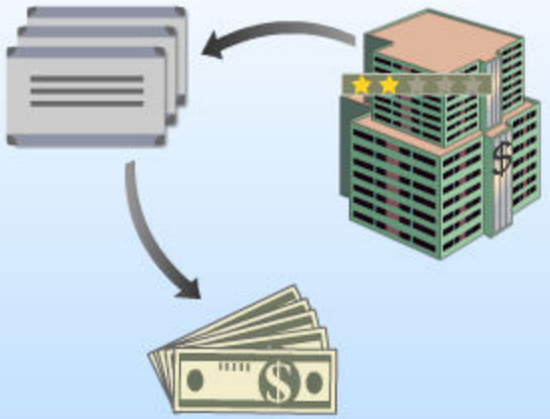
Exchange Traded Notes (ETNs) – Key Features

Click on each tab to learn the key features of Exchange Traded Notes (ETNs).

What it is | Returns of ETNs | Risk Factors

What it is

- **Debt security** issued by a third-party financial institution (usually an investment bank).
- Designed to **track** the performance of **underlying assets** such as an equity index, commodity price, and currency rate.



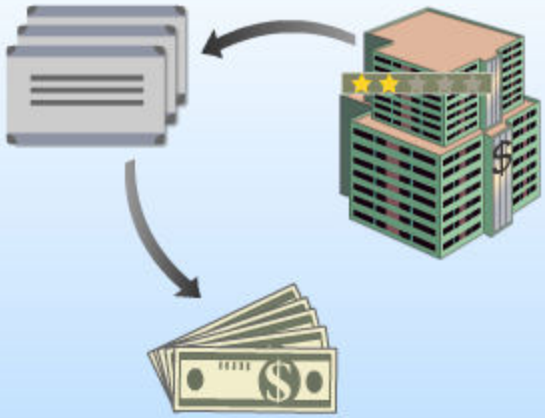
Exchange Traded Notes (ETNs) – Key Features

Click on each tab to learn the key features of Exchange Traded Notes (ETNs).

What it is | Returns of ETNs | Risk Factors

Returns of ETNs

- Returns of ETNs are based on the performance of the underlying assets.
- ETNs do not provide periodic coupon payments like bonds.
- ETNs do not pay interest.
- ETNs do not guarantee returns or return of principal.



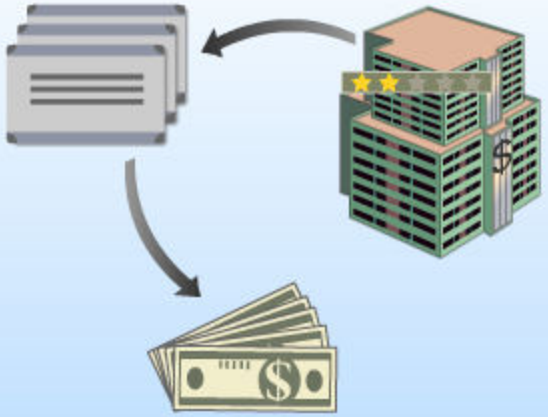
Exchange Traded Notes (ETNs) – Key Features

Click on each tab to learn the key features of Exchange Traded Notes (ETNs).

What it is | Returns of ETNs | Risk Factors

Risk Factors

- Investors are exposed to the **credit risks** of ETN issuers, who usually are unrelated to the issuers of the underlying assets. This is also known as issuer risk.
- Other general risks such as **market risk** and **liquidity risk** are also applicable to ETNs.

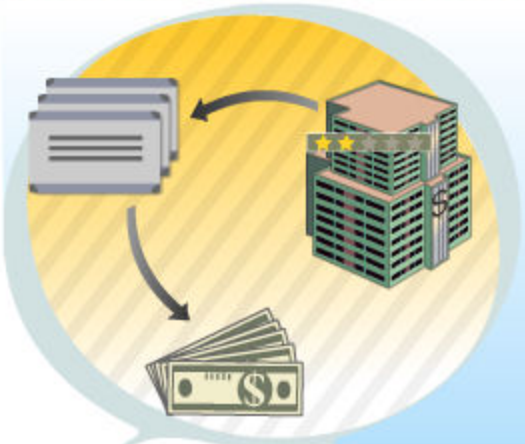


Comparison between Exchange Traded Funds and Exchange Traded Notes

The list of comparative factors is displayed. **Click each factor to view how ETFs compare with ETNs.**

Factor	Exchange Traded Funds	Exchange Traded Notes
Security type	Investment Funds	Debt security
Diversification	Varies, depending on underlying index	Varies, depending on underlying index
Dividend distribution	Yes, depending on individual ETF	No
Principal guaranteed	No	No
Expiry	No	Generally yes
Tracking error	Yes	No
Credit risk of issuer	No. Fund assets are segregated from issuer's asset.	Yes. ETNs are debt obligation owed by the issuer to investors.

Quick Question



Select one of the options below.

Which of the following is not a feature of an Exchange Traded Note (ETN)?

- ○ It is a debt security.
- ○ Investors in ETNs are exposed to the credit risks of ETN issuers.
- ○ It is designed to track performance of the underlying assets
- ◉ It guarantees returns or return of principal.

Feedback

Correct. Well done!
An ETN is a debt security designed to track the performance of underlying assets such as an equity index, commodity price and exchange rate. It is issued by a third party financial institution. As such, investors are exposed to the credit risk of the issuer. Like ETFs, ETNs are designed to track the performance of the underlying index. However, in the event of issuer default on an ETN, the entire investment in the ETNs may be lost. In the case of ETFs, the liquid assets directly held by the fund are recoverable. An ETN does not guarantee returns or return of principal.

Click Close × the close button on the top right of the screen to return to the menu page.

Futures – Key Features

Click on each tab to learn the key features of Futures.

What it is | How it works | Different Types | Margin | Settlement Methods

What it is

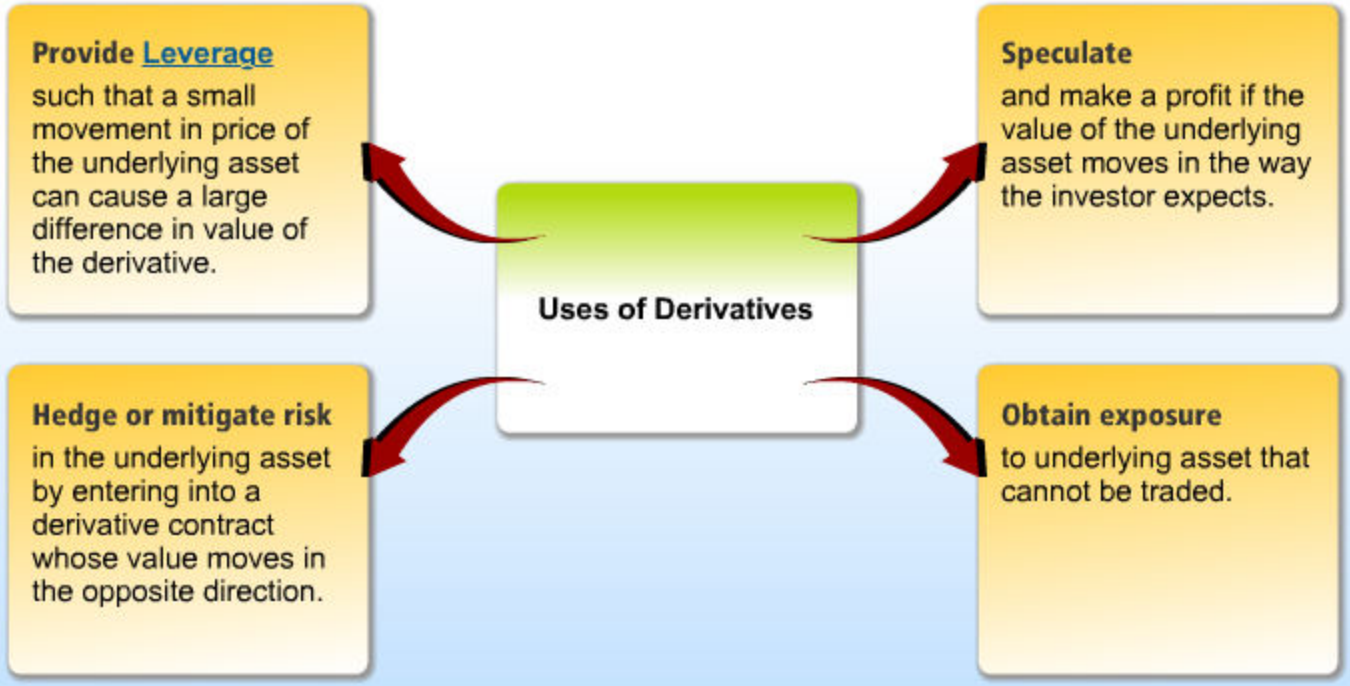
The **obligation** to buy or sell the underlying assets in a specified quantity

- at a specified price (the **future price** or **delivery price**),
- on a specified future date (the **delivery date** or **settlement date**).

What are Derivatives

Click on each tab to learn more about derivatives.

Uses of Derivatives



Futures – Key Features

Click on each tab to learn the key features of Futures.

What it is | How it works | Different Types | Margin | Settlement Methods

How it works

- An investor who expects the price of the **underlying assets** to **appreciate** adopts a **long position** by agreeing to buy and receive delivery of the underlying at the delivery price.
- Similarly, if he expects the price to **fall**, he adopts a **short position** by agreeing to sell and deliver the underlying at the delivery price.

Futures – Key Features

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How it works

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- Simil g at the deliv

Long position refers to purchase of the futures contract with the expectation that the underlying asset will rise in value.

Futures – Key Features

Click on each tab to learn the key features of Futures.

What it is | How it works | Different Types | Margin | Settlement Methods

How it works

- An investor who expects the price of the **underlying assets** to **appreciate** adopts a **long position** by agreeing to buy and receive delivery of the underlying at the delivery price.
- Similarly, if he expects the price to **fall**, he adopts a **short position** by agreeing to sell and deliver the underlying at the deliv

Short position refers to the sale of the futures contract with the expectation that the underlying asset will fall in value.

Futures – Key Features

Click on each tab to learn the key features of Futures.

Different Types

- **Financial futures** are futures contracts based on financial instruments, such as currencies, equities, equity indices, interest rates.
- **Commodity futures** are contracts based on physical commodities: crude oil, gold, etc.

Futures – Key Features

Click on each tab to learn the key features of Futures.

What it is | How it works | Different Types | Margin | Settlement Methods

Margin

- Futures are subject to margin requirements and have partial settlements of emerging gains/losses through daily mark-to-market process.

Mark–to–market is the daily process of revaluing outstanding positions to the daily settlement price at the end of each trading day. The resulting amount of profit and loss will be added to or subtracted from the margin account the investor maintains with his broker.

Futures – Key Features

Click on each tab to learn the key features of Futures.

What it is | How it works | Different Types | Margin | Settlement Methods

Settlement Methods

Futures contracts can be settled in two ways:-

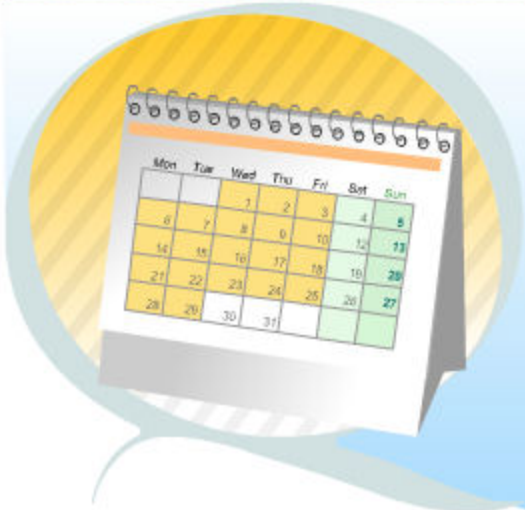
- **Physical delivery** where the underlying assets are delivered by the seller to the specified delivery location.
- **Cash settlement** where the parties settle by paying (or receiving) cash for the loss (or gain) related to the contract.

The settlement method is specified in the contracts.

Difference Between Futures and Options

Futures	Options
Investor who holds a futures is **obliged** to buy/ sell the underlying asset.	Investor who holds an option is **free to decide** whether to buy/ sell the underlying asset.

Quick Question



Select one of the options below.

Mark-to-market is a process of revaluing positions to the ___ settlement price at the end of that trading period where the resulting profit or loss will be added or subtracted from the margin account.

- ○ Hourly
- ◉ Daily
- ○ Weekly
- ○ Monthly

Feedback

Correct. Well done!
Mark–to–market is the daily process of revaluing outstanding positions to the daily settlement price at the end of each trading day.

Margin

- Futures are traded on margin.
- The initial cash outlay is also called **initial margin** and is a fraction of the full value of the contract.
- The level of initial margin is usually set by the futures exchange on which the contracts are traded, based on the anticipated price volatility.
- The broker may add additional margin requirement for specific clients, products or markets based on risk analysis.
- The ability to trade at a fraction of the value of the contract creates the leverage effect of futures trading.
- A futures contract is marked to market on a daily basis.
- The broker issues a **margin call** when the initial margin is eroded by losses, and falls below the minimum margin requirement (the **maintenance margin**).
- The additional amount required to restore the account to the initial margin is called **variation margin**.
- If the margin calls are not met, the broker has the right to liquidate the holdings in the futures to raise the necessary amount.

Click on the icons to view the respective examples.

Illustration:
How margins work

Uniquely Example:
Extended Settlement Contracts

- Futures are traded on margin.
- The initial cash outlay is also called **initial margin** and is a fraction of the full value of the contract.

Illustration: How margins work

SGX MSCI Singapore Index Futures ("SG")

Initial Margin ["IM"]	$2,500
Maintenance Margin ["MM"]	$2,000

When you buy SG (i.e. take a long position), you will need to deposit $2,500 as IM.

Scenario 1 – Margin Amount Drops Below MM

If the value of SG drops by $1,000 from your purchase price, the loss is offset against your margin account of $2,500, bringing it down to $1,500. Your margin amount is now below the MM of SG.

Your broker will issue a margin call, requesting a top-up to restore the account balance to the initial margin of $2,500.

Scenario 2 – Margin Amount Drops But Remains Above MM

If the value of SG drops by $300, your margin account is reduced to $2,200. Your margin amount remains above the MM of SG.

No margin call is made, even though it is below the initial margin.

Uniquely Example: Extended Settlement Contracts

Extended Settlement (ES) contracts are classified as futures contracts under the Securities and Futures Act (SFA). An ES contract is a contract between two parties, to buy or sell:

(a) specific quantity (e.g. 1,000 shares) of
(b) specific security (e.g. SIA) at
(c) specific price (e.g. $15.00) for final settlement at
(d) specific future date (i.e. when the contract matures or expires).

When an investor buys or sells an ES contract, the investor must put up margins of between 5-20% of the contract value to brokers.

Key Features of the ES Contracts

- **Commence trading on the 25th of the month immediately preceding the contract month.**
- **Cease trading on the last market day of the contract month (also known as Last Trading Day).**
- Each ES series has tenure of approximately 35 days.
- There is a consistent **overlap period** for customers to **'roll over'** their positions in ES contracts. **Settlement** of ES contracts takes place by way of delivery of the underlying securities on the third market day after the Last Trading Day (**LTD + 3**).
- On LTD + 3, ES contracts are settled in the same manner as ready market trades.
- Payment and receipt of the purchase and sale consideration, respectively, will take place in accordance with the

Uniquely Example: Extended Settlement Contracts

(c) specific price (e.g. $15.00) for final settlement at

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- On LTD + 3, ES contracts are settled in the same manner as ready market trades.
- Payment and receipt of the purchase and sale consideration, respectively, will take place in accordance with the current practice of the ready market. If the seller of the ES contract does not have any or sufficient underlying securities of the ES contract on LTD + 3 to meet delivery obligations, CDP will conduct buying-in of the underlying securities to close off the outstanding position.
- If an investor does not pay for the underlying securities, which have been delivered for a buy ES contract, the broker can force-sell these securities to recover the cost paid by the broker.

Quick Question

Select True or False.

Futures contracts are marked-to-market daily. After I deposit the initial margin amount with the broker, I may need to deposit additional variation margins if there is a margin call.

- (•) True
- ( ) False

Feedback

Correct. Well done!
A futures contract is marked to market on a daily basis. The broker issues a margin call when the initial margin is eroded by losses, and falls below the minimum margin requirement (the maintenance margin). The additional amount required to restore the account to the initial margin is called variation margin.

If the margin calls are not met, the broker has the right to liquidate positions to raise the necessary amount.

Futures – Risk Factors

The table lists the key risk factors associated with futures.

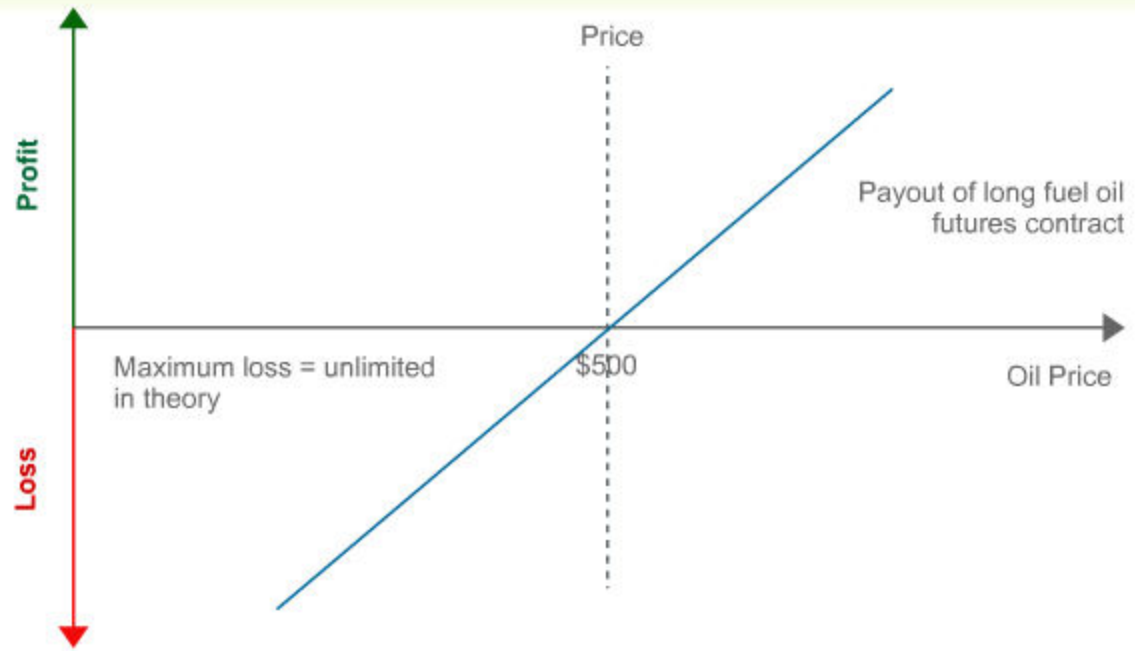
Risks	Description
Leverage Risk	If the market moves against you, the losses you suffer from trading futures will be greater in percentage terms than the movement in the underlying asset.
Liquidity Risk	There is no assurance that a liquid market will exist for offsetting a futures contract that you have previously bought or sold if: - A futures price has increased or decreased by the maximum allowable daily limit. - There is no one presently willing to buy the futures contract you want to sell or sell the futures contracts you want to buy.
Market Risk	If the market moves against you, the losses will be debited from the margin account. This is done on an ongoing basis. If the margin account falls below the maintenance margin, a margin call is initiated which requires a top up back to the initial margin, or to reduce the number of open contracts. Failing which, the broker may force-liquidate the position.

Click on the icon to view the risk profile of a futures contract (long position).

The tab

Risks
Lever… Risk
Liquid… Risk
Marke…

Risk profile of a futures contract (long position)



Suppose the September 2011 delivery fuel oil contract with price of $500 has an initial margin of $100 and maintenance margin of $80. The profit on this fuel oil futures contract increases correspondingly with the increase in oil price. Theoretically, there is no upper cap on the profit.

When the oil price drops below $480, a margin call may be triggered. The loss can be more than the

The tab

Risks
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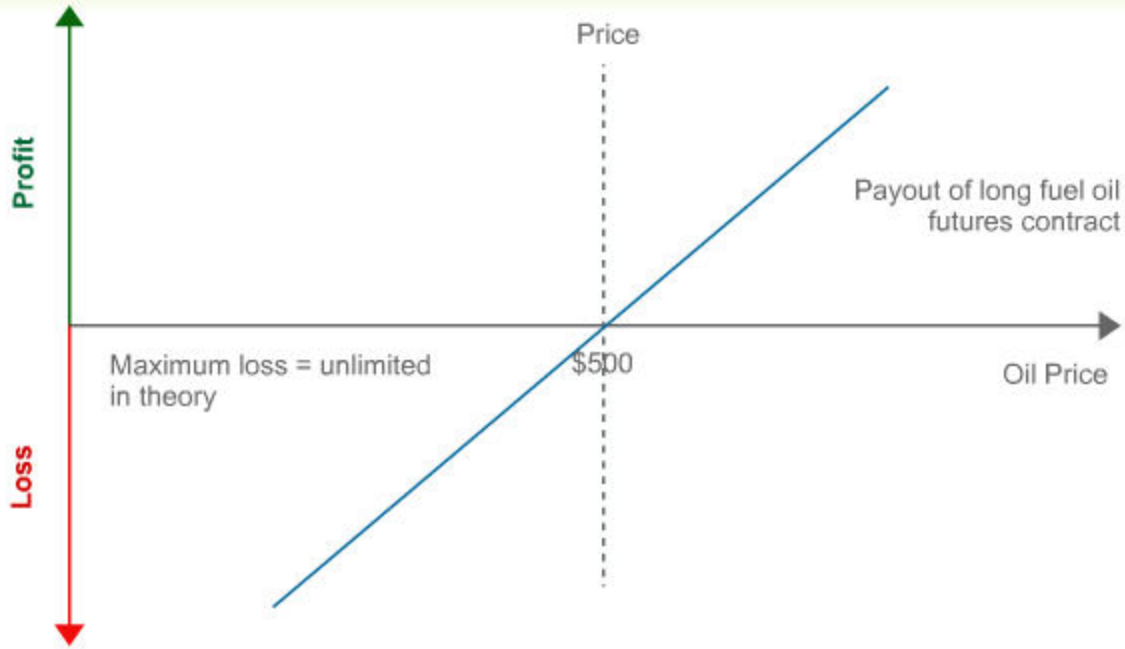
Risk profile of a futures contract (long position)



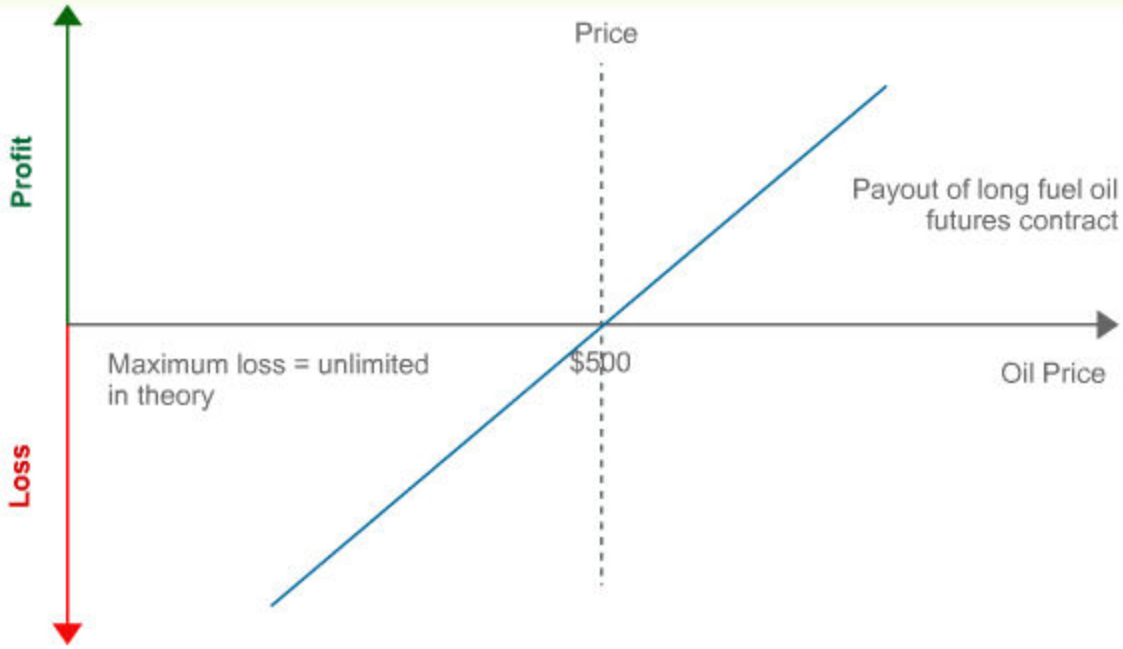
When the oil price drops below $480, a margin call may be triggered. The loss can be more than the $100 initial margin if the oil price continues to decline below the price.

It is also possible for an investor to lose more than the initial margin.

The tab

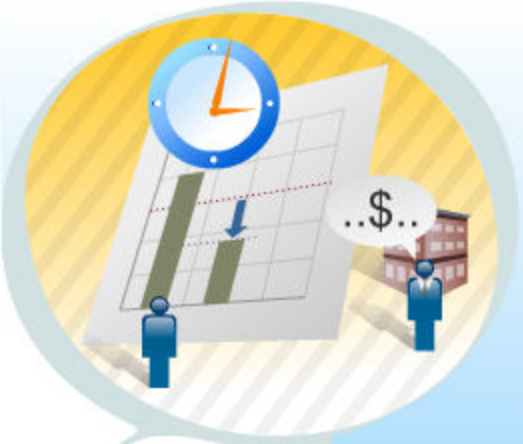
Risks
Lever… Risk
Liquid… Risk
Marke…

Risk profile of a futures contract (long position)



For example, you put up **$10** initial margin to trade a $100 coffee futures contract. If the coffee price drops 20%, you incur a **$20 loss** on the contract, more than the initial margin. If the coffee price continues to drop, you incur additional losses. The theoretical maximum loss is $100, 10 times your initial investment on the condition there is a top up of the variation margin.

Quick Question



Select one of the options below.

The broker would make a margin call on the client when the margin account falls below the _____ level.

- ○ initial margin
- ○ variation margin
- ◉ maintenance margin
- ○ final margin

Feedback

Correct. Well done!
The broker issues a margin call when the initial margin is eroded by losses, and falls below the minimum margin requirement (the maintenance margin)

Click Close × the close button on the top right of the screen to return to the menu page.

Click on each tab to learn more about derivatives.

Features of Exchange-Traded Derivatives (Listed Derivatives)

Click Close × the close button on the top right of the screen to return to the menu page.

Certificates – Key Features

Click on each tab to learn the key features of Certificates.

What it is | Risk Factors

What it is

Certificates are investment products issued by a third-party financial institution (usually an investment bank) to enable an investor to benefit from different price trends of the underlying asset.

Certificates – Key Features

Click on each tab to learn the key features of Certificates.

What it is | Risk Factors

Risk Factors

- Certificates are susceptible to risks similar to those of warrants: leverage risk, issuer risk, market risk, liquidity risk and maybe foreign exchange risk.
- Product features may vary from issue to issue. Two products by the same name, offered by two different issuers, may have different product features.
- The different features may result in different risks. An investor should be clear about the features before they invest in a certificate.

We will cover one such certificate in this section – Discount Certificate

Features

- A **Discount Certificate** allows you to buy the underlying asset at a discounted price.

- If the price of the underlying rises beyond a specified level (called cap strike), the investor receives only the cap strike amount at maturity of the certificate. In other words, there is a **cap** to the potential **upside gain**, in exchange for the discounted price.

Click on the icon to view an example.

Example

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In relation to certificates, cap strike is the upper cap of the amount paid back to investors on maturity.

Click on the icon to view an e

Example

Example:

ABC current share price = $10
Tenure of discount certificate on ABC = 6 months
Cap Strike of discount certificate on ABC = $9.50
Price of discount certificate on ABC = $8.80

At maturity, the investors receive either the ABC shares (Scenario 1) or the cap strike (Scenario 2), depending on the spot (or market) price of ABC shares

Scenario 1: Spot price is below cap strike ($9.50) – The investor receives one ABC share.

Scenario 1a: Spot price is below issue price ($8.80) - The investor suffers a loss. However, the loss is lower than that of a direct investment in ABC share, because he paid a discounted price for the share.

Scenario 1b: Spot price is above issue price ($8.80) - The investor realizes a gain since the share price is above his purchase price.

Scenario 2: Spot price is at or above cap strike ($9.50) - The investor receives the cap strike of $9.50. The pay-out is fixed regardless of the actual market value of ABC share. Therefore, the maximum return is capped at 7.95% for the 6-month period.

Quick Question

Select True or False.

Discount Certificates offer investors the option to acquire an underlying asset, such as a share, at a discount. In return, the investors must accept a fixed maximum return on the Discount Certificates (known as the Cap Strike)

- (•) True
- ( ) False

Feedback

Correct. Well done!
A Discount Certificate allows you to buy the underlying asset at a discounted price. If the price of the underlying rises beyond a specified level (called cap strike), the investor receives only the cap strike amount at maturity of the certificate.

Quick Question

Select one of the options below.

On maturity of a discount certificate, the investor of the discount certificate _____ amount if the price of the underlying rises beyond the cap strike.

- (•) receives the cap strike
- ( ) receives the underlying price
- ( ) pays the cap strike
- ( ) pays the underlying price

Feedback

Correct. Well done!
A Discount Certificate allows you to buy the underlying asset at a discounted price. If the price of the underlying rises beyond a specified level (called cap strike), the investor receives only the cap strike amount at maturity of the certificate.

Click Close × the close button on the top right of the screen to return to the menu page.

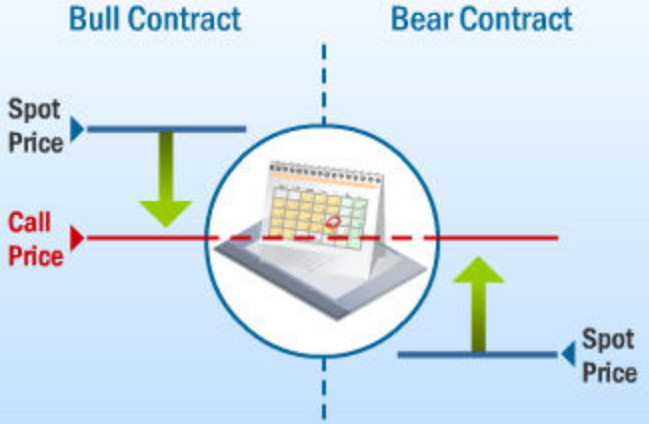
Callable Bull/Bear Contracts (CBBC) – Key Features

CBBCs are financial products issued by third-party issuers and have the following features:

- Follow closely the price performance of an underlying asset, either an index or single stock.
- Leveraged, allowing investors to gain exposure to the underlying asset at a fraction of its price.
- Issued as bull or bear contracts with a fixed expiry date and exercise/ strike level, allowing investors to take upward or downward views on the underlying.
- Issued with the condition that they will be called by the issuer before the expiry date when the underlying asset price reaches the call level (call price).
- **When the CBBC is called by the issuer, an investor will no longer be able to trade the CBBC on SGX-ST.** This is known as the **mandatory call event** ("MCE") or **knock-out event.**

Click on the icon to know more.

What is the difference between Bull and Bear Contracts?



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- **When the CBBC is called by the issuer, an investor will no longer be able to trade the CBBC on SGX-ST.** This is

What is the difference between Bull and Bear Contracts?

Bull Contract	Bear Contract
Call Price ≥ Strike Price	Call Price ≤ Strike Price
Investor buys a bull if he holds a bullish view of the underlying.	Investor buys a bear if he holds a bearish view of the underlying.

The 2 Types of CBBCs

Type N CBBC	Type R CBBC
Bull or bear contracts whose call price = strike price	Bull contracts whose call price > strike price or Bear contracts whose call price < strike price
No residual value when MCE occurs.	Investors may receive a residual value when a MCE occurs.

Click on the icons to know more.

What happens when an MCE occurs?

What happens if a CBBC trades till expiry without a MCE?

The 2 Types of CBBCs

Type N CBBC	Type R CBBC
Bull or bear contracts whose call price = strike price	Bull contracts whose call price > strike price or Bear

What happens when an MCE occurs?

An investor **may** possibly receive a **residual value** when an MCE occurs during the life of the CBBC.

Contract	Residual Value	
Bull	Settlement level of the underlying asset – Strike level of the CBBC (adjusted by conversion ratio and foreign exchange rate where applicable)	Where the Settlement level will be the **lowest (for bull) / highest (for bear)** traded level of the underlying from the time of the MCE and until the end of the next trading session following the MCE.
Bear	Strike level of the CBBC - Settlement level of the underlying asset (adjusted by conversion ratio and foreign exchange rate where applicable)	

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Contract	Residual Value
Bull	l be the **lowest** traded level of the MCE and q session
Bear	

In market where the underlying asset is traded continuously throughout a trading day, each trading day is deemed to have two trading sessions of similar number of trading hours. The term sheet of respective CBBC would provide details of the actual reference time in such cases.

The 2 Types of CBBCs

What happens if a CBBC trades till expiry without a MCE?

Investors who hold a CBBC at expiry **may** receive a **cash settlement amount**.

Contract	Cash Settlement Amount	
Bull	Settlement level of the underlying asset – Strike level of the CBBC (adjusted by conversion ratio and foreign exchange rate where applicable)	where the Settlement level will be the closing level of the underlying asset on the last trading day of the or the final settlement price of the relevant index futures
Bear	Strike level of the CBBC - Settlement level of the underlying asset (adjusted by conversion ratio and foreign exchange rate where applicable)	

There will be **no residual value** if the **settlement** level is **equal or less than** the **strike level** for a **bull** contract (equal or greater than the strike level for a bear contract).

Value of CBBC

The price changes of a CBBC tend to **follow closely** the price movement of the **underlying** asset.

If the underlying asset increases in value,
- a bull with entitlement ratio of 1 to 1 generally increases in value by approximately the same amount;
- a bear CBBC with entitlement ratio of 1 to 1 generally decreases in value by approximately the same amount.

In other words, the delta of a CBBC is usually close to one.

Value of a CBBC = Intrinsic Value + Financing Cost

1. Intrinsic Value

- The intrinsic value is the **major component** of the value of a CBBC.
- Intrinsic Value
  = Spot price of underlying asset – Strike Price of CBBC (Bull Contract); or
  = Strike price of CBBC(Bear Contract) – Spot price of underlying asset

2. Financing Cost

- The financing cost refers to the funding costs or stock borrowing costs incurred by issuer over the trading period.
- Generally **declines** as the **time-to-maturity shortens**.

Investors should note that **price changes** in the CBBC may become **volatile** when the price of the underlying asset is **close to the call price** of the CBBC, or if liquidity in the CBBC is affected by external factors such as market demand and supply.

Click on the icon to view an example.

Example: 12-month Single Stock (ABC Company) Type R Bull Contract

ABC Spot price	$100
Strike price	$80
Call price	$85
Funding cost (5%)	$4
Entitlement Ratio	1 : 1 Share
Price at issue	$24 (=$100 - $80 + $4)
Scenario 1: Spot price falls to call price; MCE occurred:	
Spot price	$85 (=15% decline)
Settlement price	$83 (lowest traded level from MCE to the next trading session)
Payout (theoretical)	$3 (=settlement price – strike, 87.5% loss)
Scenario 2: Spot price does not reach call level before expiry; At maturity:	
Spot price	$120 (=20% appreciation)
Settlement price	$120 (closing price on last trading day)
Payout (theoretical)	$40 (=settlement price – strike, 60% gain)

As illustrated in Scenario 1, investors may receive part of the upfront premium paid for the CBBC when the price of the underlying moves adversely against the investor and crosses the call level. However, since the contract is called and terminated early, the investor will not benefit from any subsequent rebound of the underlying asset.

What are the Key Features of Warrants and Options

Click on each tab to learn the key features of Warrants and Options.

What it is | Different Types | Exercise Styles | Life Span | Conversion ratio (applicable to warrants only)

What it is

The **right** to buy or sell the underlying stock at a specified price (the exercise price or strike price); and on or by a specified date (the expiry date).

Quick Question

Select True or False

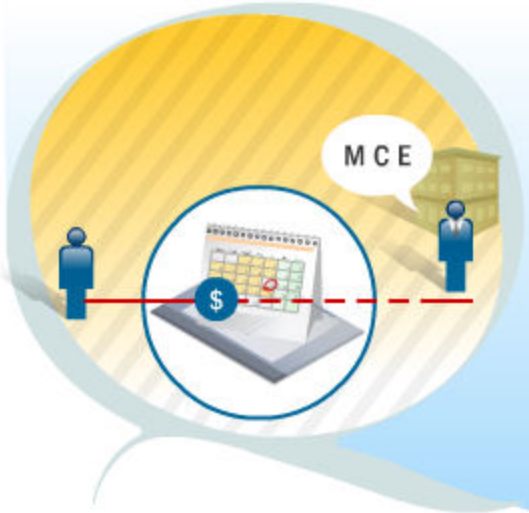
CBBCs have fixed maturity dates, but they may terminate early when mandatory call events occur before maturity.

- (•) True
- ( ) False

Feedback

Correct. Well done!
A CBBC is issued with the condition that it will be called by the issuer before the fixed maturity date when the underlying share price reaches a pre-specified call level. When the CBBC is called by the issuer, the CBBC ceases trading and this is known as the mandatory call event ("MCE").

Quick Question



Bull contracts with the call price above the strike price/ exercise price may offer a residual value if the contract is called.

The residual value is the difference between the _____price and the _____ price.

- spot, call
- settlement, strike
- call, strike
- call, settlement

Feedback

Correct. Well done!
Bull contracts with the call price above the strike price/ exercise price may offer a residual value if the contract is called. The residual value is the difference between the settlement price and the strike price, where the settlement price is the lowest traded level of the underlying from the time of the MCE and until the end of the next trading session following the MCE. Bull contracts with the call price equal to the strike price will not offer any cash payment if the contract is called. Bear contracts work similarly in the opposite direction for investors having a bearish view of the underlying.

CBBC – Risk Factors

CBBCs are susceptible to all the common risks identified earlier: leverage risk, market risk, issuer risk and foreign exchange risk.

Click each type of risk to learn more.

Mandatory Call Event ("MCE") Feature

When a MCE occurs, CBBC will terminate trading and expire early. Any trade executed at and after the time of the MCE are invalid and will be cancelled accordingly.

Trading near Call Price

When the underlying asset of a CBBC is trading at a price close to its call price, the change in the value of the CBBC may be more volatile and disproportionate with the change in the value of the underlying asset.

For example, as a bull CBBC approaches MCE, the price of the CBBC may fall by a greater proportion due to the decrease in the value of the financing cost as the risk of the product expiring early increases.

Some investors may also sell the CBBC to cap their loss while other investors are less willing to buy the product that may be called anytime.

CBBC – Risk Factors

CBBCs are susceptible to all the common risks identified earlier: leverage risk, market risk, issuer risk and foreign exchange risk.

Click each type of risk to learn more.

Product Specific Risks | Leverage Risk | Liquidity Risk | Market Risk | Issuer Risk

CBBCs are leveraged instruments.

While leveraged products allow investors to magnify their gains, investors are also exposed to a larger percentage loss in the event the underlying asset moves against expectations.

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CBBCs are susceptible to all the common risks identified earlier: leverage risk, market risk, issuer risk and foreign exchange risk.

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Product Specific Risks | Leverage Risk | Liquidity Risk | Market Risk | Issuer Risk

The market-maker may be the only participant buying and selling the contracts and there may be circumstances where investors may not be able to buy or sell CBBCs at the prices desired.

CBBC – Risk Factors

CBBCs are susceptible to all the common risks identified earlier: leverage risk, market risk, issuer risk and foreign exchange risk.

Click each type of risk to learn more.

Value of the CBBCs is susceptible to prevailing market forces, including demand and supply of the CBBCs.

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Product Specific Risks | Leverage Risk | Liquidity Risk | Market Risk | Issuer Risk

The contracts are unsecured contractual obligations of the issuer. If the issuer is unable to meet its obligations under the contracts, the investor may lose the entire investment.

Learning About SGX-Listed Specified Investment Products Including Derivatives: Recap

You have gone through the tutorial on SGX-listed Specified Investment Products, which covered the following:

- ☑ Common types of investment products
- ☑ Their basic features and associated risks
- ☑ How they can be used to achieve investment goals

If there are items you are not clear about, you may go back and review the content.
More information on the products can also be found on website of the respective issuers or SGX website.

You may approach your CMS licensed broker if you want to trade in Specified Investment Products. **However, investors should satisfy themselves that they fully understand the product features and risks of derivatives before investing in them.**

Click Close × the close button on the top right of the screen to return to the menu page.

What are the Key Features of Warrants and Options

Click on each tab to learn the key features of Warrants and Options.

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Different Types

- **Call** warrant/ option – the right to buy the underlying
- **Put** warrant/option – the right to sell the underlying

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Exercise Styles

- **European style:** The warrant/option is a contract that may only be exercised on expiration
- **American style:** The warrant/option is a contract that may be exercised on any trading day on or before expiry date
- It is worth noting that most of the structured warrants currently listed on the Exchange are European style.

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Life Span

- Have specified expiry dates.
- No value after the expiry date, because the right to buy/sell no longer exists.