Unit 6: Derivatives

Student Workbook

Unit 6

Unit Aim: Understand the key features of futures, options and swaps.

Relevance of this unit to the course:
This unit builds on the previous financial assets units, as well as making connections to unit 2 and unit 8.

Learning Objective	Learning Outcomes	Chapter Section
6.1.1	Know the uses and application of derivatives	1
6.2.1	Know the definition and function of a future	2
6.3.1	Know the definition and function of an option	3
6.3.2	Understand the following terms • Calls • Puts	3
6.4.1	Understand the following terminology around futures / options • Long • Short • Open • Close • Covered • Naked • Holder • Writing • Premium	2 and 3
6.5.1	Understand the characteristics of the derivatives and commodity markets	6
6.5.2	Understand the potential advantages and disadvantages of investing in the derivatives and commodity markets	6
6.6.1	Know the definition and function of an interest rate swap	4
6.7.1	Know the definition and function of credit default swaps	5

How to use this student workbook

Throughout this student workbook, look out for the different icons to support your learning:

Understand and learn – these sections will help you to develop your knowledge and understanding of the assessed learning objectives.

Apply and practise – Practise and test your newly acquired learning by undertaking a range of activities to help you prepare for the multiple choice assessment at the end of the course.

Further your knowledge – Consolidate your understanding of key concepts by reading and interacting with current, credible resources to help further enhance your learning.

Introduction to derivatives

A derivative is a financial instrument whose price is based on the price of another asset called 'the underlying'. Which of the following could be an underlying? Give reasons for your answers.

The underlying?	Reason	The underlying?	Reason
☐ US Dollar		☐ Market index	
☐ Wheat		☐ Bonds	
☐ Gold		☐ Corn	
☐ Exchange Traded Funds		☐ Cocoa Beans	
☐ Sugar		☐ Crude Oil	
☐ Stocks		☐ Yen	

Module Learning Outcome 6.1

6.1.1: Know the uses and application of derivatives

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What are derivatives?

Watch the video What are derivatives? and answer the following questions.

1. In your own words, briefly explain derivatives.

2. What are the 3 products that form the derivative market?
   Define these products with examples.

3. What are derivatives used for?

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The uses and application of derivatives

A derivative is a financial instrument whose price is based on the price of another asset which is known as the underlying asset or simply 'the underlying'. They are chiefly designed to be used to reduce the risk faced by organisations and individuals, known as hedging.

Give 3 examples of each type of underlying asset:

Financial Assets:

1.

2.

3.

Commodities:

1.

2.

3.

Derivatives play an important role in the investment management of many large portfolios and funds and are used in different ways. Fill in the blanks below:

is a technique used by portfolio managers to reduce the impact of price movements on a portfolio's value.

Anticipating future cash flows is closely linked to the idea of hedging. If a portfolio manager expects to receive a large inflow of cash to be invested in a particular asset, then futures can be used to the price at which it will be bought in order to offset the risk that prices that will have risen by the time the cash is received.

Changes in asset allocation of a fund can be used to take advantage of short term movements in the market or to implement a change in strategy. The changes can be made more quickly and less expensively using derivatives than actually buying and selling the securities within the portfolio.

Arbitrage is the process of deriving a profit from buying AND selling the same asset in two different markets at the same time, where the price between the markets. If the price of a derivative and its underlying asset are , then a portfolio manager may be able to profit from the pricing anomaly.

Module Learning Outcome 6.2 – Futures

6.2.1 – Know the definition and function of a future

Module Learning Outcome 6.4 – Futures Terminology

6.4.1 – Understand the following terminology around futures

- Long
- Short
- Open
- Close
- Covered
- Naked

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What are futures and forwards?

Watch this CISI YouTube video about forwards and futures and read the section in chapter 6 of your course workbook. Answer the following questions.

1. What is the difference between forward and future contracts?
2. When and where was the world's first derivatives exchange opened?
3. Describe a commodities futures contract?
4. When was the world's first financial futures contract introduced?
5. What are two distinct features of a futures contract?

Derivatives and their uses

Read the five scenarios below where two counterparties have entered into a contract to exchange money for an asset. Write down which asset you think is being traded (What asset is the financial transaction derived from?) and answer the questions that follow.

1.

What asset is being traded?

£

Airline
e.g. British Airways

Oil Company
e.g. Shell

2.

What asset is being traded?

£

Brewery
e.g. Shepherd Neame

Farmer

Derivatives and their uses

3.

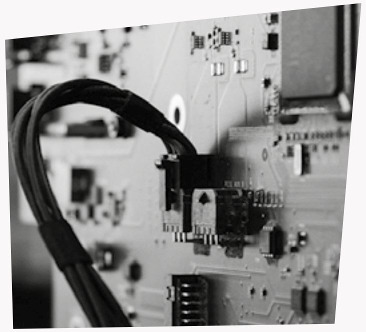
Bakery
e.g. Allied Bakeries

What asset is being traded?

£

Farmer

4.



Electronics manufacturer
e.g. Sony

What asset is being traded?

£

Mining Company
e.g. Rio Tinto

5.

Medium sized UK plc

What asset is being traded?

£

Investment Bank
e.g. JP Morgan

Uses and futures

In scenarios 1-4, the contracts put in place between the buyer and seller are negotiated directly between the two parties and stipulates:

- The price of the asset
- The quantity of the asset
- The quality of the asset
- The delivery of the asset on a set date paid

These are known as forward contracts. Why are contracts like this put in place? Think about what the two parties stand to gain with this type of agreement. Write down your thoughts below for each scenario:

Scenario 5 involves a different type of asset in the agreement. What do you think are the reasons for both counterparties for entering into this agreement?

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Futures – True or False?

	True	False
A future is an agreement between a buyer and a seller	○	○
A futures contract is a legally binding obligation between 2 parties	○	○
In a futures contract, the buyer agrees to pay a pre specified amount for the delivery of a respecified quantity of an asset at a moveable date	○	○
A buyer of a futures contract can only negotiate the date and location of delivery, not the price of the underlying asset.	○	○
Futures allow assets and commodities to be traded for future settlement at a price agreed today.	○	○

Futures terminology

Read the section about futures terminology in chapter 6 of the course workbook and match the term and definitions below:

Definition	Term
The term used for the position taken by the buyer of the future	
The term used for the position taken by the seller of the future	
Describes the initial trade, when it first enters into a future	
Most physical assets don't end up being delivered and so this happens instead. If this doesn't happen, the buyer pays agrees sum and receives the underlying asset.	
When the seller of the future has the underlying asset that will be needed if physical delivery of the underlying commodity takes place.	
The term used when the seller of the future does NOT have the asset that will be needed if physical delivery of the underlying commodity is required.	

Using futures terminology

Look at the example below and decide which of the 6 futures terms (open, close, short, long, naked, covered) relate to the buyer and/or the seller. Terms may apply to both. Give reasons for your answers.

Buyer

- Covered ☐
- Open ☐
- Short ☐
- Long ☐
- Close ☐
- Naked ☐

Buyer
e.g. British Airways

Futures Contract
Legally binding obligation between two parties

Seller
e.g. Shell Aviation

Seller

- Covered ☐
- Open ☐
- Short ☐
- Long ☐
- Close ☐
- Naked ☐

Reasons:

Reasons:

Further your knowledge – Futures

Watch the video 'What are futures' and write your own case study/ scenario explaining how futures work in practice. You should include information about:

- The asset and parties involved
- The forward contract (what should be included?)
- A change in the contract
- The impact on all parties
- The impact of bringing in a third party

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Multiple choice questions

1. When a counterparty using derivatives has no interest in the underlying asset, they are said to be;

- A. Accumulating
- B. Hedging
- C. Speculating
- D. Mitigating

2. When derivatives are traded directly between counterparts, it is known as;

- A. OTC
- B. ETF
- C. OTT
- D. ECB

Multiple choice questions

3. Which ONE of the following is described as having gone short in a futures transaction?

- A. Guarantor
- B. Holder
- C. Seller
- D. Buyer

4. The seller in a futures contract agrees to;

- A. Pay a pre-specified amount for an asset
- B. Take delivery of an asset at a pre-specified future date
- C. Take delivery of a pre-specified quantity of an asset
- D. Deliver the asset on a pre-specified future date

Multiple choice questions

5. What is the only element of a futures contract that is open to negotiation between buyer and seller?

- A. Underlying quantity
- B. Purchase price
- C. Future date
- D. Delivery location

6. If a futures contract is not closed by the specified delivery date, which of the following will happen;

- A. The buyer will take delivery of the asset
- B. The seller will not deliver the asset
- C. A closing sale is made by the buyer
- D. The buyer will not pay the seller

Multiple choice questions

7. When both parties have an interest in the underlying asset in a futures contract, they are said to be;

- A. Hedging
- B. Speculating
- C. Taking a short position
- D. Taking a long position

8. Rose has committed to buy 1000 barrels of crude oil for \$105 per barrel in 3 months' time on a derivatives exchange. Which of the following best describes Rose's position;

- A. Short futures
- B. Short options
- C. Long futures
- D. Long options

Module Learning Outcome 6.3 – Options

6.3.1: Know the definition and function of an option

6.3.2: Understand the following terms

- Calls
- Puts

Module Learning Outcome 6.4 – Terminology

6.4.1 – Understand the following terminology around options

- Holder
- Writing
- premium

What are options?

Watch this CISI YouTube video about options and read the section in chapter 6 of your course workbook. Answer the following questions.

1. What are options?
2. What does the term "exercise the option" mean?
3. What is the term given to the pre-agreed price at which an option buyer is able to buy or sell a specified quantity of an underlying asset?
4. What is the premium?

What are options?

5. What is a call option?

6. What is a put option?

7. What is another term for the buyer of the option?

8. What is another term for the seller of the option?

Options – True or False?

	True	False
In exchange traded options contracts, buyers and sellers deal directly with each other	○	○
The premium paid by a buyer to an exchange is non-refundable	○	○
In a call option, the writer is obliged to sell the underlying asset	○	○
In a put option, the writer is obliged to buy the underlying asset	○	○
The premium represents the payment by the buyer for the option	○	○

Options example

Read the example about Jersey PLC in the options section of chapter 6 in the course workbook and apply this to the scenario below:

Romi holds a £2.80 call option for ABC plc which ends on 2nd December. She paid a premium of 15p.

1. Explain how Jenny's option works?
2. Explain how and when she could make a profit?
3. What is the maximum loss Jenny could make?

Fill in the remaining blanks:

An option gives the buyer the right but not the obligation to buy or sell a specified   of an underlying asset at a pre-agreed   price, on or before a pre-specified future date or between two specified dates. The seller, in exchange for the payment of a   , grants the option to the buyer.

When options are traded on an   they will be in   sizes and terms. When investors want to trade outside of these terms they can do so   in the   market where the contract is   .

A   is the buyer and owner of an option.

A   is the seller of an option.

The seller of an option, in exchange for the payment of a   , grants the option to the buyer.

Options – Shares in Beckenham Ventures

Shares in Beckenham Ventures Plc are trading at 125p.

Investor Smith believes the share price is going to rise sharply over the course of the next three months.

Investor Jones thinks the shares are going nowhere.

Investor Jones writes (sells) the **call option**. Investor Jones charges investor Smith a non-refundable premium of 20p.

Investor Smith buys a 150p call option for three months.

1. What would happen if Beckenham Venture PLC share price rise above 170p?

2. What would happen if Beckenham Venture PLC share price rise to 155p?

3. What would happen if Beckenham Venture PLC share price rise to 127p?

Options – Shares in Gameshare PLC

Shares in Gameshare Megastore Plc are trading at 240p.

Investor Smith believes the share price will fall sharply over the next three months.

Investor Jones believes the share price will rise slightly.

Investor Jones writes a **put option** for Gameshare Megastore plc shares at 220p for three months.

Investor Smith buys the option written by Mr Jones for a premium of 30p

1. What would happen if Gameshare PLC shares are trading at 160p?
2. What would happen if Gameshare PLC shares are trading at 210p?
3. What would happen if Gameshare PLC shares are trading at 230p?

Further your knowledge – options

Watch the video to recap your knowledge about options and answer the following questions:

1. What are the uses of options?

2. Summarise the key features of an option.

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Module Learning Outcome 6.5 – Derivatives / Commodity Markets

6.5.1: Understand the characteristics of the derivatives and commodity markets

6.5.2: Understand the potential advantages and disadvantages of investing in the derivatives and commodity markets

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Derivatives Markets

There are broadly two groups of derivatives in the derivatives market: Over The Counter (OTC) derivatives and Exchange-Traded Derivatives (ETD). Read section 6 in chapter 6 of the course workbook and place the following terms under correct heading

	OTC	ETD
Traded privately between parties	○	○
Standardised features	○	○
Participants need to post a margin for all transactions	○	○
The larger market in terms of value of contracts traded daily	○	○
Mainly takes place in Europe and the UK currently	○	○
Guarantees given to each party that trade will eventually be settled	○	○
Uses intermediary for all trades	○	○
Interest rate swaps mainly traded this way	○	○

Physical Markets

Using section 6 in chapter 6 of the course workbook, name five commodity markets:

1.

2.

3.

4.

5.

Read the example on base and precious metals in the course workbook and explain the factors that could influence supply and demand.

European Derivatives Exchanges

The main derivative exchanges in Europe are shown below. List where they are located and the different types of derivatives that they trade.

Derivatives Exchange	Trades in…
ICE Futures Europe	
Eurex	
Intercontinental Exchange (ICE)	
London Metal Exchange (LME)	

Who does what?

1. Which exchange trades German bond futures?

2. Which exchange trades American agricultural futures and options?

3. Which exchange trades options on the FTSE100?

4. Which exchange trades derivatives on soft commodities as well as financial derivatives?

Who does what?

5. Which exchange trades energy commodity contracts?

6. Where would you trade a jet fuel futures contract?

7. Which exchange is based in London but has a global market with international membership?

Advantages and disadvantages

Summarise the main advantages and disadvantages of investing in the derivatives and commodity markets in the table below. Use chapter 6 to help.

Advantages	Disadvantages

Further your knowledge

Complete the commodities and energy markets module (1 hr) on the professional refresher section of the CISI learning platform.

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CISI TV

Commodities

Watch the panel discussion about commodities focusing on gold and uranium on the CISI TV channel through the learning platform.

Module Learning Outcome 6.6 – Swaps

6.6.1: Know the definition and function of an interest rate swap

What is a swap?

Watch the video about swaps and read the section in chapter 6 of your course workbook then answer the following questions.

1. What is a swap?

2. What is an interest rate swap?

3. Are swaps standardised or unique?

4. What are the "legs of a swap"?

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What is a swap?

5. What is the purpose of an interest rate swap?

6. The variable interest rate is usually based on a market reference rate such as the SOFR. What does SOFR stand for?

7. What is another term for the variable rate of interest?

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Swaps activity

ABC plc and XYZ plc enter into a 1-year interest rate swap with a notional amount of £1 million. ABC plc makes an agreement with XYZ plc to exchange a rate of LIBOR* plus 1% for a fixed annual rate of 5%.

1. If the LIBOR rate stays at roughly 4%, what would the value of the legs of the swap agreement be?

2. What would the value of the legs of the swap agreement be if the LIBOR rate was trading at 4.75%?

3. Which of the two companies has lost out as a result of this swap deal if the rate of LIBOR is 4.7%?

* The London Interbank Offered Rate (LIBOR) is a set of interest rates calculated from submissions by large global banks. LIBOR rates are supposed to represent the cost of borrowing among the banks.

Module Learning Outcome 6.7 – Credit Default Swaps

6.7.1: Know the definition and function of credit default swaps

What are credit default swaps?

Read the section about credit default swaps in the course workbook and on the Investopedia web page. Answer the following questions.

1. What is the function of credit derivatives?
2. What is a credit event?
3. What is a credit derivative?
4. Why is a credit default swap different to other type of swaps?

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Further your knowledge

Complete the derivatives module (1 hr) on the professional refresher section of the CISI learning platform.

End of Unit 6
Multiple Choice Assessment

Test your knowledge

1. The premium for an exchange traded option is paid:

- A. Directly to the Exchange
- B. Directly to the Writer
- C. Directly to the Holder
- D. Directly to a Custodian

2. The ‘holder’ of an option is another name for the

- A. Writer
- B. Buyer
- C. Seller
- D. Granter

Test your knowledge

3. A premium is most likely to be paid

- A. When a futures contract is opened
- B. At the beginning of an option contract
- C. When a futures contract is closed
- D. When an option contract lapses

4. The exercise price relates to which type of derivative?

- A. Futures
- B. Forwards
- C. Swaps
- D. Options

Test your knowledge

5. What is 'the underlying' in relation to a derivative?

- A. The asset from which the derivative's price is determined
- B. The price of the financial instrument
- C. The contract put in place between two counterparties
- D. The terms set out in the derivatives contract

6. Which of the following is not a major form of derivative?

- A. Options
- B. Forwards
- C. Equities
- D. Futures

Test your knowledge

7. The first derivatives exchange, established in 1848 was the

- A. CBOE
- B. CBOT
- C. CSIT
- D. OPEC

8. Which of the following is NOT a feature of a futures contract?

- A. It is exchange traded
- B. It is dealt on standardised terms
- C. Only the price is open to negotiation
- D. The date of delivery can be negotiated

Test your knowledge

9. When the seller of a future does not own the underlying asset, which of the following best describes their position?

- A. Covered
- B. Naked
- C. Long
- D. Open

10. What does the term ‘long’ refer to in futures terminology?

- A. The position taken by the buyer of the future
- B. The position taken by the seller of the future
- C. The timescale specified by the futures contract
- D. The position taken either by the buyer or seller of the future

Test your knowledge

11. Which of the following is NOT true about the premium paid in an options contract?

- A. It is paid at the beginning of the contract
- B. It is refundable
- C. It is paid to an exchange for exchange traded options contracts
- D. It is paid by the eventual holder of the option

12. Which of the following is true when derivatives are traded OTC?

- A. They have standardised terms
- B. Terms are negotiated directly between counterparties?
- C. They are traded on exchange
- D. These are legally binding obligations for both counterparties

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Test your knowledge

13. The exercise price relates to which type of derivative?

- A. Futures
- B. Forwards
- C. Swaps
- D. Options

14. A call option is where:

- A. The buyer has the right to buy the asset at the exercise price
- B. The seller is obliged to take delivery and pay the exercise price
- C. The buyer has the right to sell the underlying asset at the exercise price
- D. Either the buyer or the seller can waive their obligation

Test your knowledge

15. Sellers of options are referred to as:

- A. Holders
- B. Writers
- C. Exchangers
- D. Buyers

16. Which of the following is NOT a drawback of investing in a derivative markets?

- A. Professional investment skills and experience are required
- B. Counterparty default risk
- C. Potential to lose more than the initial outlay
- D. Offers the ability to speculate on a range of assets and markets

Test your knowledge

17. Which of the following is NOT a credit event?

- A. A fall in an assets value
- B. Bankruptcy
- C. Debt restructuring
- D. A rise in an assets value

18. Company A has entered into an interest rate swap with an investment bank. Company A originally borrowed £1. What term is given to the original amount on which the swap cash flows are based?

- A. The negligible
- B. The nominal
- C. The notional
- D. The notable

Test your knowledge

19. The cash flows of an interest rate swap are known as which of the following terms?

- A. Flows
- B. Trades
- C. Feet
- D. Legs

20. Which are the most common form of swaps?

- A. Interest Rate Swaps
- B. Credit Default Swaps
- C. Currency swaps
- D. Commodity Swaps

Test your knowledge

21. Arbitrage is the

- A. process of deriving a risk free profit from simultaneously buying and selling the same asset in two different markets
- B. technique employed by portfolio managers to reduce the impact of adverse price movements on a portfolio's value
- C. process of changing an asset allocation of a fund
- D. technique used to fix the price of an asset and offset the risk of rising prices when expecting to receive a large inflow of cash to pay for the asset

Test your knowledge

22. Which of the following statements is correct:

- A. Both futures and options can ONLY be exchange traded
- B. A future is a legally binding obligation whereas an option only gives the right to buy or sell
- C. A option is a legally binding obligation whereas a future only gives the right to buy or sell
- D. Buyers pay a premium to buy futures

Monitoring my progress – Unit 6

My multiple choice assessment mark is / 22

I am happy with the progress that I made on the multiple choice assessment

◯ Yes ◯ No

To improve my knowledge and understanding, I now need to….

1.

2.

3.

Need more help?

If you feel that your multiple choice score can be improved further, complete the end of unit 6 multiple choice questions in the course workbook.

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Answers

Page 4
All are examples of underlying assets

Page 7
Financial Assets could include:
1. Bonds
2. Shares
3. Stock market indices
4. Interest rates

Commodities could include:
1. Oil
2. Silver
3. Wheat
4. Coffee
5. Sugar

Page 8
Hedging is a technique used by portfolio managers to reduce the impact of **adverse** price movements on a portfolio's value.

Anticipating future cash flows is closely linked to the idea of hedging. If a portfolio manager expects to receive a large inflow of cash to be invested in a particular asset, then futures can be used to **fix** the price at which it will be bought in order to offset the risk that prices that will have risen by the the time the cash is received.

Changes in asset allocation of a fund can be used to take advantage of **anticipated** short term movements in the market or to implement a change in strategy. The changes can be made more quickly and less expensively using derivatives than actually buying and selling the securities within the portfolio.

Arbitrage is the process of deriving a **risk free** profit from buying AND selling the same asset in two different markets at the same time, where the price **differs** between the markets. If the price of a derivative and its underlying asset are **mismatched**, then a portfolio manager may be able to profit from the pricing anomaly.

Page 10
1. Forward and futures contracts involve two parties agreeing to buy and sell an asset at a specified price by a specific date.

   A forward contract is a private, customizable agreement that settles at the end of the agreement and is traded over the counter (OTC).

   A futures contract has standardized terms and is traded on an exchange, where prices are settled daily until the end of the contract.
2. When and where was the world's first derivatives exchange opened? 1848 in Chicago
3. A commodities futures contract enables standardised qualities and quantities of a commodity to be traded for a fixed future price on a stated delivery date. Unlike the forward contracts that preceded it, a futures contract can itself be traded.
4. 1975
5. It is exchange traded and is dealt on standardised terms where only the price is open to negotiation

Page 11
1. Jet fuel
2. Wheat/hops

Page 12
1. Wheat
2. Copper
3. Interest rates

Answers

Page 14
A future is an agreement between a buyer and a seller - **TRUE**
A futures contract is a legally binding obligation between 2 parties - **TRUE**
In a futures contract, the buyer agrees to pay a prespecified amount for the delivery of a respecified quantity of an asset at a moveable date - **FALSE**
A buyer of a futures contract can only negotiate the date and location of delivery, not the price of the underlying asset - **FALSE**
Futures allow assets and commodities to be traded for future settlement at a price agreed today. -**TRUE**

Page 15
Long = the term used for the position taken by the buyer of the future

Short = the term used for the position taken by the seller of the future

Open = describes the initial trade, when it first enters into a future

Close = Most physical assets don't end up being delivered and so this happens instead. If this doesn't happen, the buyer pays agrees sum and receives the underlying asset.

Covered = When the seller of the future has the underlying asset that will be needed if physical delivery takes place

Naked = The term used when the seller of the future does NOT have the asset that will be needed if physical delivery of the underlying commodity is required.

Page 16
Long – the buyer
Short – the seller
Naked – the seller
Covered – the seller
Open – both
Close – the buyer

Page 18 - 21
1C
2A
3C
4D
5B
6A
7A
8C

Page 23 - 24
- What are options? An option gives a buyer the right, but not the obligation, to buy or sell a specified quantity of an underlying asset at a pre-agreed exercise price, on or before a prespecified future date or between two specified dates. The seller, in exchange for the payment of a premium, grants the option to the buyer.
- What does the term "exercise the option" mean? When an option buyer chooses to proceed with the purchase of an asset by the agreed date.
- What is the term given to the pre-agreed price at which an option buyer is able to buy or sell a specified quantity of an underlying asset? Exercise price
- What is the premium? The premium is the money paid by the buyer/holder to the exchange (and then by the exchange to the seller/writer) at the beginning of the option contract; it is not refundable.
- What is a call option? 'Call option' is when the buyer has the right to buy the asset at the exercise price, if they choose to. The seller is obliged to deliver if the buyer exercises the option.
- What is a put option? 'Put option' is when the buyer has the right to sell the underlying asset at the exercise price. The seller of the put option is obliged to take delivery and pay the exercise price if the buyer exercises the option.
- What is another term for the buyer of the option? Holder
- What is another term for the seller of the option? Writer

Answers

Page 25

In exchange traded options contracts, buyers and sellers deal directly with each other **FALSE**
The premium paid by a buyer to an exchange is non-refundable **TRUE**
In a call option, the writer is obliged to sell the underlying asset **TRUE**
In a put option, the writer is obliged to buy the underlying asset **TRUE**
The premium represents the payment by the buyer for the option **TRUE**

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1. Romi's call option gives her the right but not the obligation to buy ABC shares at £2.80 any time up to 2nd December
2. Romi will make a profit by exercising her option to buy if the share price rises above £2.95 (£2.80 + 15p) before 2nd December. She could also make a profit by selling her option before 2nd December depending on the option trading price at the time.
3. 15p (the premium she paid)

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An option gives the buyer the **right** but not the **obligation** to buy or sell a specified **quantity** of an underlying asset at a pre-agreed **exercise** price, on or before a pre-specified future date or between two specified dates. The seller, in exchange for the payment of a **premium**, grants the option to the buyer.

When options are traded on an **exchange** they will be in **standardised** sizes and terms. When investors want to trade outside of these terms they can do so **'off exchange'** in the **OTC** market where the contract is **bespoke**.

A **holder** is the buyer and owner of an option

A **writer** is a seller of an option.

The seller of an option, in exchange for the payment of a **premium**, grants the option to the buyer

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1. What would happen if Beckenham Venture PLC share price rise above 170p? Investor Smith will exercise the option as he has made a profit. He has to pay 150p per share and has already paid 20p for the option
2. What would happen if Beckenham Venture PLC share price rise to 155p? Investor Smith might exercise the option as the 5p profit on the purchase of the share will defray part of the 20p cost of the option premium
3. What would happen if Beckenham Venture PLC share price rise to 127p? Investor Smith will not exercise the option and allow it to expire. Investor Smith loses the 20p premium already paid to Investor Jones.

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1. What would happen if Gameshare PLC shares are trading at 160p? Investor Smith will definitely exercise the option as he has made a profit – he can sell the shares for 220p each and has paid the 30p premium.
2. What would happen if Gameshare PLC shares are trading at 210p? Smith might exercise the option as the 10p profit on the sale of shares will defray part of the 30p cost of the option premium
3. What would happen if Gameshare PLC shares are trading at 230p? Smith will not exercise the option and allow it to expire. Smith will lose out on the 30p premium and keep the shares. Jones makes 30p frpm the premium

Answers

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Traded privately between parties **OTC**
Standardised features **ETD**
The larger market in terms of value of contracts traded daily **OTC**
Interest rate swaps mainly traded this way **OTC**
Mainly takes place in Europe and the UK currently **OTC**
Guarantees given to each party that trade will eventually be settled **ETD**
Uses intermediaries for all trades **ETD**
Participants need to post a margin for all transactions **ETD**

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Potential answers include:
- Agricultural markets
- Base and precious metals
- Energy markets
- Power markets
- Plastic markets
- Emissions markets
- Freight and shipping markets

The factors that influence supply include the availability of raw materials and the costs of extraction and production

Demand comes from underlying users of the commodity eg the demand for metals in rapidly industrialising economies such as China and India. it also originates from investors such as hedge funds which might buy metals in anticipation of excess demand or incorporate commodities into specific funds.

Page 35 – 36
1. Which exchange trades German bond futures? **Eurex**
2. Which exchange trades American agricultural futures and options? **ICE**
3. Which exchange trades options on the FTSE100? **ICE Futures Europe**
4. Which exchange trades derivatives on soft commodities as well as financial derivatives? **ICE Futures Europe**
5. Which exchange trades energy commodity contracts? **ICE**
6. Where would you trade a jet fuel futures contract? **ICE**
7. Which exchange is based in London but has a global market with international membership? **LME**

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Advantages
- Enables producers and consumers of goods to agree the price of a commodity today for future delivery, which can remove the uncertainty of what price will be achieved for the producer and the risk of lack of supply for the consumer.
- Enables investment firms to hedge the risk associated with a portfolio or an individual stock.
- Offers the ability to speculate on a wide range of assets and markets to make large bets on price movements using the geared nature of derivatives.

Disadvantages
- Some types of derivatives investment can involve the investor losing more than their initial outlay and, in some cases, facing potentially unlimited losses.
- Derivatives markets thrive on price volatility, meaning that professional investment skills and experience are required.
- In the OTC markets, there is a risk that a counterparty may default on their obligations, and so it requires great attention to detail in terms of counterparty risk assessment, documentation and the taking of collateral.

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Answers

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1. If the LIBOR* rate stays at roughly 4%, what would the value of the legs of the swap agreement be?
   - ABC pays 5% of £1m = £50,000
   - XYZ pays 5% of £1m = £50,000
2. What would the value of the legs of the swap agreement be if the LIBOR rate was trading at 4.75%?
   - ABC pays 5% of £1m = £50,000
   - XYZ pays 5.75% of £1m = £57,500
3. Which of the two companies has lost out as a result of this swap deal if the rate of LIBOR is 4.7%?

- XYZ will lose out

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1. Credit derivatives are used to enable an organisation to protect itself against unwanted credit exposure (or risk) by passing on that exposure to someone else. They can also be used to increase credit exposure, in return for income.
2. Credit events are typically defined as including a material default, bankruptcy, a significant fall in an asset's value, or debt restructuring for a specified reference asset.
3. Credit derivatives are instruments whose value depends on agreed credit events relating to a third party company. For example a credit derivative's value may depend on changes to the credit rating of a company or an increase in a company's cost of funds in the market or credit events relating to it.
4. A credit default swap is more like an option or a type of insurance. It is not based on a exchange of cash flows.

Test your knowledge

1A
2B
3B
4D
5A
6C
7B
8D
9B
10A
11B
12B
13D
14A
15B
16D
17D
18C
19D
20A
21A
22B