



ASXF Grain Futures – A Working Introduction

An overview of ASXF grain futures contracts and how they can help effectively manage some of the risks you may face as either a grower or buyer of grains



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Chapter 1 – Introduction

What are Futures Contracts?

Futures contracts are legally binding agreements between two parties to buy or sell a particular asset (or its cash equivalent) on a specified future date. Futures contracts are used by people to either make a trading profit or to protect the value of an asset. Around the world, futures contracts are traded over commodities such as grains, gold, base metals, and electricity, and financial instruments such as government bonds, currencies, and equities.

A futures contract is a formal, standardized, binding agreement made on ASX's electronic trading platform. A buyer and seller agree to trade a specific quantity and quality of a commodity for delivery at an established point in the future and at an agreed-upon price. The contract specifies size, price, location(s), and other terms and conditions.

The full value of a futures contract is not paid or received when the contract is entered into. Instead both buyer and seller pay an initial margin, which is generally a small percentage of the value of the contract. Futures trades can be closed out on market at any time, or else they remain open until maturity of the contract.

Why Use Grain Futures?

1. To fix the sale or purchase price of grain in advance. This provides price certainty, as the profit/loss made on the futures contract should approximately offset the impact of unfavourable/favourable movements in the underlying physical (track) market.
2. To hedge. Just as futures can be used to hedge currency or interest rate exposures, ASXF grain futures contracts can provide a hedge for the purchase/sale price of grain.

Futures contracts provide participants in the grain industry with

- A way to manage price risk
- A market to facilitate price discovery by bringing buyers and sellers together on the one transparent market
- A cheap and quick way to manage your exposure to grain prices – either as a buyer or seller, or a speculator or hedger
- Minimal credit and counterparty risk
- A market that is a level playing field for all participants

Users of Futures

Futures market participants fall into two general categories: hedgers and speculators.

Hedgers

The trading of grain presents producers and end users, as well as traders and exporters, with different price risk scenarios. In a futures market context, hedgers generally have a relationship with the underlying commodity (such as a farmer protecting his wheat price) whilst the speculator is concerned only with price and profit.

The hedger is avoiding risk and the speculator is taking on this risk in the hope of profiting from the price movement. This is called risk transfer and buyers and sellers use the futures market as a form of risk management.



To reiterate, hedgers are people who buy and sell the underlying physical commodity and use futures to protect themselves from commodity prices (or indices) that move against them. They use futures markets to avoid risk and to protect themselves against price change. Hedgers include:

- Producers that are exposed to the risk of low grain prices. They need to manage cash flows to meet financial obligations relating to operational and maintenance costs, production costs, and financial charges.
- End users that are exposed to the risk of high grain prices. They need to manage their gross margin; the difference between buying from producers and traders at uncertain and volatile prices and selling to end retail users at fixed prices.
- Traders that may be exposed to the risks of both high and low prices. They need to protect their positions, and subsequently, their profits through the process of hedging.
- Exporters, similar to end users, are exposed to the risk of high grain prices. They need to manage their gross margin, which is the difference between buying from producers and traders at uncertain and volatile prices and selling to overseas markets.

Speculators

Speculators facilitate hedging by providing liquidity – the ability to enter and exit the market quickly and easily. Speculators are those people who analyse and forecast price movement and trade futures in the hope of making a profit from these decisions. They put their capital at risk and must be prepared to accept losses from their trading decisions. They may buy and then sell back at a contract price higher than that at which they purchased the position, or sell a contract and then buy back at a lower contract price. They seek to profit by either buying low and selling back high or selling high and then buying back low.

Speculators include private traders and professional Hedge Funds who seek to profit from their view on the change in prices in the futures market.

Differences Between ASXF Futures and Forward Transactions.

Some of the features of ASXF grain futures contracts are:

- Liquid markets
- Standardised contracts
- Centralised clearing
- Minimal counterparty risk, due to the novation process
- Transparent pricing
- Mark to market margining
- Regulated market
- Leveraged returns
- Benefit from both market directions

Some of the features of the OTC market are:

- Forward transactions are negotiated directly between counterparties, or may be arranged by specialist brokers to the OTC grain market.
- Non-standardised bilateral agreements are entered into; the specifications of an agreement can be tailored according to the requirements of the counterparties.



- Participants in the OTC market are exposed to the credit risk of the counter party
- Cancellation of an OTC contract can be difficult due to their lack of standardisation
- OTC contracts can be difficult to value due to the lack of mark to market mechanism
- OTC markets are relatively unregulated
- Low transparency due to the non-standardised nature of the products and the lack of regulatory and disclosure requirements.

The following table summarises the features of exchange-traded markets such as ASXF Futures versus OTC markets.

	ASXF FUTURES	OTC
Fungible Contract	✓	x
No Counterparty Risk	✓	x
Novation	✓	x
Regulated Market	✓	x
Price Transparency	✓	x
Liquid Market	✓	x
Mark to Market Margining	✓	x
Trade Reporting	✓	x
Centralised Trading Platform	✓	x
Anonymous Trading	✓	x
Fully electronic trading	✓	x
Broad Distribution	✓	x

ASXF Grain Futures - Contract Specifications

The best futures contracts are those that reflect the way the market for the underlying commodity is traded. The ASXF grain futures contracts have been designed in consultation with grain market traders. Below are some features you should know about the contracts.

ASXF Contract codes

You can access these from asx.com.au/grainfutures. The ASXF futures contract code is a five-character code. The first three letters are the ASXF code of the underlying grain. The fourth character is a number designating the year of maturity and the fifth character represents the maturity month. For example: **AWM5F** means **Australian Milling Wheat** contract maturing in **January05**.

ASXF Underlying grain codes:

AWM – Milling Wheat
 AWF – Feed Wheat
 AFB – Barley
 ASM – Sorghum
 ACM – Canola

Contract Month codes:

Jan - F
 Mar - H
 May - K
 Jul - N
 Sep - U
 Nov - X



Contract unit – each contract represent 20 metric tonnes of grain

Quotation/ Tick size – AUD \$0.10 per tonne, tick value of \$2.00 per contract

Contract Maturity months – This is when the futures contract matures, and you are able to make or take delivery of grain against your futures contracts if you hold an open contract until maturity. ASXF grain futures contracts mature in January, March, May, July, September and November

Maturity date – The third Thursday of the maturity month, provided this is a trading day.

Last trading day - The same as the maturity date. This is the last day that you can execute trades in the month the contract is due to mature.

Trading hours – Normal trading 9.50 am – 4.30 pm (Sydney time). Late trading 4.30 pm to 5.00pm. On the Maturity date trading ceases at 12 noon.

Table of the current margin requirements for the ASXF Grain futures contracts *

	Milling Wheat	Feed Wheat	Barley	Canola	Sorghum
Initial Margin	\$300	\$300	\$300	\$300	\$300
Inter-month spread charge	\$100	\$100	\$100	\$100	\$100
Daily Variation Margin	All futures positions for both buyers and sellers are settled to market each day and subject to variation margins. An intra-day margin call may also be made by OCH.				
Margin Cover / Collateral	Settlement to market margin obligations must be settled daily by the payment of cash. Cash or collateral such as shares and other ASX traded securities, bank guarantees and Austraclear pledged securities may be lodged to cover initial margin obligations.				

*Figures are indicative and could vary. Please consult your broker at time of trade.

Settlement – Physical Delivery

Delivery – The delivery period begins on the second business day of the contract month and ends at 3.00pm on the last trading day. In order to effect delivery, you must first instruct your broker to lodge your grain with OCH as deliverable stock. This process must be done at least two business days before you tender against a contract.

Deliverable Grade – the grade specifications differ from grain to grain. For full details, please refer to asx.com.au/grainfutures

Delivery Locations – locations differ from grain to grain. For full details, please refer to asx.com.au/grainfutures

ASXF Grain Contract Specifications Summaries - the specification summary for each grain is on asx.com.au/grainfutures. Below is an example of Milling Wheat.



Contract	ASXF MILLING WHEAT FUTURES
Underlying commodity	Australian Milling Wheat (ASXF Code: AWM)
Contract Unit	20 Metric Tonnes
Quotation Tick Size	AUD \$0.10 per Tonne, Tick value of \$2.00 per contract
Contract Months	January, March, May, July, September, November
Last Trading Day and Maturity Date	The third Thursday of the maturity month, provided this is a trading day.
Trading Hours	Normal trading 9.50am to 4.30pm (Sydney time). Late trading 4.30pm to 5.00pm. Trading ceases 12noon on Maturity date.
Delivery Period	The Delivery Period begins on the second business day of the contract month and ends at 3.00pm on the Last Trading Day.
Notice Day	Any business day within the Delivery Period on which notice of delivery is given via lodgement of tender documentation with the clearing house.
Settlement Method	Physical Delivery
Settlement Amount	The final Settlement Amount is calculated from the settlement price on the Notice Day. This price is adjusted for location differentials, shrink, protein adjustments, receival fees and GST.
Settlement Day	The business day following the Notice Day.
Pricing Point	NSW track (Newcastle and Port Kembla) less the prevailing location differential at time of delivery to a tributary up-country location of an Approved Bulk Handler.
Deliverable Grade	Australian Wheat as per AWB Bin Grade APW2 or better, transferred on a grower receival stack average basis.
Approved Warehouses and Delivery Locations	Up-country locations in NSW of an Approved Bulk Handler. See asx.com.au/grainfutures for delivery locations.
Premiums and Discounts	Protein premiums and discounts paid on grower receival stack average data as per Approved Bulk Handler's stock report.

Differences between the ASXF contracts and previous contracts

There are a number of major differences between the ASXF grain futures contracts and previous contracts that were listed in Australia. The delivery mechanism has been modernised and the contract specifications are more closely aligned to the underlying market with delivery locations, premiums and discounts, price basing points and all the major characteristics of the underlying track markets reflected in the ASXF grain futures contract specifications.



Quiz. Chapter 1

- 1) What are futures?
- 2) Name three benefits of using grain futures contracts
- 3) Who are speculators and what role do they play in the futures market?
- 4) What is the 3-letter ASXF code for the following grains:
 - Milling Wheat
 - Feed Wheat
 - Barley
 - Sorghum
 - Canola

- 5) In order to effect delivery, you must first instruct your broker to lodge your grain with OCH as deliverable stock. This process must be done at least how many days before you tender against a contract?



Chapter 2: Mechanics of Trading and Delivery

ASXF Participants/Brokers

Any person or organisation that meets the ASX criteria for efficiency, integrity, operational capacity and quality management can join the market. Once accepted by ASXF the organisation is called a Participant.

There are various categories of Participants:

Broker Participant

(Trading Participant) that has the right to trade in any contract on the exchange on its own behalf and/or trade in any contract on the exchange on behalf of another person.

Local Participant

(Trading Participant) who has the right to trade in any contract on the exchange on its own behalf. Locals cannot trade on behalf of clients.

Clearing Participant

ASXF Futures' clearing house is Options Clearing House (OCH). Participants who are OCH Clearing Participants are able to clear trades. Some Trading Participants are also Clearing Participants; others only have execution capability on ASXF.

Trading

Trading is conducted by Trading Participants (brokers) approved by ASXF Futures. Institutions and end-users are usually clients of brokers. Trading Participants (brokers that execute the orders) do not have to be Clearing Participants (brokers who clear (or settle) the orders).

Buyers and sellers place their orders with their Trading Participant (Futures Broker), specifying the price they wish to contract at and the quantity of futures contracts they need. The Trading Participant then enters the order into the trading system. The ASX trading system is called Derivatives Trading Facility (DTF); also known as CLICK™¹.

CLICK maintains an electronic order book for each Futures contract. Buy and sell orders are ranked on a price/time priority basis. Buy and sell orders at the same price are matched automatically by the central system. When there is a match between the buyer's and seller's price, the futures contract is created. All orders in the Central Order-book are firm orders and can be traded. You can see an animated example of a trade transacted on CLICK on ASX's website: http://www.asx.com.au/markets/l3/HypotheticalFuturesTrade_AM3.shtm

Following the execution of the trade on CLICK, the contract is recorded and registered with the clearing house in the name of the client's nominated Clearing Participant.

Clearing

Once a futures contract has been executed on ASXF it must then be cleared. OCH records and registers all trades conducted on the ASXF market and from that point on assumes

¹ The OM CLICK Exchange system and OM CLICK Trade are trademarks of OM AB.



responsibility for ensuring that all Clearing Participants fulfil their obligations in relation to the futures contract.

On OTC markets, market participants are directly exposed to the credit risk of the counterparties they trade with. On ASXF Futures, as on other exchange-traded futures markets around the world, this is overcome by the introduction of a single third party to the transaction known as a Central Counter-Party (CCP).

The CCP for ASXF Futures traded contracts is nominated as Options Clearing House (OCH), a wholly owned subsidiary of ASX. OCH assumes the legal responsibility for the contract that would normally exist between the buyer and the seller by becoming a buyer to the seller and a seller to the buyer. Where one buy / sell contract previously existed at the time the trade is matched on CLICK, two new contracts now replace it in a clearing process known as novation.

Novation

Novation is the name given to the process that occurs when a Futures trade is registered to an account of the Clearing Participant ultimately responsible for the trade. This occurs at the end of trading each day.

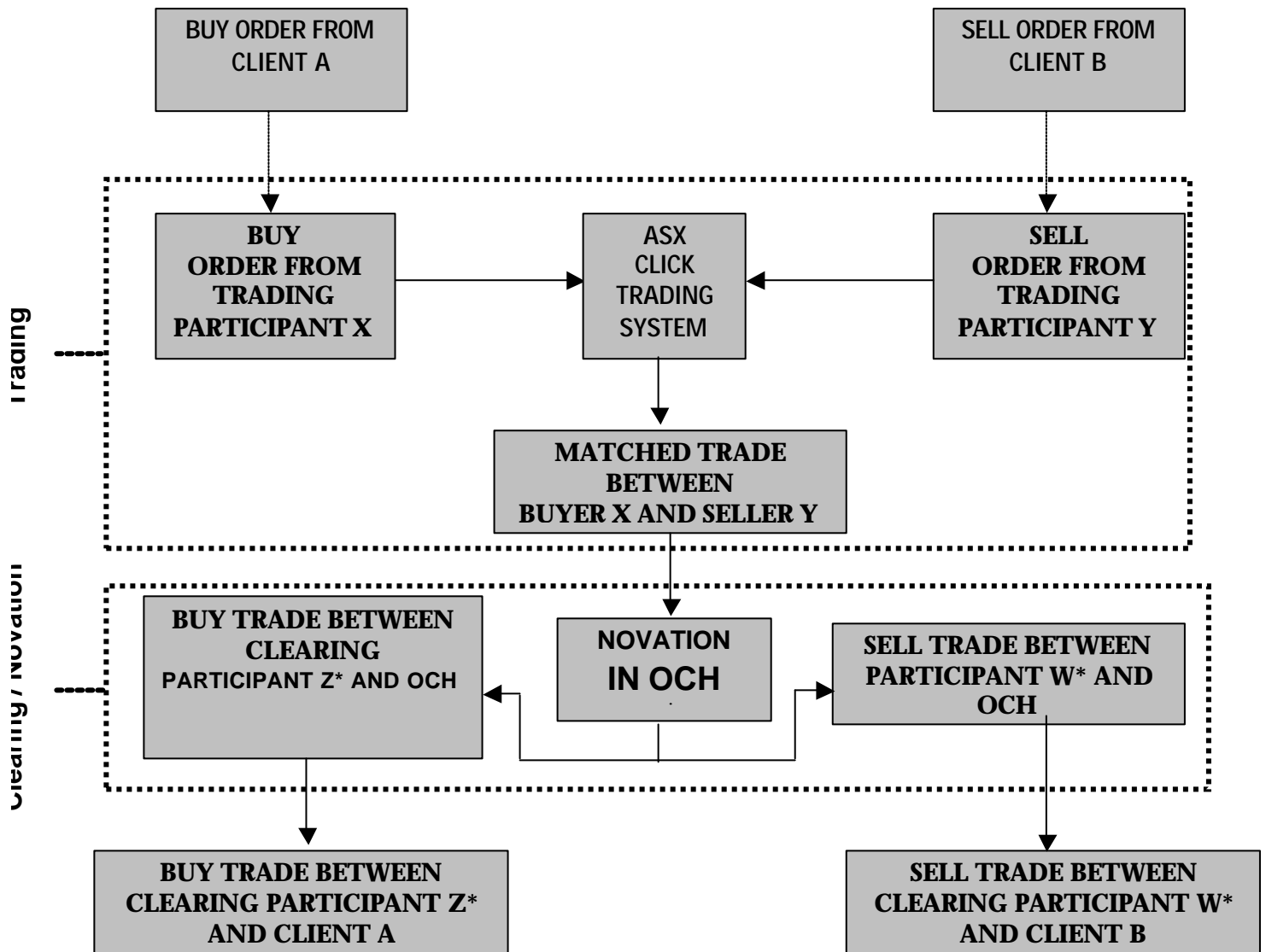
The advantage of novation to the futures market is that it enables the market's overall exposure to be balanced (as for each buyer it has an equal and opposite seller). Other advantages of novation include:

- Negates counterparty credit risk to individual market participants and replaces it with a risk to OCH.
- Negates liquidity risk from other participants, by ensuring that payments for matured contracts are made.
- Minimises settlement risk, i.e. provides financial support to the market if a counterparty defaults or threatens to default at settlement. This gives the market added stability and ensures the integrity of the market even if one party defaults – security that often does not exist on OTC markets.
- Reduces the flow-on effect that may occur if one party in a market defaults, sometimes referred to as systemic risk.
- Facilitates anonymous trading between participants by removing the need to have any contact with the original counterparty to the trade.
- Reduces cash flow demands by enabling multilateral netting and settlement-offset arrangements thus reducing margin demands.
- Standardises clearing and settlement arrangements thereby substantially reducing administration costs.

The process of novation enables OCH to record exposures to each of its counterparties and to net its exposures to each of these.



The following chart illustrates the process of novation:



- *Trades can be cleared by the same participant or another, according to client choice*

OCH is responsible for the orderly settlement of all grain Futures contracts at maturity. OCH provides a guarantee of performance for the Futures contract by taking responsibility for all outstanding settlement amounts even if a particular Clearing Participant was to default. As a result, each Clearing Participant is not exposed to the credit worthiness of other Clearing Participants, only to the creditworthiness of OCH.

Margins

When a Futures contract is traded, you do not pay or receive the full value of the contract at the time of the trade. Instead, both buyers and sellers pay an initial margin and are also liable for daily variation margin calls.

Margin is the money deposited with your broker to retain an account in good standing. It represents a small percentage of the overall value of a futures contract and therefore serves as a performance bond. It must be placed and maintained with a broker in order to trade.



Margins are made up of two components: initial margin and variation margin.

Initial Margin

OCH requires that every buyer and every seller pay an initial margin when a futures position is created. The initial margin covers the maximum probable one-day (intra day) move in the price of the futures contract. The initial margin is returned when the position is closed. Initial margins are reviewed regularly. The lodgement of initial margin is required after netting and spreading have taken place against all non-spread futures positions: we discuss this in more detail shortly.

Variation (Mark-to-Market) Margin

The next part to the margin system is the variation margin. Each day all positions are valued at the closing market prices and compared to the previous days closing prices and the resultant profits and losses are credited or debited to your account. This way all profits and losses are prevented from accumulating. If you hold bought (long) or sold (short) positions and the market has moved against you, a variation margin will be deducted from your account. On the other hand, if the market has moved in your favour, you will receive a variation margin. Variation margins are debited or credited to your margin account daily and must be settled in cash. Your margin account must always be equal to or greater than the initial margin. If the balance of your account falls below the initial margin level, your broker will request that you deposit additional cash into the account (i.e. the broker is making a margin call against your account). If there are surplus funds in your margin account then you may request to have those funds transferred back to a nominated account.

Simple Margin Example

Assuming you have \$10,000 lodged in a margin account with your broker here is how your account would look:

Action	Initial Margin	Variation Margin	Margin Account
Day 1 - Purchase 1 x Jan 04 AWM for \$250 per tonne	\$300*		\$9,700 cr
Day 2 – Price increases to \$252 per tonne		+ \$40 (20 tonne contract x \$2 per tonne price increase)	\$9,740 cr
Day 3 – Price decrease to \$247 per tonne		- \$100 (20 tonne contract x \$5 per tonne price decrease)	\$9,640 cr
Day 4 – Price increase to \$248 per tonne		+ \$20 (20 tonne contract x \$1 per tonne price increase)	\$9,660 cr

The initial margin figure is indicative only and could vary. Please consult your broker at time of trade.

When you close out the futures position, the margin is returned to you.

Offsets, Netting & Spread margining

Spreads are offsetting when you trade two different futures contracts maturing in the same month, or contracts maturing in different months. The clearing house may permit a reduced initial margin for each position. This is because the risk of one position is considered to have an offsetting influence on the risk of some other position. Firstly, the offsetting longs and shorts in each delivery month are matched against each other. This is called netting and



determines whether the month is net long or net short. That is the difference between the long positions and the short positions.

After netting, the remaining positions in each month can be spread against each other where possible. That is net longs in one month can be offset against net shorts in another month.

These positions are margined at a reduced rate, because the risk is reduced through the holding of long and short positions in different months. However, it is unlikely that the prices in each month will move exactly in line and therefore a spread margin rate is determined to cover the difference in price movements in the different months.

Margin Cover

Cover for margin liability can be in the form of Cash, Bank Guarantee, Austraclear lodged securities and shares of specific ASX listed securities. Initial margins paid in cash earn interest at a level referenced to the overnight cash rate less 0.5%.

Each day, OCH assigns a value to all collateral held for margin purposes. All securities will be valued at the daily closing market price less a "haircut". Collateral falls into categories as follows:

- Securities that are currently approved as underlying securities for options trading or securities, which are able to meet ASX's criteria for approval as underlying securities but are not currently traded on the options market. A 30% haircut is applied.
- Ordinary shares or units in companies that are in the S&P/ASX 50 Index that do not appear in Tier 1. A 30% haircut is applied.
- ASX traded securities (other than fully paid ordinary shares) of companies whose ordinary shares are eligible as collateral under Tier 1 provided these securities have: an issued capital of a minimum of \$100 million, a monthly volume of at least 100,000, and a price greater than 50 cents. A 20% haircut is applied.
- Austraclear Pledged Securities - OCH accepts certain money market securities that have been lodged with Austraclear and pledged to OCH. Acceptable securities include: bank negotiable certificates of deposit, bank transferable certificates of deposit, non-bank promissory notes or certificates of deposit, bank bills of exchange and non-bank bills of exchange.

Margin Example

A broker's client buys 10 ASXF Canola futures contracts and another sells 10 ASXF Canola futures contracts. The trade is executed at the current futures market price of \$380 per tonne. The initial margin requirement is \$300 per contract (i.e. \$15 per tonne). Here's how the cash flows of each client's margin account would look over a trading week.



	ASXF Canola Futures Closing Price	Action	Client A Cashflow	Client B Cashflow
Day 1 – open futures position	\$380.00	Client A Buys 10 ASXF Canola futures contracts at \$380.00 Client B Sells 10 ASXF Canola futures contracts at \$380.00	Pays \$3000 In Initial Margin (\$300 x 10 contracts)	Pays \$3000 In Initial Margin (\$300x 10 contracts)
Day 2	\$381.50		Receives \$300 in Variation Margin (\$1.50 gain x 20mt x 10) balance \$300 cr	Pays \$300 in Variation Margin (\$1.50 loss x 20mt x 10) balance \$300 dr
Day 3	\$381.00		Pays \$100 in Variation Margin (\$0.50 loss x 20mt x 10) balance \$200 cr	Receives \$100 in Variation Margin (\$0.50 gain x 20mt x 10) balance \$200 dr
Day 4	\$379.70		Pays \$260 in Variation Margin (\$1.30 loss x 20mt x 10) balance \$60 dr	Receives \$260 in Variation Margin (\$1.30 gain x 20mt x 10) balance \$60 cr
Day 5	\$380.30		Receives \$120 in Variation Margin (\$0.60 gain x 20mt x 10) balance \$60 cr	Pays \$120 in Variation Margin (\$0.60 loss x 20mt x 10) balance \$60 dr
Day 6 – close out position	\$385.30	Client A Sells 10 ASXF Canola futures contracts at \$385.30 Client B Buys 10 ASXF Canola futures contracts at \$385.30	Receives \$1000 in profit at settlement (\$385.30 - 3800.30 x 20mt x 10) Receives \$3000 Return of Initial Margin	Pays \$1000 in loss at settlement (-385.30 + 380.30 x 20mt x 10) Receives \$3000 Return of Initial Margin
		Total Profit/Loss:	\$1000 (profit at settlement) +\$60 (variation margin) = \$1060.	-\$1000 (loss at settlement) -\$60 (variation margin) = - \$1060

The initial margin debit of \$3000 remained unchanged and is held throughout the time the futures contracts are open. Be aware that depending on the volatility of the market, the initial margin may change and you may be asked to 'top-up' this initial margin amount. Your broker will notify you if this happens.

As the example above demonstrates, the \$1060 debit or credit that is the balance on Day 6, is the difference of \$5.30 between the futures closing price on Day 1 (\$380) and on Day 6 (\$385.30) x 10 contracts x 20 mt.



Review of the clearing process for ASXF Futures

When a futures contract is traded and an open position created you do not pay or receive the full value of the contract at the time of the trade because the futures contract is fundamentally an agreement to buy/sell at a future date, not today.

The full value of the futures contract is only ever required in the event the contract is still open at expiry and you take physical delivery of the grain.

At the moment the futures contract is traded the buyer's and seller's obligation commences, therefore there exists a risk that either party will default on their obligation. As has been explained above OCH takes responsibility for minimising this risk by implementing a system of margin payments for all open futures positions.

Closing a Futures Position on Market

As grain futures contracts are predominantly used for hedging purposes most positions will be closed out before maturity. In order to exit an open futures position prior to expiry you will need to place an order to "close the position" via your broker.

To close a position your broker will execute a trade that is opposite to the open position. For example, if you currently hold a bought futures contract (a long position), your broker will place an order to sell futures.

However, there may be instances when you will want to physically deliver grain under the futures contract. An example of how this process occurs will soon be available.

Quiz Chapter 2

1. What does the initial margin amount cover?
2. In what form are initial margin payments accepted by OCH?
3. What does the variation margin cover?
4. In what form are variation margin payments accepted by OCH?



Chapter 3: Hedging Concepts

Before giving a hedging example, let's examine some basic concepts that you should be familiar with:

- How to calculate the "fair value" of a futures contract
- Basis
- Basis movement
- Basis risk
- Arbitrage

How to Calculate "fair value" of a Futures Contract: Carrying-Charge Theory

Fair value of a commodities futures contract is the current value of the underlying commodity plus an amount referred to as the 'cost of carry'. The carrying-charge theory, (or also known as "cash and carry" pricing) is the way fair value of futures contracts is determined. This provides the *theoretical* price of a commodities futures contract that is a useful starting point. However, there are many factors which will cause the actual price of the futures contract to vary from the theoretical price.

The futures fair value must equal the cash price plus the cost of carrying an asset forward to contract delivery under perfect market conditions (i.e. assuming that no default risks exist, carrying charges are constant over the life of the contract, and ignoring market frictions such as brokerage fees and taxes).

Remember that the futures *fair value* usually does not equal the futures *market price*. This is because buyers and sellers in the market will price expectations and supply and demand factors into the market price of a futures contract. Usually the futures market price will trade at a premium or discount to the fair value of the contract. It is only when the contract matures that it will equal fair value (ignoring market frictions).

For grains the Cost of Carry (CC) is the sum of storage costs (SC) and financing cost (FC):

$$CC = SC + FC$$

A grain futures price has its fair value when the futures price fits the cost of carry model:

$$\text{Futures fair value} = \text{Cash price} + \text{Cost of Carry}$$

or

$$\text{Cash price} - \text{Futures market price} = \text{Basis}$$

Basis

Basis is the difference between the local cash price of a commodity and the price of the relevant futures contract. For example:

Local Cash Price	\$200
Jan Futures Price	\$220
Basis	\$20



In this example, the cash price is \$20 lower than the January futures price so the basis is -\$20. On the other hand, if the cash price is \$20 higher than the January futures price, then the basis is +\$20.

Because basis reflects local market conditions, it's directly influenced by several factors including:

- Transportation costs
- Local supply and demand conditions such as grain quality, availability, local weather
- Interest and storage costs
- Handling costs and profit margins

Under the carrying-charge theory of futures prices, the basis represents the dollar cost of carrying an asset forward in time.

A further component of basis is the difference between the characteristics of the grain being hedged and the characteristics specified in the futures contract.

Basis is generally more stable and predictable than price.

Basis Movement

The basis changes as the factors affecting cash and/or futures markets change. Two terms used to describe a changing basis are strengthening and weakening. If basis becomes more positive (or less negative), the basis is said to be strengthening. If the basis becomes less positive (or more negative), the basis is said to be weakening. A strengthening basis occurs when the cash price increases relative to the futures. In this instance, the cash price is becoming strong relative to the futures. A weakening basis occurs when the cash price decreases relative to the futures over time. In this instance, the cash price is becoming weak relative to the futures.

It is important to note that strengthening or weakening basis refers to a change in the price relationship between the cash and futures market; it is not referring to the change in price direction.

Example 1: Strengthening Basis

	Cash	January Wheat Futures	Basis
1 Dec	\$200.00	\$201.00	-\$1.00
15 Dec	\$201.00	\$201.90	-\$0.90
1 Jan	\$200.70	\$201.50	-\$0.80

You can see how basis continued to strengthen from December through to January while the cash and futures prices have both increased and decreased during the same period. This example illustrates basis can strengthen regardless of prices moving higher or lower. A strengthening basis works to a seller's (or a short hedger's) advantage.



Example 2: Weakening Basis

	Cash	March Wheat Futures	Basis
1 Feb	\$198.00	\$197.20	+\$0.80
15 Feb	\$197.50	\$196.80	+\$0.70
1 Mar	\$197.70	\$197.10	+\$0.60

Notice that in this example the cash and futures prices decreased and then increased during the month. Regardless, basis continued to weaken, again illustrating that basis can weaken regardless of price direction. A weakening basis works to a buyer's (or a long hedger's) advantage.

Effect of Basis Change on a hedge gain		
	Stronger Basis	Weaker Basis
Short hedge	More	Less
Long hedge	Less	More

Basis risk

The success of any hedging strategy depends partly on how movements in your futures holding match movements in the underlying commodity. Basis risk is the uncertainty of how the basis will change over the life of a hedge and most hedging strategies seek to minimise basis risk.

Arbitrage Trading

If a futures contract is seen to be trading at a significant premium or discount to fair value, there may be opportunities for arbitrage. In an arbitrage strategy, the trader takes a position in the futures market and simultaneously takes an opposite position in the physical market. The trader buys futures if they are seen to be undervalued, and sells futures if they appear to be overvalued.

The success of an arbitrage strategy results from the convergence of the futures and physical prices at maturity, or from a return to a 'fair' basis relationship between the futures and physical prices at some point before maturity.

As prices return to parity, the trader profits from the miss pricing at the time of the arbitrage trade. Note that an arbitrage strategy may result in a loss if the assumptions underlying the fair value calculation turn out to be inaccurate.

Hedging

Hedging refers to taking equal and offsetting positions in cash and futures markets to reduce the risk of unfavourable price movements. Hedging involves the switching of price risk to basis risk.

In simple terms, the principle of hedging is that you fear you will lose money in one market, but by taking the opposite position in the other market, you make an offsetting profit. Hedging is a risk reducing strategy. The hedgers transfer their risk to those willing to take risk (speculators) in the hope of increased profits, or to other hedgers who have a need to take the opposite position.



A hedge is successful when most of the price variation in the cash market is offset by the opposite futures transaction. A hedge is "perfect" when gains or losses in the cash market are neutralised by losses or gains in the futures transaction. A perfect hedge seldom happens as market frictions (such as brokerage and transaction fees) mean there are costs of putting the hedge in place.

A hedger may use futures to offset a cash market (or physical product) position or to guarantee a price for a future point in time.

Examples of Hedgers:

Flour Miller

A Flour Miller, as an end user of grain, is exposed to the risks of high grain prices. They need to manage their gross margin - that is, the difference between buying from producers and traders at uncertain and volatile prices and selling to end retail users at relatively fixed prices. They are able to use futures to fix the price of wheat at some point in time in the future.

In January the Flour Miller may think prices are reasonable but is concerned that the price will increase in the future. The Flour Miller may purchase a futures contract now with an expiry at a point in time some months in the future. That means the Flour Miller has purchased grain of a specified quality at a specified price for delivery at a specified time in the future.

At any point in time throughout the life of the contract the Flour Miller may close the contract out in the market by selling the equivalent contract with the same expiry time. Alternatively, the Flour Miller may keep their bought contract and take delivery of the grain.

Grain Trader

Grain Traders may be exposed to the risk of both high and low grain prices. They need to protect their positions and subsequently their profits through the process of hedging.

When a farmer sows his winter grain crop sometime in autumn he may wish to secure the price for a proportion of the expected crop. The farmer can do this by selling to the Grain Trader at a specified price for delivery at the next harvest. If the grain market is higher at harvest time then the Grain Trader would make a profit but if it is lower then they would suffer a loss. The Grain Trader may not be prepared to risk the loss and could reduce this risk by hedging on the grain futures market.

To offset the risk, the Grain Trader could take the opposite position in the futures market by selling an equivalent quantity of futures of a comparable grade with an expiry at a similar time to when the grain will be received from the farmer at harvest time. Thus, if the price of grain falls, the Grain Trader will lose on the grain he has bought from the farmer but this will be countered by a gain on the futures contracts that he has sold.

At harvest time when the farmer delivers the grain to the Grain Trader, the Grain Trader can close his futures contracts by buying back an equivalent number of the same contracts. The losses/gains made on the futures contracts will approximately offset the gains/losses made on the grain bought from the farmer.



Quiz Chapter 3

- 1) According to the carrying-charge theory, what affects the futures fair value?
- 2) What is the difference between futures fair value and futures market price?
- 3) What is basis?
- 4) What is basis risk?
- 5) What is basis movement?
- 6) What is arbitrage?
- 7) In what situation does an arbitrage opportunity arise?
- 8) In simple terms, what is the principle of hedging?
- 9) Explain the difference between a hedger and a speculator.
- 10) Does strengthening/weakening basis refer to a change in the price relationship between the cash and futures market or a change in price direction?
- 11) Complete the formula: For grains the Cost of Carry (CC) is the sum of?
- 12) If a wheat grower was using futures contracts to hedge price risk, would he/she be more likely to buy or sell futures contracts?



Chapter 4: Hedging Examples and Trading Strategies.

Example A: Production Planning: Wheat

Assume you are a wheat producer. The drought has been driving prices up significantly, however you feel conditions will change and you are concerned that wheat prices will decline.

It's May and currently January wheat futures are trading at \$200.00 per tonne and the best bid on a forward contract is \$190.00 per tonne which is \$10 under the January contract. Basis is -\$10 per tonne.

Your estimated cost of production is \$90.00 per tonne; therefore, you could lock in a profit of \$100.00 through this forward contract. Before calling your broker to make the trade you review historical prices and basis records and discover the local basis during mid-November is usually about \$2.00 under January futures. Your view is that basis may strengthen between May and November.

Because the basis in the forward contract is historically weak, you decide to hedge using futures. You calculate the number of wheat futures contracts equal to the amount of wheat you want to hedge. For example, if you want to hedge 200 tonnes of wheat, you sell 10 wheat futures because each futures contract equals 20 tonnes.

By selling January wheat futures, you lock in a selling price of \$190.00 if the basis remains unchanged (futures price of \$200 – less the basis of minus \$10). And, if the basis strengthens, you will benefit from any basis appreciation. But remember, there is a chance the basis could actually weaken. So you maintain the basis risk even though basis is generally much more stable and predictable than price.

Scenario 1 – Price decreases

If the price declines and the basis remains unchanged, you will receive \$190.00 per tonne for your crop. If price drops and the basis strengthens, you will receive a higher price for your wheat.

Assume by November the best spot bid in your area for wheat is \$160.00 per tonne. Fortunately, you were hedged in the futures market and the current January futures price is \$162.00. When you offset the futures position by buying back the same type and amount of futures contracts as you initially sold, you realize a gain of \$38.00 per tonne. Your gain in the futures market increases your net sales price. The net sales price is actually \$8.00 greater than the May forward contract bid because, as you predicted, basis strengthened. This price reflects the change in basis, which strengthened by \$8.00 between May and November.

	Cash Market	Futures Market	Basis
May	Forward contract at \$190.00/tonne	Sell January wheat futures at \$200/tonne	-\$10.00
November	Sell cash wheat at \$160.00/tonne	Buy back January wheat futures at \$162.00/tonne	-\$2.00
Change	\$30.00/tonne stet loss	\$38.00/tonne gain	\$8.00 gain
Cash price when wheat is sold		\$160.00/tonne	
Gain on futures position		\$38/tonne	
Net sale price		\$160.00+ \$38 = \$198.00	



Scenario 2- Prices Increase

If the price increases and the basis remains unchanged, you will still receive \$190.00 per tonne for your crop. With futures hedging, you lock in a selling price and cannot take advantage of a price increase. The only variable that ultimately affects your selling price is basis. As shown in the following example, you will receive a higher than expected price for your wheat if the basis strengthens.

Suppose by mid-November the futures price increased to \$240.00 per tonne and the local price for wheat is \$235.00 per tonne. Under this scenario, you will receive \$195.00 per tonne which is \$5.00 more than the May forward contract bid. You can see in the table following that the relatively higher price reflects a strengthening basis and is not the result of a futures price increase. Once you establish a futures hedge, the price level is locked in. The only variable is basis.

	Cash Market	Futures Market	Basis
May	Forward contract at \$190.00/tonne	Sell January wheat futures at \$200.00/tonne	-\$10.00
November	Sell cash wheat at \$235.00/tonne	Buy back January wheat futures at \$240.00/tonne	-\$5.00
Change	\$45.00/tonne opportunity gain	\$40.00/tonne loss	\$5.00 gain
Cash price when wheat is sold		\$235.00/tonne	
Loss on futures position		\$40.00/tonne	
Net sale price		\$235.00 - \$40.00 = \$195.00	

If you could have predicted the future in May, more than likely you would have waited and sold your wheat in November for \$235.00 per tonne rather than hedging. But prices could have as easily gone down. In May, you liked the price level and knew the basis was historically weak. Knowing your production cost was \$90.00 per tonne, a selling price of \$190.00, or potentially better as seen above, provided you with a reasonable profit margin.

In both examples above, the basis strengthened between the time the hedge was initiated and offset, which worked to your advantage. But how would your net selling price be affected if the basis weakened?



Scenario 3 –Prices Decrease/Basis weaken

If the price falls and the basis weakens, you will be protected from the price decrease by hedging but the weakening basis will slightly decrease the final net sales price.

Assume by mid-November the January futures price is \$170.00 and the local basis is \$15.00 under. After buying back your futures position and simultaneously selling your wheat, the net sales price equals \$185.00 per tonne (see example in the following table). You will notice the net sales price is \$5.00 lower than the forward contract bid in May, reflecting the weaker basis.

	Cash Market	Futures Market	Basis
May	Forward price at \$190.00/tonne	Sell January wheat futures at \$200.00/tonne	-\$10.00
November	Sell cash wheat at \$155.00/tonne	Buy back January wheat futures at \$170.00/tonne	-\$15.00
Change	\$35.00/tonne opportunity loss	\$30.00/tonne gain	\$5.00 loss
Cash price when wheat is sold		\$155.00/tonne	
Gain on futures position		\$30.00/tonne	
Net sale price		\$155.00 + \$30.00 = \$185.00	

As we've seen in the preceding examples, the final outcome of a futures hedge depends on what happens to the basis between the time a hedge is initiated and closed.

Example B: ABC Feedlot – Hedging Feed Barley Purchases

Assume you are a feed consumer and purchase barley on a regular basis. It is January and you are in the process of planning your barley purchases for the month of April- wanting to take your delivery of the barley in mid-April. Several suppliers in the area are offering forward contracts, with the best quote among them being \$5.00 over May futures. ASXF May feed barley futures are currently trading at \$205.00 per metric tonne, equating to a cash forward offer of \$210.00 per tonne.

If you take the forward contract, you will lock in the futures price of \$205.00 and a basis of \$5.00 over, or a flat price of \$210.00 per tonne. Or, you could establish a futures hedge, locking in a futures price of \$205.00 per tonne but leaving the basis open.

In reviewing your records, you discover the cash price of barley in your area during mid-April averages \$7.00 under the May futures price, and, based on current market conditions and what you anticipate happening between now and April, you believe the mid-April basis will be close to \$7.00 under.

Since you like the current futures price but anticipate the basis weakening, you decide to hedge your purchase using futures rather than entering into a forward contract. You purchase the number of barley contracts equal to the amount of barley you want to hedge. For example, if you want to hedge 1500 tonnes of barley, you buy 75 barley futures contracts because each contract equals 20 tonnes.



By purchasing May barley futures, you lock in a purchase price of \$210.00 if the basis remains unchanged (futures price of \$205 + the basis of \$5.00 over). And, if the basis weakens, you will benefit from any basis appreciation. Of course, you realize the basis could surprise you and strengthen, but based on your records and market expectations, you feel it is in your best interest to hedge your purchases.

Scenario 1 – Prices Increase

If the price increases and the basis remains unchanged at \$5.00 over, you will purchase barley at \$210.00 per tonne (futures price of \$205 + the basis of \$5.00 over). But if the price increases and the basis weakens as you expect, the purchase price is reduced.

Assume by early April, when you need to purchase the physical barley for mid April delivery, the May futures price has increased to \$265.00 and the best offer for physical barley in your area is \$258.00 per tonne (futures price-the basis of \$7.00 under).

With the futures price at \$265.00, the May barley futures contract is sold (closed) for a net gain of \$60.00 per tonne (\$265.00- \$205.00). That amount is deducted from the current local cash price of barley, \$258.00 per tonne, which equals a net purchase price of \$198.00. Notice the price is \$12.00 lower than what you would have paid for barley through a forward contract. The lower price is a result of a weakening basis moving from \$5.00 over to \$7.00 under May futures.

	Cash Market	Futures Market	Basis
January	Forward offer at \$210/tonne	Buy May barley futures at \$205/tonne	+ \$5.00
April	Buy cash barley at \$258/tonne	Sell May barley futures at \$265/tonne	-\$7.00
Change	\$48/tonne opportunity loss	\$60/tonne gain	\$12.00 gain
Cash price when barley is purchased		\$258.00/tonne	
Gain on futures position		\$60.00/tonne	
Net purchase price		\$258.00 - \$60.00 = \$198.00	

Scenario 2 – Prices Decrease

If prices decrease and the basis remains unchanged, you will still pay \$210.00 per tonne for barley. Hedging with futures provides protection against rising prices, but it does not allow you to take advantage of lower prices. In making the decision to hedge, one is willing to give up the chance to take advantage of lower prices in return for price protection. On the other hand, the purchase price will be lower if the basis weakens.

Assume by early April the May futures price is \$165.00 per tonne and the best quote offered by an area supplier is also \$165.00 per tonne. You purchase barley from the supplier and simultaneously close your futures position by selling the futures contracts you initially bought.

Even though you were able to purchase cash barley at a lower price, you lost \$40.00 on your futures position. This equates to a net purchase price for barley of \$205.00. The



purchase price is still \$5.00 lower than what you would have paid for barley through a forward contract. Again this difference reflects a weakening basis.

In hindsight, you would have been better off neither taking the forward contract nor hedging because prices fell. But your job as ABC feedlot is to purchase barley and add value to the cattle you are feeding. Back in January, you evaluated the price of barley, basis records and your company's expected profits based on that information. You determined by hedging and locking in the price for barley your firm could earn a profit. You also believed the basis would weaken, so you hedged to try and take advantage of a weakening basis, therefore, you accomplished what you intended. The price of barley could just as easily have increased.

	Cash Market	Futures Market	Basis
January	Forward offer at \$210/tonne	Buy May barley futures at \$205/tonne	+\$5.00
April	Buy cash barley at \$165/tonne	Sell May barley futures at \$165/tonne	0.00 (or "par"/"Even money")
Change	\$45/tonne opportunity gain	\$40/tonne loss	\$5.00 gain
Cash price when barley is purchased		\$165.00/tonne	
Loss on futures position		\$40/tonne	
Net purchase price		\$165.00 + \$40.00 = \$205.00	

Scenario 3 – Price Increase/Basis strengthen

If the price rises and the basis strengthens, you will be protected from the price increase by hedging but the strengthening basis will increase the final net purchase price.

Assume in early April your supplier is offering barley at \$280.00 per tonne for mid April delivery and that the May futures contract is trading at \$265.00 per tonne. You purchase the physical barley and close your futures position by selling your futures contracts at \$265.00. This provides you with a futures gain of \$60.00 (\$265.00 - \$205.00) which is used to lower the net purchase price to \$220.00. The \$10.00 difference between the forward contract and the net purchase price reflects the strengthening basis.

	Cash Market	Futures Market	Basis
January	Forward offer at \$210/tonne	Buy May barley futures at \$205/tonne	+\$5.00
April	Buy cash barley at \$280/tonne	Sell May barley futures at \$265/tonne	+\$15.00
Change	\$70/tonne opportunity loss	\$60/tonne gain	+\$10.00 loss
Cash price when barley is purchased		\$280.00/tonne	
Gain on futures position		\$60.00/tonne	
Net purchase price		\$280.00 - \$60.00 = \$220.00	



As we've seen in the preceding examples the final outcome of a futures hedge depends on what happens to basis between the time a hedge is initiated and closed. No one can predict the future but you can manage it. By evaluating your market expectations for the months ahead and reviewing past records, you will be in a better position to take action.

Example C: Trading a View

Assume you are a wheat trader. The drought continues to drive track market prices upwards, however you feel market conditions are already overpriced (too high). Currently, July wheat futures contracts are trading at \$270 per tonne. You decide to sell 10 July wheat futures contracts with the expectation that the wheat futures price will fall shortly. You expect to profit from a fall in prices.

Of course if the market price falls as you expect, you will profit. But what if your market view is wrong?

Scenario 1 – Limiting your loss using stops

After selling the 10 July wheat futures contracts at \$270, the price of wheat (both cash and futures) continues to rise, contrary to what you expected. At this point you must manage your risk, as you are speculating on the price, not hedging.

To protect your position you place a stop loss order. A stop loss order will assist you to manage risk, because it will limit the amount of loss that you have on any one trade.² So you place an order with your broker to buy 10 July wheat futures contracts at \$275 per tonne “ON STOP” should the price of wheat futures reach this level. You have limited your loss to approximately \$5 per tonne (sell price \$270 less buy price \$275).

A week after initiating your trade, your broker contacts you to let you know that the price limit of \$275 per tonne has been breached for the July futures contract and your protective stop loss order has been executed. You take a loss on the position of \$5 per tonne ($\$5 \times 20 \times 10$ contracts) = \$1000.

Start May	You decide that the July wheat futures price is inflated. You decide to sell 10 July wheat futures contracts at \$270 per tonne. You also place a protective stop loss order at \$275.
Mid May	By Mid July the price of wheat has not fallen, but in fact risen unexpectedly. Your broker executes the protective stop order for you by buying 10 July wheat futures contracts at \$275 per tonne. Closing the losing futures position. Loss: $\$5 \times 10 \text{ contracts} \times 20 \text{ tonnes} = \1000

² Whenever speculating and you place an order, you should always place a protective stop loss order, so as to limit the amount of loss per trade. Note that when markets ‘gap’ due to large changes or low liquidity, the effectiveness of stop orders in limiting your loss is significantly reduced. You should discuss this risk with your broker.



Scenario 2 – Rolling to maintain your market view

It is now the end of June. July futures are trading at \$274. You strongly believe that the direction of wheat futures prices is extremely over bought, that is the futures price has risen well above fair value.

You still believe futures are trading too high, and the July futures contract will go into delivery in a few days. Your market view has not changed and you wish to maintain your short (sold 10 July wheat futures) position in the market.

With the July contract entering the tender period you take a longer- term view of the situation and decide to “roll” your position over to the next traded month i.e. September. September futures are trading at \$278.

You will execute a spread trade. This means simultaneously buying the near month (buy 10 July futures at \$274 - closing out your current sold (short) position) and simultaneously selling September wheat futures contracts at \$278. By doing this, you “square “ (or close) your position in July, and re-open a sold (short) position in September. Your market view is maintained.

It is now the end of August and the price of the September wheat futures contract is trading at \$265 per tonne. You close the trade by buying 10 September wheat futures contracts at \$265 per tonne.

You have made a profit on the September futures contract of \$13.00 per tonne or \$2,600.00 ($\$278 - \$265 \times 10 \text{ contracts} \times 20 \text{ tonnes}$). However you suffered a loss on the July contract of \$4.00 per tonne, therefore reducing your overall profit to \$9.00 per tonne or \$1,800.00. “Rolling” your position from July to September enabled you to profit from your view, although the market took longer to fall than you first anticipated.

Other Futures Trading Strategies

Your use of grain futures is not limited to hedging. Here are some other ways in which you can trade ASXF grain futures.

1. Trade a view: By trading a grain futures contract, you can take a view on market price (speculate) without needing to trade the physical commodity.
2. Trade declining markets: Futures enable you to trade declining markets, because you can sell a contract without first buying it. If you are a producer of grain and feel that there is going to be short term fall in prices, selling a futures contract will make profits in the event of a price fall. The sold futures position is simply closed out by buying it back.
3. Leverage: Speculators are attracted to futures markets because of the leverage they offer – i.e. by only paying a small initial margin you can gain increased percentage returns. For example, the initial margin on a futures contract may be \$300, but it gives you market exposure equivalent to 20 tonnes of stock. The percentage return, made on your initial investment is far greater than the price movement in the underlying stock.

On the flip side, if the market moves against you, the losses you will suffer from trading futures may be substantial. Leverage can work against you as well as for you.



4. Trade the 'track' market: the specifications of ASXF grain futures mirror the way the Australian track market is traded. As the contracts are deliverable, you can use futures as a way to make or take delivery of the underlying commodity at maturity.

Quiz Chapter 4

1. If you wish to hedge production of 200 tonnes of wheat, how many futures contracts would you sell?
2. November futures are trading at \$250 per tonne, the best forward price in the track market is currently \$245 per tonne, and your estimated cost of production is \$95 per tonne.
 - (a) What is the transaction you would make to hedge 200 tonnes of production using futures contracts?
 - (b) What would the basis be per tonne?
 - (c) What price could you lock in by hedging with futures, assuming basis is constant?
 - (d) What would be the main risk of this transaction?
 - (e) If the track price drops and basis remains the same, would you receive more, the same or less money for your wheat?
 - (f) If the track prices increases from \$245 to \$255 per tonne and basis remains unchanged, would you receive more, the same or less money for your wheat?
3. Is basis generally more or less stable and predicable than price?
4. If basis strengthens but the track price declines and you have hedged with futures, will you receive more, the same or less money for your wheat?
5. Hedging with futures provides protection against rising prices, but it does not allow you to take advantage of lower prices. In making the decision to hedge, are you willing to give up the chance to take advantage of lower or higher prices in return for price protection?
6. If the track price rises and the basis strengthens, you will be protected from the price increase by hedging but will the strengthening basis increase or decrease the final net purchase price you receive?
7. Can you sell a futures contract without first buying it?
8. If you wish to speculate on the futures market price falling, what trade would you execute?
9. At the time of opening a futures trade, what payment must you make?
10. What is a stop-loss order? What is the risk of placing a stop order?
11. What is a spread trade?



Chapter 5: Language of Futures

ARBITRAGE: This term describes buying low in one market and selling high in another related market, whenever the price difference between the two exceeds the transaction costs. It can be a form of speculation because it usually involves some risks from the time and geographic aspects of the purchase and sale. It is also a form of market competition that keeps price differences (between areas, among product forms, and over time) approximately equal to transaction costs. In other words, it reduces excess profits in the marketing system.

Arbitrage works because it transfers products from one market to another, reducing supplies in one market and increasing them in another. When information is sound and fast, and when products can be moved (in form, distance and time), arbitrage will be quick, and large price differences will be minimized. An analogy is the length of supermarket checkout lines. When the lines are moving at about the same speed, they will be about the same length and you cannot save time by moving to another line. The objective of minimizing the time in line keeps the length of lines about the same and achieves an efficient checkout process.

BASIS: Basis is the difference between the futures price and a relevant cash price. It is comprised of carrying charges, and handling and transportation costs associated with moving the cash commodity to or from the deliverable futures position.

A basis can be calculated for every pair of cash and futures prices. The basis level when a hedge is placed and when it is lifted are both important. Basis levels tend to fluctuate (reflecting local supply and demand) and can result in a change in the price received. The potential downside associated with changes in basis when hedging, is referred to as basis risk. The basis is made up of a number of components: storage costs, interest costs, handling costs, transportation costs and profit margins including opportunity costs. The nearby futures month is normally used to calculate the basis. Basis also refers to the difference between the futures contract specifications and the characteristics of a commodity being hedged against that futures contract.

BACKWARDATION: See inverted market.

BASIS RISK: The risk associated with unexpected changes in the basis between the time a hedge is placed and the time that it is lifted.

CASH PRICE: A cash price in the context of ASXF grain futures is the Australian track market price. It is the price for a physical commodity at a particular point in time and a specific delivery location/region.

CLEARING HOUSE: A separate but related entity that records each futures transaction and ensures the financial integrity of each trade. The clearing house for ASXF grain futures is ASX's Options Clearing House (OCH).

CONTANGO: Situation where prices are higher in the far delivery months than in the nearby delivery months. A contango normally occurs when supplies are adequate or in surplus.

CLOSE OUT: To take an opposite and offsetting position in order to close a futures position and thus eliminate the delivery obligation.

DELIVERY MONTH: The last month in which a particular futures contract is traded. Delivery may be made during this month.



FUTURES CONTRACT: Agreement to sell or buy a specific amount of a commodity or financial instrument at a particular price on a stipulated future date.

FUTURES PRICE: A futures price is the market transaction price at which the buyer and seller agree to trade a futures contract.

FUTURES MONTHS: This term refers to the designated maturity months that exist for futures contracts. Each commodity has specific maturity months that are defined in the contract specifications.

INITIAL MARGIN: The amount a futures market participant must deposit at the time he/she places an order to buy or sell a contract. Usually a futures broker will require sufficient funds to be deposited in an "at call" account prior to accepting a futures order from you.

INVERTED MARKET: A market in which the nearby futures price is above the more distant futures price. It also describes a situation where the cash price is above the nearby futures price. Inverted markets are not characteristic of normal market inter-temporal price relationships during a crop year or between crop years when carryover stocks are adequate. However they may occur during periods of lower than expected production.

HEDGE: Practice of offsetting the price risk inherent in any cash market position by taking an equal but opposite position in the futures market.

LEVERAGE: Effect produced by futures contracts allowing the investor to control a large amount of the underlying asset, with a minimal investment.

LIQUIDATION: An offsetting transaction that closes out a previously established long or short position.

LONG: To buy a futures contract.

LONG POSITION: A long position in the cash market is when the trader owns the cash commodity. In the futures market, a long position is when a trader has purchased a futures contract and is committed to take ownership upon delivery by the seller. A long cash position is cancelled when the commodity is sold. Selling the contract on market typically closes a long futures position.

MARGIN: Monetary deposit a trader must give the broker before taking a position in the market. The broker, in turn, must deposit margin money with the exchange's clearing house. Margin is made up of two components: initial margin and variation margin.

MARGIN CALL: A demand from the clearing house (through the broker) for additional cash funds from the trader because of an adverse price movement against a futures position.

MARK TO MARKET: Daily calculation of debit or credit variation margin resulting from price fluctuations of the futures market.

OPEN INTEREST: The number of purchases and sales (open positions) that have not been liquidated, or closed. It represents the number of long and short positions that are still "open".

SETTLEMENT PRICE: The price established by the clearing house at the end of a trading session as the closing price that will be used in determining profits and losses for the mark-to-market process for margin accounts.



SHORT: To sell a futures contract.

SHORT POSITION: A merchant that forward-sells a physical commodity it does not own is in a short cash position. An example is a crushing plant selling canola oil before it has purchased the raw product. A short position in the futures market is when the trader has sold a futures. Delivering the product or buying back the futures contract closes a short futures position.

SPECULATE: To speculate is to buy, sell or hold onto cash commodities, or to buy or sell futures contracts in order to profit from potential favourable price changes. The speculator assumes price risk expecting to profit from price changes. A speculator in the futures market does not have to deal in the cash market. Also, one does not have to be in futures to be a speculator. The farmer who holds grain in the bin, or cattle on feed, and may gain or lose if prices rise or fall, is a cash speculator. Similarly, an exporter who has committed a sale at a particular price, but has not bought the product, is also speculating in the cash market. Consider the following example:

An economist stated publicly that barley prices would fall during the next six months; she believed the analysis so firmly that she sold a futures contract. A farmer heard this news, but believed that markets usually move in an opposite direction to economist's forecasts and therefore acted against the "expert's" opinion, holding out for a higher price. A doctor talked to the farmer, accepted the farmer's free advice and bought the futures contract sold by the economist. A local feed mill operator, who had been waiting for a drop in barley prices, believed the economist and held out for a lower price.

These are all speculative positions and some of the expectations will be false. In fact, they may all be wrong if prices do not change. Each assumed some risk of price change in anticipation of some gain. If prices change, some will be winners and others will be losers. However, if the farmer had "hedged" the barley in storage, and the feed mill operator had "hedged" the anticipated future requirements, they would have been indifferent to a change in price (assuming no basis risk) and only the economist and the doctor would have borne the risk.

SPECULATOR: A trader who deals in either cash or futures and attempts to profit from correctly anticipating the direction of a price change. Speculators, like the economist and the doctor in the example above, improve the ease of transaction execution by increasing "liquidity" of futures markets. They increase the number of buyers and sellers and help to facilitate trading. Speculators provide a valuable service to hedgers by taking on some of the risk that hedgers wish to avoid. A speculator assumes the risk of price change from the hedger.

SPREAD: A spread is the difference between two futures contract prices at a given point in time. Theoretically, a spread is determined by the carrying cost of the cash commodity between the futures months. Therefore, there is a spread for each pair of delivery months or futures contracts. Spreads change over time, representing the money the market requires or is willing to pay to have the product carried forward for the time period considered. A positive spread implies the market is willing to pay for the storage of the product, while a negative spread means the market values the product for nearby delivery more than for future delivery.

STOP LOSS ORDER: An order to buy or sell a futures contract that immediately becomes a market order when a specific price, the "stop" level, is reached. Stop losses are used to limit the amount by which a futures position is allowed to change in value before a trader reverses



his/her position.

VARIATION MARGIN: Margin funds that are required to bring the cash balance in an account back to the price level of the futures market each day.

VOLUME: The number of contracts traded over a specified length of time, such as one trading day.



Chapter 6: Begin Using ASXF Grain Futures

In order to participate in the grain futures market you will need to:

- Understand ASXF grain futures and the terms and conditions of the contract
- Select an ASXF Futures broker to execute trades
- Sign a client agreement form with an ASXF futures broker
- Set up clearing arrangements with an ASXF Futures Clearing Participant – this can be the same as your executing broker, or a different ASXF Futures Participant if you wish
- Ensure all internal approvals and controls are in place (if you are not a private investor)

When you are ready to trade your first futures contract you will need to engage the services of a broker to execute your trades (Trading Participant) and also a firm to clear the trades (Clearing Participant). This may well be the same company, however it is not uncommon for it to be a different company.

You are able to nominate whether you wish your clearer to use an omnibus client account (where all client accounts are held together) or to use a single client account (where each client account is separated from the next). OCH requires its Clearing Participants to segregate house and client account, with the alternative of maintaining individual client accounts if so required by their client. OCH records the positions, cash and collateral in respect of each particular account.

In the case of an omnibus client account, the positions, cash and collateral applied to your account would be commingled and applied to offset other client obligations.

Participants in ASXF Futures grain market

- An ASXF Futures Trading Participant (either as a broker, market maker or local participant)
- An OCH Clearing Participant (only clearing the market)
- An ASXF Futures Trading Participant that is also an OCH Clearing Participant

Selecting an ASXF Futures Broker

A list of ASXF Futures brokers is available on asx.com.au/grainfutures. Before a broker can trade for you, it is obliged to execute client agreement forms. The broker will usually ask you to deposit an amount of cash in an “at call” account so that margins can be covered. You should ensure that the individual adviser(s) from whom you take advice about ASXF futures transactions is properly qualified. Each individual must be an ASXF Accredited Futures Adviser (AFA) under ASXF Business Rules.

Selecting a Clearing Participant

A list of Futures Clearing Participants is available on asx.com.au/grainfutures. It is essential that you have clearing arrangements in place before you trade the contract. Your clearing broker can be the same or different to your executing broker.

Costs of Trading

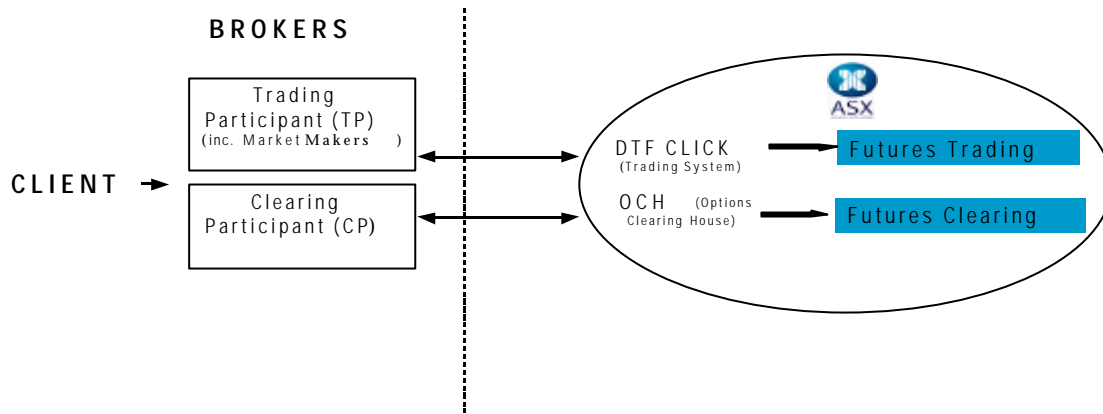
There are two costs of trading futures:

1. Brokerage, which is negotiable with your broker(s)



2. Fees for trading which are posted regularly on the website via notices to Futures Participants (http://www.asx.com.au/markets/f4/FuturesNotices_AM4.shtm)

ASXF Futures – Participation Structure



Important Disclaimer

This document outlines some requirements of how you can trade ASXF Futures markets. It is to be used as a guide only and is not intended to be a precise statement of the provisions of the ASXF FUTURES Business Rules or OCH Futures Clearing Rules or the Corporations Act, and many of the provisions that govern the requirements for access to ASXF Futures markets are very technical. Whilst every care has been taken in the compilation of this publication, ASXF Futures expressly disclaims all liability to any person in respect of any statement in or omission from this guide.