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The document has been prepared to introduce some of the key terms and concepts associated with futures and futures options trading. Investors are reminded that the risk of loss from trading futures or futures options can be substantial and these products may not be for everyone. Investors also need to consider the level of risk they are willing to accept and the suitability of any investment before acquiring a position. The following information is not to be construed as an offer to sell or a solicitation or an offer to buy any futures or futures options. It is simply provided to you as is, for general use and information purposes only by Union Securities Ltd. Please contact your USL broker for further assistance.

Hedging with Futures – Examples

Previously we defined a hedge as "establishing an equal but opposite position in a relevant futures market to that of a current or anticipated cash position". This action effectively serves to offset an underlying commodities price risk by converting it to basis risk. Of course the "perfect" hedge requires the basis to remain unchanged for the duration of the hedge. In actuality, basis is seldom static due to convergence between cash and futures markets and the effects of supply and demand on the underlying commodity. This requires a skilled marketer to recognize a "good" basis from a "poor" basis and how to capitalize on pricing opportunities.

The short hedger uses the following strategy to protect a later selling price on existing inventory or against anticipated production. The following are examples of a selling or short hedge and a T-account is used to illustrate the outcome of each scenario.

In June, Canola prices for October delivery are quoted at $8.02/bushel or $353.00/metric tonne when the November Canola futures contract traded at the Winnipeg Commodity Exchange (WCE) is $383.00/metric tonne. A producer considers this futures price to be attractive but feels a potential exists for an improvement in the basis. The producer hedges 200 metric tonnes in the WCE futures market which represents 25% of anticipated production, then lifts the hedge after making delivery and pricing in the fall.

1) In this first example we assume that cash market prices in the fall have declined to $7.50/bu or $331.00/mt when the WCE futures are $361.00/mt. The producers net return at these prices can be illustrated with the following T-account (note basis level):

CASH	FUTURES	BASIS
June: November deferred delivered price is $353.00/mt.	Producer sells (goes short) 10 job lots (200 mt) of the Nov. WCE futures contract at $383.00/mt	- $30.00
Oct. Producer sells 200 mt of Canola at harvest at a price of $331.00/mt.	Producer offsets (buys back) 10 job-lots of the Nov. WCE futures contract at $361.00/mt.	-$30.00
Result: Canola sold in the cash market during October at: $331.00 x 200 mt = $66,200	*Futures Gain (Loss):* $383.00/mt - $361.00/mt = $22.00/mt gain $22.00 x 200 mt = $4,400	Unchanged

Cash Selling Price	$66,200
+ Futures Gain	$4,400
= Net Selling Price	$70,600 or $353.00/mt.

Please note the preceding example does not include brokerage commissions or transaction costs.

2) We will now look at the same example only this time fall prices have declined to $7.64/bu or $337.00/mt and the WCE futures are $361.00. The net return can be illustrated with the following T-account (note change in basis):

CASH	FUTURES	BASIS
June: November deferred delivered price is $353.00/mt.	Producer sells (goes short) 10 job lots (200 mt) of the Nov. WCE futures contract at $383.00/mt	- $30.00
Oct: Producer sells 200 mt of Canola at harvest at a price of $337.00/mt.	Producer offsets (buys back) 10 job-lots of the Nov. WCE futures contract at $361.00/mt.	-$24.00
Result: Canola sold in the cash market in October at $337.00 x 200 mt = $67,400	*Futures Gain (Loss):* $383.00/mt - $361.00/mt = $22.00/mt gain $22.00 x 200 mt = $4,400	$6.00 basis gain

Cash Selling Price	**$67,400**
+ Futures Gain	**$4,400**
= Net Selling Price	**$71,800 or $359.00/mt.**

Please note the preceding example does not include brokerage commissions or transaction costs.

In this second example the producers selling price in the cash market has increased by $6.00/mt over the first scenario due to an improvement in basis. Both of the preceding examples show a gain on the futures side of the balance sheet. However, if futures prices strengthened during the hedge period and basis remained unchanged from the above examples, a loss will occur on the futures side of the balance sheet. This loss effectively offsets a higher selling price on the cash side of the balance sheet and the net selling price remains unchanged.

The previous two examples involved hedgers who were long inventory and required protection from a decline in prices. Conversely, the long hedger is usually short inventory and requires protection from a rise in prices. In the next two examples, a long futures or buy position is established for price protection. It is also important to recognize that a strengthening basis will negatively impact the net buying price.

In August, feed barley prices in the cash market are quoted at $130.00/metric for fall delivery when December Western Barley futures are trading at $143.00/metric tonne. A feedlot manager hedges 500 metric tonnes of feed barley for the November feeding period by establishing a long (buy) position in the December Western Barley futures

contract. The manager intends to purchase and take delivery of feed barley in the cash market during early November.

3) In this example we assume that barley prices have strengthened during the term of the hedge and purchases are priced at $147.00/metric tonne in early November and the hedge is lifted with December Western Barley futures contract at $160.00/metric tonne (note basis level).

CASH	FUTURES	BASIS
August: **Fall deferred delivery price is $130.00/mt.**	**Manager goes long (buys) 25 job-lots of the Dec. Western Barley futures contract at: 143.00/mt.**	**-$13.00**
Nov: **Manager purchases 500 mt. of feed barley from local cash market at $147.00/mt.**	**Manager offsets (sells) 25 job-lots of the Dec. Western Barley futures contract at $160.00/mt.**	**-$13.00**
Result: **Feed requirements purchased in the cash market at: $147.00 x 500 mt = $73,500**	**Futures Gain (loss) $160/mt - $143.00/mt = $17.00/mt gain $17.00 x 500 mt = $8,500**	**Unchanged**

Feed Purchase Price	**$73,500**
- Futures Gain	**$ 8,500**
= Net Buying Price	**$65,000 or $130.00/mt.**

Please note the preceding example does not include brokerage commissions or transaction costs.

4) We will now look at the same example only this time fall prices have risen to $151.00/bu or $329.00/mt and the WCE futures are $160.00. The net return can be illustrated with the following T-account (note change in basis):

CASH	FUTURES	BASIS
August: **Fall deferred delivery price is $130.00/mt.**	**Manager goes long (buys) 25 joblots of the Dec. Western Barley futures contract at 143.00/mt.**	**-$13.00**
Nov: **Manager purchases 500 mt. of feed barley from local cash market at $151.00/mt.**	**Manager offsets (sells) 25 job-lots of the Dec. Western Barley futures contract at $160.00/mt.**	**-$9.00**
Result: **Feed requirements purchased in the cash market at: $151.00 x 500 mt = $75,500**	**Futures Gain (loss) $160/mt - $143.00/mt = $17.00/mt gain $17.00 x 500 mt = $8,500**	**$4.00 basis loss**

Feed Purchase Price	**$75,500**
- Futures Gain	**$ 8,500**
= Net Buying Price	**$67,000 or $134.00/mt.**

Please note the preceding example does not include brokerage commissions or transaction costs.

In this fourth example, the manager's purchase price in the cash market increased by $4.00/mt from the previous example due to a stronger basis. Both of the preceding examples show a gain on the futures side of the balance sheet. However, if futures prices would have declined during the hedge period and basis remained unchanged from the previous two examples, a loss will occur on the futures side of the balance sheet. This loss effectively offsets a lower purchase price on the cash side of the balance sheet but the net purchase price remains unchanged.

This completes the second document of a series in Futures and Futures Options Trading – please see related articles located in our website at www.union-securities.com/futures.