



19BAE710-FINANCIAL DERIVATIVES

Introduction

The buyer or seller of a futures contract is required to deposit part of the total value of the specified commodity future that is bought or sold – this is known as margin money. This deposit is required by regulations set out by each commodity exchange, and must be deposited with a registered futures commission merchant (RFCM) before a futures contract is bought or sold. Margin money is essentially a guarantee that the trader, the customer of the RFCM, will honour the contract.

How margins work

There are 2 levels of margins: the initial margin and the maintenance margin. The minimum amount of the initial margin is set by the exchange and varies depending on the commodity, the commodity's trading price, and how much those prices are moving up and down. Exchanges may increase or decrease initial margin amounts at any time.

RFCMs usually set initial margins higher than the minimums set by the exchange. The initial margin may be somewhat less for clients who declare their trading activity as hedge-related rather than for speculation.

The maintenance margin is the minimum amount of money that must be maintained in a margin account after all potential losses have been accounted for.

Margin call

If a change in the futures contract price causes the open futures trade to be in a losing position, a "margin call" may be required by the broker, even though the position has not been offset. A margin call is required once an account's initial margin has been reduced to below the maintenance margin level. If this happens, the client must deposit enough money to re-establish adequate margin in the account.

If arrangements are not made to meet the margin call immediately, the trader's commodity broker may make an offset trade to terminate the client's futures position. Brokers will offset a position to protect the brokerage firm, which is legally responsible to cover losses if a trader does not cover the losses.

Margin call example

For example, Client A buys one canola futures contract of 20 tonnes for \$500 per tonne. Client A posts an initial margin of \$440 with the broker. If, the next day, the price of that canola contract goes down by \$6 per tonne to \$494, Client A has a potential, or unrealized loss of \$120 (20 tonnes at \$6 per tonne). Client A's margin account has been reduced by the \$120 potential loss to \$320, below the \$400 minimum margin level. To bring Client A's account back to the required margin level, the commodity broker contacts the client to send at least \$120 to bring the margin account up to the \$440 initial margin level. This is known as a margin call.

- June 3: Client A buys 1 January canola contract of 20 tonnes at \$500 per tonne. Initial margin is \$440.
- June 4: January canola futures price falls to close the day at \$494 per tonne.
- June 4: Potential loss, if offset now, is \$6 per tonne; total potential result is 20 tonnes multiplied by \$6 per tonne equals \$120
- June 4: Margin account value is \$320 after accounting for potential loss, excluding commissions
- June 4: Margin call from broker for \$120
- June 5: Margin call made and \$120 is sent to brokerage account
- June 5: Margin account value \$440

Note: If this canola futures trade is a hedge, such as a canola crusher protecting against a rising price of canola, the potential loss in the futures trade as the canola futures price fell would likely be offset with a lower cash price for canola needed by that crusher.

Futures trading example

In mid-June, a speculator expects canola prices to rise over the next few months, based on his belief that the upcoming crop will be smaller than most people expect. Through a commodity broker, he buys 100 tonnes of November canola futures, that is, 5 contracts of 20 tonnes, using the ICE exchange at \$460 per tonne. This buy is known as taking a long futures position.

Since futures contracts are margin transactions, the speculator only needs to put up a fraction of the total value of the contract. The initial margin would be \$2200 for the 5 contracts, which have a value of \$46,000 (\$460 per tonne multiplied by 100 tonnes).

In early July, November canola futures are trading at \$480 per tonne and the speculator decides to take profits of \$20 per tonne and instructs his broker to sell 100 tonnes of November canola futures. The new short position offsets the original long obligation.

In this example, the speculator bought 100 tonnes of November canola at \$460 per tonne, and later sold 100 tonnes at \$480 per tonne for a gross gain of \$20 per tonne. From this gross sum, broker commissions and exchange fees must be paid.

There were no margin calls in this example because prices moved only in a favorable direction to the trade position.

- June 10: initial margin deposit with broker of \$22 per tonne (\$2200), then buys 5 contracts (100 tonnes) of November canola at \$460 per tonne.
- July 7: sell (offset) 100 tonnes of November canola (5 contracts at 20 tonnes) at \$480 per tonne. Gross profit of \$20 per tonne on 100 tonnes for a total of \$2000.
- July 7: funds returned to trader: \$20 per tonne (profit) less \$1.25 per tonne (example broker commission and fees) equals \$18.75 per tonne or \$1875 plus the original margin deposit of \$2200 released or refunded on request.

- The trader earned \$1875 for their speculative activity.

Summary

Margin money is a deposit to secure a futures position while it is open. Margins must be maintained at the level required by the brokerage firm.

When the futures position is closed, the remaining margin money after trade settlement can be returned to the account holder.

