Binance Trading

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1 Margin Trading

Allows positions to be leveraged from traders staking their funds. Enables going long or short. Important to note that while the position is open the traders assets act as collateral for the borrowed funds. Margin calls are made if price shifts mean you dont cover the required margin. Margin trading uses spot trading fees (0.1 maker and taker).

2 Futures

Trade contracts on the underlying asset, generally date driven with an expiry but perpetual futures allows for trading very similar to the spot and to margin trading with lower fees and more liquidity.

2.1 How do you close a contract?

Offset: Open a position opposite to the current positions to net out the setup.
Rollover: Offset then get a new contract with a longer expiration date.
Settlement: Settled at the expiration date.

2.2 What are futures price patterns?

Futures price = spot price + premium (can be positive or negative)
Contango: Price of a futures contract is higher than expected spot price.
Backwardation: Price of the futures is lower than the expected spot price.

2.3 What are the commission fees?

USD-M: maker=0.02, taker=0.04
Coin-M: maker=0.01, taker=0.05

$$Commission\,fee = notional\,value * fee\,rate$$

$$Notional\,Value = (Number\,of\,contracts * contract\,size)/trade\,price$$

Fee is charged at entry and exit.

2.4 What is funding rates ?

Periodic payment is taken from traders, which is based on the difference between contract price and the underlying asset spot price. This fee is designed to force the convergence between spot price and contract.

$$Funding\ Amount = Nominal\ value\ of\ position * funding\ rate$$

$$Nominal\ value = Mark\ price * contract\ size$$

Funding rate is taken every 8 hours at set times: 0:00, 8:00, 16:00 UTC.

$$Funding rate = average premium index + clamp(interest rate - premium index, 0.05, -0.05)$$

If interest rate - premium index is between -0.05 and 0.05 then the funding rate is equal to the interest rate. Interest rate 0.03%.

2.5 What are the different prices?

Last price: Last cost of contract (used to calculate realized P/L)
Mark price: Similar to the spot price (unrealized P/L)

2.6 What triggers a margin call ?

Liquidation is triggered at a margin call.

$$Collateral = Inital collateral + realised PnL + unrealised PnL < maintenance margin$$

$$margin\ ratio = maintenance\ margin / margin\ balance$$

Margin ratio is suggested to be < 80%.
If a margin call occurs your position will be liquidated and all open position closed. It may not be completely liquidated depends on position size.
There will also be a liquidation fee based on the amount liquidated!!

2.7 What happens if you go bankrupt ?

If the wallet hits a negative amount after liquidation, the fund will set the balance back to 0.

2.8 What is the insurance funds ?

The insurance fund covers bankrupted traders, its is funded from funding rates.

2.9 What is auto-deleveraging ?

If the fund can not cover bankruptcy, counter parties will be liquidated. Most profitable and higher leverage trades are liquidated first. There are indicators showing your position in the auto deleverage queue.

3 Profit and loss

For USD based:

$$Profit/Loss = (Entry\,Price - Exit\,Price) * position\,size$$

(if a short multiply by -1)
For coin based:

$$Profit/Loss = (1/Entry\,Price - 1/Exit\,Price) * position\,size$$

3.1 Open loss

When shorting there is an open loss:

$$Open\,loss = order\,size * Abs(min(0, -1 * (mark\,price - entry\,price)))$$

3.2 Unrealized P/L

Uses mark price instead of exit price.

$$ROE = unrealised\,P/L \div \frac{position\,size * mark\,price}{leverage}$$

$$ROE = \frac{unrealised\,P/L}{entry\,margin}$$

$$ROE = \frac{Profit}{InitalMargin} = (\frac{Exit}{Entry} - 1) * leverage$$

3.3 Target Price

$$LONG: Target\,price = entry\,price * (1 + \frac{ROE}{leverage})$$

$$SHORT: Target\,Price = entry\,price * (1 - \frac{ROE}{leverage})$$

3.4 Price Index

This is essentially the spot price of the underlying asset. The average price on the major markets.

3.5 Mark Price

The primary component of the mark price is the price index. The mark price is used to calculate the unrealised P/L and determine if a margin call is required.

$$Mark\,price = Median * (Price1, Price2, Contract\,Price)$$

$$Price1 = Price\,Index * (Last\,Funding\,Rate * \frac{Timeuntilfunding}{8})$$

$$Price2 = Price\,Index + Moving\,average_{5min}(\frac{Bid1 + Ask1}{2} - Price\,Index)$$

The price is the controlled to be between the contract price, the diff between the contract price and spot price and the funding rate at that moment.

3.6 Difference between coin based and USD based futures

Coin based is settled in the contracts underlying asset.
USD based is settled in USDT or BUSD.

4 Other

5 Binance leveraged tokens

Tokens traded on the spot market that allow access to leverage without holding future contracts.
Uses variable leverage not constant, which has benefits for longer term holding.Charges a daily fee of 0.01% fee.

5.1 What is Time weighted average price (TWAP) ?

Attempts to have a minimum impact on the market with large orders. Will break it into smaller orders executed over a period of time.

5.2 Liquidity Analysis ?

Binance offers liquidity analysis tools.

5.3 Volume participation algorithm

Trade at a pace matching a portion of the real time market volume with respect to the target.
Good to use when making orders larger than the market liquidity while trying to minimize impact on the market.

5.4 Binance Portfolio management program

Asset portfolio to track equity, margin value and maintenance margin requirements.