



i am seeing too many random explanations and interpretations of funding rates and thats not good for my mental health

explaining funding rate, a thread

Symbol	USDT or USD Margined							Token Margined					
	Binance	Okex	Bybit	FTX	dYdX	Gate	Bitget	Binance	Okex	Bybit	Bitmex	Huobi	Deribit
BTC	0.0086%	0.0041%	0.0100%	-0.0008%	-0.0164%	0.0100%	-0.0100%	-0.0062%	-0.0109%	0.0064%	-0.0268%	-0.0040%	0.0000%
Predicted	-	-0.0030%	-0.0080%	-	-	0.0100%	-	-	-0.0120%	-0.0161%	-0.0091%	0.0080%	-
ETH	0.0018%	-0.0054%	0.0004%	-0.0048%	-0.0131%	0.0100%	0.0100%	-0.0066%	-0.0088%	-0.0114%	0.0100%	0.0058%	0.0000%
SOL	0.0100%	0.0022%	0.0100%	0.0080%	-0.0079%	0.0100%	-0.0100%	0.0010%	0.0006%	-	0.0170%	-	-
DOT	-0.0035%	-0.0108%	0.0040%	0.0000%	-0.0389%	0.0100%	0.0100%	-0.0082%	0.0005%	-0.0061%	0.0100%	-0.0179%	-

1. at its core, funding rate is used by exchanges to force the prices of spot and perpetual contracts to converge. perps don't have any expiry time (unlike traditional futures) and hence people can hold it forever until they close or get liq'd while futures have an expiry epoch

2. to understand funding properly, we need to understand futures first traditional futures have an expiry and usually when the contract nears its maturity date; people start arbitraging, and hence in turn the prices start converging and it expires close to the spot price

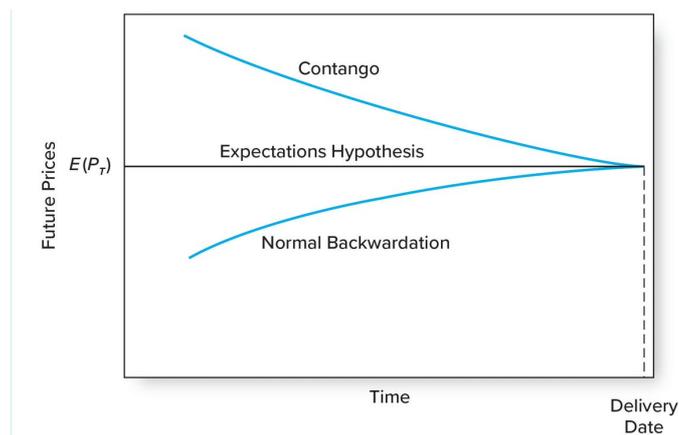


Figure 22.7 Futures price over time, in the special case that the expected spot price remains unchanged

3. in contrast, perp trading is more so treated as spot trading (no expiry remember) and hence funding rate plays an essential role in making the perp prices be in sync with the index price of the asset

Mark	Index	Funding / Countdown
42,537.38	42,557.23	0.0073% 00:47:05

4. the funding isn't a magical number, it has a very simple method of calculation for almost all exchanges

the funding rate is simply:

$$\text{Funding Rate} = *[\text{Interest Rate} - \text{Premium Index}] + \text{Premium Index}$$

*a clamp function is applied with ceil/floor as 0.05% and -0.05%

5. to further break down the formula, let's first look at what's the interest rate

contracts are traded with a base and a quote currency (e.g. BTC - base, USD - quote) and the interest rate is a simple calculation between them which goes like this:

$$\text{Interest Rate (I)} = \frac{(\text{Interest Quote Index} - \text{Interest Base Index})}{\text{Funding Rate Interval}}$$

6. interest quote index = the borrowing rate for the quote currency

interest base index = the borrowing rate for the base currency

funding interval = the periodic intervals in which rates are recalculated

lets now try to make these even simpler by using an example

7. binance and bybit have the usd rate at 0.06% and btc rate at 0.03% and hence the difference being roughly 0.03%

the funding interval being 8 hours for most exchanges becomes = 24/8 (once every 8 hours)

hence,

$$\text{Interest Rate} = (0.06 - 0.03) / (24/8) = 0.01\% \text{ (the magical number)}$$

$$\text{Interest Rate (I)} = \frac{(\text{Interest Quote Index} - \text{Interest Base Index})}{\text{Funding Rate Interval}}$$

$$\text{Interest Rate (I)} = \frac{(0.06 \text{ percent} - 0.03 \text{ percent})}{\text{Funding Rate Interval}}$$

$$\text{Interest Rate (I)} = \frac{(0.06 \text{ percent} - 0.03 \text{ percent})}{24/8}$$

$$\text{Interest Rate (I)} = \frac{(0.03 \text{ percent})}{3} = 0.01 \text{ percent}$$

8. but then how do we enforce the convergence when spot and perpetual prices diverge greatly?

we use the cute premium index

Premium Index = [max(0, Impact Bid Price - Price Index) - max(0, Price Index - Impact Ask Price)] / Price Index

lets simplify this too now

$$\text{Premium Index (P)} = \frac{\text{Max}(0, \text{Impact Bid Price} - \text{Mark Price}) - \text{Max}(0, \text{Mark Price} - \text{Impact Ask Price})}{\text{Index Price}}$$

9.

max being simple maximum math f(x)

Impact Bid Price = The average fill price to execute the Impact Margin Notional on the bid price

Impact Ask Price = The average fill price to execute the Impact Margin Notional on the ask price

price index = the index price of the asset



10. The Impact Margin Notional for perp contracts is the notional available to trade with 200 USDT (binance) of initial margin (quote in USDT) and is used to determine the average impact bid or ask and how deep in the order-book it is

$$\text{IMN} = 200 / \text{Initial margin rate at max lev}$$

11. an example from binance:

maximum degening for btcusdt is 125x and the Initial Margin Rate is 0.8%, then the IMN is 25,000 USDT (200 USDT / 0.8%), and the system will take an IMN of 25,000 USDT every minute in the order book to measure the average Impact Bid/Ask price

$$\text{Initial Margin} = \frac{\text{Notional Position Value}}{\text{Leverage Level}}$$

$$\text{Maintenance Margin} = \text{Notional Position Value} * \text{Maintenance Margin Rate} - \text{Maintenance Amount}$$

12. and hence premium index varies and correspondingly impacts the funding rate

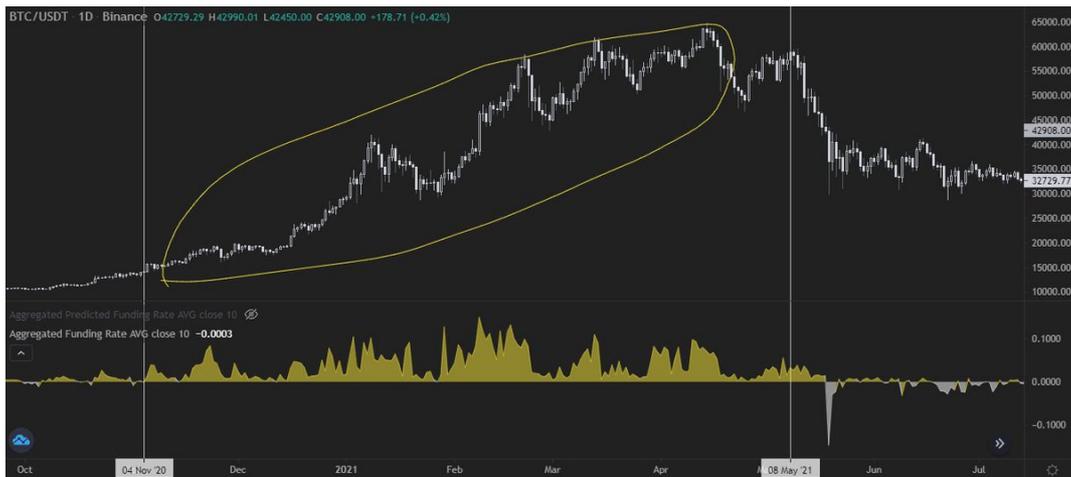
notice how the premium index varies greatly on days of high volatility/big moves



13. oh no the funding is too high again

the degen disgusting "leverage traders" are at it again, it's because of them we will have

corrections if any. the funding is reaching 0.15 omg
time to stay in stables



14. the disgusting beras deserve this short squeeze haha fully deployed



15. funding rate is a good system for exchanges and a good metric and usable in a lot of ways in your system but please it's not as binary as negative= short squeeze because traders dumb; positive = go up because whales buying

and there r some more complexities that i left out

16. and as always, dont believe what im saying because im an online anime person and might be trying to psyop you into ignoring it zhusu style (u better believe everything i say or else i come fight you on the streets)

ty for reading

[comf image by @ByzGeneral]



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