

The crossover: when a wider spread beats nightly financing

COST CROSSOVER

The holding period at which two vehicles cost the same. One charges more to enter and nothing to hold; the other charges less to enter and accrues nightly. Divide the extra entry cost by the nightly charge and you get the number of nights beyond which the expensive-to-enter vehicle is the cheaper one.

"Which is cheaper?" is asked constantly and answered badly, because the honest answer is a question back: for how long?

This lesson turns that into arithmetic you can do before opening a position. It is the most useful thing in the module, and it is not complicated - it is division.

The two shapes

Every cost on an index position is one of two shapes. Either it is paid once, at entry, and does not change however long you hold - a spread, a commission. Or it accrues per night, and grows without limit - financing.

Two vehicles with different mixes of those shapes must cross somewhere, and finding where is the whole technique.

The calculation

Work out each vehicle's one-off cost in money: spread in points times point value, plus commission and fees. Take the difference. That is what the expensive-to-enter vehicle costs you extra, up front. Take the accruing vehicle's nightly charge in money. Divide the difference by the nightly charge. That is the crossover, in nights.

Worked through

Take a sterling account, an index at £5 a point, one contract.

The cash product quotes 1.6 points and finances at £1.80 a night. Its entry cost is $1.6 \times £5 = £8.00$.

The future quotes 4.0 points and finances nothing. Its entry cost is $4.0 \times £5 = £20.00$.

So the future costs £12.00 more to get into. The cash product costs £1.80 every night to stay in. £12.00 divided by £1.80 is 6.67, so from the seventh night onward the future - the one with the wider spread - is the cheaper vehicle.

Worked example - figures in USD

The same illustrative financing rate as lesson 3, -\$2.30 per contract per night, carried to the seventh night.

1. The cash position finances at -\$2.30 per contract per night on 1 contract.
2. Hold it 7 nights - 7 charged nights at -\$2.30 - and the financing reaches -\$16.10.
3. That is the night the cheaper-to-enter vehicle stops being the cheaper one. Before it, the spread dominates; after it, the financing does, and it keeps going.

What that number means in practice

Below the crossover the entry cost dominates, so the tight spread wins and it is not close. Above it, the financing dominates, and it keeps going: at thirty nights the cash product has paid £54.00 in financing against a £12.00 one-off difference.

The crossover is not a soft preference either side of which things are similar. It is the point at which one term overtakes another and then keeps compounding.

Why the tables get it wrong

A comparison table has to pick a holding period to produce a single number, and it almost never says which one it picked. Pick an intraday horizon and cash products win every time; pick a quarter and they lose every time.

Both tables are accurate. Neither is useful without the assumption printed next to it, and the assumption is usually the thing being sold.

What moves the crossover

Rates. Financing tracks a reference rate, so a higher rate shortens the crossover - sometimes sharply. Position size. Both terms scale with size, so the crossover barely moves - unless a fixed fee is involved, which pushes it out for small positions. Your broker's markup. A larger markup on financing shortens the crossover; a wider quoted spread lengthens it. Dividends, on the long side, which reduce the effective carry over a dividend season.

Recalculate it when rates move materially. A crossover worked out when the reference rate was near zero will be badly wrong in a high-rate environment, and it will be wrong in the direction of holding cash positions for too long.

What this does not tell you

Which vehicle to use. That depends on your holding period, your size, what your account can access and what you are trying to do, and none of those are cost questions.

What it does is remove the guesswork from one input. You can hold a view about the market and still be wrong about the bill; this is the part you can simply calculate.

Check your understanding

1. How do you find the crossover between two vehicles?

- a. Compare their quoted spreads
- b. Divide the difference in one-off entry cost by the accruing vehicle's nightly charge
- c. Compare their annual percentage costs

Answer: b. One cost is paid once and one accrues. The number of nights it takes the accruing one to catch up is the difference divided by the nightly rate.

2. A future costs £12.00 more to enter; the cash product finances at £1.80 a night. From which night is the future cheaper?

- a. The fourth
- b. The seventh
- c. The twelfth

Answer: b. £12.00 divided by £1.80 is 6.67, so the seventh night is the first on which the accrued financing exceeds the extra entry cost.

3. Reference rates rise sharply. What happens to the crossover?

- a. It lengthens, because financing matters less
- b. It shortens, because financing tracks the reference rate and accrues faster
- c. It is unaffected, because both vehicles are financed

Answer: b. The accruing term grows, so it overtakes the one-off difference sooner. A crossover calculated at near-zero rates will be wrong in the direction of holding cash positions too long.