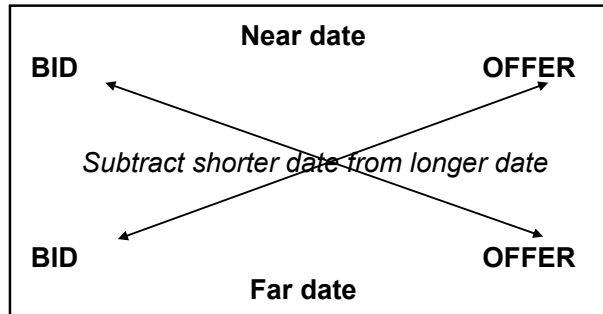


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Forward/forward swap Calculations

Calculation rule



This rule works when both forward prices are quoted on a Base currency Discount (High – Low) and when both forward prices are quoted on a Base currency Premium (Low - High). The rule even works when the forward points move through **PAR** between one period and the next.

If the forwards are quoted:

USD/XXX Forwards
10 - 5
<b>6 - 1</b>
<b>2 - 7</b>
5 - 10
12 - 17

Looking at these **USD/XXX** forwards, we can see that in the one and two months the forwards are at a forward USD Discount (High - Low) and in the three months to one year periods the forwards move through parity and are quoted on a forward USD Premium (Low – High). Supposing we need to calculate a forward/forward swap price 2s v. 3s.

We can still use the rule to subtract the shorter period points from the longer period points but we must remember the move through parity changes the sign of the points. Two months High - Low is actually *minus 6 minus 1* and three months Low – High is actually *plus 2 plus 7*, so starting with the forward/forward **BID**, the calculation is:

$$\text{plus 2 [minus minus] 1 = plus 3 on the BID}$$

*minus minus = plus* therefore the adjustment (the forward/forward BID) is **plus 3 points**. ...and likewise for the forward/forward **OFFER**, the calculation is:

$$\text{plus 7 [minus minus] 6 = plus 13 on the OFFER}$$

*minus minus = plus* so the adjustment (the forward/forward OFFER) is **plus 13 points**.

This makes the forward/forward two way price: **3 – 13** (Low High), which as noted before is the “wide outside”.

**Proof**

Spot **USD/XXX: 2.0000** (Mid point)

...in the 2 months: 6 – **1** and 3 months: **2** – 7

Let’s calculate the 2 months and 3 months forward outright rates based on the mid spot rate of 2.0000, 2 months OFFER and 3 months BID:

$$\text{Spot less 2 mths OFFER of 1 pt : } (2.0000 - 0.0001) = 1.9999$$

$$\text{Spot plus 3 mths BID of 2 pts : } (2.0000 + 0.0002) = 2.0002$$

$$\text{Making the forward/forward BID: } \quad \quad \quad \underline{\quad \quad \quad} + 3$$

...in the 2 months: **6** – 1 and 3 months: 2 – **7**

Let’s calculate the 2 months and 3 months forward outright rates based on the mid spot rate of 2.0000, 2 months BID and 3 months OFFER:

$$\text{Spot less 2 mths BID of 6 pts = } (2.0000 - 0.0006) = 1.9994$$

$$\text{Spot plus 3 mths OFFER of 7 pts = } (2.0000 + 0.0007) = 2.0007$$

$$\text{Making the forward/forward OFFER: } \quad \quad \quad \underline{\quad \quad \quad} + 13$$

This can be proved yet again by confirming that the forward/forward spread is the sum of the two periods spreads. The 2 months spread is 5 and the three months spread is 5 so the forward/forward spread should be **(5 plus 5) = 10**. At **3 – 13** there is a 10 point spread. The points move from *Negative* (High – Low) to *Positive* (Low - High), i.e. through Par, and therefore the adjustment must be *Positive*. At **3 – 13** it is.

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