

## VII. Spot and Forward Trading.

### 1. Spot

*Definition : Exchange of two currencies at an agreed upon exchange rate for cash delivery. Cash delivery is considered to be two business days, except for the Canadian dollar, which is one business day.*

#### **Example :**

Today : 8<sup>th</sup> of December.

Customer X buys EUR/USD 1'000'000.— for spot delivery at 0.9950.

Delivery : 10<sup>th</sup> of December.

## 2. Bid/Offer

Bids and Offers are quoted in terms of the base currency. 1 Base unit is how many units of the other currency.

Example :

EUR/USD : 0.9950/54

BID : 0.9950 is where the market maker buys the base currency and the customer sells the base currency.

OFFER : 0.9954 is where the market maker sells the base currency and the customer buys the base currency.

Example of a Spot Transaction :

Customer : “Hi, this is X Customer Reference x, could you show me a spot price in EUR/USD 1’000’000,-- please ?”.

RTFX : “EUR/USD is 0.9950/54”.

Customer : “At 0.9954 I buy 1 Mio EUR ”.

RTFX : “OK at 0.9954 you bought EUR 1 Mio against USD value 10<sup>th</sup> of December”.

### 3. Forward Outright

A Foreign Exchange Forward is an exchange of two currencies at a predetermined rate for any date other than spot delivery.

A Forward Outright is a single exchange of two currencies at a predetermined rate for future delivery. (Spot + Forward Points).

#### **Calculation of forward exchange rate is base upon spot and interest rate differentials :**

Today : 8<sup>th</sup> of December 2002 Spot EUR/USD 0.9954 (Value 10<sup>th</sup> of December)

Customer X buys EUR/USD 1'000'000,-- forward at 0.9942 for 1 month.

Exchange of Currencies on January 10<sup>th</sup> 2003.

#### **Example of a Forward Outright Quote :**

Spot EUR/USD	0.9950/54
1 Month	15 – 12 (Discount)

Forward Outright Quote	0.9935 – 0.9942
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#### **Example of a Forward Outright Transaction :**

Customer : “Hi, this is X Customer Reference x, could you show me a forward outright price in EUR/USD 1'000'000,-- 1 month please ?”.

RTFX : “Forward outright EUR/USD 1 month is 0.9935/42”.

Customer : “At 0.9942 I buy 1 Mio EUR ”.

RTFX : “OK at 0.9942 you bought EUR 1 Mio against USD value 10<sup>th</sup> of January 2003”.

#### 4. FX Swap

A Foreign Exchange Forward is an exchange of two currencies at a predetermined rate for any date other than spot delivery.

A FX Swap is an agreement to make an initial exchange of currencies for spot value with a reversal of that exchange at some future date. Differs from a forward outright in that two deliveries take place. Comparable to borrowing or lending.

##### Example of a FX Swap :

Spot Price	122.75/80
Forward Outright	48/44 (Discount)

Customer : “Hi, this is X customer reference x, Could you please show me a price for a Swap USD/JPY 3 Months please ?”.

RTFX : “Swap USD/JPY 3 months is -48/-44”.

Customer “OK at - 48, I buy and sell 1 Mio USD/JPY”.

RTFX : “OK you bought 1 Mio USD/JPY at 122.75 value Spot 10<sup>th</sup> of December 2002 and sold 1 Mio USD/JPY at 122.27 value 10<sup>th</sup> of March 2003”.

**Remark : there is no spot exposure on FX SWAP**



## 6. Calculating Premium and Discount

Customer wants to sell EUR 3 Mio against USD 3 months forward.

Trade Date	February 11 <sup>th</sup> .
EUR/USD	1.0710/14
USD 3 Month rate	1.25 / 1.35 %
EUR 3 Month rate	2.60 / 2.70 %
Maturity	90 days

**How calculate the bid price for EUR/USD 3 months Forward ?**

**1<sup>st</sup> Method :**

$$\text{Forward Points} = \frac{\text{Spot} * (1 + (\text{OCR rate} * n/360))}{(1 + (\text{BCR rate} * n/360))} - \text{Spot}$$

OCR = Other Currency Rate

BCR = Base Currency Rate

$$\text{Forward points} = \frac{1.0710 * (1 + (0.0125 * 90/360))}{(1 + (0.027 \text{ rate} * 90/360))} - 1.0710$$

$$\text{SWAP} = - 0.00385$$

$$\text{Forward rate} = 1.0710 - 0.00385 = 1.06715$$

Alternative Method :

Borrow

EUR 3'000'000  
90 days at 2.70 %  
Interest = EUR 20'250

TOTAL EUR 3'020'250.--

Lend

USD 3'213'000  
90 days at 1.25 %  
Interest = USD 10'040.625

TOTAL USD 3'223'040.625

$$\text{Forward rate} = \frac{3'223'040.625}{3'020'250.--} = 1.06715$$

Customer sells EUR 3 Mio against USD at 1.06715 at 3 month (1.0710 – 0.00385).

Customer wants to Buy EUR 3 Mio against USD 3 months forward.

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OCR = Other Currency Rate

BCR = Base Currency Rate

$$\text{Forward points} = \frac{1.0714 * (1 + (0.0135 * 90/360))}{(1 + (0.026 \text{ rate} * 90/360))} - 1.0714$$

$$\text{SWAP} = - 0.0033$$

$$\text{Forward rate} = 1.0714 - 0.0033 = 1.0681$$

#### Alternative Method :

Lend

Borrow

EUR 3'000'000  
90 days at 2.60 %  
Interest = EUR 19500

Spot 1.0714

USD 3'214'200  
90 days at 1.35 %  
Interest = USD 10'847.925

TOTAL EUR 3'019'500.--

TOTAL USD 3'225'047.925

$$\text{Forward rate} = \frac{3'225'047.925}{3'019'500.--} = 1.0681$$

Customer buys EUR 3 Mio against USD at 1.0681 at 3 month (1.0714 – 0.0033).