

OUTRIGHTS / FX SWAPS

1.	FX Forward Outrights.....	2
1.1	Conventions and Terminology.....	2
1.2	Computing Outright Rates	3
1.3	Quotation of Outright Rates	7
1.4	Cross Rates of Outrights.....	14
1.5	Time Options	15
1.5.1	Pricing of Time Options	16
1.5.2	Remaining Risk for Time Options.....	17
1.6	Non-deliverable Forwards (NDF)	18
1.6.1	Terminology	18
1.6.2	Risks for NDF	20
2.	FX Swaps.....	22
2.1	Terminology.....	22
2.2	Quotation of FX swaps	24
2.3	Mark to Market of FX swaps.....	25
2.4	Residual FX Risk of FX Swaps (FX Tail)	26
2.5	Effects of the Spot Basis on FX Swaps	28
2.6	Matched and Mismatched Principal FX Swaps	29
2.7	Forward / Forward Swap.....	30
2.8	Short dated FX Swaps – FX Deals for Value prior to Spot.....	33
2.9	SAFE, FXA and ERA.....	36
3.	Applications of FX Outrights and FX Swaps	37
3.1	Using FX Swaps for Hedging an Outright deal	37
3.2	Arbitrage between Deposits and FX Swaps	38
3.3	Computing the Interest Rate from Spot and Forward Rate.....	39
3.4	Prolongation of FX Forward Deals	41

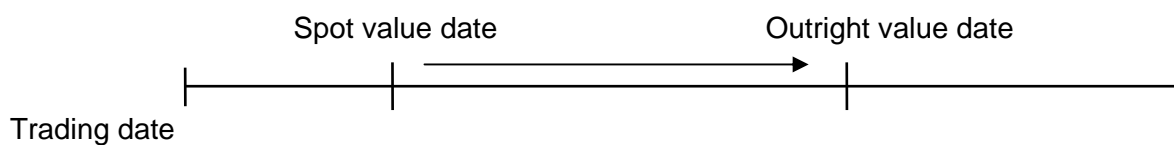
1. FX Forward Outrights

An outright is an agreement between two counterparts to exchange currencies on a future date at a fixed rate.

1.1 Conventions and Terminology

Value date

The regular terms for outright deals are the straight months (resp. weeks) up to 1 year e.g.: 1w, 2w, 3w, 1m, 2m, 3m, 4m...12m. For the major currencies terms of up to 5 years are possible. The term of an outright deal is measured starting with the spot value date.



If the theoretical value date of an outright is a Saturday, Sunday or a bank holiday, the value date is deferred to the next working day.

Example

The value date of a 1-month outright, traded on Wednesday, the 22nd of October, would be the 24th of November. If the 24th of November is a Sunday, the value date will be the 25th of November.

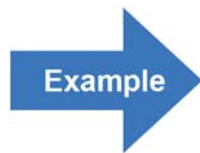
For the so-called **end / end deals** (outright deals with spot value dates on the last working day of a month), the value date of the outright is the **last working day**.

Example

The trading day of a one-month outright deal is Wednesday, the 29th of October. Value date of the spot deal would be Friday, the 31st of October. The value date of the outright deal is in this case Friday the 28th of November (last bank day in November).

1.2 Computing Outright Rates

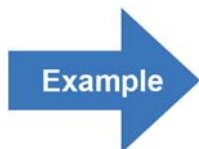
The table shows some examples of spot 12-month outright rates:



	EUR/USD	USD/CHF	EUR/GBP
Spot	1.0980	1.5000	0.6975
12 mth	1.0870	1.4720	0.7033

These examples demonstrate that the outright rates usually differ from the spot rate, but they are not a forecast for the spot rate at the end of the term. If, for example, the rate for a 12-month outright USD/CHF is 1.4720, this does not mean that the market expects a rate of 1.4720 in 12 month time.

The difference between the outright rate and the spot rate only reflects the interest differential between the two currencies involved. Would the outright rates not conform to the interest differential, arbitrage between the foreign exchange market and the euro deposit market would be possible.



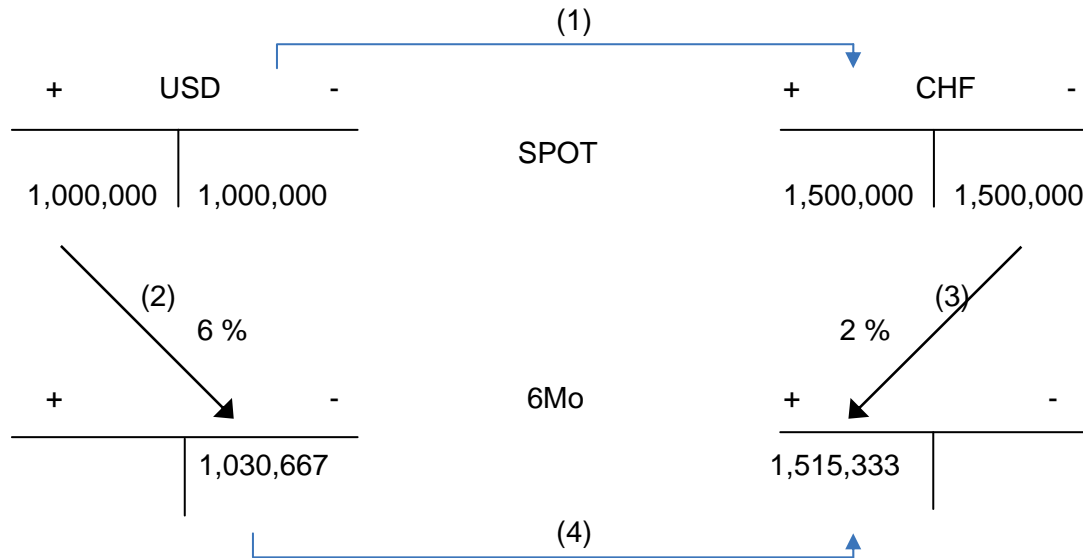
USD/CHF spot: 1.5000
 USD 6-mth deposit rate: 6 %
 CHF 6-mth deposit rate: 2 % (184 days).

A company is long USD/CHF value date 6 months and wants to hedge the FX-risk. There are two alternatives:

1. Sell USD outright against CHF or
2. Sell USD spot against CHF and
 refinance USD for 6 months by means of an interbank deposit and
 invest CHF for 6 months by means of an interbank deposit

The results of both alternatives must be the same. Otherwise the market participants would do arbitrage that means they would buy the cheaper alternative and close the position by selling the other one. Hence the difference would disappear very quickly.

If both alternatives produce the same result, the 6 months outright rate can be computed as shown below:



- ▶ Sell spot USD 1,000,000 against CHF at a rate of 1.5000 (1)
- ▶ Take 184 days USD deposit 1,000,000 at 6 % (2)
- ▶ Give 184 days CHF deposit 1,500,000 at 2 % (3)
- ▶ Computing the outright rate: $1,515,333 / 1,030,667 = 1.4702$ (4)

The outright rate can be computed by using the stated formula, too.

$$O = SPOT \times \frac{1 + \left(i_V \times \frac{D}{B_V} \right)}{1 + \left(i_B \times \frac{D}{B_B} \right)}$$

D = number of days

O = outright rate

SPOT = spot rate

i_B = interest rate p.a. in decimals, base currency

i_V = interest rate p.a. in decimals, quote/variable currency

B_B = basis of term calculation for the base currency (360 or 365)

B_V = basis of term calculation for the quote/variable currency (360 or 365)

Example

What is the 6-month outright rate of USD/CHF (184 days)?

USD/CHF spot: 1.5000

interest rates: USD (base currency) 6 %

CHF (quote currency) 2 %

In order to compute the outright rate, you need

- ▶ the spot rate
- ▶ the number of days
- ▶ the interest rates for both currencies.

$$O = 1.50 \times \frac{1 + \left(0.02 \times \frac{184}{360}\right)}{1 + \left(0.06 \times \frac{184}{360}\right)} = 1.4702$$

Compare the result with the rate, which was derived from the cash flows on the previous page. Both rates are **1.4702**.

Premium/Discount

If the outright rate is lower than the spot rate, the base currency is at a discount.

If the outright rate is higher than the spot rate, the base currency is at a premium.

Rules for premium/discount

If a currency is at a premium or discount depends on the interest rates

interest rate base currency < interest rate quote currency → premium
interest rate base currency > interest rate quote currency → discount