

# Foreign Exchange Outright - Cross - Split Swap Cost From Spot Reference Rate

## PURPOSE

To show illustration of foreign exchange outright by cross currency - split swap cost from spot reference rate.

## OVERVIEW

- i. Component of Gain/Loss split between FX effect and swap point effect during period end.
- ii. Settlement amounts are journalled across multi-currency cash clearing accounts in the general ledger.

## TRANSACTION DETAILS

Accounting Base Ccy
Trade ID
Trade Date
Value Date
Transaction
Sell Ccy
Sell Amount
Buy Ccy
Spot Reference Rate
Forward Swap Points
Contract Rate
Buy Amount
USD

FRX1001
25-Mar-03
3-Apr-03
SELL (GBP)
GBP
-1,000,000.00
SGD
2.509940
-199.40
2.490000
2,490,000.00

## SUMMARY OF JOURNALS

ID	Date	Description
J1	31-Mar-03	Month end revaluation
J2	1-Apr-03	Reversal of Month end revaluation
J3	3-Apr-03	Settlement of Trade
J4	3-Apr-03	Settlement of Trade

### J1 **Month end revaluation**

TradeID	PostDate	B/P	Account	Ccy	Ccy Amt D/(CR)	Rate	Base	Base Amt D/(CR)	Line
FRX1001	31-Mar-03	B	FRX: Derivative Liability Fair Value	GBP	0.00	1.000000	USD	-9,116.91	J1a
FRX1001	31-Mar-03	P	FX - Unrealised Swap Losses	GBP	0.00	1.000000	USD	10,381.49	J1b

TradeID	PostDate	B/P	Account	Ccy	Ccy Amt D/(CR)	Rate	Base	Base Amt D/(CR)	Line
FRX1001	31-Mar-03	P	FX - Unrealised Gains - FX Trade	GBP	0.00	1.000000	USD	-1,264.58	J1c

**Note J1a: The FX revaluation Profit/Loss is analyzed as follows:**

### **SUMMARY**

Component of Gain/Loss	Ccy	Amount	Working/Reference
Due to Spot Ref Rate (Gain)	USD	1,264.58	= Z (Working 1)
Due to Swap Points (Loss)	USD	-10,381.49	= N - Z ( Balancing)
Total Reval'n P/L (Loss)	USD	-9,116.91	= N (Working 2)

**Working 1 Revaluation of Profit/Loss due to movement in the Spot Reference Rate:**

Transaction Ccy Amt	GBP	-1,000,000.00
SRR (Historical)	GBP/SGD	2.509940
Historical Counter Amount	SGD	2,509,940.00
SRR (31-Mar)	GBP/SGD	2.507750
Counter Amount on 31 Mar	SGD	-2,507,750.00
Change (Gain)	SGD	2,190.00
SGD to USD 31 Mar		0.577434
Gain/(Losses) in Base Ccy	USD	1,264.58

### **Working 2 Gross Revaluation Gain/Loss**

Forward Points at 31-Mar-03

Ccy	Description	Days	Bid	Offer	Mid
GBP	1 Week	7	10	12	11

	1 Month	30	25	27	26
SGD	1 Week	7	-46	-44	-45
	1 Month	30	-69	-67	-68

#### Interpolation of GBP forward points

7 days forward	11	A
Days	3	$A' = 31\text{-Mar-03 to } 3\text{-Apr-03}$
3 days forward	4.714285714	$B = A/7 * A'$
Spot Rate at 31-Mar-03	1.448060	C
Add Forward Points	0.000471	$D = B/10000$
Forward Rate	1.448531	$E = C + D$

#### Interpolation of SGD forward points

7 days forward	-45	A2
Days	3	$A2' = 31\text{-Mar-03 to } 3\text{-Apr-03}$
3 days forward	-19.28571429	$B2 = A2 / 7 * A2'$
Spot Rate at 31-Mar-03	1.731800	C2
Add Forward Points	-0.001929	$D2 = B2/10000$
Forward Rate	1.729871	$E2 = C2 + D2$

#### Computation of forward rate

SGD forward rate to USD	1.729871	$F = E2$
GBP forward rate to USD	1.448531	$G = E$
SGD forward rate to GBP	2.505773	$H = F * G$

#### Future Value Profit and Loss in Transaction Ccy GBP

Counter Ccy Amount	SGD	2,490,000.00	I
Cost	GBP	-1,000,000.00	J

Revalued	GBP	-993,705.41	$K = I / H$
Losses (FV)	GBP	-6,294.59	$I = J - K$

### Discounting Valuation Currency Method

Losses (FV)	USD	-9,117.91	$J = I * E$
-------------	-----	-----------	-------------

### Discount Rate

Ccy	Description	Days	Rate
USD	1 Week	7	3.123%
USD	1 Month	30	4.456%

### Interpolation of discount rate

7 days forward	3.123%	$K$
3 days forward	1.338%	$L = K / 7 * A'$
Discount Factor	0.999890763	$M = 1/(1+L)^{(3/365)}$

### Present Value Profit and Loss in base currency USD

Losses (PV)	-9,116.91	$N = J * M$
-------------	-----------	-------------

**J2**

### **Reversal of Month end revaluation**

TradeID	PostDate	B/P	Account	Ccy	Ccy Amt D/(CR)	Rate	Base	Base Amt D/(CR)	Line
FRX1001	1-Apr-03	B	FRX: Derivative Liability Fair Value	GBP	0.00	1.000000	USD	9,116.91	J2a
FRX1001	1-Apr-03	P	FX - Unrealised Swap Losses	GBP	0.00	1.000000	USD	-10,381.49	J2b

TradeID	PostDate	B/P	Account	Ccy	Ccy Amt D/(CR)	Rate	Base	Base Amt D/(CR)	Line
FRX1001	1-Apr-03	P	FX - Unrealised Losses - FX Trade	GBP	0.00	1.000000	USD	1,264.58	J2c

### **J3 Settlement of Trade**

TradeID	PostDate	B/P	Account	Ccy	Ccy Amt D/(CR)	Rate	Base	Base Amt D/(CR)	Line
FRX1001	3-Apr-03	B	Cash at Bank	SGD	2,490,000.00	0.581416	USD	1,447,724.92	J3a
FRX1001	3-Apr-03	B	FX Cash Clearing Account	SGD	-2,490,000.00	0.581416	USD	-1,447,724.92	J3b

**Note J3a:** The exchange rate on value date is 1.719940 (multiplier 0.581416). See Exchange Rates below. The rate is rounded to 6dp for display. Full precision is used in calculation.

### **J4 Settlement of Trade**

TradeID	PostDate	B/P	Account	Ccy	Ccy Amt D/(CR)	Rate	Base	Base Amt D/(CR)	Line
FRX1001	3-Apr-03	B	Cash at Bank	GBP	-1,000,000.00	1.455237	USD	-1,455,236.81	J4a
FRX1001	3-Apr-03	B	FX Cash Clearing Account	GBP	1,000,000.00	1.455237	USD	1,455,236.81	J4b

**Note J4a:** The exchange rate on value date is 1.455237. See Exchange Rates below. The rate is rounded to 6dp for display. Full precision is used in calculation.

### **J5 Settlement of Trade**

TradeID	PostDate	B/P	Account	Ccy	Ccy Amt D/(CR)	Rate	Base	Base Amt D/(CR)	Line
FRX1001	3-Apr-03	P	FX - Realised Gains - FX Trade	GBP	0.00	1.455237	USD	-4,081.54	J5a
FRX1001	3-Apr-03	P	FX - Realised Swap Losses	GBP	0.00	1.000000	USD	11,593.43	J5b
FRX1001	3-Apr-03	B	FX Cash Clearing Account	GBP	0.00	1.455237	USD	-7,511.89	J5c

**Note J5a: The FX revaluation Profit/Loss is analyzed as follows:**

### **SUMMARY**

Component of Gain/Loss	Ccy	Amount	Working/Reference
Due to Spot Ref Rate (Gain)	USD	4,081.54	Working 1
Due to Swap Points (Loss)	USD	-11,593.43	Balancing
Total Reval'n P/L (Loss)	USD	-7,511.89	Working 2

**Working 1 Revaluation of Profit/Loss due to movement in the Spot Reference Rate:**

Transaction Ccy Amt	GBP	-1,000,000.00
SRR (Historical)	GBP/SGD	2.509940
Historical Counter Amount	SGD	2,509,940.00
SRR (3-Apr)	GBP/SGD	2.502920
Counter Amount on 3-Apr	SGD	-2,502,920.00
Change (Gain)	SGD	7,020.00
SGD to USD 3-Apr		0.581416

Gain/(Losses) in Base Ccy	USD	4,081.54
---------------------------	-----	----------

## Working 2 Revaluation of Settled Amounts

Ccy	Amount	Rate	Base	Amount
GBP	-1,000,000.00	1.455237	USD	-1,455,236.81
SGD	2,490,000.00	0.581416	USD	1,447,724.92
		Gain/(Loss)		-7,511.89

### EXCHANGE RATES

The following rates were used for this illustration.

Spot rate

Date	USD to SGD	SGD to USD*	GBP to USD	GBP/SGD
31-Mar-03	1.731800	0.577434	1.448060	2.507750
3-Apr-03	1.719940	0.581416	1.455237	2.502920

\*Rates used for calculation are in full precision. Illustrated rates are rounded to 6dp.

### FREQUENTLY ASKED QUESTIONS

### RELATED INFORMATION

### CHANGE HISTORY

Date	By	Changes
8-Oct-2014	CS	Creation.
17-Jun-2016	RJ	Reformatted.
5-May-2020	LT	Re-formatting.