Article – Foreign Currency Transaction Risk Management

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INTRODUCTION

All organisations that invest in, sell into or source from economies which have a currency other than their domestic currency will be exposed to foreign currency (FX) risk. There are three main types of FX risk namely:

1) Translation - Impairment in Balance Sheet value of foreign assets/investments between year-end dates due to adverse foreign exchange rate movements.
2) Transaction – Transaction impairment as a result of adverse foreign exchange rate movements between the date of inception and completion.
3) Economic – Broad risk of reduced international competitiveness on which foreign exchange rates can impact significantly.

This article concentrates on managing FX transaction risk using Forward Exchange Contracts (FECs) and Currency Options.

Many organisations choose not to accept FX transaction risk and will endeavour to hedge to reduce their exposure thereto. Ideally, in the first instance organisations will attempt to manage FX transaction risk internally using mechanisms such as:

- Matching
- Netting
- Leading & lagging

If such mechanisms are not possible and/or fail to achieve acceptable hedging efficiency, an organisation will typically resort to external hedging mechanisms. These may include;

- Forward Exchange Contracts
- Money Market Hedges
- Currency Options
- Derivatives
- Currency Swops

ILLUSTRATION OF FORWARD EXCHANGE CONTRACTS AND CURRENCY OPTIONS

NG Limited is an Irish bus company. NG Limited has agreed to sell twenty second hand buses to a South African bus company for 200,000 ZAR (South African Rand) each. This transaction is expected of a non-recurrent nature. NG Limited and its subsidiaries have no other business transactions in South Africa. The buses will be transported today (1/1/09) and they will take approximately three month's to transport to Capetown. The South African bus company has agreed to pay NG Limited three months following receipt of the buses.

NG Limited has consulted its bankers who have quoted the following exchange rates and currency option exercise prices/rates.

Exchanges Rates	**ZAR/€**	
Spot **6 Month Forward**	**11.8** **40 cent discount**	**12.2** **50 cent discount**

Option Type	**Exercise Price**	**9 Month Premium***	**Contract Size**
ZAR Put	11.5	0.75	**100000 ZAR**

*The premium (quoted in €) is payable per 100 units of foreign currency.

NG Limited's management are concerned about the foreign currency risk associated with this transaction. They have asked you to:

1) explain the key stages in a FX risk management strategy
2) demonstrate how both a FEC and currency option would operate for this transaction
3) advise on the most appropriate hedging mechanism for this transaction.

Stages in Foreign Currency Risk Hedging Strategy

Stage1

NG Limited should in the first instance attempt to manage the risk using internal methods. As NG Limited has no other transactions in South Africa/involving the South African currency it has no opportunity to employ internal hedging mechanisms such as matching and netting. Likewise, leading or lagging is not possible as this a receipt of foreign currency i.e. not a payment being made by NG Limited.

Stage2

NG Limited will have to resort to external hedging mechanisms. Ideally, it will have a policy in place as to which external hedging mechanism/s can be employed. In this illustration let us assume that NG Limited's risk management policy is to hedge FX transaction risk using either FECs or currency options.

Stage 3
Consider the appropriateness of the hedging options available and implement the most efficient and suitable hedge.

Forward Exchange Contracts (FECs)
An organisation may enter into a FEC (for an arrangement fee) with a third party (normally a retail/investment bank) to ***buy/sell a stated sum of a stated currency at a state exchange rate on a state future date***. The forward rates that will apply to a Forward Exchange Contract (FEC) can be determined in a number of ways including;

- simply quoted by a bank
- by adjusting the spot rate by the requisite forward premium/discount
- by adjusting the spot rate for the differential between interest rates in the domestic and foreign economy (this method is not examinable)

If NG Limited is certain that the 4,000,000 ZAR will be received in 6 month's time (1/7/2009) then a FEC hedge would represent an appropriate hedging mechanism. NG Limited will contract with a bank to sell 4,000,000 ZAR on l/7/2009 at a forward rate of €1 = 12.7 ZAR. Thus, the contract would be executed guaranteeing NG Limited a receipt of €314.960.63 on 1/7/2009.

Details	**Amount**	**Forward Rate**	**€ Value**
Receipt	**4,000,000ZAR(20*200,000)**	**12.7 (12.2 + .50)**	**314,960.63**

Thus, NG Limited has achieved certainty of exchange rate in relation to this transaction and is no longer exposed to any foreign currency transaction risk associated therewith.

Appropriateness of FEC for the transaction
It should be noted that such a contract will have to executed. As this type of hedge is particularly rigid it should only be considered as a hedging mechanism when the amount and date of the future foreign currency receipt/payment is certain.

In the event that NG Limited entered into the above FEC and, for whatever reason e.g. late receipt of goods, there is a delay in receiving the ZAR payment then NG Limited will find itself in the position of being contracted to sell to the bank 2,000,000 ZAR on 1/7/2009, without having the 2,000,000 ZAR available (to sell) on that date. In that event NG Limited will have to purchase 2,000,000 ZAR at spot on 1/7/2009 in order to sell to the bank at the forward rate. When NG Limited eventually receives the 2,000,000 ZAR from the South African bus company, they will sell that currency to the bank at spot on the date of receipt. This possible scenario will leave NG Limited exposed to transaction risk on the residual receipt and will incur significant transaction charges. Thus, if NG Limited is uncertain as to the exact date of receipt it would be best advised to employ alternative external hedging mechanism's that will offer more risk management flexibility. Such alternatives include;

Money Markets – NG Limited could use the money markets to create a liability of 2,000,000 ZAR as at 1/7/2009. If the ZAR receipt is delayed then this liability would increase, and any resultant liability in excess of 2,000,000 ZAR could be repaid by buying ZAR at spot on the date on which the 2,000,000 ZAR is ultimately received (and used to pay off the 2,000,000 ZAR liability).

Currency Options – For a (significant) fee NG Limited could buy a put option to sell the bank 2,000,000 ZAR anytime between (American Option) when the option is purchased and the exercise date of the option. This hedging mechanism will operate as follows:

Currency Options
If NG Limited decides to purchase a currency option the premium (payable immediately) will cost €30,000 (2,000,000ZAR/100ZAR * €.75). This will guarantee NG Limited a minimum of €317,826.09 anytime between now and in nine month's time (1/10/2009). This is determined as follows;

Currency & Exercise Date	**Amount of Foreign Currency**	**Exercise Price**	**Options Purchased**	**€ Value**	**Commission**	**Final € Receipt/Cost**
9 Month ZAR Put	**4,000,000 ZAR**	11.5	40	347,826.087	-30,000	317,826.087

On the future date of the receipt of the SA Rand, if the buy spot rate is preferable to the option exercise price/rate then the option would be described as "out of the money". In this case NG Limited will let the option lapse and sell the SA Rand at spot on the date of receipt for a sum in excess of €317,826.

On the future date of the ZAR receipt if the option exercise price/rate is preferable to the spot rate the option would be described as "in the money". In this case NG Limited will exercise the option yielding a guaranteed receipt of €317,816.

Limitations of Currency Options
Whilst currency options offer flexibility it should be appreciated that there are drawbacks related thereto including:

- they can be expensive (perhaps prohibitively so), particularly over the counter (OTC) options
- the premium must be paid immediately and whether or not the option is ultimately exercised
- standardised (exchange traded) options may not achieve a perfect hedge for a transaction (if not exactly divisible by the standardised option size) resulting in some residual foreign exchange risk
- standardised (exchange traded) options are not available in all world currencies

Recommendation of FX Hedging Mechanism
As there is some doubt of the exact date on which the buses will be received by the South African customer, then the American currency option offers flexibility to;

- exercise the option at any date up to the final exercise date
- choose whether to sell at spot or at the option exercise rate on the actual date of receipt.