**Hedging Transaction Exposure**

Suppose Volkswagen wants to build a new plant in Germany and they open bids to the construction firms with the bids to be made in Euros.

A U.S. firm enters its bid as 100 million Euros which is $122 million at a spot rate of 1.22 $/€.

One month later, Volkswagen informs the U.S. firm that it has won the bid. However, by now the XR is at 1.15 $/€ so the $100 million euros to be paid is now worth $115 million.

Note that the U.S. firm now has an asset in euros.

The U.S. firm takes 8 months to build the plant and Volkswagen pays them 3 months after that. This means that the XR can move even more. This is an example of transaction exposure.

One way to eliminate transaction exposure is to match your assets and liabilities in the same currency. In this case, the U.S. firm could plan to pay in euros for building supplies and workers’ wages, so when the euro depreciates, the dollar cost of the building goes down too.

If a firm chooses to hedge its transaction exposure, there are three ways it can do so that we will examine.

1. Forward Contract Hedge (or Futures Contract)
2. Money Market Hedge
3. Options Hedge

With forward contracts, if you have an asset such as a receivable in a foreign currency, you must create a liability – meaning you contract to sell 100 million euros in one year. This locks in a rate and guarantees that you will get a certain amount of dollars for the 100 million euros you will be paid.

A futures contract works the same way.

Forward contracts are typically with banks and can be individually tailored.

Futures contracts are entered into on an exchange and are standardized

Money market hedges use interest rates. Again, you want to create a liability to offset your asset. This means you must create a situation where you owe 100 million euros in a year.

Borrow \_\_\_\_ euros now so that the amount due with interest will be 100 million euros.

Assume that the interest rate is 5%. Borrow the present value of 100 million euros discounted at 5%.

PV = FV = € 100 million = € 95.238 million

 (1+r)t 1.05

Convert the € 95.238 million to dollars at the current spot rate to lock-in your payment.

€ 95.238 million x 1.22 $/€ = $116.19 million that you have immediately.

There is no risk. In one year, you will be paid 100 million euros by VW and you use that to pay what you borrowed.

With an options hedge, you purchase an option to sell your 100 million euros for a specified XR. In this case, you would buy a put (an option to sell).

If the euro depreciates, you exercise the option to sell at the high price.

If the euro appreciates, you tear up the option and sell at the spot rate.

If your transaction exposure is a liability in one year rather than an asset, you want to do things just a bit differently.

With the forward contract, you want to create an asset, so you buy the foreign currency forward.

With the money market hedge, you also want to create an asset so you need to invest enough euros today to pay off your liability in one year. Here are the steps:

Convert dollars to euros and invest them for one year. Then use the proceeds to pay off the liability.

You lock-in at the spot rate of converting today.

If you don’t have the dollars today to convert, you need to borrow at the local interest rate.

With options, you need to buy a call (an option to buy). This gives you the option to buy the foreign currency at a locked-in price if need be to pay the liability.

Note that there are also currency futures options contracts. Here, if you buy a put, you have the option to go short in a currency futures contract. If you buy a call, you have the option to go long in a currency futures contract.