

Provided by
ACCA Research Institute



ACCA F9

Financial Management (FM)

财务管理

ACCA Lecturer: Sinny Shao





Part G: Risk Management——Foreign Currency Risk

1

Money market hedging

2

Foreign currency derivatives



Money Market Hedging

Money market hedging involves borrowing in one currency, converting the money borrowed into another currency and putting the money on deposit until the time the transaction is completed, hoping to take advantage of favorable exchange rate movements.

'manufacture' a forward rate by using the spot exchange rate and money market lending or borrowing



Money Market Hedging

Setting up a money market hedge for a foreign currency payment:

Suppose a British company needs to pay a supplier in Swiss francs in three months time. It does not have enough cash to pay now, but will have sufficient in three months time.

Step 1 Borrow the appropriate amount in sterling now.

Step 2 Convert the sterling to francs immediately at the spot rate.

Step 3 Put the francs on deposit in a Swiss franc bank account.

Step 4 When the time comes to pay the company:

- (a) Pay the supplier out of the franc bank account.
- (b) Repay the sterling loan.



Money Market Hedging

Setting up a money market hedge for a foreign currency receipt:

如果未来某个时间我们将收到一个foreign currency, 我们也可以采用类似的方式来进行对冲。

Step 1 Borrow an appropriate amount in the foreign currency today.

Step 2 Convert it immediately to home currency at the spot rate.

Step 3 Place this on deposit in the home currency.

Step 4 When the receivable's cash is received:

- (a) Repay the foreign currency loan.
- (b) Take the cash from the home currency deposit account.



Money Market Hedging

Forward market hedge or money market hedge?

两者为同类型的对冲方式

选择是主要标准为：收到现金：获得本币更多
付出现金：支付本币更少

Example:

Trumpton plc has bought goods from a US supplier, and must pay \$4,000,000 for them in three months time. The company's finance director wishes to hedge against the foreign exchange risk, and the three methods which the company usually considers are:

- Using forward exchange contracts
- Using money market borrowing or lending
- Making lead payments

The following annual interest rates and exchange rates are currently available:



Money Market Hedging

	US dollar		sterling	
	Deposit rate	Borrowing rate	Deposit rate	Borrowing rate
1 month	7%	10.25%	10.75%	14%
3 month	7%	10.75%	11%	14.25%

	Exchange rate per £1
Spot	\$1.8625 – \$1.8635
1 month forward	\$1.8565 – \$1.8577
3 months forward	\$1.8445 – \$1.8460

Which is the cheapest method for Trumpton plc? Ignore commission costs (the bank charges for arranging a forward contract or a loan).



Money Market Hedging

Choice 1: The forward exchange market

Trumpton must buy dollars in order to pay the US supplier. The exchange rate in a forward exchange contract to buy \$4,000,000 in three months time (bank sells) is $\$1.8445 = \text{£}1$.

The cost of the \$4,000,000 to Trumpton in three months time will be:
 $\$4,000,000 / 1.8445 = \text{£}2,168,609.38$

This is the cost in three months. To work out the cost now, we could say that by deferring payment for three months, the company is: Saving having to borrow money now at 14.25% a year to make the payment now, or avoiding the loss of interest on cash on deposit, earning 11% a year

The choice depends on whether Trumpton plc (a) needs to borrow to make any current payment or (b) is cash rich. Here, assumption (a) is selected, but (b) might in fact apply.

At an annual interest rate of 14.25% the rate for three months is $14.25/4 = 3.5625\%$. The 'present cost' of $\text{£}2,168,609.38$ in three months time is: $\text{£}2,168,609.38 / 1.035625 = \text{£}2,094,010.26$



Money Market Hedging

Choice 2: The money markets

Trumpton will pay \$4,000,000 and so it would lend US dollars.

It would lend enough US dollars for three months, so that the principal repaid in three months time plus interest will amount to the payment due of \$4,000,000.

(a) Since the US dollar deposit rate is 7%, the rate for three months is approximately $7/4 = 1.75\%$.

(b) To earn \$4,000,000 in three months time at 1.75% interest, Trumpton would have to lend now: $\$4,000,000/1.0175 = \$3,931,203.93$

These dollars would have to be purchased now at the spot rate of (bank sells) $\$1.8625 = \text{£}1$. The cost would be:

$\$3,931,203.93/1.8625 = \text{£}2,110,713.52$

By lending US dollars for three months, Trumpton is matching eventual receipts and payments in US dollars, and so has hedged against foreign exchange risk.



Money Market Hedging

Choice 3: Lead payments

Lead payments should be considered when the currency of payment is expected to strengthen over time, and is quoted forward at a premium on the foreign exchange market. Here, the cost of a lead payment (paying \$4,000,000 now) would be $\$4,000,000 \div 1.8625 = \text{£}2,147,651.01$.

Summary

	£
Forward exchange contract	2,094,010.26 (cheapest)
Currency lending	2,110,713.52
Lead payment	2,147,651.01



Foreign Currency Derivatives

Currency futures: standardised contracts for the sale or purchase at a set future date of a set quantity of currency.

Differences between futures and forwards:

Currency futures	Forward contracts
Standard contracts	Bespoke contracts
Traded on the open market (futures exchange)	Traded over the counter
Contract price in US dollars	Contract price in any currency offered by the bank
Flexible close out dates	Fixed date of settlement
Underlying transactions take place at the spot rate. The difference between spot rate and futures rate is settled between two parties.	Underlying transactions take place at the forward rate.
Cheaper than forwards	Relatively high premium required



Foreign Currency Derivatives

Advantages of futures:

- Transaction costs should be lower than other hedging methods.
- Futures are tradeable and can be bought and sold on a secondary market so there is pricing transparency, unlike forward contracts where prices are set by financial institutions.
- The exact date of receipt or payment of the currency does not have to be known, because the futures contract does not have to be closed out until the actual cash receipt or payment is made.

Disadvantages of futures:

- The contracts cannot be tailored to the user's exact requirements.
- Hedge inefficiencies are caused by having to deal in a whole number of contracts and by basis risk.
- Only a limited number of currencies are the subject of futures
- Unlike options, they do not allow a company to take advantage of favourable currency movements.



Foreign Currency Derivatives

Currency options:

Currency options protect against adverse exchange rate movements while allowing the investor to take advantage of favourable exchange rate movements. They are particularly useful in situations where the cash flow is not certain to occur.



Foreign Currency Derivatives

Drawbacks of currency options

- They have a cost (the 'option premium'). The cost depends on the expected volatility of the exchange rate, the choice of exercise rate and the length of time to the expiry date for the option.
- Options must be paid for as soon as they are bought.
- Tailor-made options (arranged over-the-counter with a bank) lack negotiability .
- Traded options are not available in every currency



Foreign Currency Derivatives

Currency swaps:

Currency swaps effectively involve the exchange of debt from one currency to another.

Benefits of currency swaps:

- Swaps are easy to arrange and are flexible since they can be arranged in any size.
- Transaction costs are low.
- The parties can obtain the currency they require without subjecting themselves to the uncertainties.
- The company can gain access to debt finance in another country and currency where it is little known.
- Currency swaps may be used to restructure the currency base of the company's liabilities
- A currency swap could be used to absorb excess liquidity in one currency which is not needed immediately.



Example

An investor plans to exchange \$1,000 into euros now, invest the resulting euros for 12 months, and then exchange the euros back into dollars at the end of the 12-month period. The spot exchange rate is €1.415 per \$1 and the euro interest rate is 2% per year. The dollar interest rate is 1.8% per year.

Compared to making a dollar investment for 12 months, at what 12-month forward exchange rate will the investor make neither a loss nor a gain?

- A €1.223 per \$1
- B €1.412 per \$1
- C €1.418 per \$1
- D €1.439 per \$1



Thank You!

