Chapter 23: International Finance

Foreign exchange

In the foreign exchange market every currency is priced in terms of other currencies. The foreign exchange rate is the price for a currency denominated in another currency.

The foreign exchange market, also called FX or forex, is a market in which curreinces are traded that has no physical location. This market operates 24 hours a day during the business week.

If a manager of a multinational is doing business with more than one country than trading currencies is needed. There are also other reasons to trade curriences but the focus is here on the reason in the former sentence.

Key players in the forex are very large investment banks such as the Citibank, the UBS and the Deutsche Bank. These banks trade for themselves and for their clients. There are also multinational firms that trade for themselves.

Risk

Trading currencies is subjected to the risk of fluctuations in the exchange rate.

The exchange rate of the dollar vs the euro is a floating rate; an exchange rate that changes constantly depending on the supply and demand for each currency in the market.

The supply and demand of a currency is drive by three factors:

1. Firms trading goods
2. Investors trading securities
3. The actions of central banks in each country

Because of changes in these factors, supply and demand change which leads to fluctations in the exchange rate. This creates an importer-exporter dilemma for firms in international markets.

There are two strategies that firms use to hedge this exchange rate risk:

1. Currency forward contracts: a contract that sets a currency exchange rate and an amount to exchange in advance. The exchange rate set in this contract is called the forward exchange rate; it applies to an exchange that will occur in the future.
2. Currency options: they give the holder the right but not the obligation to exchange currenyc at a given exchange rate. These options allow firms to ensure themselves against the exchange rate moving beyond a certain level.

Currency forward contracts are set to exchange in the future. The currency timeline indicates time horizontally by dates, as in a standard timeline, and currencies vertically, as in dollars and euros.

The exchange rate used to convert dollars to euros today is called the spot exchange rate.

The cash-and-carry strategy: a strategy used to lock in the future cost of an asset by buying the asset for cash today and storing (or carrying) it until a future date. It involves three transactions:

1. Borrow dollars today which a one-year loan at the dollar interest rate, r$.
2. Exchange dollars for euros today at the spot exchange rate
3. Deposit the euros for one year at the euro interest rate, r€.

The covered interst parity states that the difference between the forward and the spot exchange rates is related to the interest rate differential between the currencies. There are many managers that prefer to hedge options rather than forward contracts. This is because they want to benefit if the exchange rate moves in their favor. They also prefer options if the transaction they are hedging migth not take place.

Internationally integrated markets

Internationally integrated capital markets: when any investor can exchange currencies in any amount at the spot or forward rates and is free to pruchase or sell any security in any amount in any countrie at its current market prices. A necessary condition to ensure integrated capital markets is that the value of an investment does not depend on the currency used in the analysis.

Valuation

The difference between a domestic and a foreign project is that the latter will most likely generate cash flows in a foreign currency. In this case the manager has to determine the home currency value of the foreign currency cash flow.

In an internationally integrated capital market two equivalent methods for calculating the NPV of a foreign project can be used:

- Compute the NPV in the foreign currency and then convert it to the local currency at the spot rate
- Convert the cash flows of the foreign project into the local currency and then calculate the NPV of these cash flows.

To calculate the NPV of a project one must make a number of assumptions; that the international markets are integrated, that the exchange rate and the cash flows of the project are uncorrelated. The managers of the project might worry whether these assumptions are actually justified. In this case they can run an analysis to check.The law of one price can be used by the manager as a robustness check. If uncertainty in the spot exchange rate is not related to the foreign currency cash flow, then the foreign and domestic WACCs are related.

International taxation

Determining the corporate tax rate on foreign income is complicated because taxes must be paid to the host and home government. The amount of taxes a firm pays depends on how many profits are repatriated; refers to the profits from a foreign project that the firm brings back to its home country.

When a foreign project is a separately incorporated subsidiary of the parent company, the amount of taxes usually depends on the profits repatriated.

A corporation in the US pays the the tax that is highest, domestic or foreign, on its foreign project. Therefore, one should use the higherst of these two rates in project valuation.

Firms are able to lower their taxes by pooling multiple foreign projects and deferring the repatriation of earnings. The earnings of foreign projects can be pooled with those of the new project.

Segmented capital markets

Segmented capital markets are markets that are not internationally integrated. In these markets investors do not all have equal access to financial securities.

Markets for specific firm securities might be segmented. These differences in acces to the capital markets leads to the existence of currency swaps; a contract in which parties agree to exchange coupon payments and a final face value payment that are in different currencies.

The holder of the swap receives coupons in one currency and pays coupons denominated in a different currency. Swaps allow firms to reduce the exchange rate risk exposure between asset and liabilities while still making investments.

With a currency swap a firm can borrow in the market where its access to capital is best and then swap the coupon and principal payments to another currency the firm prefers to make the payment in.

The market for risk-free instruments may also be segmented. This can be the result of capital controls and foreign exchange controls that create barriers.

Many countries set limitations to their capital inflows or outflows. Their currencies may not be freely converted into dollars which creates a segmented capital market.

An important thing to note is that in a segmented capital market one country or currency has a higher rate of return than another countrie or currency when the two rates are compared in the same currency.

If the difference in return is the result of a market friction like a capital control, corporations can exploit this friction. This is done by setting up projects in the high-return currency/country and raisin g capital in the low-return currency/country.

However, such a strategy is not easy to implement since the difference in return quickly dissapears when corporations competed to use the strategy.

Capital budgeting

When you have a project with inputs and output that are in different currencies, the foreign cash flows are likely to be correlated with changes in the spot exchange rates. In order to value these projects correct one should value the foreign and domestic cash flows separately.