International Financial Management

Week One: Foreign Exchange Rates and the Spot FX Market

- Exchange rate
  - The price at which one currency can be exchanged for another currency
  - Eg, 1 AUD can be exchanged for 0.7238 USD, this quotation is written as 0.7238USD/AUD
  - CHF – Swiss Frac
  - GBP – British Pound
  - ZAR – South African Rand
  - CAD – Canadian Dollar
  - JPY – Japanese Yen
  - CNY – Chinese Yuan
- Banknote vs. Spot Market
  - Banknote market – travelling abroad and you need to buy small amounts of foreign currency, transaction happens immediately
  - Spot market/forward market – when firms, banks or other large institutions buy or sell foreign currencies
    - Spot market for foreign currency involves almost the immediate delivery of foreign currency, typical cash settlement is made within two business days after the transaction
- Exchange rate quotations
  - Y C/$ means $1 = y units of currency C
- Spot Rate quotations
  - FT quotes conversion
    - Foreign exchange rates can be quoted differently
      - When the denominator currency is the USD ($) the quotation is said to be in European terms
      - But the quotes for the British Pound, Irish Punt and the euro are quoted in American terms, the USD is the numerator currency
  - Direct vs Indirect terms
    - From a countries perspective, an FX rate is said to be in direct terms if the home currency is the pricing currency
      - 1 GBP = 1.8308 AUD
      - 1 USD = 1.2159 AUD
    - Indirect terms if the currency is the pricing currency
      - 1 AUD = 0.5462 GBP
      - 1 AUD = 0.8224 USD
- Foreign Exchange (FX) Markets
    - Players: corporations and indiv, FX traders and speculators, central banks
    - FX market is a dealer market. FX dealers are ready to trade from their own inventories
  - Retail – corporations, investors, indivs, international banks and their customers, nonbank dealers, FX brokers and their central banks
  - Wholesale (interbank) markets
    - Extremely liquid: the half-life of the dealer's position is only ten minutes
    - Much better rates than the retail market
    - About 100-200 banks worldwide stand ready to make a market in foreign exchange
    - There are FX brokers who match buy and sell orders but do not carry inventory, but only a few specialised brokering firms still exist
- The Bid-Ask Spread
  - The bid-ask spread represents the dealers expected profit

$$Percent\ spread = \frac{Ask\ Price - Bid\ Price}{Ask\ Price}\ x\ 100$$

  - Ask price is always higher than bid, A ahead of B, remember you always trade at a worse position, so divide by largest and times by smallest
  - Selling then you get the lowest price
  - Buying then you pay the highest price

    - Transaction costs
        - Bid-ask spread, when you buys something from a dealer you pay the *offer* (ask) price (higher price); when you sell something to a dealer you sell it at the *bid* price (lower price)
        - Transaction costs include: bid/offer spread, commissions, taxes (if applicable)
- Cross rates
    - Cross rate is a rate of exchange between two non-US dollar currencies, it is implied through the no-arbitrage condition
- Triangular arbitrage
    - Arbitrage refers to the opportunity of making positive profit with zero net investment
        - Implication: law of one price, that is one good has one price
    - Triangular arbitrage: if you can find that a quote between two currencies is different from the derived cross rate then you can engage in triangular arbitrage
- Spot foreign exchange Microstructure
    - Market microstructure refers to the mechanics of how a marketplace operates
    - The spot FX market is mainly a dealers market
    - The bid-ask spreads in the spot FX market
        - Increase with FX exchange rate volatility
        - Decrease with dealer competition
    - Private information is an important determinant of spot exchange rates
- Changes in foreign currency
    - Suppose the quote changes from 80c USD/AUD to 90c USD/AUD, then the AUD is more valuable relative to the USD, we say the AUD appreciates against the USD
    - In general, a rise in any change rate quote is an appreciation of the denominator current, and a depreciation of the numerator currency
    - Percentage Change
        - What is the percentage change of the AUD with respect to the USA, given the quote of 0.8 USD/AUD to 0.9 USD/AUD?

$$\frac{0.9 - 0.8}{0.8} = 12.5\%$$

        - Does this mean that the USD depreciates by 12.5%
        - NO this is called Siegel's Paradox
    - Siegel's Paradox
        - To calculate the percentage change of the USD with respect to the AUD, we need to convert he quotes first (from 1.25 AUD/USD to 1.11 AUD/USD)
        - The percentage change of the USD with respect to the AUD thus is

$$\frac{1.11 - 1.25}{1.25} = -11.1\%$$

- Trade weighted FX indexes: Australia
    - The Reserve Bank of Australia (RBA) publishes a Trade-Weighted Index (TWI) of the AUD periodically
    - Overall strength relative to trading partners