Supply and Demand Under a system of flexible exchange rates, the foreign exchange market responds to forces that shift the demand and supply curves for foreign exchange.

You need to know how to shift demand or supply curves in the foreign exchange market in response to changes in fundamental factors.

**Fundamental Market Forces (D & S shifters)**

- Aggregate Demand \( (AD_{US}/AD_{ROW}) \uparrow \Rightarrow \) $ depreciates  \( (AD_{US}/AD_{ROW}) \downarrow \Rightarrow \) $ appreciates
- Current Account Balance Deficit \( \Rightarrow \) K-outflow \( \Rightarrow \) $ depreciation  Surplus \( \Rightarrow \) K-inflow \( \Rightarrow \) $ appreciation
- Real interest-rate Differentials \( (i_{US} - i_{UK}) \uparrow \Rightarrow \) K-outflow \( \Rightarrow \) $ depreciation  \( (i_{US} - i_{UK}) \downarrow \Rightarrow \) K-inflow \( \Rightarrow \) $ appreciation
- Inflation Rates  \( (\pi_{US} - \pi_{ROW}) \uparrow \Rightarrow \) $ depreciates  \( (\pi_{US} - \pi_{ROW}) \downarrow \Rightarrow \) $ appreciates
- Real Output \( (Y_{US}/Y_{ROW}) \uparrow \Rightarrow \) $ appreciates  \( (Y_{US}/Y_{ROW}) \downarrow \Rightarrow \) $ depreciates
- Productivity \( (MP = \text{marginal product}) \) \( (MP_{ROW} - MP_{US}) \uparrow \Rightarrow \) $ Depreciation  \( (MP_{US} - MP_{ROW}) \downarrow \Rightarrow \) $ Appreciation
- Trade Policy ROW Barriers \( \Rightarrow \) $ Depreciation  US Barriers \( \Rightarrow \) $ Appreciation

**Three Time Horizons:**

- Short-run Dominated by transfers of financial assets
- Intermediate Run Governed by cyclical forces. (due to business cycle, macro policy changes)
- Long Run Regulated by flows of goods, services, and investment capital

**Three models of e/r determination**

**Purchasing Power Parity** Idea is that identical good should cost the same amount in all countries.

- **Absolute PPP Index** (Law of one Price)
  
  \[ r_{S} = \left( \frac{P_{0}}{P_{s}} \right)^{\frac{1}{\epsilon}} \]

- **Relative PPP Index**
  Prediction based on domestic & foreign Price index for common mkt. basket of goods.
  Given: \( P_{i} = \) today's price index, \( P_{0} = \) price index in base period, \( r_{0} = \) E.R. in base period
  
  PPP Predictions are accurate when:
  - Inflation differentials are large (i.e., double digit).
  - Time interval is long (several years, at a minimum).
  - Commodities used for price indexes are highly traded.

**Monetary Model**

Ratio of money supplies determines E.R. between them.

If: \( M_{d} = \) domestic money supply and \( M_{f} = \) foreign money supply,

Then

- \( M_{d} / M_{f} \uparrow \) ($ depreciation) and
- \( M_{d} / M_{f} \downarrow \) ($ appreciation)

**Asset (Portfolio Balance) Model**

Simple version with three assets:

- **M** = domestic money risk - domestic inflation, return - no interest (use for transactions)
- **D** = domestic bonds risk - default, price variation return - domestic interest rate
- **F** = foreign bonds risk - default, price variation, ER risk, return - i-rate difference, currency appreciation

Investors balance portfolio of asset holdings to maximize return, given risk tolerance.

Adjust asset holdings to respond to changes in interest rates and expected future exchange rates: \( (i_{d}, i_{f}, r_{S}^{s}) \)