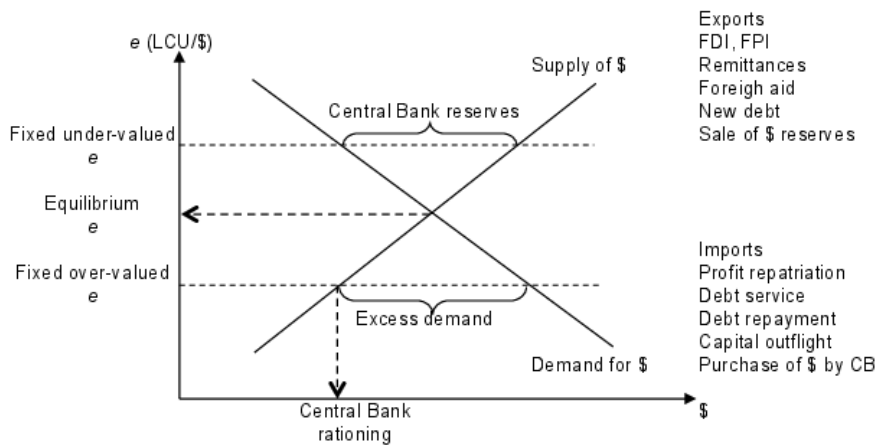


Section Chapter 10: International Finance

1. Tradeable good vs. Non-tradeable good:

- (a) **Tradeable good:** Domestic price is equal to border price, plus or minus tariffs and subsidies. $p^d = ep^{\$}(1 + t)$. Market equilibrates by quantity adjustment
- (b) **Non-tradeable good:** Domestic price is unrelated to the world price, because international trade is infeasible (services, housing) or limited in quantity by trade policy (quotas). Market equilibrates by price adjustment.

2. Nominal Exchange rate: Rate at which currencies are exchanged in the market, usually denoted by e . Price of the dollar (or other currency), in terms of the local currency. $e = \frac{LCU}{\$}$.



- (a) Appreciation or revaluation: e decreases= local currency becomes stronger.
- (b) Depreciation or devaluation: e increases= local currency becomes weaker.

3. Real Exchange Rate: We want to define an exchange rate separated from the effect of inflation levels on the nominal exchange rate. Since the real demand for the country's currency is equal to the demand for the goods that can be purchased with that currency, the real exchange rate is the *border price* of internationally traded goods in real terms - i.e. in terms of goods rather than in terms of dollars. To do this, we use as the local price level among non-tradeable goods as the **numeraire** (the unit in terms of which the RER is measured).

$$RER = \frac{e}{p^{LCU}/p^{\$}} = \frac{ep^{\$}}{p^{LCU}} = \frac{\text{price of tradeable goods}}{\text{price of non-tradeable goods}} = \frac{p_T^b}{p_{NT}} = \frac{eWPI^{\$}}{CPI^{LCU}}$$

4. **Exchange Rate Regimes:** Each regime can only achieve two of the three policy goals: exchange rate stability, freedom of capital movements, or monetary autonomy.

(a) **Flexible (floating)** exchange rate is market-driven based on supply and demand for foreign exchange (i.e. dollars). Achieves freedom of capital movements and monetary autonomy, but exchange rate fluctuates day to day.

i. Supply is driven by exports, FDI, FPI (foreign portfolio investment), remittances, foreign aid, borrowing, etc.

ii. Demand is driven by imports, debt repayment, capital outflows, etc.

(b) **Fixed/pegged** exchange rate (**capital controls**): Government sets an e higher or lower than the market determined exchange rate. The central bank (CB) intervenes in the market to maintain its chosen exchange rate. Achieves stability, but capital controls are necessary so that these CB interventions do not interfere with monetary policy.

i. **Overvalued exchange rate:** Helps keep imports cheap. CB sells \$, so ability to sustain this exchange rate depends on foreign exchange reserves. Alternatively, CB may set quota limits on the amount of foreign exchange that citizens can purchase. Often pursued by governments with high import dependence in politically sensitive commodities such as energy and food. Countries also end up with overvalued exchange rates if they set a peg and then continue to have high domestic inflation but don't want to devalue because of the signal it sends to investors.

ii. **Undervalued exchange rate:** Helps promote export competitiveness- strategy of **Neomercantilism**. CB buys \$. Capital controls are necessary to limit the amount of foreign exchange inflows so that the CB does not have to continue purchasing dollars indefinitely, since the sales of LCU will eventually lead to inflation. (ex. China).

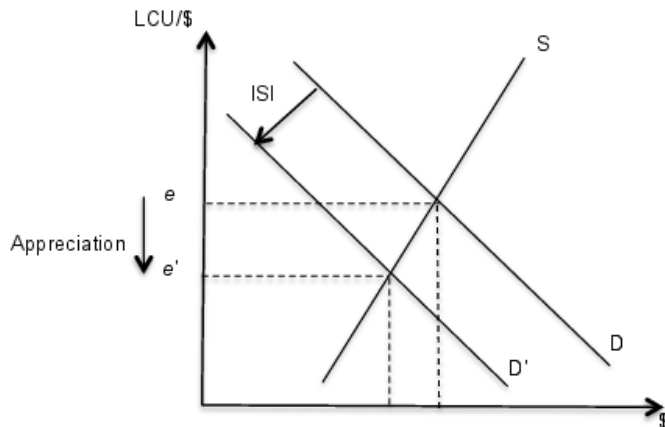
iii. **Stability:** a stable exchange rate is good for trade and FDI since it reduces uncertainty. While a fixed exchange rate is free of the day to day fluctuations of the floating exchange rate, it is vulnerable to speculative attacks.

(c) **Dollarization/currency board:** When exchange rates become chronically unstable, some countries turn to Dollarization or a Currency Board that guarantees convertibility of the LCU into US\$ (or Euro) by fixing $e = \frac{kLCU}{US\$}$, where $k = 1$ means literal dollarization. Achieves stability without capital controls, but government gives up the ability to have an independent monetary policy.

5. **Consequences of changes in the RER:** The RER has important consequences on the fundamentals of the economy. Table 1 shows the effects of an appreciation of the RER ($\frac{p_T^b}{p_{NT}}$ falls). Who are the winners and losers of an appreciation of the RER?

	Change induced by appreciation
Impact on the production structure (Q_T, Q_{NT})	$Q_T \rightarrow Q_{NT}$
Impact on the consumption structure (C_T, C_{NT})	$C_T \leftarrow C_{NT}$
Impact on the structure of input use	$X_T \leftarrow X_{NT}$
Impact on imports (M) and exports (E)	$M \uparrow, E \downarrow$
Impact on the balance of trade = $E - M$	$BofT \downarrow\downarrow$

6. **Impact of ISI on the RER:** ISI by design decreases demand for imports, which, as seen above, decreases demand for foreign exchange. The figure below shows that this results in appreciation of the nominal exchange rate e . Therefore the real exchange rate $RER = \frac{ep^S}{p}$ also appreciates. For non-protected tradeable goods, recall that the border price is defined as: $P^b = eP^S$ (remember that the *border* price does not include the tariff). As e falls, the domestic price of non-protected imports falls, harming other import competing industries. The domestic price (cost) of non-protected exports must fall to compete internationally, harming exporters. For example, agriculture as either an export or import competing industry is often harmed by ISI strategies. Note that within the protected sector $P^d = eP^S(1 + t_M)$, so the overall effect on *domestic* prices in the protected sector is positive.

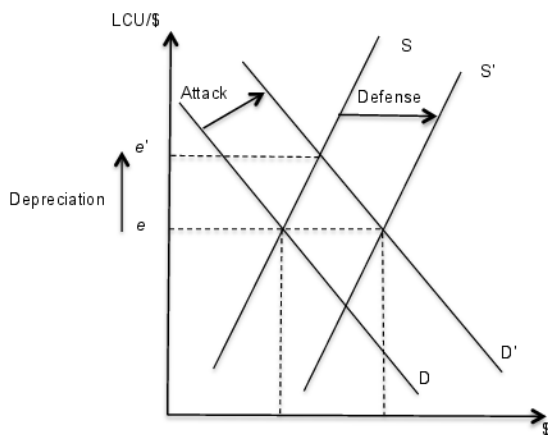


7. **Dutch Disease:** A short-term foreign exchange inflow- often, but not necessarily, due to resource discoveries or price jumps- leads to an increase in supply of foreign exchange. When

the nominal exchange rate appreciates, the real exchange rate also appreciates. As seen in (4), this makes other export sectors less competitive.

Policy responses : sterilize the exchange rate by depositing foreign exchange earnings abroad or investing abroad; also avoid the problem to start with by reducing exposure to short run capital inflows due to FDI by imposing taxes on dollar deposits and avoiding large increases in foreign aid or foreign debt.

8. **Speculative Attacks**: A danger faced by countries with fixed exchange rates that are perceived to be over-valued. Politicians may hesitate to devalue the currency because it sends a bad signal to foreign investors who will lose money. A devaluation also reduces the value of citizens' savings held in the local currency. However, the CB's ability to maintain the exchange rate is limited by its foreign reserves. Traders launch a speculative attack when they believe that the CB cannot maintain the exchange rate. As they trade against the currency (buying dollars) they increase demand for dollars, and the CB is forced to run down its reserves to counter the attack by increasing supply. If the CB runs out of reserves defending the currency, it will be forced to devalue, completing a self-fulfilling prophecy.



Policy responses : run down reserves and call for backup from the IMF and other friendly countries (IMF in the past has often taken advantage of this situation to impose **conditionality**); increase domestic interest rates to attract foreign capital: dangerous in that high interest rates might create a recession, thus the dilemma between devaluation (undermining confidence of investors) and recession