Chapter 3 : Open Economy Macroeconomics

EE312 (for Section 046402)

Read: Froyen Ch.14-15

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1 Balance of payments

Balance of Payments

- Records of all foreign economic transactions.
  - Trade in goods and services.
  - International transfers.
  - Capital movements (lending, investment)
- **Double-entry method:**
  - Foreign exchange earnings — credit (+).
  - Foreign exchange expenditures — debit (-)
  - Official reserve transactions — the opposite entry.

1. **The current account (CA)**

		Credit(+)	Debit(-)
	Merchandise Exports	+	
	Merchandise Imports		-
(1)	**Merchandise Trade Balance**	surplus	deficit
(2)	Service balance	+	-
(3)	Transfer	+	-
	CA Balance (1)+(2)+(3)	surplus	deficit

2. **The capital account**

	Credit(+)	Debit(-)
Public Borrowing Lending	+	-
Private Borrowing Lending	+	-
Investment Portfolio investment Direct investment	+	-
Capital Account Balance	surplus	deficit

Balance of Payments = Current Account (CA) + Capital Account (KA)

3. **Official reserve transactions**
   - Changes in official reserve assets at the central bank due to activities in the current account and the capital account.
     - Gold;
     - Special drawing rights (SDRs);
     - Foreign currencies;
     - Foreign government securities.
   - Existence of sovereign funds.

2 International Payment and Foreign Exchange Rate Market

2.1 Foreign Exchange Rate : Nominal V.S. Real

- The nominal exchange rate (e): the price of one unit of foreign currency in terms of domestic currency; rising 'e' means depreciation in local currency.
- P = the price of domestic goods in the unit of domestic currency.
- P*= the price of foreign goods in the unit of foreign currency.
- eP* = the price of foreign goods in the unit of domestic currency.
- The real exchange rate (rer: the terms of trade) is the price of foreign goods in terms of domestic goods:

$$\text{Real Exchange Rate} = \frac{eP^*}{P}$$

2.2 Exchange Rate Determination

- Long-run v.s. Short-run theory
- Institutional details and how a country run its exchange rate regime : Fix Exchange Rate Regime, Flexible Exchange Rate Regime and Managed Float Regime

2.2.1 Long-Run Theory : The Purchasing Power Parity (PPP)

- Accounting for the long-run movement of nominal exchange rate is often referred to the theory of purchasing power parity, i.e. PPP.
- The theorem is founded upon one the most important concepts in international trade theory so called "**the law of one price**"
- Law of One Price : an identical product should be priced the same across countries. A dollar should buy the same everywhere.
  - Holds under (i) zero transport cost and (ii) no trade barriers.
  - $P = eP^*$
  - If the condition doesn't hold, we are under the arbitrage condition.
    - If $eP_i^* > P_i$, domestic good-i is cheaper. Foreigners buy more domestic goods; P is rising
    - If $eP_i^* < P_i$, foreign good-i is cheaper. Domestic consumers buy more foreign goods; P is falling
  - The idea is extended to aggregate level.

$$\begin{aligned} eP^* &= P \\ e &= \frac{P}{P^*} \end{aligned}$$

P and P^* are consumer price index

- If domestic inflation rate exceeds the inflation rate of foreign country, domestic currency should be depreciating.
- In the long-run, productivity matters for the exchange rate movement.
  - Fast-growing productive economy (such as China) should have its national currency appreciate.
- The nominal exchange rate implied by PPP is treated as the long-run equilibrium rate.
- Deviation from PPP exchange rate.
  - Ex: Item X is an internationally-traded good.
    The US: the price of X is $10.
    Thailand: the price of X is THB200.
    The PPP rate: THB200/$10 = THB20/$1.
    But the nominal rate is THB30/$1.
    So the Thai baht is undervaluedby 33%!
- The Big Mac Index by the Economist

"Academic economists are taking burgernomics more seriously, chewing over the Big Mac index in almost a dozen studies. Now a whole book has been written about the index* by Li Lian Ong, of the International Monetary Fund. She says it has been surprisingly accurate in tracking exchange rates in the long term. But there are **some persistent deviations from PPP**. In particular, **emerging-market currencies are consistently undervalued**.

Differences in productivity are one explanation of this. **Rich countries have higher productivity than poor countries,** but their advantage tends to be smaller in non-tradable goods and services than in tradables. Because wages are the same in both sectors, non-tradables are cheaper in poorer countries. Therefore, if currencies are determined by the relative prices of tradables, but PPP is calculated from a basket that includes non-tradables, such as the Big Mac, **the currencies of poor countries will always look undervalued**."

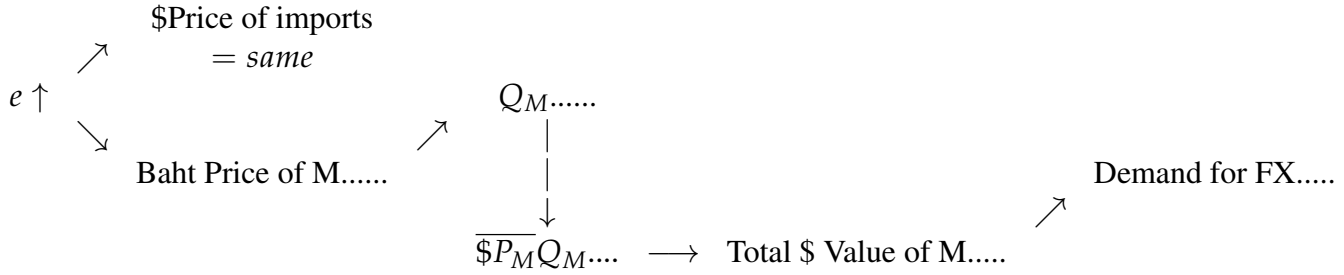
Source: McCurrencies, The Economist, 2003

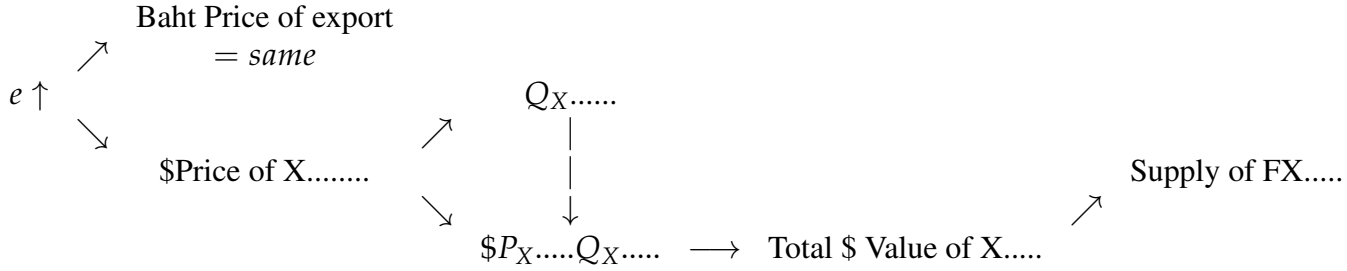
- PPP holds in the case of traded goods with low transport cost, e.g., crude oil.
- PPP may not hold with non-traded goods (due to physical and legal barriers), e.g., services.
- In the long-term, strong market forces push foreign and domestic prices towards PPP.
  - Physical and legal barriers tend to be overcome by consumers and firms.

2.2.2 Short-Run Theory : Exchange Rate Market

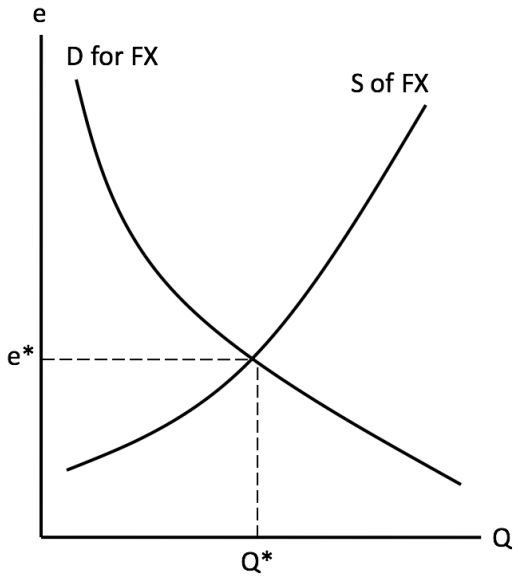
- e is exchange rate quoted as domestic currency per unit of foreign currency.

	Demand for FX	Supply of FX
Source		
	$(1+r)$.....$\frac{(1+r^*)e_{t+1}}{e_t}$	$(1+r)$.....$\frac{(1+r^*)e_{t+1}}{e_t}$
FX Intervention		
e	*Unclear effect of changes in 'e' on the capital outflow. * **Higher exchange rate causes a drop in the quantity of imports at the same FX price, so the FX value of imports falls.**	* **Effects of changes in 'e' on exports depend on the elasticity of foreign demand for exports .** * **Assume elastic foreign demand, the supply of FX has a positive slope.**





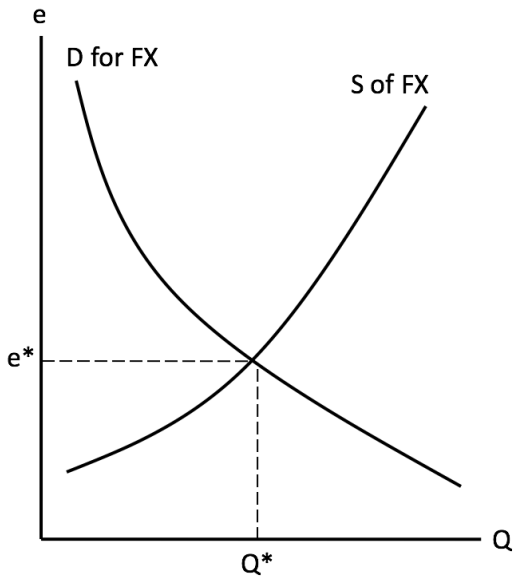
- If $\left|\varepsilon_X^d > 1\right|$ ⇒Effect of ΔQ_M.....Effect of ΔP ⇒ Total value of $ export .... ⇒ Supply of FX .....
- If $\left|\varepsilon_X^d < 1\right|$ ⇒Effect of ΔQ_M.....Effect of ΔP ⇒ Total value of $ export .... ⇒ Supply of FX .....



- Change in Exchange Rate $\Rightarrow$ Movement Along D and S curve
- Exchange Rate $\uparrow \Rightarrow$ Demand for FX .....
- Exchange Rate $\downarrow \Rightarrow$ Demand for FX .....
- Exchange Rate $\uparrow \Rightarrow$ Supply of FX .....
- Exchange Rate $\downarrow \Rightarrow$ Supply of FX .....
- Equilibrium Exchange Rate
- Change in the other factors determining D and S for FX $\Rightarrow$ Shift in D and S curve

2.2.2.1 Flexible Exchange Rate :

- **the exchange rates that are determined by market**

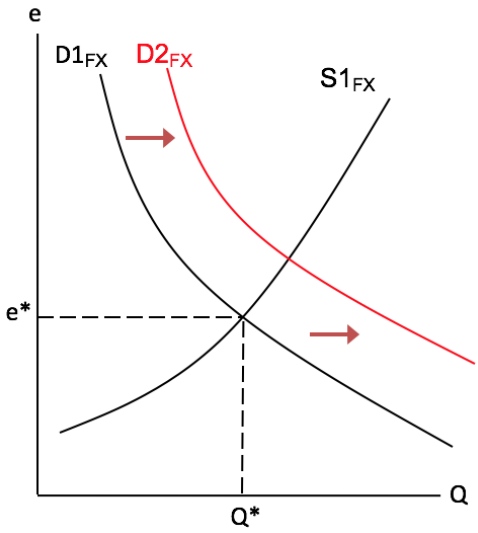


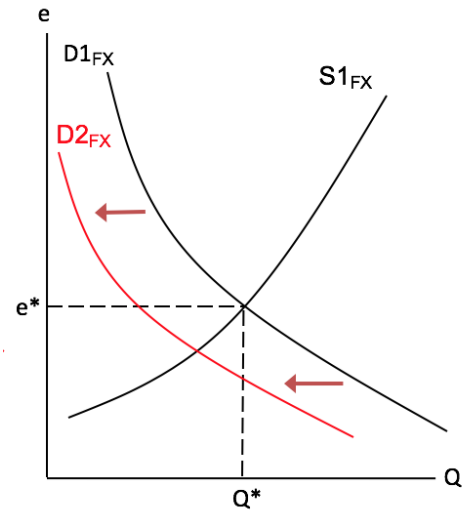
- Excess supply : BOP surplus
- Excesss Demand : BOP deficit
- Supply of FX = Demand for FX
- $X = X(Y^f, e, \text{other factors})$
- $M = Z(Y, e, \text{other factors})$
- BP = 0 when $e = e^*$ and FX market is in equilibrium
- Flexible Exchange Rate System : BOP always equal to zero.

Under flexible exchange rate regime, at equilibrium e*, $X - M + F = 0$.

Changes in Equilibrium : Shifts in Demand or supply

1. Demand Shifts





(a) At the orignal equilibrium exchange rate e_1^*, Demand for FX = Supply of FX. Balance of Payments ..... 0. FX flows in ..... FX flows out.

(b) Demand for FX shifts to the right, caused by

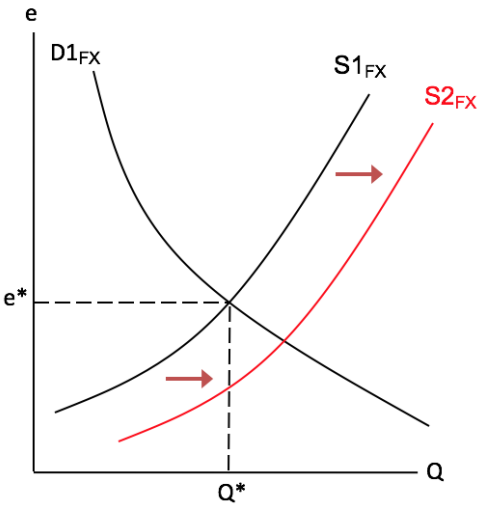
- Quantity demand for FX increases for all levels of e.
- At the original e^* ,
  there is excess demand for FX. Balance of Payments ..... 0.
  FX flows in ..... FX flows out.

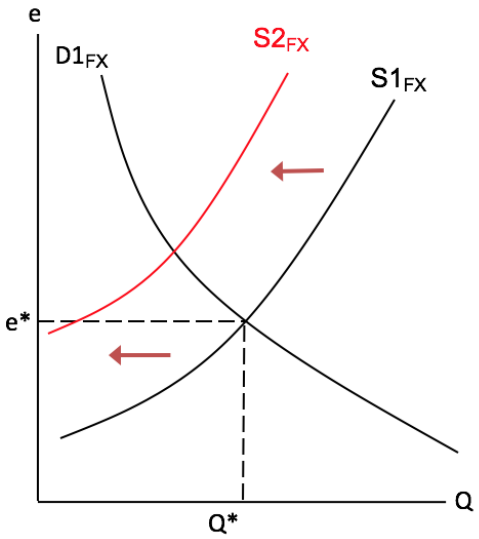
(c) There is excess demand for FX at e_1^*. Competition in the market will drive e ..... to e_2^*.

(d) As e increases, excess demand for FX .....

(e) At new e_2^*, D for FX ..... S of FX. Balance of Payments ..... 0. FX flows in ..... FX flows out.

2. Supply Shifts

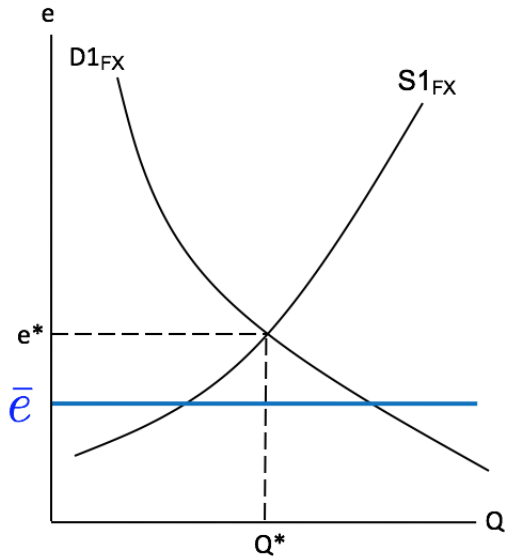




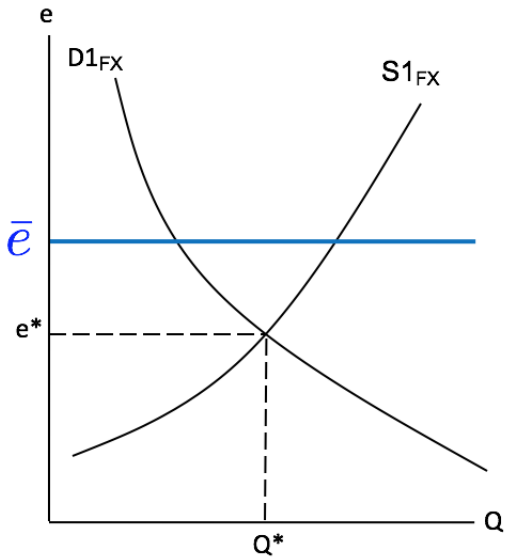
Examples : How does each of these situations affect Baht exchange rate?

- Thailand imports more US products
- Foreigners invest more in Thai stock market
- Domestic price of export goods (such as rice) decreases and Thailand rice export increase [export more rice].
- Foreign price of import goods (such as machine) decreases and Thailand value of machine import increase [import more machines].
- Changes in overall price level
  - Case of equal inflation in both countries
  - Case of inflation in only one country
  - Case of inflation at unequal rates
- Interest rate in Thailand increases so that it is more than interest rates in other ASEAN countries
- Interest rate in Thailand decreases so that it is more than interest rates in other ASEAN countries

2.2.2.2 Fixed exchange rate system: Exchange rates are determined by central bank (fix at a particular value) Authority makes an announcement in advance for a targeted level of exchange rate.



- The officeical exchange rate ($\bar{e}$) is below e^*.
- Domestic currency is overvalued.
- There is excess ..... FX. Balance of Payments ..... 0. FX flows in ..... FX flows out.
- Hence the Central Bank need to ..... FX
- Loss of FX reserve. BOP ..... 0.
- At ($\bar{e}$) , BOP ..... 0 and FX flows in ..... FX flows out.
- Devaluation of Domestic currency



- The officeical exchange rate ($\bar{e}$) is above e^*.
- Domestic currency is undervalued.
- There is excess ..... FX. Balance of Payments ..... 0. FX flows in ..... FX flows out.
- Hence the Central Bank need to ..... FX
- Accumulation of FX reserve. BOP ..... 0.
- At ($\bar{e}$) , BOP ..... 0 and FX flows in ..... FX flows out.
- Revaluation of domestic currency.

	Fix Exchange Rate	**Flexible Exchange Rate**
Advantage	No uncertainty inexchange rate.	Reflecting fundamental of economy
Disadvantage	Likely to invite a financial crisis; slow to respond to imbalances.	Prone to subject to high volatility; resulting in unnecessarilyhigh cost for hedging exchange rate risk.

- Managed float regime is more popularized regime.
- Occasional intervention if rate changes at a very dramatic pace.

3 Foreign sector and IS-LM-BP Framework

- Three interconnected markets

  1. Goods Market = IS
  2. Money Market = LM
  3. International Transation = BP

  Equilibrium takes place for (r, Y) that satisfy equilibrium in all three markets

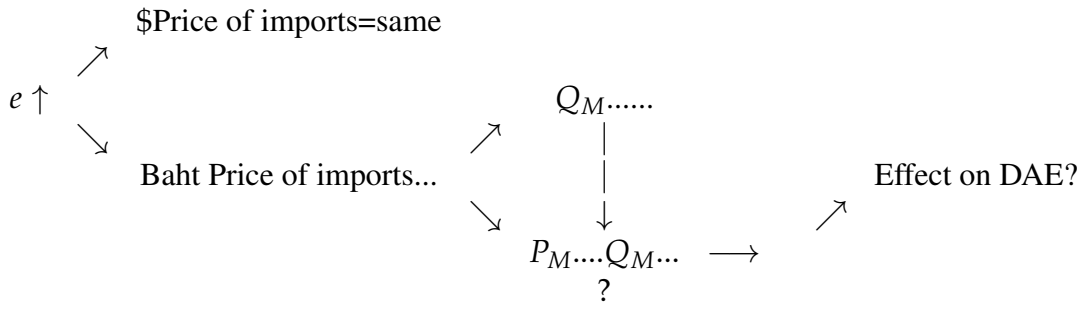
- X - M and F (net capital flow) have **no direct** effect on the money market (and LM curve).
- Net exports (X – M) is part of aggregate expenditure (DAE and IS curve).
  - An increase in (X –M) raises DAE and shifts IS right.
  - Exports are determined by foreign income (Y^f) and exchange rate (e).
  - Imports are determined by domestic income (Y) and exchange rate (e).

3.1 Product market equilibrium (IS)

$$\begin{array}{rcccl} C+S+T & = & C+I+G+(X-M) & = & Y \\ S+T & = & I+G+(X-M) & & \\ S+T+M & = & I+G+X & & \\ & = & & & \end{array}$$

Where $\frac{\partial M}{\partial Y}$.....0; $\frac{\partial M}{\partial e}$.....0, when $\left|\varepsilon_M^d\right| > 1$

and $\frac{\partial X}{\partial Y}$.....0; $\frac{\partial X}{\partial e}$.....0



- $e \uparrow \Rightarrow$If $\left|\varepsilon_M^d > 1\right| \Rightarrow P_M Q_M$.....$\Rightarrow$ DAE .....$\Rightarrow$ IS .....

(If $\left|\varepsilon_M^d < 1\right| \Rightarrow$Effect of ΔQ_M.....Effect of $\Delta P \Rightarrow$ Total value of Baht M .... $\Rightarrow$ DAE .....)

3.2 The BP line

3.2.1 Developing BP line

- Combinations of the real interest rate and output which keep the balance of payments in equilibrium.
- The balance of payments is in equilibrium when Balance of Payments = 0.

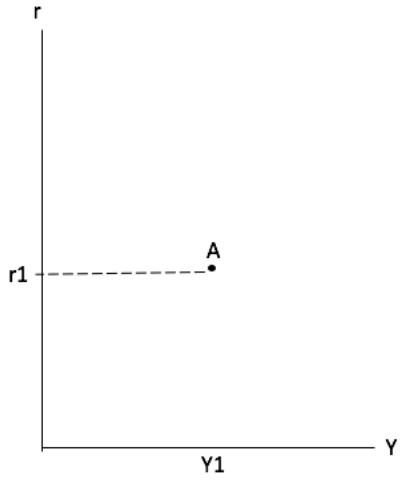
$$\begin{aligned} BP &= X - M + F \\ &= X(Y^f, e) + M(Y, e) + F(r - r^f) \end{aligned}$$

- where $\frac{dF}{dr} > 0$, given r^f.
- Small open economy: the country's economic activity has no influence on the world prices of goods.

BP equation : $X - M + F = 0$; where $\frac{dF}{dr} < 0$, given r^f.

$r \uparrow \Rightarrow$ Net Capital Inflow $F(r,\, r^f)$..... $\Rightarrow (X - M) + F = BP = 0 \Rightarrow M$ must..... $\Rightarrow Y$.....

- On BP : $X(Y^f,\, e) - M(Y,\, e) + F(r,\, r^f)$ = 0, BOP is equal to zero.
- Above BP : $X(Y^f,\, e) - M(Y,\, e) + F(r,\, r^f)$.....0, BOP .....
  - the same X-M as A (with same Y1)
  - $r > r^*$, has more F.
  - So at B, BP > 0.
- Below BP : $X(Y^f,\, e) - M(Y,\, e) + F(r,\, r^f)$.....0, BOP .....



3.2.2 Slope of BP line

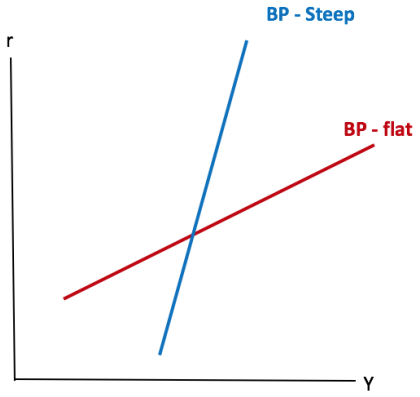
- The slope of BP line depends on the sensitivity of capital flow (F) with respect to the domestic interest rate (r), given the foreign rate (r^f).
  - Sensitivity = degree of capital mobility

  - High degree of capital mobility

    $r \uparrow \Rightarrow$ Net Capital Inflow F(r,r^f)$\uparrow$..... $\Rightarrow$ $(X - M) + F = BP = 0 \Rightarrow M$ must $\uparrow$ ..... $\Rightarrow$ $Y \uparrow$.....$\Rightarrow$ BP is .....

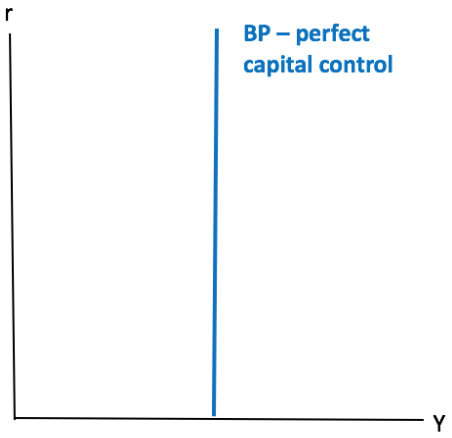
  - Low degree of capital mobility

    $r \uparrow \Rightarrow$ Net Capital Inflow F(r,r^f)$\uparrow$..... $\Rightarrow$ $(X - M) + F = BP = 0 \Rightarrow M$ must $\uparrow$ ..... $\Rightarrow$ $Y \uparrow$.....$\Rightarrow$ BP is .....

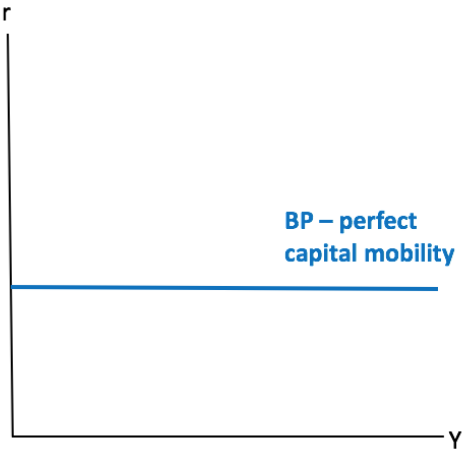


- High sensitivity = high degree of capital mobility = flat BP.
- Low sensitivity = low degree of capital mobility = steep BP.

- **Perfect capital control : BP is vertical**
- Whenever $r > r^f \Rightarrow$ ..... $\Rightarrow r$.....
- Whenever $r < r^f \Rightarrow$ .....$\Rightarrow r$.....
- At A, BP = 0.
- At B, BP .... 0, infinite capital inflow
- At C, BP.... 0 . infinire capital outflow



- **Perfect capital mobility : BP is horizontal**
- Whenever $r > r^f \Rightarrow$ infinite $capital$..... $\Rightarrow$ ..... domestic bonds$\Rightarrow r$..... until .....
- Whenever $r < r^f \Rightarrow$ infinite $capital$..... $\Rightarrow$ ..... domestic bonds$\Rightarrow r$..... until .....
- On BP, BP = 0.
- Above BP, BP .... 0, infinite capital inflow
- Below BP, BP.... 0 . infinire capital outflow



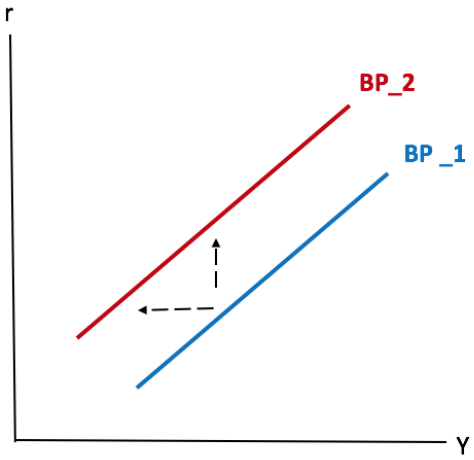
3.2.3 Shifting BP line

BP equation : $X - M + F = 0$; where $\frac{dF}{dr} < 0$, given r^f.

$r \uparrow \Rightarrow$ Net Capital Inflow $F(r, r^f)$..... $\Rightarrow (X - M) + F = BP = 0 \Rightarrow M$ must..... $\Rightarrow Y$.....

Leftward Shift

- ***** higher r^f, Y..... for all r, or r ..... for all Y. *****
- lower Y^f, Y..... for all r, or r ..... for all Y.
- lower $REER = \frac{eP^*}{P}$, or import ..... for all Y and export .....,
  Y..... for all r, r ..... for all Y.



3.3 Exchange rate on IS curve

- Higher exchange rate (rising e):
  - The $ price of exports is lower; more foreign demand for exports — exports (X) increases.
  - The domestic price of imports is higher; less demand for imports (assuming $\left|\varepsilon_M^d\right| > 1$) — imports (M) falls.
  - DAE increases; IS curve shifts right.

$$e \uparrow \begin{cases} \nearrow X \uparrow \\ \searrow M \downarrow \end{cases} \quad (X - M) \uparrow \quad \rightarrow \quad IS \text{ shifts to the right}$$

4 The Mundell-Fleming model

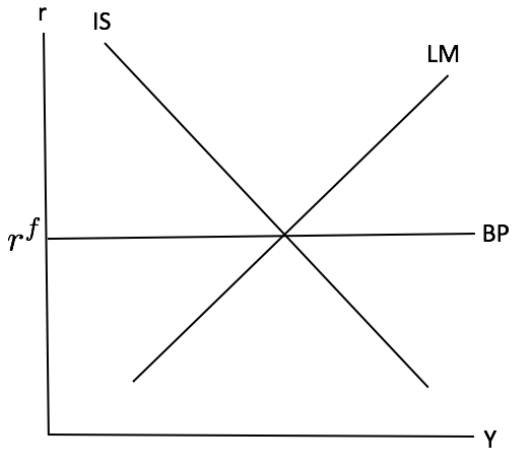
- Robert A. Mundell (1963), "Capital mobility and stabilization policy under fixed and flexible exchange rates," Canadian J of Economics and Political Science 29, 475-85.
- Marcus J. Fleming (1962), "Domestic financial policies under fixed and under floating exchange rates," IMF Staff Papers 9 , 369-79.

A small-open economy and the shape of BP line

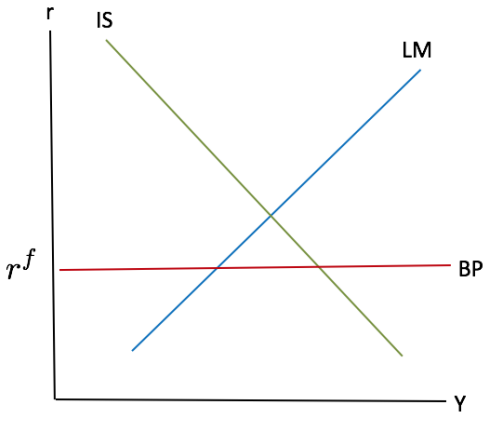
- The economy has no impact on the world.
- Perfect capital mobility; no barrier to capital movement.
- Assume price is constant.
- The domestic real interest rate is the same as the world rate (r = r^f).
- Any deviation causes huge capital movement. If r > r^f, huge capital inflow. If r < r^f, huge capital outflow.

Notions of equilibrium concepts

1. **Internal equilibrium** (IE) "r" and "y" clear goods and money market: IS-LM intersection
2. **External equilibrium** (EE) "r" and "y" clear the balance of payments: on the BP



- Internal Equilibrium : BOP 0



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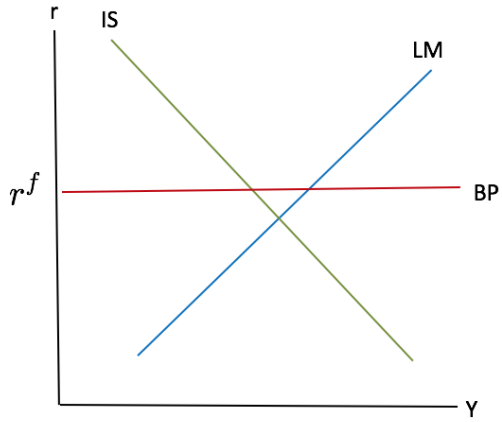


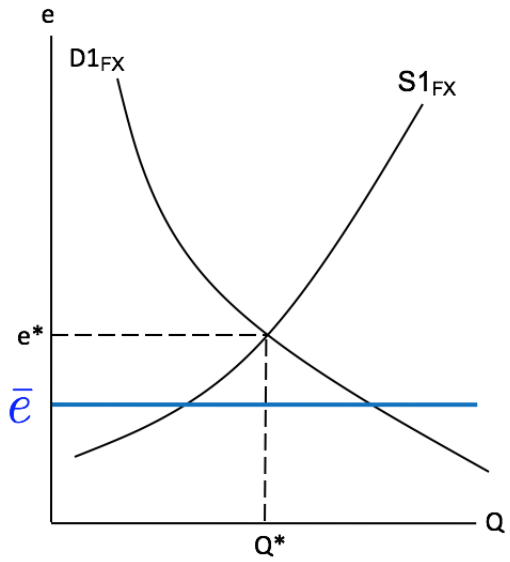
- **Given the Internal equilibrium, how does the economy reach the GE? Mechanism?**
  - Answer depends on the choice of exchange rate regime.
  - Under the fixed exchange rate, nominal exchange rate is fixed.
    - The adjustment mechanism will work through money supply.
  - Under the flexible exchange rate, nominal exchange rate is flexible.
    - "e" will directionally move to clear the imbalance of BOP.

5 Policy Effectiveness

5.1 Policy Effectiveness under the fixed exchange rate regime

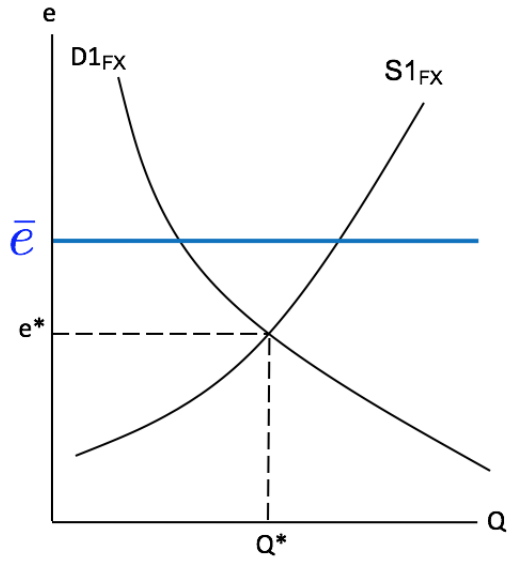
- **Exchange Rate Market and Money Supply**

Official rate e^f under e*

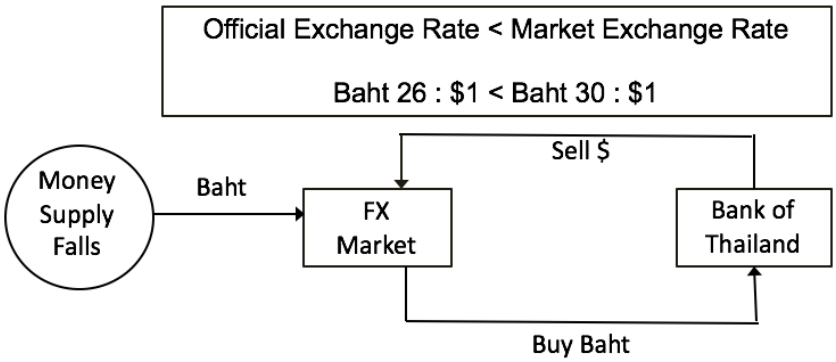


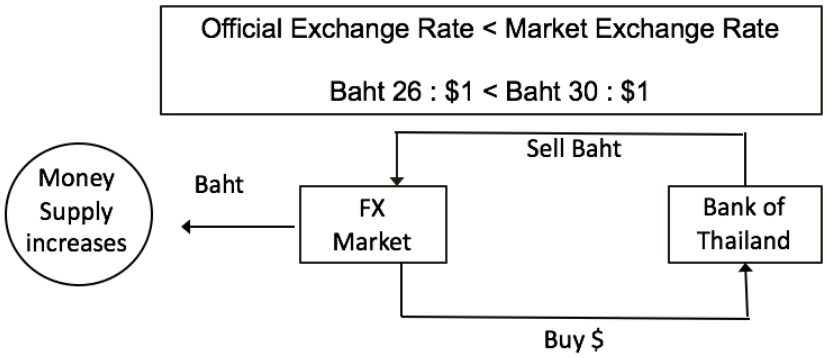
- Domestic currency is overvalued.
- Excess D for FX ; BP < 0.
- Central bank must sell FX to keep e^f.
- Domestic money supply falls.

Official rate e^f above e*



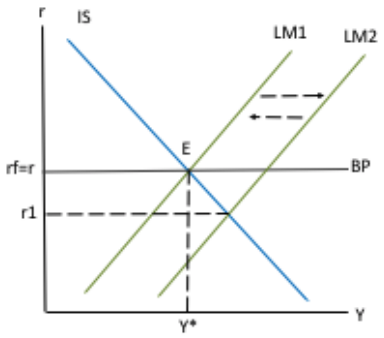
- Domestic currency is undervalued.
- Excess Supply for FX ; BP < 0.
- Central bank must buy FX to keep e^f.
- Domestic money supply rises.





$\bar{e} < e^*$,	Excess Demand	Central Bank sells FX	Money Supply $\downarrow$	BOP deficits
$\bar{e} > e^*$,	Excess Supply	Central Bank buys FX	Money Supply $\uparrow$	BOP Surplus

5.1.1 Monetary Policies under fixed exchange rate



- Initially the economy is at E. All three markets are clear. $\bar{e} = e^*$, real money supply is constant.

- Monetary policy: The central bank expands the money supply (LM shifts right).
- Domestic interest rate drops below the world rate (r^f) — huge capital outflow and BP < 0.
- More demand for FX; market exchange rate (e) tends to rise above the official rate.
- At new e^*, there is Excess Demand for FX
- The central bank must sell FX and buy domestic currency — the money supply decreases..
- LM shifts left.
- The domestic interest rate returns to r = r^f.
- BP = 0 at the same initial output (Y*).

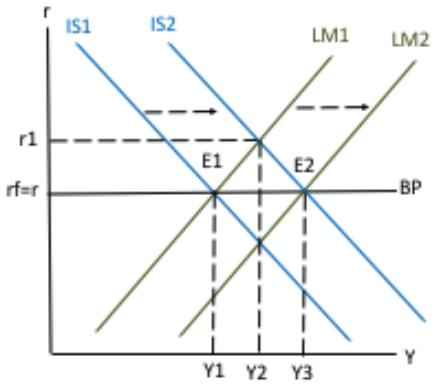
Notice:

1. **Sterilization policy**
   - The central bank may prevent the contraction of the money supply by putting the domestic currency back into circulation.
   - Buying bonds from the public.
   - Forcing domestic interest rate below r^f with larger output (Y > Y*).
   - But the CB will keep losing FX — limited FX reserves.
2. **Loss of money supply control**
   - The central bank cannot pursue an independent monetary policy under the fixed exchange rate regime.
     - If it increases Ms, the nominal exchange rate rises, forcing it to sell foreign currency and reduce Ms.
     - If it decreases Ms, e drops, forcing it to buy foreign currency and increase Ms.
   - An independent monetary policy is self-defeating.
3. **Impossible trinity**
   - Trilemma: it is impossible to conduct all three policies at the same time:
     (1) The fixed exchange rate system
     (2) Free capital movement
     (3) Independent monetary policy

   Ex: Mexican peso crisis (1994-95), Asian financial crisis (1997-98), Argentinian financial collapse (2001-2002).

Monetary policy is ineffective under fixed exchange rate.

5.1.2 Fiscal policy with fixed ER

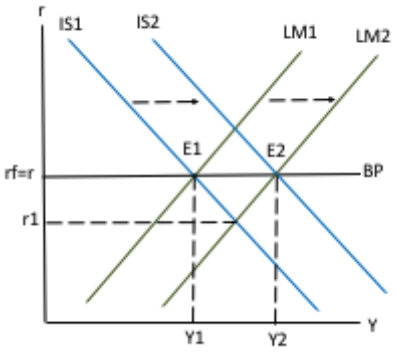


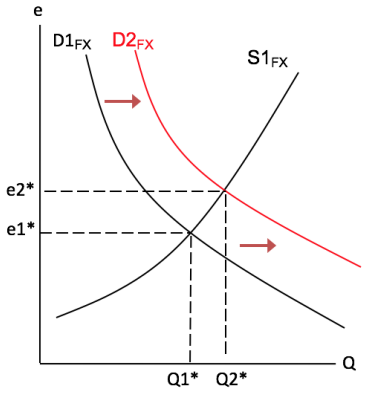
- Initially the economy is at E. All three markets are clear. $\bar{e} = e^*$, real money supply is constant.
- Government increases spending (G). IS shifts right.
- Aggregate expenditure and output increase (AE = Y), inducing more money demand (M^d).
- Domestic interest rate rises above r^f, causing huge capital inflow (BP > 0).
- More supply of FX forces the market exchange rate to fall below the official rate.
- Central bank buys FX and sells domestic currency. Money supply increases.
- LM shifts right.
- The domestic interest rate returns to r = r^f. BP = 0 at the same initial output (Y*).

Fiscal policy is effective under fixed exchange rate.

5.2 Policy effectiveness under flexible exchange rate regime

5.2.1 Monetary Policies under flexible exchange rate

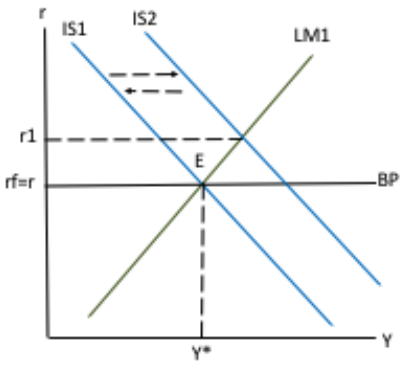


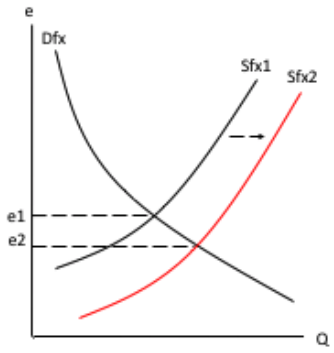


- Initially the economy is at E. All three markets are clear. $e = e1^*$, real money supply is constant.
- Monetary policy: The central bank expands the money supply (LM shifts right).
- Domestic interest rate falls below r^f. Huge capital outflow (BP < 0); more demand for FX and nominal exchange rate (e) rises.
- Net exports (X-M) and AE increase (IS shifts right).
- Output increases from Y1 to Y2.
- Higher income raises money demand.
- Domestic interest rate rises to r^f.
- At E2, BP = 0 with higher income and higher exchange rate.
- **More demand for FX**
  - Easy-money policy causes BP < 0 and more demand for FX.
  - The domestic currency depreciates.

Monetary policy is effecttive under flexible exchange rate regime.

5.2.2 Fiscal Policies under flexible exchange rate





- Initially the economy is at E. All three markets are clear. $e = e1^*$, real money supply is constant
- Government increases spending (G). IS shifts right.
- Aggregate expenditure (AE) and output (Y) increase.
- Money demand rises, raising domestic interest rate above r^f.— huge capital inflow and BP > 0.
- More supply of FX; exchange rate falls. Net exports and AE decrease. Output drops back; money demand falls.
- Domestic interest rate falls to r^f. BP = 0 at the same level of income (Y*).
- Exchange rate is lower (appreciation of domestic currency).
- Higher G results in BP > 0 and more supply of FX.
- The domestic currency appreciates.

Fiscal policy is ineffecttive under flexible exchange rate regime.

6 Shocks and Propogations

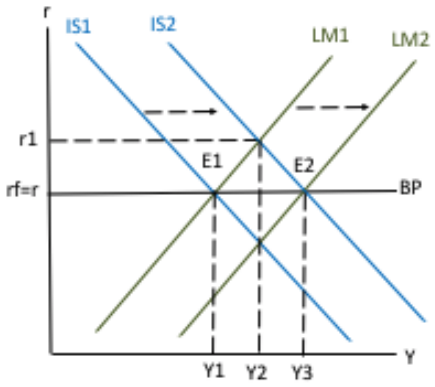
- Shocks :

1. Domestic shocks
   (a) Real shocks (IS)
   (b) Financial shocks (LM)
2. External shocks
   (a) Real shocks (IS)
   (b) Financial shocks (BP)

6.1 Domestic Real Shocks

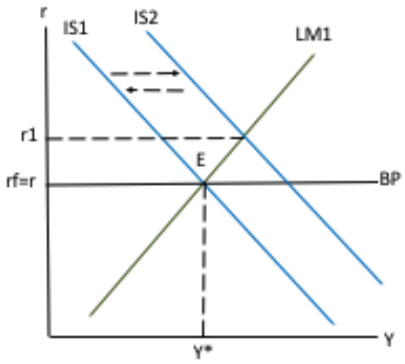
- IS shifts to the right : example , an improvement in business sentiment

Fixed Exchange Rate



Amplified/Insulated

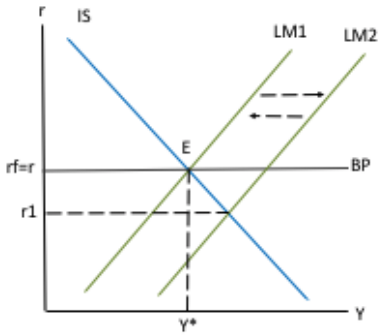
Flexible Exchange Rate



Amplified/Insulated

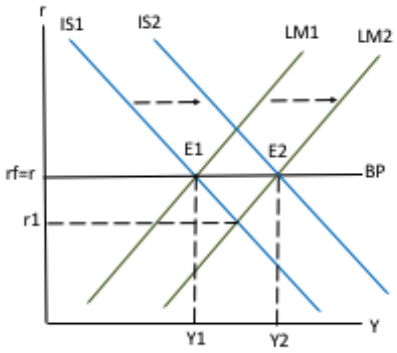
6.2 Domestic Financial Shocks

Fixed Exchange Rate



Amplified/Insulated

Flexible Exchange Rate

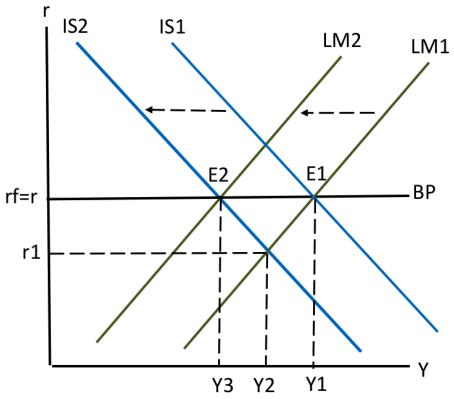


Amplified/Insulated

6.3 External Real Shocks

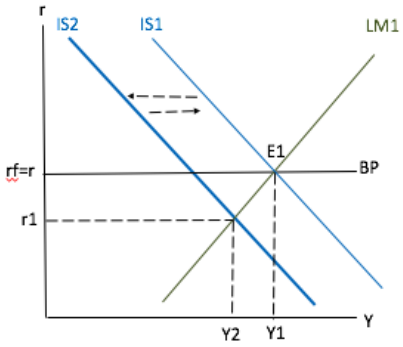
- World recession (falling world output) reduces foreign demand for exports (X).
  - Net exports (X-M) and DAE fall; IS shifts left.
  - Output drops and money demand decreases.
  - Domestic interest rate drops below r^f; huge capital outflow and BP < 0.
  - More demand for FX; central bank sells FX and buys domestic currency.

Fixed Exchange Rate



Amplified/Insulated

Flexible Exchange Rate

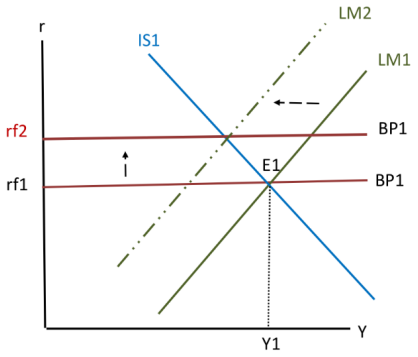


Amplified/Insulated

6.4 External Financial Shocks

- Fed raises FED fund rate

Fixed Exchange Rate



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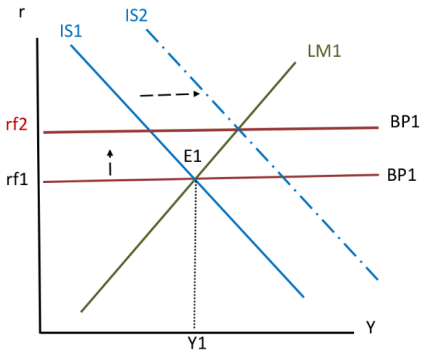
Flexible Exchange Rate

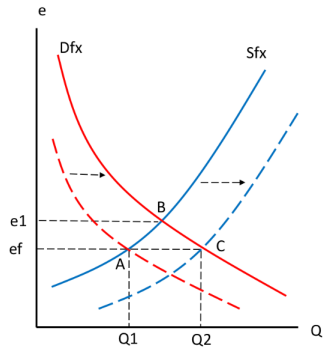


Amplified/Insulated

6.5 Policy in response to shocks

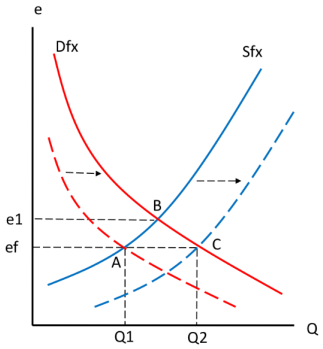
6.5.1 Fixed Exchange rate :Required foreign exchange maket intervention in response to shocks

- when $e > e^f$
- More Dfx; BP < 0; ef < e1
- Central bank must sell FX to keep e^f.
- Domestic money supply falls.
- Loss of official reserves = Q1Q2.



Currency devaluation

- The shock is so large that FX losses are huge against limited FX reserves.
- Central bank devalues the currency to prevent FX reserves loss.



Cost of devaluation

- Currency devaluation might reduces a current account deficit in the short run.
- Future shocks may cause the CA deficit to resume.
- The CA deficit is caused by real factors: Excessive government spending — spending cut.
- Costs of devaluation — foreign debt!

6.5.2 flexible ER regime : no intervention required

- Policy independence: Central bank can pursue internal policy independently.
- The FX market clears and BP = 0 by flexible FX adjustment.
- Insulation from real foreign shocks.
- External shocks affect the exchange rate w/o effects on domestic output.

- Net exports drop. AE and Y are falling.
- Md decreases; r < rf, capital outflows and BP < 0.
- Less supply of FX; e rises.
- Net exports increase; IS2 returns to IS1 and Y1.