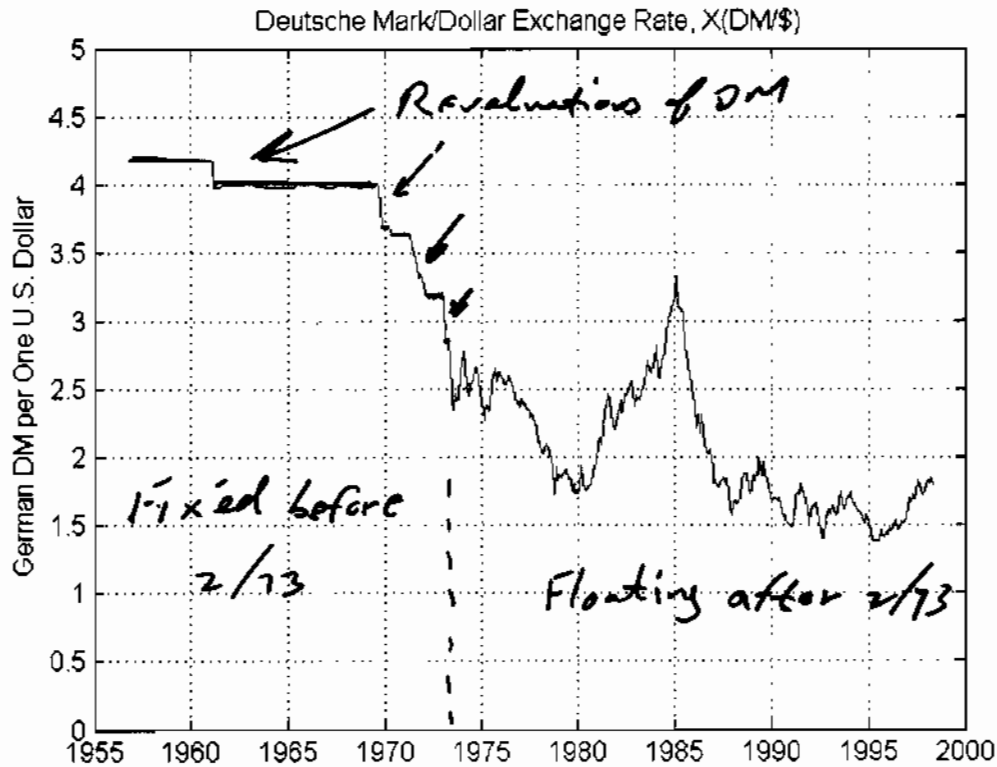


Floating vs Fixed Exchange Rates

M+B 32.33
cont.

DM/\$ Rate was fixed 1957-1973

- with revaluations by Germany, 1961, 1969, 1971, 1/1973
- allowed (by Germany) to float, 2/1973
- \$ floated relative to the other major currencies at same time.
- \$ continues to float relative to Euro since 1999.



Foreign Exchange (FX) Regimes (concl. M+B 32-33).

- Floating Exchange Rate
- Fixed Exchange Rate

Floating Exchange Rates

($\$$ Post-1973)

$X \rightarrow$ Market Rate X_m set by

1-3 Fundamental S+D

- 1. Trade S+D
- 2. Investment S+D
- 3. Transfer S+D

4. Speculative S+D

Anticipated fundamentals

No Official Intervention (#5)

in pure float.

Fixed Exchange Rates

($\$$ pre-1973 - Bretton Woods System)

Central Bank(s) use(s) Int'l Reserves (I) to hold X
at official rate X_0 .

Add(s) unlimited Official S or D (#5) to Market S+D (#1-4)

- Devaluation
a reduction in X_0 (Foreign/Dom)
- Revaluation
an increase in X_0 (Foreign/Dom)

Balance of Payments (BOP) Problems

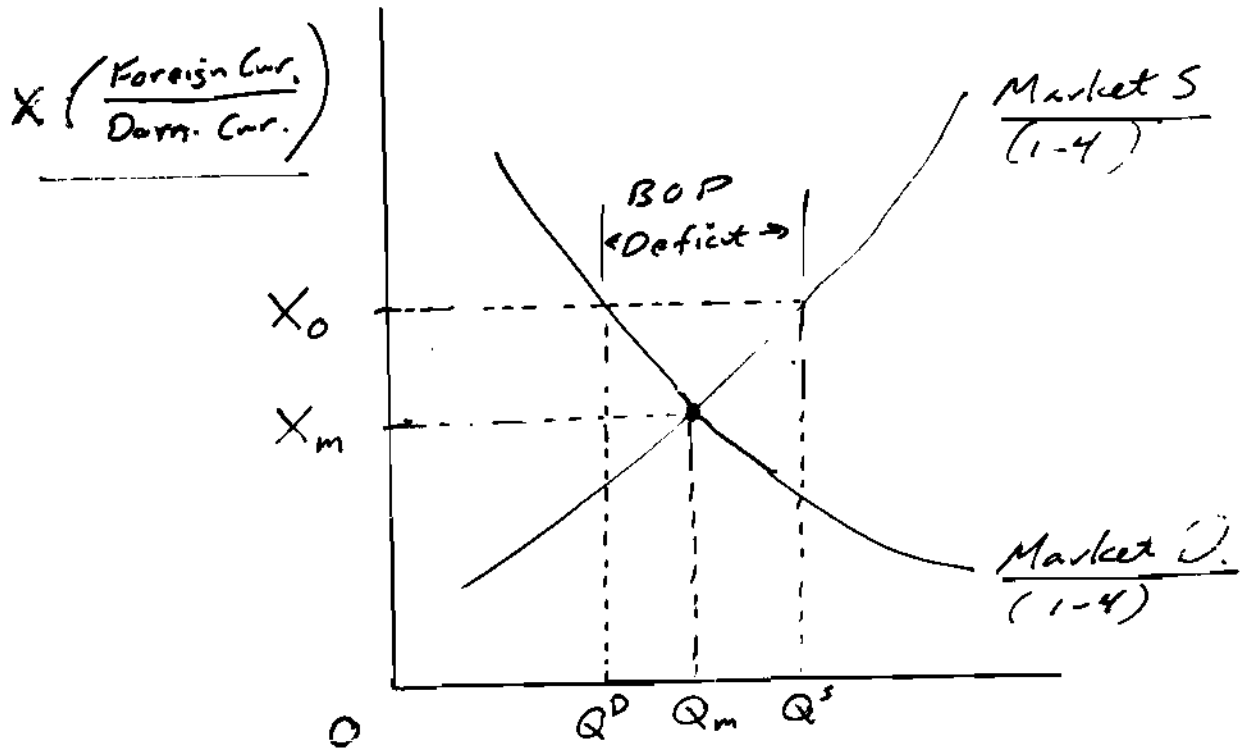
Since X_m is continually changing,
at any moment, either

- $X_o > X_m$ (Fn/Dom),
 - Overvalued Currency,
 - BOP Deficit Problem.
- -or $X_o < X_m$,
 - Undervalued Currency,
 - BOP Surplus Problem.

Overvalued Currency

$$\underline{X_0 > X_m}$$

(US pre-1968,
UK 1924-30,
China 1986-1994)



$$\underline{Q(\text{Dom}) / \text{yr.}}$$

$$\underline{\text{At } X_0 > X_m, Q^S > Q^D.}$$

→ Balance of Payments Deficit Problem.

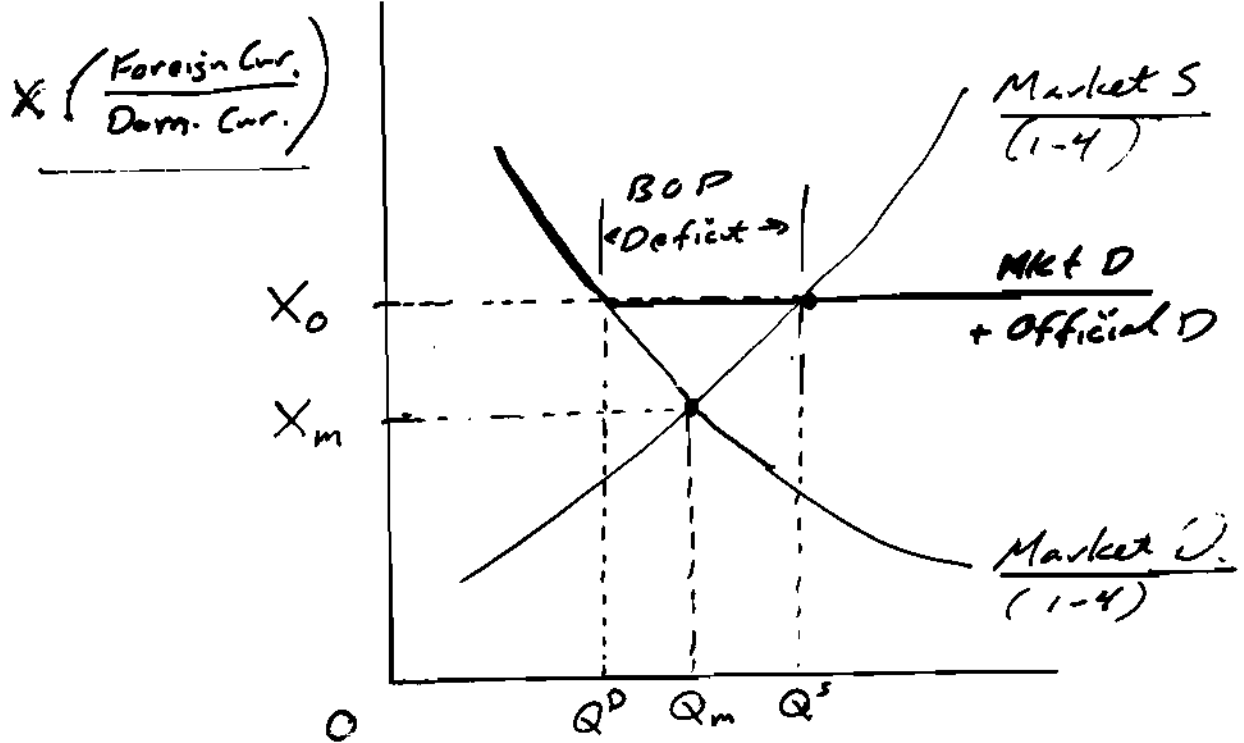
CB must intervene to maintain X_0

Adds Official D (#5) to Mkt D.
⇒ $I_{\text{Dom}} \downarrow$

Overvalued Currency

$$\underline{X_0 > X_m}$$

(US pre-1968,
UK 1924-30,
China 1986-1994)



Q (Dom) / yr.

$$\underline{\text{At } X_0 > X_m, Q^S > Q^D.}$$

→ Balance of Payments Deficit Problem.

CB must intervene to maintain X_0

Adds Official D ($\$5$) to Mkt D.

⇒ $I_{om} \downarrow$

CB Options with Overvalued Currency

1. Demonetize Deficit.

$I \downarrow, B \downarrow$

$\rightarrow M \downarrow, P_{dom.} \downarrow, \underline{X_m \uparrow \text{ to } X_0 \text{ by PPP}}$

"Specie-Flow Mechanism"

\Rightarrow Country gives up independent
M Policy, imports P.For.

But Deficit ends.

2. Sterilize Deficit

$I \downarrow, \Delta S = -\Delta I, \Delta B = 0$

(Defensive GMO)

\Rightarrow Deficit continues, $I \rightarrow 0$

\Rightarrow Speculation against Domestic Cur (154)

Supply $\uparrow, X_m \downarrow, \text{Deficit } \uparrow, I \downarrow$

3. Suppress Deficit

- Discourage imports (Reduces S of Dom. Cur.)
tariffs
quotas
Popular w/ Producers, bad for consumers.
- Encourage exports (Increases D for Dom. Cur.)
subsidies
Popular w/ Producers, bad for taxpayers.
- Discourage investment abroad
 - Interest equalization tax - early 60's
 - Capital Controls
- Exchange controls.

All turn terms of trade against domestic country.

4. Devolve to X_m

Encourages speculation. (before fact)

Makes X uncertain

5. Borrow Reserves

"Swap Agreement"

Must be repaid. - Problem
just postponed.

International Monetary Fund (IMF)

6. Let Foreign CBs fix X .

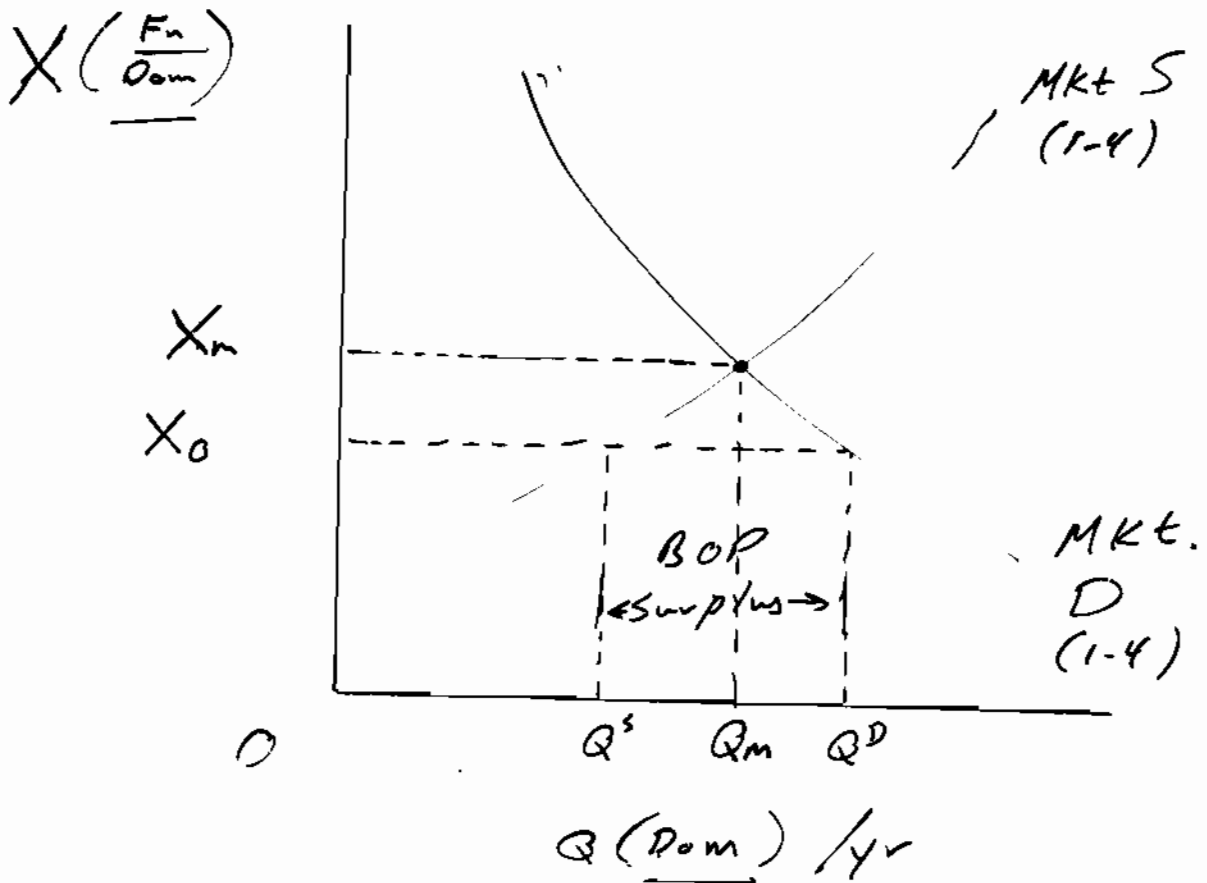
(US 1968)

→ Foreign Currency undervalued

$$\text{at } X_0 \left(\frac{Dom}{Fn} \right) = \frac{1}{X_0 \left(\frac{Fn}{Dom} \right)}$$

Undervalued Currency

$X_0 < X_m$ (Gov, Japan 1968-73, China 1994-present)



At $X_0 < X_m$, $Q^D > Q^S$.

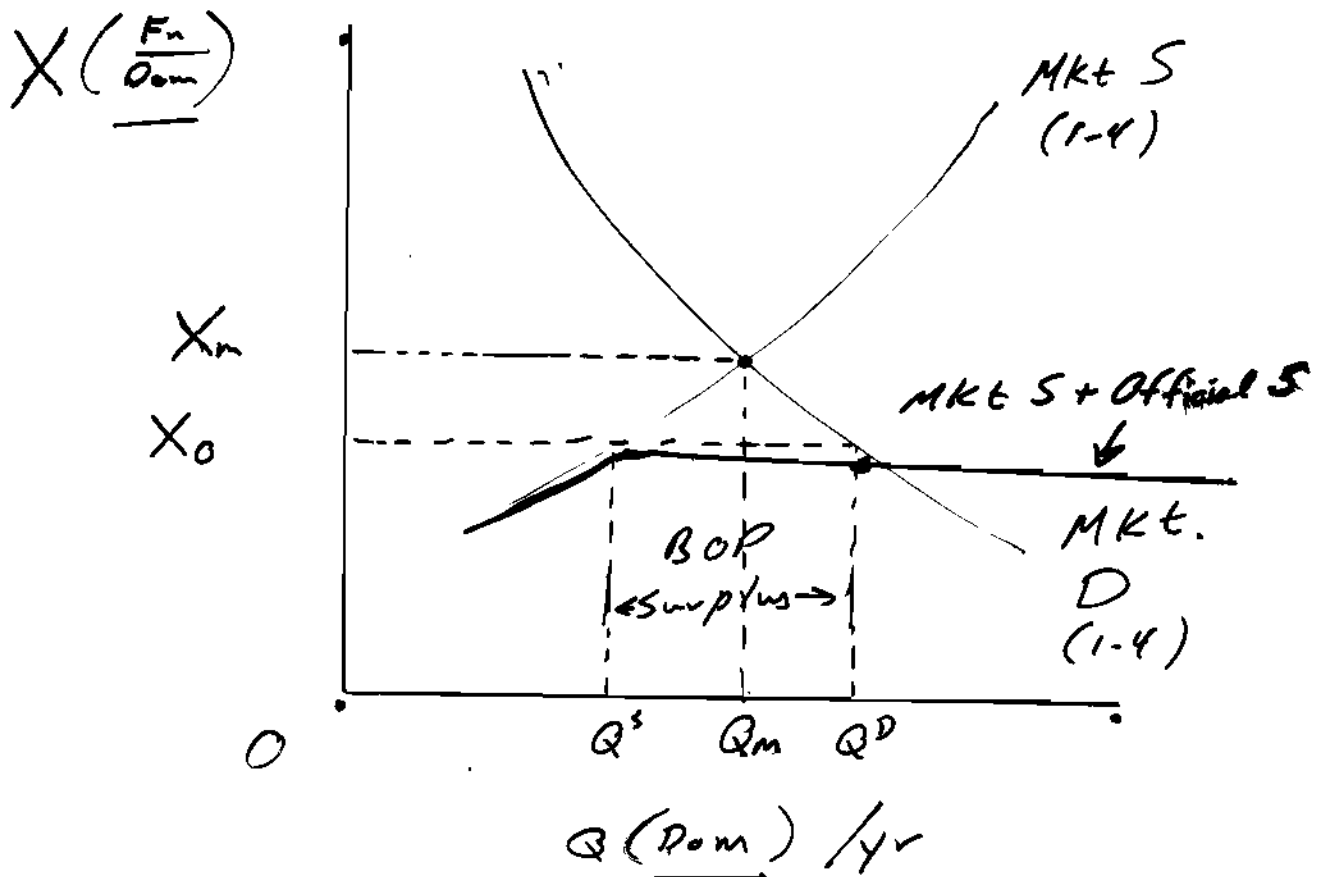
→ BOP Surplus Problem.

CB must intervene to provide $Q^D - Q^S$

Adds Official S (of Dom) (as)
to Mkt S. $\Rightarrow I_{Dom} \uparrow$

Undervalued Currency

$X_0 < X_m$ (Gov, Japan 1968-73, China 1994-present)



At $X_0 < X_m$, $Q^D > Q^S$.

→ BOP Surplus Problem.

CB must intervene to provide $Q^D - Q^S$

Adds Official S (of Dom) (ES)
to Mkt S. $\Rightarrow I_{Dom} \uparrow$

CB Options with Undervalued

Currency. (Ger. Japan 1968-73,
China 2000-present)

1. Monetize Surplus

$$I_{\text{Dom}} \uparrow, B_{\text{Dom}} \uparrow$$

$$\rightarrow M_{\text{Dom}} \uparrow, P_{\text{Dom}} \uparrow, X_m \left(\frac{F_n}{P_{\text{Dom}}} \right) \downarrow \text{ to } X_0$$

by PPP, surplus ends

Specie - Flow Mechanism

\rightarrow Home country imports Foreign inflation

2. Sterilize Surplus w/ Defensive OMO

$$I_{\text{Dom}} \uparrow, \Delta S_{\text{Dom}} = -\Delta I, \Delta B_{\text{Dom}} = 0$$

Surplus continues, may grow

$$I \uparrow \uparrow, S \downarrow \downarrow$$

\rightarrow CB finances foreign fiscal deficits instead of domestic.

If $S \rightarrow 0$, must revalue or mendize

\rightarrow Speculation for Dom, $D \uparrow, X_m \uparrow,$
BoP Surplus $\uparrow \uparrow$

3. Suppress Surplus

- Encourage imports
- Discourage exports
- etc.

Unpopular with domestic producers,
hence rare.

4. Revalue

Raise X_0 to X_m . (Ger 1961, 69, 71, 73)

Encourages Speculation

Makes X uncertain

Unpopular with Dom. Producers.

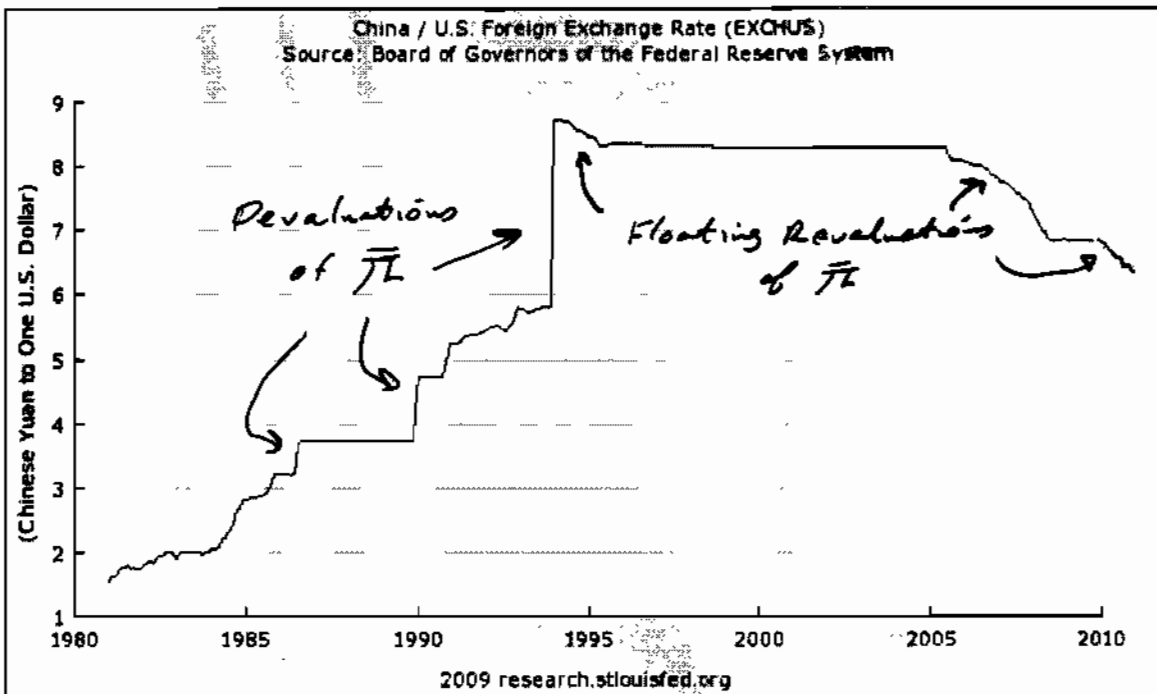
5. Borrow domestic reserves

(rare) (Reverse Sup)

6. Float

Germany, Japan 2/73.

China fixes Yuan Renminbi (元) to US Dollar
 w/ occasional devaluations prior to 1995,
 - occasional revaluations since 1995,
 • interim floats



Yuan has been undervalued most of last decade

- Gives China big trade surplus, capital outflows to US
- China now holds over \$1T in US Treasuries, GSEs.
- *Helps finance US deficits, subprime mortgages.*

8.28 元/\$

3 Instruments of M policy

• M

• i

• X_0

Pursuing one requires giving up control
of other 2 in L.R.

X_0 instrument. —

• P_{Dom} governed by P_{Fn} , X_0 , via PPP.

• $M_{Dom} \rightarrow P_{Dom} \cdot m_{Dom}^D$

by Specie Flow Mechanism

• $i_{Dom} \rightarrow i_{Foreign}$

to prevent massive capital
flows.

Fixed vs Floating FX Rates

- ★ Pros
- Cons

Fixed

- ★ X predictable
- ★ Imposes discipline on M policy
- Encourages speculation
- Impacts Foreign M policy
- BOP Problems

Floating

- ★ No BOP Problems
- ★ CB may pursue independent M policy
- X changes continually, is unpredictable
- ★ But Forward FX mkt shifts risk
- No Intl Discipline

Fixed vs Floating FX Rates

- ★ Pros
- Cons

Fixed

- ★ X predictable
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- Encourages speculation about X_0
- Imports Foreign M policy
- BOP Problems

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