Outline

Stabilization policy
24.1, 24.2 (not equations 24.1, 24.2)
24.3

Open economy: 18, 19.

1. Exchange rate (Nominal)

2. International financial markets
   Uncovered Interest Rate Parity

3. Exchange rate overshooting

4. Real exchange rate

5. National Income & Product Accounts
   Modify the total planned spending curve, to accommodate foreigners, a fact that domestic residents buy foreign stuff.
\[
i = i^f + \left( \frac{E^e}{E} \right) - 1
\]

Note: US dollar depreciated on average over the whole period.

Note: US dollar depreciated 2002 to 2004 and then held constant or appreciated.


Note: Interest rates very low in US 2002 to 2005 and after that they rise.

Note: in recent times, depreciation of dollar associated with low US interest rate and depreciation stopped (or turned around) with high US interest rate.
Uncovered Interest Parity.

\[ W \]

\[ \frac{1}{E} (1+i^F) \times (E^e) \]

Expected foreign exchange rate.

Foreign bonds are more risky, because future exchange rate is unknown.

Assumption: Traders don't worry about risk.

Uncovered interest parity.

\[ 1+i = \frac{(1+i^F)E^e}{E} \]

Derived two assumptions

1. Financial markets move quickly

2. Traders only worry about
\[ E_1 = \text{tomorrow's exchange rate.} \]

**Case 1**

\[ E_1 = .5 \quad \text{u.p.} \quad \frac{1}{2} \]

\[ 1.5 \quad \text{u.p.} \quad \frac{1}{2} \]

\[ \Rightarrow e^e = 1 \]

**Case 2**

\[ E_1 = .95 \quad \text{u.p.} \quad \frac{1}{2} \]

\[ E_1 = 1.05 \quad \text{u.p.} \quad \frac{1}{2} \]

\[ E^e = 1 \]

Assume traders think

\#1, \#2 are same because they only consider \( E^e \) when thinking about foreign assets.

\[ 1 + i = (1 + i^e) \left( \frac{E^e}{E} \right) \]

\[ .05 \quad \uparrow \quad .10 \]

\[ 95 \quad \uparrow \quad 95 \]

\[ c = c^f + \frac{E^e}{E} - 1 \]

\[ .05 \quad .10 \quad .95 \quad -1 \]
start with
\[ \frac{E^e}{E} = 1 \]

[Diagram showing the relationship between current exchange rate and future exchange rate with an expectation of appreciation of currency.]

\[ \text{\textbullet} \quad \text{future} \]

\[ \begin{align*}
\text{\textbullet} & \quad \circ \quad \circ \quad \circ \quad \circ \quad \circ \\
\text{\textbullet} & \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \\
\text{\textbullet} & \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \\
\end{align*} \]

1. **Cut domestic interest rate, i.**
2. **Triggers stampede out of domestic currency, \( E^t \).**
3. **\( E^t \) creates anticipation that domestic currency will appreciate (assuming that \( E^e \) does not change).**
4. **Expected appreciation of domestic currency reduces return on foreign currency (\"foreign currency depreciation, so you're losing money on round-trip part of foreign return\")**
start with

\[ \frac{E^e}{E} = 1 \]

\[ E \rightarrow E^t, \]

**Expectation of Appreciation of currency**, future

\[ \left( \frac{E^e}{E} \right) \rightarrow \left( \frac{E^e}{E} \right) + \frac{E^e}{E} - \frac{1}{E} \]

1. Cut domestic interest rate, i
2. Triggers stampede out of domestic currency, \( E_t \)
3. \( E_t \) creates anticipation that domestic currency will appreciate (assuming that \( E^e \) does not change)
4. Expected appreciation of domestic currency reduces return on foreign currency ("foreign currency depreciation, so you're losing money on round-trip cost of foreign return")
Theory about \(E\) determination: moves with change in demand for domestic/foreign currency triggered by changes in \(i\), if 
\[E = E^e\]

2. Foreign C.B. \(i\) \(\uparrow\) \(\Rightarrow\) \(E\) \(\uparrow\) so that
\[i = i^f + \frac{E^e}{E} - 1\]
National Income and Product Accounts

\[ C + I + G + X = Y \]

\[ C = c_0 + c_1(Y - T) \]

\[ I = I_0 - b_0 + \beta Y \]

\[ E \text{ "nominal exchange rate"} \]

Real exchange rate

\[ E = \text{how many units of domestic goods give up to get one foreign good.} \]

\[ P^* \text{ units of foreign currency to get one unit of foreign good.} \]

\[ E P^* \text{ a dollar cost of one unit of foreign good.} \]
Suppose I give up
1 unit of US goods
how many dollars does
that give me? P.

\[ E = \frac{E_0}{P} \]