FLEXIBLE EXCHANGE RATES

1. Purchasing Power Parity

\[ P_x = S P_x^* \]

\[ S = \text{exchange rate} \]

2. Interest Parity (Covered, Uncovered)

\[ 1 + i_t = (1 + i_t^*) \frac{S_{t+1}}{S_t} \]

3. Money Market Equilibrium

\[ \frac{M}{P} = L \left( -i_t, +Y_t \right) \]
4. Approximating Interest Parity:

\[ i_t, i_t^* = \text{overnight interest rates} \]

\[
(1 + i_t \Delta t) = (1 + i_t^* \Delta t) \frac{S_{t + \Delta t}}{S_t}
\]

\[
(i_t - i_t^* \frac{S_{t+\Delta t}}{S_t})\Delta t = \frac{S_{t+\Delta t}}{S_t} - 1 = \frac{S_{t+\Delta t} - S_t}{S_t}
\]

Dividing by \( \Delta t \) and letting \( \Delta t \rightarrow 0 \)

\[
i_t - i_t^* = \frac{d \log S_t}{dt} = \frac{dS_t}{S_t dt} \quad \text{(exchange rate depreciation)}
\]
\[ \{Y_t, M_t^S, P_t\} \text{ are given} \]

\[ (i_t^*, S_{t+1}) \text{ are given} \]

\[ \{S_t, i_t\} \text{ are endogenous variables} \]