

## Summary of international parity relationships and more ...

### Forward Premium

$$\text{Forward Premium} = \frac{F - S}{S} \times \frac{360}{\text{days to maturity}}$$

$$\begin{aligned} S &= \text{DomCur}/\text{ForeignCur} \\ E() &= \text{Expected value} \\ * &= \text{Foreign} \end{aligned}$$

**Interest Rate Parity (IRP)** – use for inferring about the *forward rate*

$$1 + i = \frac{F}{S}(1 + i^*) \quad \text{OR} \quad i - i^* = \frac{F - S}{S}$$

**Purchasing Power Parity (PPP)** – use for forecasting the *expected future spot rate* given  $\pi$ ,  $\pi^*$

$$\text{Absolute PPP:} \quad P = P^* \times S$$

$$\text{Relative PPP:} \quad \frac{P_1}{P_0} = \frac{P_1^*}{P_0^*} \times \frac{E(S_1)}{S_0} \quad \text{OR} \quad (1 + \pi) = (1 + \pi^*) \cdot \frac{E(S_1)}{S_0}$$

$$\text{OR} \quad \pi - \pi^* = \frac{E(S_1) - S_0}{S_0}$$

**Fisher Effect (FE)** – use for calculating for either  $i$ ,  $\rho$ , or  $E(\pi)$  given the other two of them.

$$(1 + i) = (1 + \rho) \cdot E(1 + \pi) \quad \text{OR} \quad i = \rho + E(\pi)$$

$$\text{Also,} \quad \frac{(1 + i)}{(1 + i^*)} = \frac{E(1 + \pi)}{E(1 + \pi^*)}$$

**International Fisher Effect (IFE)** – use for forecasting the *expected future spot rate* given  $i$ ,  $i^*$

$$(1 + i) = (1 + i^*) \cdot \frac{E(S_1)}{S_0} \quad \text{OR} \quad i - i^* = \frac{E(S_1) - S_0}{S_0}$$

### Balance of Payments Identity

$$\text{Overall balance} = \text{CA} + \text{KA} = -\text{RA}$$

**Option value at maturity:**

$$C_T = \text{Max}[S_T - K, 0]$$

where  $K$  = strike price

$$P_T = \text{Max}[K - S_T, 0]$$