International Parity

Topic: 國際平價理論

價 → 相等

Foreign Exchange rate

- Relative inflation rate 物價相對水平(預期)
- Relative national income level
- Import/exporter: Goods/services

Price

- Foreign Domestic inflation rate differential
- international trade → when TW inflation rate > USA
  NTD 貶值

Relative interest rate

- Foreign Domestic interest rate differential
- Nominal interest rate/real interest rate
- capital flow → when TW interest rate > USA
  NTD 升值

$t=0$ → $t=T=1$

當下匯率 S_0 → S_T unknown ⇒ $E(S_T)$

(Future) F

i_d ⟶

i_f - - - - - - - - → 預期未來的匯率

Inflation rate (預期)

I_d ⟶

I_f - - - - - - - - →

$$\frac{E(S_T)-S}{S} = \Delta s\% = s$$ change/movement FX

$$\frac{F-S}{S} = 1+p$$ forward premium/discount

$$\frac{i_d - i_f}{1+i_f} \approx i_d - i_f$$ interest rate differential

$$\frac{I_d - I_f}{1+I_f} = I_d - I_f$$ inflation rate

Topic:

(不偏估計值) 遠期匯率

未知

$$\frac{E(S_1)-S}{S} = \Delta S\% = s$$

PPP 購買力平價說

$$\frac{F-S}{S} = 1+p$$

未拋補 利率平價

預期通膨

$$\frac{I_d-I_f}{1+I_f} = I_d - I_f$$

利率平價說

$$\frac{i_d-i_f}{1+i_f} = i_d - i_f$$

費雪方程式

國際費雪效果

貨幣可以買多少商品

【PPP 購買力平價說】 Goods → 計價基礎

1. The law of price 單一價律

同商品 $P_d = 70$ NTD, $P_f = 2$ USD　　$P_d = 70\text{ NTD} = P_f \times e = 2\text{ USD}$

$\therefore e = P_d/P_f = 70/2 = 35$

2、絕對PPP：CPI …一籃子的商品

直接價格的比較　　PP: Purchase power

$$e = P_d/P_f = \boxed{\frac{P_d}{P_f} = \frac{1/P_f}{1/P_d} = \frac{PP_f}{PP_d}} = \frac{1/2m}{1/70m} = 35$$

3、相對PPP

$t=0 \longrightarrow t=1$

$P_d^0 \longrightarrow P_d^1 = P_d^0 \times (1+?)$ unknown

$P_f^0 \longrightarrow P_f^1 = P_f^0 \times (1+?)$

$e_0 = S_0 = \frac{P_d^0}{P_f^0}$　　$e_1 = S_1 = \frac{P_d^1}{P_f^1}$ → 未知，可估計

$$E(e_1) = S_1 = \frac{P_d^1}{P_f^1} = \frac{P_d^0(1+I_d)}{P_f^0(1+I_f)} = S_0 \frac{(1+I_d)}{(1+I_f)}$$

$$E(e_1) = E(S_1) = S_0 \frac{(1+I_d)}{(1+I_f)} \Rightarrow \boxed{\text{公式：} \frac{I_d-I_f}{1+I_f}} \approx I_d - I_f$$

$\approx I_d - I_f - ?$

TW通膨3%

US通膨2.5%

⇒USD升值

(under PPP, S↑)

In fact

美國、TW商品難相同

⇓

大麥克指數 ⇒ PPP實證

Topic:

【費雪效果】

$1+i=(1+r)(1+I)$ ---- $i=r+I \Rightarrow 20\%-25\%=-5\%$

$t=0 \longrightarrow t=1$

Bank定存 100 20% 120

$(1+20\%)=[1+(-4\%)][1+25\%]$

$=0.96*1.25=1.20$

王子麵 4元/包 25% 5元/包

當下的錢 $100\div4=25$包

$100\div5=20$

$120\div5=24$包

25 -4% 24

$=(24-25)/25$

條件 1. market integration 2. $r_d=r_f$

【國際 Fisher effect】

(1) $1+i_d=(1+r_d)(1+I_d)$

(2) $1+i_f=(1+r_f)(1+I_f)$

$$\frac{(1)}{(2)}=\frac{1+i_d}{1+i_f}=\frac{1+I_d}{1+I_f}$$

【未拋補利率平價說】

∵ PPP+IFE ⇒ Uncovered PPP

不知道多少

$$\boxed{\frac{E(S)-S}{S}=\frac{i_d-i_f}{1+i_f}} \qquad \boxed{\frac{F-S}{S}=\frac{i_d-i_f}{1+i_f}}$$

If TW利率>US ⇒ USD升/NTD貶

利率在PPP成立下，名目利率反應通膨率

∴ TW通膨>US ⇒ NTD貶