長期物價與匯率

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¶授課講義非經同意請勿引用
[取材自Krugman, et al. (2018) chap. 5]

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0 前言

- 長期匯率走勢
  - …1970, you could have bought 358 Japanese yen with a single American dollar; …1980, a dollar was worth only 203 yen (i.e. 十年間美元對日幣貶值約43%)
- 模型擴充的方向
  - (1) complete our account of the linkages among monetary policies, inflation, interest rates, and exchange rates
  - (2) examine factors other than money supplies and demands—for example, demand shifts in **markets for goods and services**—that also can have sustained effects on exchange rates

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- (Why we care?) …predictions about long-run movements in exchange rates are important even in the short run
- (How we care?) In the long run, national price levels play a key role in determining both interest rates and the relative prices at which countries' products are traded
- A theory of how national price levels interact with exchange rates is thus central to understanding why exchange rates can change dramatically over periods of several years

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1 一價法則

- The law of one price (LOP) states that in competitive markets free of transportation costs and official barriers to trade (such as tariffs), identical goods sold in different countries must sell for the same price when their prices are expressed in terms of the same currency
  - LOP係購買力平價的基礎
  - 迅速的商品**套利**行為⇒單一價格(p.132)(見次頁)
- 同理， When trade is open and costless, identical goods must trade at the same relative prices regardless of where they are sold

$$E_{\$/€} = P^i_{US}/P^i_{E}.$$

1-1 商品套利與一價法則

- if the dollar/pound exchange rate is $1.50 per pound, a sweater that sells for $45 in New York must sell for £30 in London
- If the dollar/pound exchange rate were $1.45 per pound, …Thus, the dollar price of a sweater in London would be only $43.50. If the same sweater were selling for $45 in New York
- 因之商人就有誘因將毛衣從英國出口至美國出售⇒$P_{US}\downarrow$、$P_{BR}\uparrow$until prices were equal in the two locations (反之，若英鎊升值…)

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2 購買力平價(PPP)

- the domestic purchasing power of a country's currency is reflected in the country's price level, the money price of a reference basket of goods and services. (PP相當於物價倒數(1/P))
- The PPP theory therefore predicts that **a fall** in a currency's domestic purchasing power (as indicated by an increase in the domestic price level，$(1/P)\downarrow$) will be associated with **a proportional currency depreciation** in the foreign exchange market.
- Symmetrically, PPP predicts that an increase in the currency's domestic purchasing power will be associated with a proportional currency appreciation

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- David Ricardo (英)、Gustav Cassel (瑞典)與PPP
- PPP predicts a dollar/euro exchange rate of

$$E_{\$/€} = P_{US}/P_{E}. \qquad (5\text{-}1)$$

- If, for example, the reference commodity basket costs $200 in the United States and €160 in Europe, PPP predicts a dollar/euro exchange rate of $1.25 per euro ($200 per basket/€160 per basket).
- If the U.S. price level were to triple (to $600 per basket), so would the dollar price of a euro: PPP would imply an exchange rate of $3.75 per euro (= $600 per basket / €160 per basket)

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- an alternative interpretation of PPP

$$P_{US} = (E_{\$/€}) \times (P_{E}),$$

  - The lhs of this equation is the dollar price of the reference commodity basket **in the United States**; the rhs is the dollar price of the reference basket when purchased **in Europe**
  - **These two prices are the same if PPP holds**
  - PPP thus asserts that all countries' price levels are equal when measured in terms of the same currency
  - the rhs of the last equation measures the purchasing power of a dollar when exchanged for euros and spent in Europe
  - PPP therefore holds when, at going exchange rates, every currency's domestic purchasing power is always the same as its foreign purchasing power

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2-1 PPP與LOP的關係

- The statement that exchange rates equal relative price levels [equation (5-1)] is sometimes referred to as **absolute PPP** (絕對PPP)
- Absolute PPP implies a proposition known as **relative PPP** (相對PPP)
  - which states that the percentage change in the exchange rate between two currencies over any period equals the difference between the percentage changes in national price levels

$$(E_{\$/\euro,t} - E_{\$/\euro,t-1})/E_{\$/\euro,t-1} = \pi_{US,t} - \pi_{E,t} \qquad (5\text{-}2)$$

- It makes logical sense to compare percentage exchange rate changes to inflation differences, as above, even when countries base their price level estimates on product baskets that differ in coverage and composition
- Relative PPP is important also because it may be valid even when absolute PPP is not
  - Provided the factors causing deviations from absolute PPP are more or less stable over time, percentage changes in relative price levels can still approximate percentage changes in exchange rates

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3 以PPP為基礎的長期匯率模型

- 匯率的貨幣論(monetary approach to exchange rate)
  - think of the monetary approach as a long-run and not a short-run theory because it does not allow for the **price rigidities** that seem important in explaining short-run macroeconomic developments, in particular departures from **full employment**
  - 即使如此…且或有爭議，the monetary proceeds as if prices can adjust right away to maintain full employment as well as PPP
  - 但是…Here, …when we refer to a variable's **"longrun"** value, we mean the variable's equilibrium value in a hypothetical world of perfectly flexible output and factor market prices*

3-1 貨幣論－基本方程式

- 假設在長期之下，PPP條件成立

$$E_{\$/\euro} = P_{US}/P_E. \qquad (5\text{-}1)$$

- explain domestic price levels in terms of domestic money demands and supplies －美、歐分別為:

$$P_{US} = M^s_{US}/L(R_\$, Y_{US}), \qquad (5\text{-}3)$$
$$P_E = M^s_E/L(R_\euro, Y_E). \qquad (5\text{-}4)$$

- The monetary approach therefore makes the general **prediction** that *the exchange rate, which is the relative price of American and European money, is fully determined in the long run by the relative supplies of those monies and the relative real demands for them*

3-1

- a number of specific **predictions**
  - **1.** *Money supplies*. an increase in the U.S. money supply causes a **proportional long-run *depreciation*** of the dollar against the euro (同理，若歐洲Ms…)
  - **2.** *Interest rates*. A rise in $R\$$ on dollar-denominated assets lowers real U.S. money demand $L(R\$, Y_{US})$. By (5-3), the long-run U.S. price level rises, and under PPP the dollar must depreciate against the euro **in proportion to this U.S. price level** increase
  - **3.** *Output levels*. 若$Y_{US}\uparrow$，$L(R\$, Y_{US})\uparrow \Rightarrow$ (long run) $P_{US}\downarrow$，則根據PPP, there is an appreciation of the dollar against the euro

3-1

- To understand these predictions, remember that the monetary approach, like any long-run theory, essentially assumes price levels adjust as quickly as exchange rates do—that is, right away
- 迷思：一國利率變動的影響
  - 若R↑，**貨幣論**推測該國貨幣**貶值**，但…
  - 根據**利率平價**條件，該國貨幣反而應該**升值**(參見「認識匯率與外匯市場/ 4」)
  - 如何解釋此一迷思(puzzle)?
    - 貨幣(政策)與利率之間的長期關聯(Fisher effect)

3-2 持續中的通膨、利率平價與PPP

- According to relative PPP：$\%\Delta E_{\$/€} = \pi_{US} - \pi_E$
- Since people understand this relationship, … it must also be true that they *expect* the percentage exchange rate change to equal the U.S.–Europe inflation difference
- If relative PPP holds, however, market participants will also expect relative PPP to hold, i.e.

  $\%\Delta E^e_{\$/€} = \pi^e_{US} - \pi^e_E$

- 已知利率平價： $R_\$ = R_€ + (E^e_{\$/€} - E_{\$/€})/E_{\$/€}$
- $\Rightarrow R_\$ - R_€ = \pi^e_{US} - \pi^e_E.$ (5-5)

3-3 Fisher效果

- Fisher方程式：$R = r + \pi^e \Rightarrow \Delta R = \Delta\pi^e$, *given r*
- *all else equal, a rise in a country's expected inflation rate will eventually cause an equal rise in the interest rate that deposits of its currency offer.* 反之亦然…
- 換言之，These changes (ΔR, $\Delta\pi^e$)would leave the real rate of return on dollar assets (r), measured in terms of U.S. goods and services, unchanged
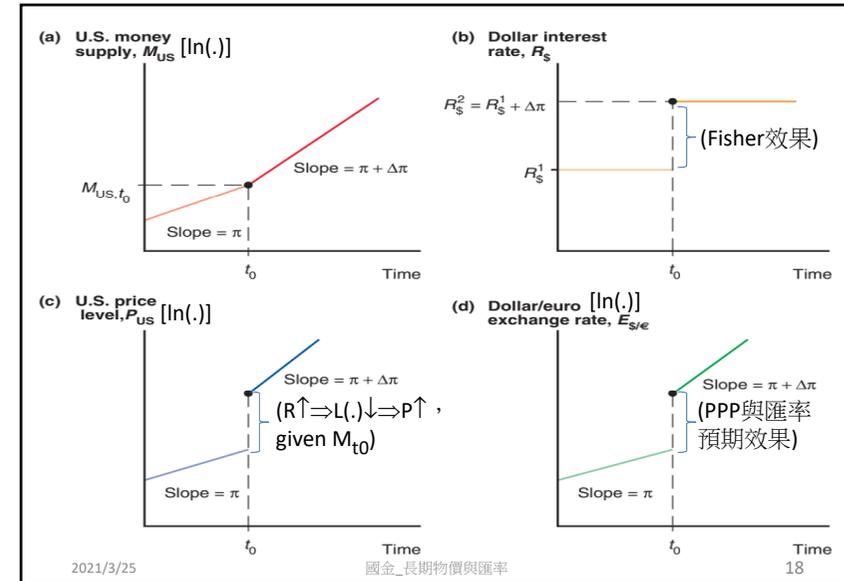
3-3

- In the long-run equilibrium assumed by the monetary approach, a rise in the difference between home and foreign interest rates occurs **only when** expected home inflation rises relative to expected foreign inflation ((5-5)式)
- 但in the short run, when the domestic price level is sticky… 若Ms↓表示(Ms/P)↓⇒R↑，則利率平價…
- Under the flexible-price monetary approach, however, the price level would fall right away, leaving the *real* money supply (Ms/P) unchanged ⇒R不變 (⇒無利率平價效果)
- 舉例： Imagine that at time *t*0, the Federal Reserve unexpectedly increases the growth rate of the U.S. money supply from π to the higher level π + Δπ

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(a) U.S. money supply, M_{US} [ln(.)]

Slope = π + Δπ

$M_{US.t_0}$

Slope = π

t_0　Time

(b) Dollar interest rate, $R_\$$

$R_\$^2 = R_\$^1 + \Delta\pi$

(Fisher效果)

$R_\$^1$

t_0　Time

(c) U.S. price level, P_{US} [ln(.)]

Slope = π + Δπ

(R↑⇒L(.)↓⇒P↑，given M_{t0})

Slope = π

t_0　Time

(d) Dollar/euro [ln(.)] exchange rate, $E_{\$/€}$

Slope = π + Δπ

(PPP與匯率預期效果)

Slope = π

t_0　Time

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3-3

- 關鍵: 如何維持貨幣市場均衡?
  - 物價僵固，利率調整，匯率由利率平價條件決定；還是…
  - 物價完全彈性、充分調整，利率受Fisher效果支配，匯率則由PPP決定
- These contrasting results of interest rate changes … that an explanation of exchange rates based on interest rates must carefully account for the factors that cause interest rates to move

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4 有關PPP與LOP的實證

- How well? A brief answer is that *all versions of the PPP theory do badly* in explaining the facts
  - …changes in national price levels often tell us relatively little about exchange rate movements
- Even the law of one price has not fared well…
- Relative PPP is sometimes a reasonable approximation to the data, but it, too, usually performs poorly
- (參見次圖) **The Yen/Dollar Exchange Rate and Relative Japan–U.S. Price Levels, 1980–2015**

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Exchange rate ($E_{¥/\$}$),
Japan-U.S. price level ratio (P_J/P_{US})

P_J/P_{US}

$E_{¥/\$}$

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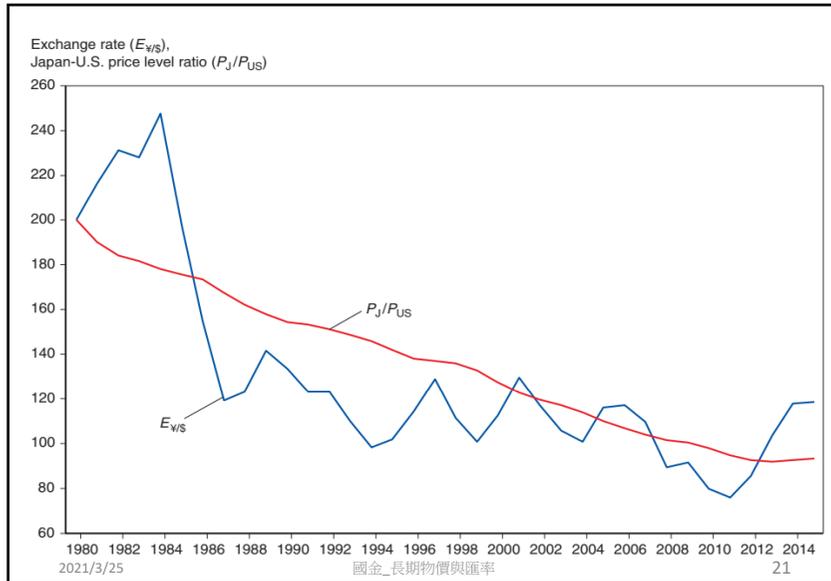
5 PPP的問題

- 1. Contrary to the assumption of the law of one price, transport costs and restrictions on trade certainly do exist. These trade barriers may be high enough…

- 2. Monopolistic or oligopolistic practices in goods markets may interact with transport costs and other trade barriers…

- 3. Because the inflation data reported in different countries are based on different commodity baskets, there is no reason for exchange rate changes to offset official measures of inflation differences (即使無1.與2.)

5-1 貿易障礙與非貿易財

- Suppose once again that the same sweater sells for $45 in New York and for £30 in London, but that it **costs $2 to ship** a sweater between the two cities

- 若匯率成為$1.45/£，則倫敦毛衣的美元價格成為$43.5 < 美國的$45；… but an American importer would have to pay $43.50 + $2 = $45.50 to purchase the sweater in London and get it to New York

- 因此，美商無利可圖，商品套利亦無從發生；在兩地即使一樣的商品仍會有不同的價格(同幣表示)

- 易言之，此時欠缺一價法則來「框住」匯率變動

5-1

- **The greater the transport costs**, the greater the range over which the exchange rate can move, given goods prices in different countries

- Official trade restrictions such as **tariffs** have a similar effect…

- Either type of trade impediment weakens the basis of PPP by allowing the purchasing power of a given currency to differ more widely from country to country

- transport costs may be so large relative to the cost of producing some goods and services that those items can never be traded internationally at a profit. Such goods and services are called *nontradables* (非貿易財)

5-1

- Nontradables are primarily services and the outputs of the construction industry (營建業)
- The existence in all countries of nontraded goods and services, whose prices are not linked internationally, allows systematic deviations even from relative PPP
- the purchasing power of any given currency will fall in countries where the prices of nontradables rise
- Nontradables help explain the wide departures from relative PPP illustrated by 前圖

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5-2 若非完全自由競爭...

- When a firm sells the same product for different prices in different markets, we say that it is practicing **pricing to market** (因市定價)
  - 不同市場會有不同的消費者(如購買力與偏好的差異)與銷售成本
  - For example, countries where demand is more price inelastic will tend to be charged higher markups (加成、加碼) over a monopolistic seller's production cost
- The combination of product differentiation and segmented markets, however, leads to large violations of the LOP and absolute PPP.
- Shifts in market structure and demand over time can invalidate relative PPP

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5-3 消費型態與物價統計編制差異

- ... One reason for these differences is that people living in different countries spend their incomes in different ways
- Because relative PPP makes predictions about price changes rather than price levels, it is a sensible concept regardless of the baskets used to define price levels in the countries being compared 但...
- Change in the relative prices of basket components, however, can cause relative PPP to fail tests 因為 ... simply because fish take up a larger share of the Japanese basket (即使雙方魚價皆同幅上揚)

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5-4 長期與短期下的PPP

- the PPP theory's poor empirical performance can cause national price levels to diverge even in the long run, after all prices have had time to adjust to their market-clearing levels
- however, many prices in the economy are sticky and take time to adjust fully. Departures from PPP may therefore be even greater in the short run than in the long run
- Michael Mussa...found that floating exchange rates systematically lead to much larger and more frequent short-run deviations from relative PPP
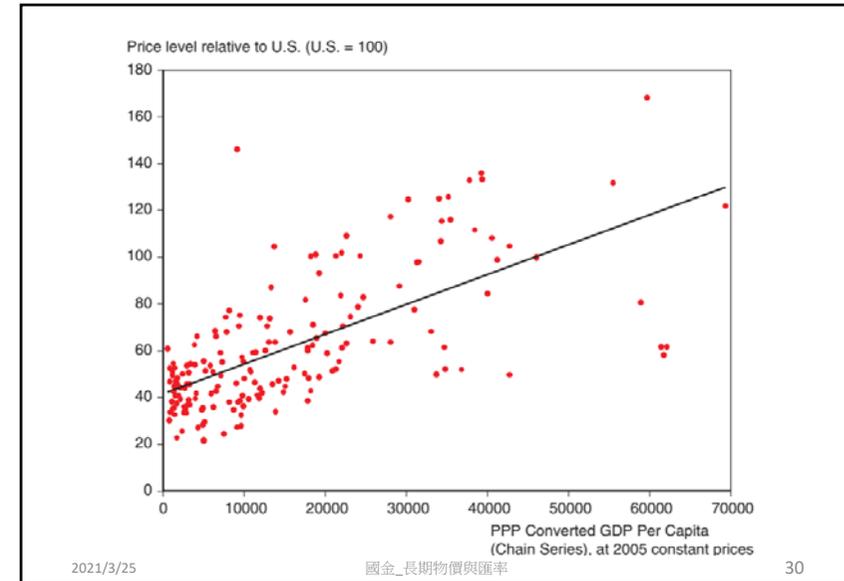
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5-4

- Even when ... temporary PPP deviations are removed from the data, however, it still appears that the cumulative effect of certain long-run trends causes predictable departures from PPP for many countries ...特別是物價普遍相對較低者
  - 實證發現：When expressed in terms of a single currency, countries' price levels are positively related to the level of real income per capita (見次圖)
    (亦即在此低物價並非反映貨幣購買力相對較高)
  - ... data indeed show that nontradables tend to be more expensive (relative to tradables) in richer countries

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Price level relative to U.S. (U.S. = 100)

PPP Converted GDP Per Capita (Chain Series), at 2005 constant prices

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5-4

- Reason(s) for the lower relative price of nontradables in poor countries
  - Balassa-Samuelson theory假設高所得者貿易財部門生產力較高，但國際間貿易財價格大致相當(國際競爭或LOP的關係)**由於低所得者的貿易財部門的生產力相對較低**，意謂其平均薪資(成本)較外國為低，故整體國內生產的商品，特別是**非貿易財價格**甚至一般物價也都會相對較低
    (因此高所得者雖然物價相對較高並不表示其貨幣購買力相對較低，故幣值並不會如PPP所預測的低(PPP低估其幣值)；反而在地物價高反映外幣在本地購買力相對↓⇒高所得者貨幣實質升值(低生產力者實質貶值)(參見後面(5-6.1)式說明)
  - Alternative theory ...

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5-4

  - Bhagwati-Kravis-Lipsey theory... relies on differences in endowments of capital and labor ... but it also predicts that the relative price of nontradables increases as real per capita income increases
    因高所得者有較大的資本/勞動比，故其勞動邊際生產力較高(得力於資本密集的幫助)
    ⇒高所得者有較高薪資，而非貿易財部門多提供服務財，多屬勞力相對密集產業
    ⇒非貿易財價格在高所得者(因一般薪資普遍較高)要比低所得者的來得高 ...

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6 長期匯率之一般模型

- **6-1 實質匯率**
- The real exchange rate between two countries' currencies is a broad summary measure of the prices of one country's goods and services relative to the other country's
  - Cf. **nominal exchange rate:** a relative price of two currencies
  - 若在市場上，1歐元賣$1.2，則名目匯率(或簡稱匯率) $E_{\$/€}$ = $1.2/€
  - 若歐洲與美國的物價分別為P_E與P_{US}，則美歐實質匯率 $q_{\$/€} = (E_{\$/€} \times P_E)/P_{US}.$ (5-6)

補充說明－實質匯率 與貨幣相對購買力

- (5-6)式rhs $\Rightarrow \dfrac{(€\,1\times E_{US/€})/P_{US}}{€\,1/P_E} = \dfrac{\$1/P_{US}}{(\$1/E_{US/€})/P_E}$ (5-6.1)

- (5-6.1)等號lhs的分母表示歐元在歐洲的購買力，分子則表示該單位歐元在美國的購買力
  - 購買力係以貨幣(單位)能夠購買多少**財貨**來衡量
  - 財貨可以指產出(如real GDP)、貿易財(如實質輸出入)或其他可衡量並**可比較的財貨**(單一或一籃子組合)
  - not be assuming absolute PPP…no longer assume the price level can be measured by <u>the same basket of commodities</u>
- 此一相對購買力以美元表示亦同(即等號rhs)

- 美歐實質匯率(real dollar/euro exchange rate) $q_{\$/€}$ 表示 the dollar price of the European basket relative to that of the American basket
- (5-6.1) $\Rightarrow$

$$q_{\$/€} = \frac{美國財貨數量}{歐洲財貨數量}$$

  - 若$q_{\$/€}$ = (3籃子美國財貨)/(2籃子歐洲財貨) $\Leftrightarrow$

    $q_{\$/€}$ = 1.5 U.S. basket per European basket
  - Ref. Krugman (2018, p.152)

- a **real depreciation** of the dollar against the euro…
  - (5-6.1) $\Rightarrow$ 歐元(在美國)的購買力↑(即歐元採買美國財貨的購買力↑)
  - 同理，$\Rightarrow$ 美元(在歐洲)的購買力↓(即美元採買歐洲財貨的購買力↓) ((5-6.1) rhs，esp. 分母部分)
- 實質匯率定義式*(5-6)可用變動率表示

  %$\Delta q_{\$/€}$ = %$\Delta E_{\$/€}$ + %ΔP_E − %ΔP_{US}
  - a 10 percent nominal dollar depreciation (%$\Delta E_{\$/€}$ =10%) 會反映 a *real* dollar depreciation of 10 percent against the euro (%$\Delta q_{\$/€}$ =10%) (AEE)
  - 同理，%ΔP_E =10% (美元在歐洲購買力↓10%)或 %ΔP_{US} = −10% (歐元在美國購買力↑10%) (AEE)

6-1

- 反之，A **real appreciation** of the dollar against the euro is a fall in $q_{\$/€}$ …
- Equation (5-6) makes it easy to see… Under relative PPP, a 10 percent rise in $E_{\$/€}$, for instance, would always be exactly offset by a 10 percent fall in the price level ratio P_E / P_{US}, leaving $q_{\$/€}$ unchanged
- 但… PPP does not hold, the long-run values of real exchange rates—just like other relative prices that clear markets—depend on demand and supply conditions

6-2 財貨供需與實質匯率

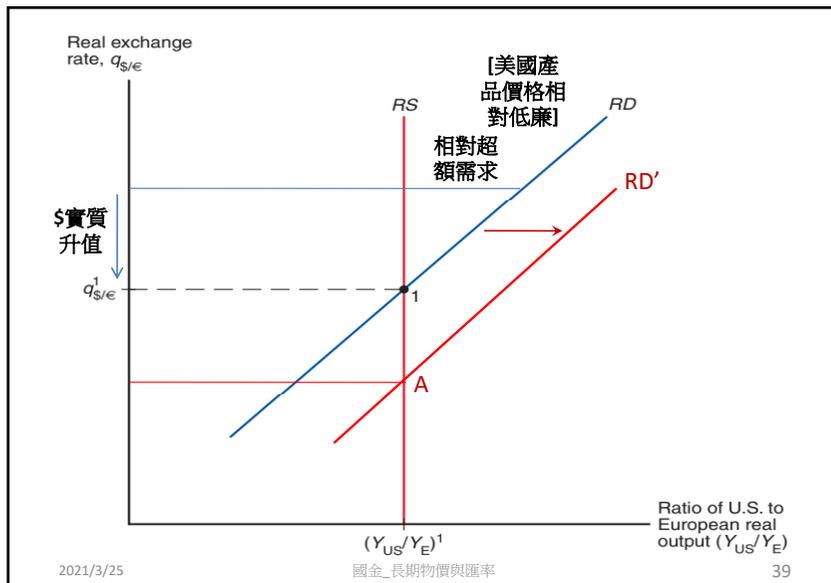- 影響長期實質匯率變動的因素
  - **全球對美國產品的相對需求變動**
    - 外需或內需(如政府購買支出)↑⇒ excess demand for US products ⇒ the relative price of US output in terms of European output will therefore have to rise
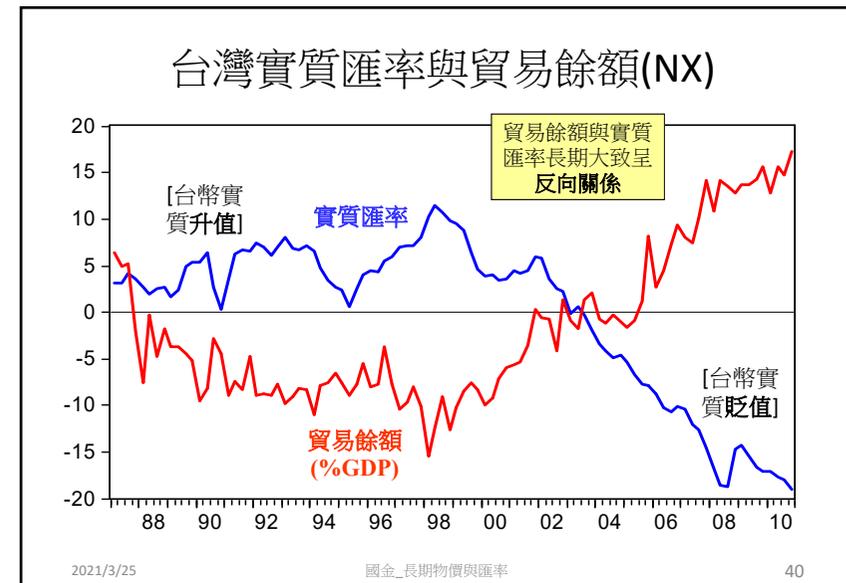 $$\Rightarrow q_{\$/€} = \frac{\text{美國財貨數量}}{\text{歐洲財貨數量}} \quad \downarrow$$
    - (參見次圖)

台灣實質匯率與貿易餘額(NX)

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6-2

- 影響RD (relative demand)變動(移動)的因素
  - 國際原物料如石油價格↓ ⇒ US產品(如休旅車)相對需求上升、RD右移(參見前圖) ⇒ 美元實質升值
  - 美國採持續性貿易保護主義或採貿易緊縮政策(如課徵永久性進口關稅) ⇒ RD右移 ⇒ 美元實質升值
- 影響RS (relative supply)變動(移動)的因素
  - 美國勞動生產力提高(如因健保制度改善) ⇒ Y_{US}↑ ⇒ RS右移 (美產品出現相對超額供給；在原均衡下，表示美產品相對昂貴) ⇒ 美元實質貶值(新均衡)

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6-3 長期均衡下的名目與實質匯率

- 改寫定義式(5-6)為

$$E_{\$/€} = q_{\$/€} \times (P_{US}/P_E). \tag{5-7}$$

- 因此，**長期名目匯率**取決於(1)實質匯率與(2)國內外物價水準(即美國與歐洲相對物價)等因素

| RD-RS模型決定 | US貨幣供需決定 | 歐洲貨幣供需決定 |

- (5-7)以變動率表示如下

$$\%\Delta E_{\$/€} = \%\Delta q_{\$/€} + (\%\Delta P_{US} - \%\Delta P_E) \tag{5-7.1}$$

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6-3.1 名目匯率長期變動因素

- Assuming all variables start out at their long-run levels
- (1)貨幣**供給額**的相對變動
- (2)貨幣供給**成長率**的相對變動
- (3)產出需求的相對變動
- (4)產出供給的相對變動
- (參見次表)

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TABLE 5-1　Effects of Money Market and Output Market Changes on the Long-Run Nominal Dollar/Euro Exchange Rate, $E_{\$/€}$

Change	Effect on the Long-Run Nominal Dollar/Euro Exchange Rate, $E_{\$/€}$
Money market	
1. Increase in U.S. money supply level	Proportional increase (nominal depreciation of $)
2. Increase in European money supply level	Proportional decrease (nominal depreciation of euro)
3. Increase in U.S. money supply growth rate	Increase (nominal depreciation of $)
4. Increase in European money supply growth rate	Decrease (nominal depreciation of euro)
Output market	
1. Increase in demand for U.S. output	Decrease (nominal appreciation of $)
2. Increase in demand for European output	Increase (nominal appreciation of euro)
3. Output supply increase in the United States	Ambiguous
4. Output supply increase in Europe	Ambiguous

(Why?) Hint: 價量影響…

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6-3.2 結論

- *We conclude that when all disturbances are monetary in nature, exchange rates obey relative PPP in the long run. In the long run, a monetary disturbance affects only the general purchasing power of a currency, and this change in purchasing power changes equally the currency's value in terms of domestic and foreign goods.*

- *When disturbances occur in output markets, the exchange rate is unlikely to obey relative PPP, even in the long run*

7 國際利差與實質匯率

- 令實質匯率公式(5-6)在預期行為之下亦成立⇒
$$q^e_{\$/€} = (E^e_{\$/€} \times P^e_E)/P^e_{US}.$$

- 合併上式與(5-6)實質匯率公式 ⇒
$$(q^e_{\$/€} - q_{\$/€})/q_{\$/€} = [(E^e_{\$/€} - E_{\$/€})/E_{\$/€}] - (\pi^e_{US} - \pi^e_E), \quad (5\text{-}8)$$

- 重揭利率平價條件
$$R_\$ - R_€ = (E^e_{\$/€} - E_{\$/€})/E_{\$/€}$$

- 將(5-8)帶入上式等號右邊⇒
$$R_\$ - R_€ = [(q^e_{\$/€} - q_{\$/€})/q_{\$/€}] + (\pi^e_{US} - \pi^e_E). \quad (5\text{-}9)$$

- 若相對PPP成立， (5-9)rhs第一項=0，則(5-9)=(5-5)

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- In general, however, the dollar/euro interest difference is the sum of *two* components:
(1) the expected rate of real dollar depreciation against the euro (取決於RS-RD模型) and
(2) the expected inflation difference between the United States and Europe (取決於貨幣數量說暨貨幣供給之相對成長率)

8 實質利率平價

- 衡量實質利率 r： $r = R - \pi$
  - 假設存款年息為5%，若這一年內的物價上升3%，則該存款的實質收益率等於2%
  - 現在如果利率上升至8%，但通貨膨脹率為10%，則實質利率就成為−2%
  - 相較前述情況，此時對存戶相對不利，勢必影響存款意願(該存款需求減少)

8

- 事前與事後概念的 r
  - π = **實際**通貨膨脹率
    (直到發生後才可知)
  - π^e = **預期**通貨膨脹率
- $R - \pi$ = 事後(ex post) 實質利率
  - 後來真正實現的實質利率
- $R - \pi^e$ = 事前(ex ante) 實質利率 r^e
  - 達成協議時(即契約尚未到期前)，借貸雙方(即銀行與存戶)**預期**的實質利率

8

- Fisher effect: Any increase in the expected inflation rate that does not alter the expected real interest rate must be reflected, one for one, in the nominal interest rate (i.e. $R = r^e + \pi^e$ ，r^e given)

8-1 國際實質利差

- 將預期實質利率用於歐美兩地
  $$r^e_{US} - r^e_E = (R_\$ - \pi^e_{US}) - (R_\text{€} - \pi^e_E)$$
- 再將名目利差公式(5-9)帶入⇒
  $$r^e_{US} - r^e_E = (q^e_{\$/\text{€}} - q_{\$/\text{€}})/q_{\$/\text{€}}. \qquad (5\text{-}10)$$
  - Expected real interest rates are the same in different countries when relative PPP is expected to hold (見[6-1])
  - 但…expected real interest rates in different countries need not be equal, even in the long run, if continuing change in output markets is expected (如同PPP不成立)
  - 舉例…

8-1

- Suppose that productivity in the S. Korean tradables sector is expected to rise during the next 2 decades, while productivity stagnates in South Korean nontradables and in all U.S. industries
- If the Balassa-Samuelson hypothesis is valid, people should expect the U.S. dollar to depreciate in real terms against South Korea's currency, the won, as the prices of South Korea's nontradables trend upward
- Equation (5-10) thus implies that the expected real interest rate should be higher in the United States than in South Korea

8-1

- Do such real interest differences imply unnoticed profit opportunities for international investors? Not necessarily.

- 前例美國實質利率較高…so what?
  (仍須考慮到預期美元貶值(無論實質或名目)…)

FIN

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