

短期的產出與匯率 (part 1)

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[取材自Krugman, et al. (2018)
chap. 6]

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0 前言

- 物價僵固下的短期經濟狀態
 - 暫無須區別實質與名目數值(或變數)
- 總合需求與實質匯率的關係
- 開放經濟下的短期均衡－連接資產市場均衡與產出商品市場均衡狀態及其間的相互作用
- 貨幣政策與財政政策對匯率與產出短期的影響效果
- 永久性總經政策變動的長期效果
- 總經政策、經常帳平衡與匯率之間的關聯

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1 開放經濟下的總合需求

- 1-1 總合需求函數

$$C = C(Y^d).$$

- 其中可支配所得 $Y^d = Y - T$
- C , Y , and T are all **measured in terms of domestic output units**
- when disposable income rises, consumption demand generally rises by *less* because part of the income increase is saved (i.e. 邊際消費傾向(mpc, marginal propensity to consume)大小介於(0, 1)之間)

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1-2 經常帳餘額(淨輸出需求)

- $CA (\equiv NX, \text{net exports}) = EX - IM$
 - CA , EX , and IM are measured in terms of domestic output
- 淨輸出需求函數

$$CA = CA(EP^*/P, Y^d).$$
- 實質匯率 $q = E \cdot P^*/P$ 表示用本國商品數量衡量的外國商品價格
- 名目匯率 E 表示用本國貨幣衡量之外國貨幣的價格(如在台灣NT\$/US\$)
- CA 與 q 呈正相關； CA 與 Y^d 呈負相關(見次表)

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影響經常帳暨實質淨輸出變動的因素

Change	Effect on Current Account, CA
Real exchange rate, $EP^*/P \uparrow$ (本幣實質趨貶)	CA \uparrow
Real exchange rate, $EP^*/P \downarrow$	CA \downarrow
Disposable income, $Y^d \uparrow$ ($\Rightarrow IM \uparrow$)	CA \downarrow
Disposable income, $Y^d \downarrow$	CA \uparrow

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補充說明：貨幣升貶對CA的價量效果

- $CA = EX - IM$
 - 式中CA, EX, IM皆以本國產出表示的實質變數
 - 本國物價為P，故實質進、出口(以本國產出衡量表示)分別為

$$IM = (P_M \times Q_M)/P, EX = (P \times Q_X)/P = Q_X$$
 - 其中 P_M 為以本幣表示的進口財價格， $=EP^*$
 - 換言之， $IM = q Q_M$
 - 此外， Q_M 、 Q_X 分別為進、出口量，假設 $\Delta Q_M/\Delta q < 0$ ， $\Delta Q_X/\Delta q > 0$
- 因此， $CA = Q_X - q Q_M$

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補充說明：貨幣升貶對CA的價量效果(cont.)

- 若本幣實質貶值 $q \uparrow$ ，對CA會產生2個相互抵銷的影響效果
- (1) 量的效果(*volume effect*)
 - $Q_M \downarrow, Q_X \uparrow \Rightarrow CA \uparrow$
- (2) 值的效果(*value effect*)
 - $(q Q_M) \uparrow \Rightarrow CA \downarrow$
- We assume ... that the volume effect of a real exchange rate change always outweighs the value effect (即Marshall-Lerner條件成立), so that, other things equal, a real depreciation of the currency improves the current account and a real appreciation of the currency worsens the current account

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2 總合需求等式

- 總合需求(AD或D)等於啥?

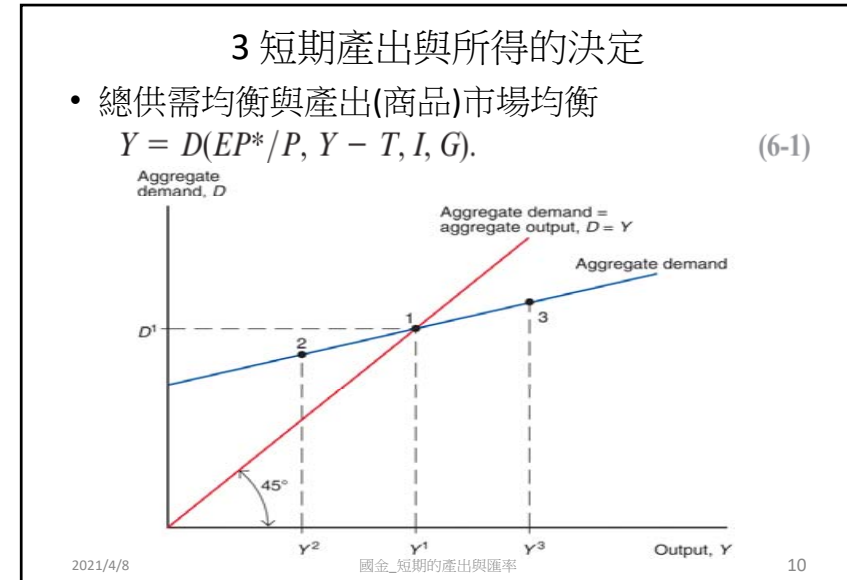
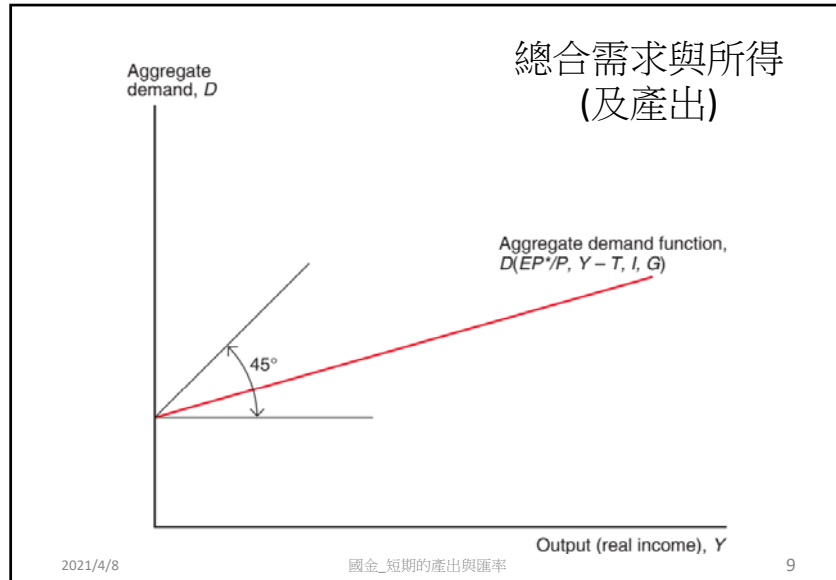
$$D = C(Y - T) + I + G + CA(EP^*/P, Y - T)$$
- 或以函數形式D(.)表示

$$D = D(EP^*/P, Y - T, I, G)$$
 - D與 q, I, G 呈正相關
 - 假設邊際總需求傾向 $\Delta D/\Delta(Y-T)$ 仍介於(0,1)，雖然...
 - (見次圖)

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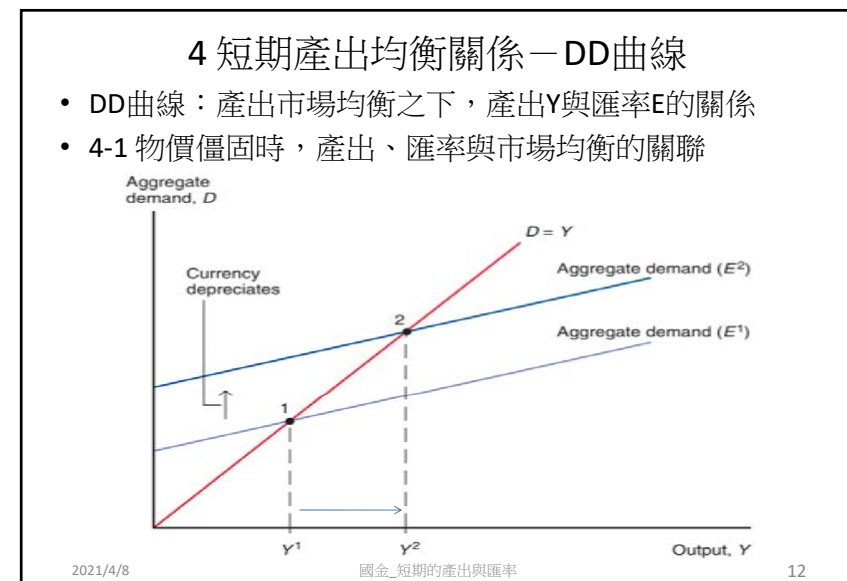
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- 國民所得會計等式vs.市場均衡條件(f.note 6, p.175)
- why output tends to settle at Y_1 in the short run?
- 若實際 $Y < Y_1$ ，則市場供不應求， $Y \uparrow$
 - 非事先計畫或安排的(unplanned、undesired)存貨減少 \Rightarrow 補庫存...
- 反之...市場供過於求， $Y \downarrow$
 - 存貨增加(非自願性累積存貨) \Rightarrow 先消化庫存...
 - (參見f.note 6, p.175)
- 此時，產出基本上配合需求做調整...

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4-1

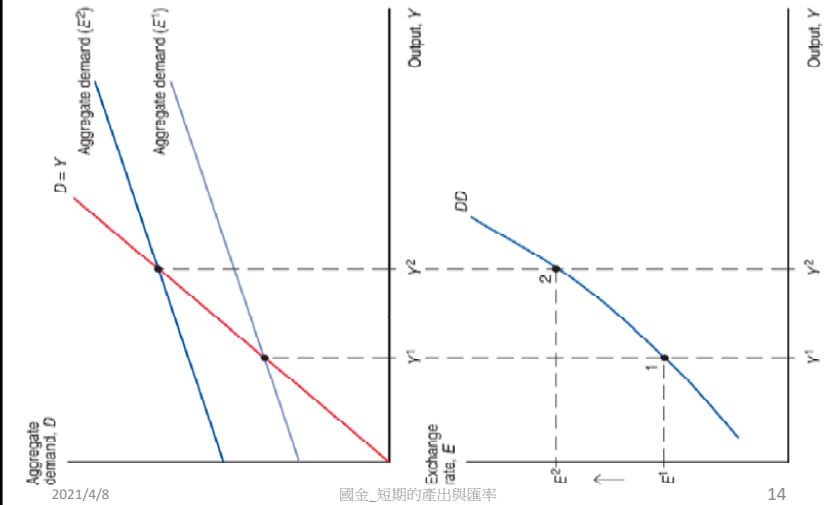
- Any rise in the real exchange rate EP^*/P (whether due to a rise in E , a rise in P^* , or a fall in P) will cause an upward shift in the aggregate demand function and an expansion of output, all else equal
- 反之，any fall in EP^*/P , regardless of its cause (a fall in E , a fall in P^* , or a rise in P), will cause output to contract, all else equal.
 - (A rise in P , with E and P^* held fixed, for example, makes domestic products more expensive relative to foreign products, reduces aggregate demand for domestic output, and causes output to fall.)

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4-2 求導DD曲線(Demand for Domestic Y)



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4-2

- 在DD曲線上
 - 本國貨幣貶值(i.e. $E \uparrow$)，本地產出 $Y \uparrow$
 - 反之， $E \downarrow$ ， $Y \downarrow$
- 易言之，在 (Y, E) 座標上，其中 E 表示已本幣衡量的外幣價格，則**DD曲線為正斜率**

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4-3 影響DD曲線移動的因素

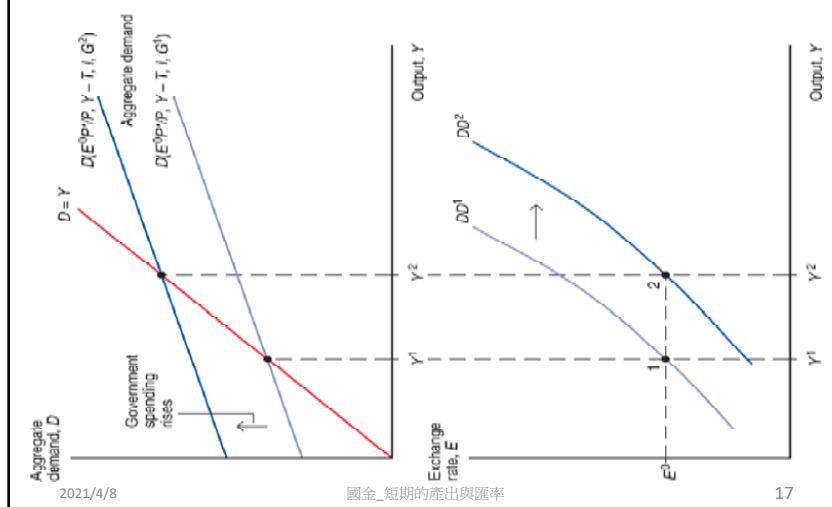
- DD曲線移動 – DD增加或DD減少
- 會使DD曲線「外移」(或右移，即DD增加)的因素
 - 政府需求(即政府購買支出) $G \uparrow$ (見次圖)
 - 減稅 $T \downarrow$ ($Y^d \uparrow$)
 - 投資需求 $I \uparrow$
 - $P \downarrow$ ($q \uparrow$, given E)
 - $P^* \uparrow$ ($q \uparrow$, given E)
 - 消費需求傾向上升(即需求函數上升, given Y)
 - 例如本地居民變得消費較高而儲蓄較少
 - 淨輸出需求傾向上升(外人對本地產品相對於本地居民對進口品的需求 \uparrow , 即CA或NX函數上升, given q)
 - 例如中美貿易戰可能造成台灣出口(esp. 電子產品)增加

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政府需求增加在產出市場對Y的影響



4-3

- 會使DD曲線「內移」(或左移，即DD減少)的因素 – ... (自我練習)
- Any disturbance that raises aggregate demand for domestic output shifts the DD schedule to the right;
- any disturbance that lowers aggregate demand for domestic output shifts the DD schedule to the left

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5 短期資產市場均衡—AA曲線

- DD曲線上每一點均表示產出市場均衡
 - 亦即given任何E，DD曲線上對應的皆為產出市場均衡的Y
 - 單靠DD無法確定到底何者為均衡的E
- 引進資產市場均衡關係—AA曲線，連同DD曲線就可確定相對一般的均衡「位置」(Y, E) (而非一串的產出市場均衡關係)

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5-1 產出(所得)、匯率與資產市場均衡

- 兩個(貨幣)資產市場—外幣與本幣市場
- 匯率在利率平價條件—外幣資產(外匯)市場均衡

$$R = R^* + (E^e - E)/E,$$
- 產出(所得)在貨幣市場均衡—本幣資產均衡

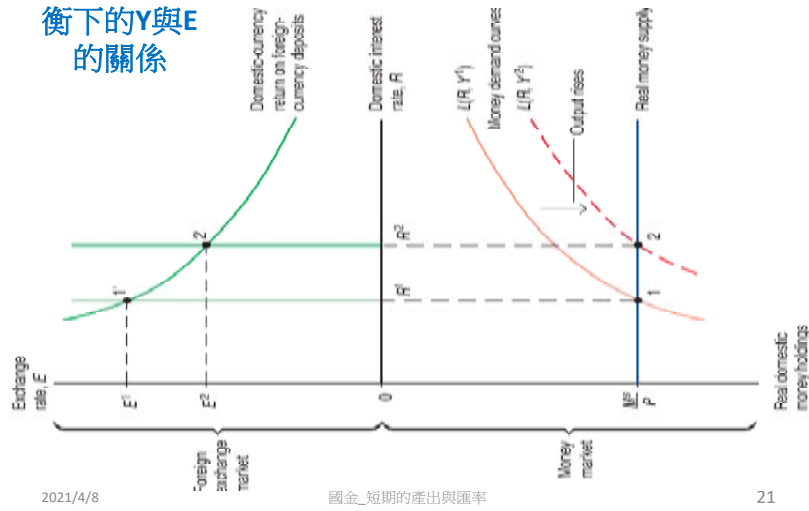
$$M^s/P = L(R, Y).$$
- 連結兩個市場：國內市場利率R
 - 例如 $\uparrow Y \Rightarrow L(\cdot) \uparrow$ ；貨幣市場維持均衡 $\Rightarrow R \uparrow$
 - $R \uparrow$ ；外幣資產市場維持均衡 $\Rightarrow E \downarrow$ (本幣升值)
- 因此，AA曲線為負斜率(參見次圖)

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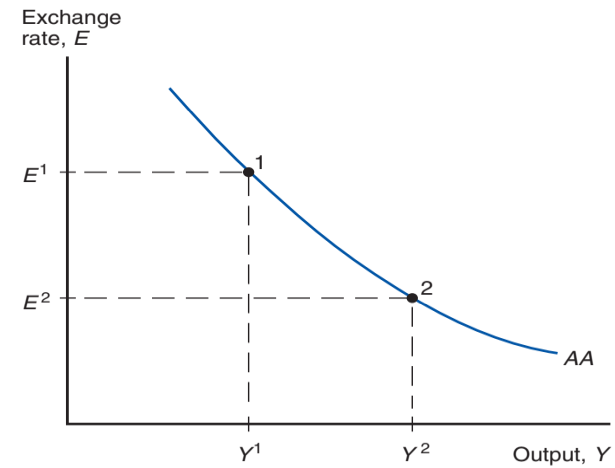
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資產市場均 衡下的Y與E 的關係



5-2 導出的AA曲線



5-3 影響AA曲線移動的因素

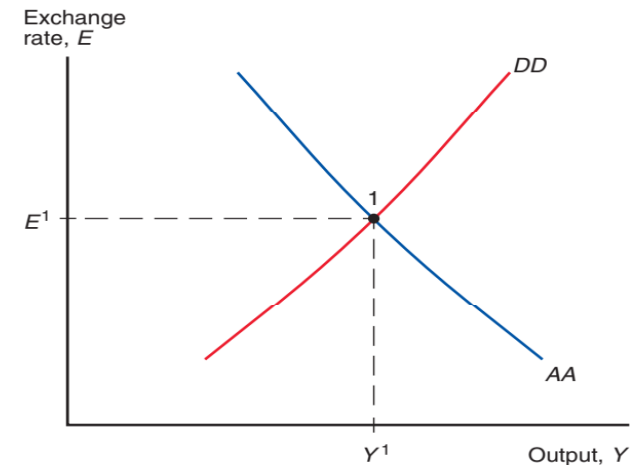
- 會使AA曲線「外移」(上移或右移, 即AA增加)的因素
 - A fall in P results in an upward shift of AA
 - $(M_s/P) \uparrow \Rightarrow R \downarrow, E \uparrow$ (for any given Y)
 - the rise in M_s causes AA to shift *upward*
 - AA shifts upward when a rise in the expected future exchange rate occurs
 - 維持外匯市場均衡, $E \uparrow$
 - A rise in R^* therefore has the same effect on AA as a rise in E^e : It causes an upward shift
 - A reduction in money demand therefore has the same effect as an increase in the money supply, in that it shifts AA upward

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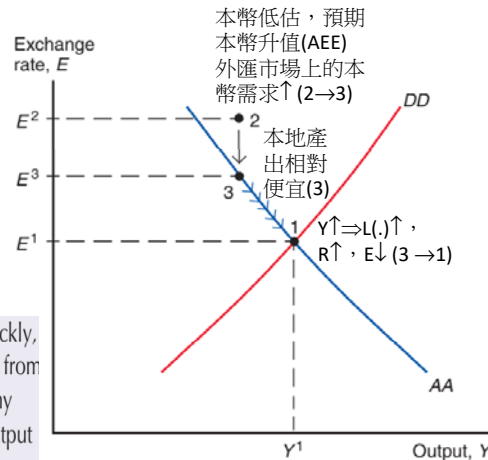
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6 開放經濟的短期均衡—DD與AA



6-1 調整機制



Because asset markets adjust very quickly, the exchange rate jumps immediately from point 2 to point 3 on AA. The economy then moves to point 1 along AA as output rises to meet aggregate demand.

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7 暫時性的貨幣與財政政策

- 前提假設
 - 一次性的貨幣數量、政府支出或課稅變動
 - The expected future exchange rate, E^e , is now assumed to equal the long-run exchange rate
 - a temporary policy change does not affect the long-run expected exchange rate, E^e
 - We assume throughout that events in the economy we are studying do not influence the foreign interest rate, R^* , or price level, P^* , and that the domestic price level, P , is fixed in the short run

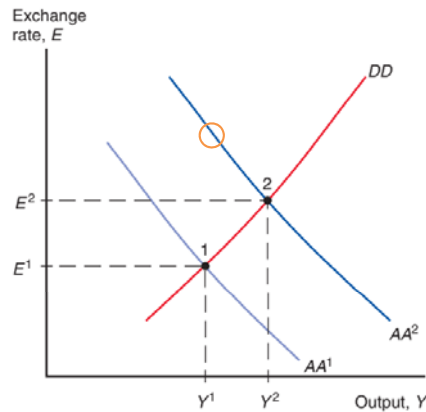
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7-1 貨幣政策

- $M_s \uparrow \Rightarrow R \downarrow$
- E^e 給定(不受影響)
 - 國外變數(如 R^*) 亦給定
- 在利率平價下，預期美元(本幣)升值，但 E^e 給定 $\Rightarrow E \uparrow$ (即期美元貶值)、**AA上移**(given Y)
- 本國商品變得相對便宜
- 總合需求 \uparrow 、產出增至 Y^2
- (overshooting?)



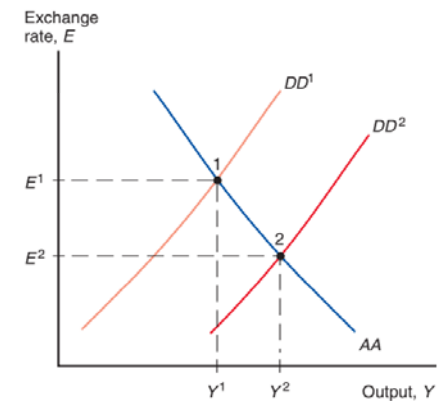
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7-2 財政政策

- $G \uparrow$ (and/or $T \downarrow$) \Rightarrow **DD外移**、總合需求 \uparrow 、 $Y \uparrow$
- $L(\cdot, Y \uparrow) \dots R \uparrow$ (以維持貨幣市場均衡)
- 在利率平價下，預期美元(本幣)貶值，但 E^e 給定 $\Rightarrow E \downarrow$ (即期美元升值)
- (no overshooting?)



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7-3 保持充分就業的政策

- 假設原始經濟處於充分就業狀態(FE)
- 來自國內外部門的外生因素對商品市場(DD)與資產市場(AA)的干擾可能使經濟乖離FE
- 如何利用貨幣與財政等總體經濟政策來抵銷這些干擾，達到穩定經濟的目的

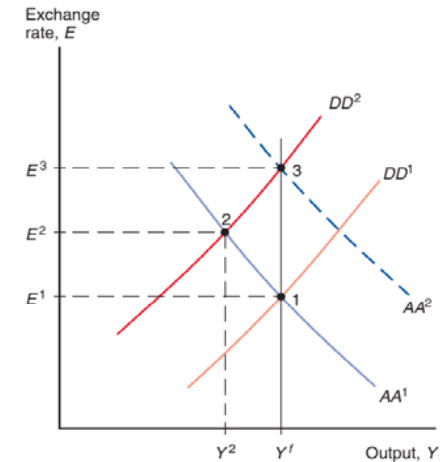
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7-3.1 商品市場干擾

- A temporary fall in world demand (1 → 2)
- 暫時性寬鬆貨幣政策的應對 (2 → 3)
 - 最終貨幣貶值幅度更大
- 暫時性的擴張性財政政策的應對 (2 → 1)
 - 幣值最終將恢復至原先水準
- 應付商品市場干擾時，用財政政策較佳



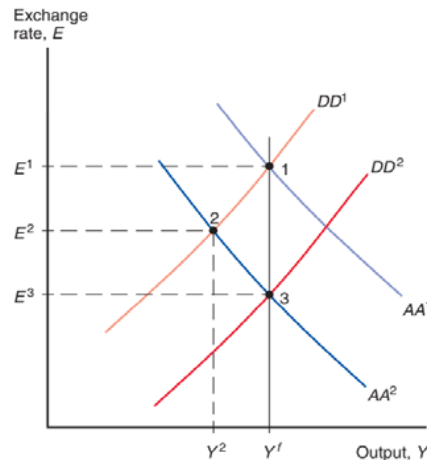
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7-3.2 資產(暨貨幣)市場干擾

- a temporary money demand increase (1 → 2)
- 暫時性寬鬆貨幣政策的應對 (2 → 1)
 - 幣值最終將恢復至原先水準
- 暫時性的擴張性財政政策的應對 (2 → 3)
 - 最終貨幣升值幅度更大
- 應付資產市場干擾時，用貨幣政策較佳



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8 通膨偏差與政策制定的其他問題

- 穩定經濟保持充分就業對於政策制定是否是簡單或容易達成的目標?
- 決策過程中需面對與考慮的問題
- (1)物價僵固與通膨偏差(inflation bias)
 - 特別在政治上，短期物價僵固容易被誤認寬鬆或擴張性政策真的只會帶來實質經濟繁榮，進而經常偏執於採刺激經濟的政策
 - 如競選期間...policies will ...be used in a shortsighted way, at the expense of long-term price stability
 - 但通膨終將顯現...As a result, macroeconomic policy can display an **inflation bias**, leading to high inflation but no average gain in output

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- (2) 分辨、判別各種干擾的來源
- (3) To avoid procedural delays, governments are likely to respond to disturbances by changing monetary policy even when a shift in fiscal policy would be more appropriate
- (4) Another problem with fiscal policy is its impact on the government budget...
 - Business cycles vs. electoral cycles
- (5) Policies that appear to act swiftly in our simple model operate in reality with lags of varying lengths. At the same time, the difficulty of evaluating the size and persistence of a given shock makes it hard to know precisely how much monetary or fiscal medicine to administer

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