

Ch. 27 Countercyclical Macroeconomic Policy

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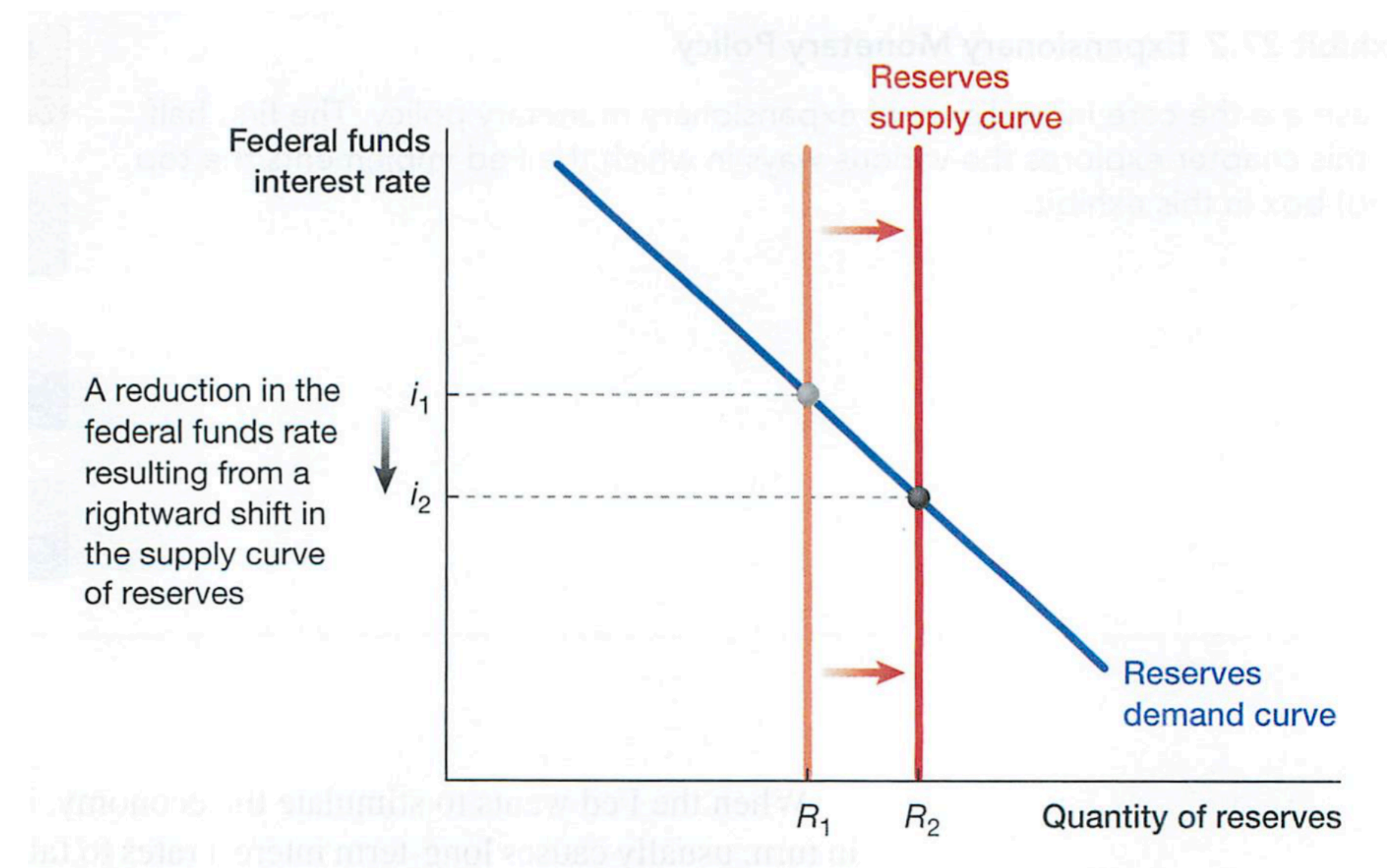
27.1 The Role of Countercyclical Policies in Economic Fluctuations

- Countercyclical Policy: mitigate economic fluctuations.
 - Monetary: change interest rate, i , and bank reserves.
 - Expansionary: $i \downarrow$, bank reserve \uparrow .
 - Contractionary: $i \uparrow$, bank reserve \downarrow .
 - Fiscal: change government expenditure, G , and taxes, T .
 - Expansionary: $G \uparrow$, $T \downarrow$.
 - Contractionary: $G \downarrow$, $T \uparrow$.

27.2 Countercyclical Monetary Policy

Controlling the Federal Funds Rate

- Open market operation: buy/sell short-term bonds from the market.
- Bank reserve \uparrow
- federal funds rate \downarrow
- long-term interest rate \downarrow
- $C \uparrow I \uparrow$
- labor demand \rightarrow



27.2 Countercyclical Monetary Policy

Other Tools of the Fed

1. Changing the reserve requirement:
 - shifting private banks' demand curve for reserve.
2. Changing the interest rate paid on reserves deposited at the Fed:
 - shifting private banks' demand curve for reserve.
3. Lending from the discount window:
 - The Fed lend bank reserves through this channel.
4. Quantitative easing:
 - The Fed buys **long-term** bonds, pushing up prices of long-term bonds.
 - Long-term interest rate ↓, bank reserves ↑.

27.2 Countercyclical Monetary Policy

觀念澄清

1. 聯邦基金利率 (federal funds rate) 為銀行間的短期借貸利率，亦稱隔夜拆款利率 (overnight rate, see p661)。
2. 重貼現率 (rediscount rate) 是商業銀行向中央銀行借款的利率。準備金乙戶利率是中央銀行給商業銀行存放在央行準備金的利率。
3. 央行可透過兩種系統干預金融市場 (Williamson, 2019, JME):
 - Channel system: 央行試圖影響隔夜拆款利率。此時央行的升降息無法直接影響隔夜拆款利率，只有限制效果 - 準備金乙戶利率 < 隔夜拆款利率 < 重貼現率。
 - Floor system: 銀行系統有大量超額準備時，準備金利率 = 隔夜拆款利率。

27.2 Countercyclical Monetary Policy

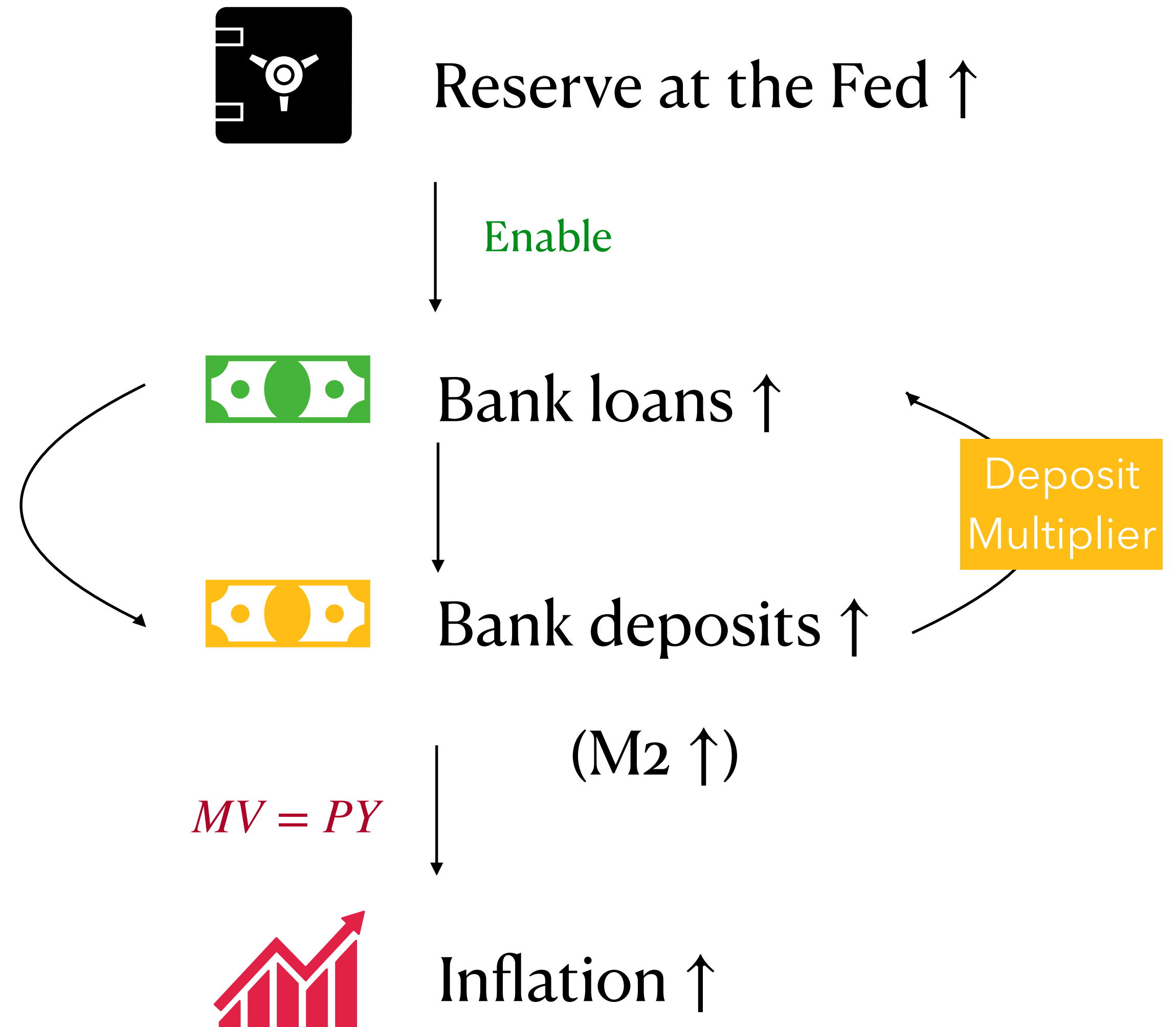
Expectation, Inflation, and Monetary Policy

- Bernanke, 2020. “The New Tools of Monetary Policy”, AER. 前美國聯準會主席介紹量化寬鬆(quantitative easing) 及 前瞻指引 (forward guidance) 。
 1. 前瞻指引又稱 “open mouth operations”:
 - Communication about how monetary policy makers **expect** the economy and policy to evolve.
 - 手段: speeches, testimonies, and policy reports.
 2. 央行透過引導大眾預期來影響長期利率
- Long-term expected real interest rate = Long-term nominal interest rate
3.
$$- \text{Long-term expected inflation rate}$$

27.2 Countercyclical Monetary Policy

Contractionary Monetary Policy: Control of Inflation

- 央行目標要控制通貨膨脹率在2% - 過高或過低都不好。
- 擴張性貨幣政策有引發通膨的風險。
- 緊縮性貨幣政策能控制通膨。
 - Shrink bank reserves
 - Forward guidance
- Trade-off: 高通膨高產出 vs. 低通膨低產出



27.2 Countercyclical Monetary Policy

Policy Trade-offs

- 央行想要使用擴張性貨幣政策刺激經濟，可能會有通貨膨脹的風險。
 - ▶ Fed's dual mandate: 1) price stability 2) maximum sustainable employment.
- 央行的政策取捨: 打擊通膨 \Rightarrow 低就業、低成長; 刺激就業 \Rightarrow 高通膨。
- Taylor rule (建議的調整法則):
 - ▶ Federal funds rate = Long-run federal funds rate target + $1.5 \times (\text{Inflation rate} - \text{Inflation rate target}) + 0.5 \times (\text{output gap in percentage points})$
 - ▶ Output gap = $\frac{\text{GDP} - \text{Trend GDP}}{\text{Trend GDP}}$.

27.2 Countercyclical Monetary Policy

More on Taylor Rule

- FOMC決定完全遵照Taylor rule進行公開市場操作。
 - Federal funds rate is 1.25%; long-term federal funds rate target is 3%.
 - Inflation rate target is 2%; inflation rate is 1.25%; output gap is -0.5%.
- a. How will expectations of future inflation change?
 - $\text{federal funds rate} = 3 + 1.5 \times (1.25 - 2) + 0.5 \times -0.5 = 1.625 \%$.
- b. Why might the Federal Reserve not want to set their policy by mechanically applying the Taylor rule?
 - 政策彈性不足、Taylor rule建議不見得合適、存在其他工具、Fed希望固定利率。

27.2 Countercyclical Monetary Policy

Zero Lower Bound

- 負利率背後的邏輯 (effective lower bound):
 - ▶ 持有貨幣可能不方便: 需要保管成本，可能遭竊、龐大的存放空間、大額交易不便。
 - ▶ 但利率低於0太多，銀行會寧可蓋更大間的金庫以降低保管成本。
- 流動性陷阱 (liquidity trap): 短期利率為0時，貨幣政策無效!
 - ▶ 短期政府公債利率為0時，貨幣與短債為完全替代，市場上的貨幣供給為 $M + B$ 。
 - ▶ 此時央行公開市場操作買入短債 ($B \downarrow$) 並且放出貨幣 ($M \uparrow$) 無法增加貨幣供給。
 - ▶ 凱因斯在他1936年的一般理論中首次提出這個理論。

27.2 Countercyclical Monetary Policy

Zero Lower Bound

- 景氣過糟時，Taylor rule可能建議負利率：
 - ▶ Long-term federal funds rate target 1%; inflation target 2%; inflation rate 1%; output gap -3%;
 - ▶ $\text{federal funds rate} = 1 + 1.5 \times (1 - 2) + 0.5 \times -3 = -2\%$
- 當利率到達0時會遭遇流動性陷阱，此時央行需使用非傳統工具：
 - ▶ 量化寬鬆政策 - quantitative easing
 - ▶ 前瞻指引 - open mouth operation

27.3 Countercyclical Fiscal Policy

Fiscal Policy Over the Business Cycle: Automatic and Discretionary Components

- 政府透過擴張性或是緊縮性財政政策來抵消總體經濟波動的影響：
 - ▶ **擴張性**: 增加政府支出、降低稅賦; **緊縮性**: 減少政府支出、增加稅賦 → 影響勞動市場
- 自動性反循環要素 (automatic countercyclical components):
 - ▶ 累進稅率制度、移轉性支付政策都算是automatic stabilizer。
- 權衡性反循環要素 (discretionary countercyclical components):
 - 經濟波動時，有意圖地制定財政政策來抵消影響
 - 常可見在景氣衰退時，政府收入 (↓) - 政府支出 (↑) = 預算赤字 (↑)

27.3 Countercyclical Fiscal Policy

Government Expenditure Multiplier & Crowding Out Effect

- 政府支出乘數分析:
 - ▶ $(Y + m) = (C + m - 1) + I + (G + 1) + X - M$, 支出乘數為 $m/1$ 。
- 排擠效果 (crowding out effect):
 - ▶ 政府透過借貸來因應支出，導致可貸資金需求增加。
 - ▶ 實質利率上升，減少民間投資。
 - ▶ $(Y + m - d) = (C + m - 1) + (I - d) + (G + 1) + X - M$, 支出乘數為 $(m - d)/1$ 。

27.3 Countercyclical Fiscal Policy

Government Expenditure Multiplier & Crowding Out Effect

- 政府稅收乘數分析:
 - 如減稅1元，且這些錢都用來消費
 - ▶ $(Y + m) = (C + m) + I + G + X - M$, 支出乘數為 $m/1$ 。
- 排擠效果 (crowding out effect):
 - ▶ 政府透過借貸來因應支出，導致可貸資金需求增加。
 - ▶ 實質利率上升，減少民間投資。
 - ▶ $(Y + m - d) = (C + m) + (I - d) + G + X - M$, 支出乘數為 $(m - d)/1$ 。

27.3 Countercyclical Fiscal Policy

Trick Question

- 假設政府發放\$1的消費券給消費者，請問下列式子該如何調整？將下列選項填入空格中，選項可重複使用。

► $(Y + \underline{\quad}) = (C + \underline{\quad}) + I + (G + \underline{\quad}) + X - M.$

- a. 0
- b. 1
- c. $m > 1$
- d. $m < 1$
- e. 無法判斷