Lecture 6: Output and Exchange Rate in Short Run

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Course: International Macroeconomics

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Aggregate Demand in Open Economy

Aggregate demand equation

$$D = C(Y - \overline{T}) + \overline{I} + \overline{G} + CA(EP^*/P, Y - \overline{T}) = D(\underbrace{q = EP^*/P}_{(+)}, \underbrace{Y - \overline{T}}_{(+)}, \overline{I}, \overline{G})$$

- Determinants of aggregate demand
  - consumption: $C = C(Y^d), Y^d = Y - \overline{T}$

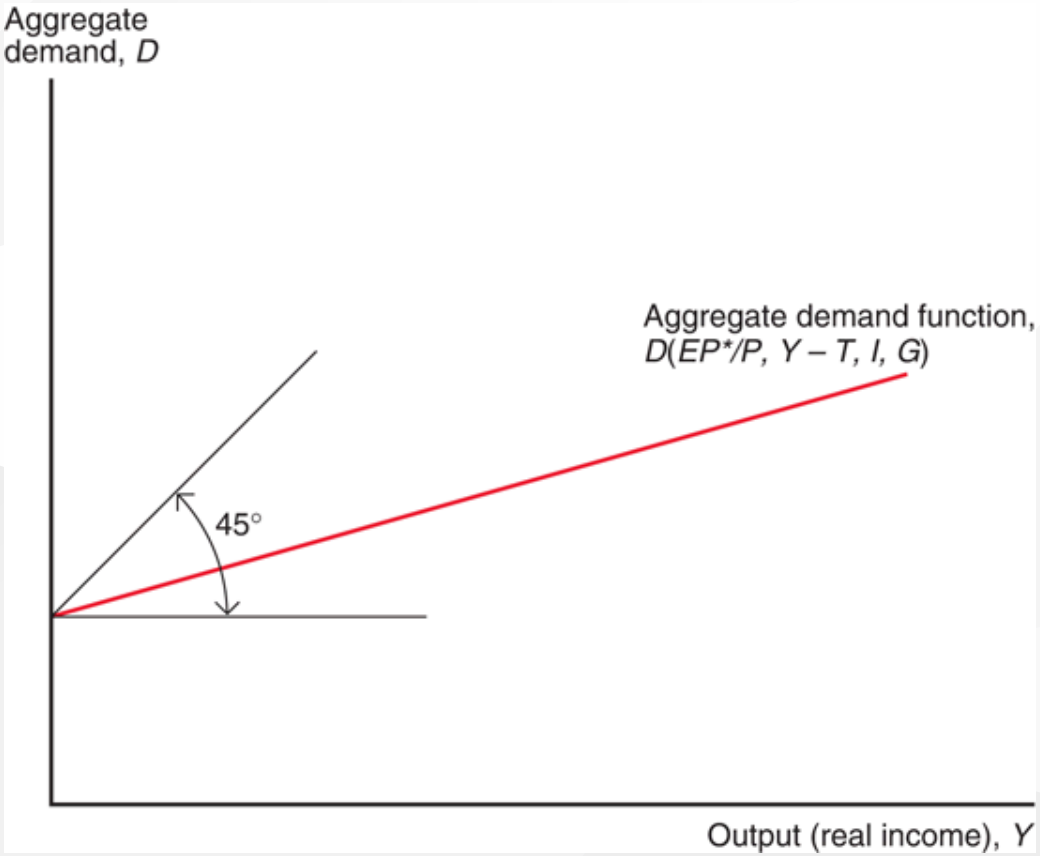
    remark: $Y^d \uparrow \Rightarrow C \uparrow$ less than one-for-one
  - investment: $I = \overline{I}$, government purchases: $G = \overline{G}$
  - current account: $CA = CA(q, Y^d)$

    remark 1: $IM = q \times EX^*$ measured in domestic output

    remark 2: $q \uparrow \Rightarrow EX \uparrow, IM \downarrow$ (?) $\Rightarrow CA \uparrow$ (Marshall-Lerner condition)

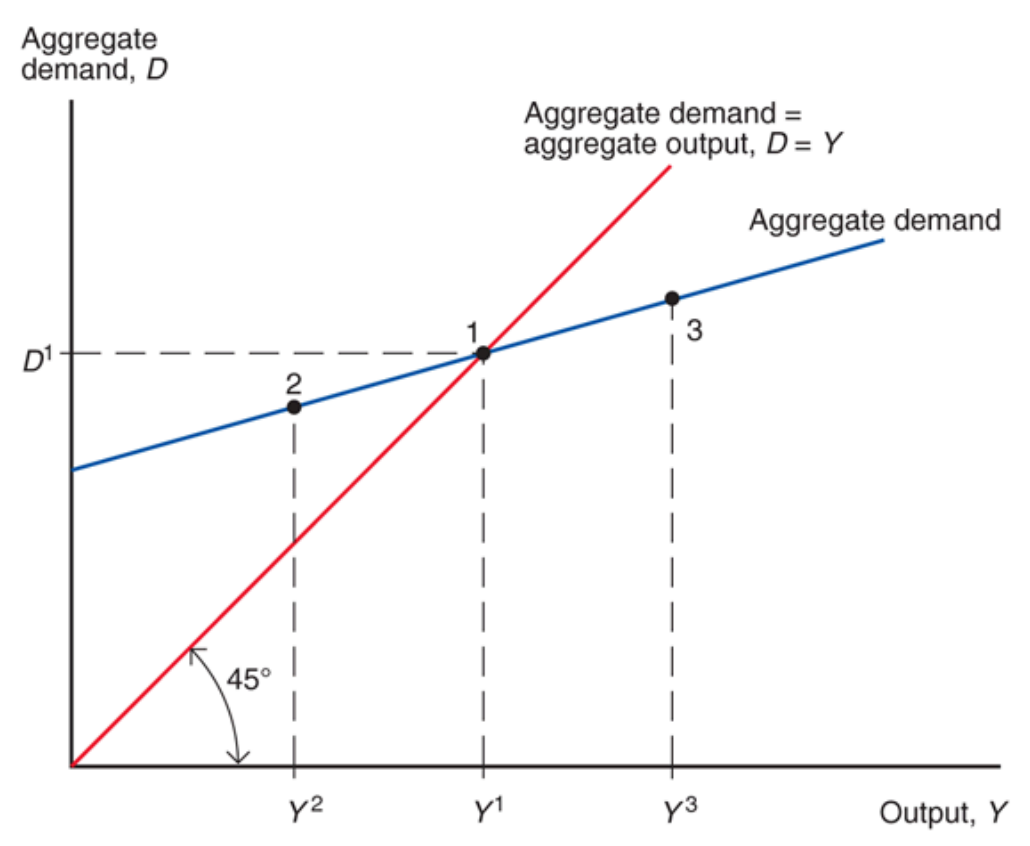
    remark 3: $Y^d \uparrow \Rightarrow IM \uparrow \Rightarrow CA \downarrow$

Aggregate Demand Function



- Why AD function slopes positive but less than one?
- $Y \uparrow \Rightarrow C \uparrow \ > \ IM \uparrow \Rightarrow D \uparrow$ less than one-for-one

Short-Run Equilibrium Output

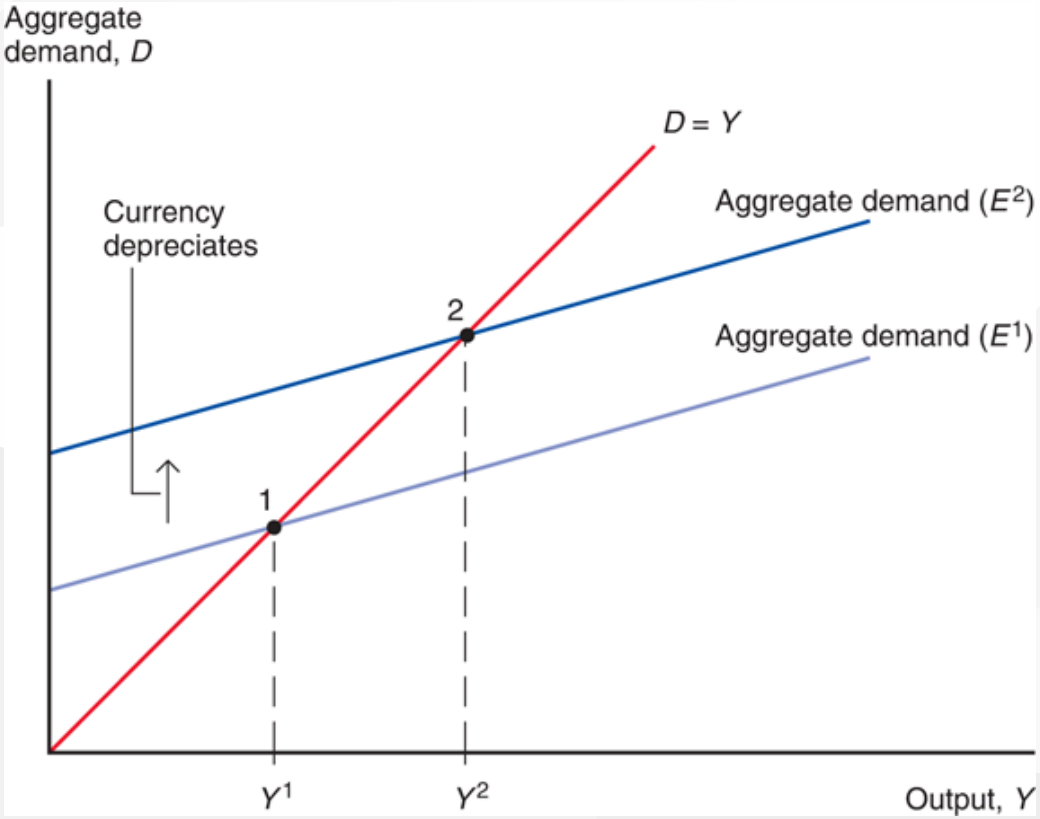


- Equilibrium occurs when $Y = D(EP^*/P, Y - \overline{T}, \overline{I}, \overline{G})$
- Exogenous: $(EP^*/P, I, T, G)$; endogenous: Y

The Road Ahead

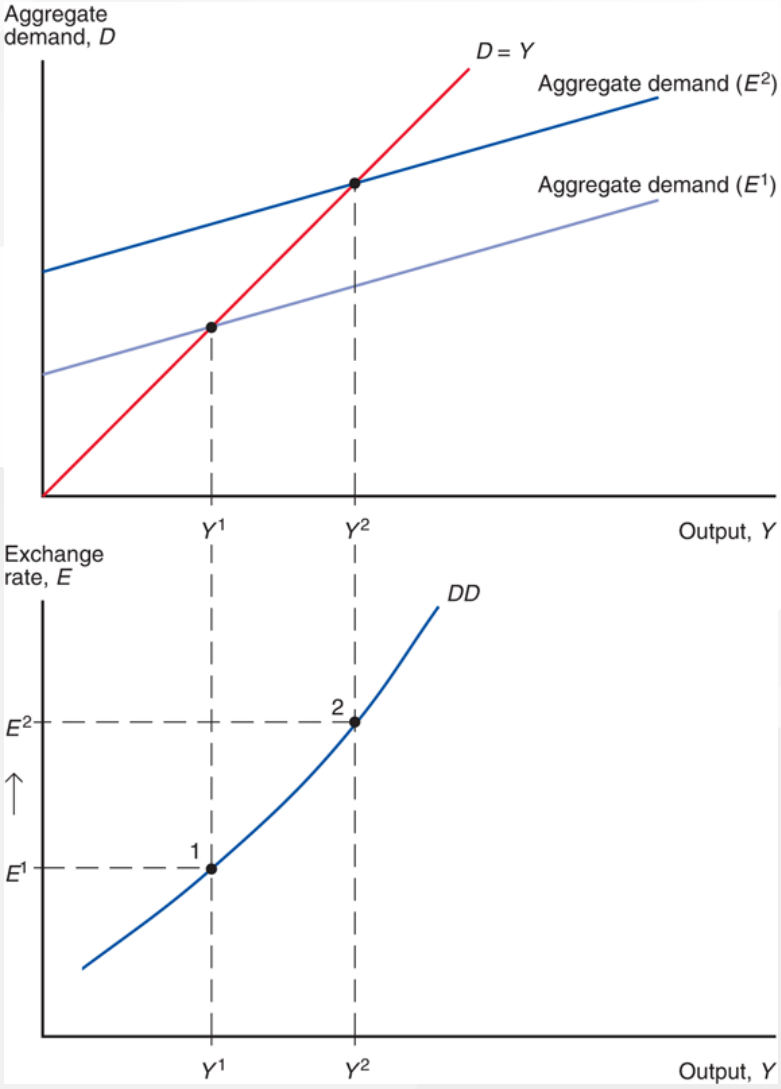
1. Output Market Equilibrium
2. Asset Market Equilibrium
3. Equilibrium of All Markets
4. Monetary and Fiscal Policy
5. Miscellaneous

Output Effect of Currency Depreciation

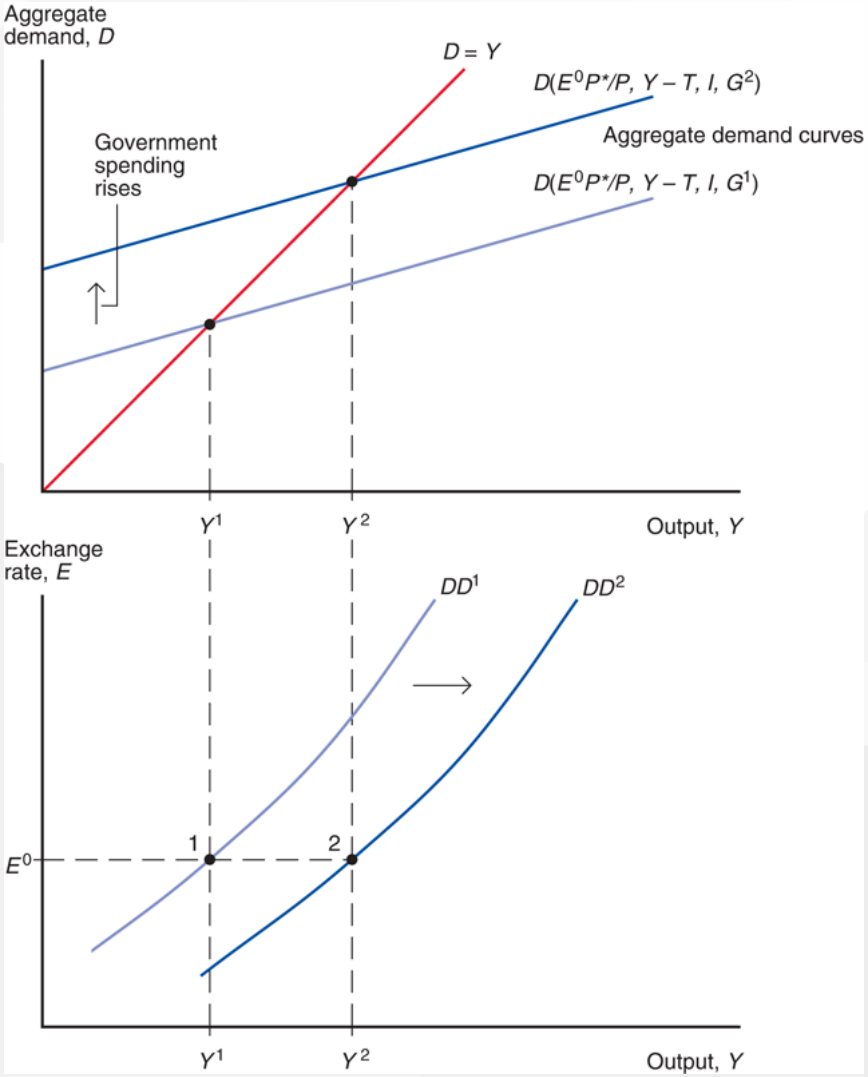


- All else equal, higher exchange rate raises output
- Exogenous: (P, P^*, I, T, G); endogenous: (Y, E)

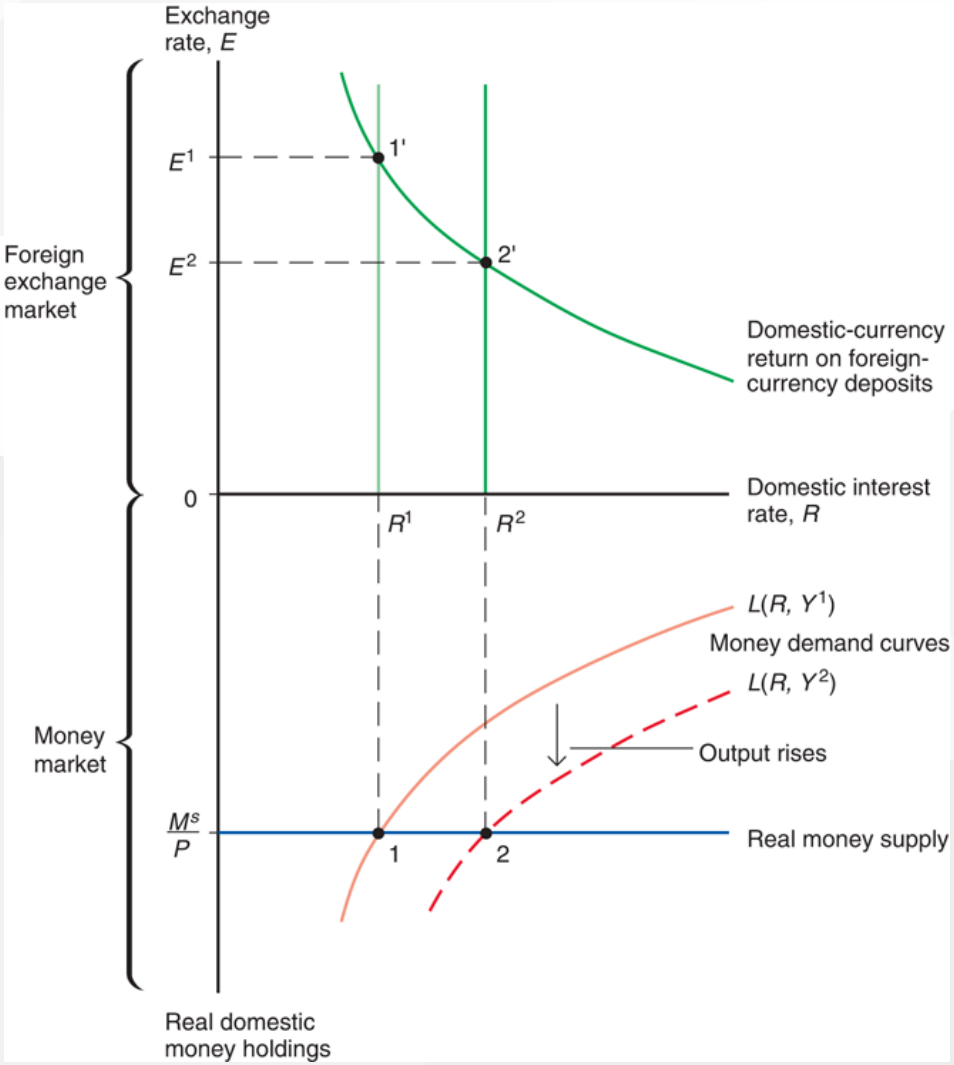
DD Schedule


Aggregate demand, D
D = Y
Aggregate demand (E^2)
Aggregate demand (E^1)
Y^1
Y^2
Output, Y
Exchange rate, E
DD
E^2
2
E^1
1
Y^1
Y^2
Output, Y

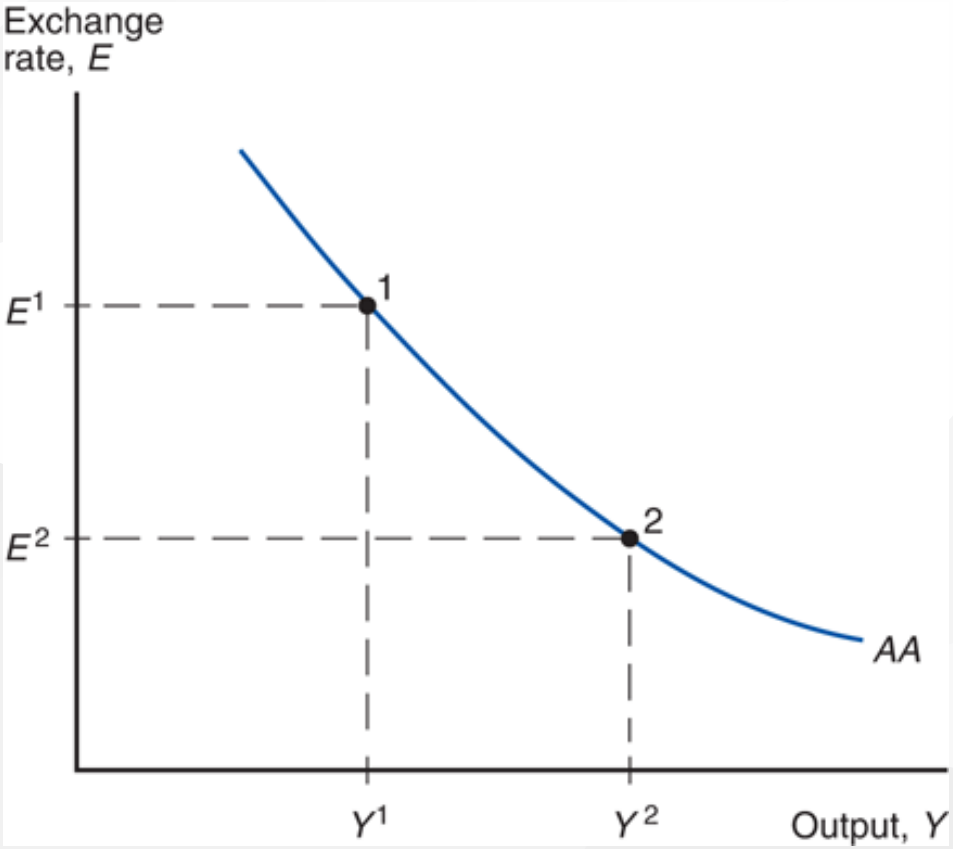
Shift in DD Curve



Currency Effect of Higher Output

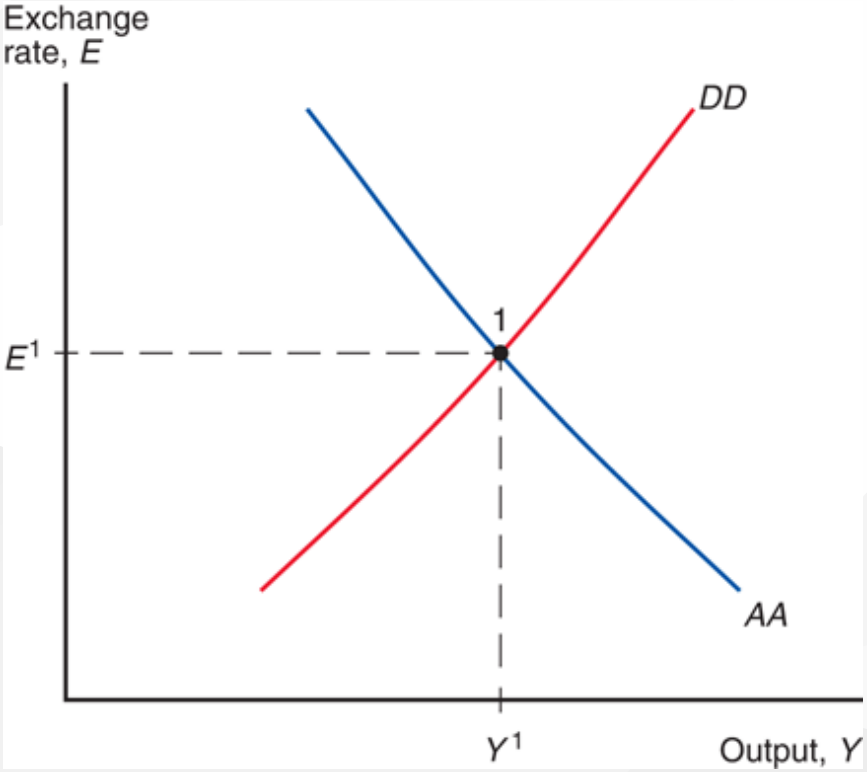


AA Schedule



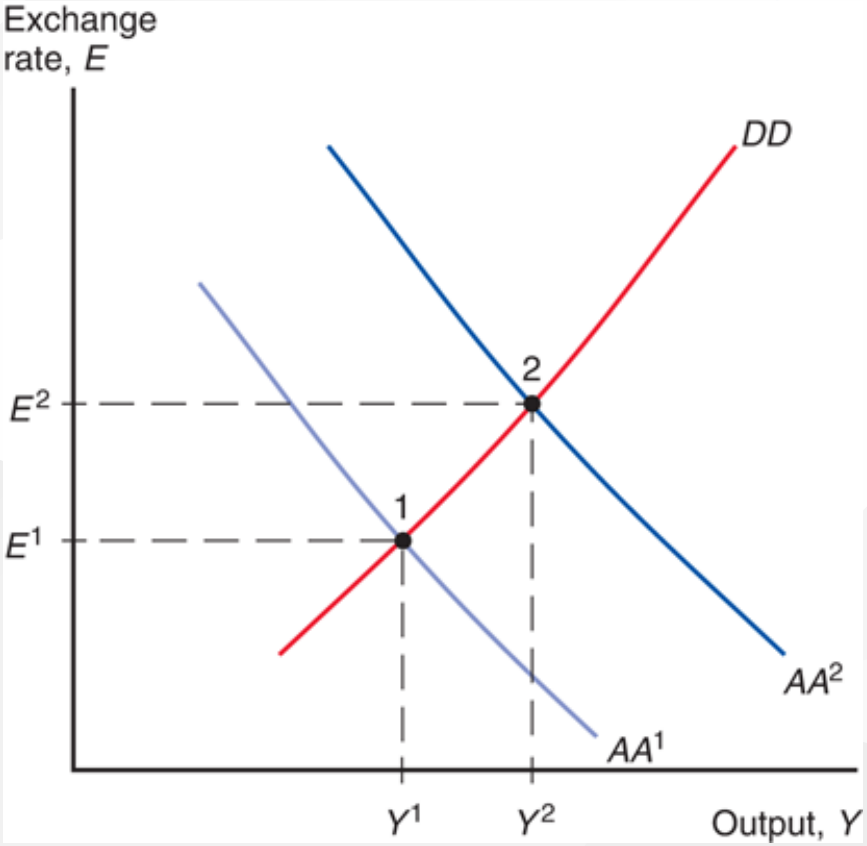
- All else equal, higher output lowers exchange rate
- Exogenous: (M^s, P, R^*, E^e); endogenous: (R, Y, E)

Equilibrium Output and Exchange Rate



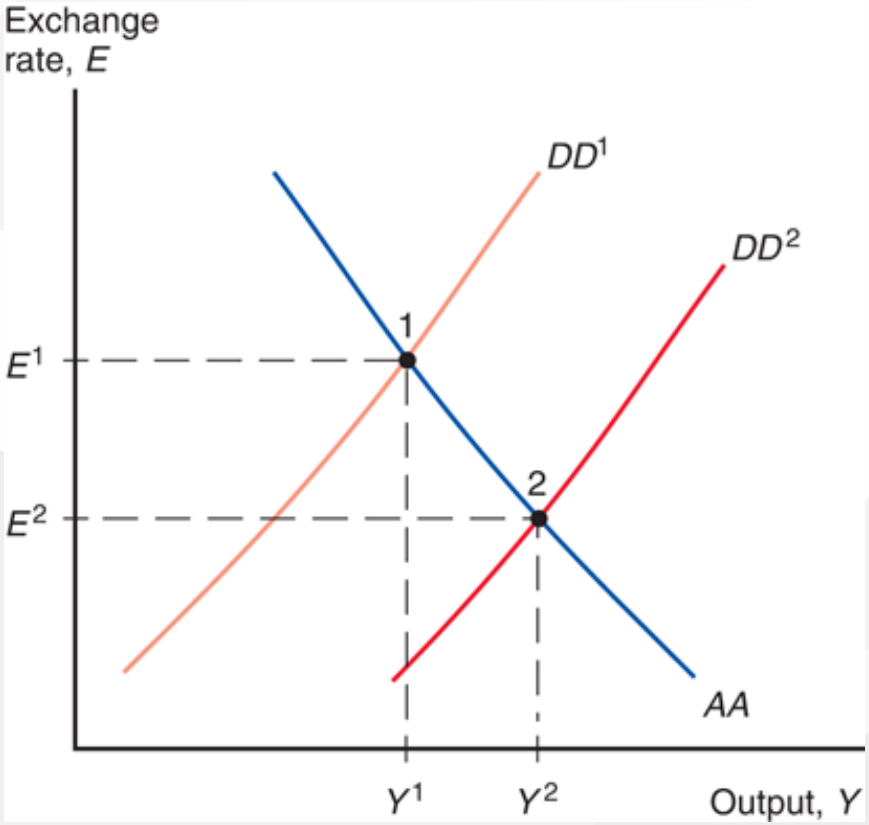
- Output market equilibrium on DD curve
- Asset market equilibrium on AA curve
- Simultaneous equilibrium occurs at intersection

Temporary Monetary Expansion



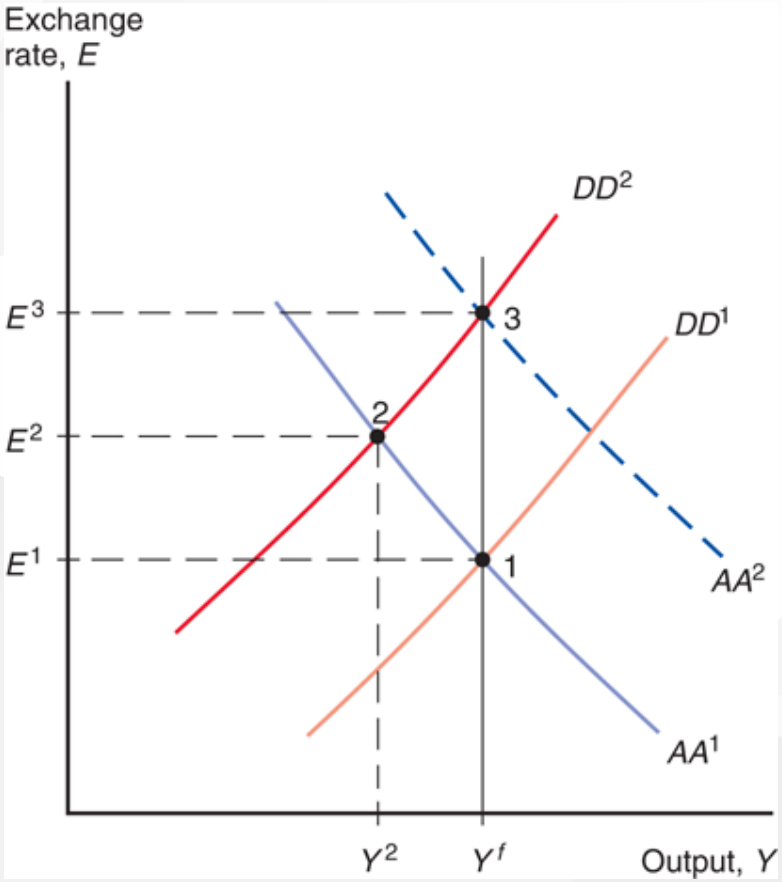
- $M^s \uparrow$ with expected $M^s \downarrow \Rightarrow E^e$ unchanged
- $M^s \uparrow \Rightarrow R \downarrow \Rightarrow E \uparrow \Rightarrow D \uparrow \Rightarrow Y \uparrow$

Temporary Fiscal Expansion



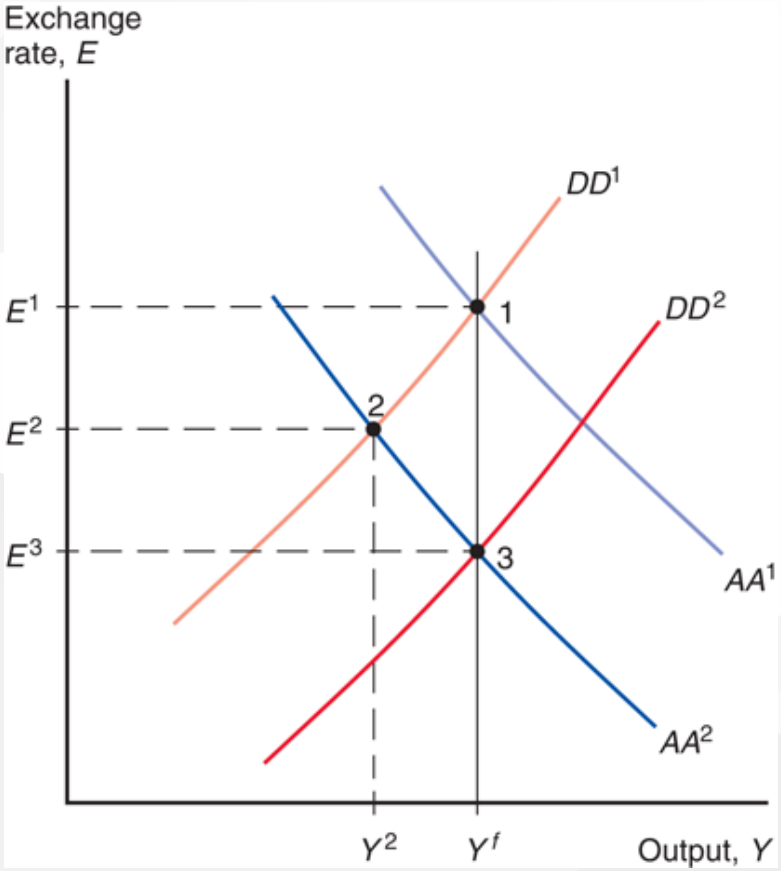
- $G \uparrow$ with expected $G \downarrow \Rightarrow E^e$ unchanged
- $G \uparrow \Rightarrow Y \uparrow \Rightarrow L(R \uparrow, Y) = M^s/P \Rightarrow E \downarrow$

Restoring Full Employment



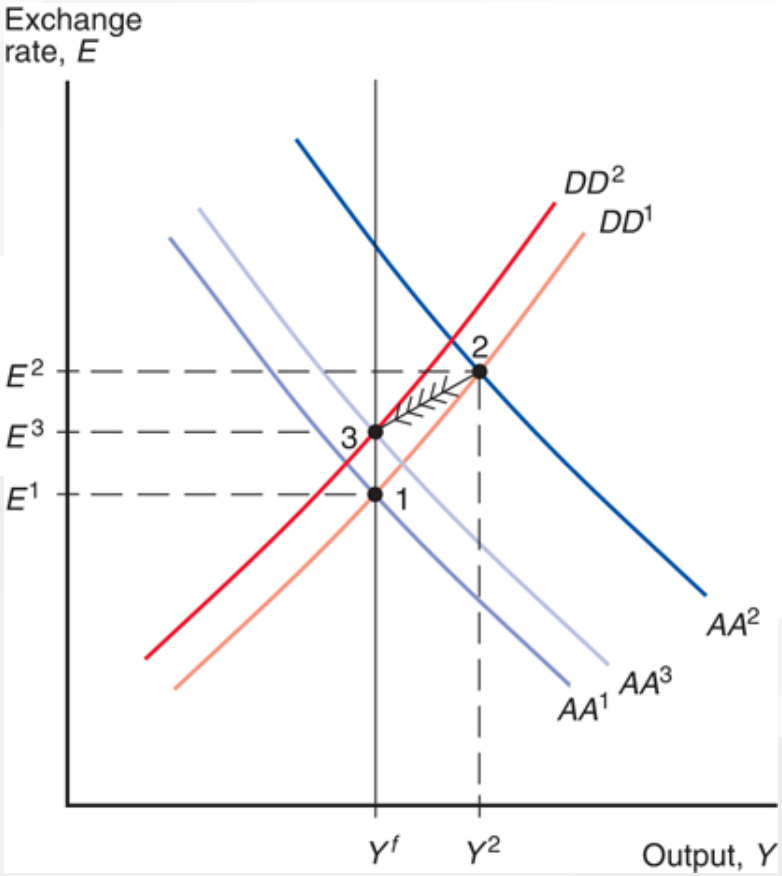
- Temporary demand shift towards foreign goods $(1 \rightarrow 2)$
- M expansion $(2 \rightarrow 3)$; F expansion $(2 \rightarrow 1)$

Restoring Full Employment (Cont'd)



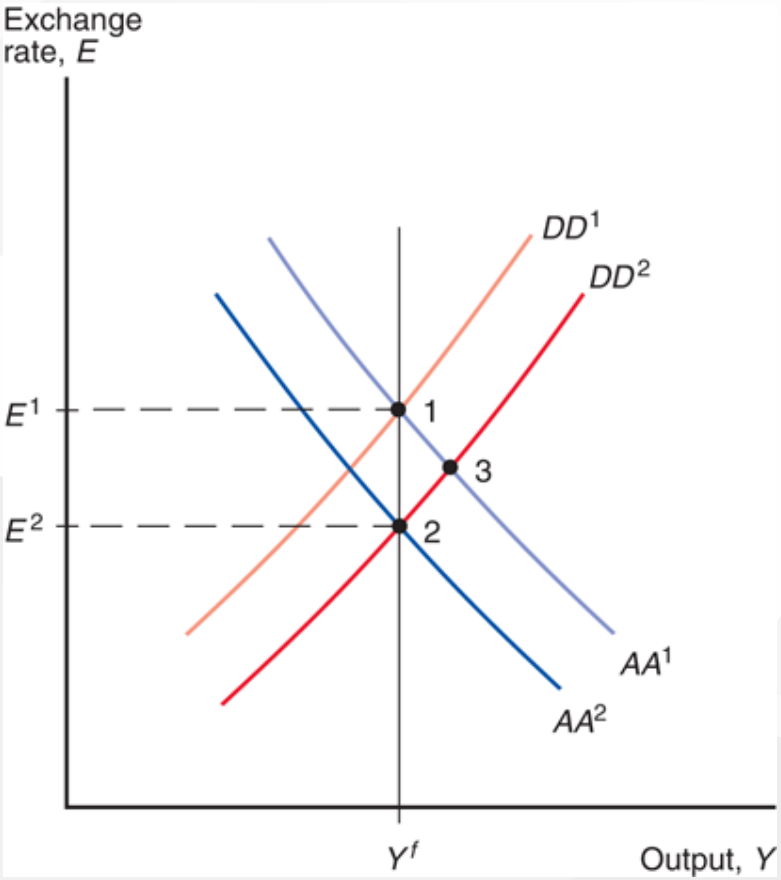
- Temporary increase in money demand $(1 \rightarrow 2)$
- M expansion $(2 \rightarrow 1)$; F expansion $(2 \rightarrow 3)$

Permanent Monetary Expansion



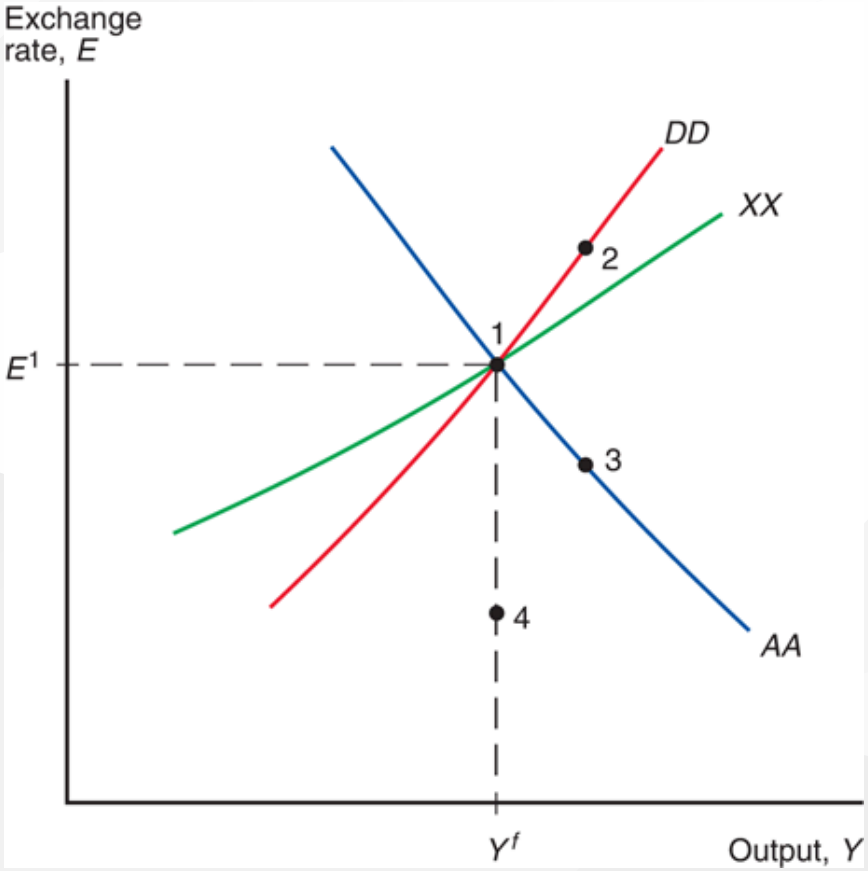
- $M^s \uparrow$ with no future reversal $\Rightarrow (P^e, E^e) \uparrow$
- $M^s \uparrow \Rightarrow E \uparrow, Y \uparrow \Rightarrow P \uparrow \Rightarrow D \downarrow, M^s/P \downarrow \Rightarrow E \downarrow, Y \downarrow$

Permanent Fiscal Expansion



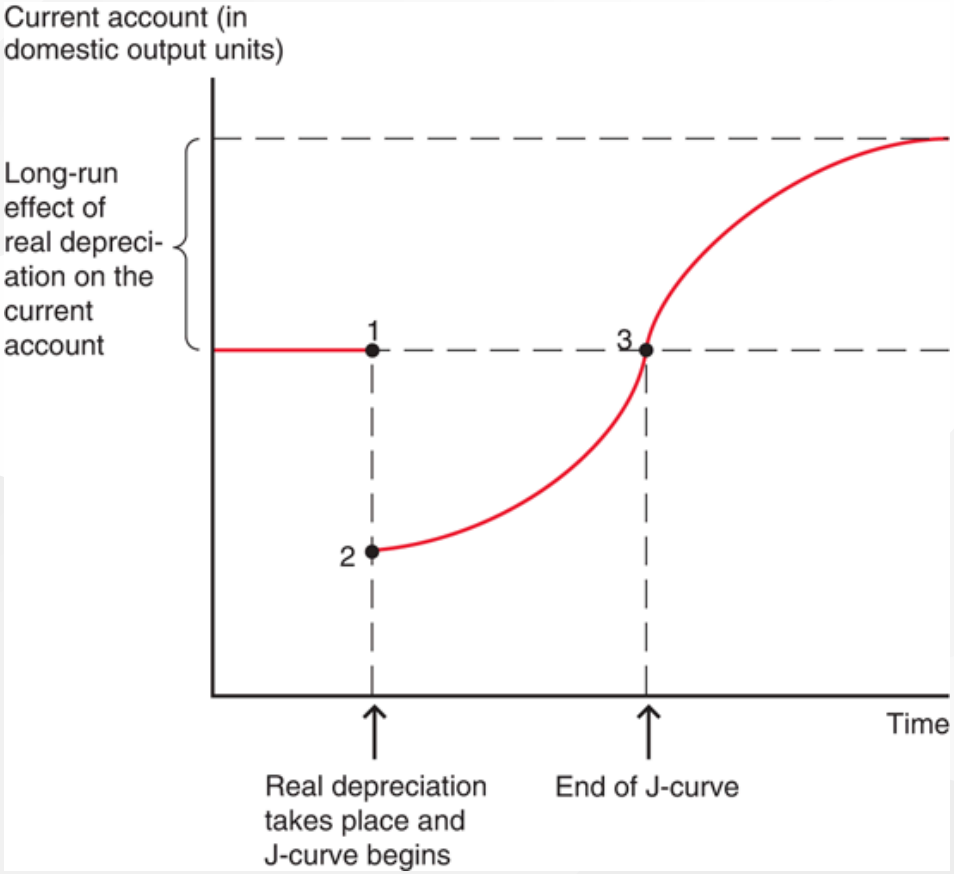
- $G \uparrow$ with no future reversal $\Rightarrow E^e \downarrow$
- $G \uparrow \Rightarrow Y \uparrow, R \uparrow \Rightarrow E \downarrow; E^e \downarrow \Rightarrow E \downarrow \Rightarrow Y \downarrow$

Macro Policies & Current Account



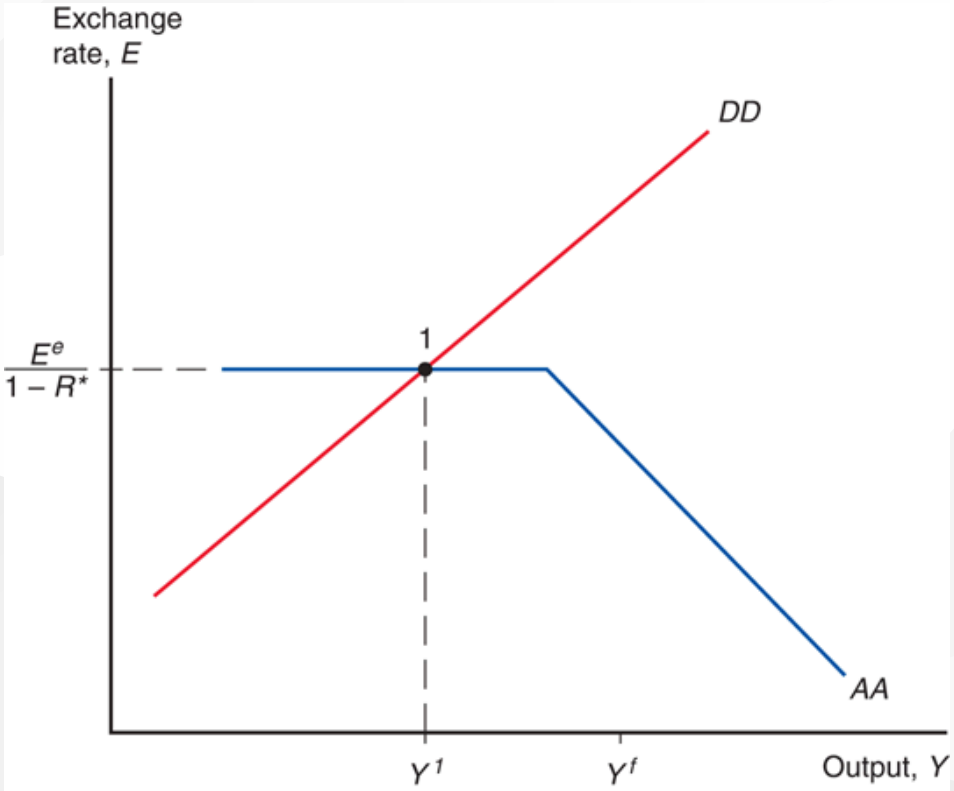
- XX curve: $CA(EP^*/P, Y-T) = X$ (constant)
- Effects of temporary/permanent MP/FP on CA?

J-Curve



- $1 \rightarrow 2$: value effect dominates, $CA \downarrow$ immediately
- $2 \rightarrow 3$ & beyond: volume effect takes over

Liquidity Trap



- Set $R = 0$ (ZLB), interest parity: $E = E^e/(1 - R^*)$
- With fixed E^e, M expansion becomes ineffective
- Unconventional monetary policies

Readings & Exercises

- Readings
  - KOM: chapter 17
- Exercises
  - KOM: problem 1, 2, 3, 4
  - In-class quiz: problem 14
  - What are effects of temporary/permanent MP/FP on CA? Hint: M expansion improves CA; F expansion worsens CA