Lecture 6   Output and Exchange Rate in Short Run

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Aggregate Demand in Open Economy

Aggregate demand equation

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

▶ 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: $q \uparrow \Rightarrow EX \uparrow$, $IM \downarrow$ (?) $\Rightarrow CA \uparrow$ (valid under Marshall-Lerner condition)
    remark 3: $Y^d \uparrow \Rightarrow IM \uparrow \Rightarrow CA \downarrow$

Aggregate Demand Function
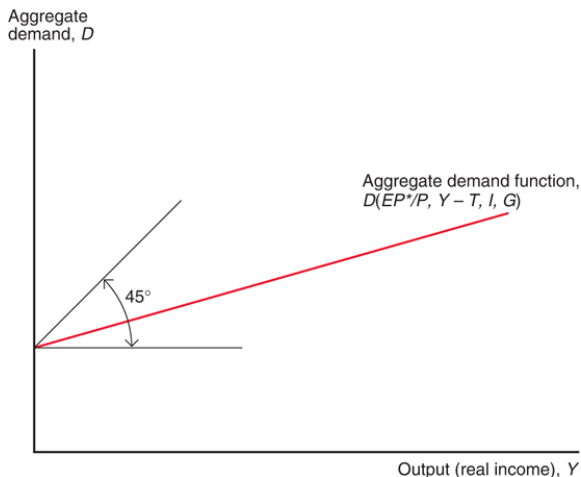
- Why AD function slopes positive but less than one?

- $Y \uparrow \Rightarrow C \uparrow > IM \uparrow \Rightarrow D \uparrow$ less than one-for-one

Short-Run Equilibrium Output
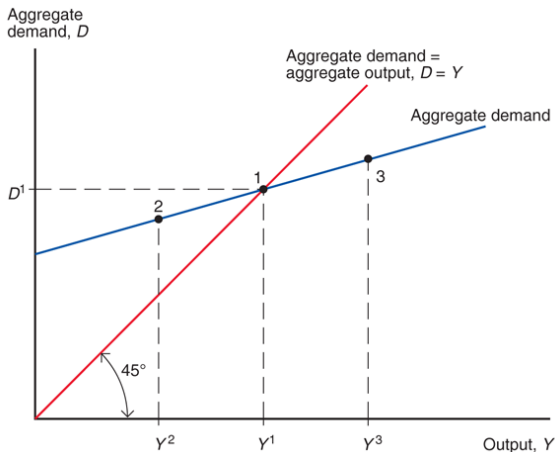
▶ Equilibrium occurs when $Y = D(EP^*/P, Y - \overline{T}, \overline{I}, \overline{G})$

▶ Exogenous: $(EP^*/P, I, T, G)$; endogenous: Y

The Road Ahead...

Output Effect of Currency Depreciation

Aggregate demand, D

Currency depreciates

$D = Y$

Aggregate demand (E^2)

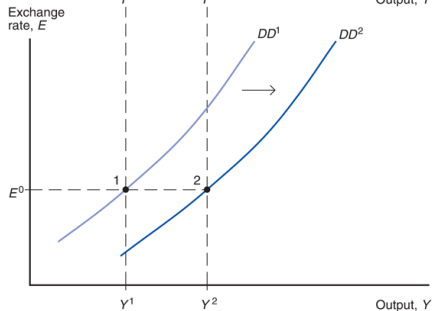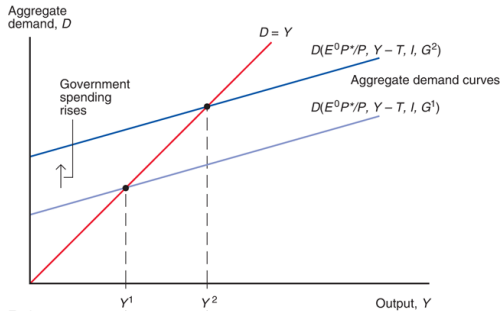Aggregate demand (E^1)

2

1

Y^1 Y^2
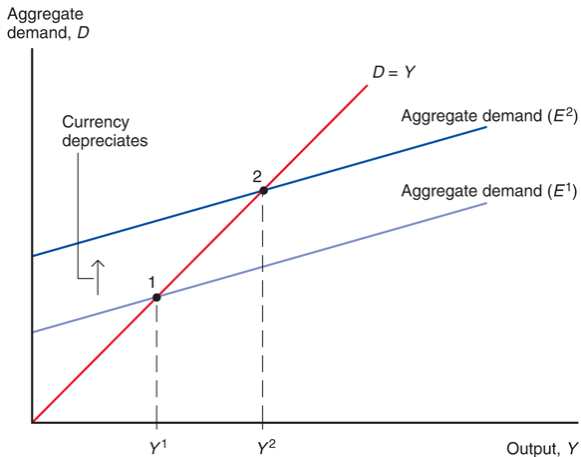
Output, Y

▶ All else equal, higher exchange rate raises output

▶ Exogenous: (P, P^*, I, T, G); endogenous: (Y, E)
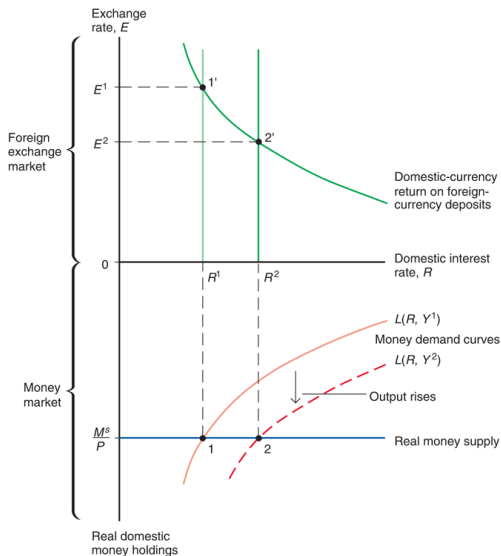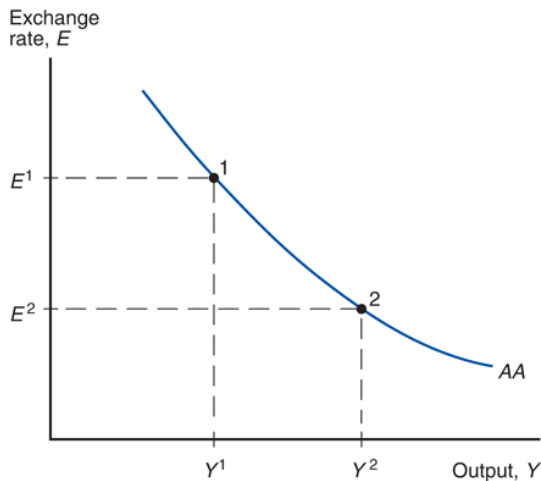
DD Schedule

Shift in DD Curve

Aggregate demand, D

$D = Y$

$D(E^0 P^*/P, Y - T, I, G^2)$

Aggregate demand curves

$D(E^0 P^*/P, Y - T, I, G^1)$

Government spending rises

Y^1 Y^2 Output, Y

Exchange rate, E

DD^1 DD^2

E^0

1   2

Y^1 Y^2 Output, Y

The Road Ahead...

Currency Effect of Higher Output

AA Schedule

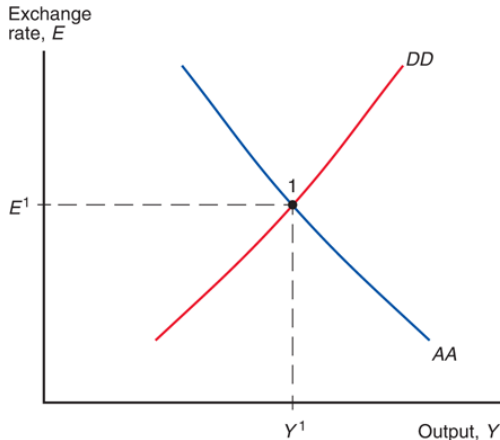- All else equal, higher output lowers exchange rate

- Exogenous: (M^s, P, R^*, E^e); endogenous: (R, Y, E)
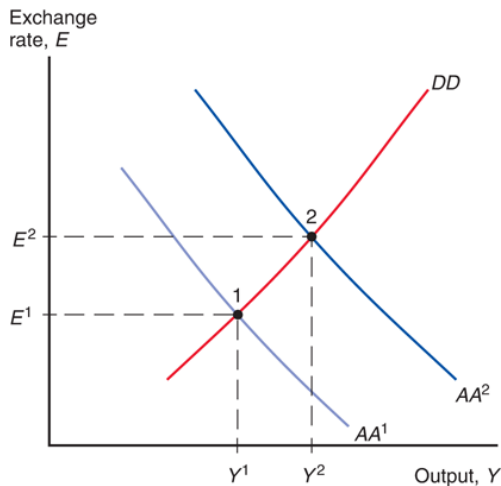
The Road Ahead...

Equilibrium Output and Exchange Rate
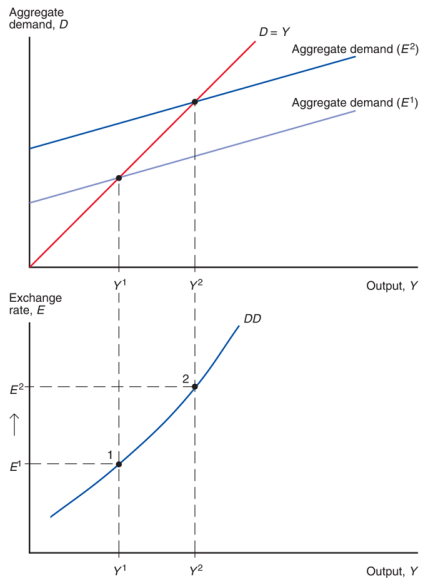
- Output market equilibrium on DD curve

- Asset market equilibrium on AA curve

- Simultaneous equilibrium occurs at intersection
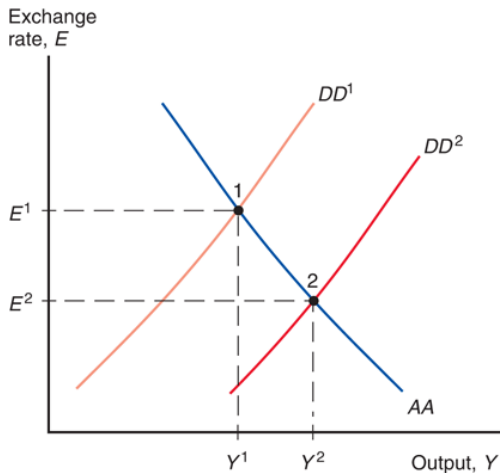
The Road Ahead...

Temporary Monetary Expansion

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

- $M^s \uparrow \Rightarrow R \downarrow \Rightarrow E \uparrow \Rightarrow D \uparrow \Rightarrow Y \uparrow$
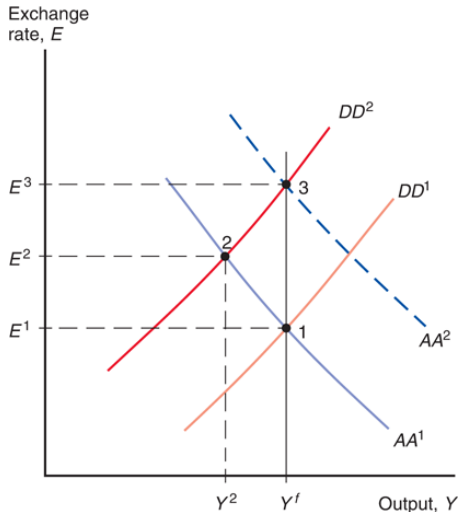
Temporary Fiscal Expansion

- $G \uparrow$ with expected $G \downarrow \Rightarrow E^e$ unchanged

- $G \uparrow \Rightarrow Y \uparrow \Rightarrow L(R \uparrow, Y) = M^s / P \Rightarrow E \downarrow$
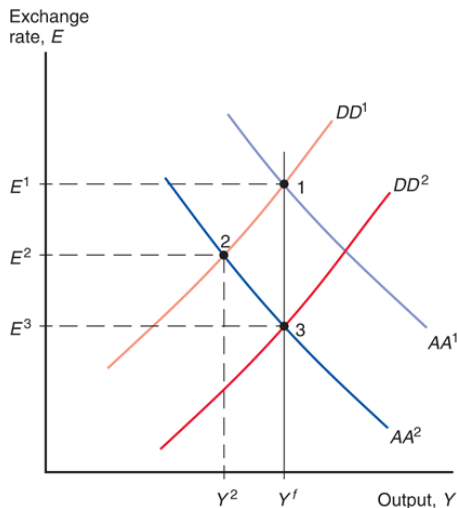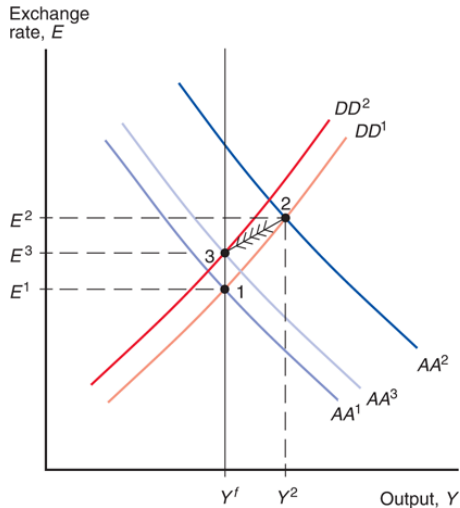
Restoring Full Employment

- Temporary demand shift towards foreign goods (1 → 2)

- M expansion (2 → 3); F expansion (2 → 1)

Restoring Full Employment (Cont'd)

- Temporary increase in money demand $(1 \to 2)$

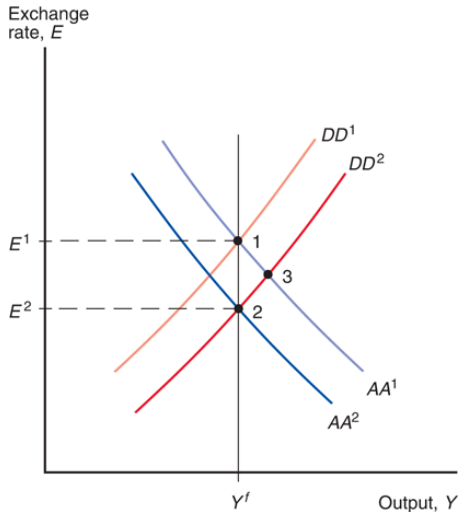- M expansion $(2 \to 1)$; F expansion $(2 \to 3)$

Permanent Monetary Expansion

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

- $M^s \uparrow \Rightarrow E \uparrow, Y \uparrow \Rightarrow P \uparrow \Rightarrow D \downarrow, M^s/P \downarrow \Rightarrow E \downarrow, Y \downarrow$
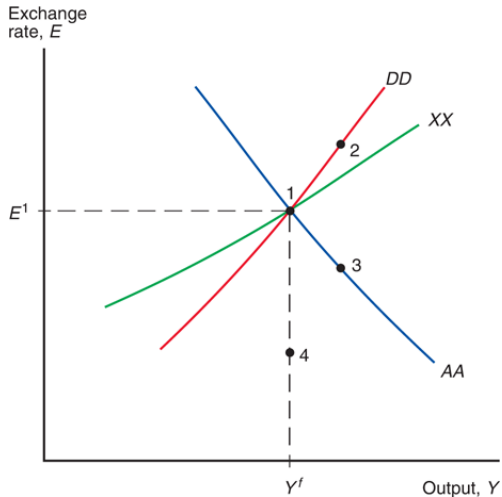
Permanent Fiscal Expansion

- $G \uparrow$ with no future reversal $\Rightarrow E^e \downarrow$

- $G \uparrow \Rightarrow Y \uparrow, R \uparrow \Rightarrow E \downarrow$; $E^e \downarrow \Rightarrow E \downarrow \Rightarrow Y \downarrow$
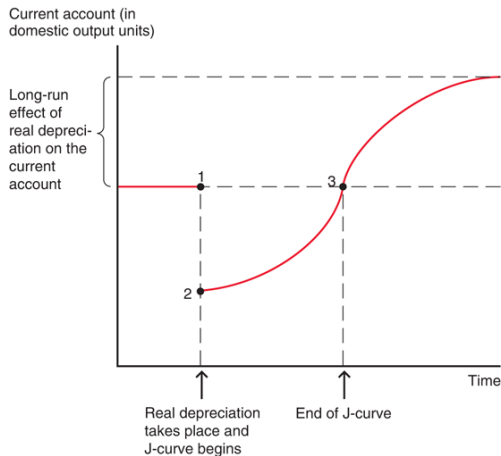
Macro Policies & Current Account

- XX curve: $CA(EP^*/P, Y - T) = X$ (constant)

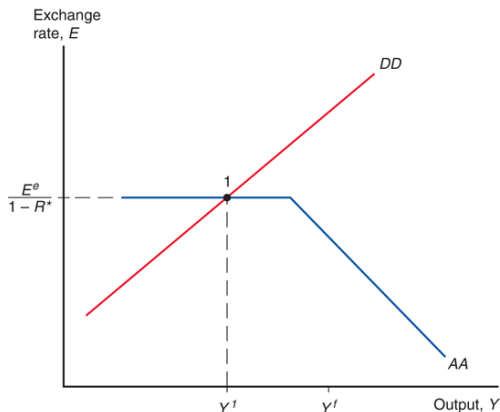- Effects of temporary/permanent MP/FP on CA?

The Road Ahead...

J-Curve

Current account (in domestic output units)

Long-run effect of real depreciation on the current account

1

2

3

Real depreciation takes place and J-curve begins

End of J-curve

Time

- 1 → 2: value effect dominates, $CA \downarrow$ immediately

- 2 → 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