International Economics

Unit 7

Fixed versus Floating Exchange Rates

Aim: How to choose between fixed and floating exchange rates

Which is the most preferred exchange rate regime depends on:

- The type of shock that is impinging upon the economy (for simplicity, all shocks are considered to be transitory)
- The specification of the objective function of the authorities
- The structural parameters of the economy

- Arguments for fixed exchange rates
    - Fixed exchange rates promote international trade and investment
    - Fixed exchange rates provide discipline for macroeconomic policies
    - Fixed exchange rates promote international cooperation
    - Speculation under floating rates is likely to be destabilizing
- Arguments for floating exchange rates
    - Floating exchange rates ensure BP equilibrium
    - Floating exchange rates ensure monetary autonomy
    - Floating exchange rates insulate economies
    - Floating exchange rates promote economic stability
    - Speculation under floating rates is stabilizing

Objective function:

$$O(P,Y) = \omega \cdot \left(Y - Y_n\right)^2 + \left(1-\omega\right) \cdot \left(P - P_n\right)^2 \qquad 0 \le w \le 1$$

Money demand function:

$$M_t^d = P_{It} + nY_t - \sigma r_t + u_{t_1}$$

$$P_{It} = \alpha P_t + \left(1-\alpha\right) \cdot \left(s_t + P_t^*\right) \qquad 0 < \propto < 1$$

Aggregate demand function

$$Y_t^d = \theta \cdot \left(s_t + P_t^* - P_t\right) - \beta \cdot \left(r_t + P_t - P_{t+1/t}\right) + \pi Y_n + u_{t_2}$$

Aggregate supply function:

$$Y_t^s = \varphi \cdot \left(P_t - W_t \right) + u_{t_3}$$ or

$$Y_t^s = Y^s \left(L_t \right)$$

where $\delta Ys_t/\delta L_t > 0$ and $\delta^2 Ys_t/\delta^2 L_t < 0$

UIP condition:

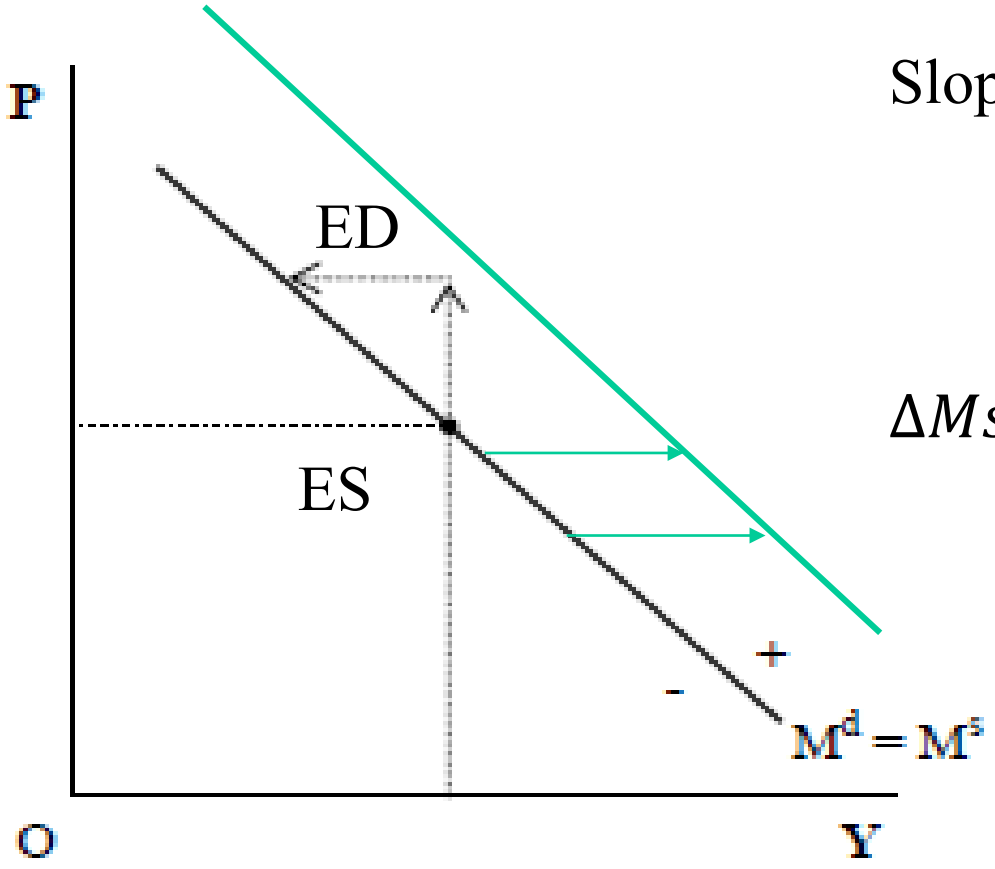
$$r_t = r_t^* + \left(S_{t+1/t} - S_t \right)$$

Equilibrium equations:

$$W_t = W_{t^*} \quad \rightarrow \quad Y_t = Y_n$$

$$Ms_t = Md_t \qquad Ys_t = Yd_t$$

Equilibrium of the money market



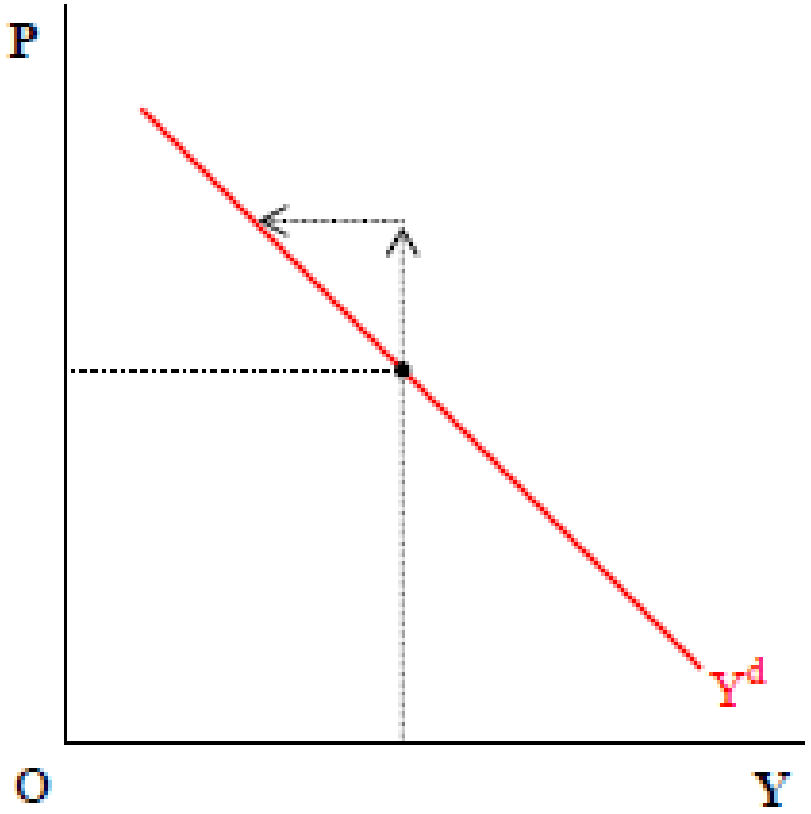
Slope:

$$\frac{dP_t}{dY_t} = -\frac{n}{\propto}$$

ΔMs?

Rightward shift

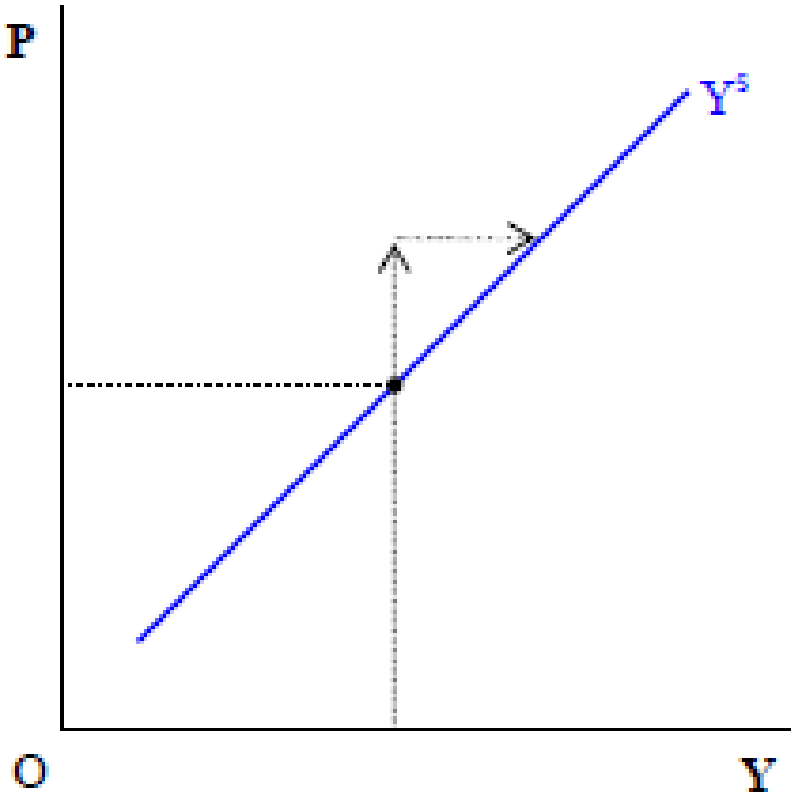
Aggregate demand curve



Slope:

$$\frac{dP_t}{dY_t} = -\frac{1}{\theta + \beta}$$

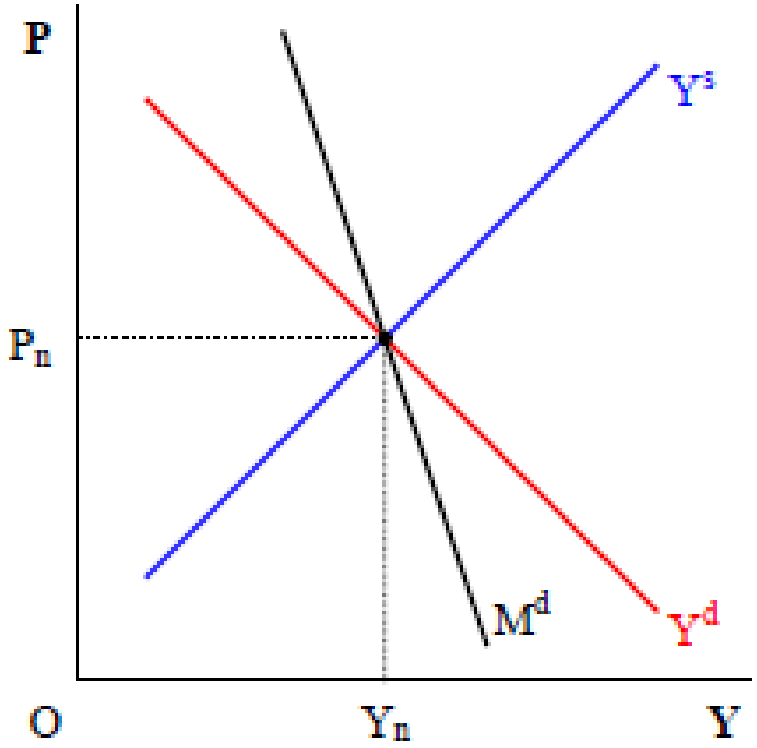
Aggregate supply curve



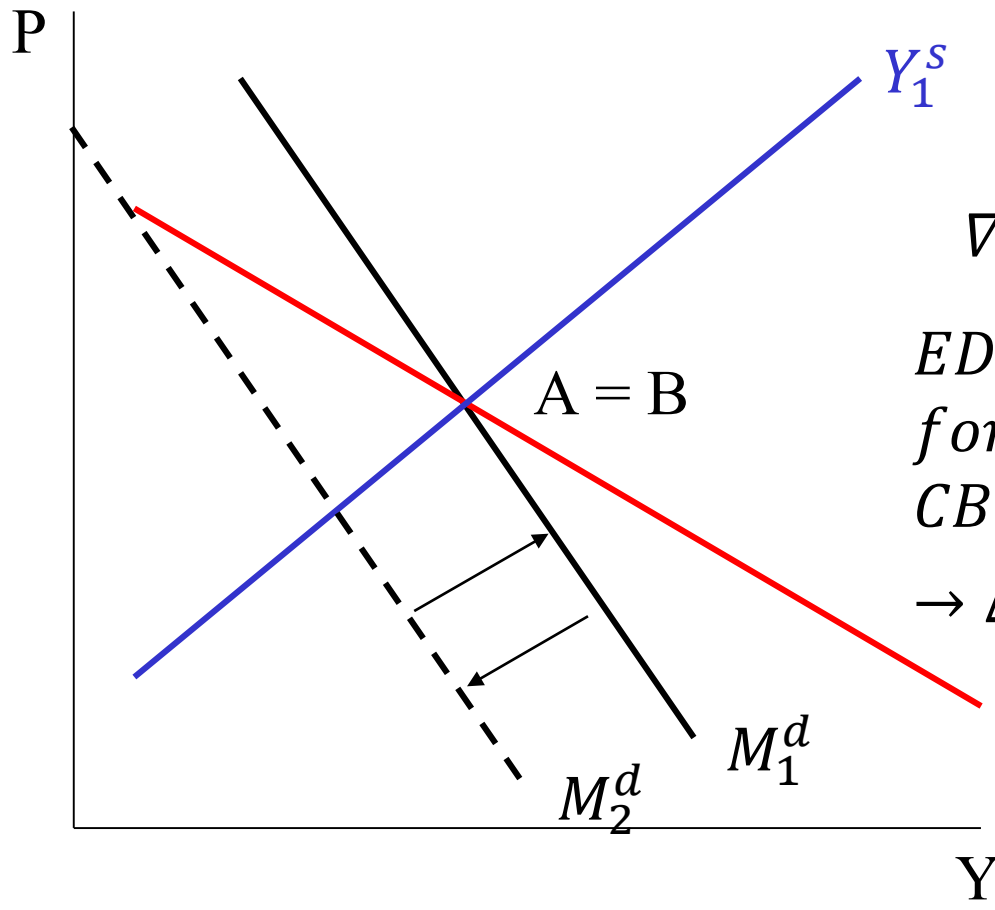
Slope:

$$\frac{dP_t}{dY_t} = \frac{1}{\rho}$$

Equilibrium of the model



Money demand shock: Fixed exchange rate regime

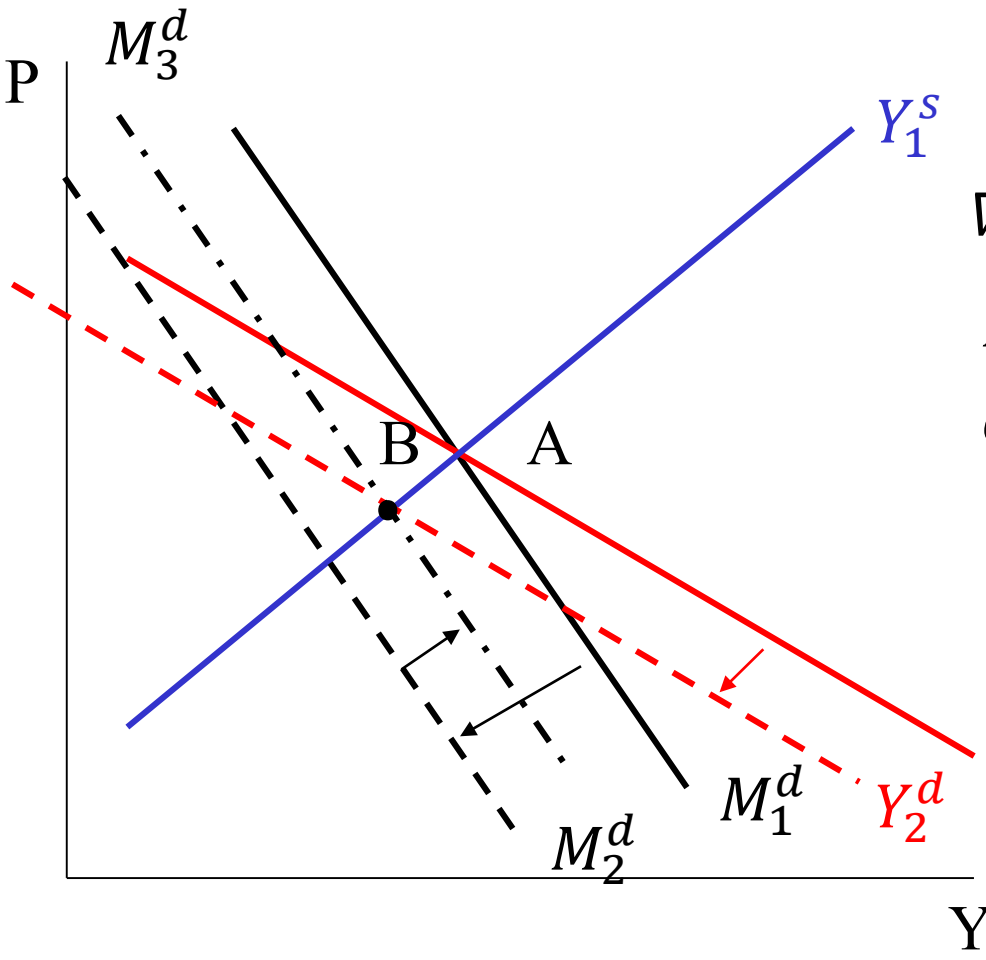


Positive shock: $u_{t_1} > 0$

$ED\ money \rightarrow for\ a\ given\ M^s,$
$\nabla P\ and, or\ \nabla Y\ to\ keep\ eq. \rightarrow \overleftarrow{M^d}$

$ED\ money\ at\ point\ A \rightarrow tendency$
$for\ the\ appreciation\ of\ € \rightarrow$
$CB\ increases\ D_{\$} \rightarrow \Delta Reserves$
$\rightarrow \Delta M^s \rightarrow \overrightarrow{M^d}$

Money demand shock: Floating exchange rate regime



Positive shock: $u_{t_1} > 0$

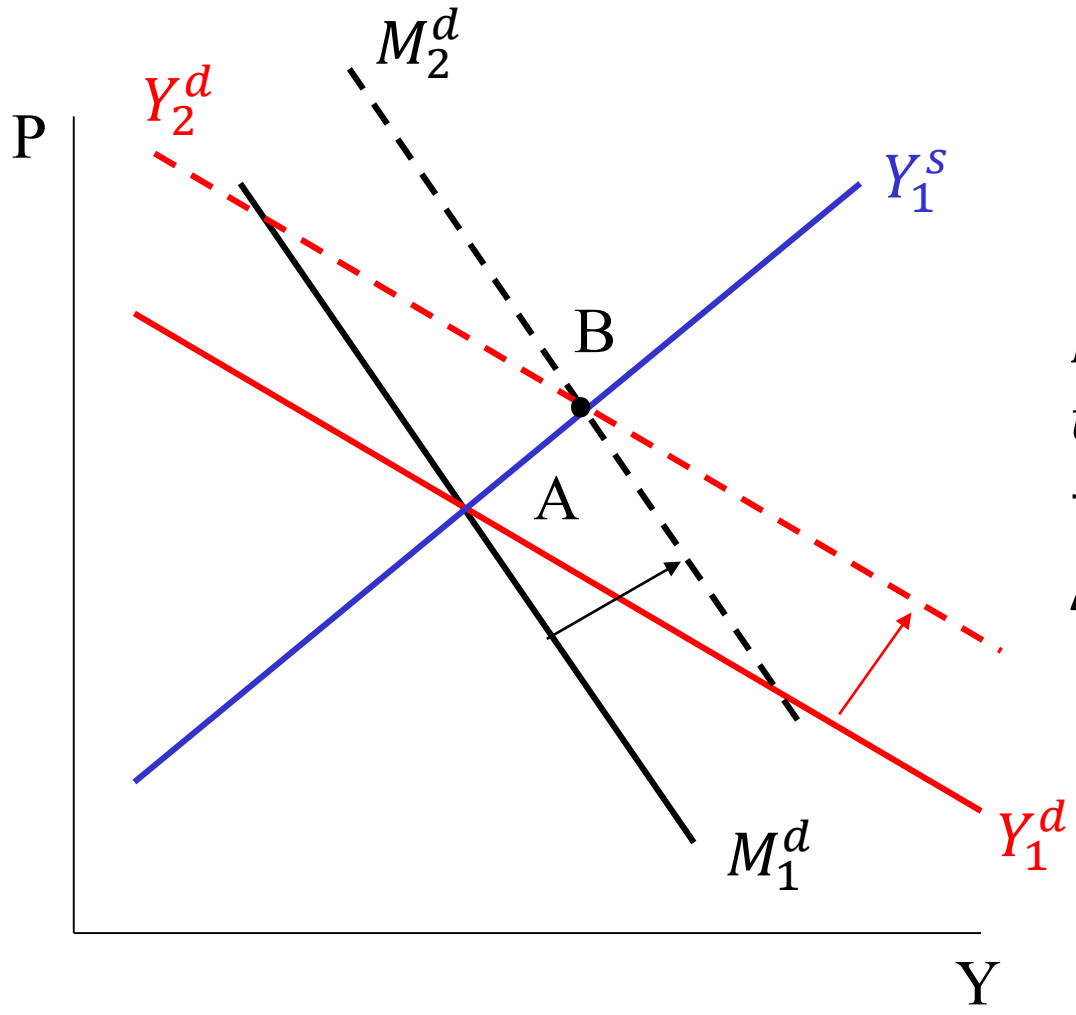
$ED\ money \rightarrow for\ a\ given\ M^s,$
$\nabla P\ and, or\ \nabla Y\ to\ keep\ eq. \rightarrow \overleftarrow{M^d}$

$ED\ money\ at\ point\ A \rightarrow$
$appreciation\ of\ € \rightarrow \overleftarrow{Y^d}$

$Since\ shocks\ are\ transitory,$
$a\ depreciation\ is\ expected \rightarrow$

$according\ to\ UIP\ \Delta r \rightarrow \begin{cases} \overleftarrow{Y^d} \\ \overrightarrow{M^d} \end{cases}$

Aggregate demand shock: Fixed exchange rate regime

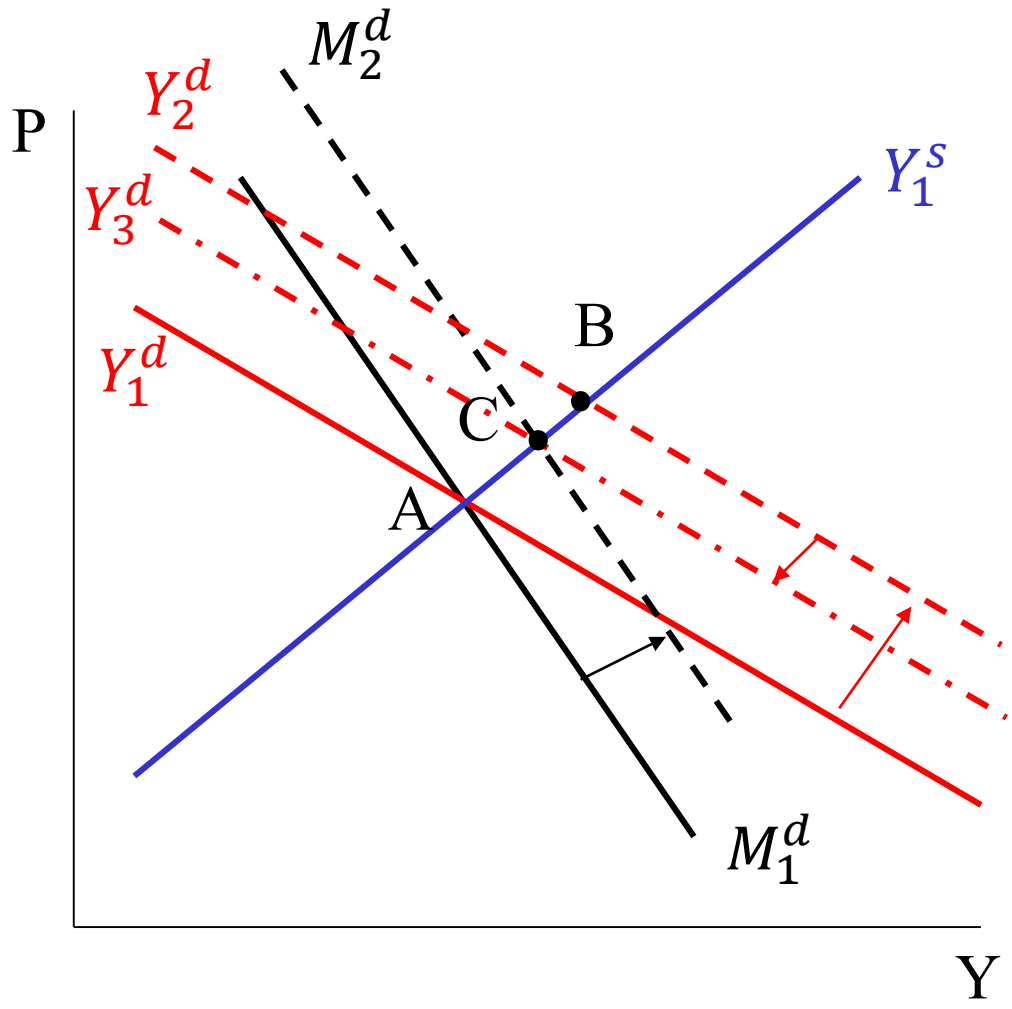


Positive shock: $u_{t_2} > 0$

$\overrightarrow{Y^d} \rightarrow point\ B$

$ED\ money\ at\ point\ B \rightarrow$
$tendency\ appreciation\ of\ €$
$\rightarrow CB\ increases\ D_{\$} \rightarrow$
$\Delta Reserves \rightarrow \Delta M^s \rightarrow \overrightarrow{M^d}$

Aggregate demand shock: Floating exchange rate regime



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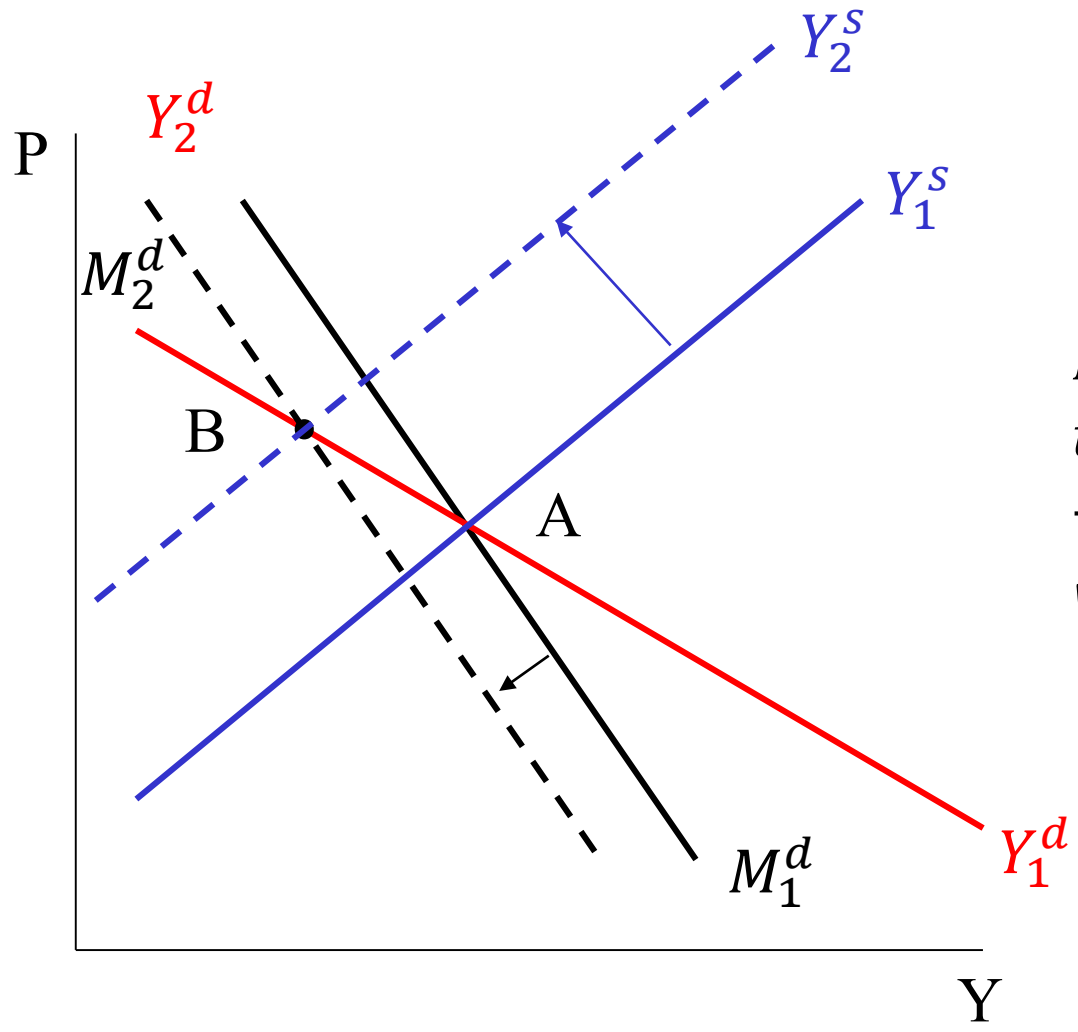
Aggregate supply shock with fixed exchange rates. Case 1: *Md* schedule is steeper than the *Yd* schedule

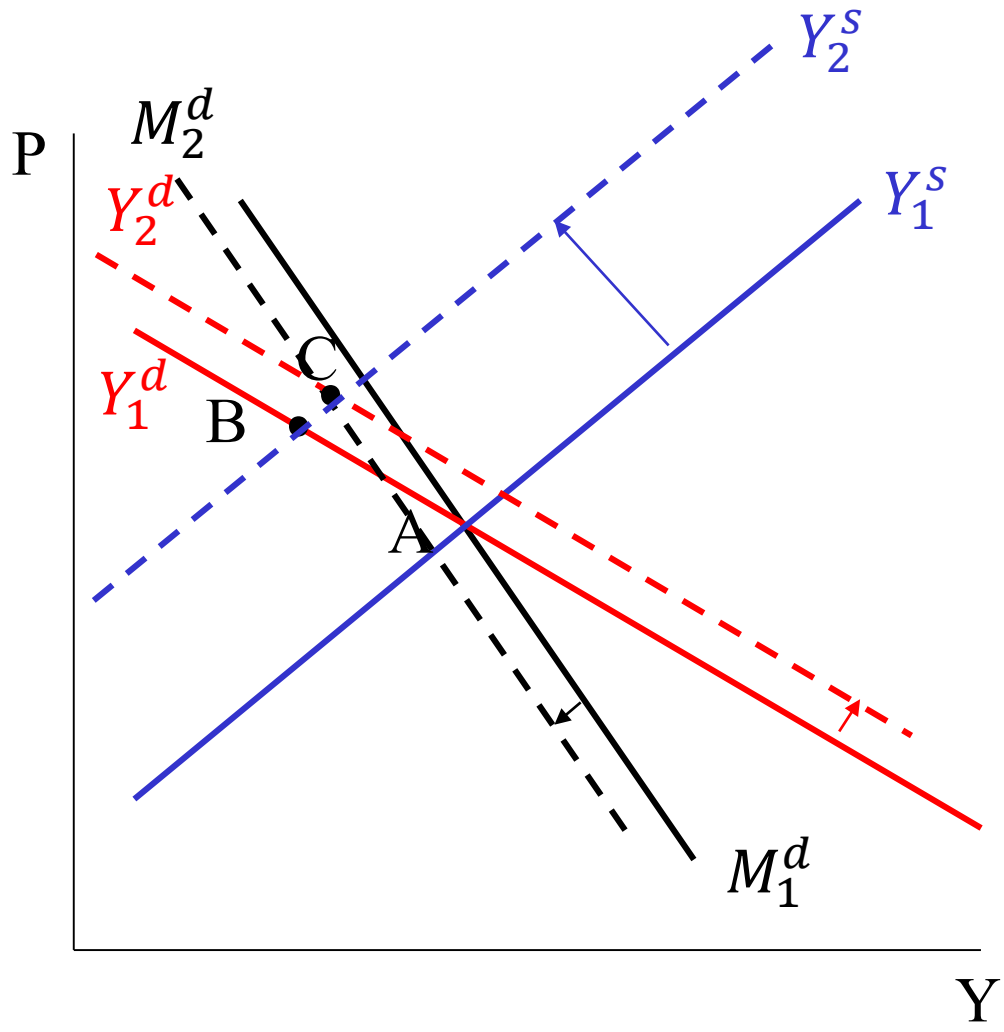


Negative shock: $u_{t_3} < 0$

$\overleftarrow{Y^s} \rightarrow point\ B$

$ES\ money\ at\ point\ B \rightarrow$
$tendency\ depreciation\ of\ €$
$\rightarrow CB\ increases\ S_{\$} \rightarrow$
$\nabla Reserves \rightarrow \nabla M^s \rightarrow \overleftarrow{M^d}$

Aggregate supply shock with floating exchange rates. Case 1: *Md* schedule is steeper than the *Yd* schedule



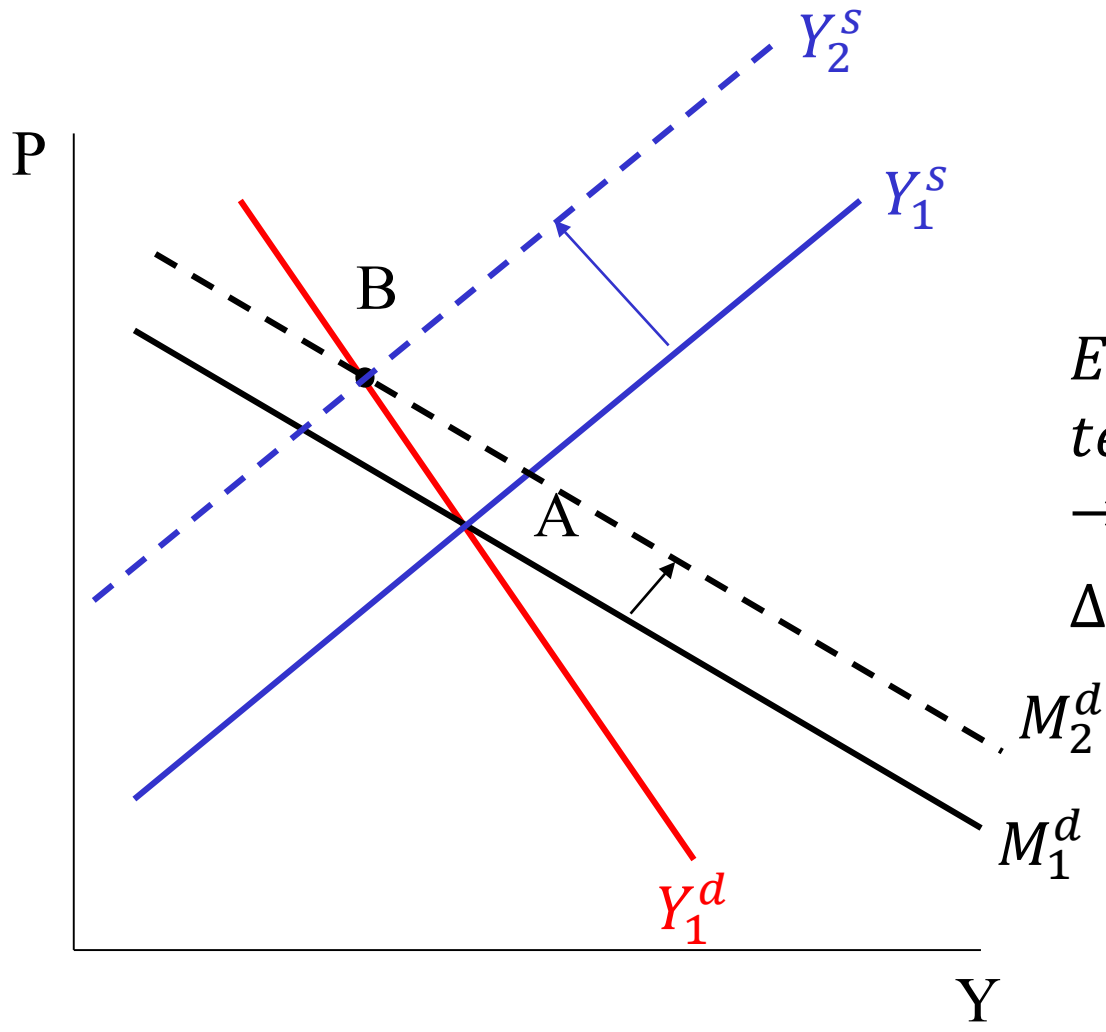
Negative shock: $u_{t_3} < 0$

$\overleftarrow{Y^s} \rightarrow point\ B$

$ES\ money\ at\ point\ B \rightarrow$
$\text{de}preciation\ of\ € \rightarrow \overrightarrow{Y^d}$

$Since\ shocks\ are\ transitory,$
$an\ appreciation\ is\ expected \rightarrow$
$according\ to\ UIP\ \nabla r \rightarrow \begin{cases} \overrightarrow{Y^d} \\ \overleftarrow{M^d} \end{cases}$

Aggregate supply shock with fixed exchange rates. Case 2: *Yd* schedule is steeper than the *Md* schedule

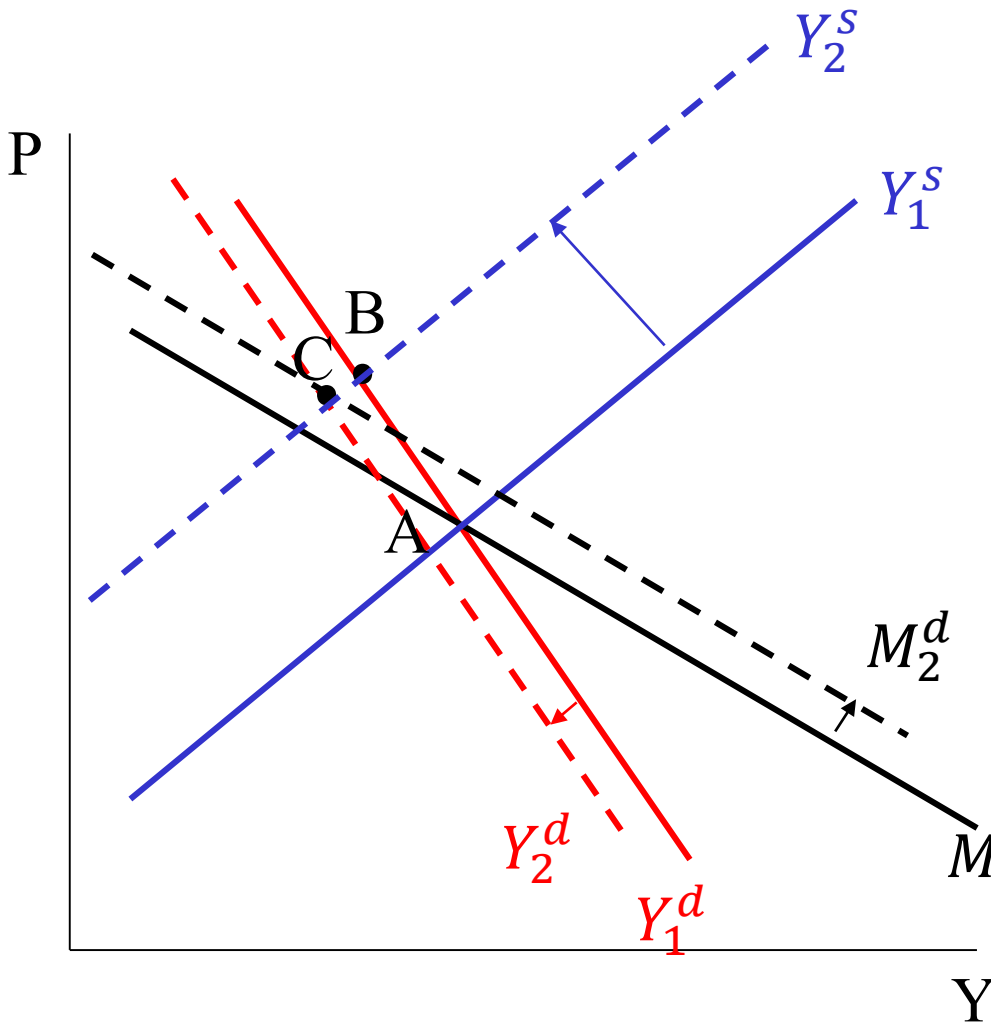


Negative shock: $u_{t_3} < 0$

$\overleftarrow{Y^s} \rightarrow point\ B$

$ED\ money\ at\ point\ B \rightarrow$
$tendency\ appreciation\ of\ €$
$\rightarrow CB\ increases\ D_{\$} \rightarrow$
$\Delta Reserves \rightarrow \Delta M^s \rightarrow \overrightarrow{M^d}$

Aggregate supply shock with floating exchange rates. Case 2: *Yd* schedule is steeper than the *Md* schedule



Negative shock: $u_{t_3} < 0$

$\overleftarrow{Y^s} \rightarrow point\ B$

$ED\ money\ at\ point\ B \rightarrow$
$appreciation\ of\ € \rightarrow \overleftarrow{Y^d}$

$Since\ shocks\ are\ transitory,$
$a\ depreciation\ is\ expected \rightarrow$
$according\ to\ UIP\ \Delta r \rightarrow \begin{cases} \overleftarrow{Y^d} \\ \overrightarrow{M^d} \end{cases}$

Summary of the results under fixed and floating rates

Transitory shock	Floating rates		Fixed rates	
	Price stability	Output stability	Price stability	Output stability
Money demand	X	X	✓	✓
Aggregate demand	✓	✓	X	X
Aggregate supply *Md* steeper than *Yd*	X	✓	✓	X
Aggregate supply *Yd* steeper than *Md*	✓	X	X	✓

Note: ✓ – indicates performs best, X – indicates performs worst.

Source: Pilbeam: "International Finance"