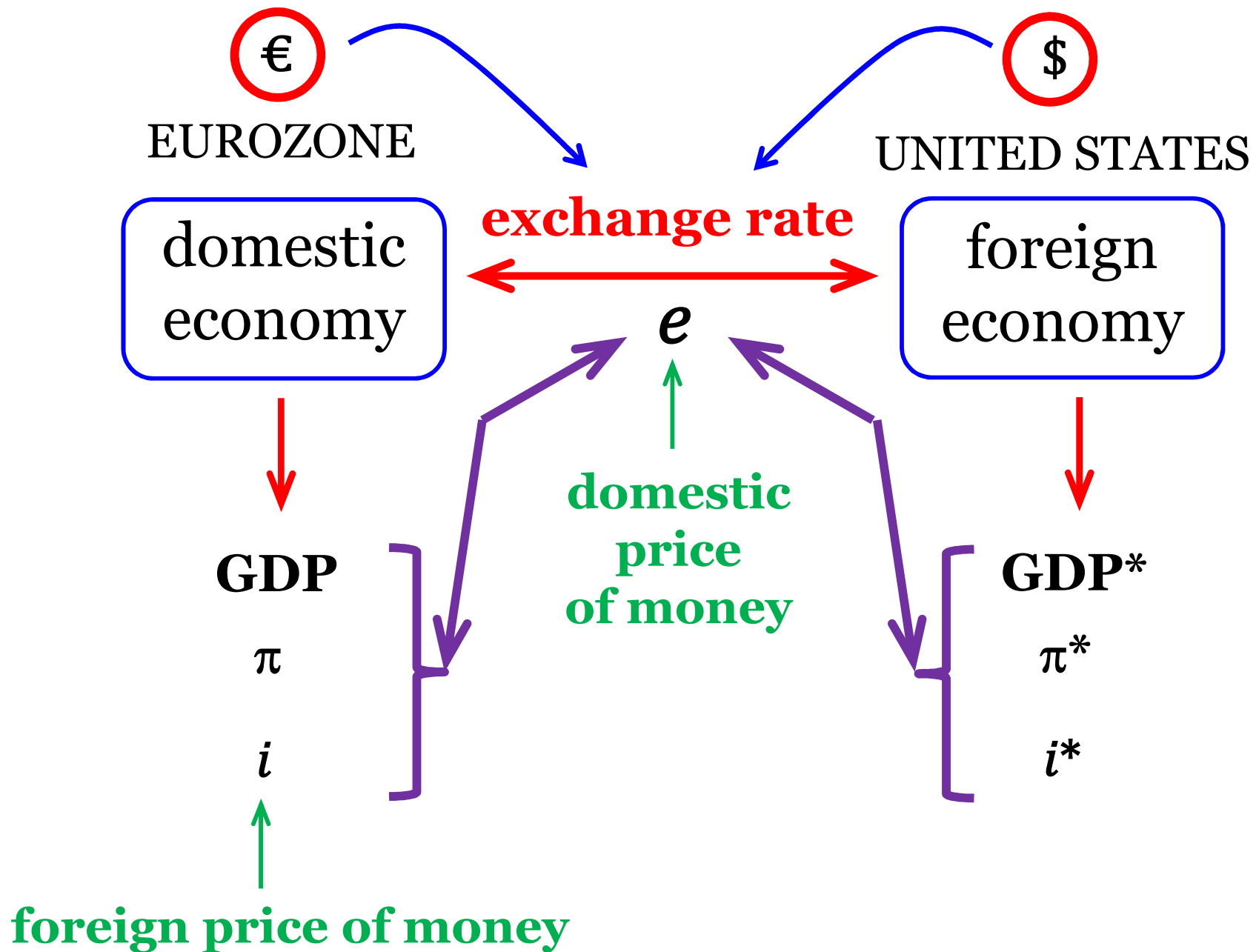


LAST DAY OF CLASS...

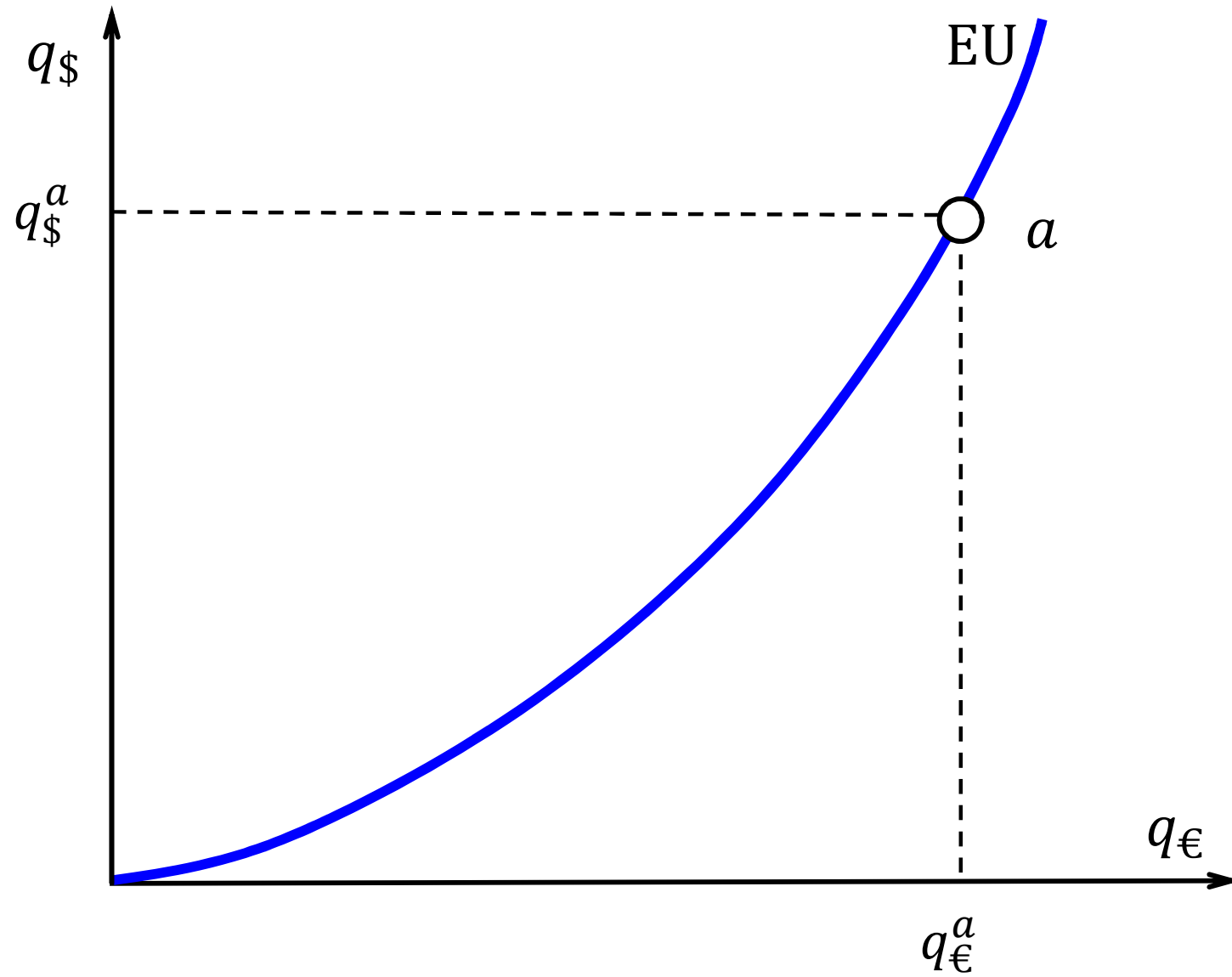


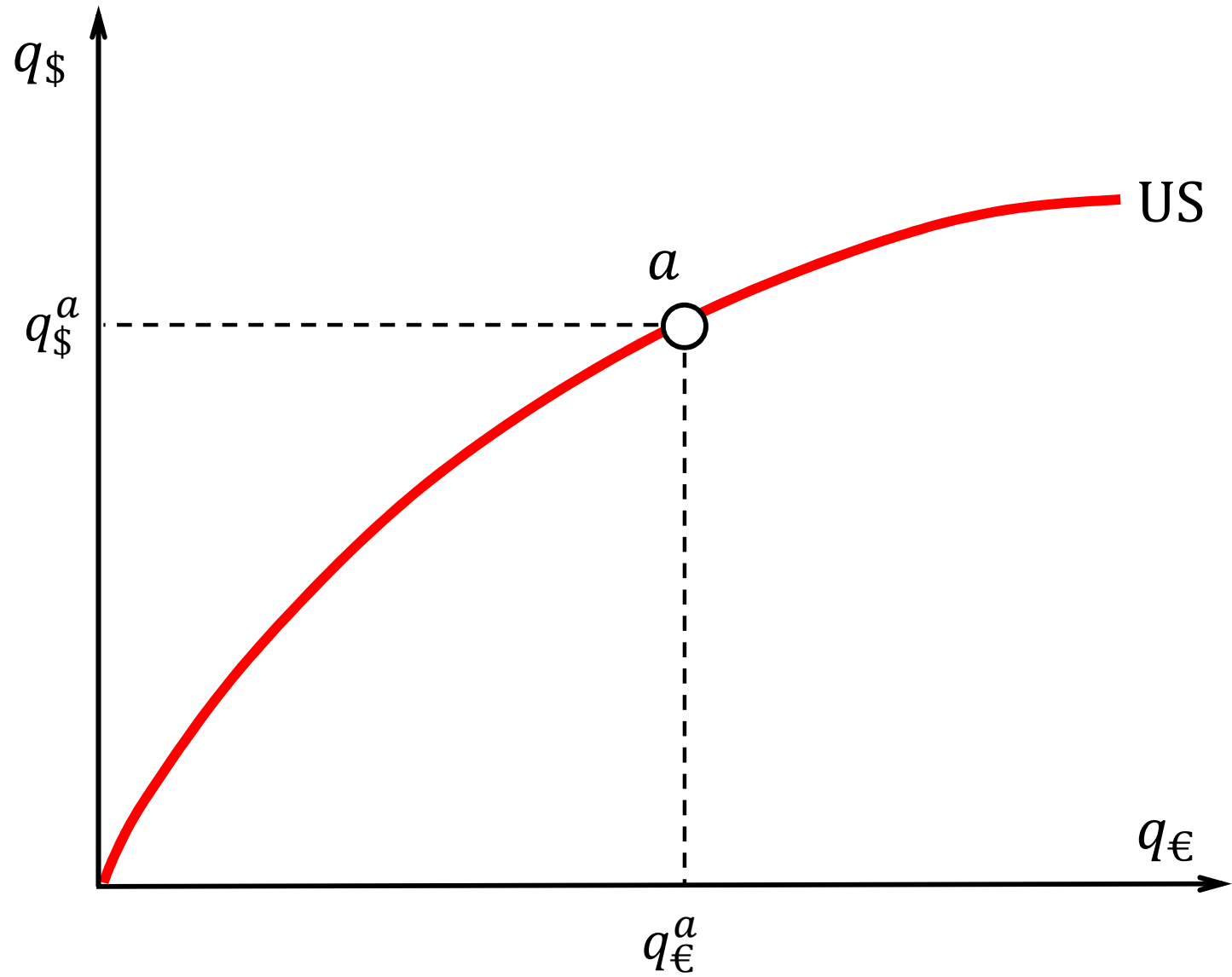
T O D A Y

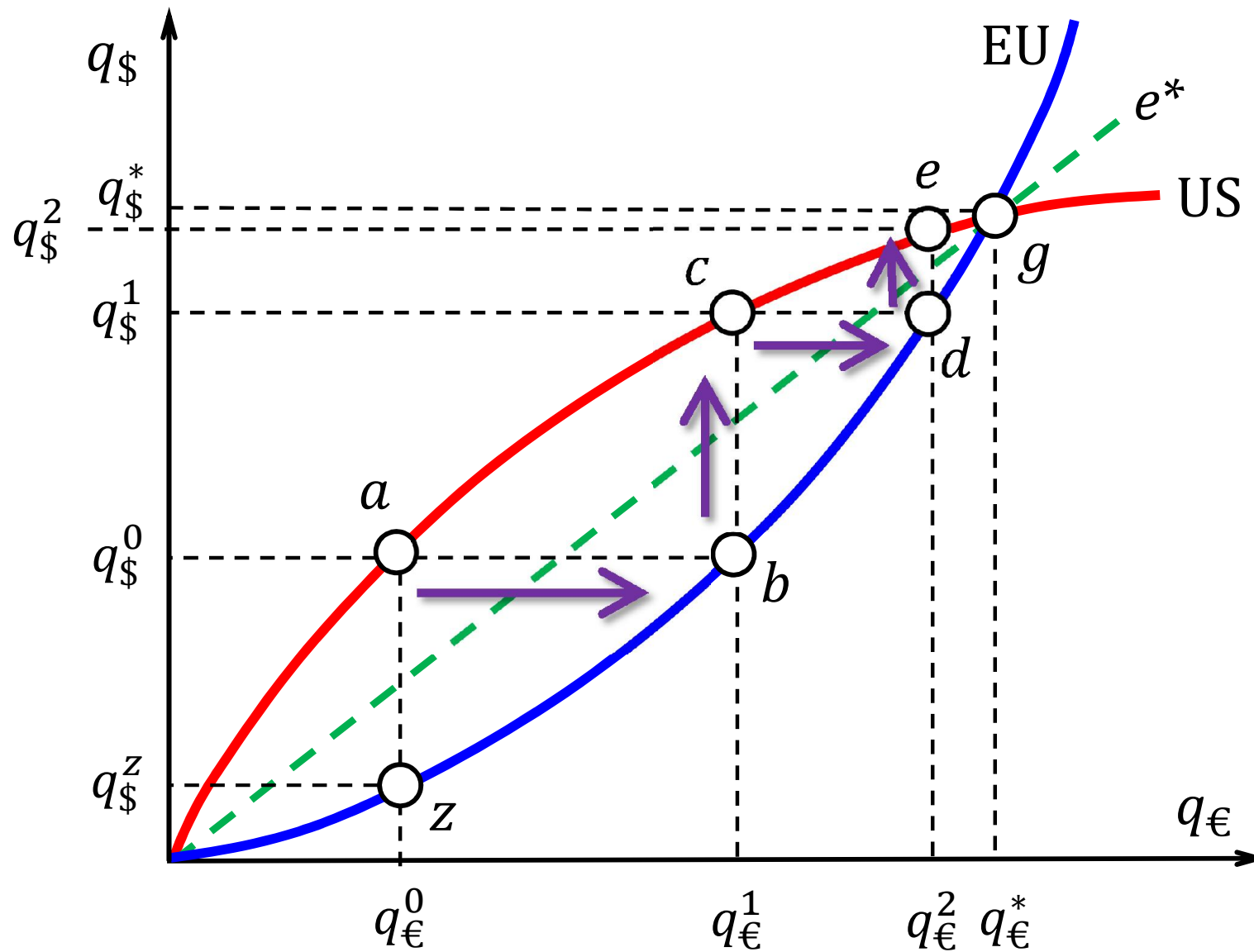


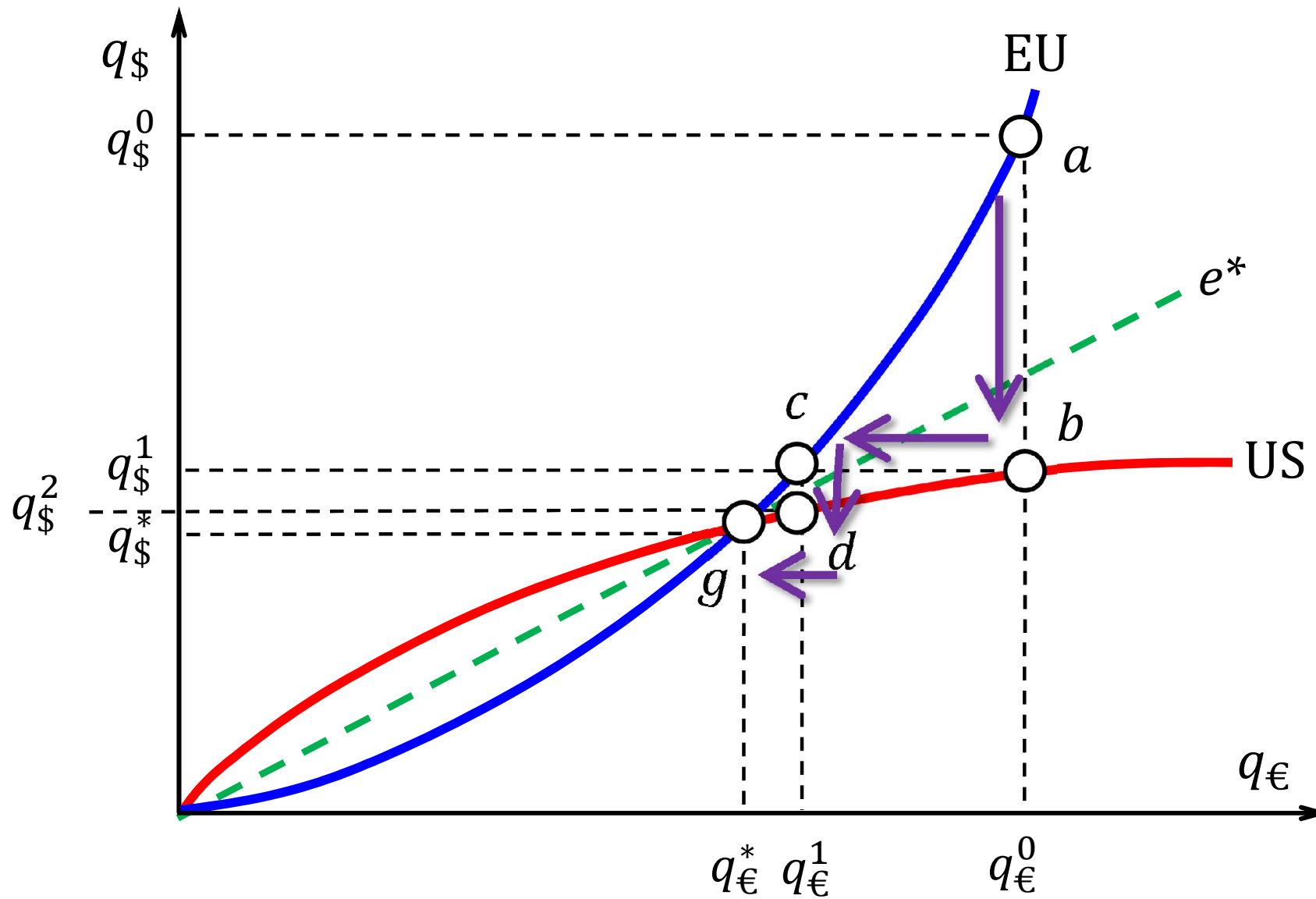
1. The currency market model

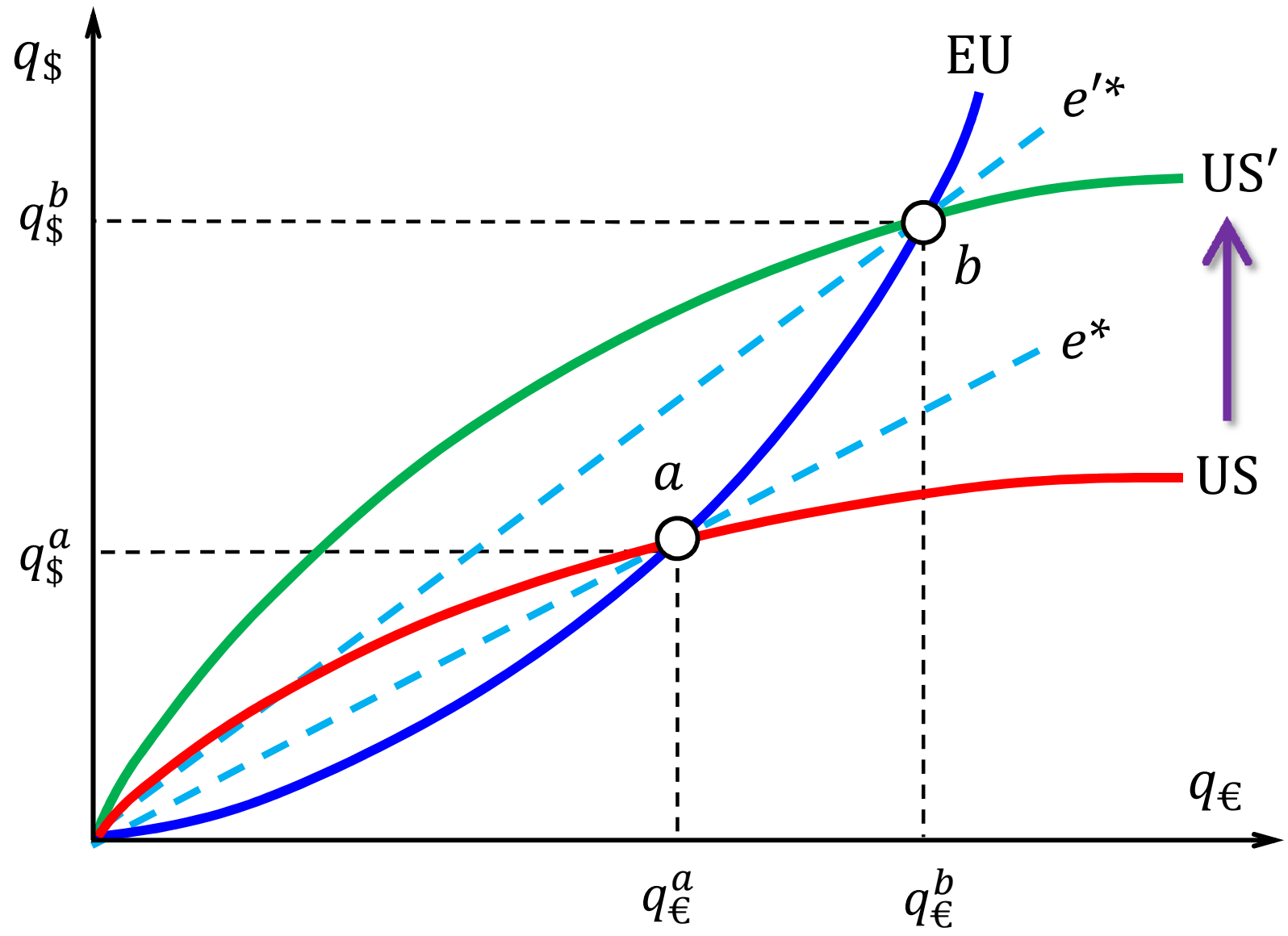
- Supply of euros: by Europeans (demand dollars)
- Demand for euros: by Americans (supply dollars)
- Equilibrium exchange rate e^*
- Comparative statics: impact on e^* of a change in
 - domestic GDP
 - foreign GDP
 - domestic inflation
 - foreign interest rates

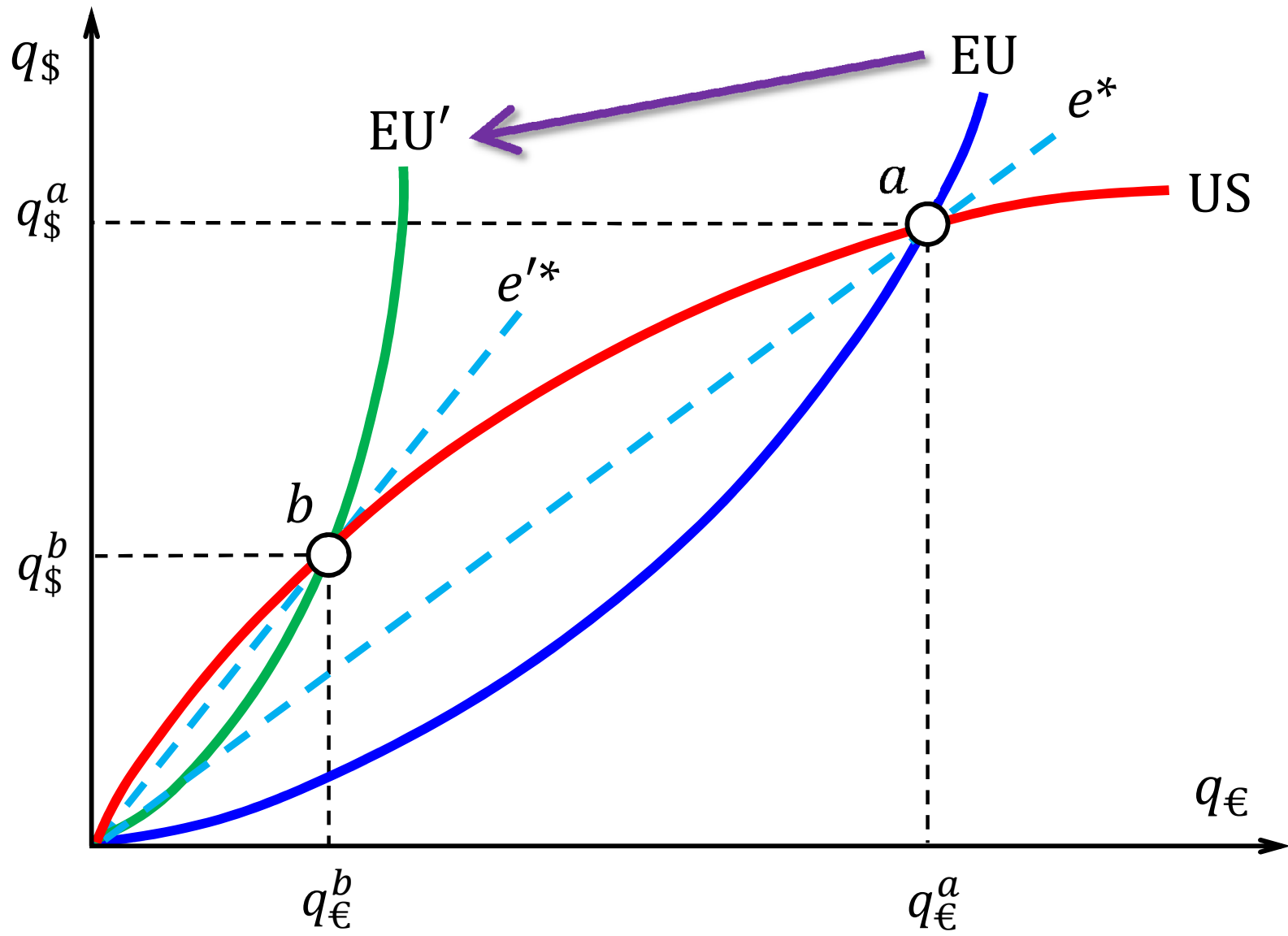


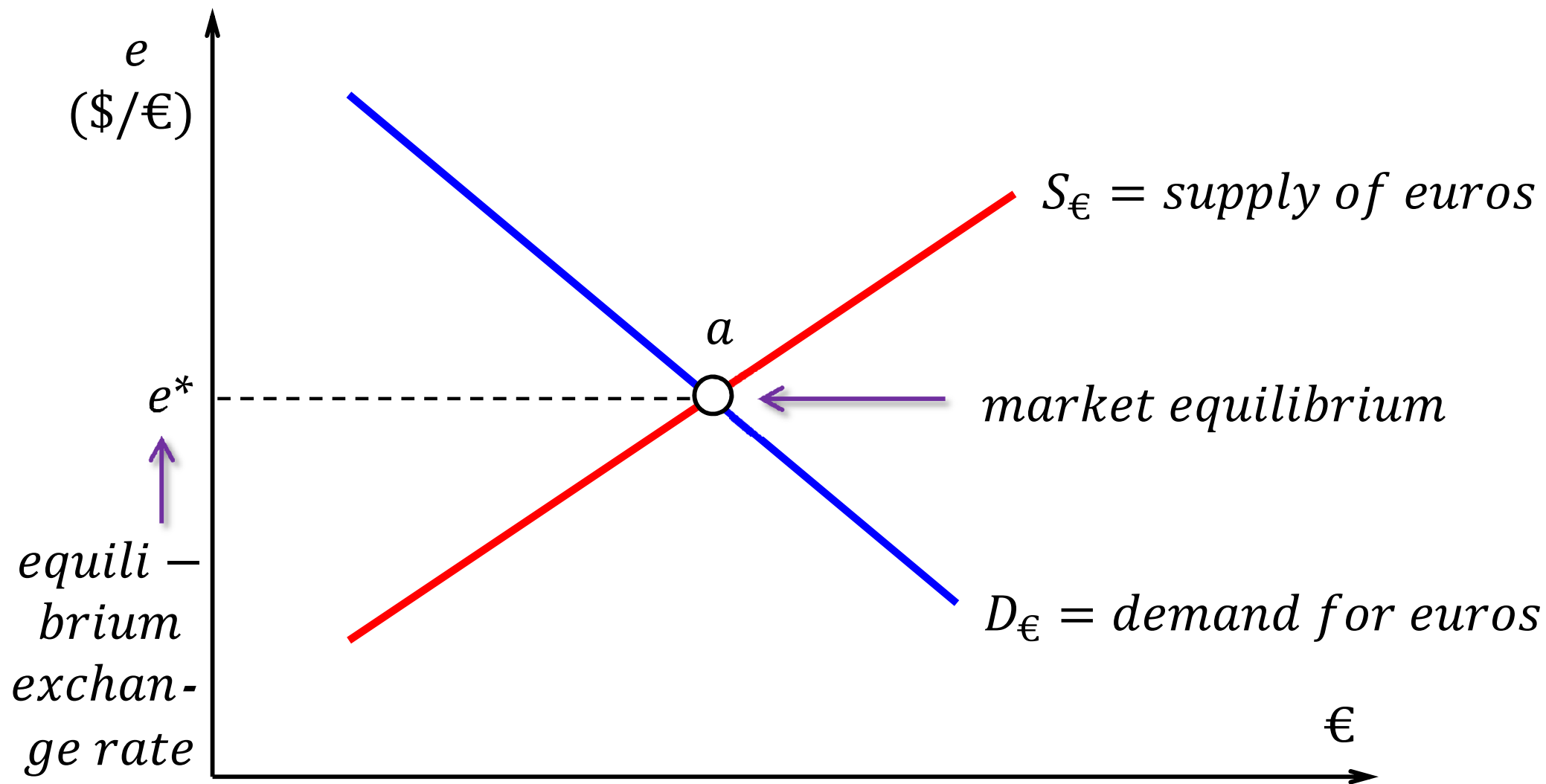




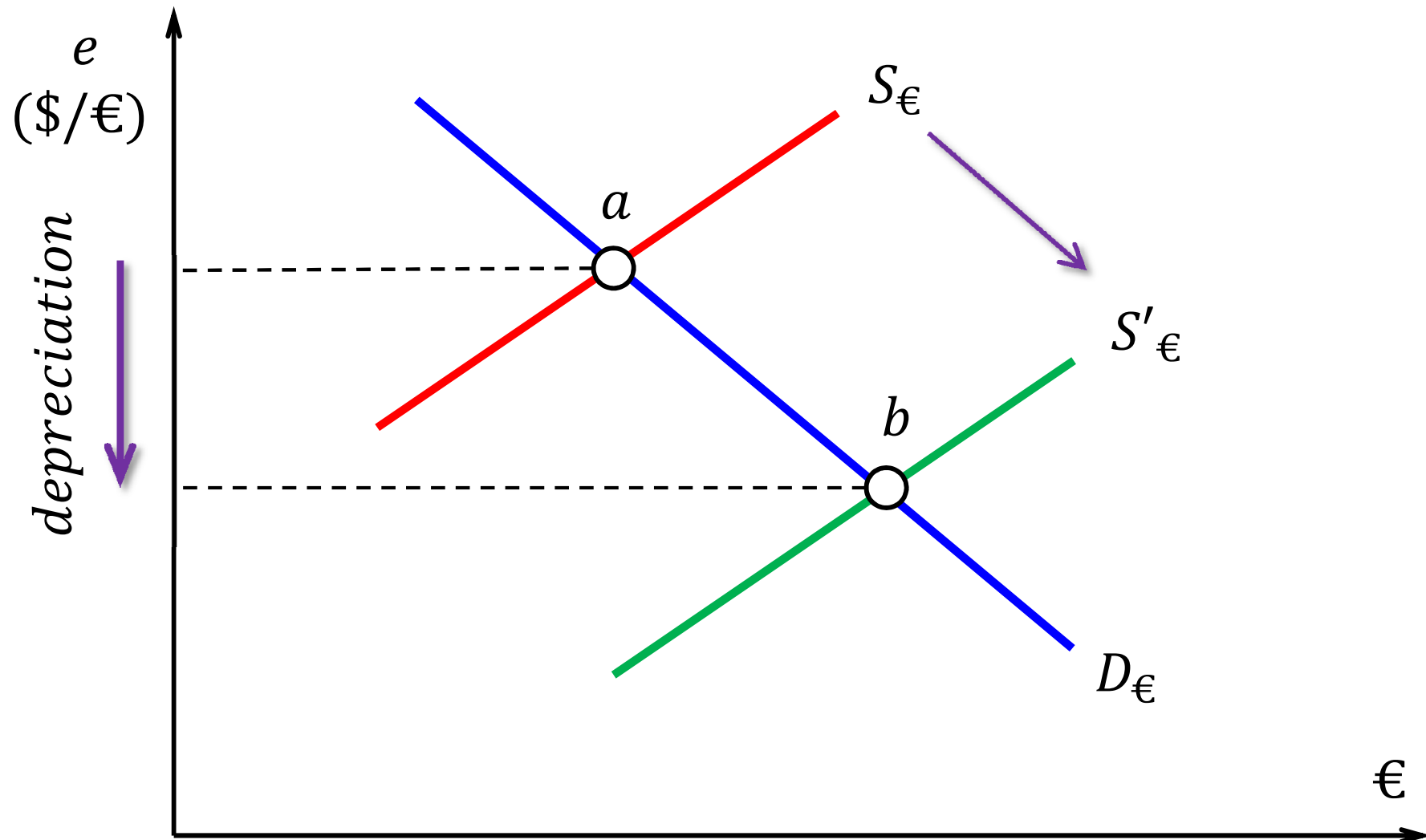




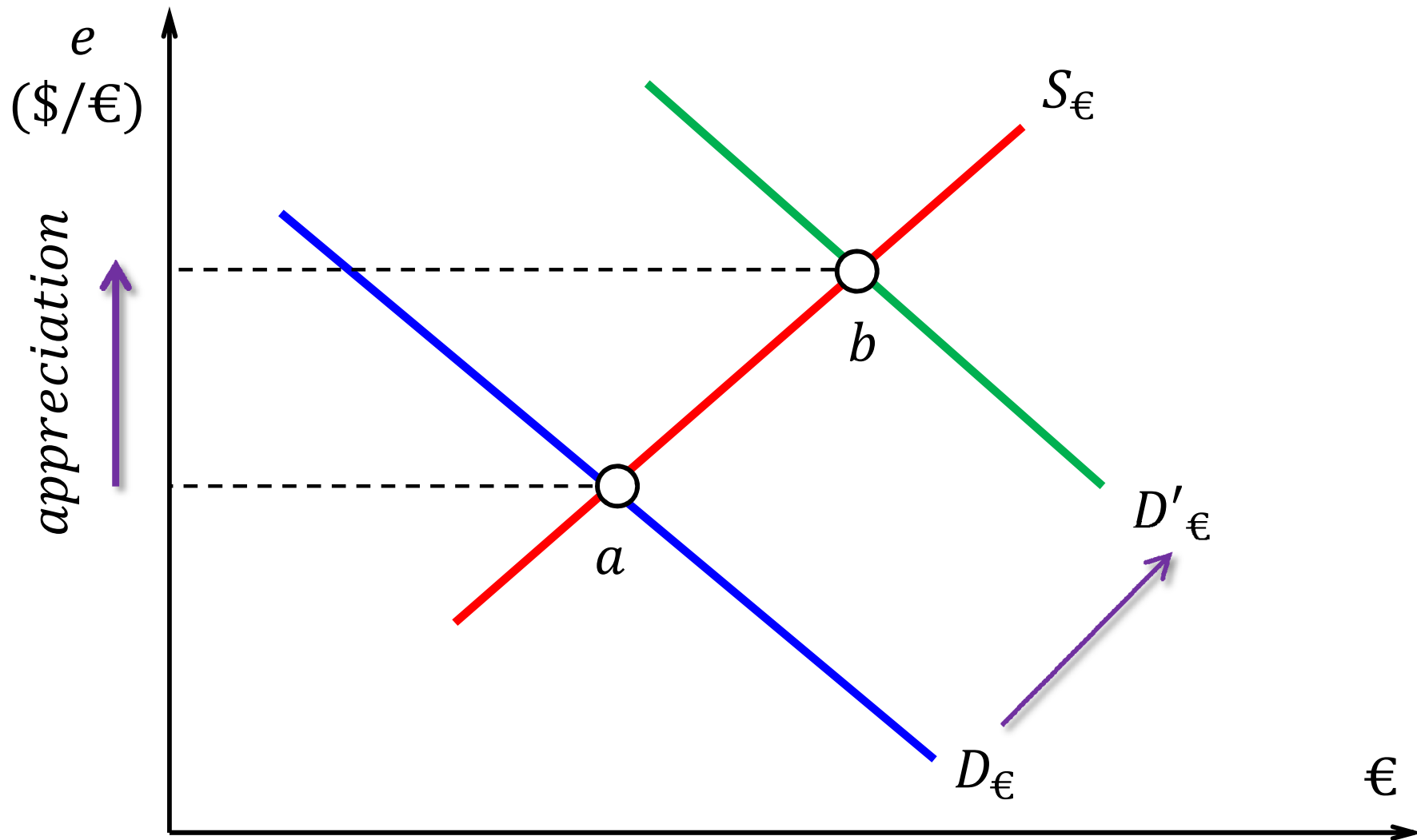




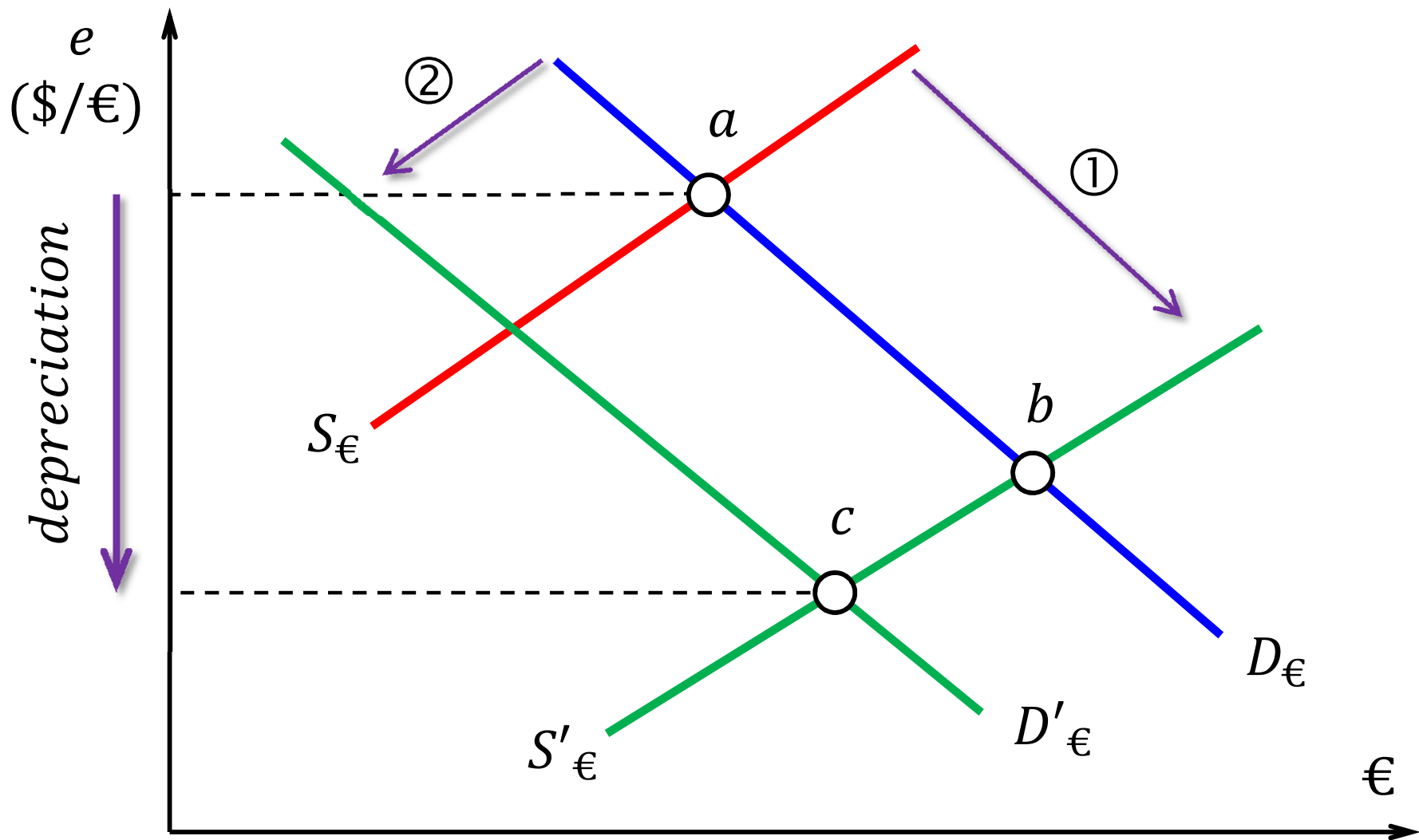
$$\uparrow \text{GDP}_{\text{EU}} \Rightarrow \uparrow \text{IM}_{\text{EU}} \Rightarrow \uparrow D_{\$} \Rightarrow \uparrow S_{\text{€}} \Rightarrow \downarrow e$$



$$\uparrow \text{GDP}_{\text{US}} \Rightarrow \uparrow \text{IM}_{\text{US}} \Rightarrow \uparrow D_{\text{€}} \Rightarrow \uparrow e$$

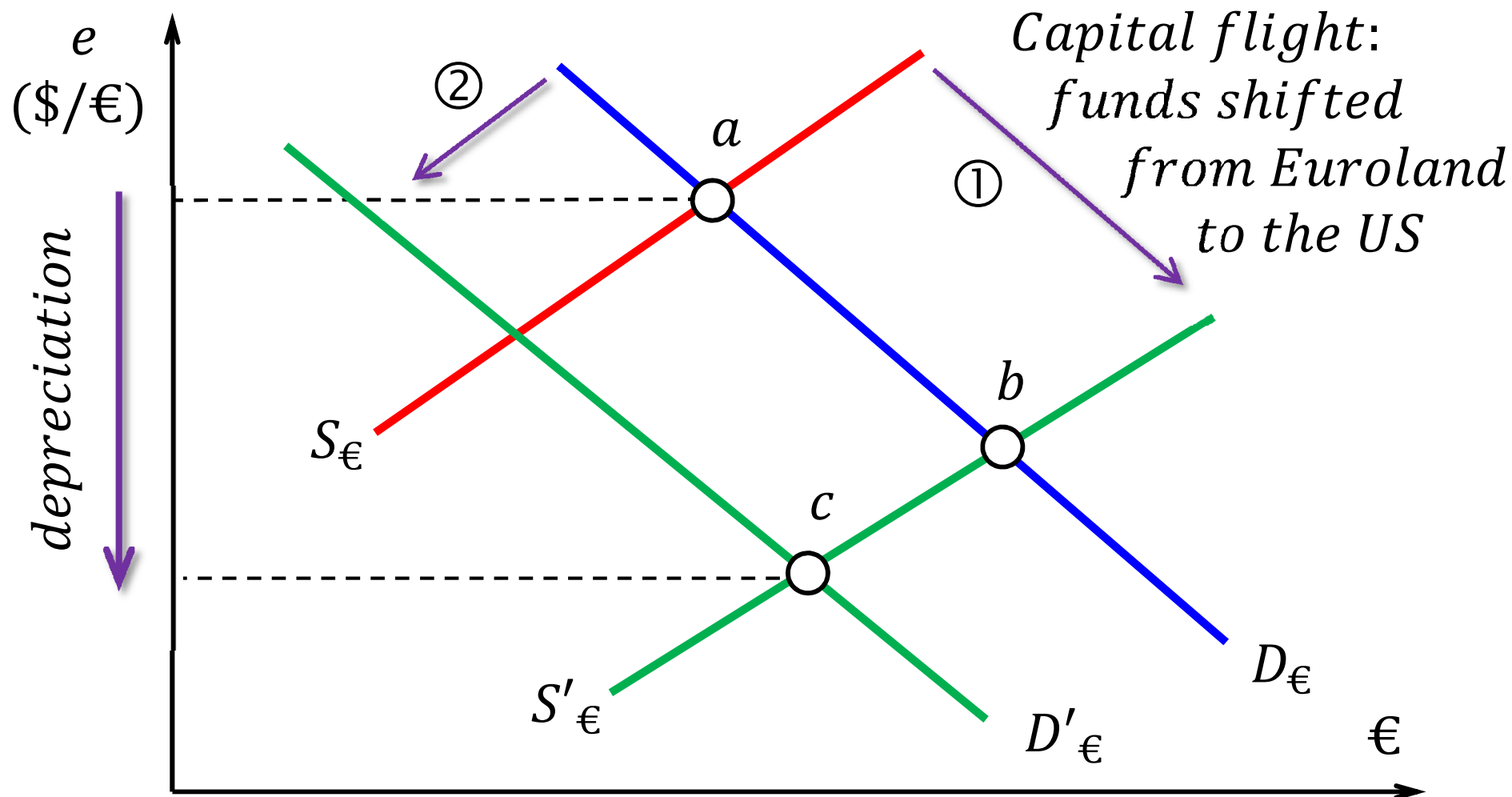


$\uparrow \pi_{\text{EU}} \Rightarrow$
 $\begin{cases} \textcircled{1} \nearrow \uparrow \text{IM}_{\text{EU}} \Rightarrow \uparrow D_{\$} \Rightarrow \uparrow S_{\text{€}} \Rightarrow \downarrow e \\ \textcircled{2} \searrow \downarrow \text{IM}_{\text{US}} \Rightarrow \downarrow D_{\text{€}} \Rightarrow \downarrow e \end{cases}$



$\uparrow i_{US} \Rightarrow$

- ① $\uparrow D_{US\text{-securities}}^{\text{BY EUROPEANS}} \Rightarrow \uparrow D_{\$} \Rightarrow \uparrow S_{\text{€}} \Rightarrow \downarrow e$
- ② $\downarrow D_{EU\text{-securities}}^{\text{BY AMERICANS}} \Rightarrow \downarrow D_{\text{€}} \Rightarrow \downarrow e$



2. Arbitrage and speculation

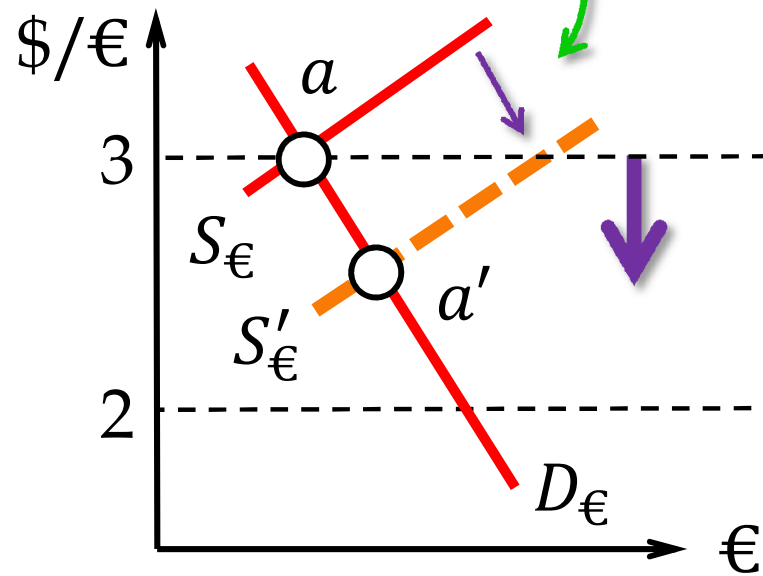
- Spatial arbitrage – integrates currency markets geographically
- Triangular arbitrage – integrates different currency markets
- Speculation
 - going short – you buy expecting a price fall
 - going long – you buy expecting a price rise

Spatial arbitrage

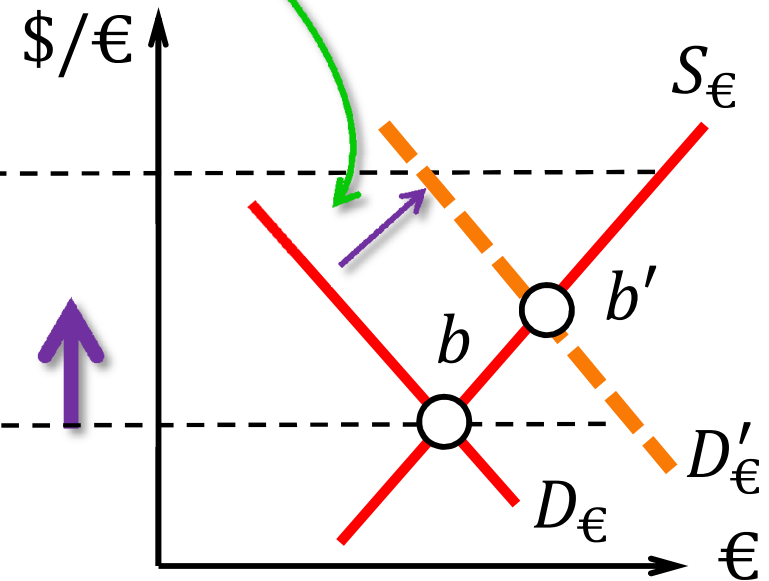
€1 $\xrightarrow{\hspace{2cm}}$ \$3 $\xrightarrow{\hspace{2cm}}$ €1.5

↑
€ are sold

↑
\$ are sold

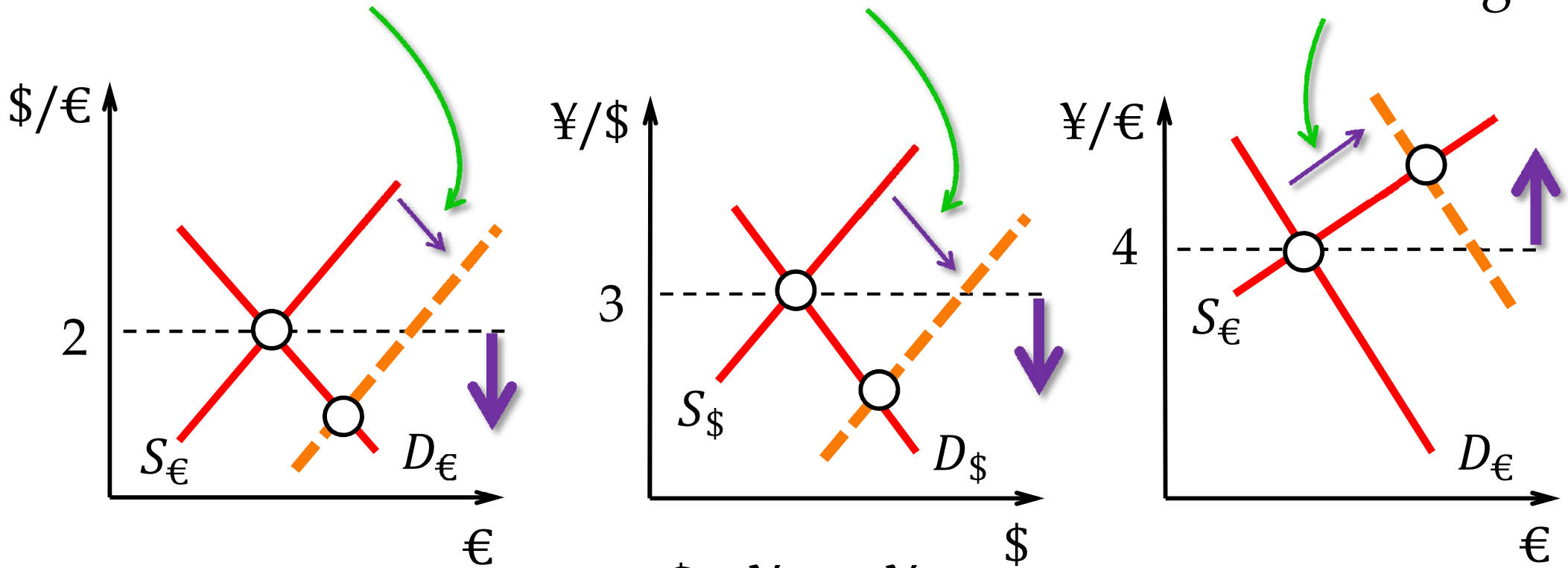
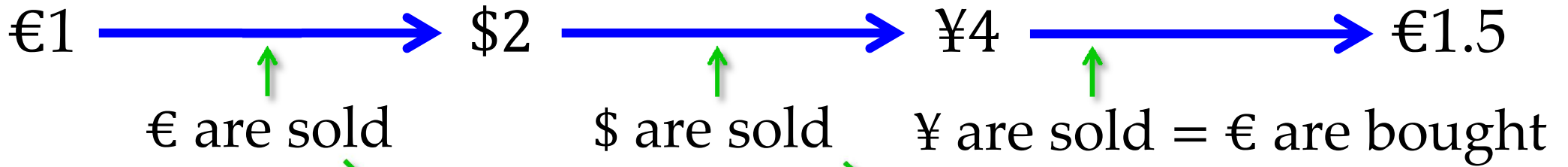


New York



London

Triangular arbitrage



$$\frac{\$}{\text{€}} \frac{\text{¥}}{\$} > \frac{\text{¥}}{\text{€}} \quad \leftarrow \text{initially}$$

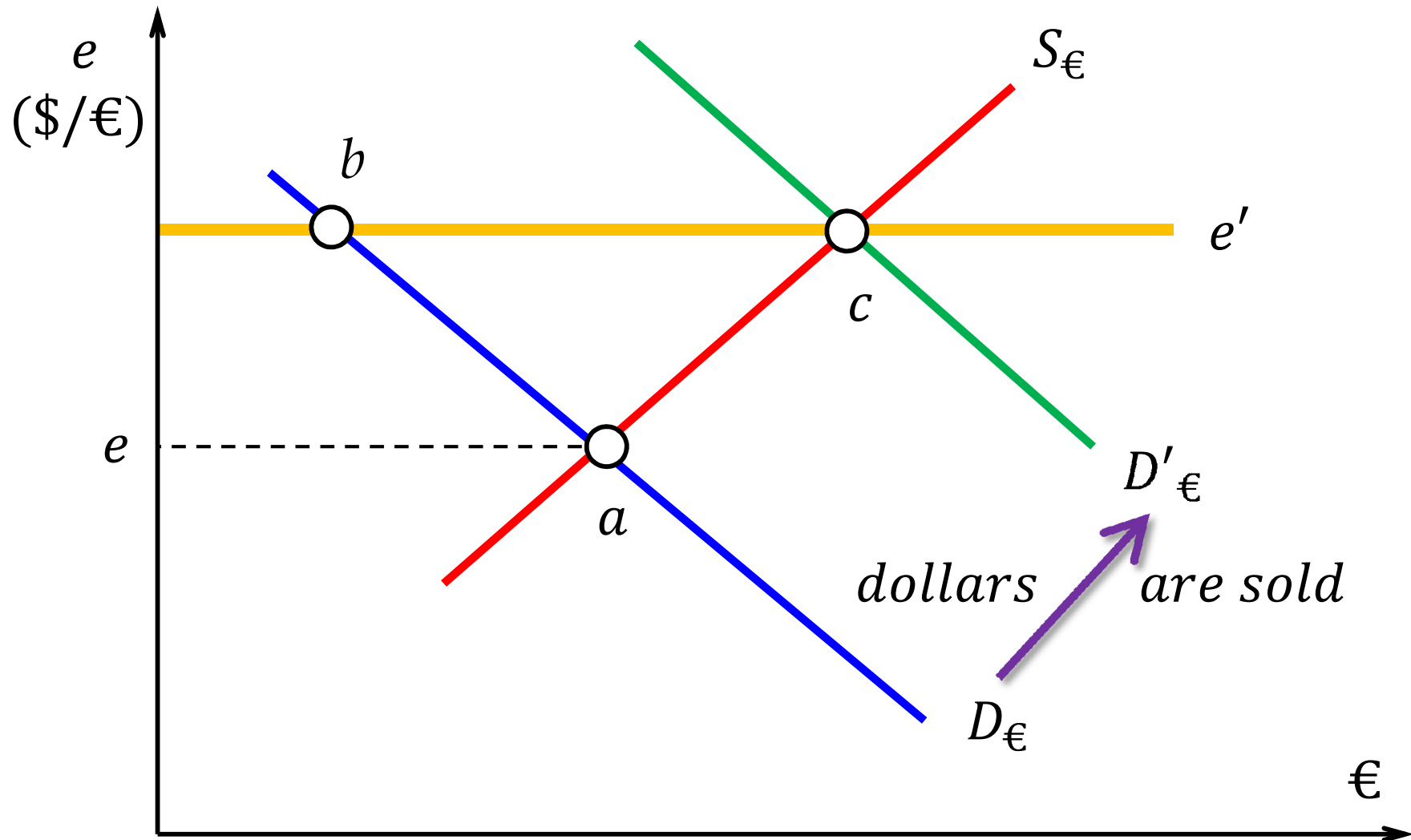
with arbitrage \rightarrow

\downarrow \downarrow \uparrow

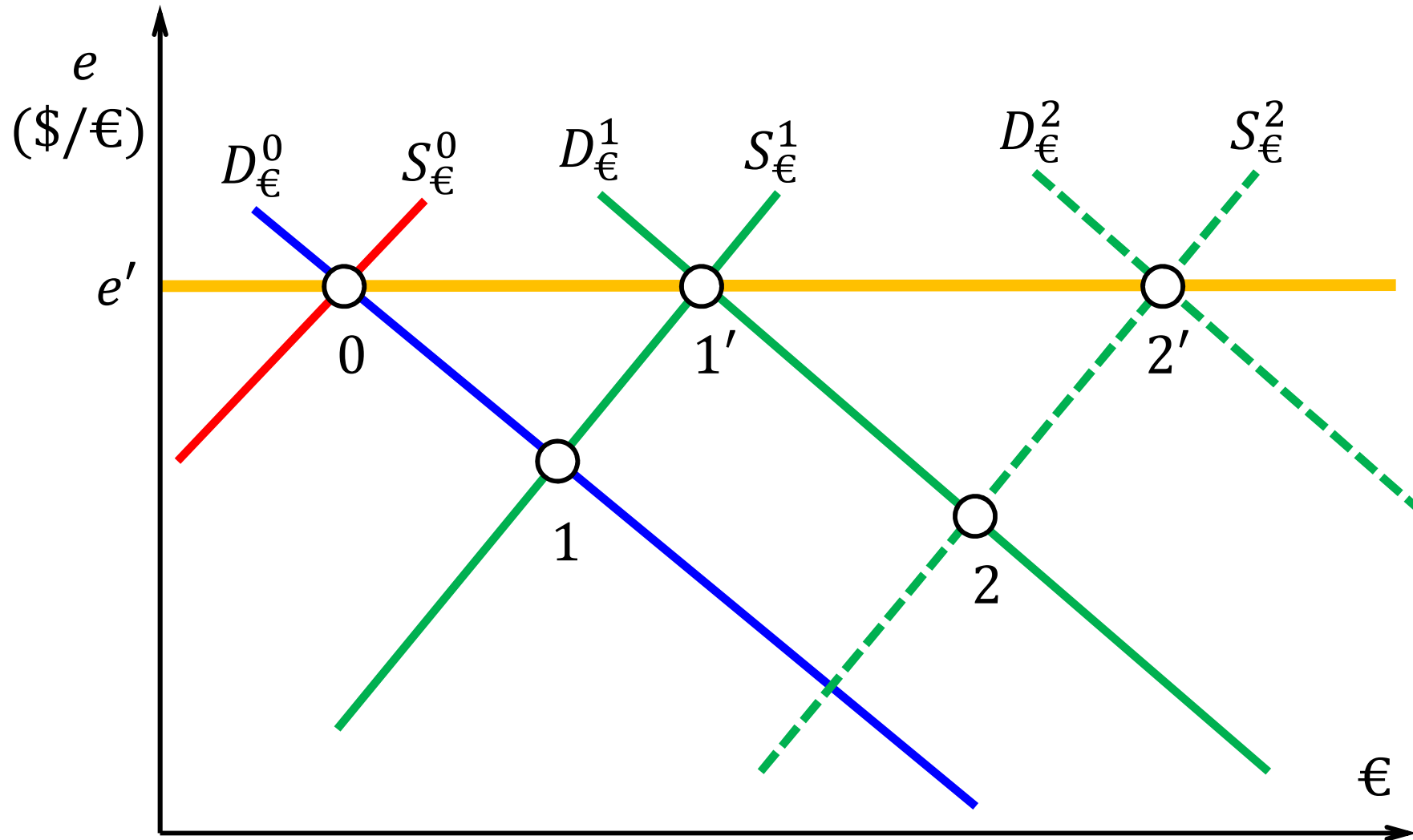
3. Exchange rate regimes

- Flexible or floating exchange rate
- Fixed exchange rate: revaluation / devaluation
- Managed float
- CB intervention in the currency market
- Anatomy of a typical currency crisis and speculative attacks

Intervention in the currency market



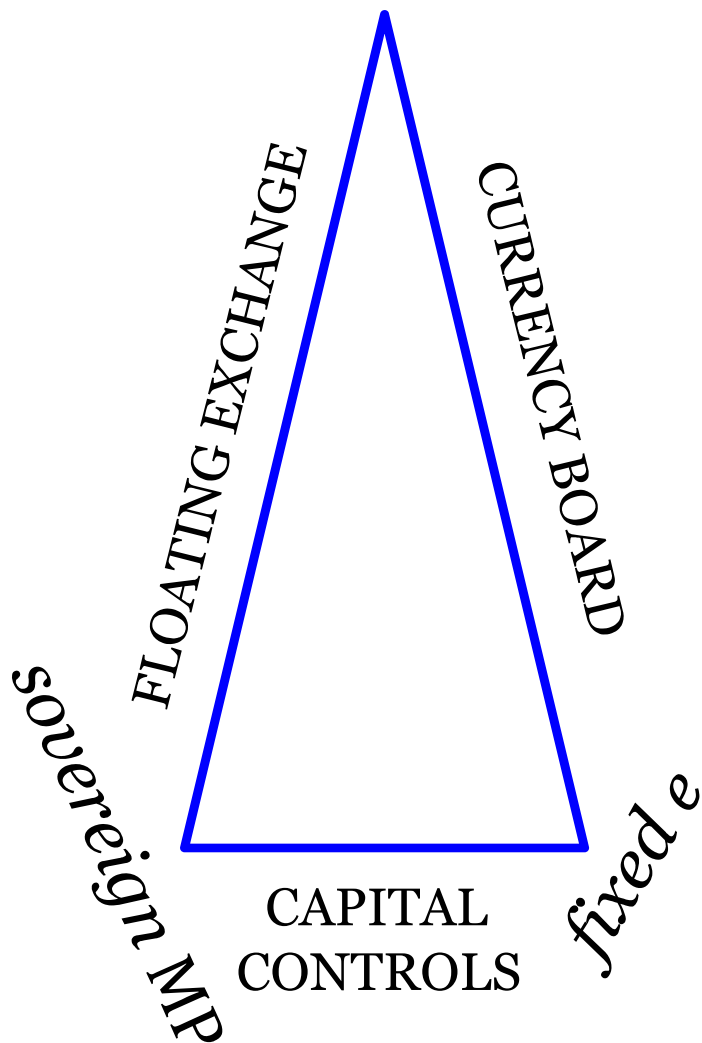
Currency crises



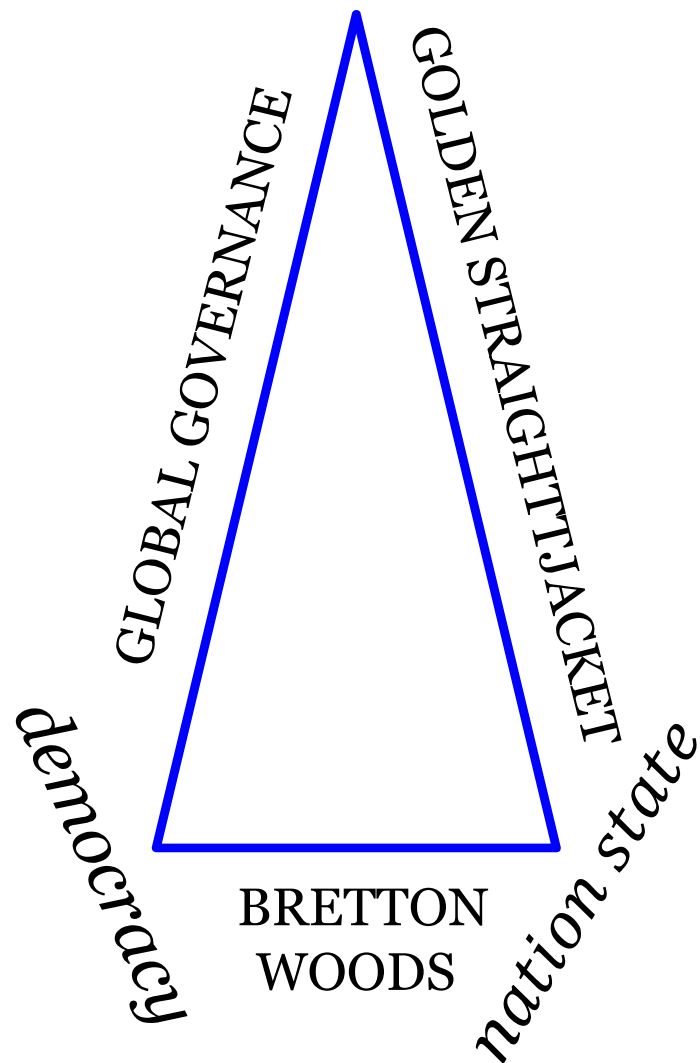
4. Trilemmas

- Impossible trinity: you can only have two of
 - fixed exchange rate
 - independent monetary policy
 - unrestricted international mobility of capital
- Rodrik's trilemma: you can only have two of
 - domestic democracy
 - independent domestic policy (sovereign state)
 - hyperglobalization

free capital flows



hyperglobalization



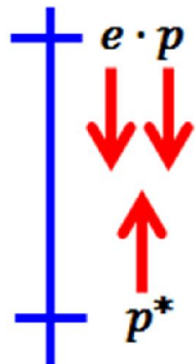
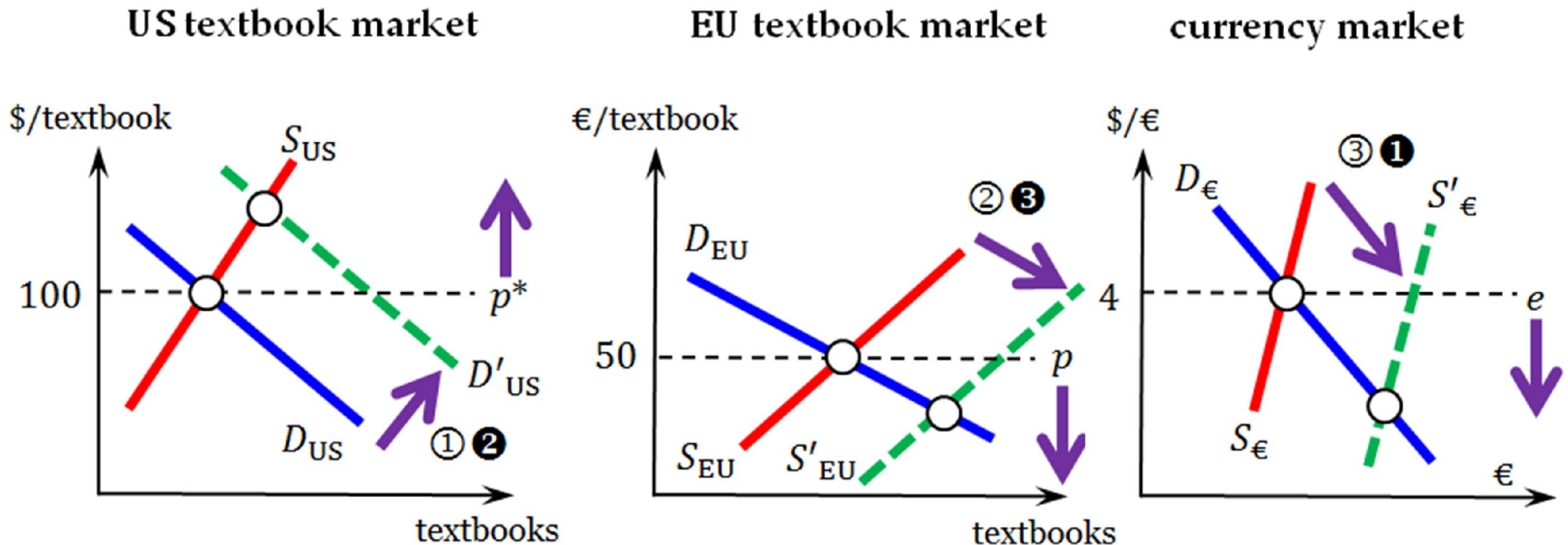
5. Real exchange rate

- Defined as
$$e_r = e \cdot \frac{P}{P^*}$$
- Competitiveness / real appreciation & depreciation
- Purchasing power parity exchange rate

$$e_{PPP} = \frac{P^*}{P}$$

- Commercial arbitrage and PPP
- The Big Mac index

Commercial arbitrage



- ① = Americans buy textbooks in US ② = sell them in EU ③ = and convert € in to \$
 ① = Europeans convert € into \$ ② = buy textbooks in US ③ = and sell them in EU

US = home economy	P^* = BM home price	BM price in \$ = P^*/e	PPP of \$ = P^*/P	market e on 22 Jan 2014	Over (+) under (-) valuation against the \$
US	$P = 4.62$	—	—	—	—
Brazil	12.4 R\$	5.25	2.68	2.36	13.48
UK	2.79 £	4.63	1.66 \$/£	1.66 \$/£	0.06
China	16.6 ¥	2.74 \$	3.59 ¥/\$	6.05 ¥/\$	-40.68
Eurozone	3.65 €	4.96	1.26 \$/€	1.35 \$/€	7.3
India	95 ₹	1.54	20.54	61.85	-66.78
Russia	89 руб	2.62	19.25	33.94	-43.29
Sweden	40.7 kr	6.29	8.8	6.47	35.97
Venezuela	45 Bs.F.	7.15	9.73	6.29	54.66

US = home economy	P^* = BM home price	BM price in \$ = P^*/e	PPP of \$ = P^*/P	market e on 22 Jan 2015	Over (+) under (-) valuation against the \$
US	$P = 4.79$	—	—	—	—
Brazil	13.5 R\$	5.21	2.82	2.59	8.70
UK	2.79 £	4.63	1.66 \$/£	1.66 \$/£	0.06
China	17.2 ¥	2.77 \$	3.59 ¥/\$	6.21 ¥/\$	-42.19
Eurozone	3.68 €	4.26	0.77 \$/€	0.86 \$/€	-10.98
India	116.25 ₹	1.89	24.27	61.62	-60.61
Russia	89 руб	1.36	18.58	65.23	-71.51
Sweden	40.7 kr	4.97	8.50	8.19	3.73
Switzerland	6.5 CHF	7.54	1.36	0.86	57.49
Venezuela	132 Bs.F.	2.53	27.56	52.10	-47.119