Why does the dollar go up and down?

The exchange rate as a price, demand and supply of euros, shifts of either curve, appreciation and depreciation, prices in two currencies, interest rates, who gains from a strong or weak dollar, and the real euro since 1999: €1 = $2.00, €100B traded.

1 A price

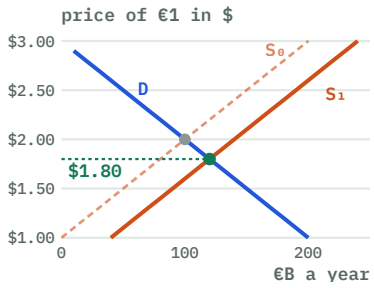
the exchange rate

- **Exchange rate** = the price of one currency in another · here `e` = price of **€1** in Coralian dollars · €1 = **$2.00**
- Euro price → dollars `× e` · €100 hotel × 2.00 = **$200** · practice: €80 ticket × 2.50 = **$200**
- Dollar price → euros `÷ e` · $100 dive ÷ 2.00 = **€50** · practice: $150 surf lesson ÷ 2.50 = **€60**
- **B** = billion · **bond** = a loan to a government or firm that pays interest every year

2 Market for euros

demand and supply

- **Demand** for euros ← Coralians buying European goods, trips, assets (things owned that keep value or earn: shares, bonds) · `D = 300 − 100e` (€B a year)
- **Supply** of euros ← Europeans selling euros to buy Coralian goods, dives, bonds · `S = 100e − 100`
- **Equilibrium** = wanted = offered · `300 − 100e = 100e − 100` → **e = $2.00**, **€100B** traded
- Above it (e.g. $2.60: wanted 40, offered 160) → euros left over → price falls back to $2.00



3 Shifts

the whole curve moves

- **Shift** = tastes, income, interest rates change → the whole curve moves · a change in e only moves **along** it
- **D +€40B** (Coralians love Europe) → **$2.20**, €120B · hotel **$220** · **S +€40B** → **$1.80**, €120B · hotel $180, dive ≈ €56
- Practice · storm, S −€60B → **$2.30**, €70B · both: D +80 & S +40 → `380 − 100e = 100e − 60` → **$2.20**, €160B (bigger shift wins)

Shift	€1 costs	The dollar
D right (more euros wanted) · S left (fewer offered)	more	DEPRECIATES
D left · S right (more euros offered)	less	APPRECIATES

4 Two sides

one rate, two bills

- **Appreciation** = a currency buys **more** of another money · **depreciation** = buys **less** · one price → when one appreciates, the other depreciates
- €1: $2.00 → $2.20 ⇒ $1 buys €0.50 → ≈ €0.45 ⇒ dollar **depreciates** (≈ 9%) · euro appreciates (10%)
- **Strong dollar** helps Coralians who pay in euros: travelers, importers, students abroad · **weak dollar** helps exporters, tourist islands, dive schools
- "Strong" = a price, **not** a score for the economy

5 Interest rates

money moves the rate

- Rate **up** → Europeans buy Coralian bonds → sell euros for dollars → **S** ↑ → euro cheaper → dollar **appreciates** → exports dearer abroad
- Rate **cut** (practice) → savers buy European bonds → buy euros → **D** ↑ → dollar **depreciates** · €1 $2.00 → $2.50 → $100 box of shells €50 → **€40** → exports cheaper
- **Central bank** = the public bank that sets a country's interest rates

6 The real euro

$ per €1 · ECB

- Jan 1999 launch **$1.18** · Oct 2000 low **$0.83** · Jul 2008 high **$1.60** · Sep 2022 below $1, **$0.96** (ECB = European Central Bank)
- €100 hotel for an American: $118 · $83 · $160 · $96 → Paris unchanged, demand and supply of euros shifted · 2022: US rates rose faster than Europe's, war in Ukraine

Watch out: e = price of **€1** in dollars → e **up** = euro dearer = dollar **depreciates** (not appreciates) · euro price → dollars **× e**, dollar price → euros **÷ e** · fewer euros offered = **S** moves, not D · $1.60 → $0.96 is a price, not Europe shrinking by 40%