Should a country fix its exchange rate?

Fixed and floating rates, the gap at a peg, reserves running out, ways to defend a peg and their cost, the impossible trinity, how a peg breaks, and four real pegs: Coralia pegs €1 at $2.00.

1 Fixed or floating

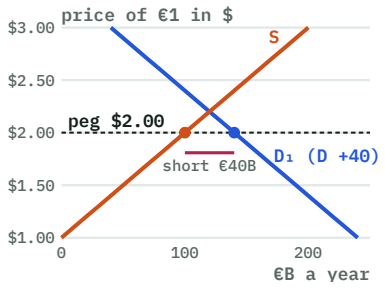
who sets the price

- **Floating rate** = price of a currency set by demand and supply, no promise (Lesson 5) · `e` = price of **€1** in dollars
- **Peg** (fixed rate) = central bank's promise: one fixed price in another currency · Coralia: €1 = **$2.00**, whatever happens
- Market for euros: `D = 300 − 100e` · `S = 100e − 100` (€ billions a year, **B** = billion) → $2.00, €100B

2 The gap

at the pegged price

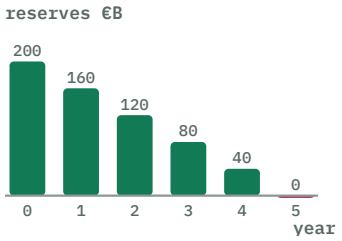
- **Gap** = euros wanted − euros offered at the peg · **D +€40B** → at $2.00: 140 − 100 = **€40B short** · free market → **$2.20**
- Practice · D +€60B → 160 − 100 = **€60B short** · no peg → `360 − 100e = 100e − 100` → **$2.30**, €130B
- Other side (practice) · D −€40B → 60 wanted, 100 offered → **€40B extra** → bank **buys** euros with new dollars → reserves **grow** · no bank → **$1.80** · risk: more money at home → prices up



3 Reserves

how long a peg lasts

- **Reserves** = central bank's stock of foreign money → sold to fill the gap
- `years = reserves ÷ gap` · €200B ÷ €40B = **5 years** → empty → peg breaks → €1 jumps **$2.00 → $2.20** at once
- Practice · €240B ÷ €60B = **4 years** · after 3 years €60B left · **IMF** lends €120B → 180 ÷ 60 = 3 more → **6 years** · loan buys time, gap stays
- **IMF** = International Monetary Fund, 1944, Washington → lends to countries short of reserves



4 Defending

ways to hold on

- Sell reserves · **borrow** (IMF) · **capital controls** = limits on money moving in or out of a country
- **Raise the interest rate** → Coralian **bonds** (loans to the government that pay interest) pay more → Europeans sell euros → **S +€40B** → gap closed at $2.00, no reserves spent
- Cost → every loan more expensive at home (mortgages, firms, students) → growth and jobs pay · printing dollars or cutting taxes → more euros wanted → gap **grows**

5 Impossible trinity

pick two of three

- Only two of: **fixed rate** · **free movement of money** · **own interest rate** · Robert Mundell (Canadian economist, Nobel 1999) and Marcus Fleming (British economist), early 1960s
- Peg + free money → rate **follows** abroad · Fed (US central bank) raises its rate → Hong Kong raises too, or money leaves

Gives up	Keeps	Examples
A FIXED RATE	free money + own rate	United States, Japan (they float)
ITS OWN RATE	peg + free money	Hong Kong, Denmark · Coralia in the lesson
FREE MOVEMENT	peg + own rate	China, Malaysia 1998 (3.80 ringgit, Malaysian money, per $, controls)

6 When it breaks

real pegs

- Sells reserves → reserves low, traders (people and banks that buy and sell currencies) expect a break → rush to sell the currency → reserves drain faster → **peg breaks, price jumps**
- **Broke** · Thailand: ≈ 25 baht (Thai money) per $ from 1984 → floated 2 Jul 1997 → ≈ 56 (Jan 1998) · Argentina: 1 peso (Argentine money) = $1, Apr 1991 – Jan 2002 → 4 pesos (Mar 2002)
- Foreign debt grows → $1,000 at 4 pesos = **4,000 pesos** · practice: €10,000 debt $20,000 → **$25,000** (€1 $2.00 → $2.50) · sellers to foreigners gain: $200 night €100 → **€80**
- **Held** · Hong Kong HK$7.80 per $ since 17 Oct 1983 · Denmark ≈ 7.46 krone (Danish money) per € since 1999
- Peg **buys** stable prices for trade, a brake on inflation (prices rising year after year) · **costs** own rate, reserves, a crisis if it breaks → a trade-off, no verdict

Watch out: gap = wanted − offered **at the peg**, not the change in price · years = reserves ÷ gap (a loan only adds years) · too many euros offered → bank **buys**, reserves grow · trinity: a peg with free money gives up the **own interest rate**, not the peg