CHAPTER 18

The International Financial System

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Created: June 26, 2026 ▪ Last modified: June 26, 2026

Outline

Intervention and the Monetary Base

The Balance of Payments

Exchange-Rate Regimes

Capital Controls and the IMF

The Trilemma and Monetary Unions

Wrap-up

Reading and objectives

- Mishkin, *The Economics of Money, Banking, and Financial Markets*, 13th ed.
- This deck: **Chapter 18** — The International Financial System.
- Chapter 17 gave us how exchange rates are *determined*. Now we ask how central banks *act* on them — and how the choice of exchange-rate regime feeds back onto domestic monetary policy.

Learning objectives

18.1 Use T-accounts and graphs to contrast sterilized vs. unsterilized intervention.

18.2 Read the balance of payments: current account, financial account, reserves.

18.3 Explain how a fixed-rate regime is maintained — and where it breaks.

18.4 Weigh the case for and against capital controls.

18.5 Assess the IMF as an international lender of last resort; the policy trilemma.

PART 1

Intervention and the Monetary Base

Who intervenes, and what it does

Decisions to intervene in the FX market are made jointly by the **U.S. Treasury** (primary responsibility) and the **Fed's FOMC**; the New York Fed's foreign-exchange desk executes the trades.

- An FX intervention is just the central bank *buying or selling foreign assets* (international reserves) with domestic currency.
- The key insight: because the central bank pays in domestic currency, an intervention changes the **monetary base** exactly as an open market operation does.
- So FX policy and monetary policy are not separate levers — pulling one moves the other, unless you deliberately offset it.

Mishkin Ch. 18, Section 18.1.

The T-account: an unsterilized intervention

Suppose the Fed **buys $1B of dollars** (sells $1B of foreign assets) to support the dollar. The buyer pays with currency or reserves, which the Fed retires.

Federal Reserve System

Assets		Liabilities	
Foreign assets (reserves)	−$1B	Currency / reserves	−$1B

- Reserves are *drained* ⇒ monetary base **falls by $1B**.
- Symmetrically: a *sale* of domestic currency (to buy foreign assets) *raises* reserves and the base.

Mishkin Ch. 18, Section 18.1.

Unsterilized intervention moves the exchange rate

Trace the chain through the asset-market model of Chapter 17:

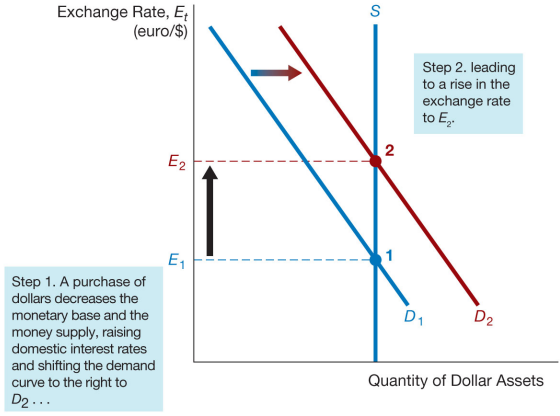
- A **purchase of dollars** drains the base $\Rightarrow$ money supply $\downarrow$ $\Rightarrow$ domestic interest rate $\uparrow$.
- Higher relative returns shift the **demand for domestic (dollar) assets right** $\Rightarrow$ the dollar **appreciates**.
- A **sale of dollars** does the reverse: base $\uparrow$, money supply $\uparrow$, rates $\downarrow$, the dollar **depreciates**.

The rule

An **unsterilized** intervention that sells domestic currency raises international reserves, raises the money supply, and *depreciates* the domestic currency. The exchange-rate effect is real because the monetary base actually changed.

Mishkin Ch. 18, Section 18.1.

Figure 1 — Effect of an unsterilized purchase of dollars



Mishkin Ch. 18, Figure 1. The purchase shifts the demand curve for dollar assets right ($D_1 \rightarrow D_2$), raising the exchange rate from E_1 to E_2.

The T-account: a sterilized intervention

Now the Fed wants to move the exchange rate *without* disturbing the money supply. It pairs the FX trade with an **offsetting open market operation**.

Federal Reserve System

Assets		Liabilities	
Foreign assets (reserves)	$-\$1\text{B}$	Monetary base	0
Government bonds	$+\$1\text{B}$		

- The bond purchase puts back exactly the reserves the FX sale drained.
- **No change in the monetary base $\Rightarrow$ no change in the money supply $\Rightarrow$ no effect on the exchange rate.**

Mishkin Ch. 18, Section 18.1.

PART 2

The Balance of Payments

The balance of payments

The **balance of payments** is the bookkeeping for all transactions between a country's residents and the rest of the world.

- **Current account** — trade in currently produced goods and services (the *trade balance* is its largest piece), plus net income and transfers.
- **Financial (capital) account** — net trade in *assets*: who is buying claims on whom.
- **Official reserve transactions balance** — the net change in the central bank's holdings of international reserves.

The accounting identity

Every cross-border transaction is a wash: the three accounts must *sum to zero*. A current-account deficit is necessarily financed by a financial-account surplus and/or a drawdown of reserves.

Mishkin Ch. 18, Section 18.2.

The accounts at a glance

Structure of the balance of payments

Account	What it records
Current account	Goods, services, income, transfers
of which: trade balance	Exports − imports of goods
Financial account	Net purchases/sales of assets
Official reserve transactions	Net change in central-bank reserves
Sum	$\equiv 0$ **(must balance)**

Why the U.S. current-account deficit draws worry: at current exchange rates foreign demand for U.S. exports trails U.S. demand for imports, and the mirror-image financial-account surplus means *foreign claims on U.S. assets keep growing*.

Mishkin Ch. 18, Section 18.2.

PART 3

Exchange-Rate Regimes

Three families of exchange-rate regime

- **Fixed** — a currency is *pegged* to an anchor currency; the central bank stands ready to trade reserves to hold the peg.
- **Floating** — the value moves freely against all other currencies; no intervention.
- **Managed float ("dirty float")** — mostly market-determined, but the central bank intervenes to smooth large swings.

The historical arc

Gold standard (fixed; money tied to gold, no monetary autonomy) → **Bretton Woods** (1944–71; rates fixed to the dollar, dollar to gold; created the **IMF**, World Bank, GATT/WTO) → today's **managed float** with the euro's monetary union alongside.

Mishkin Ch. 18, Section 18.3.

How Bretton Woods worked — and why it failed

Under Bretton Woods, rates were fixed but *adjustable*:

- A country could change its peg only under a **"fundamental disequilibrium"** — large, persistent balance-of-payments deficits.
- The **IMF** lent reserves to deficit countries and pressed them toward *contractionary* policy; devaluation was a last resort if loans ran short.
- Two fatal asymmetries: there were **no tools to discipline surplus countries**, and the **U.S. itself could not devalue** — the dollar was the anchor.

When U.S. deficits made the dollar's gold convertibility untenable, the system collapsed in 1971.

Mishkin Ch. 18, Section 18.3.

How a fixed-exchange-rate regime works

Holding a peg means buying or selling reserves to close the gap between the official rate and the market rate.

Currency *overvalued* (peg above market)

- Central bank must **buy** its own currency
- It *loses* international reserves
- Or it **devalues** (resets the peg lower)

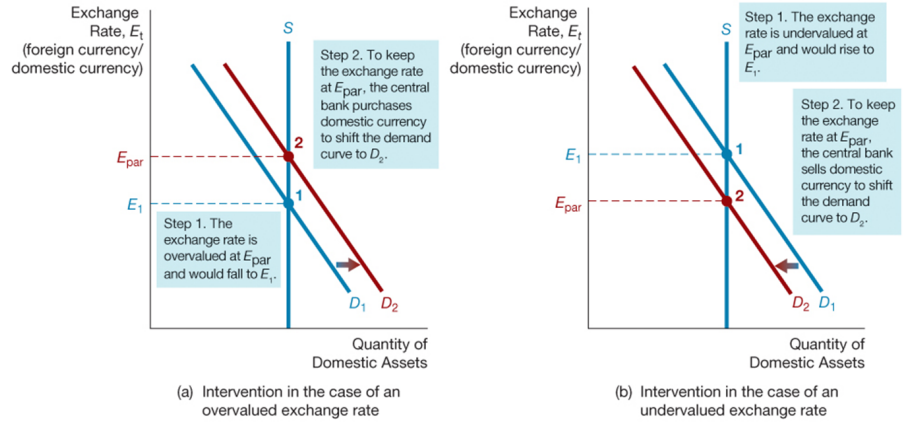
Currency *undervalued* (peg below market)

- Central bank must **sell** its own currency
- It *gains* international reserves
- Or it **revalues** (resets the peg higher)

The defense works through the **demand curve for domestic assets**: intervention shifts D until the equilibrium rate equals the pegged rate. Defending an *overvalued* peg is dangerous — reserves are finite, and the market knows it.

Mishkin Ch. 18, Section 18.3.

Figure 2 — Defending an over- and undervalued peg



Mishkin Ch. 18, Figure 2. (a) An overvalued currency: the bank buys domestic currency, shifting D left to hold E_{par}, losing reserves. (b) An undervalued currency: it sells, shifting D right, gaining reserves.

Speculative attacks: the 1992 sterling crisis

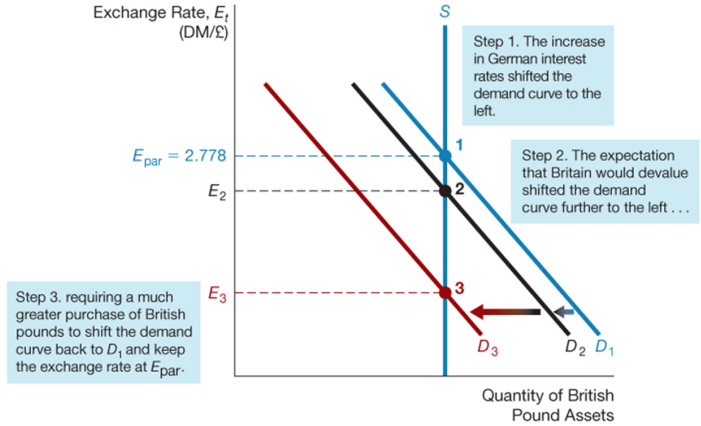
A fixed rate invites a one-way bet. Within Europe's exchange-rate mechanism, the pound was pegged to the Deutsche mark.

- High German interest rates (post-reunification) shifted demand for pound assets *left* — the pound came under pressure.
- Once markets expected Britain **would devalue**, demand collapsed *further* left: a self-fulfilling **speculative attack**.
- Defending the old parity required ever-larger reserve purchases. On "Black Wednesday," September 1992, the Bank of England gave up and let the pound float.

The lesson: a peg defended by finite reserves is a target. When fundamentals turn, the speculators, not the central bank, set the terms.

Mishkin Ch. 18, Section 18.3.

Figure 3 — The market for British pounds in 1992



Mishkin Ch. 18, Figure 3. Each leftward shift of demand ($D_1 \to D_2 \to D_3$) forces a larger reserve purchase to hold E_{par} — until the defense becomes impossible.

PART 4

Capital Controls and the IMF

Capital controls

If reserves and pegs are fragile, why not just restrict the flows? Mishkin is skeptical.

Controls on *outflows*

- Seldom effective; often *increase* capital flight
- Can force the very devaluation they aim to prevent
- Breed evasion and corruption

Controls on *inflows*

- Can blunt a destabilizing lending boom *in principle*
- But block funds for productive uses
- Produce distortion, misallocation, corruption

The better fix

The real problem behind inflow-driven crises is *weak banks taking excessive risk*. The strong case is for **improving bank regulation and supervision** — not walling off the capital account.

Mishkin Ch. 18, Section 18.4.

The IMF as international lender of last resort

In a crisis, an emerging-market country with weak central-bank credibility and foreign-currency debt cannot credibly be its *own* lender of last resort. The **IMF** can step in.

The case for

- Can halt **contagion** across countries
- Supplies reserves a fragile central bank cannot create

The worries

- **Moral hazard**: a safety net invites risk-taking
- Often too *slow*, worsening the crisis
- Austerity conditions may stress macro tightening over real financial reform

The design problem is the same lender-of-last-resort tension we met in Chapters 10–12: stop the panic without underwriting the next one.

Mishkin Ch. 18, Section 18.5.

PART 5

The Trilemma and Monetary Unions

The policy trilemma (the impossible trinity)

A country can have *at most two* of these three at once:

1. A **fixed exchange rate**,
2. **Free capital mobility**,
3. An **independent monetary policy**.

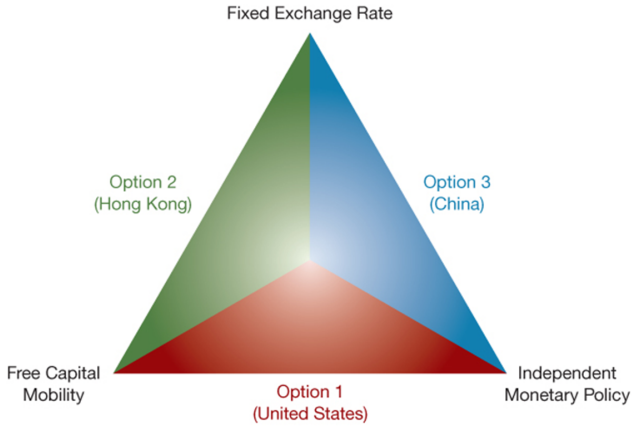
Why only two

With *free capital flows*, interest-parity ties your interest rate to the anchor country's the moment you fix the rate — so you forfeit monetary independence. Want independence *and* a fixed rate? You must wall off capital. Want independence *and* open capital? You must float.

Choices: the U.S. floats (keeps independence + mobility); Hong Kong fixes with open capital (a currency board, no independence); China long fixed with controls (kept independence + the peg).

Mishkin Ch. 18, Section 18.6.

Figure 4 — The policy trilemma



Mishkin Ch. 18, Figure 4. Each side of the triangle is a feasible pair; the opposite vertex is what you must give up. The U.S., Hong Kong, and China each pick a different edge.

China and $4 trillion of reserves

The trilemma explains the most striking reserve buildup in history.

- To hold the yuan *undervalued* against the dollar, China's central bank had to **sell yuan and buy dollar assets** — relentlessly.
- That is the "undervalued peg" case from Figure 2: persistent intervention $\Rightarrow$ persistent reserve *accumulation*, reaching **$4 trillion by 2014**.
- China could run an independent monetary policy *and* a fixed rate only because **capital controls** occupied its corner of the trilemma.

Mishkin Ch. 18, Section 18.6.

Monetary unions, currency boards, dollarization

The fixed-rate family has hard-commitment variants that surrender monetary independence on purpose:

- **Monetary union** (the **euro**): a group adopts one currency, fixing rates among members irrevocably. Powerful integration — but members lose their own monetary policy. The crisis hit the southern Eurozone hard, a "straitjacket" effect.
- **Currency board**: domestic money is backed **100%** by a foreign currency; the board trades at a fixed rate on demand. Strong commitment, but no independent policy and *no lender of last resort* (Argentina, 1991–2002).
- **Dollarization**: adopt another country's money outright. The strongest commitment — immune to speculative attack — but you forfeit policy, the lender-of-last-resort role, and **seigniorage**.

Mishkin Ch. 18, Section 18.6.

Exchange-rate targeting as a strategy

Pegging is also a *monetary-policy strategy* — the nominal anchor of Chapter 16, imported from abroad.

Advantages

- Anchors inflation to a credible foreign rate
- Automatic, rule-bound conduct
- Simple and clear to the public

Disadvantages

- No response to *domestic* shocks; imports the anchor's shocks
- Open to speculative attack
- Weakens accountability; the rate stops signaling

When it makes sense

Most defensible when domestic institutions are *too weak* to run credible policy alone, or when integration benefits (as in the EU) are large enough to justify the surrender of autonomy.

Mishkin Ch. 18, Section 18.7.

PART 6

Wrap-up

Key terms from Chapter 18

- foreign-exchange intervention; international reserves
- unsterilized vs. sterilized intervention
- balance of payments; current account; trade balance
- financial (capital) account; official reserve transactions
- fixed, floating, managed-float regimes
- gold standard; Bretton Woods; IMF
- overvalued / undervalued currency
- devaluation; revaluation; speculative attack
- capital controls
- policy trilemma (impossible trinity)
- monetary union; the euro
- currency board; dollarization; seigniorage

The one idea to take away

There is no free lunch in the international system

Every cross-border choice is a trade-off priced by the **trilemma**: fix the rate, open the capital account, keep monetary independence — pick *two*. An intervention is never just an FX trade; *unsterilized*, it moves the monetary base and the exchange rate together. And a peg defended with finite reserves is, sooner or later, a target for speculators.

- This closes the international block (Chapters 17–18) — the open-economy side of money and banking.
- Next we turn to the macroeconomy as a whole: **Chapter 22** — *Aggregate Demand and Supply Analysis*, the framework that puts monetary policy, output, and inflation in one picture.