International Finance

Session 2 — Interest Rates, Exchange Rates and the Climate Reading

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KEDGE Business School

3 · The Interest Rate

The week a number moved a pension fund

September 2022, the UK. Gilt yields jumped after the mini-budget. Pension funds running leveraged liability-driven strategies got collateral calls, sold gilts to meet them, and pushed yields higher still. The Bank of England had to step in and buy.

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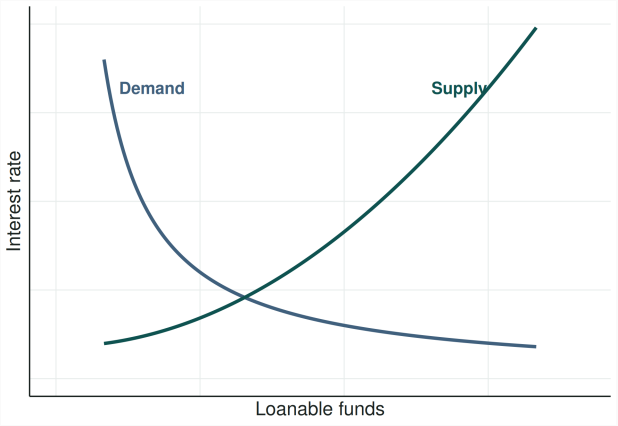
- An interest rate is not a number on a screen. It is the price that reprices everything you own.

3 · Supply and demand for loanable funds

The interest rate is the price that clears the market for **loanable funds**.

Everything in the next two slides is a shift of one of these two curves. Ask yourself which one, and in which direction.



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- **Economic conditions improve** (inflation, unemployment, growth) → the flow of funds to the country increases

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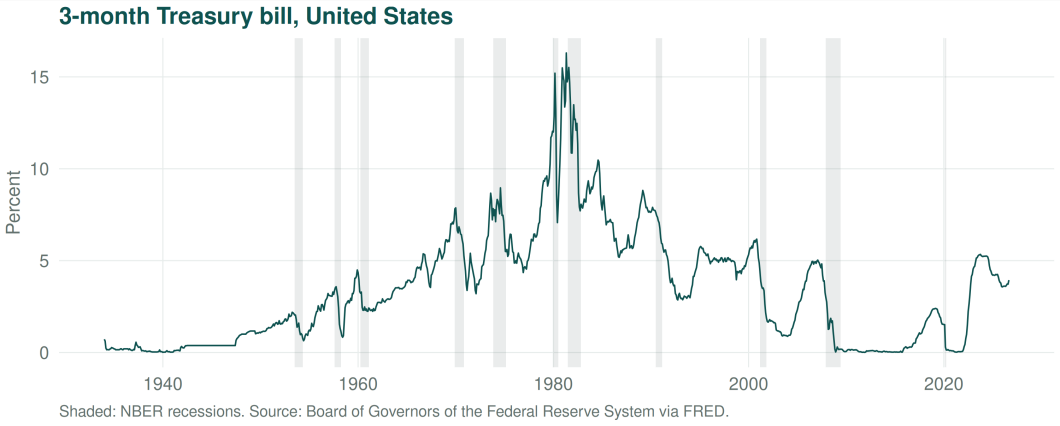
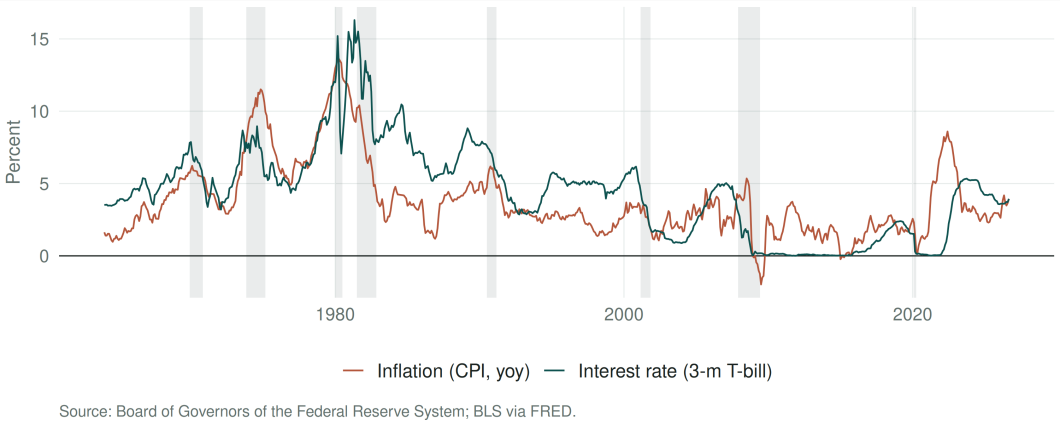
The ECB's 2022–2023 hiking cycle: which curve moved, which way, and did the **quantity** of loanable funds rise or fall? (The rate going up does not settle it.)

3 · The interest rate over the business cycle



What is the relationship between the business cycle and interest rates — and which way does the causality run?

3 · The interest rate and the CPI

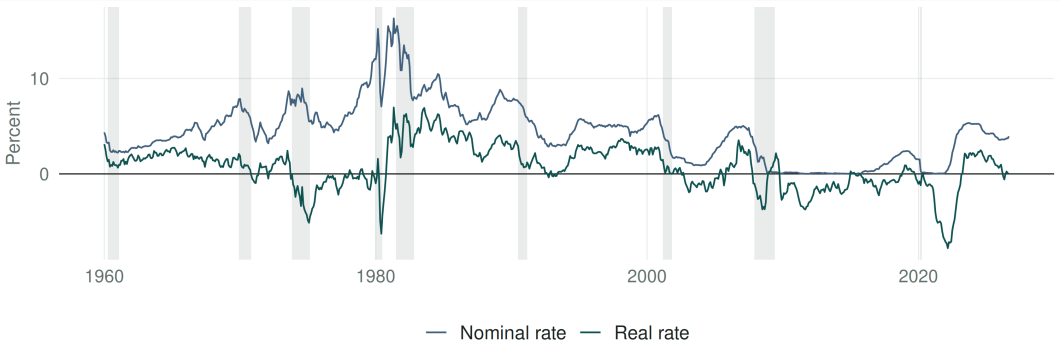


Source: Board of Governors of the Federal Reserve System; BLS via FRED.

What is the relationship between the interest rate and the CPI?

$$i_r = i - \pi^e$$

The real rate is the nominal rate adjusted for **expected** changes in the price level. It reflects the true cost of borrowing.



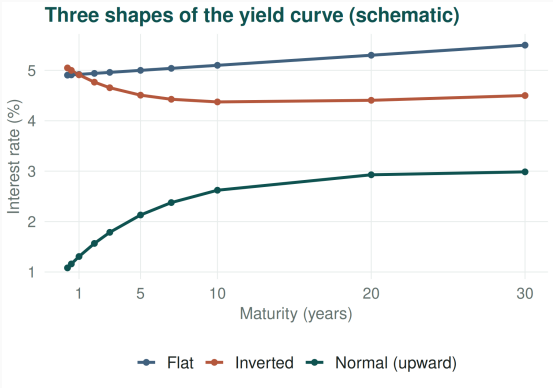
Default risk
The risk that the issuer is unable or unwilling to make interest payments as promised. Bonds with no default risk — U.S. Treasuries, which can raise taxes or print money — are the benchmark. The **risk premium** is the spread between a bond with default risk and a default-free bond.

Liquidity
A liquid asset is quickly and cheaply converted into cash. Demand is higher for more liquid assets, so the premium reflects **both** default risk and liquidity.

Taxation
Tax exemption acts like an increase in expected return. U.S. municipal bonds are exempt from federal income tax; Treasuries are exempt from state and local income tax.

Maturity
Rates at different maturities move together. When short rates are low, yield curves tend to slope steeply upward; when short rates are high, the curve tends to slope gently downward. Most of the time it slopes **upward**.

3 · Yield curves



Most of the time the curve slopes upward. The two other shapes are the interesting ones.

An **inverted** curve has preceded most U.S. recessions. Does that make it a forecast, or a symptom?

Live curve: U.S. Treasury daily yield curve rates. Pull the current one before class — the shape today is the best slide you have.

4 · The exchange rate

15 January 2015

For three years the Swiss National Bank had promised it would not let the franc strengthen past 1.20 per euro. That morning, it stopped. The franc jumped by roughly a fifth against the euro within the day, and several retail FX brokers did not survive the week.

- A fixed exchange rate is a **promise**, and a promise is worth exactly the reserves standing behind it.

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- Section 4: who makes the promise, what it costs to keep, and what happens on the day it breaks.

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Regime	Definition	In favour	Against
Fixed	Rates held constant or fluctuating within very narrow boundaries	MNCs operate more easily	Government may alter the value of a currency
Free float	Rates determined by market forces, no intervention	Problems in one country spread less easily; no intervention policy needed; market efficiency enhanced	MNCs must manage the exposure; countries with severe problems may struggle
Managed float	Market forces **with** government intervention		Governments manipulate the rate for their own benefit

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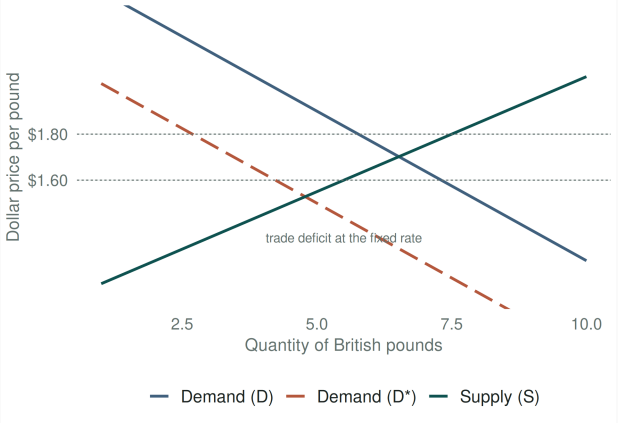
  - fixing short-term interest rates to prevent capital flight,
  - buying and selling on the foreign exchange market,
  - controlling exchanges through quantitative restrictions on capital movements.

4 · Fixed versus flexible: the pound market

The rate starts at 1.60 \$/£ and the U.S. runs a trade deficit.

- **Flexible**: the dollar depreciates to 1.80 \$/£ and the deficit disappears.



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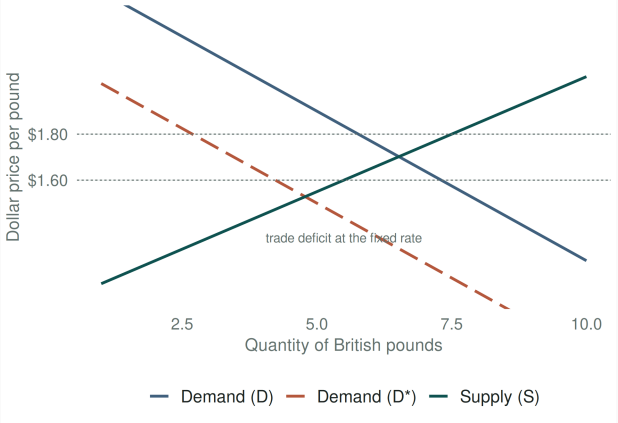
- **Fixed**: the rate stays at 1.60 and the Fed supplies pounds out of reserves — or runs contractionary policies to shift demand back.



A **small open economy with perfect capital mobility**, so $i = i^*$.

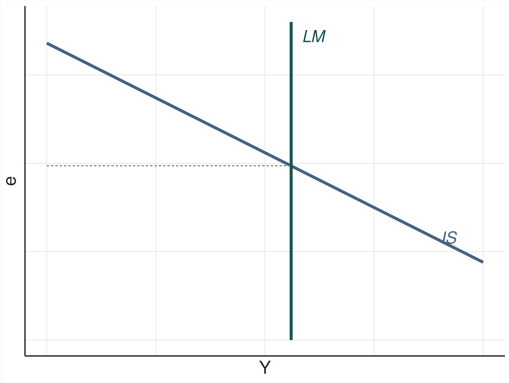
IS — goods market, for a given i^*:

$$Y = C(Y - T) + I(i^*) + G + NX(e)$$

LM — money market, for a given i^*:

$$M/P = L(i^*, Y)$$

LM is **vertical**: given i^* only one Y clears the money market, whatever e. That single fact drives every result on the next slide.



e = nominal exchange rate, foreign currency per unit of domestic currency.

4 · Problem 1.3 — policies in the Mundell–Fleming model

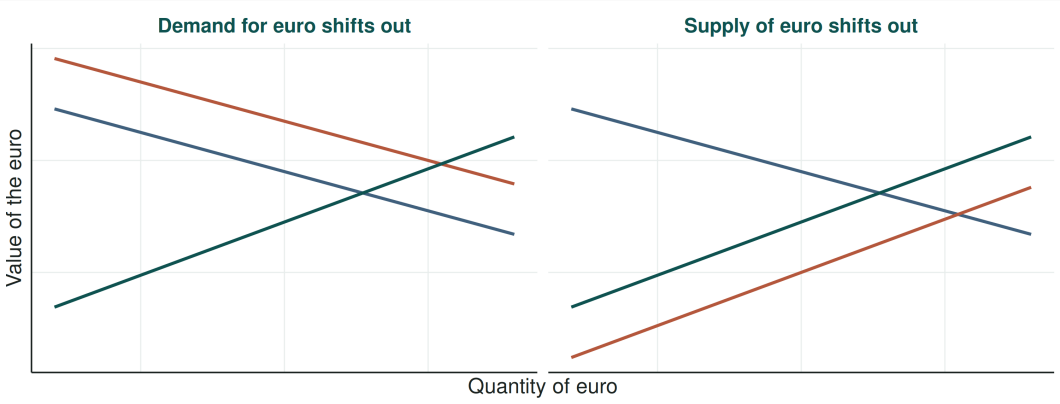
What is the consequence of a **fiscal expansion**, a **monetary expansion** and a **trade restriction** on the exchange rate and on output — under floating and under fixed rates?

Policy	Floating: e	Floating: Y	Fixed: e	Fixed: Y
Fiscal expansion				
Monetary expansion				
Import restriction				

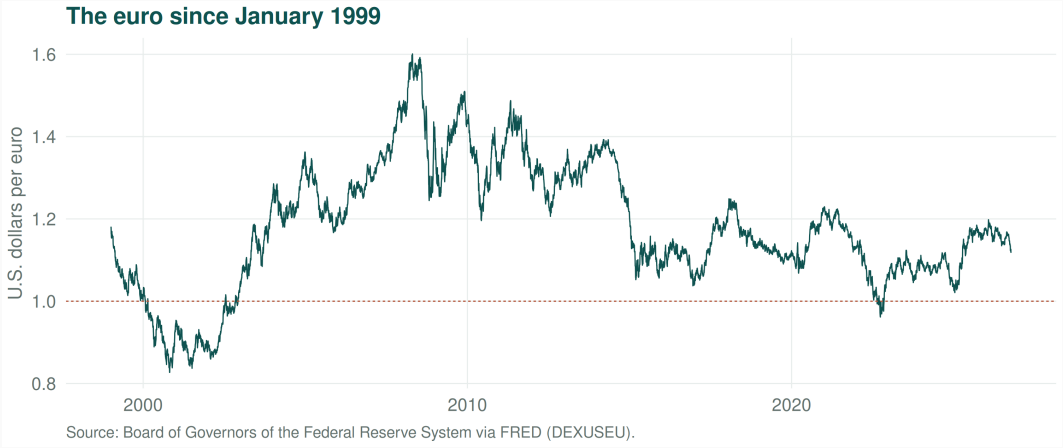
	Domestic currency supply	Domestic currency demand
Private sector	Purchase of foreign goods and services (imports) Income paid on non-residents' investments here Unilateral transfers out Net purchase of foreign assets by residents (capital outflow) Foreign debt repayment (cash outflow)	Purchase of domestic goods and services (exports) Income received on residents' investments abroad Unilateral transfers in Net purchase of domestic assets by non-residents (capital inflow) Settlement of foreign credit (cash inflow)
Central bank	Foreign currency purchased	Foreign currency sold

4 · Central bank intervention

What is the ECB's intervention in the foreign exchange market in each of these two situations?



4 · The euro against the dollar



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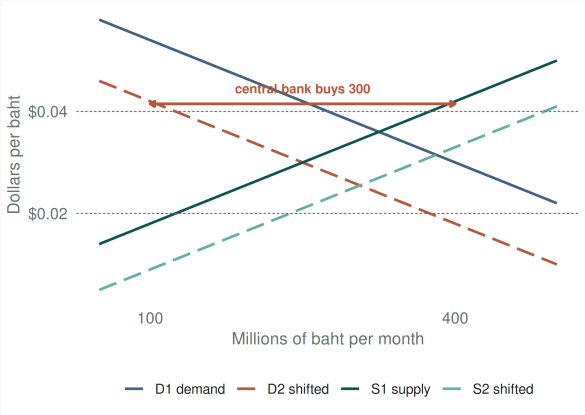
- In July 1997 it ran out of reserves and let the baht float. It fell immediately from \$0.04 to \$0.02.
- Thai banks, counting on the fixed rate, had borrowed heavily in dollars and yen and lent in baht. **That currency mismatch is the crisis.**

How did the Thai central bank maintain the fixed rate — and why did it try?

4 · The Asian crisis (2)

At the fixed rate of \$0.04, once the equilibrium has fallen to \$0.02, the central bank must **buy 300 million baht a month** with dollars.

- Once reserves are gone there are two choices: float (immediate depreciation) or declare a new, lower fixed rate — a devaluation.



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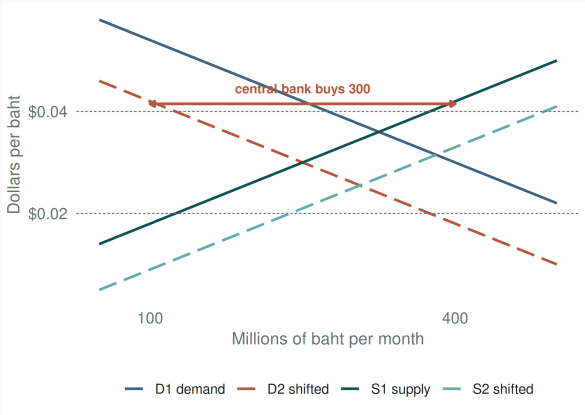

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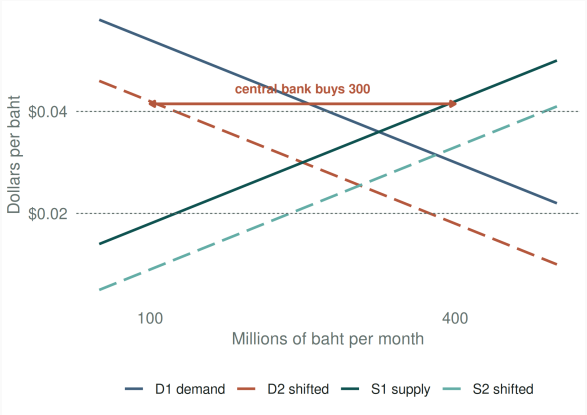
- Defending the rate gets **harder the longer you defend it**.



5 · Reading discussion

The tragedy of the horizon

Mark Carney, at Lloyd's of London in 2015: the costs of climate change fall **beyond the horizon** of the business cycle, the political cycle and the investment cycle.

By the time it is unambiguously a financial risk, it is too late to treat it as one.

photo idea: flooded street, or a stranded coal plant — search "flooded street climate" or "abandoned coal power plant"

The questions

(a) Why is there a misalignment between climate impacts and investors' decisions?

(b) What are the various climate **physical** risks?

(c) What are the potential risks arising from **policy and regulatory** shocks?

(d) Why is assessing climate risks challenging?

How to answer

- Answer (a) with the **horizons**: the tragedy of the horizon — climate damages fall outside the investment and electoral cycle, so they are not priced.

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- For (c), separate an orderly transition from a **disorderly** one. The risk to a portfolio is the disorderly path, not the transition itself.
- For (d), the honest answer is that the historical distribution does not contain the events we are pricing. That is a problem for every risk model in this course.

For the discussion

Next session

Sessions 3 and 4 move on to **securities markets**.

Two things to bring: **Sartzetakis (2021)** on green bonds, read — and the security your group wants to analyse. Not "a stock". A specific one, with a ticker.

Press `O` for the slide overview · `C` to draw · `S` for speaker notes · `F` for fullscreen · `E` then print for a PDF of the slides.