INTERMEDIATE MACROECONOMICS

8 – THE OPEN ECONOMY: INTRODUCTION

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Share 3 take-aways from the reading (textbook Chapter 17)

Openness in Goods and Financial Markets **17**

We have assumed until now that the economy we looked at was *closed*—that it did not interact with the rest of the world. We had to start this way to keep things simple and to build up intuition for the basic macroeconomic mechanisms. Figure 17-1, which repeats for convenience Figure 1-1, shows how bad, in fact, this assumption is. The figure plots the growth rates for advanced and emerging economies since 2005. What is striking is how the growth rates have moved together. Even though the crisis originated in the United States, the outcome was a worldwide recession with

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Section 8: The roadmap

1. International trade.

2. The balance of payments and financial flows.

3. Interest rates & exchange rates.

Open economy: Takeaways

- *International trade*: consumers can choose between domestic and foreign goods.

- *Real exchange rate:* price of domestic goods relative to foreign goods.

- *International Financial flows:* investors can choose between domestic and foreign assets.

8.1 INTERNATIONAL TRADE
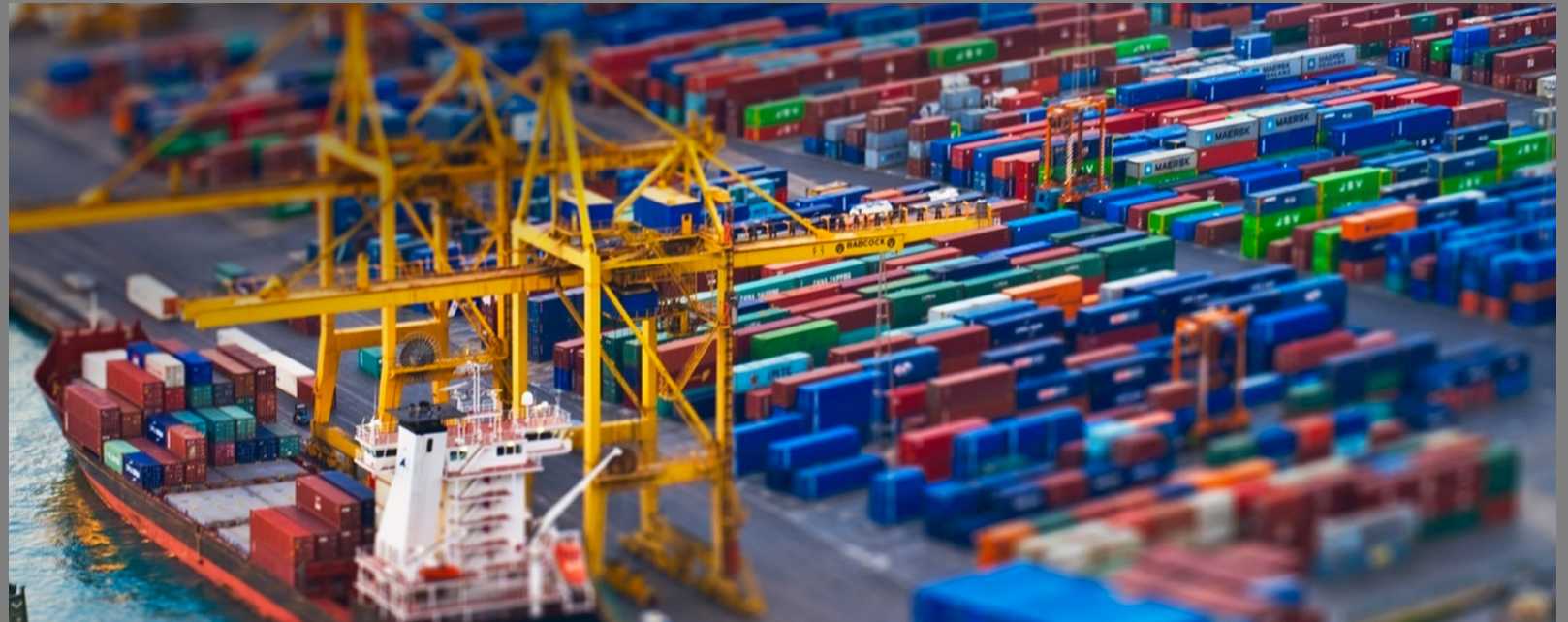
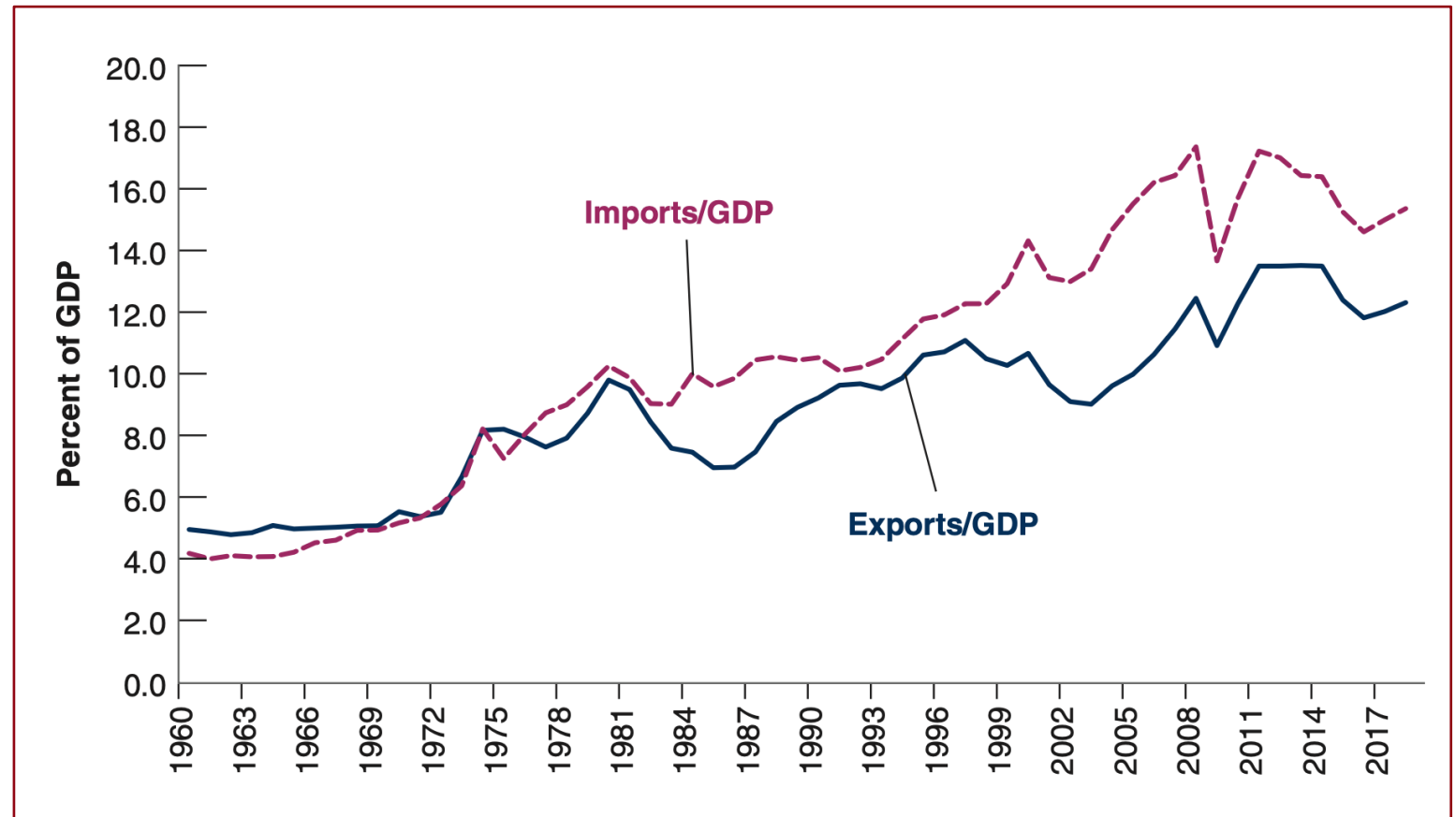# International links are extremely important!
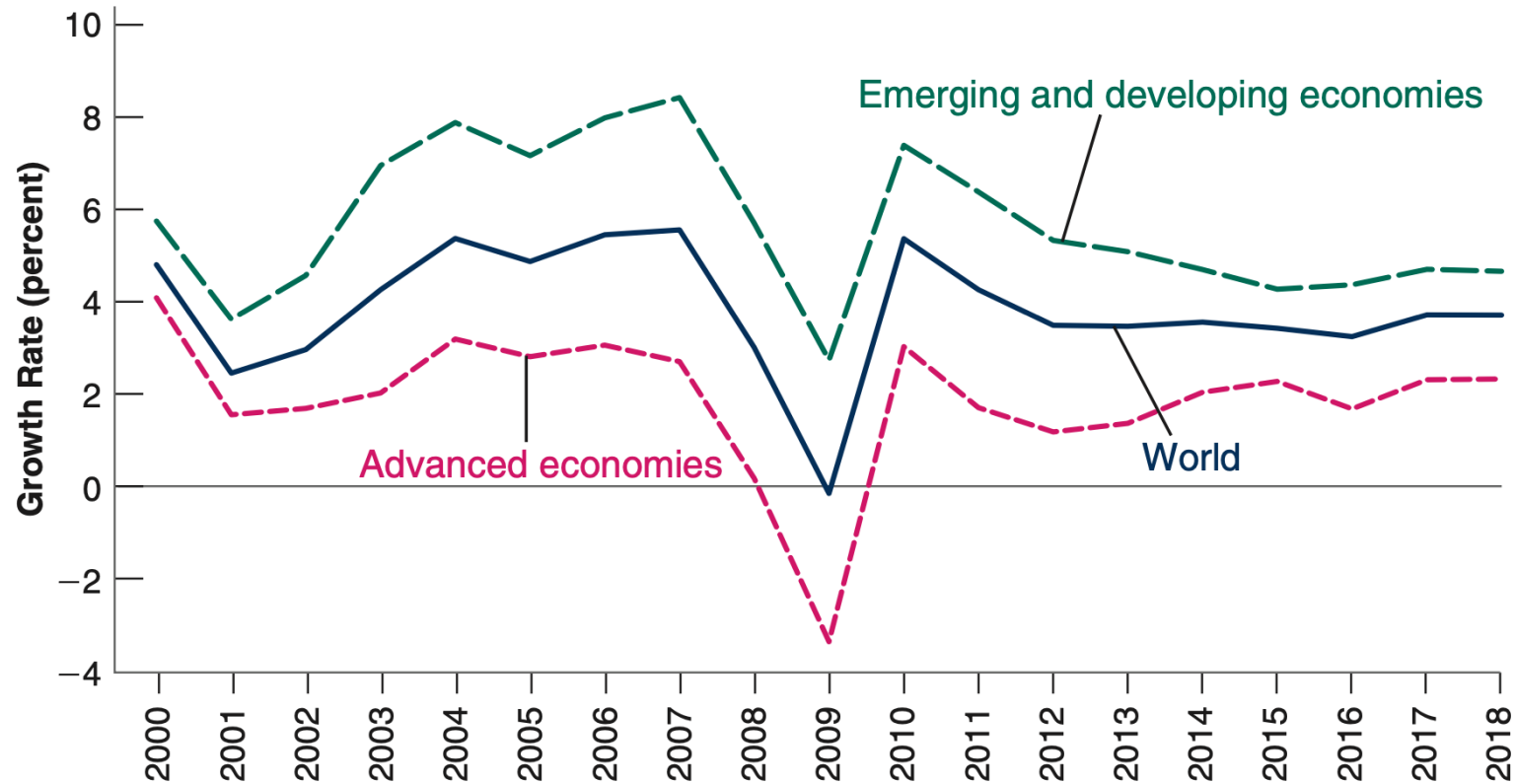
Three dimensions of openness

1. Openness in *goods* markets

2. Openness in *financial* markets.

3. Openness in *factor* markets.

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US exports and imports

- US economy has opened up over time.

- Since the early 1980s, runs a trade deficit.

- ~ 60% of US output is *tradable* goods.

Ratios of Exports to GDP (2017)

Table 17-1	Ratios of Exports to GDP for Selected OECD Countries, 2017		
Country	**Export Ratio**	**Country**	**Export Ratio**
United States	12.3%	Germany	47.2%
Japan	16.1%	Austria	53.9%
Chile	28.7%	Switzerland	65.0%
United Kingdom	30.5%	Netherlands	86.4%
Source: World Bank database, exports			

The nominal exchange rate

- The price of the domestic currency in terms of the foreign currency

  1 USD = 0.88 UK Pounds

    o *(nominal) appreciation*: increase in value of domestic currency.

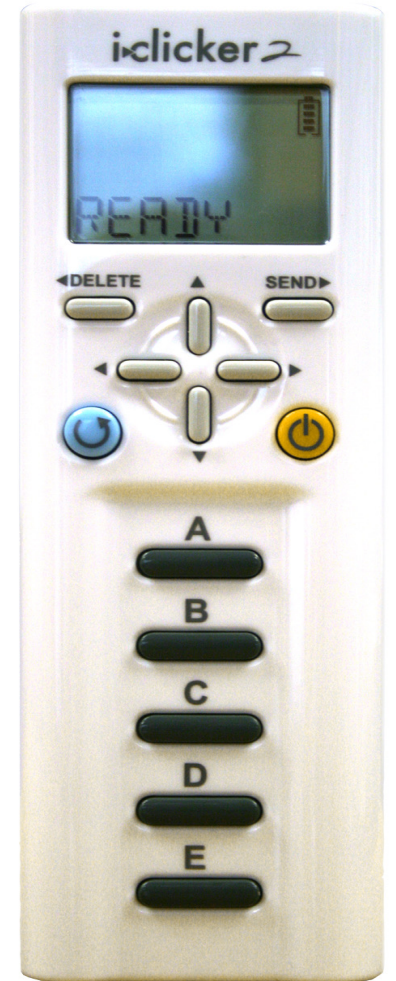   o *(nominal) depreciation*: decrease in value of domestic currency.

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Clicker question

The US is the domestic country.
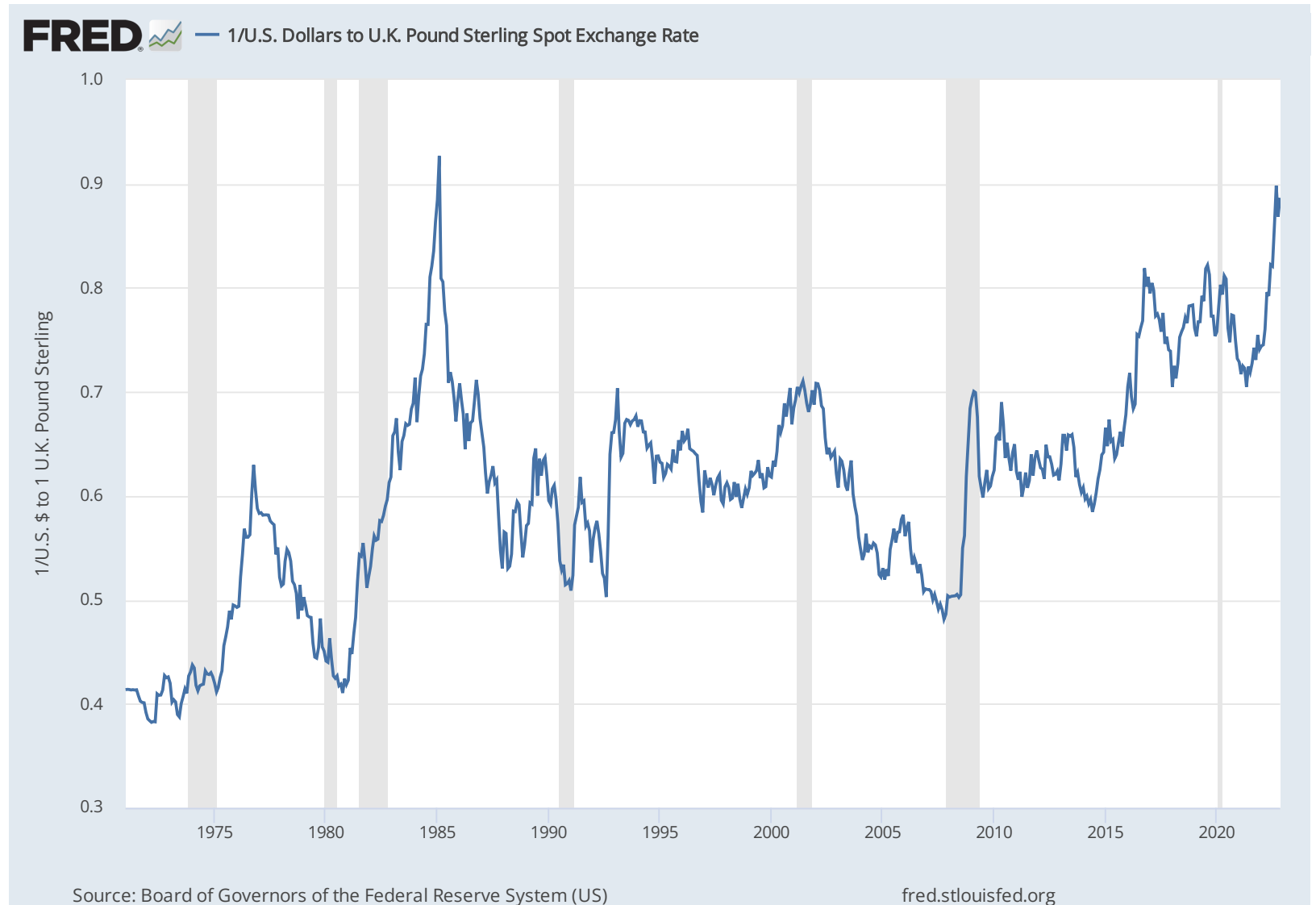The nominal exchange rate with the Yen is 146.61.
This means that…

A. One Yen is worth 146.61 US Dollars.

B. One US Dollar is worth 146.61 Yens.

C. One Yen is worth 1.46 US Dollars

D. One US Dollar is worth 1.46 Yens.

USD-UK Pound Nominal exchange rate

- Value of a USD in terms of Pounds.

- 0.41 in January 1971.

- 0.89 in November 2022.

- Long-term appreciation of the dollar.

- Large short-term fluctuations.

FRED — 1/U.S. Dollars to U.K. Pound Sterling Spot Exchange Rate

y-axis: 1/U.S. $ to 1 U.K. Pound Sterling

Source: Board of Governors of the Federal Reserve System (US)

fred.stlouisfed.org

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The Real Exchange Rate

- The price of domestic goods relative to foreign goods.

- Real exchange rate between US and UK:

$$\varepsilon = \frac{EP}{P^*}$$

- The construction of the real exchange rate:

Real Exchange rate movements

- Real exchange rate between domestic and foreign country:

$$\varepsilon = \frac{EP}{P^*}$$

- *Real appreciation* = real exchange rate increase

- *Real depreciation* = real exchange rate decrease

- Which one do you expect to stimulate exports in the domestic country? Why?

USD-UK Pound: Nominal vs. Real exchange rate

- US & UK GDP deflators =100 in 2000.

- Moved in opposite directions in 1971-1976.

- Move in tandem since 1990s
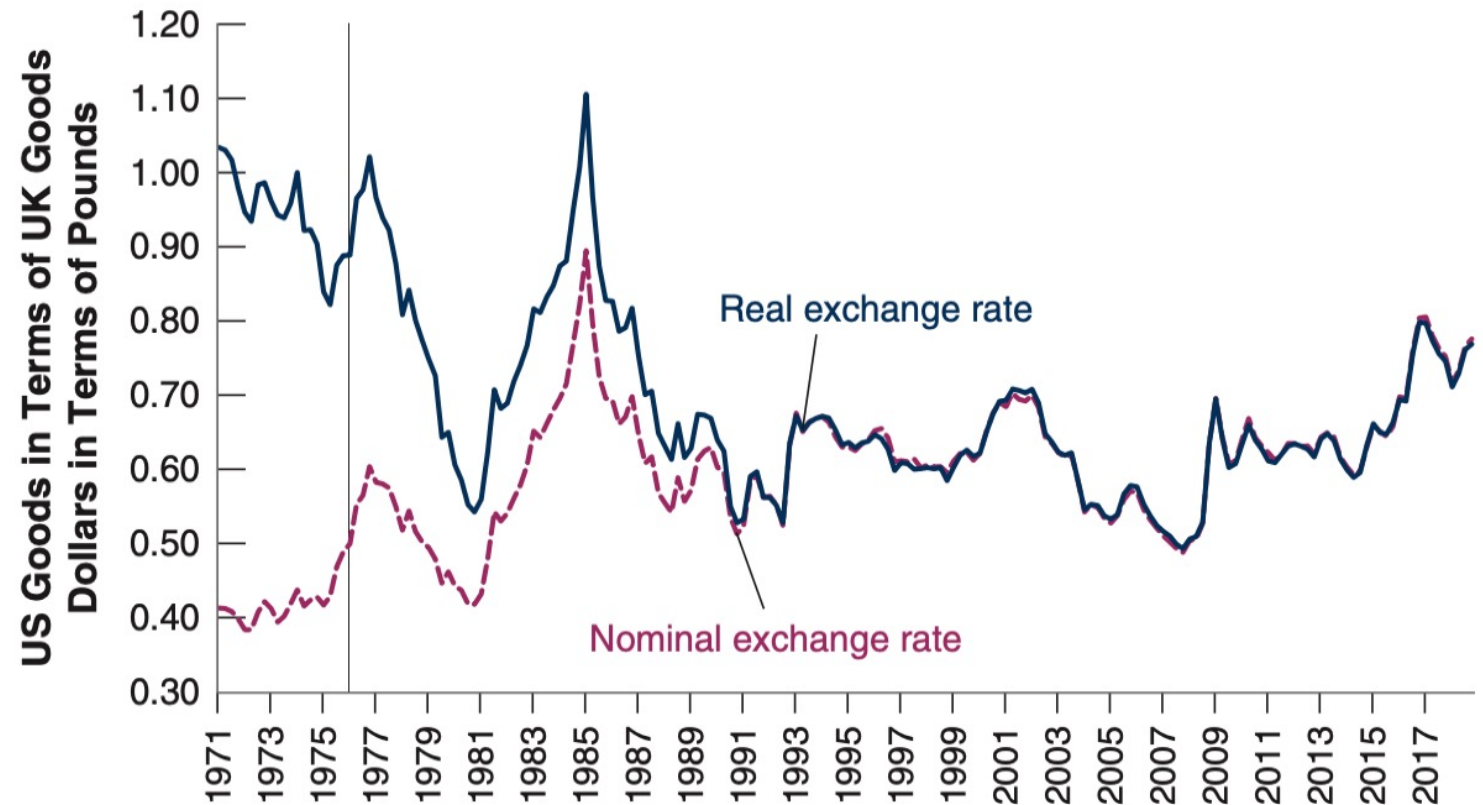
Multilateral Exchange Rates

- For 2 countries: *bilateral exchange rate*

- How about the price of US goods vs foreign goods in general?

- *Multilateral exchange rate*

Table 17-2	Country Composition of US Exports and Imports, 2018	
	Percent of Exports to	**Percent of Imports from**
Canada	18	12
Mexico	16	14
European Union	19	19
China	7	21
Japan	4	6
Rest of Asia and Pacific	15	9
Others	21	19

Source: US Census, International Trade Data, FT900, exhibit 14.

The US Multilateral Real Exchange Rate

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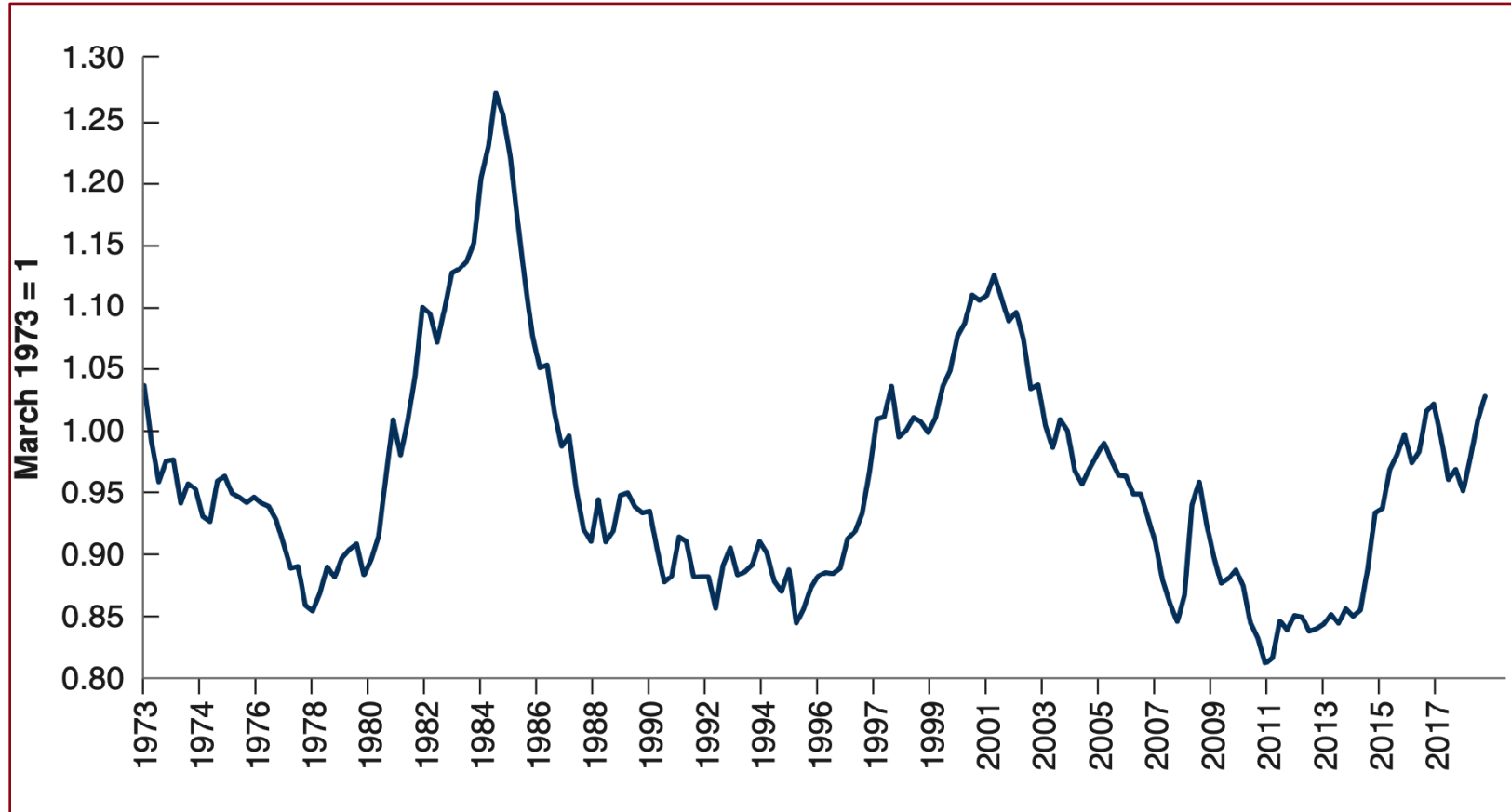
Previously on Econ 204…

- International trade.

- The nominal exchange rate.

- The real exchange rate.
  - Bilateral RER
  - Multilateral RER

8.2 THE BALANCE OF PAYMENTS AND FINANCIAL FLOWS

Intermediate Macroeconomics (ECON 204) – Fall 2022
Instructor: Daniele Girardi

International financial flows

- *Openness in financial markets.*

- 1980s-2000s: *Liberalization* of international capital markets.

- *Foreign exchange market*: buying and selling foreign currency.

- International financial flows allow countries to finance trade deficits and trade surpluses.

The balance of payments

- *Current account*
    o Trade balance (exports - imports)
    o Income balance (income payments)

- *Financial account*
    o Net transfers (foreign aid, pension payments, …)
    o Asset purchases to/from rest of the world

- Current Account + Financial Account = 0

US balance of payments in 2018 (billions of USD)

Current Account		
Exports	2,500	
Imports	3,122	
Trade balance (deficit = minus sign) (1)		− 622
Income received	1,200	
Income paid	1,067	
Net income (2)		133
Current account balance (1) + (2) (deficit = minus sign)		− 489
Financial Account		
Net capital transfers (3)	9	
Increase in foreign holdings of US assets (4)	811	
Increase in US holdings of foreign assets (5)	301	
Financial account balance (7) = (3) + (4) − (5)		519
Statistical discrepancy: financial account − current account balance		30

Source: US Bureau of Economic Analysis, US International Transactions, Table. 17.1.

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GDP vs. GNP

- GDP measures domestic income.

- *Gross national product* (GNP) measures the income earned by domestic actors

$$GNP = GDP + NI$$

NI = net income payments from abroad

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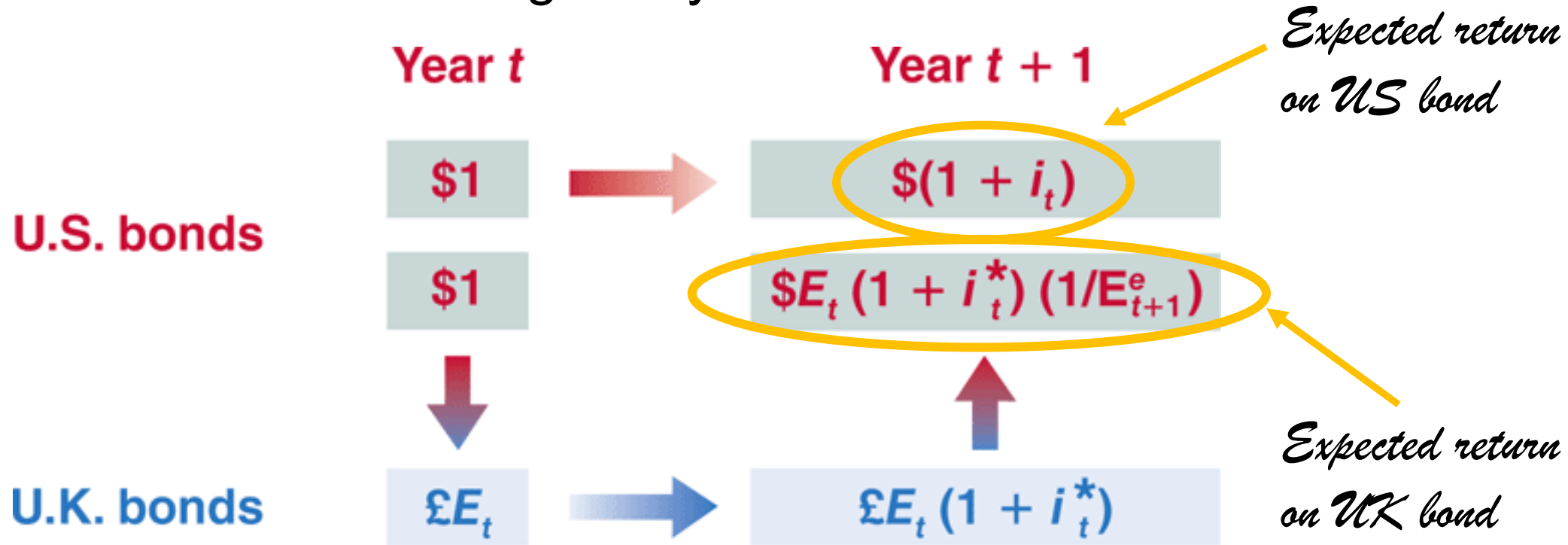Massachusetts
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8.3 INTEREST RATES & EXCHANGE RATES

The Interest Parity Condition

- A US investor chooses between a US and a UK riskless bonds.

- Expected returns from holding one-year US vs. UK bonds:

Expected return on *US* bond

Expected return on *UK* bond

The Interest Parity Condition

- In equilibrium, the two bonds must provide same expected return.

$$(1 + i_t) = (E_t)(1 + i_t^*)\left(\frac{1}{E_{t+1}^e}\right)$$

⇩

$$(1 + i_t) = (1 + i_t^*)\left(\frac{E_t}{E_{t+1}^e}\right)$$

⇩

INTEREST PARITY CONDITION

$$i_t \approx i_t^* - \frac{E_{t+1}^e - E_t}{E_t}$$

3-months interest rate in US and UK

- Largely move together.

- The periods in which they diverge are the periods in which the nominal interest rate was less stable.