Economics 2 | Professor Christina Romer
Spring 2017 | Professor David Romer

LECTURE 25

EXCHANGE RATES AND THE BALANCE OF PAYMENTS

April 25, 2017

I. Overview of International Macroeconomics

A. Building blocks

B. What determines net exports?

II. Supply and Demand Model of Exchange Rate Determination

A. The market for dollars to be used in foreign exchange

B. Some facts about foreign exchange markets

C. The supply and demand for dollars to be used in foreign exchange

D. Equilibrium

III. What Moves the Exchange Rate?

A. Inflation (U.S. and Germany in the 1970s)

B. Interest rates (U.S. and Germany in the 1980s)

C. Relative income growth (U.S. and Japan in the early 1990s)

D. Tastes for assets (Mexico and Europe after the U.S. election in 2016)

E. Is a strong dollar desirable?

V. The Balance of Payments

A. What is the balance of payments?

B. Net exports plus net capital inflows equals zero (NX + KI = 0)

C. The role of the exchange rate

D. Preview of what determines NX

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# Lecture 25

# Exchange Rates and the Balance of Payments

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# Announcements

- Problem Set 6 is due at the start of lecture next time (Thursday, April 27th).
  - Problem set work session ***today***, 5–7 p.m. in 648 Evans.
- You will do course evaluations at the start of lecture next time.
  - Please bring an electronic device (laptop, tablet, or phone).

# I. Overview of International Macroeconomics

# Issues in International Macro

- What determines exchange rates?
- The balance of payments and its implications.
- What determines net exports?
    - Net exports (NX) are a component of planned aggregate expenditures.
    - $PAE = C + I^p + G + NX$
    - So changes in NX will affect Y in the short run.

# II. Supply and Demand Model of Exchange Rate Determination

# Exchange Rate

- The price of one currency in terms of another.
- It currently takes .92 euros to buy 1 U.S. dollar.
    - The price of $1 is €.92

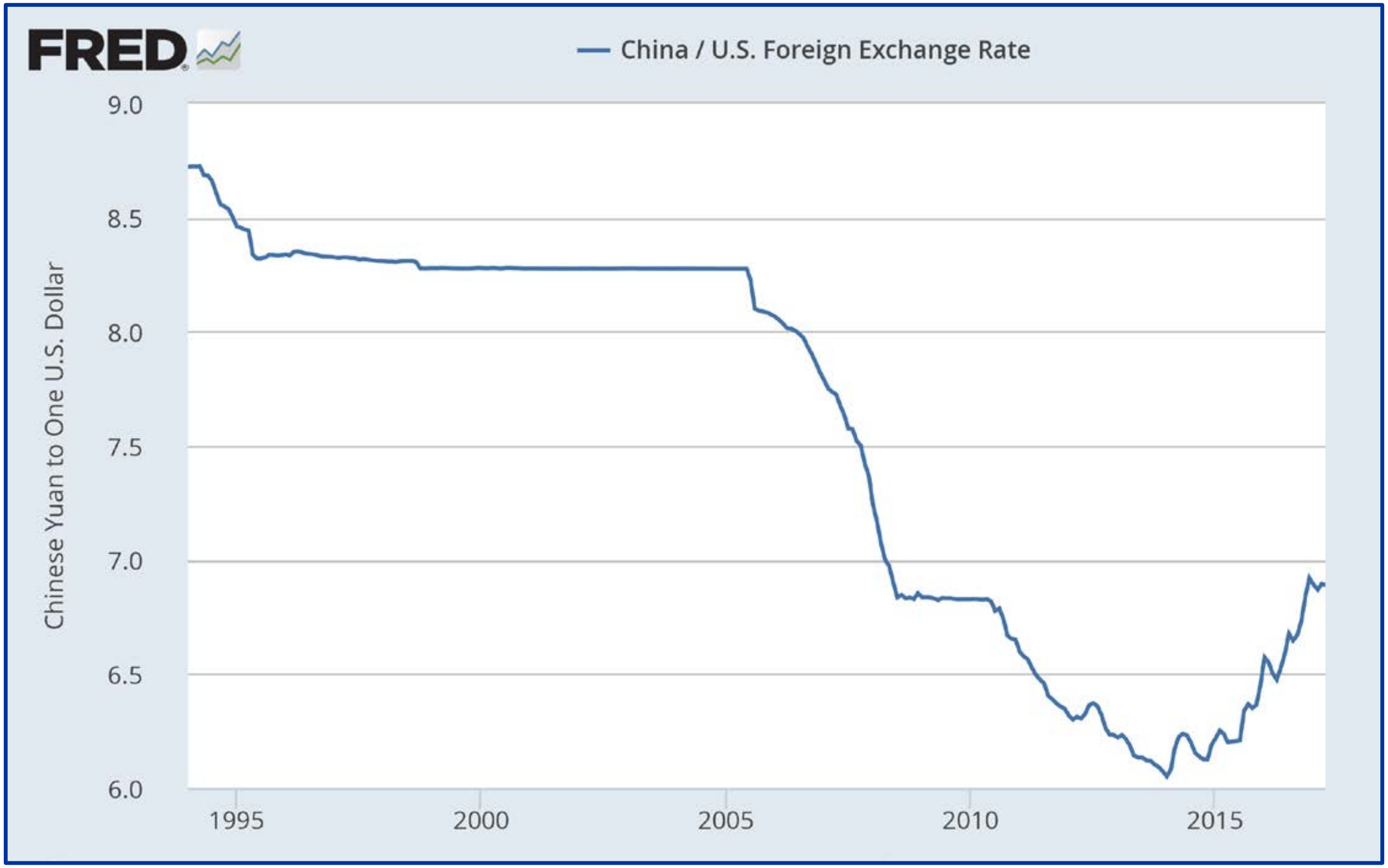
# Foreign Exchange Market for Dollars

- Suppliers of dollars: Americans who want to buy foreign goods, services, or assets.
- Demanders of dollars: Foreigners who want to buy American goods, services, or assets.
- The exchange rate is the price of dollars (in terms of some foreign currency) that equilibrates the supply and demand for dollars to be used in international transactions.

# Some Facts about Foreign Exchange Markets

- There is a market for each currency to be traded for every other currency.
    - However, the various markets for a particular currency (such as the $) often move together.
- Today, most exchange rates are determined in markets (flexible exchange rates).
    - But, some countries today and many countries in the past used a system of fixed exchange rates.

# Chinese Yuan per $1

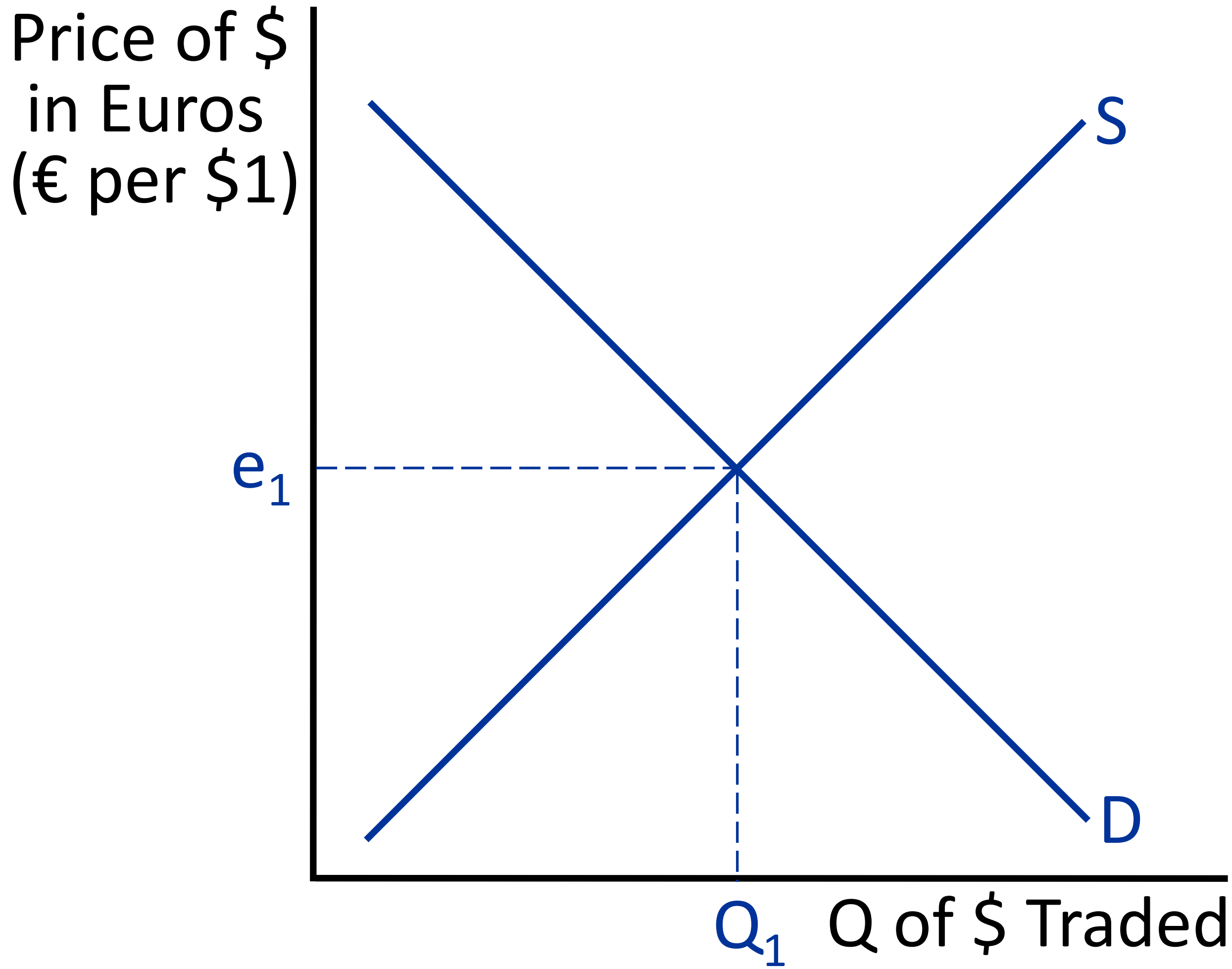



Source: Federal Reserve Bank of St. Louis, FRED.

# The market for money in the U.S. and the foreign exchange market for dollars are different things.

- The market for money in the U.S. is derived from the choice between money and interest-bearing assets.
    - It is the nominal interest rate that adjusts to make people hold the amount of money supplied by the Federal Reserve.
- The foreign exchange market for dollars is derived from the desire to make international transactions.
    - It is the exchange rate that adjusts to make the quantity of dollars supplied to the foreign exchange market equal to the quantity demanded.

# Foreign Exchange Market for Dollars



# Why Does the Demand Curve for Dollars To Be Used in International Transactions Slope Down?

- If the price of the dollar falls, American goods and services look more attractive (cheaper) to foreigners.
- Foreigners want to buy more goods and services from the U.S.
- As a result, they demand more dollars in the foreign exchange market.

# Why Does the Supply Curve for Dollars To Be Used in International Transactions Slope Up?

- If the price of the dollar rises, foreign goods and services look more attractive (cheaper) to Americans.
- Americans want to buy more goods and services from abroad.
- As a result, Americans supply more dollars to the foreign exchange market.

# A Key Assumption: The Exchange Rate Does ***Not*** Affect Asset Purchases.

- When you buy an asset in another country, you need the foreign currency to do so.
- But, when the asset pays off or your sell it, the payoff is in the foreign currency, so you need to convert it back to your home currency.
- Because exchange rate movements are generally not predictable, your best guess is that the exchange rate when you buy is going to be the exchange rate when you sell later—so any cost or benefit of the exchange rate today will be undone later.

# III. What Moves the Exchange Rate?

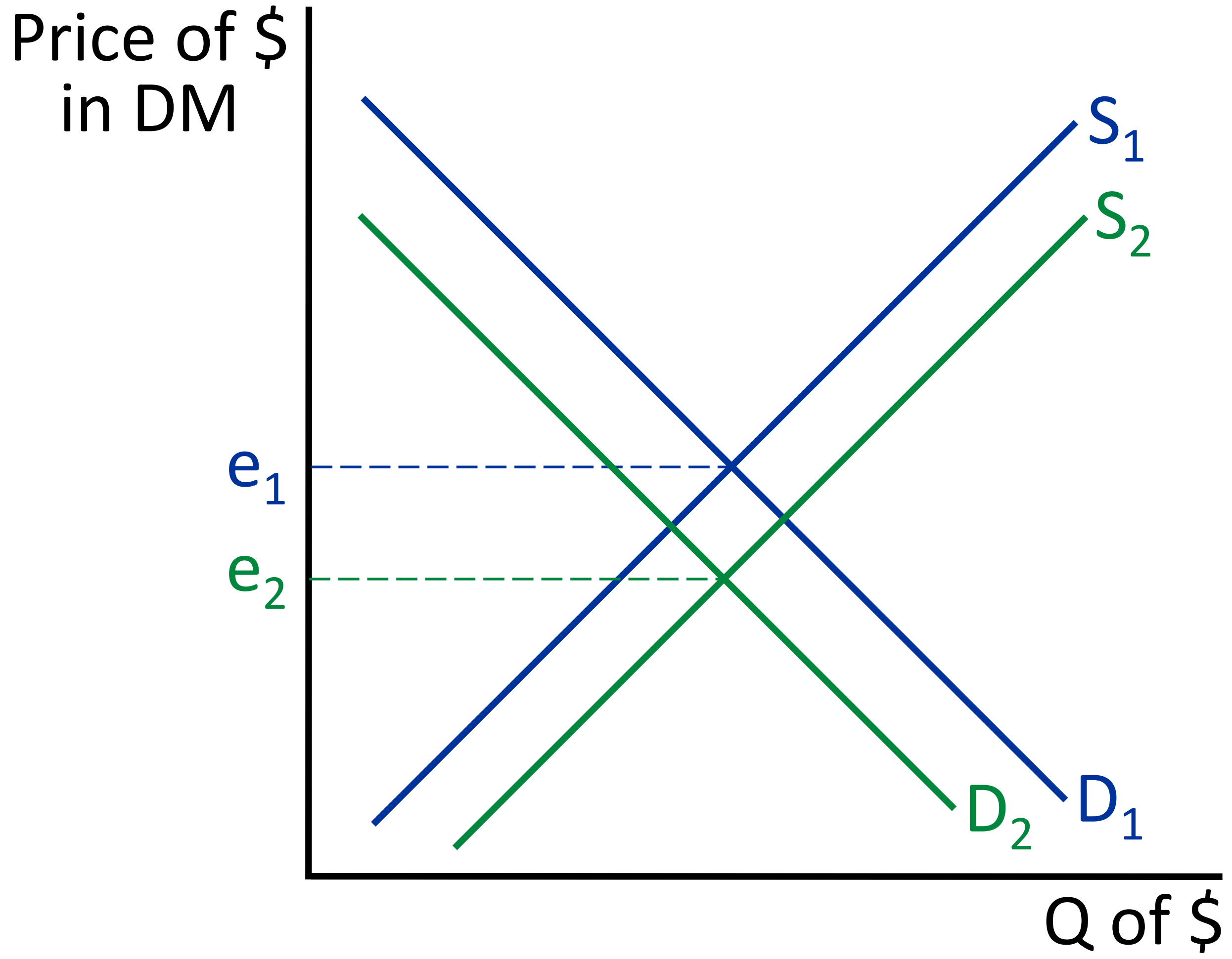
A shift in the supply curve or the demand curve for dollars in the foreign exchange market will cause the exchange rate to change.

- Appreciation of the dollar: The price of dollars in some foreign currency rises.

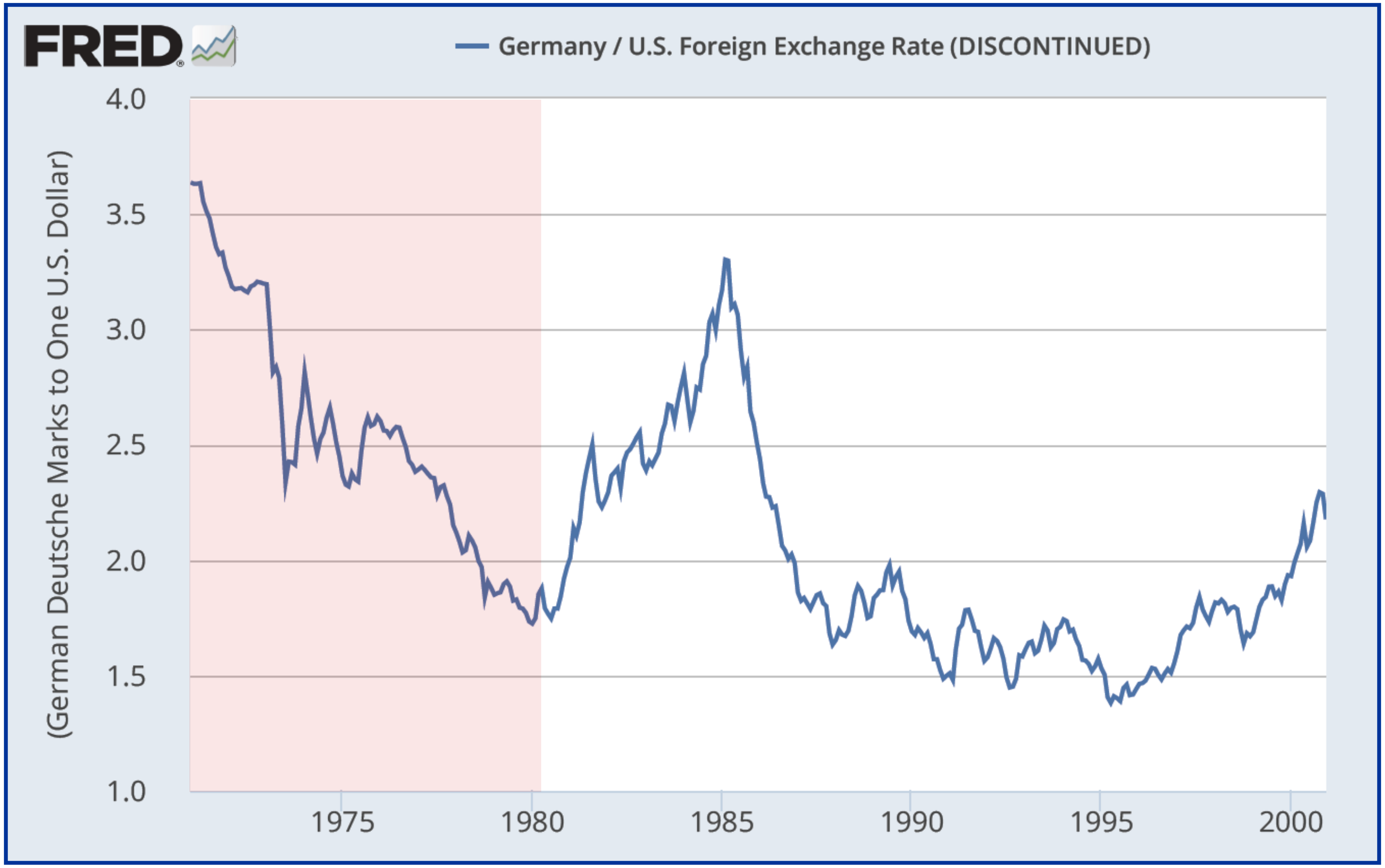
- Depreciation of the dollar: The price of dollars in some foreign currency falls.

# Example 1: Higher Inflation in the U.S. than in Germany in the 1970s

# Foreign Exchange Market for Dollars
## Higher Inflation in the U.S. than in Germany



# German Marks per $1



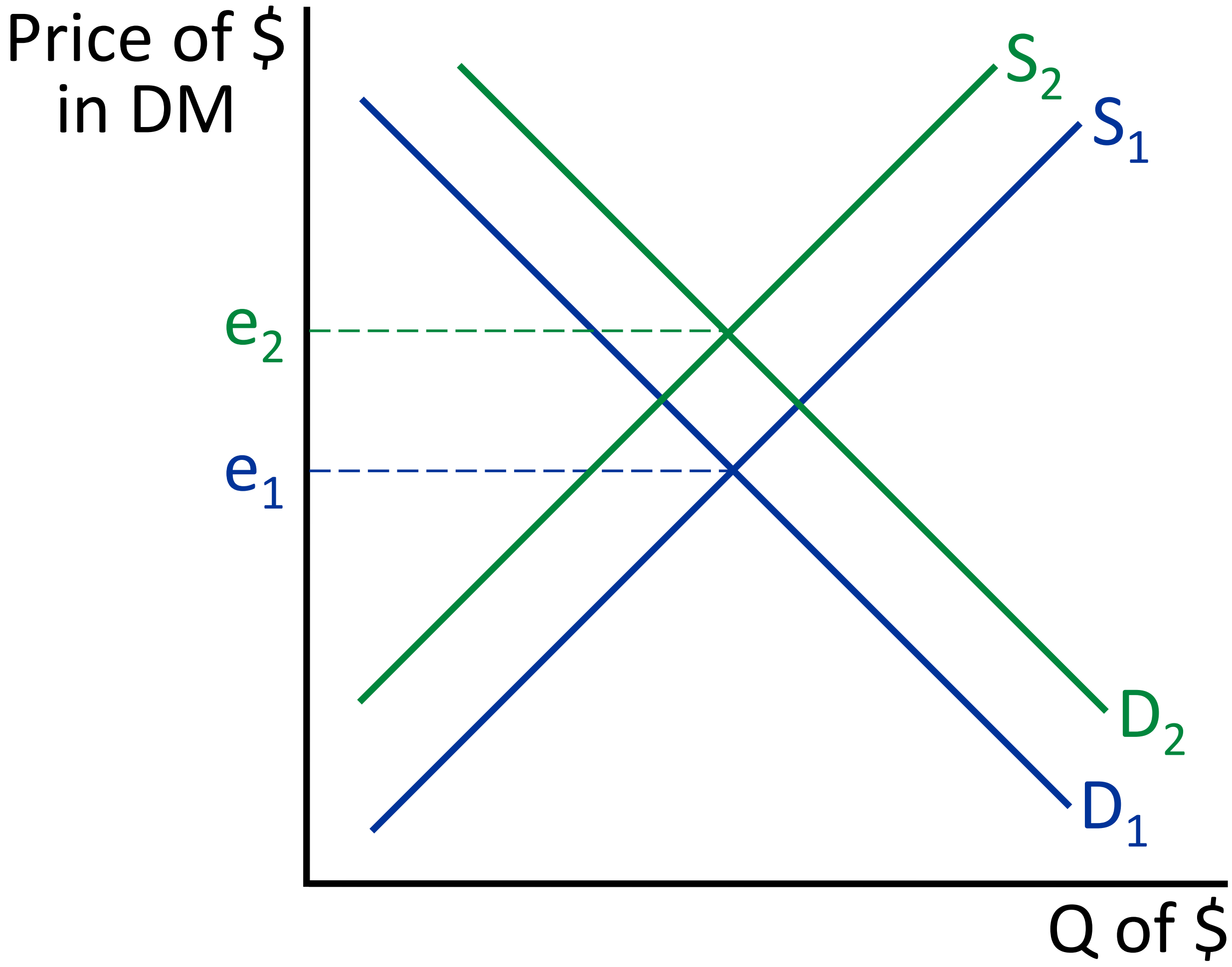

Source: Federal Reserve Bank of St. Louis, FRED.

Many developments that shift one curve in the foreign exchange market, will also shift the other curve in the opposite direction.

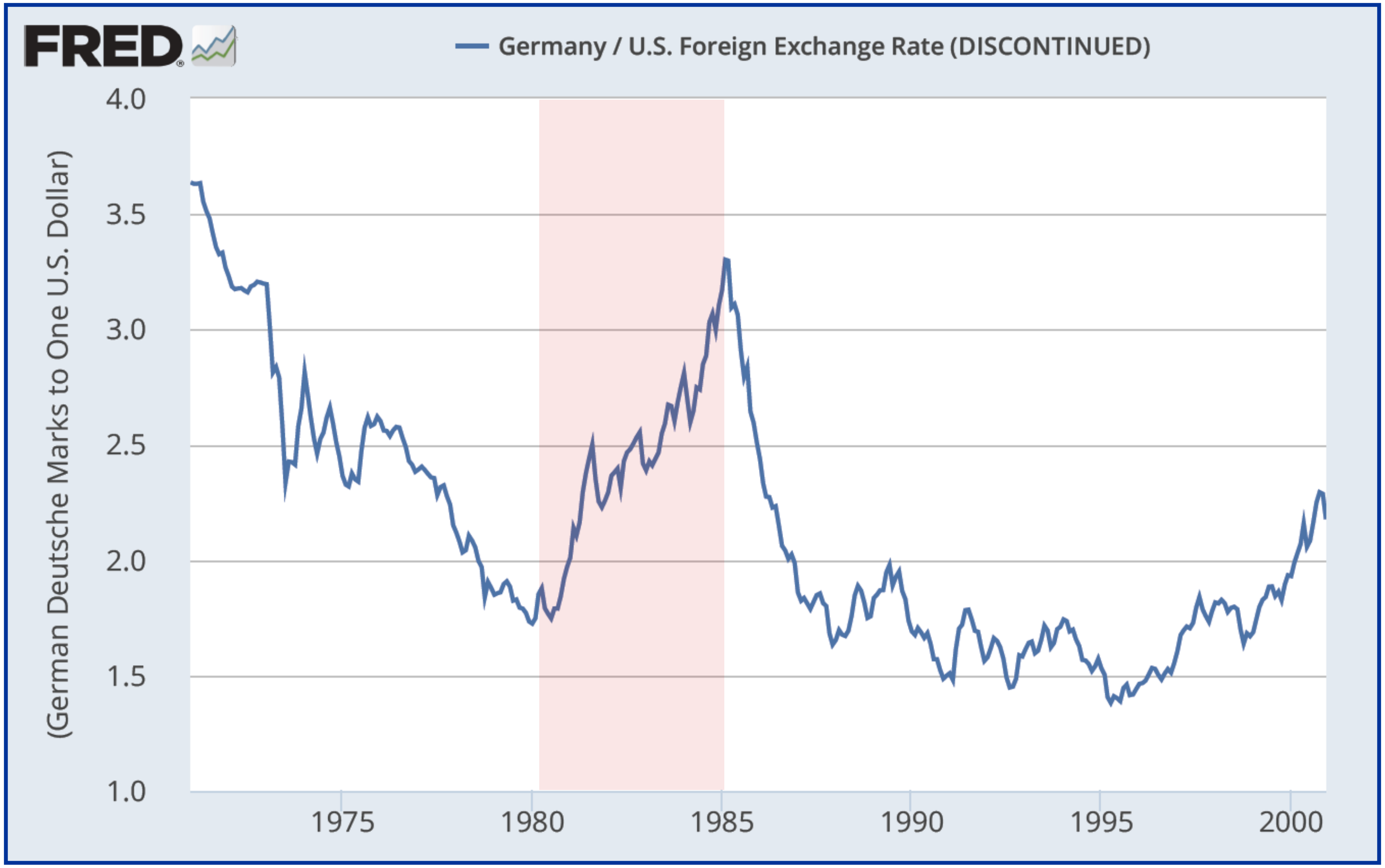
- This is because many factors affect the ***relative*** attractiveness of goods or assets in the two countries, and so affect both supply and demand.

# Example 2: A Rise in U.S. Real Interest Rates (Relative to Those in Other Countries) during the Volcker Disinflation

# Foreign Exchange Market for Dollars
## A Rise in the Real Interest Rate in the U.S.

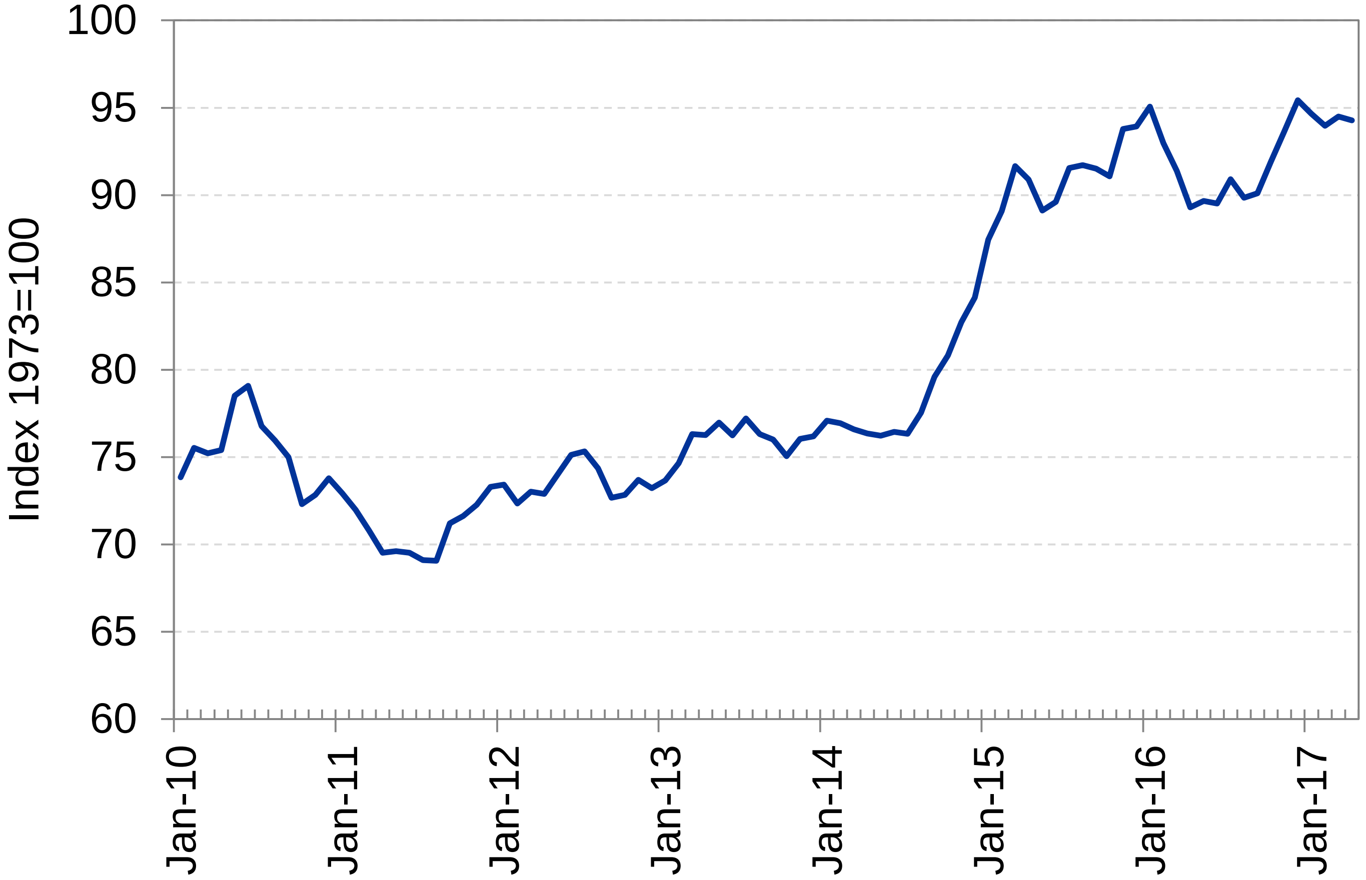


# German Marks per $1




Source: Federal Reserve Bank of St. Louis, FRED.

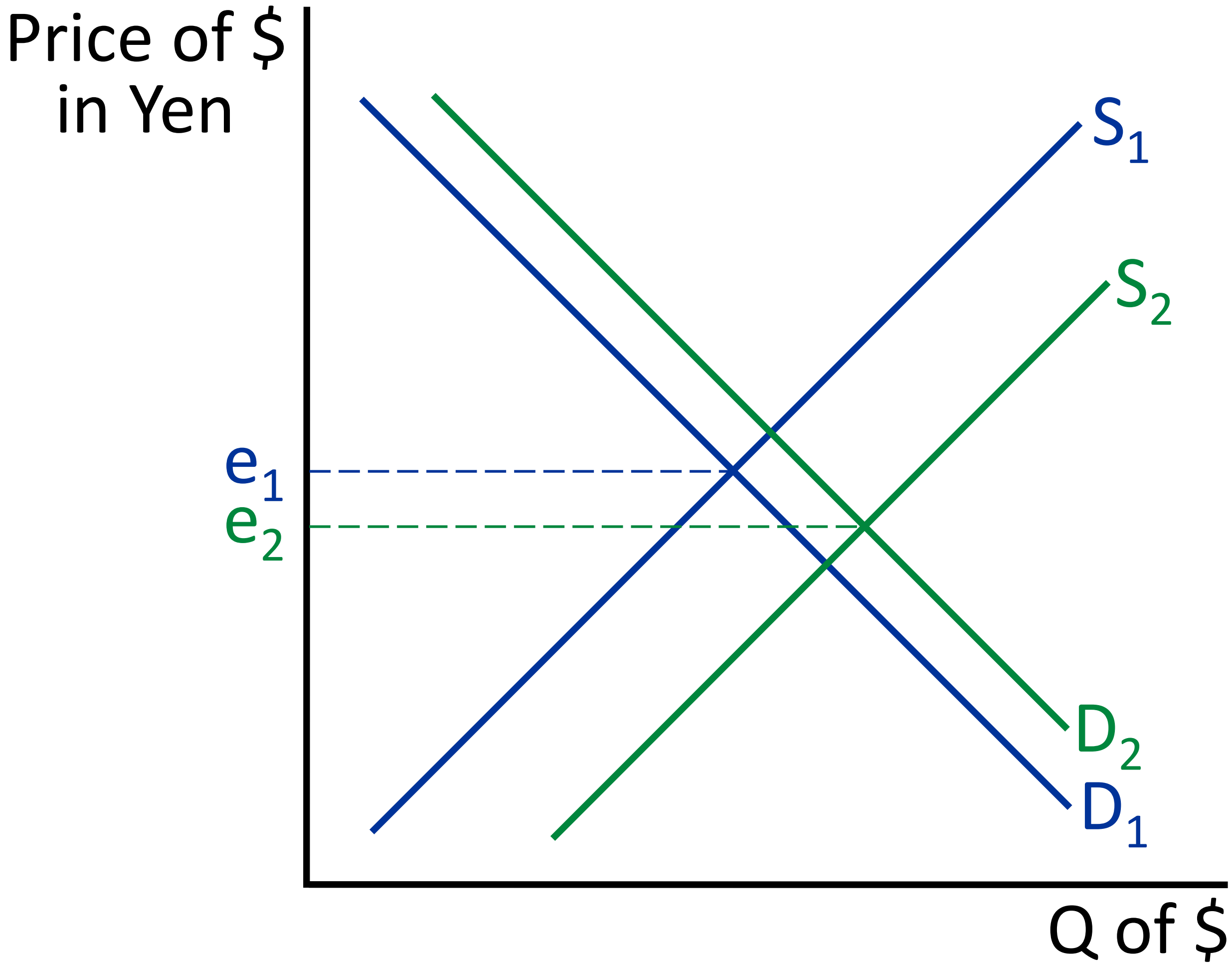
# Price of the Dollar in Major Currencies



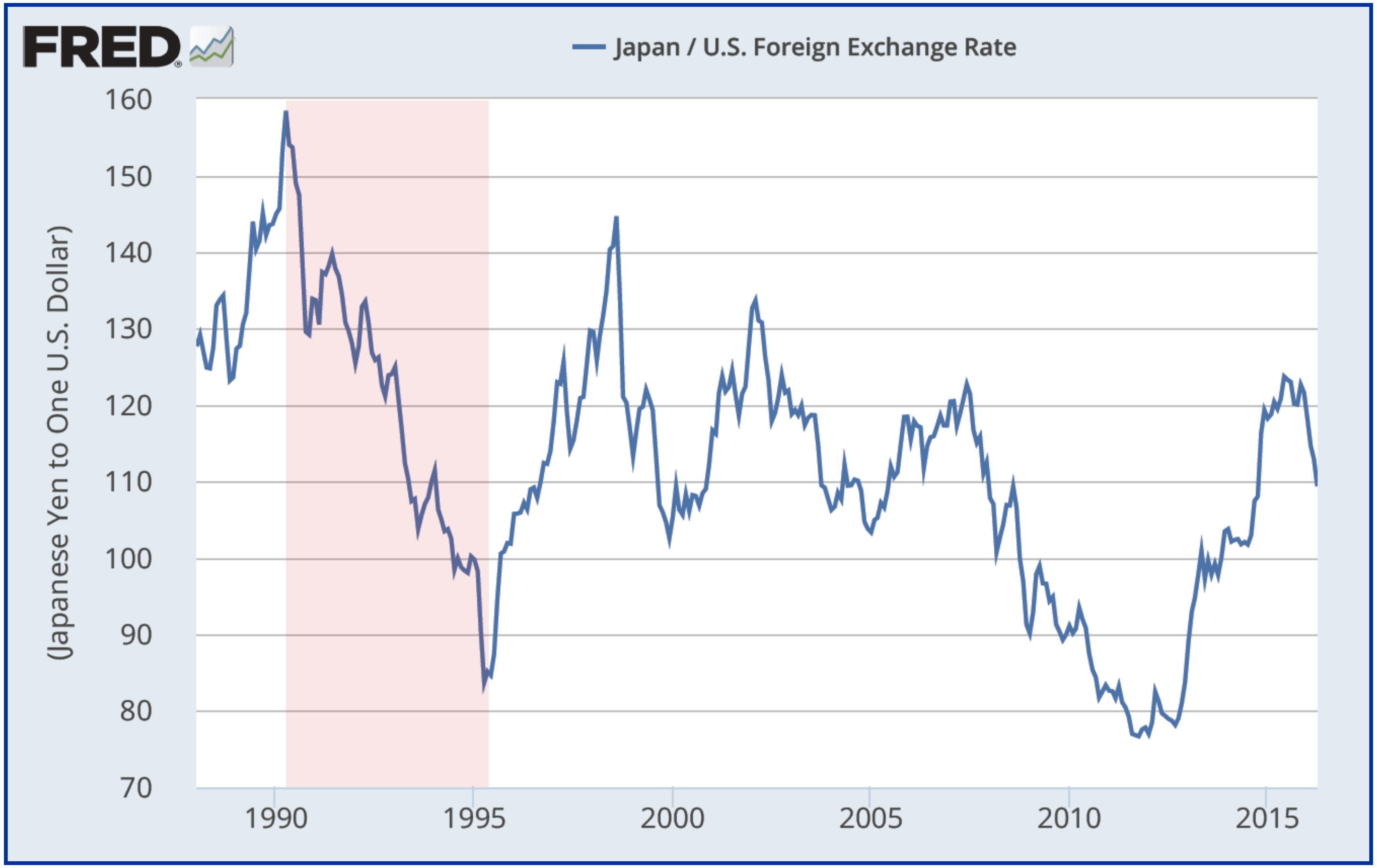

Source: Federal Reserve Bank of St. Louis, FRED.

# Example 3: Faster Income Growth in the U.S. than in Japan in the Early 1990s

# Foreign Exchange Market for Dollars
## Faster Income Growth in the U.S. than in Japan



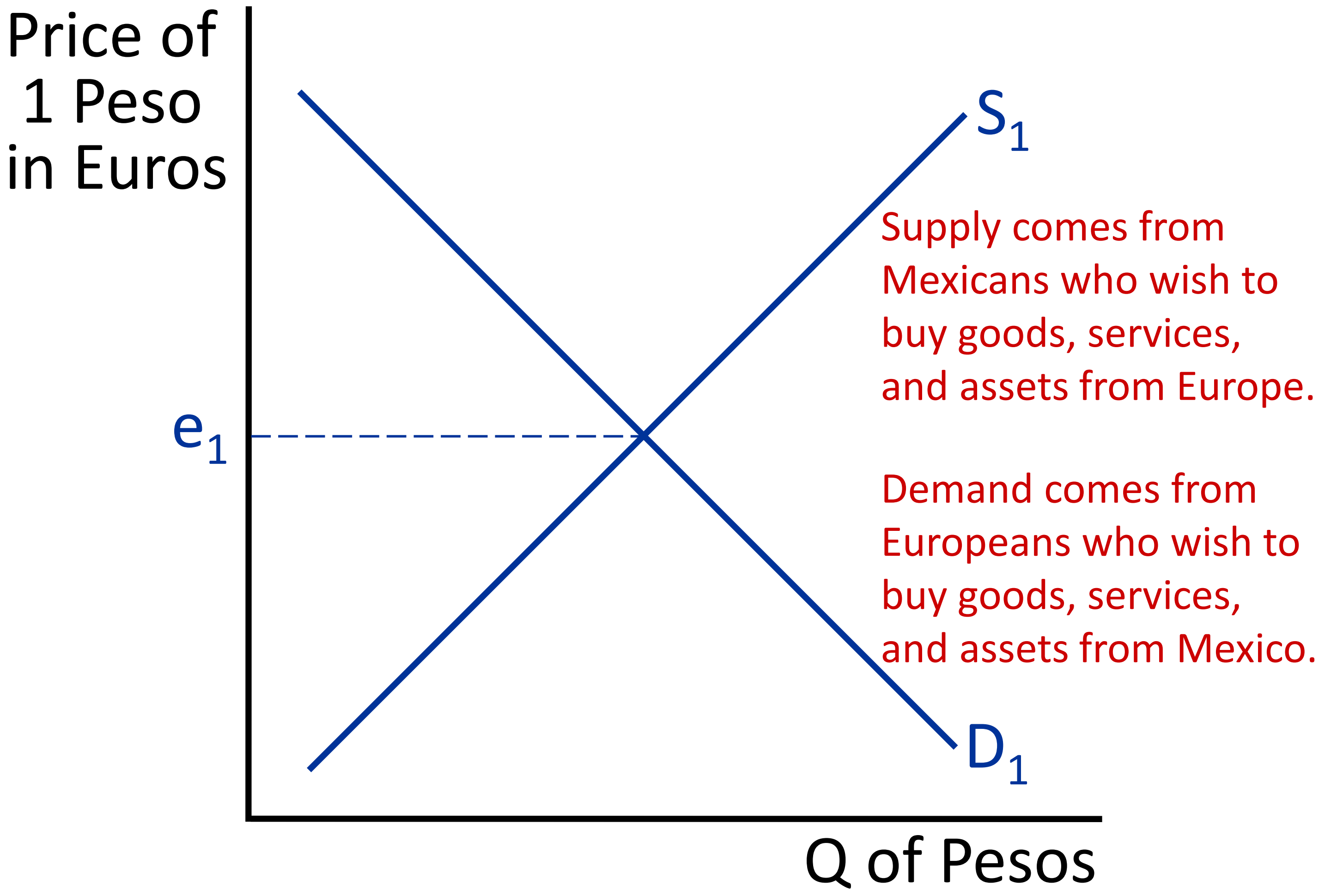
# Japanese Yen per $1



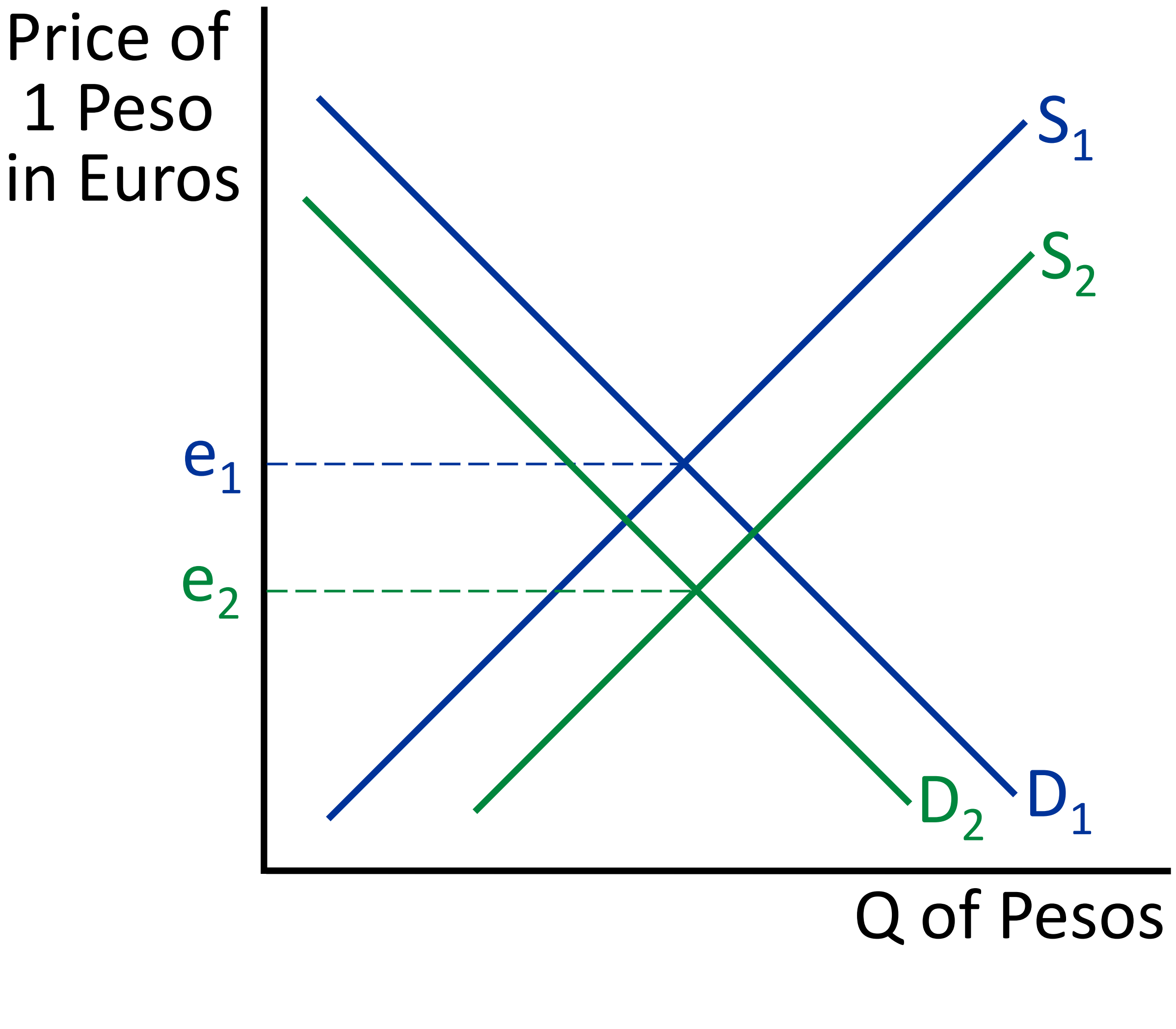

Source: Federal Reserve Bank of St. Louis, FRED.

# Example 4: A Change in Tastes away from Mexican Assets Because of the U.S. Election

# Foreign Exchange Market for Pesos



# Foreign Exchange Market for Pesos
## Change in Tastes away from Mexican Assets



# European Euros per 1 Mexican Peso


Source: http://www.xe.com.

# Mexican peso plunges to all-time low

by Patrick Gillespie @CNNMoneyInvest

November 9, 2016: 11:59 AM ET


Mexican peso plummets on U.S. election news

The Mexican peso is getting clobbered after Donald Trump's stunning victory in the U.S. presidential election.

Social Surge - What's Trending

Investors cheer as Macron emerges as favorite to lead France

China's first big jetliner clears final hurdle before flying

Trump's new problem: Americans aren't shopping

# Is a Strong Dollar Desirable?

- Some terminology:
  - A strong currency is one whose price in terms of other currencies is high.
  - A weak currency is one whose price in terms of other currencies is low.
- ***Why*** a currency is strong or weak is more important than its absolute strength.
  - For example, both higher inflation and higher growth than other countries lead to a weak currency.

# Is a strong dollar desirable? (continued)

- The strength of the dollar affects parts of the economy differently.
    - A strong dollar tends to be good for American consumers.
    - A strong dollar tends to be hard on American workers and firms in export or import-competing industries.

# IV. The Balance of Payments

# Balance of Payments

- An accounting of the supply and demand for dollars in international transactions

# Balance of Payments

Q of $ demanded = Q of $ supplied

EX + CI = IM + CO

EX: Exports of goods and services

CI: Capital inflows (purchases of American assets by foreigners)

IM: Imports of goods and services

CO: Capital outflows (purchases of foreign assets by Americans

# Balance of Payments

$$EX + CI = IM + CO$$

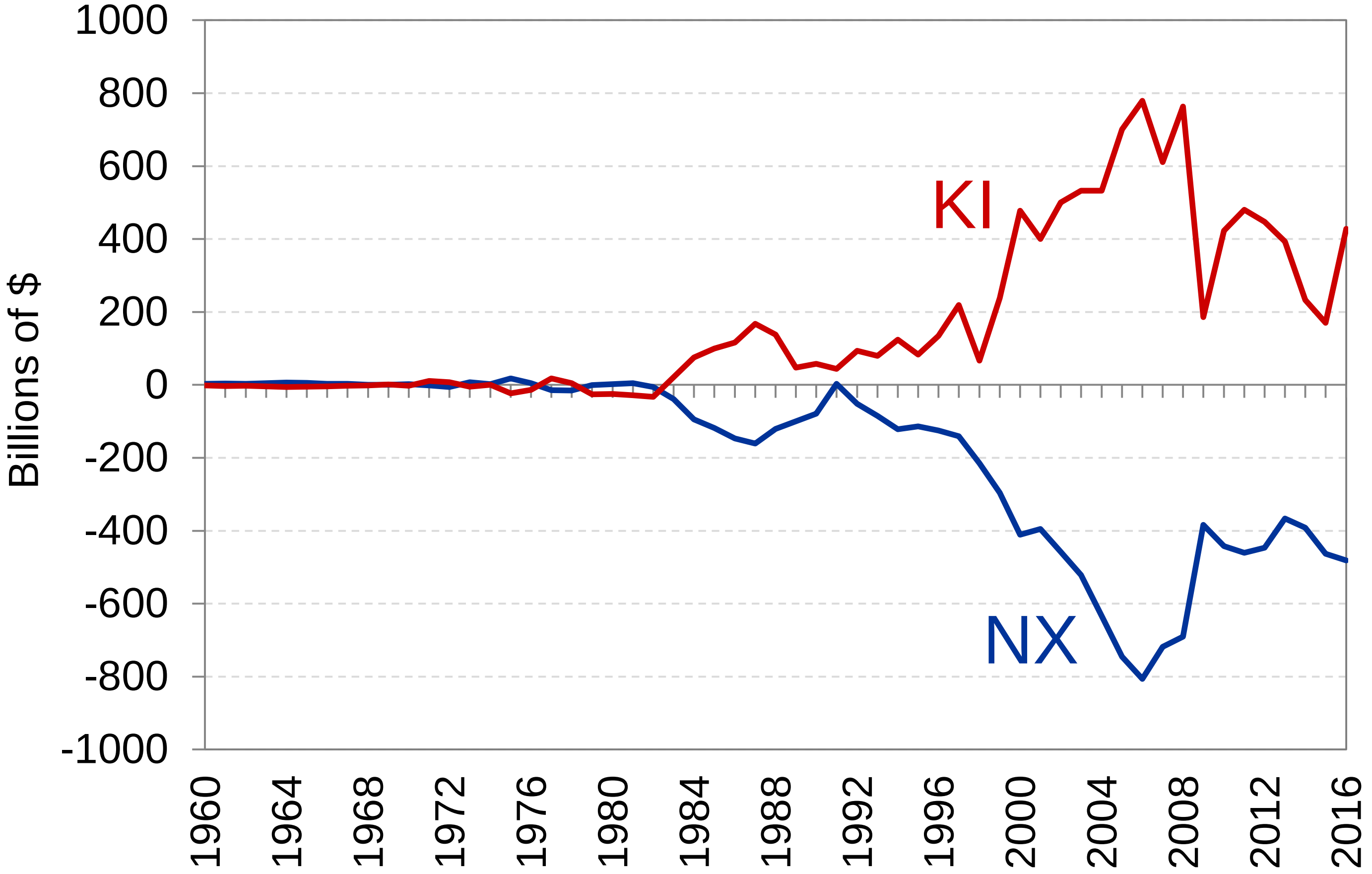
$$(EX - IM) + (CI - CO) = 0$$

EX – IM: Net exports (NX)

CI – CO: Net capital inflows (KI)

$$NX + KI = 0$$

# Net Exports (NX) and Net Capital Inflows (KI)




Source: Bureau of Economic Analysis

# Preview of What Determines Net Exports

$$NX + KI = 0$$

- Anything that moves KI moves NX in the opposite direction.
- What moves KI?  Things that affect the relative attractiveness of assets (real interest rates, tastes)
- Corollary:  If something doesn't affect KI, it will *not* move NX.