

EE432 Monetary Theory and Policy



Lecture 5 Foreign Exchange
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Outline

- Foreign Exchange Basics
- Exchange Rates in the Long Run
- Exchange Rates in the Short Run

Chapter 10



Foreign Exchange

Foreign Exchange Basics

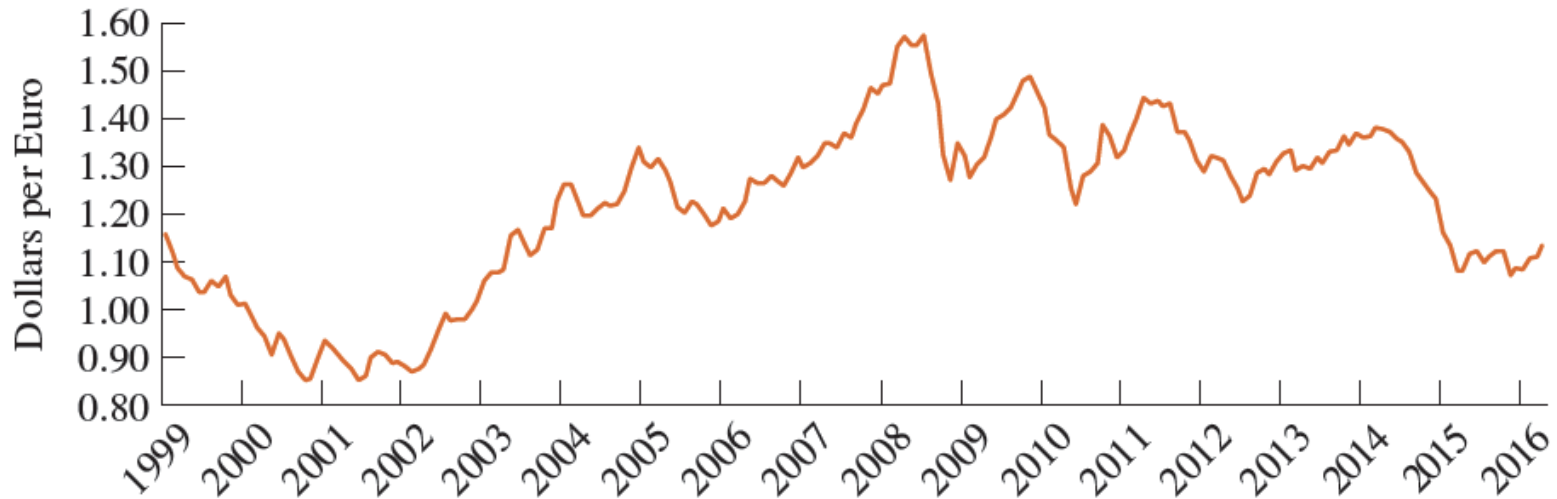
The Nominal Exchange Rate

- The **nominal exchange rate**, or simply the exchange rate, is the *rate at which one can exchange the currency of one country for the currency of another country*.
- The **price of the British pound** is quoted as the *number of dollars that can be exchanged for one pound (£)*.

The Nominal Exchange Rate

Figure 10.3

Dollar–Euro Exchange Rate, 1999–2016



The Nominal Exchange Rate

- A ***decline*** in the value of one currency relative to another is called a **depreciation** of the currency that is *falling in value*.
- The ***rise*** in the value of one currency relative to another is called an **appreciation** of the currency that is *rising in value*.

The Real Exchange Rate

- The **real exchange rate** is the *rate at which one can exchange the goods and services from one country for the goods and services from another country*

The Real Exchange Rate

- The **competitiveness of exports** *depends on* the *real exchange rate*.
- Appreciation *of the real exchange rate* makes *exports more expensive to foreigners*, reducing competitiveness.

Exchange Rates in the Long Run

The Law of One Price

- The **law of one price** is *based on the concept of arbitrage* -- the identical products *should sell for the same price*, regardless of *where* they are sold.
- ***If they don't, someone can make a profit.***

The Law of One Price

The law of one price fails almost all of the time.

1. **Transportation costs**
2. **Tariffs**, the *taxes countries charge at their borders*, can be high.
3. **Technical specifications** can *differ*.
4. **Tastes differ across countries**, leading to *different pricing*.
5. Some things simply **cannot be traded**.

Purchasing Power Parity

- We can extend the *law from a single commodity to a basket of goods and services.*
- The result is the theory of purchasing power parity (PPP), which means that *one unit of domestic currency will buy the same basket of good and services anywhere in the world.*

Purchasing Power Parity

- According to the **theory of purchasing power parity**:

Dollar price of basket of goods in U.S. = Dollar price of basket of goods in U.K.

$$\frac{\text{Dollar price of basket of goods in U.S.}}{\text{Dollar price of basket of goods in U.K.}} = 1$$

- Thus, ***purchasing power parity implies that the real exchange rate is always equal to one.***

Purchasing Power Parity

- If we *quote the price of a basket of goods in the U.K in pounds* instead of dollars, then:

$$\frac{\text{Dollar price of basket of goods in U.S.}}{(\text{Pound price of basket of goods in U.K.}) \times (\text{Dollars per pound})} = 1$$

$$\frac{\text{Dollar price of basket of goods in U.S.}}{\text{Pound price of basket of goods in U.K.}} = (\text{Dollars per pound})$$

- Purchasing power parity implies that *when prices change in one country* but not in another, the *exchange rate should change as well*.

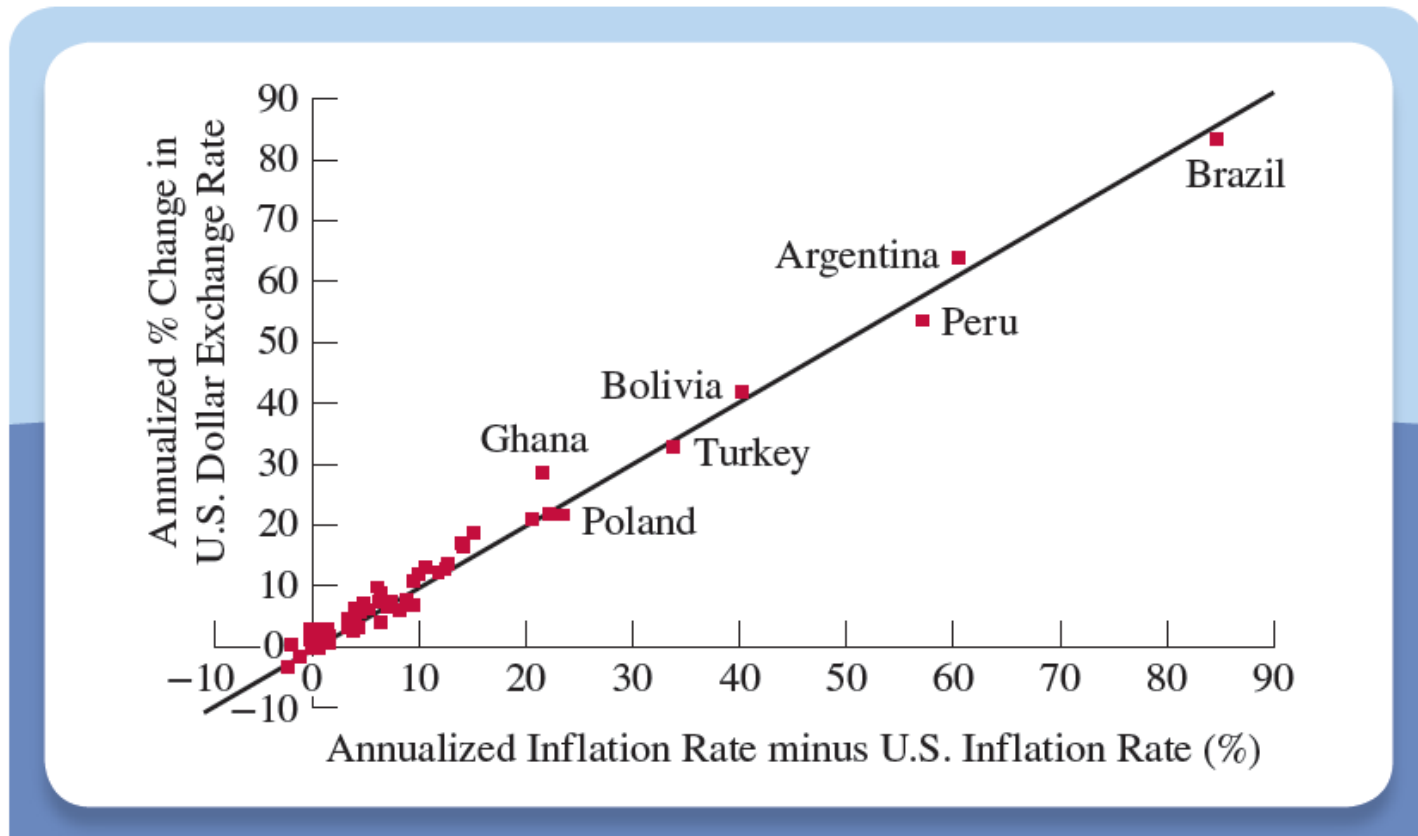
Purchasing Power Parity

- If **inflation occurs** in one country but not in another, the *change in prices* creates an *international inflation differential*.
- The **currency of a country with high inflation** will **depreciate**.

Purchasing Power Parity

Figure 10.4

Exchange Rate Movements and Inflation Differentials, 1980–2010



On the 45-degree line, exchange rate movements exactly equal differences in inflation.

Purchasing Power Parity

- We often hear of currencies being **undervalued** or **overvalued**.
- When people use these terms, they often have in mind a **current market rate** that ***deviates from what they consider to be purchasing power parity***.

Exchange Rates in the Short Run

The Supply of Dollars

- We will **use the U.S. dollar** *as the domestic currency*.
- This means we will discuss the *number of units of foreign currency*, for example Euro, that it **takes to purchase one dollar**.

The Supply of Dollars

- The ***supply of dollars*** slopes upward
- The **higher the price a dollar commands in the market, the more dollars are supplied.**
- The ***more valuable the dollar, the cheaper are foreign-produced goods*** and foreign assets *relative to domestic ones* in the U.S. Markets.

The Demand for Dollars

- The **demand curve for dollars** *slopes downward*.
- The **cheaper the dollar**--the lower the dollar-euro exchange rate--the ***more attractive are U.S. investments*** and the **higher is the demand for dollars** *with which to buy them*.

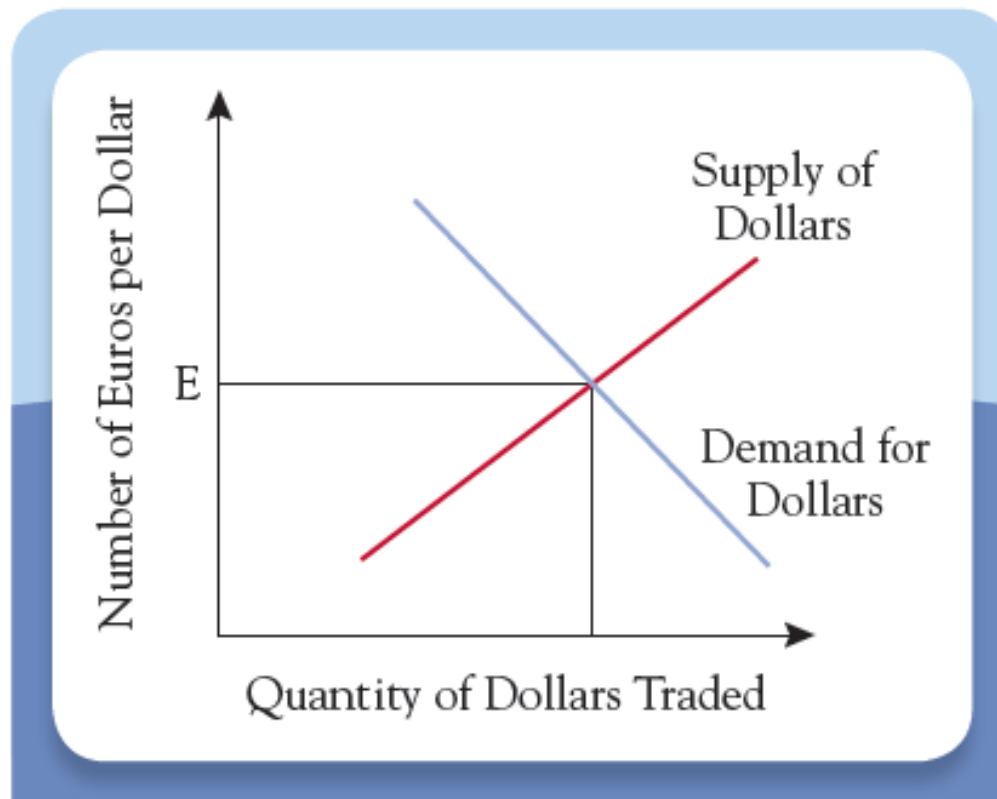
Equilibrium in the Market for Dollars

- The **equilibrium exchange rate** is the *rate that equates supply and demand for dollars*.
- Because the *values of all the major currencies in the world float freely*, they are **determined by market forces**.

Equilibrium in the Market for Dollars

Figure 10.5

The Dollar–Euro Market



Shifts in the Supply of Dollars

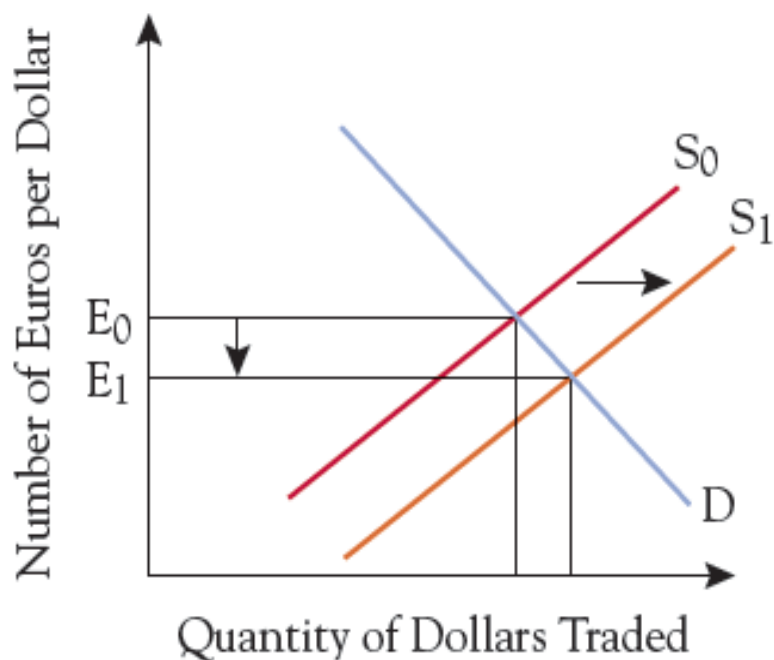
A rise in the supply of dollars can be caused by:

1. An **increase** in Americans' *preference for foreign goods*, **American import**.
2. An **increase** in the *real interest rate on foreign bonds*, capital outflow from US.
3. An **increase in American wealth**.
4. A **decrease** in the *riskiness of foreign investments* relative to U.S. investments.
5. An expected **depreciation of the dollar**.

Shifts in the Supply of Dollars

Figure 10.6

Effect of an Increase in the Supply of Dollars in the Dollar–Euro Market



- An increase in supply of dollars leads to a **depreciation of the dollar**.
- The **number of euros per dollar fall**.

Shifts in the Demand for Dollars

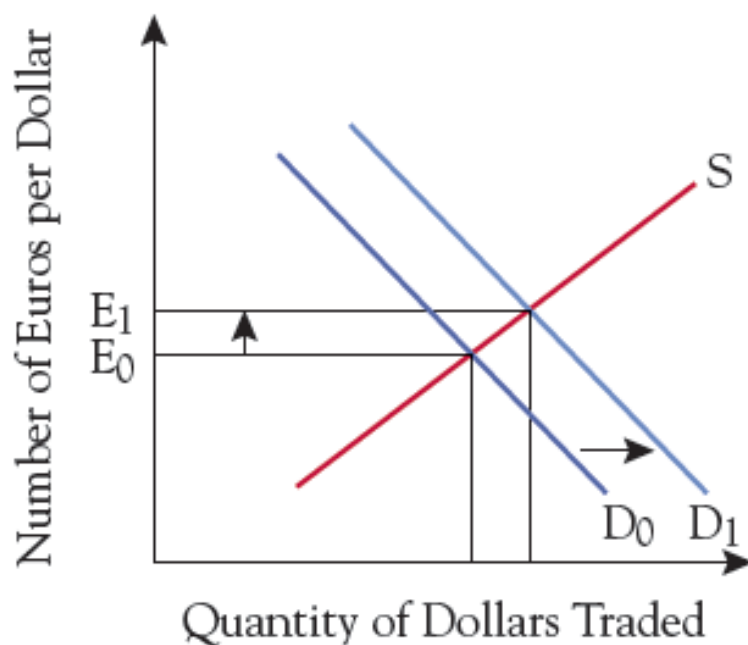
A shift in the demand of dollars can be caused by:

1. **Foreigners prefer more *American-made goods*.**
2. **The real yield on U.S. bonds rises (relative to foreign bonds).**
3. **When foreigner wealth increases.**
4. **When the *riskiness of American investments falls*.**
5. **When the dollar is expected to appreciate.**

Shifts in the Demand for Dollars

Figure 10.7

Effect of an Increase in the Demand for Dollars in the Dollar–Euro Market



- An **increase in demand for dollars** leads to an **appreciation** of the dollar.
- The **number of euros per dollar *fall***.

End of lecture