EE432 Monetary Theory and Policy

Lecture 7 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

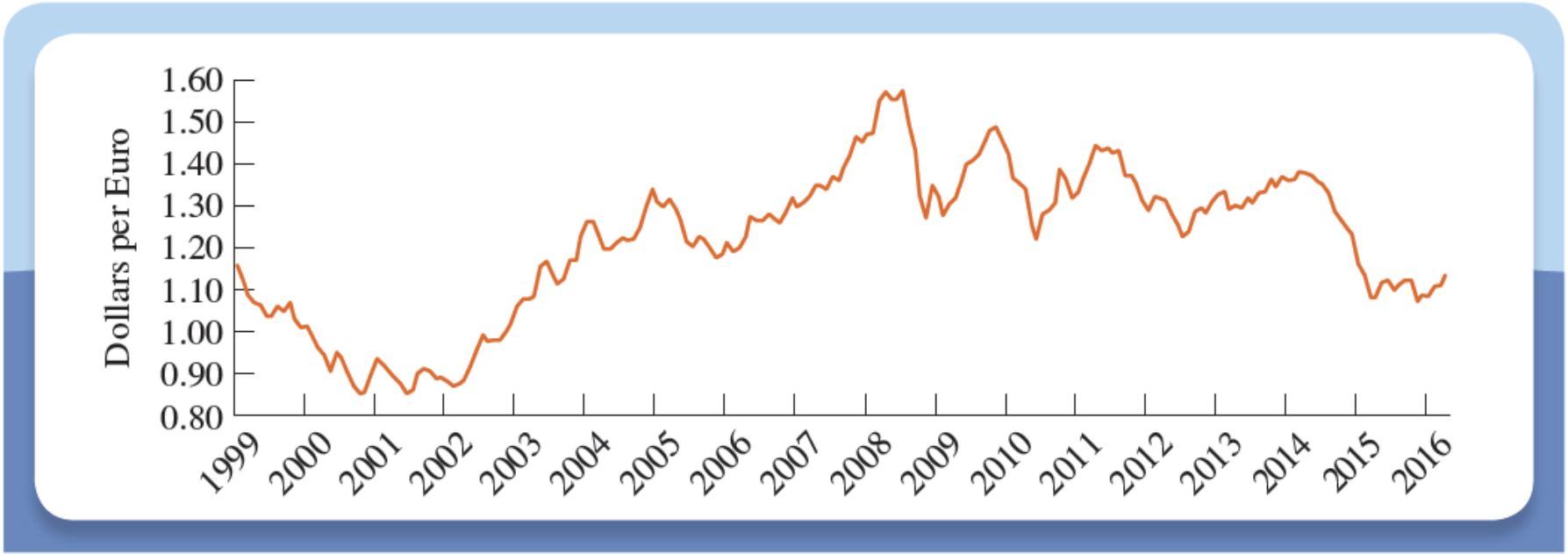
Foreign Exchange Basics

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**:

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

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

- 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:

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

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

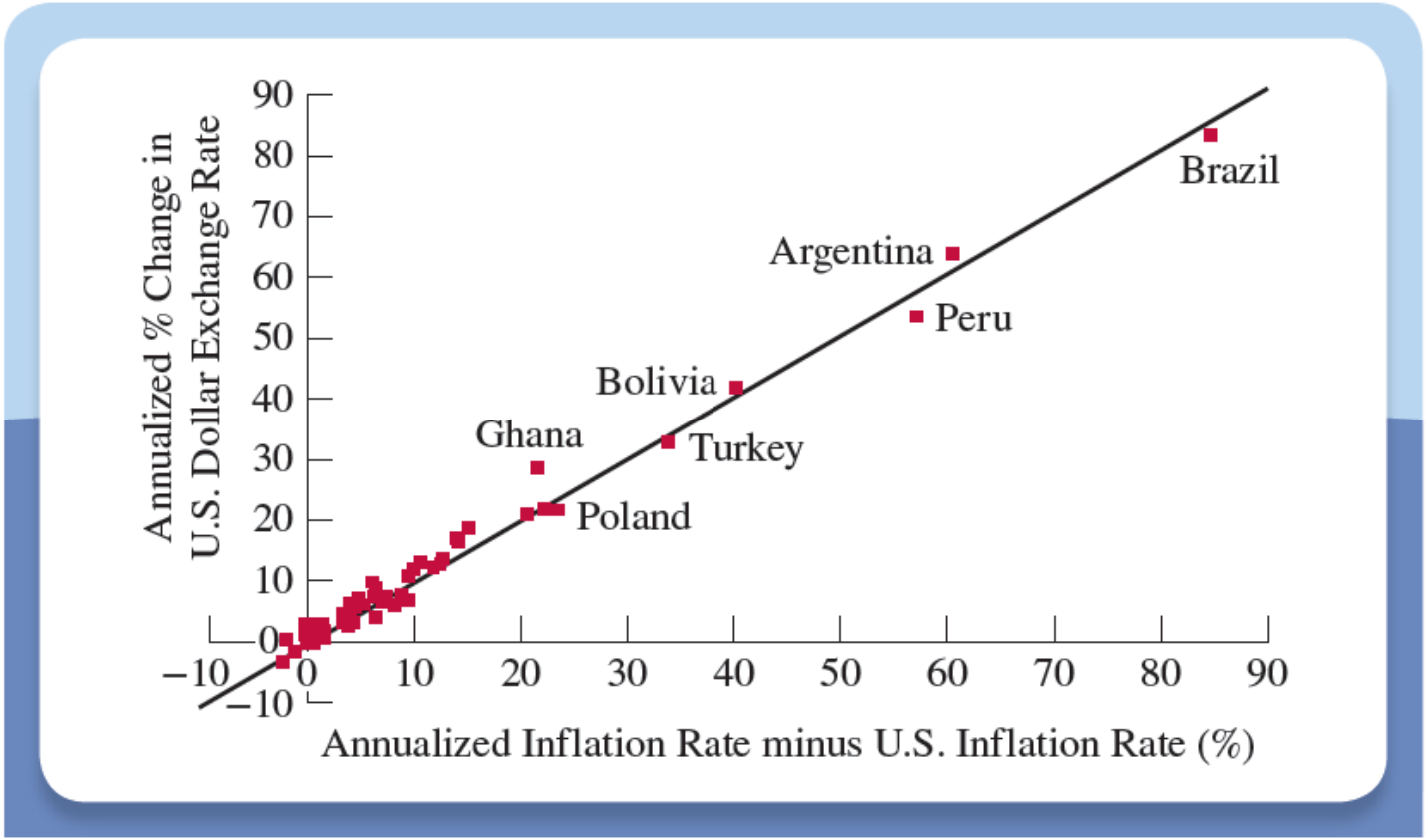
- Purchasing power parity implies that ***when prices change in one country*** but not in another, the **exchange rate should change as well**.

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

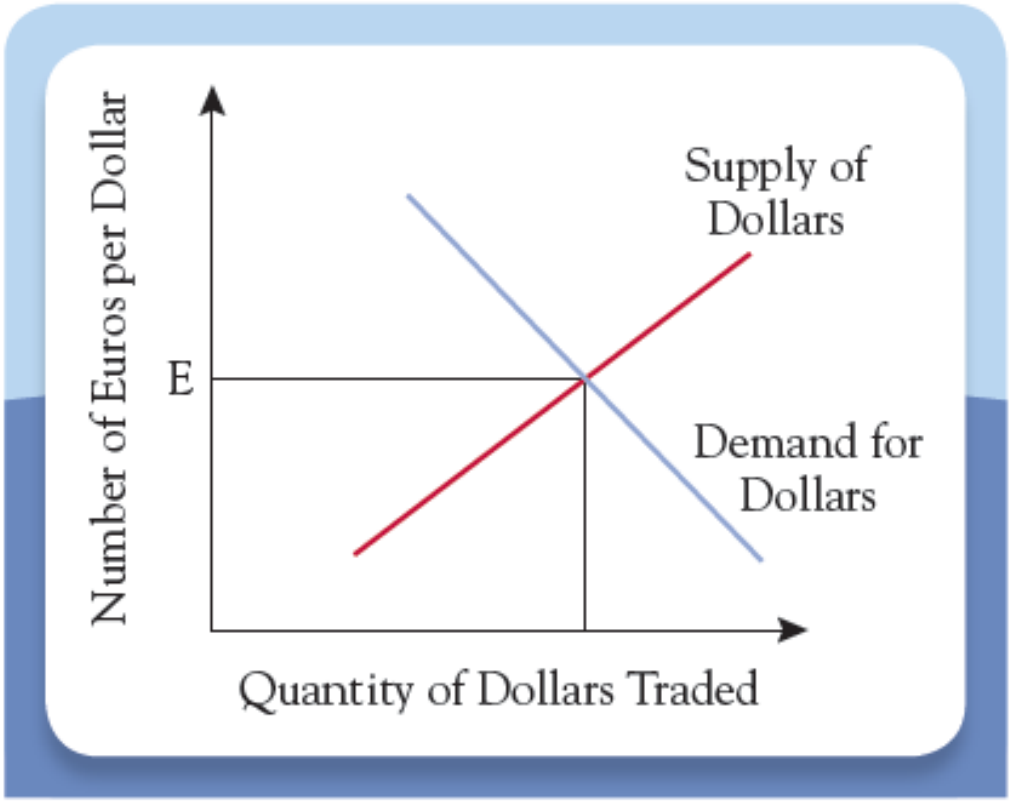
- The **demand curve for dollars** *slopes* *downward*.
- The **cheaper the dollar--**the lower the dollar-euro exchange rate--the ***more attractive are U.S. investments*** and the **higher is the demand for dollars** *with which to buy them*.

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



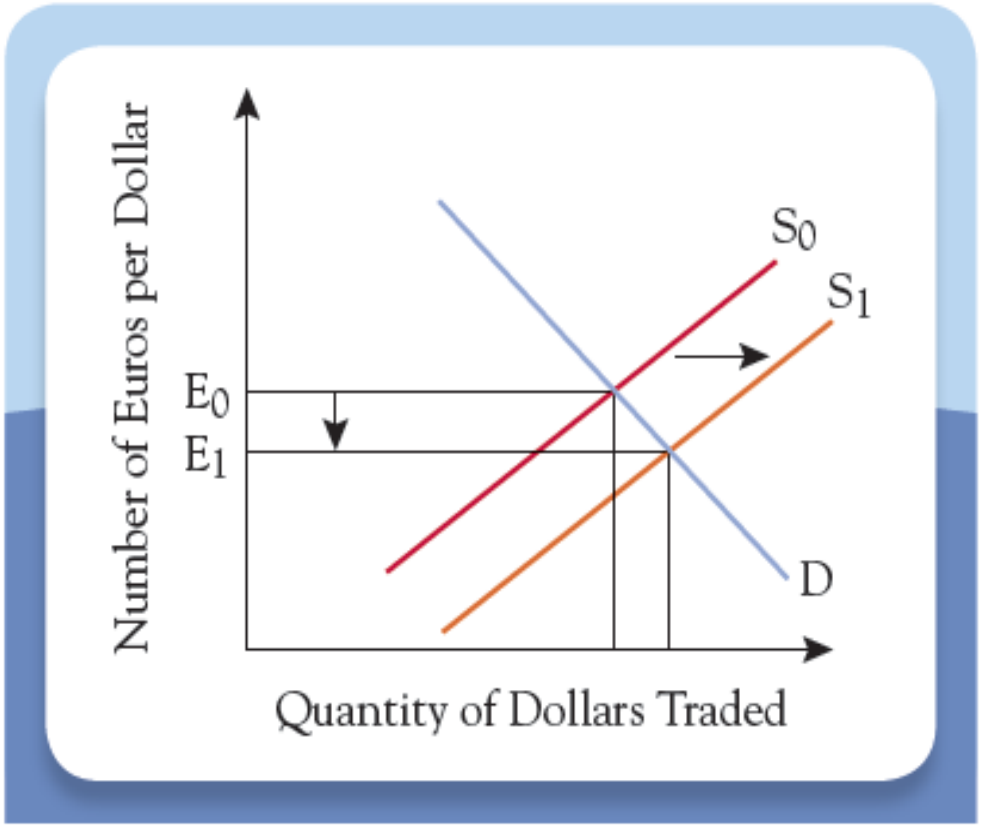
Shifts in the Supply of Dollars

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***.

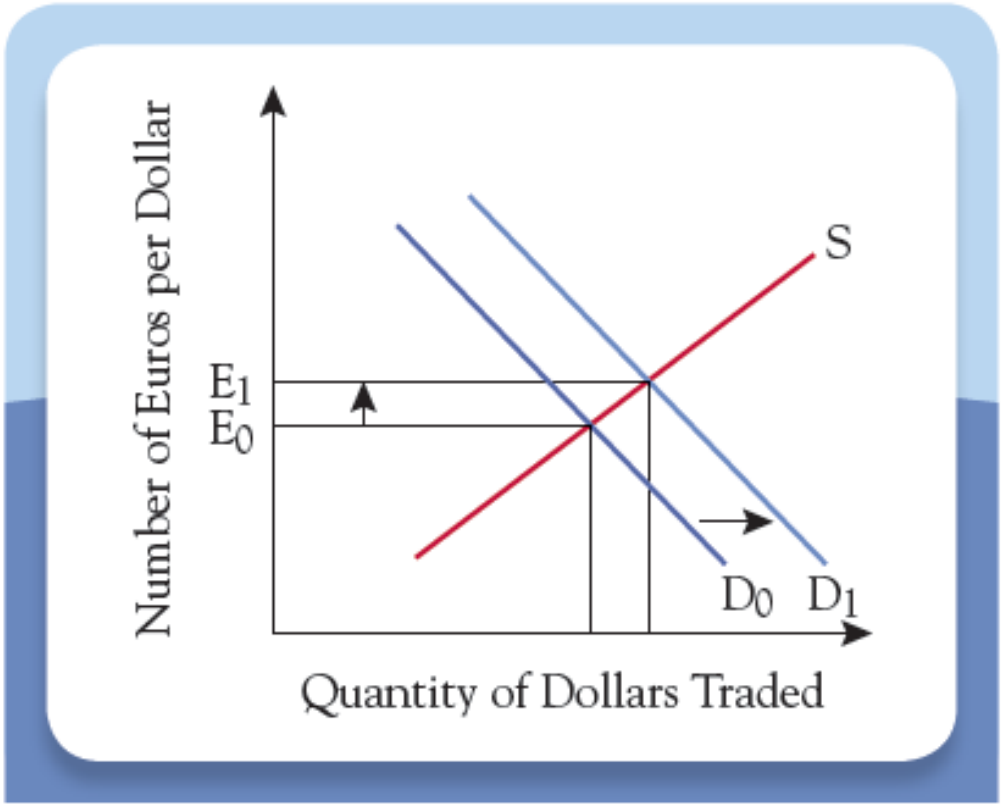
Shifts in the Demand for Dollars

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 **<u>appreciation</u>** of the dollar.
- The **number of euros per dollar *fall***.

End of lecture