Exchange Rates: Application of Supply and Demand

ECO 120: Global Macroeconomics

Goals

- Specific goals:
  - Learn how interpret exchange rates.
  - Learn how to use supply and demand to interpret exchange rates.
  - Learn how countries can choose to control exchange rates.
- Learning objectives:
  - LO2: Apply the supply and demand model to predict quantity and price outcomes of a number of different markets, including markets for currencies, labor, and loanable funds.

Relevant Reading

- Module 42

Exchange Rates

- **Nominal Exchange Rate:** how much of one currency can be traded for one unit of another currency.
- Example:
  - The Mexican Peso / U.S. Dollar exchange rate is 13.222 pesos / dollar (Jan 1 2014).
  - One U.S. dollar can be exchanged for 13.22 pesos.
- There are two ways to express every exchange rate.
- Same example:
  - The Mexican Peso / U.S. Dollar exchange rate is 0.0756 dollars / peso (Jan 1 2014).
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Changes in the Exchange Rate

- **Appreciation:** A currency appreciates against a second currency when one unit of the first currency can purchase *more* of the second currency.
- **Depreciation:** A domestic currency depreciates against a second currency when one unit of the first currency can purchase *less* of the second currency.
- Examples of an appreciation of the dollar:
  - Exchange rate increases from 13.222 pesos/dollar to 15.4 pesos/dollar.
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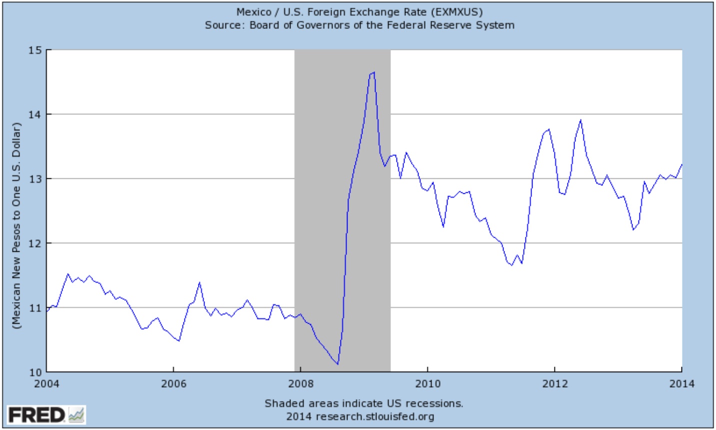
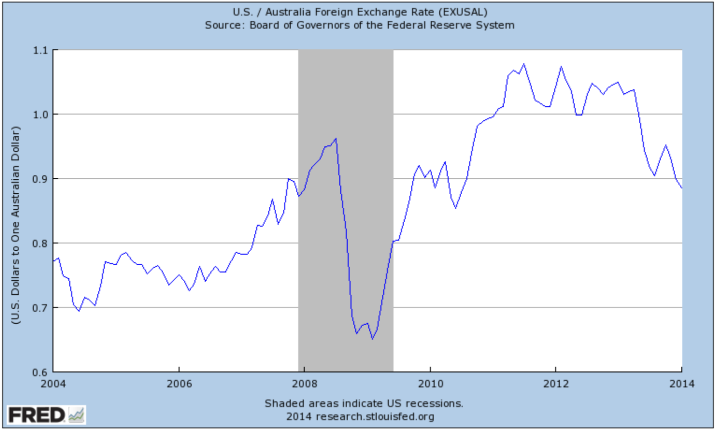
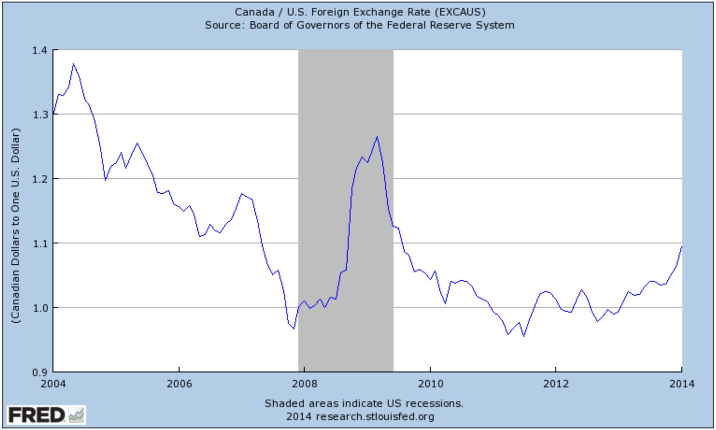
Mexico: Mexican Pesos per U.S. Dollars



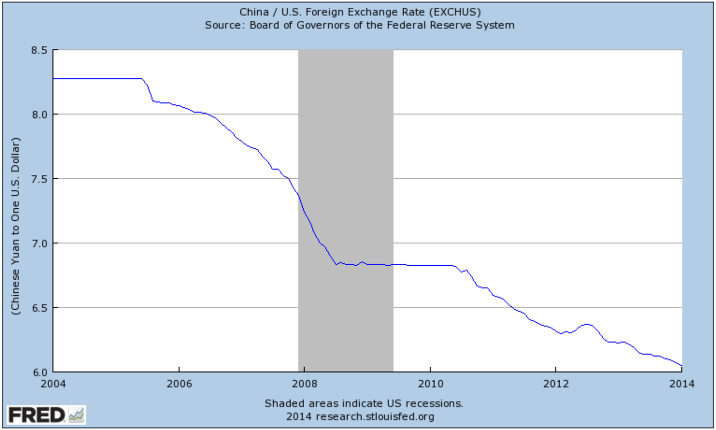
Australia: U.S. Dollars per Australian Dollar



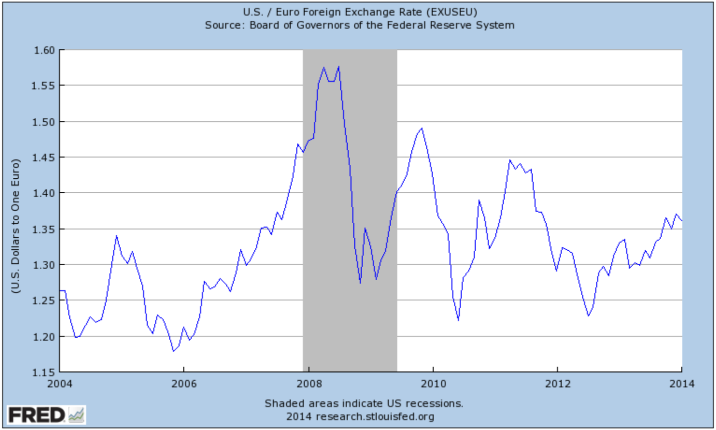
Canada: Canadian Dollars per U.S. Dollar



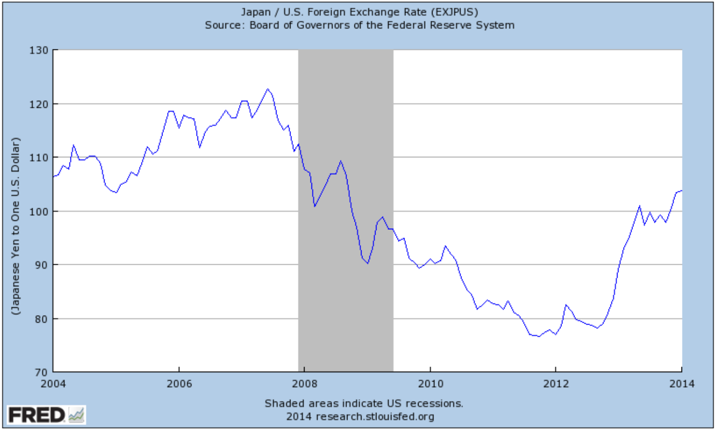
China: Chinese Yuan per U.S. Dollar



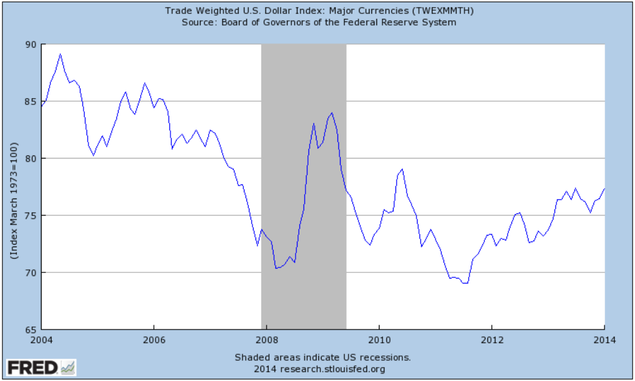
Europe: U.S. Dollar per Euro



Japan: Japanese Yen per U.S. Dollars



Trade-Weighted Index



- Foreign Currency per U.S. Dollar.
- Weighted Average of many currencies, based on level of trade.
- Includes: Euro Area, Canada, Japan, United Kingdom, Switzerland, Australia, and Sweden.

Demand for Currency

- Price of currency of interest (say U.S. Dollars):
  - Exchange rate expressed as foreign currency per one unit of currency of interest.
  - Example: price of dollars = Euros per U.S. dollar.
  - An increase in this exchange rate means an appreciation of the dollar.
- Demand for currency is a *derived demand*. It depends on...
  - foreign demand for the country's goods.
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- **Exports effect:** if the currency is more expensive, the country's goods are more expensive.

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Shifts in Demand

- When something *besides the exchange rate* influences the demand for a currency, then there is a *shift* in the demand.
- Determinants of demand for currency:
  - Changes in demand for country's products.
  - Changes in interest rate differential.
  - Expectations of future exchange rate.

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Supply of Currency

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- Supply of U.S. dollars happens when people in U.S. demand foreign currencies.
- Supply of a currency is nothing more than the holders' demands for foreign currency.

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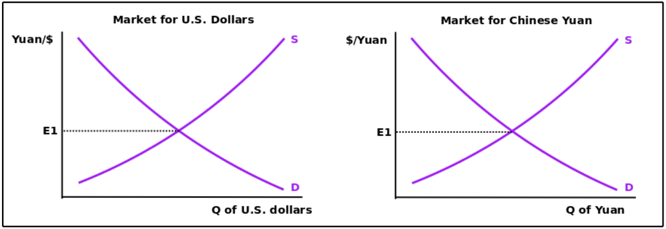
Example: Trade Restrictions on Chinese Imports

Suppose there is an increase in trade restrictions on Chinese imports that results in fewer American imports of Chinese Products.



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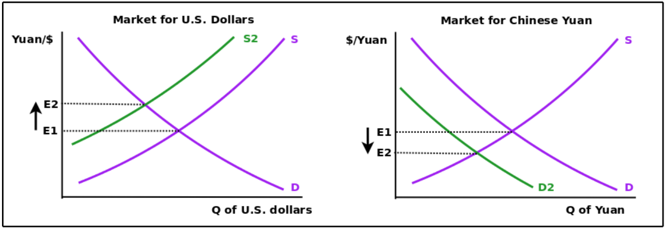
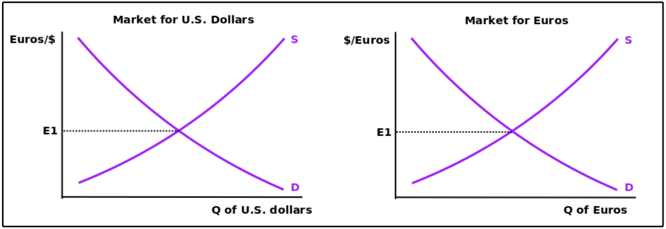


Decrease in Americans' demand for Chinese Yuan
$\rightarrow$ Decrease in Supply of U.S. Dollars.

Example: Decrease in U.S. Interest Rate

Since the onset of the recession in the U.S. the interest rate has decreased more in the United States than in Europe.



Two related markets. Market for Dollars (Price=Euros/$) and Market for Euros (Price=$/Euro)

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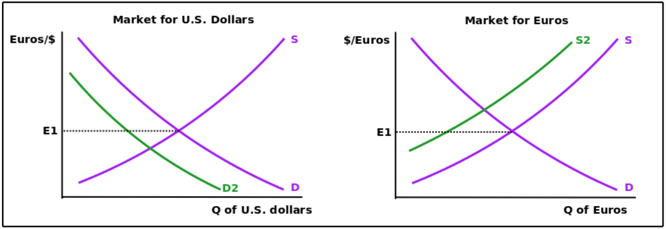

Decrease in Europeans' demand for U.S. dollars
→ Decrease in Supply of Euros.

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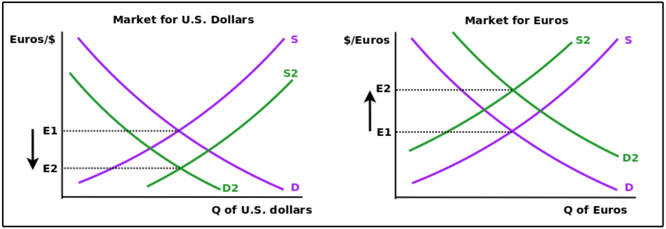

Increase in Americans' demand for Euros
$\rightarrow$ Decrease in Supply of U.S. Dollars.

Central Banks

- Each country's central bank may also be interested in influencing the exchange rate.
- **Central Bank:** (Semi-) government institution that attempts to regulate the health of the macro-economy by influencing the country's money supply and banking rules.
- **Federal Reserve (aka Fed):** United States central bank.
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Central Bank Exchange Rate Policy

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  - printing more money.
  - buying assets like Treasury Bills.
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- What would be the effect on the U.S./Euro exchange rate if the government bought Treasury Bills?
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