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LECTURE 26: EXCHANGE RATES

I. Exchange rates
   a. Think of a currency as the right to participate in a country's economy.
      i. A strong currency is high relative to others. Thus its exports are relatively more expensive. At the same time, the strong currency tends to attract foreign investment.
      ii. A weak currency is low relative to others. Thus it tends to be less attractive to foreign investors. At the same time, its exports are relatively less expensive.
   b. When a currency becomes stronger, it *appreciates*. When it becomes weaker, it *depreciates*.

II. Law of One Price
   a. Suppose, at current exchange rates, rugs cost $10 in one country and $200 in another country. What do you do?
      i. This causes the cheap rugs to be more expensive and the expensive rugs to be cheaper.
      ii. This should continue until the prices are equal (or nearly equal, since you have to pay to ship the rugs).
      iii. Thus the *law of one price*—when there are no barriers to trade, the price of a good or service should be the same everywhere.
   b. All things being equal…
      i. The currency with the cheaper rugs will appreciate and
      ii. The currency with the expensive rugs will depreciate.

III. Purchasing Power Parity
   a. In reality, though, barriers to trade exist. There are transportation costs. There are tariffs and customs. There is spoilage. Prices for many products vary widely.
      i. By looking at many goods and services, you can get a "big picture" view.
      ii. However, quality of goods and services changes from country to country, biasing the index.
      iii. Thus the *purchasing power parity (PPP)*—technique used to determine the relative value of different currencies.
   b. Like the law of one price, PPP has a prediction (called *purchasing power parity theory*): exchange rates between any two currencies will adjust to reflect differences in the price levels of various currencies.

c. Consider the Big Mac Index. Big Macs are famously the same everywhere. That uniform quality helps judge purchasing power and, in theory, can be used to predict how prices will adjust.
    i. In July 2015, a Big Mac in the U.S. cost on average $4.79.
    ii. At the same time, using July 2015 exchange rates, it cost…
        1. $1.88 in Russia, suggesting the Russian rouble is undervalued; it should appreciate soon.
        2. $6.82 in Switzerland, suggesting the Swiss franc is overvalued; it should depreciate soon.
        3. $1.83 in India, suggesting the Indian rupee is undervalued; <u>should</u> it appreciate soon?
    iii. The Big Mac Index is by no means perfect—it is just one product, after all, but it's a useful way to help think about PPP and the law of one price.

IV. Floating Exchange Rate Regime
a. In a floating exchange rate regime, market forces determine how rates are priced. There's little to it beyond that but since the market's doing all the work, it seems like a good time to explore how various market forces change the exchange rate.
b. The purchasing power parity influences the exchange rate. The more a currency can buy, the more the currency is worth.
c. It's useful to remember supply and demand to help you remember how currency prices change. There is a supply of currency and there is a demand for that currency.
d. The following also changes the price of a currency. For simplicity purposes, this will always be explained in terms of a domestic currency.
    i. Note all of these changes are <u>relative</u>. That's because all currencies are priced in terms of all other currencies. If all countries have the same amount of inflation, no currency has become less valuable compared to all other currencies.
e. The arrows at the top of the following table indicate the direction of the cause in question. For example:
    i. If the relative foreign demand for exports increases (↑), the domestic currency appreciates.
    ii. If the relative foreign demand for exports decreases (↓), the domestic currency depreciates.

A change in the relative…	↑	↓	***Explanation for Appreciation***
Foreign demand for exports	Appreciates	Depreciates	If more people want the domestic country's goods, more people will want that country's currency. Demand shifts up/right.
Domestic demand for imports	Depreciates	Appreciates	If fewer people demand imports, fewer units of domestic currency will be on the currency exchange market (because fewer people are willing to give it up). Supply shifts up/left.
Domestic productivity	Appreciates	Depreciates	If the domestic country becomes more productive, more people will want to participate in that economy (perhaps through investment). Demand shifts up/right.
Domestic interest rate	Appreciates	Depreciates	If the domestic interest rate is higher, more people will want to participate in that economy (perhaps through investment). Demand shifts up/right.
Domestic price level	Depreciates	Appreciates	Note that a decrease in the price level is called deflation; an increase is called inflation. What happens with demand and supply depends on why inflation or deflation occurred. (1) If it was due to a fall in the money supply, there are fewer units of currency so supply shifts up/left. (2) If it was because there's an expansion in the economy, it's because each unit has become more valuable so demand shifts up/right.

V. Fixed Exchange Rate Regime

a. A fixed rate first focuses on an "anchor currency" to be pegged to. China, for example, once kept their rate at about 8 yuan to the dollar.
b. The domestic government (the central bank) holds foreign currency, drawing a distinction between the private sector capital account and

the government's capital account, often called the *official reserve transactions balance* (the government's international reserves).

c. It is with this reserve of foreign currency that fixed exchange rate regimes manipulate the market.
d. Suppose China as a major manufacturer suddenly looks less appealing to the world at large, putting downward pressure on the yuan.
    i. At eight to the dollar, the yuan is currently *overvalued*.
    ii. To defend the currency, the government buys yuan with their international reserves (causing them to shrink).
    iii. In effect, the government simulates additional demand for a currency people are losing interest in.
e. Now suppose China suddenly looks more appealing as an economy to the world at large, putting upward pressure on the yuan.
    i. At eight to the dollar, the yuan is currently *undervalued*.
    ii. To defend the currency, the government sells yuan for additional international reserves (causing them to grow).
    iii. In effect, the government simulates a lack of demand for a currency people are gaining interest in.
f. Note a fixed exchange rate regime is distinct from a system where the government sets the exchange rate by explicit law—as Venezuela has—and does not back up that law with hard foreign currency.