# Econ 340

Lecture 15
International Macroeconomics

## Announcements



## News

## Outline: International Macroeconomics

- Recall Macro from Econ 102
  - Aggregate Supply and Demand
  - Policies
- Effects ON the Exchange Market
  - Expansion
  - Interest Rate
- Effects OF the Exchange Market
  - Depreciation via Trade
  - Depreciation via Net Wealth
- Effects THOUGH the Exchange Market

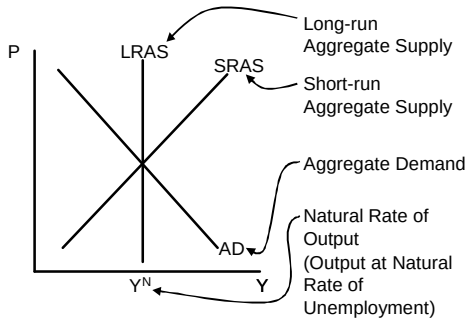


## Recall Macro from Econ 102

- Aggregate Supply and Demand Determine
  - Y = GDP = Output = Income
    - And implies level of Employment
  - P = Price level



## Recall Macro from Econ 102



# Recall Macro from Econ 102

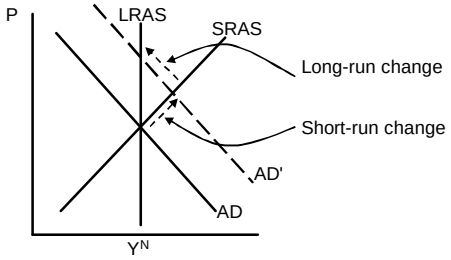
- Macroeconomic Policies
  - Monetary Expansion = Increase in Money Supply (M)
    - Open market operations: purchase bonds
    - Reserve requirement: reduce it
    - Discount rate: reduce it
  - Fiscal Expansion
    - Increase government purchases (G)
    - Reduce taxes (T)
  - All of these have the effect of
    - Increasing aggregate demand
    - Shifting AD curve to the right

They differ in effects on interest rate (i):

- ?M>0 lowers i
- ?G>0, ?T<0 raise i



# Recall Macro from Econ 102




?M>0, ?G>0, or ?T<0,



# Recall Macro from Econ 102

- Macroeconomic Policies
  - Contractionary policies (?M<0, ?G<0, or ?T>0) are just the opposite
  - All have only temporary effects on output and employment, but lasting effects on price level
  - Policies can be useful (if done right) for dealing with temporary problems such as a recession

## Effects ON the Exchange Market

- Non-Monetary Expansion

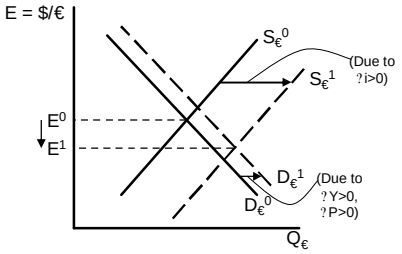
Y rises, P rises } ? imports rise ? $D_€$ shifts right

i rises ? capital inflow ? $S_€$ shifts right

  - Assume that the interest rate effect is larger
  - Three cases to consider:
    - Floating exchange rate
    - Pegged exchange rate at overvalued rate
    - Pegged exchange rate at undervalued rate



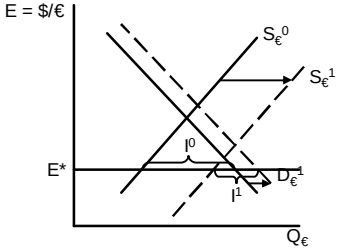
- US Non-Monetary Expansion:
  Floating Exchange Rate




?G>0, ?T<0 ? Causes dollar to appreciate

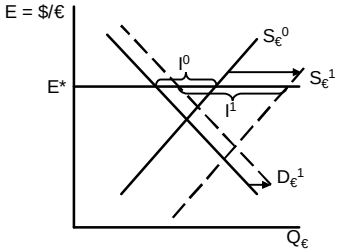


- US Non-Monetary Expansion:
  Pegged Exchange Rate - Overvalued




?G>0, ?T<0 ? Less intervention (sells)

- US Non-Monetary Expansion:
  Pegged Exchange Rate - Undervalued




? G>0, ? T<0 ? More intervention (buys)



## Effects ON the Exchange Market

- Summary: Non-Monetary Expansion
  - Results: Effects of non-monetary expansion
    - Floating exchange rate appreciates
    - Pegging the exchange rate becomes easier
      - If reserves were falling (overvalued case) they now fall less rapidly
      - If reserves were rising (undervalued case) they now rise more rapidly



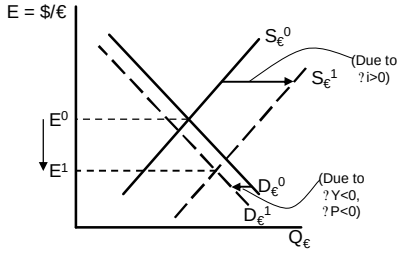
## Effects ON the Exchange Market

- Monetary Contraction (i.e., rise in interest rate)

Y falls
P falls } ? imports fall ? $D_€$ shifts left
i rises ? capital inflow ? $S_€$ shifts right

  - Assume that the interest rate effect is larger
  - Same three cases
    - Will only show floating case; others similar

- US Monetary Contraction:
  Floating Exchange Rate




? M<0 ? Causes dollar to appreciate



## Effects ON the Exchange Market

- Summary: Monetary Contraction
  - Assuming that the interest-rate effect on capital flows is larger than the income and price effects on trade
  - Monetary contraction has essentially the same effects as a non-monetary (fiscal) expansion
  - Reason: Only the interest rate really matters



## Effects OF the Exchange Market

- Under a pegged exchange, the exchange market has little effect on the economy unless the pegged rate itself is changed
  - Exception: without sterilization, domestic money supply is sensitive to trade and capital flows
- Under a floating exchange rate, movement of the exchange rate can matter a lot
- Thus, in both cases, we want to know effects of changing the exchange rate
- We'll look only at an exchange depreciation
  - (Usually called a "devaluation" when a pegged exchange rate is depreciated)

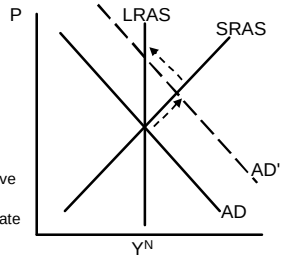
## Effects OF the Exchange Market

- Major Effects of Exchange-Rate Depreciation
  - Trade Effect
    - Depreciation makes country's goods cheaper
  - Wealth Effect
    - Depreciation makes country's assets cheaper



## Effects OF the Exchange Market

- Trade Effect of Depreciation
  - ? E>0
    - Stimulates exports (they are cheaper to foreigners)
    - Retards imports (they are more expensive for domestic buyers)
    - Thus increases aggregate demand (AD)
  - Stimulates economy






## Effects OF the Exchange Market

- Wealth Effect of Depreciation
  - If assets and liabilities in same currency, little effect
  - If assets and liabilities in different currencies, one home and the other foreign, then BIG EFFECT
- A common case, especially in developing countries:
  - Countries have borrowed abroad to finance domestic investment
    - Assets are in home currency
    - Liabilities are in foreign currency
  - Then depreciation causes a huge drop in net wealth

## Effects OF the Exchange Market

- Example: Effect of 20% depreciation of Mexican peso (p): E=10p/$ ? 12p/$
  - Case 1: Assets and liabilities both in pesos
  - Case 2: Assets in pesos but liabilities in $



## Effects OF the Exchange Market

Case 1:

| | Before E = 10 p/$ | | After E = 12 p/$ |
|---|---|---|---|
| | in pesos | in $ | in $ |
| Assets | 1000 p | = (100 $) | ~ 80 $ |
| Liabilities | - 900 p | = (- 90 $) | ~ - 72 $ |
| Net Wealth | 100 p | = (+10 $) | +8 $ |

Initial

20% loss of net worth



## Effects OF the Exchange Market

Case 2:

| | Before E = 10 p/$ | | After E = 12 p/$ |
|---|---|---|---|
| | in pesos | in $ | in $ |
| Assets | 1000 p | = (100 $) | ~ 80 $ |
| Liabilities | - 900 p | = - 90 $ | = - 90 $ |
| Net Wealth | 100 p | = (+10 $) | - 10 $ |

Initial

Bankrupt!

## Effects OF the Exchange Market

- Wealth Effect of Depreciation
  - This is exactly what happened to lots of developing countries when they had an Exchange Crisis and their currencies suddenly depreciated
  - The wealth effect overwhelms any beneficial effect that the country might otherwise feel from a boost in exports



## Effects OF the Exchange Market

- A Recent Example: The Appreciation of the Chinese Yuan
  - For many years, the yuan was pegged to the US dollar
  - On July 21, 2005, China
    - Changed to pegging to a basket of currencies
    - Appreciated the yuan by 2%
    - Since then it has risen by about another 6%
  - For the likely effects of this, see readings by Swagel and by Stiglitz



## Effects OF the Exchange Market

- Effects of the Yuan Appreciation
  - Not very large, in any case, with only 8% change over two years
  - Wealth effect
    - For US, negligible, since our debt is in dollars
    - For China, small decline in yuan value of their dollar assets

## Effects OF the Exchange Market

- Effects of the Yuan Appreciation
  - Trade effect
    - Effects on prices
      - US goods become cheaper to China
      - Chinese goods become dearer to US
        (But note, from Stiglitz: Chinese exports to the US have 70-80% import content; thus yuan matters little)
    - Helps US sales, hurts Chinese sales



## Effects OF the Exchange Market

- Effects of the Yuan Appreciation
  - Other effects
    - Helps China fight inflation and excessive monetary expansion and credit growth
    - Permits increased consumption in China



## Effects OF the Exchange Market

- Are These the Actual Reasons for the Yuan Appreciation?
  - No
  - US had been
    - Pressing China for months to stop holding down the value of the yuan
    - Threatening increased protection against Chinese exports
  - Idea was that appreciation would reduce the Chinese trade surplus with the US, thus reduce the US deficit
  - China refused to be bullied, but perhaps it was
  - On the other hand, 2% wasn't much, and neither is the 6% since 2005

## Effects OF the Exchange Market

- Will the Yuan Appreciation Change the US Trade Balance?
  - Probably not
    - To do so, it would have to change US saving and investment
    - It's not clear why an appreciation would do that
  - One possibility (see Stiglitz)
    - Chinese spending increases
    - ✍They stop financing the US
    - ✍US interest rates rise
    - ✍US housing bubble bursts
    - ✍US spending would fall

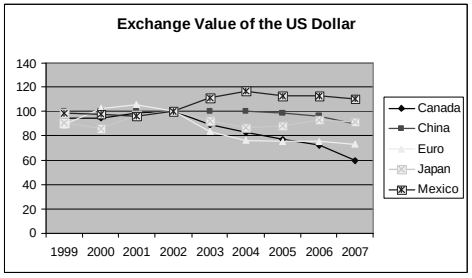


## Effects OF the Exchange Market

- Another Example: The Depreciation of the US Dollar
  - Quite aside from what happened to the yuan, the US dollar depreciated over the last several years
    - Mann and Plück, writing in 2005, say that it fell by 25%



## Effects OF the Exchange Market



## Effects OF the Exchange Market

- Effects of the Dollar Depreciation
  - Did this help the US trade balance? No!
  - For more reasons see Mann and Plück
    - Lots of US imports come from countries whose currencies didn't appreciate (China, Thailand), or even depreciated (Mexico)
    - "Pass-through" is low in the US market: 10% fall in $ only causes 2.5 - 4.0% rise in import prices



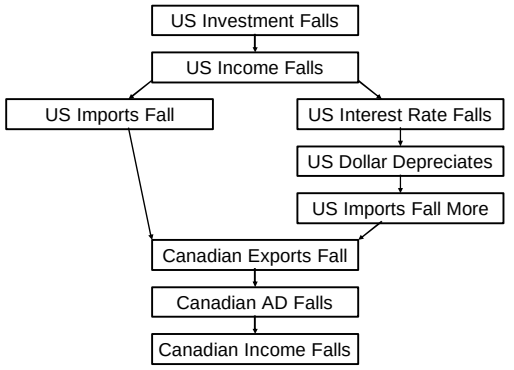
## Effects THROUGH the Exchange Market

- The issue here:
  - Do macroeconomic effects get transmitted to other countries, and if so how?
  - I.e., does an expansion, for example, in one country cause an expansion or a contraction in other countries?
  - The answer: Although many exceptions are possible, it is usually true that changes in one country cause changes in the same direction in others:
    - Expansion here ? expansion there
    - Inflation here ? inflation there
    - High interest rates here ? high interest rates there



## Effects THROUGH the Exchange Market

- Example: How a recession in US can cause recession Canada
  - Fall in aggregate demand in US (due to non-monetary contraction such as a fall in investment) leads to
    - Fall in US income, leads to
    - Fall in Canadian exports to US, leads to
    - Fall in Canadian income
  - To see these links in more detail…






## Next Time

- Fixed versus Floating Exchange Rates
  - Who uses them
  - What experts recommend
  - Pros and cons of
    - Floating rates
    - Pegged rates
  - Alternatives