International Economics & Foreign Exchange Rates

Agenda

- Open Economy Macroeconomics
  - International Trade without Exchange Rates
  - Foreign Exchange Rates

International Trade

- International Trade is an important component of economic activity.
  - Net exports are part of GDP.
    \[ Y = C + I + G + (X - M) \]

International Trade Balance

- Net Export Arithmetic
  - \[ X = X_0 + xYf \]
  - \[ M = M_0 + mY \]
  - \[ X - M = X - M_0 - mY \]
    - \( X_0 \) are exogenous exports,
    - \( Yf \) is foreign income (and \( x \) is a parameter),
    - \( M_0 \) are exogenous imports.
  - \[ TB = X - M = X_0 + xYf - M_0 - mY \]
  - \[ TB + X - M = X_0 - M_0 + xYf - mY \]

Net Export Line

<table>
<thead>
<tr>
<th>X - M</th>
<th>Surplus (+)</th>
<th>Deficit (-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X - M0</td>
<td>TB0</td>
<td>TB1</td>
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International Trade Balance

- \( Ye \) is determined in the IS – LM model
  - Which is influenced by \( X, M_0 \) and \( m \)
- \( X - M \) is determined by the TB line

Increase X or Decrease M0

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International Trade Linkages

• Net Export Assumptions
  ➢ Exports are exogenous
    • \( X = X_0 + xY_f \)
  ➢ Imports are endogenous
    • \( M = M_0 + mY \)

• However, one country’s exports are another country’s imports
  ➢ Exports are exogenous with respect to your own country’s \( Y \) but not with respect to the world’s \( Y \)
    • \( X = X_0 + xY_f \)

• Suppose there are 2 countries: the US and Japan
  ➢ Japan exports a lot to the US but
  ➢ the US does not export a lot to Japan

• What happens if the US experiences an investment boom?
International Economics

• Conclusions
  ➢ The larger the international trade flows, the stronger the economic inter-relationship between countries.
    • Exports affect domestic economic activity.
      – Which is influenced by foreign economic activity.
    • Imports allow economic activity to be exported.
      – More imports generates higher foreign economic activity and foreign employment.
  ➢ Globalization makes business cycles more synchronous.

International Economics

• Other Considerations
  ➢ These effects can be OFFSET by domestic monetary and fiscal policy actions.
  ➢ These effects do NOT consider exchange rate effects or financial flows.

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Foreign Exchange Rates

• Introduction
  ➢ International transactions require the exchange of one country’s currency for another.
    • To buy or sell goods and services and/or
    • To acquire or dispose of assets (both financial and nonfinancial)

Foreign Exchange Rates

• Determinants of Exchange Rates:
  Supply and Demand
  ➢ Assume there are only 2 countries:
    • United States
    • Mexico
Foreign Exchange Rates

• Determinants of Exchange Rates:
  
  ➢ The Mexican demand for Dollars is equivalent to the Mexican supply of Pesos and
  ➢ The U.S. supply of Dollars is equivalent to the U.S demand for Pesos

Foreign Exchange Rates

• Sources of Supply and Demand
  
  ➢ International trade in goods and services
  ➢ Foreign direct investment
  ➢ Long-term investment portfolio flows
  ➢ Short-term investment/speculative or hot money flows
    • Mutual funds
    • Hedge funds
  ➢ Safe haven status (of a reserve currency)

Foreign Exchange Rates

• Sources of Supply and Demand
  
  Alternatively, can think of the money flows in and out of a country, i.e., the credits and debits

Foreign Exchange Rates

• Credits (or money in) or the demand for the domestic currency:
  
  • Exports of goods and services
  • Investment income on foreign assets owned by domestic residents
  • Transfers to domestic residents
  • Net purchases of domestic assets by foreign residents

Foreign Exchange Rates

• Debits (or money out) or the supply of the domestic currency:
  
  • Imports of goods and services
  • Investment payments on domestic assets owned by foreign residents
  • Transfers to foreign residents
  • Net purchases of foreign assets by domestic residents
Foreign Exchange Rates

• Determinants of Exchange Rates: Supply and Demand
  ➢ Suppose there is increased Mexican demand for U.S. products or assets
    • The demand for dollars increases causing the peso price for dollars to increase as well.

Foreign Exchange Rate Systems

• Flexible Exchange Rates
  ➢ Exchange rate is free to fluctuate daily.
    ➢ Clean float
    ➢ Dirty or managed float
  ➢ Exchange rates adjust to any imbalances in the supply and demand for a currency
    ➢ Appreciate if there is an excess demand.
    ➢ Depreciate if there is an excess supply.

Foreign Exchange Rate Systems

• Why will an appreciating Dollar reduce the demand for Pesos and increase the supply of Dollars?
  ➢ Exports:  \[ X = X_0 + x*Y_f - \phi*er \]
    • Exports now have an inverse relationship with the exchange rate.
  ➢ Imports:  \[ M = M_0 + m*Y + \psi*er \]
    • Imports now have a positive relationship with the exchange rate.

Foreign Exchange Rate Systems

• Changes in Flexible Exchange Rates
  ➢ Appreciation: an increase in the foreign exchange value of the currency.
  ➢ Depreciation: a decrease in the foreign exchange value of the currency.

Foreign Exchange Rate Systems

• Fixed Exchange Rates
  ➢ Exchange rate is fixed for long periods of time.
    ➢ Central banks must finance or absorb any imbalances in supply and demand of a currency through changes in foreign exchange reserves.
      • Buy excess foreign currency when there is excess demand for the domestic currency.
      • Sell foreign currency when there is excess supply of the domestic currency.
Foreign Exchange Rates

- Changes in Fixed Exchange Rates
  - Revaluation: an increase in the foreign exchange value of the currency.
  - Devaluation: a decrease in the foreign exchange value of the currency.

Foreign Exchange Rate Systems

- Foreign Exchange Intervention
  - Mexican central bank **MUST** sell Dollars from their foreign exchange reserves to buy Pesos.
    - What is the effect on the Mexican money supply?
      - Mexican money supply will contract.
      - This is like an international open market operation.
      - This is “non-sterilized” foreign exchange intervention.
  - Can the Mexican central bank neutralize this effect?
    - Domestic open market purchase of government securities.
    - This is “sterilized” foreign exchange intervention.