Economics 302 (Sec. 001)
Intermediate Macroeconomic Theory and Policy (Spring 2012)
4/16/2012

Instructor: Prof. Menzie Chinn
UW Madison
19-1 The IS Relation in an Open Economy

Putting the Components Together

Figure 19 – 1

The Demand for Domestic Goods and Net Exports

The domestic demand for goods is an increasing function of income (output). (Panel a)
The demand for domestic goods is obtained by subtracting the value of imports from domestic demand, and then adding exports. (Panel b)
19-1 The IS Relation in an Open Economy

Putting the Components Together

**Figure 19 – 1**

*The Demand for Domestic Goods and Net Exports*

The demand for domestic goods is obtained by subtracting the value of imports from domestic demand, and then adding exports. (Panel c)

The trade balance is a decreasing function of output. (Panel d)
19-2 Equilibrium Output & the Trade Balance

Figure 19 – 2

Equilibrium Output and Net Exports

The goods market is in equilibrium when domestic output is equal to the demand for domestic goods. At the equilibrium level of output, the trade balance may show a deficit or a surplus.
19-3 Increases in Demand, Domestic or Foreign

Increases in Domestic Demand

Figure 19 – 3

*The Effects of an Increase in Government Spending*

An increase in government spending leads to an increase in output and to a trade deficit.
19-3 Increases in Demand, Domestic or Foreign

Increases in Foreign Demand

Figure 19 – 4

The Effects of an Increase in Foreign Demand

An increase in foreign demand leads to an increase in output and to a trade surplus.
19-3 Increases in Demand, Domestic or Foreign

Fiscal Policy Revisited

• The so-called G7 – the seven major countries of the world – meet regularly to discuss their economic situation; the communiqué at the end of the meeting rarely fails to mention coordination. The fact is that there is very limited macro-coordination among countries. Here’s why:

  – Some countries might have to do more than others and may not want to do so.

  – Countries have a strong incentive to promise to coordinate, and then not deliver on that promise.
19-4 Depreciation, the Trade Balance, and Output

• Recall that the real exchange rate is given by:

\[ \varepsilon \equiv \frac{EP}{P^*} \]

• In words:

\[ \varepsilon \]

• The real exchange rate, \( \varepsilon \), is equal to the nominal exchange rate, \( E \), times the domestic price level, \( P \), divided by the foreign price level, \( P^* \).
Depreciation and the Trade Balance: The Marshall–Lerner Condition

\[ NX = X(Y^*, \varepsilon) - IM(Y, \varepsilon) / \varepsilon \]

As the real exchange rate \( \varepsilon \) enters the right side of the equation in three places, this makes it clear that the real depreciation affects the trade balance through three separate channels:

- **Exports**, \( X \), increase.
- **Imports**, \( IM \), decrease
- The relative price of foreign goods in terms of domestic goods, \( 1/\varepsilon \), increases.

**The Marshall-Lerner condition is the condition under which a real depreciation (a decrease in \( \varepsilon \)) leads to an increase in net exports.**
19-4 Depreciation, the Trade Balance, & Output

Combining Exchange Rate and Fiscal Policies

**Figure 19 – 5**

*Reducing the Trade Deficit without Changing output*

To reduce the trade deficit without changing output, the government must both achieve a depreciation and decrease government spending.
If the government wants to eliminate the trade deficit without changing output, it must do two things:

- It must achieve a depreciation sufficient to eliminate the trade deficit at the initial level of output.
- The government must reduce government spending.

<table>
<thead>
<tr>
<th>Initial Conditions</th>
<th>Trade Surplus</th>
<th>Trade Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low output</td>
<td>$\varepsilon G↑$</td>
<td>$\varepsilon ↓G?$</td>
</tr>
<tr>
<td>High output</td>
<td>$\varepsilon ↑G?$</td>
<td>$\varepsilon ?G↓$</td>
</tr>
</tbody>
</table>

Q: How is this related to “global rebalancing”??
Looking at Dynamics: The J-Curve

A real depreciation leads initially to a deterioration and then to an improvement of the trade balance.

**Figure 19 – 6**

*The J-Curve*

Net exports, NX

Depreciation

Time

A

B

C
19-5 Looking at Dynamics: The J-Curve

The Real Exchange Rate and the Ratio of the Trade Deficit to GDP: United States, 1980 to 1990

The real appreciation and depreciation of the dollar in the 1980s were reflected in increasing and then decreasing trade deficits. There were, however, substantial lags in the effects of the real exchange rate on the trade balance.
The U.S. Trade Deficit: Origins and Implications

Table 1  Average Annual Growth Rates in the United States, the European Union, and Japan since 1991 (percent per year)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>2.5</td>
<td>4.1</td>
<td>3.4</td>
</tr>
<tr>
<td>European Union</td>
<td>2.1</td>
<td>2.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Japan</td>
<td>1.5</td>
<td>1.5</td>
<td>1.6</td>
</tr>
</tbody>
</table>
The U.S. Trade Deficit: Origins and Implications

Figure 1  U.S. Net Saving and Net Investment since 1996 (percent of GDP)