BB Chapter 18: Exchange Rates and the Macroeconomy

The rate at which one currency is exchanged for another is the exchange rate.

Here are some exchange rates as of November 12, 2004:

<table>
<thead>
<tr>
<th></th>
<th>USD</th>
<th>GBP</th>
<th>CAD</th>
<th>EUR</th>
<th>AUD</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD</td>
<td>1</td>
<td>1.8552</td>
<td>0.838996</td>
<td>1.29729</td>
<td>0.768497</td>
</tr>
<tr>
<td>GBP</td>
<td>0.539025</td>
<td>1</td>
<td>0.45224</td>
<td>0.699276</td>
<td>0.414239</td>
</tr>
<tr>
<td>CAD</td>
<td>1.1919</td>
<td>2.21121</td>
<td>1</td>
<td>1.54625</td>
<td>0.915972</td>
</tr>
<tr>
<td>EUR</td>
<td>0.770832</td>
<td>1.43004</td>
<td>0.646725</td>
<td>1</td>
<td>0.592382</td>
</tr>
<tr>
<td>AUD</td>
<td>1.30124</td>
<td>2.41406</td>
<td>1.09173</td>
<td>1.68809</td>
<td>1</td>
</tr>
</tbody>
</table>

For example, one U.S. dollar (USD) may be exchanged for 0.54 British pounds, 1.19 Canadian dollars, 0.77 Euros or 1.30 Australian dollars.

Alternatively, if you were buying the other currencies with dollars, you would pay $1.85 for a British pound, $0.84 for a Canadian dollar, $1.30 for a Euro and $0.77 for an Australian dollar.

When there is trading between countries, it is said to be an open economy.

The equation determining GDP is:

\[ Y = C + I + G + EX - IM \]

Exports, EX, depend on a variety of things:
1. Economic conditions in other countries – when growth is higher or unemployment is lower in another country, exports will be higher.
2. The relative prices of goods in different countries – when a country’s goods are relatively inexpensive its exports will tend to be higher.
3. Exchange rates – a depreciation in a country’s exports should make its goods relatively cheaper and its exports will be higher.
So, when the money supply is tightened and interest rates rise, foreigners will demand more of a country’s currency so that they can invest at the higher interest rates and a country’s exports will suffer as a result.

When the central expands the money supply and interest rates fall, foreigners will demand less of a country’s currency because they will be less interested in investing in that country and as a result the country’s exports will rise.

So, a depreciated currency is good, because you get more exports and GDP rises, right?

Well sort of, but there’s a bit of a problem.

**Golly, there’s a supply side here, too?**

If your country purchases a large quantity of an input in international markets (like, say, oil or computers) then when your country’s currency falls in value, there’s an effect on aggregate supply.

The higher price for the input reduces aggregate supply, causing higher prices and reduced output.

So, putting this together, an increase in the value of the dollar decreases AD but increases AS.

A decrease in the value of the dollar increases AD but decreases AS.

**An In Class Exercise**

So, when the central bank changes the money supply, you might try to combine the effects of changing interest rates on the AS/AD model with the effect of the resulting changes in exchange rates on the AS/AD model.

**Fiscal Policy and Monetary Policy in an Open Economy**

Expansionary fiscal policy often involves increased government borrowing. This borrowing increases interest rates, attracting foreign investment and increasing the value of the currency. Increased value of currency reduces net exports and reduces GDP, the opposite of the goal of expansionary fiscal policy. So, being in an open rather than a closed economy reduces the effectiveness of fiscal policy.
Putting it another way,

Contractionary fiscal policy often involves decreased government borrowing. This reduced borrowing decreases interest rates, reducing foreign investment and lowering the value of the currency. Decreased value of currency increases net exports and raises GDP. So, being in an open rather than a closed economy reduces the effectiveness of fiscal policy.

At the same time, being in an open economy increases the effectiveness of monetary policy.

Expansionary monetary policy lowers interest rates, decreases the value of the currency and increases net exports.

**Trade Deficits, Government Deficits, Capital Accounts, Current Accounts, Etc.**

Golly there’s a lot to cover here. Happily, it can all be done with circular flows.

To put this together, consider that:

\[ Y = C + I + G + (EX - IM) \]

\[ Y = C + S + T \]

A bit of algebra yields:

\[ S + (IM - EX) = I + (G - T) \]
which is equivalent to saying that the amount of money flowing into financial markets is equal to the amount of money flowing out of financial markets.

This equation can be rewritten as:

\[ I = S + (T - G) + (IM - EX) \]

So, if the government is running a huge deficit and the country has a huge trade deficit, these things really balance each other out, so that investment may be maintained.

Capital inflows from the rest of the world (because IM – EX is so huge) balance out both the trade deficit (a.k.a. the current account deficit) and the government spending deficit.

So, basically, as long as foreigners are still willing to increase their investments in the U.S., the capital accounts surplus will continue to balance the current account deficit (a.k.a. the trade deficit).

However, if foreigners decide that they’re done investing in the U.S., the value of the dollar will plummet. This will do wonders for our trade deficit, but you’d better plan on canceling that European vacation you were hoping for.