Slides for Chapter 2:

Current Account Sustainability

*International Macroeconomics*

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Motivation

A natural question that arises from our description of the recent history of the U.S. external accounts is whether the observed trade balance and current account deficits are sustainable in the long run. In this chapter, we develop a framework to address this question.
Can a Country Run a Perpetual Trade Balance Deficit?

It depends on whether the country is a net debtor or a net creditor. If it is a net debtor, that is, if its net international investment position is negative, then the answer is not. For in this case, the country will have to run a trade balance surplus at some point to service its debt.

If the country is a net creditor of the rest of the world, that is, if its net international investment position is positive, then it can run a perpetual trade deficit and finance it with the interest generated by its net investments abroad.

Let’s analyze this issue more formally.
Consider an economy that lasts for two periods. It starts period 1 with a net foreign asset position of $B_0^*$. Let $r$ denote the interest rate. Then, the country’s net investment income in period 1 is given by $rB_0^*$. Let the trade balance be denoted $TB_1$. Then, the country’s net international investment position at the end of period 1 is

$$B_1^* = (1 + r)B_0^* + TB_1$$ (1)

A similar expression holds in period 2

$$B_2^* = (1 + r)B_1^* + TB_2$$ (2)

Now at the end of period 2, the country cannot hold assets or debts, because no one will be alive in period 3 to collect (the world ends in period 2). This means that

$$B_2^* = 0.$$ (3)
Combining (1), (2), and (3) yields

\[(1 + r)B^*_0 = -TB_1 - \frac{TB_2}{(1 + r)} \]  

(4)

which states that the net foreign asset position (including interest) equals the present discounted value of its future trade deficits. It is clear from this expression that if the country is a net debtor, \( B^*_0 < 0 \), then it must run a trade balance surplus at some point. However, if the country is a net creditor of the rest of the world, \( B^*_0 > 0 \), then it can afford running trade deficits in both periods. This result holds not just for two-period economies, but for economies lasting any number of periods, including an infinite number of periods.

Since the U.S. is a net debtor, the present analysis implies that it will have to revert its trade balance deficits at some point in the future.
Can a Country Run a Perpetual Current Account Deficit?

The answer to this question is, again, yes, provided the country’s initial net foreign asset position is positive. To see this, recall that, in the absence of valuation changes, the change in the net international investment position is the current account

\[ CA_1 = B^*_1 - B^*_0 \]

Similarly, in period 2 we have

\[ CA_2 = B^*_2 - B^*_1 \]

Combining these two expressions to eliminate \( B^*_1 \) and recalling that \( B^*_2 = 0 \), we obtain

\[ B^*_0 = -CA_1 - CA_2 \]

which implies that the country can run current account deficits in both periods only if the initial net asset position is positive. This result holds for economies lasting any finite number of periods.
Savings, Investment, and the Current Account

In any period, say period 1, savings, investment, and the current account are linked by the identity

\[ CA_1 = S_1 - I_1 \]

This expression is intuitive. Savings in excess of what is needed to finance domestic investment must be allocated to purchases of foreign assets. But the change in the net foreign asset position is precisely the current account.

To derive the above identity more formally, recall that a country’s aggregate supply of goods and services in any given period, say period 1, is the sum of gross domestic product, denoted \( Q_1 \), and imports, denoted \( IM_1 \). The aggregate demand for goods and services is the sum of private consumption, \( C_1 \), government consumption, \( G_1 \), investment, \( I_1 \), and exports, denoted \( X_t \).

\[ Q_1 + IM_1 = C_1 + G_1 + I_1 + X_1 \]
Now add net investment income, or \( rB_0^* \), to both sides of the previous expression and recall that the trade balance is the difference between imports and exports, or \( TB_1 = X_1 - IM_1 \), to get

\[
Q + rB_0^* = C_1 + G_1 + I_1 + TB_1 + rB_0^*
\]

The sum of GDP and net investment income is known as National Income, denoted \( Y_1 \). Also, recall that the sum of net investment income and the trade balance is the current account, or \( CA_1 = rB^*0 + TB_1 \). Thus, we can write

\[
Y_1 = C_1 + G_1 + I_1 + CA_1
\]

Finally, the difference between national income and private and public consumption is national savings, or \( S_1 = Y_1 - C_1 - G_1 \). Combining this expression with the one above, we get the expression we were looking for

\[
CA_1 = S_1 - I_1
\]