Slides for Chapter 2

Current Account Sustainability

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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 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 no. 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

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

A similar expression holds in period 2

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

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

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

\[(1 + r)B_0^* = -TB_1 - \frac{TB_2}{1 + r}\]  

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 United States 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 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, \( X_1 \):

\[ Q_1 + IM_1 = C_1 + G_1 + I_1 + X_1 \]
Now add net investment income, \( rB^*_0 \), 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

\[
Q_1 + rB^*_0 = C_1 + G_1 + I_1 + TB_1 + rB^*_0
\]

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,

\[
CA_1 = rB^*_0 + TB_1.
\]

Thus, we can write

\[
Y_1 = C_1 + G_1 + I_1 + CA_1 \tag{5}
\]

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

\[
CA_1 = S_1 - I_1
\]
Domestic Absorption, National Income, and the Current Account

Domestic absorption is defined as the sum of private consumption, government consumption, and investment. Letting $A_1$ denote domestic absorption, we have

$$A_1 = C_1 + G_1 + I_1$$

combining this expression with (5), we can express the current account as

$$CA_1 = Y_1 - A_1,$$

which states that the current account is the gap between national income and the domestic absorption of goods and services.
Change in the Net International Investment Position and the Current Account

We saw in chapter 1 that, absent valuation changes, current account surpluses increase a country’s net foreign asset position and current account deficits decrease it. In the notation of this chapter, the change in the country’s net foreign asset position is $B_1^* - B_0^*$. Thus, we have that

$$CA_1 = B_1^* - B_0^*.$$
Summing Up

- A country that is a net external debtor cannot run a perpetual trade balance deficit.

- A country that is a net external debtor cannot run a perpetual deficit in the current account. This result applies to economies that last for any finite number of periods.

- We derived four alternative expressions for the current account:

  \[ C A_t = B^*_t - B^*_{t-1} \]
  \[ C A_t = rB^*_{t-1} + TB_t \]
  \[ C A_t = S_t - I_t \]
  \[ C A_t = Y_t - A_t \]
The Road Ahead

- All four of the above expressions for the current account are accounting identities. They do not provide any explanation, or theory, of the determinants of the current account.

- To understand what determines the current account we need a model, that is, a story of the economic behavior of households, firms, governments, and foreign residents. This is the focus of the following chapters.