# International Economics II

## Current Account Sustainability

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# Outline

1. Two-Period Framework for the Current Account

2. Savings, Investment, and the Current Account

# Motivation

- As we saw in the previous section, the U.S. has been able to experience extended periods of current account deficits, while Spain's current account has fluctuated over time.
- In general, some countries are able to maintain deficits for extended periods of time, while others experience reversals, which start with sudden stops
- We have witnessed these reversals throughout history, across different global monetary regimes.

# Motivation

**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 NIIP 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 NIIP 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.

# Outline

# Two-Period Framework

- Consider an economy that lasts for two periods. Let $r$ denote the interest rate and $TB_t$ the trade balance at period $t$.
- It starts period 1 with a net foreign asset position of $B_0^*$. Then, the country's net investment income in period 1 is given by $rB_0^*$. The country's NIIP at the end of period 1 is:

$$B_1^* = (1+r)B_0^* + TB_1 \tag{1}$$

- A similar expression holds in period 2: $B_2^* = (1+r)B_1^* + TB_2$
- Combing both expressions (substitute $B_1^*$):

$$(1+r)B_0^* = \frac{B_2^*}{(1+r)} - TB_1 - \frac{TB_2}{(1+r)} \tag{2}$$

# Two-Period Framework

- At the end of period 2, the country cannot hold debts, because no one will be alive in period 3 to collect (the world ends in period 2). This means that: $B_2^* \geq 0$.
- This restriction is known as the no-Ponzi-game condition.
- On the other hand, would a country want to hold external assets ($B_2^* > 0$)? This would apply that the country would need to collect payments in period 3, but the world no longer exits... $\Rightarrow B_2^* = 0$.
- Plugging this equality into (2) yields:

$$(1+r)B_0^* = -TB_1 - \frac{TB_2}{(1+r)} \tag{3}$$

# Two-Period Framework

- Equation (3) states that a country's time 0 NFA 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.
- Give that the U.S. has been a large net debtor in its recent history, the present analysis implies that it will have to revert its trade balance deficits at some point in the future.
- This result holds for economies lasting finite and infinite number of periods.
- This simple framework also points persistent trade deficits as potentially important predictors for current account reversals.

# Can a Country Run a Perpetual Current Account Deficit?

- The answer to this question is 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 NIIP is the current account:

$$CA_1 = B_1^* - B_0^* \tag{4}$$
$$CA_2 = B_2^* - B_1^* \tag{5}$$

- Combining these both expressions and recalling $B_2^* = 0$ $\Rightarrow B_0^* = -CA_1 - CA_2$.
- 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.
- In infinite number of periods, a net external debtor can run CA deficit indefinitely, if the economy is growing and dedicates a growing amount of resources to pay interest on the debt.

# Outline

# Current Account

- We can use the identities for the external account introduced so far to express the current account in different ways:
  1. Change in the NIIP:

$$CA_t = B_t^* - B_{t-1}^* \tag{6}$$

  2. Reflection of trade balance:

$$CA_t = TB_t + rB_{t-1}^* \tag{7}$$

- Thus far we have taken the trade balance as given. However, a country's levels of imports and exports are dependent on decisions made in the domestic economy.
- The next step is to relate the domestic and external national accounts for a more complete framework for the current account.

# National Accounting Identity

- The trade balance at time $t$ is simply the difference between exports $(X)$ and imports $(M)$:

$$TB_t = X_t - M_t \tag{8}$$

- Using the **National Accounting Identity**, e.g. supply of goods and services (G&S) must equal demand in the economy at $t$:

$$Q_t + M_t = C_t + I_t + G_t + X_t \tag{9}$$

- where:
  - $Q_t$: amount of final G&S produced domestically (i.e., GDP).
  - $C_t$: amount of final G&S consumed domestically by private sector.
  - $G_t$: amount of final G&S consumed domestically by the government.
  - $I_t$: amount of final G&S used for domestic investment.

# Current Account, Supply and Demand

- We can now begin to express the current account as a function of domestic-only variables.
- By rearranging the previous equations:

$$TB_t = Q_t - C_t - I_t - G_t. \tag{10}$$

- Take the definition of the current account in equation (8):

$$CA_t = rB^*_{t-1} + Q_t - C_t - I_t - G_t. \tag{11}$$

- Note that national income at $t$ is the sum of domestic GDP and interest payments on the NIIP: $Y_t = Q_t + rB^*_{t-1}$.
- Hence:

$$CA_t = Y_t - C_t - I_t - G_t. \tag{12}$$

# Savings, Investment, and the Current Account

- Notice that national savings $S_t$ at time $t$ is given by:

$$S_t = Y_t - C_t - G_t. \tag{13}$$

- which we combined with the previous equation yields an expression of the CA in terms of national savings and investment:

$$CA_t = S_t - I_t. \tag{14}$$

- Therefore, a country's CA position will react to savings and investment decisions in the economy. This opens the door for domestic policies to impact a country's external position . . . such policies as?

# Domestic Absorption and the Current Account

- We can derive one final expression for the current account, which relates the current account to domestic absorption $(A)$:

$$A_t = C_t + I_t + G_t. \tag{15}$$

- Simply substitute the expression for At into (13) to arrive at

$$A_t = C_t + I_t + G_t.. \tag{16}$$

- Hence, a country will run a current account deficit when domestic absorption exceeds income.

# Practical Insights

- We have **four** different expressions for the Current Account:

$$CA_t = B_t^* - B_{t-1}^* \tag{17}$$
$$CA_t = TB_t + rB_{t-1}^* \tag{18}$$
$$CA_t = S_t - I_t \tag{19}$$
$$CA_t = C_t + I_t + G_t. \tag{20}$$

- They are all based on national accounting identities and must be satisfied at all times in any economy.
- Furthermore, the framework is internally consistent, and points to the crucial link between the current account, and a variety of variables, such as the trade balance, or savings and investment.
- But do not provide a theory/model of behavior of agents in the economy (consumers, government, etc.).

# Practical Insights

- Is a current account deficit necessarily good or bad?
- We have a basic framework to look at what might be driving the deficit, but from the perspective of policy makers "it all depends".
- As Ghosh and Ramakrishnan (2012) note, a deficit might indicate a loss of competitiveness leadings to imports being larger than exports ("bad"), but it might also reflect investment being larger than savings due to a highly productive and growing economy ("good").
- Just by looking at the identity equations we cannot say in which world are we living in.
- 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.

# Taking Stock

- 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 (unless in very special conditions).
- We derive four equations that connect the national identities with the current account..
- But they do not provide any explanation, or theory, of the determinants of the current account and whether the surplus/deficit is good/bad.