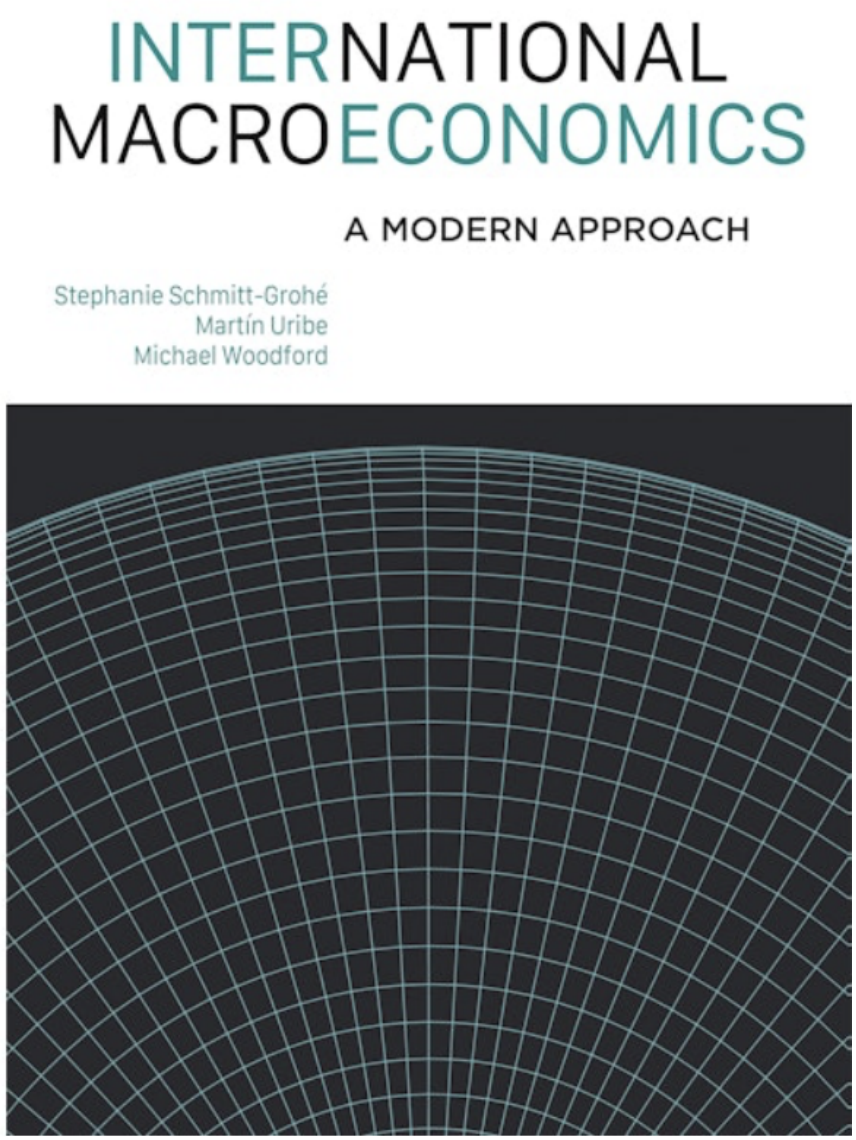

Princeton University Press, 2022

Slides EC201

Chapter 2 Summary

Trade Balance and Current Account Sustainability

Last week we asked two central questions:

1. Can a net debtor run **perpetual trade balance deficits**?
2. Can a net debtor run **perpetual current account deficits**?

Introduced Notations that we will continue using:

- B_t = Net International Investment Position (NIIP) or Net Foreign Assets Position
- TB_t = Trade balance, CA_t = Current account
- r = Interest rate

Accounting Identities:

$$CA_t = TB_t + rB_{t-1}$$
$$B_t = (1+r)B_{t-1} + TB_t$$

Finite Horizon: Two-Period Economy

Terminal condition is key: $B_2 = 0$

Derived Sustainability Condition easily, combining the above accounting identities:

$$\boxed{(1+r)B_0 = -TB_1 - \frac{TB_2}{1+r}}$$

If a country starts as a Net Debtor ($B_0 < 0$):

- Cannot run perpetual TB deficits. Must run surplus in at least one period for the above expression to hold.

- Cannot run perpetual CA deficits, from the expression $\boxed{B_0 = -CA_1 - CA_2}$, at least one period must have $CA > 0$.

Infinite Horizon: Trade Balance

The difference with a finate horizon is that there is no terminal date, but the transversaility condition must be satisfied:

$$\boxed{\lim_{T\to\infty} \frac{B_T}{(1+r)^T} = 0}$$

(No-Ponzi-Game: present value of debt must vanish, which **does not** *mean that debt "goes to zero")*

This implies:

$$B_0 = -\sum_{t=1}^{\infty} \frac{TB_t}{(1+r)^t}$$

Trade Balance Result: SAME as finite horizon

- Net debtor **cannot** run perpetual TB deficits
- Must have $TB > 0$ at some point (repay real resources)

Infinite Horizon: Current Account

Debt-servicing policy: Pay fraction $\alpha \in (0,1)$ of interest via trade surplus

$$TB_t = -\alpha r B_{t-1} \quad \Longrightarrow \quad B_t = [1 + r(1-\alpha)]B_{t-1}$$

Current account:

$$CA_t = TB_t + rB_{t-1} = r(1-\alpha)B_{t-1} < 0$$

Perpetual CA deficits! But is this sustainable?

Check transversality:

$$\frac{B_T}{(1+r)^T} = \underbrace{\left[\frac{1+r(1-\alpha)}{1+r}\right]^T}_{<1, \to 0} \times B_0 \to 0$$

A country that is a net debtor **CAN** run perpetual CA deficits in infinite horizon!

Conditions for perpetual CA deficits:

- Pay some interest via trade surplus ($\alpha > 0$)
- Debt grows slower than interest rate: $g = r(1 - \alpha) < r$
- **Critical:** GDP must grow $\geq r(1 - \alpha)$ to generate required TB surpluses

Why the difference?

- **Finite:** Hard constraint ($B_T = 0$) $\rightarrow$ must settle all debts
- **Infinite:** Soft constraint (PV $\rightarrow 0$) $\rightarrow$ can "grow out of debt"