INTERNATIONAL MACROECONOMICS
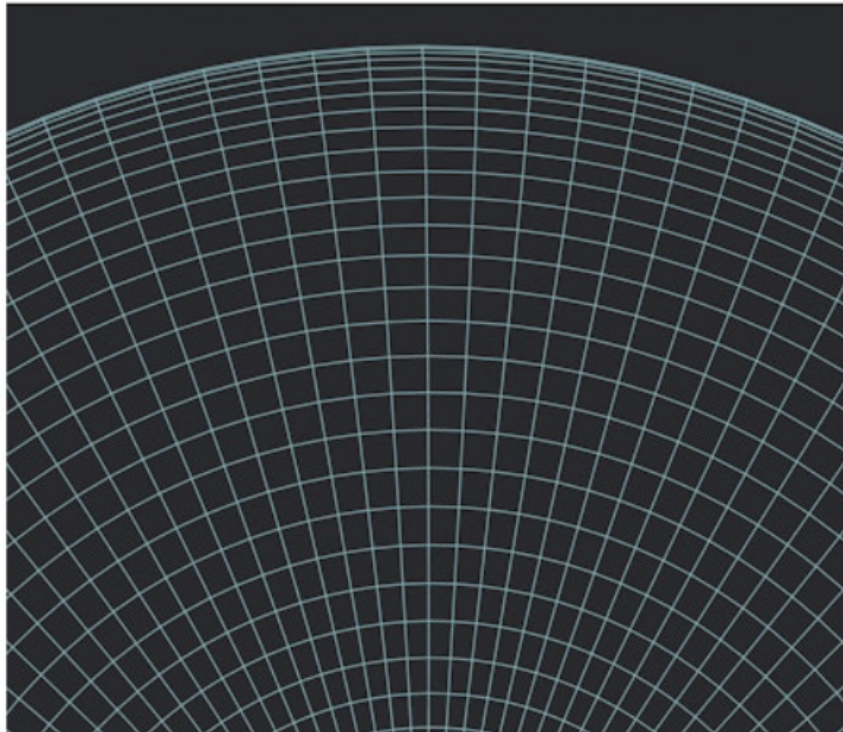
A MODERN APPROACH

Stephanie Schmitt-Grohé
Martín Uribe
Michael Woodford

Slides EC201

Chapter 3 Summary

Theory of the Current Account

Princeton University Press, 2022

In Week 3 we...

- Introduced a simple small open (endowment) economy model

- Solved for the equilibrium levels of consumption, trade balance, current account

- Analysed how shocks to the endowment affect the chosen allocations:

- Made a distinction between a temporary and permanent shocks

The Small Open Economy Model

Key Assumptions:

- **Small**: World prices and interest rates independent of domestic conditions

- **Open**: Trades goods and financial assets with the rest of the World

- Two periods: 1 and 2

- Households receive endowments Q_1 and Q_2 of perishable goods

- Free capital mobility implies: $r_1 = r^*$

Household Problem:

$$\max_{C_1,C_2} \quad U(C_1) + \beta U(C_2)$$

$$\text{s.t.} \quad C_1 + \frac{C_2}{1+r_1} = (1+r_0)B_0 + Q_1 + \frac{Q_2}{1+r_1}$$

Equilibrium Conditions

An equilibrium consists of (C_1, C_2, r_1) satisfying:

1. **Intertemporal Budget Constraint:**

$$C_1 + \frac{C_2}{1 + r_1} = (1 + r_0)B_0 + Q_1 + \frac{Q_2}{1 + r_1}$$

2. **Euler Equation (optimality):**
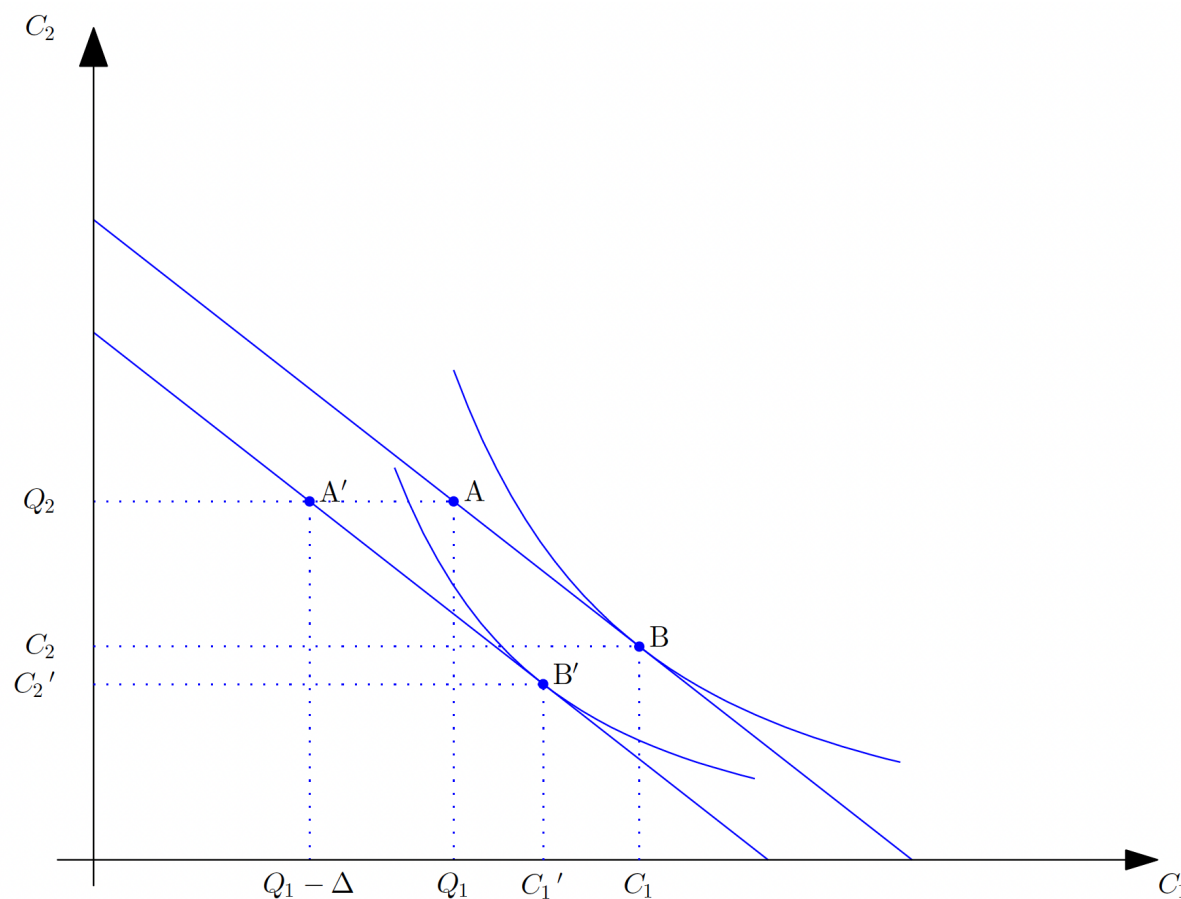
$$U'(C_1) = (1 + r_1)\beta U'(C_2)$$

3. **Interest Rate Parity:**

$$r_1 = r^*$$

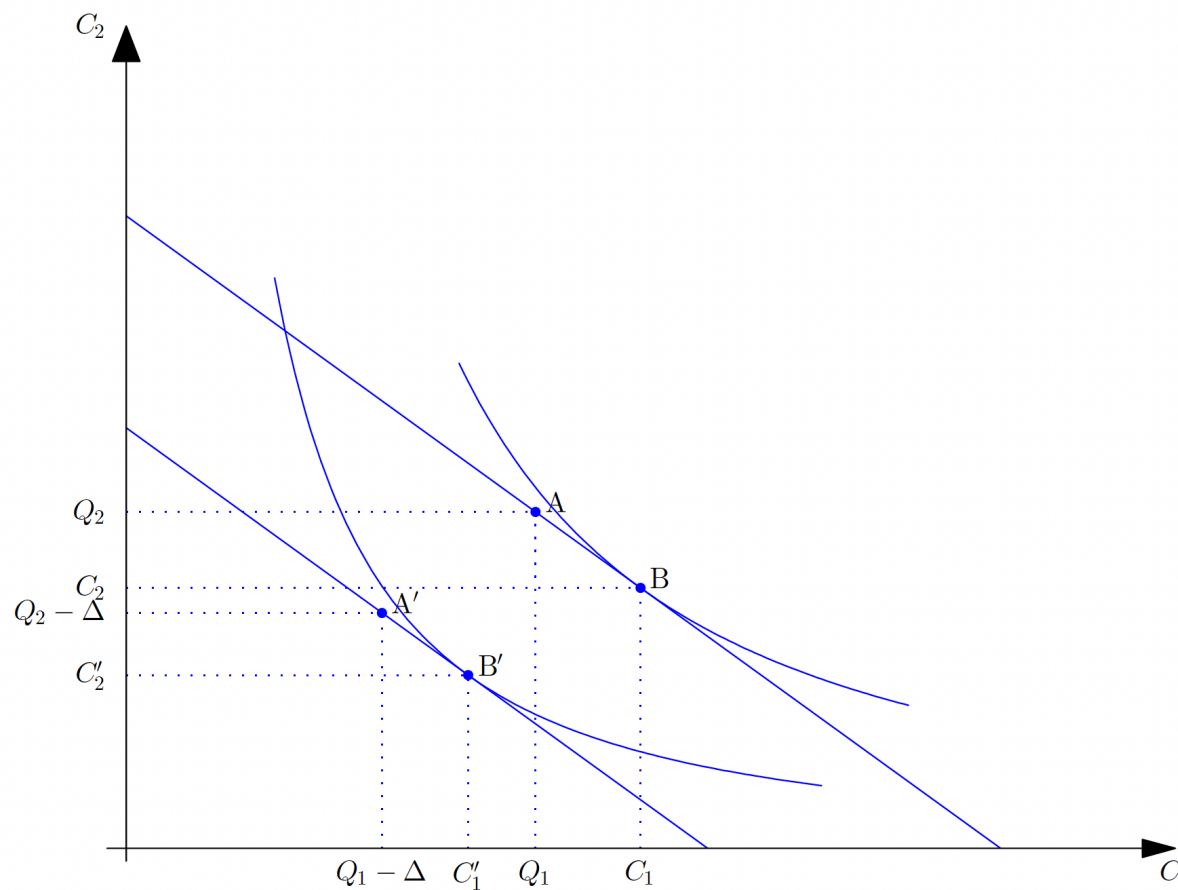## Trade Balance & Current Account:

$$TB_1 = Q_1 - C_1 \quad \text{and} \quad CA_1 = TB_1 + r_0 B_0$$

Adjustment to a Temporary Decline in Output

Notes: The figure depicts the adjustment of the economy to a decline in the period 1 endowment equal to Δ. The endowment point shifts left from point A to point A′ and the optimal consumption path shifts from point B to point B′. Period 1 consumption declines by less than Δ. The period 1 trade balance becomes more negative, $Q_1 - \Delta - C_1' < Q_1 - C_1$. The figure is drawn under the assumption that the household's initial asset position is zero, $B_0 = 0$.

Adjustment to a Permanent Decline in Output

Notes: The figure depicts the adjustment to a decline in Q_1 and Q_2 equal to Δ. The endowment point A shifts down and to the left to point A'. The intertemporal budget constraint shifts down in a parallel fashion. The optimal consumption path (C_1, C_2) shifts from point B to point B'. The figure is drawn for the case $B_0 = 0$. The period 1 trade balance is little changed.

General Principle

Comparing the effects of temporary and permanent output shocks on the current account, the following general principle emerges:

- Economies tend to finance temporary shocks (by borrowing or lending on international capital markets) and

- adjust to permanent ones (by varying consumption in both periods up or down).
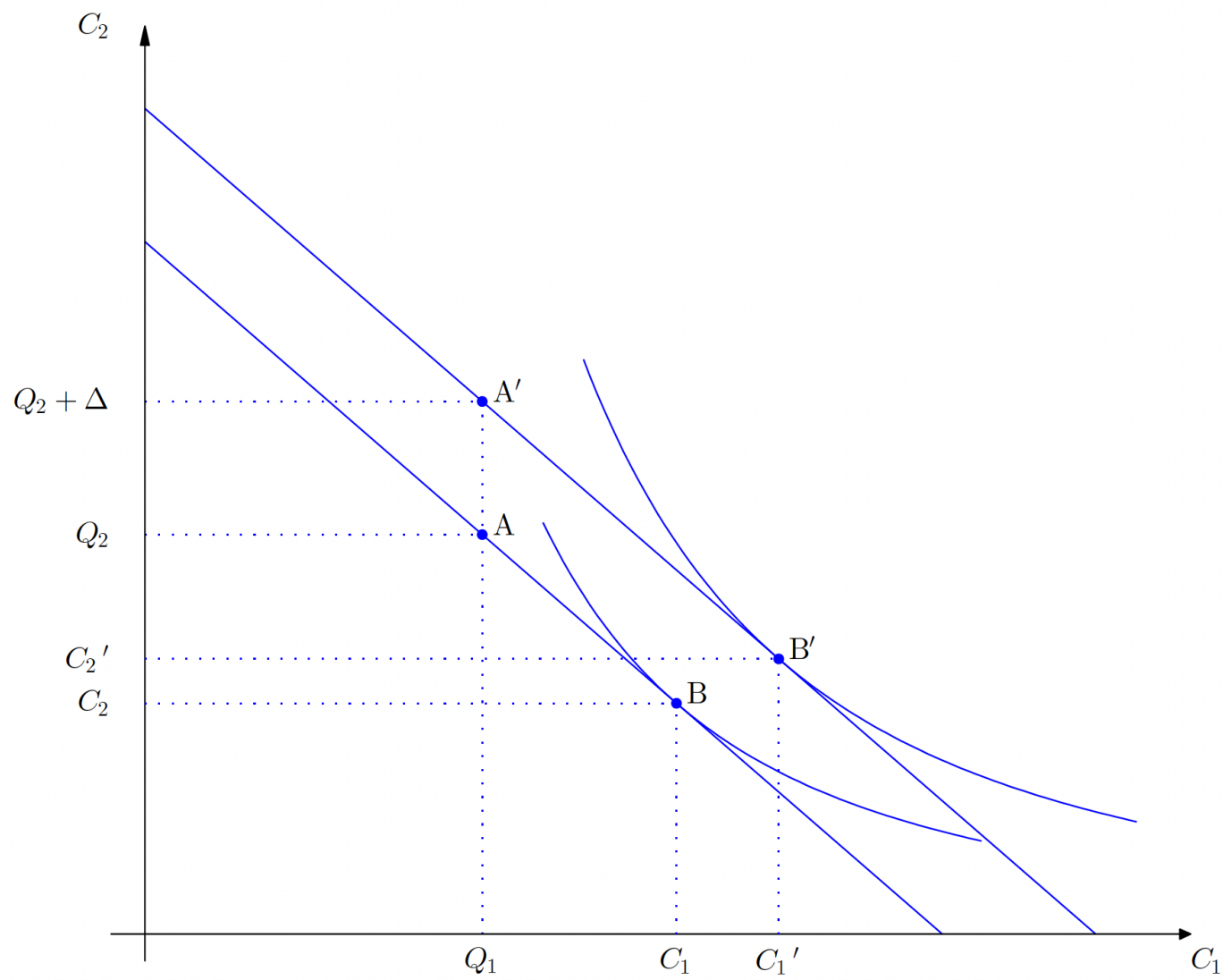
Anticipated Income Shocks

Consider now the case that in period 1 households learn that their endowment, Q_2, will be higher in period 2.

What will be the effect of this news on: consumption, the domestic interest rate, the trade balance, and the current account?

The figure on the next slide depicts the adjustment to an anticipated increase in Q_2 equal to $\Delta > 0$. The intertemporal budget constraint shifts up by Δ. The increase in the period-2 endowment causes an increase in period-1 consumption from C_1 to C_1'. Because the endowment in period 1 is unchanged, the period-1 trade balance and current account deteriorate.

Thus, good news about the future lead to a deterioration of the current account. This shows that current account deficits are not necessarily an indication of a weak economy.

Adjustment to an Anticipated Increase in Output

Summary

1. **Consumption Smoothing:**

   - Households prefer stable consumption over time (remember the concave utility function graphs)

   - Use international borrowing/lending to achieve the desired consumption allocation

2. **Current Account as Buffer:**

   - Temporary shocks $\Rightarrow$ large CA movements

   - Permanent shocks $\Rightarrow$ small CA movements

3. **Interpreting CA Deficits:**

- Not always a sign of weakness

- May reflect optimism about future growth

- Depends on nature of underlying shocks

4. **Free Capital Mobility:**

- Equalises domestic and world interest rates

- Allows optimal intertemporal allocation