

EC201 Macroeconomics 2, Term 1 2025
University of Warwick
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Support and Feedback Class 4 (week 6)
Current Account Determination in a Production Economy

Pre-Class Review Questions

A. Pre-class Review Questions These review questions are designed to help you reflect on the lecture material and check your understanding. You must complete them before the support and feedback class. At the start of the class, you will need to show your answers to your tutor, who will record both your attendance and preparation. If you have any doubts about the questions, you can ask your tutor at the beginning of the session. Please note that review questions will not be discussed in detail during the class; however, brief answers will be posted on Moodle before the test and exam.

1. **An Economy With Investment:** Consider a two-period model of a small open economy with a single good each period. Let preferences of the representative household be described by the utility function:

$$U(C_1, C_2) = \ln(C_1) + \ln(C_2),$$

where C_1 and C_2 denote, respectively, consumption in periods 1 and 2 and \ln denotes the natural logarithm. In period 1, the household receives an endowment of $Q_1 = 10$. In period 2, the household receives profits, denoted by Π_2 , from the firms it owns. Households and firms have access to financial markets where they can borrow or lend at the interest rate r_1 . (r_1 is the interest rate on assets held between periods 1 and 2.) Firms invest in period 1 to be able to produce goods in period 2. The production technology in period 2 is given by:

$$Q_2 = \sqrt{I_1},$$

where Q_2 and I_1 denote, respectively, output in period 2 and investment in period 1. Assume that there exists free international capital mobility and that the world interest rate, r^* , is 10% per period (i.e., $r^* = 0.1$). Finally, assume that the economy's initial net foreign asset position is zero ($B_0^* = 0$).

- (a) Compute the firm's optimal levels of period-1 investment and period-2 profits.
- (b) State the maximization problem of the representative household and solve for the optimal levels of consumption in periods 1 and 2.
- (c) Find the country's net foreign asset position at the end of period 1, the trade balance in periods 1 and 2, and the current account in periods 1 and 2.
- (d) Now consider an investment surge. Specifically, assume that as a result of a technological improvement, the production technology becomes $Q_2 = 2\sqrt{I_1}$. Find the equilibrium levels of savings, investment, the trade balance, the current account, and the country's net foreign asset position in period 1. Compare your results with those obtained in items 1-3. providing interpretation and intuition.

B. In-class Questions to be distributed in class by tutors.

C. Self-study Questions to be distributed in class by tutors.