

Problem Set 7

Solve before the classes March 26–28.

Exercise 1

Consider a private ownership economy $(\{(X_i, \succsim_i)\}_{i=1}^I, \{Y_j\}_{j=1}^J, \{(\omega_i, \theta_{i1}, \dots, \theta_{iJ})\}_{i=1}^I)$. Given an allocation (x, y) we naturally let $z_i = x_i - \omega_i$ denote consumer i 's net trade.

- Explain that z_i denotes the goods bundle acquired from the market by consumer i in order to move from the initial endowment ω_i to the consumption x_i .
- Explain that y_j is the goods bundle that firm j delivers to the market.
- Explain that the allocation (x, y) is feasible if and only if the market clears: together, the consumers take home precisely the amount delivered to the market by the firms.

Exercise 2

Consider figure 16.C.1 of the book. Carefully explain that x^* and p illustrate a price equilibrium with transfers (as claimed).

Exercise 3

Chapter 16 gives three definitions of equilibrium: Walras equilibrium, price equilibrium with transfers, and price quasi-equilibrium with transfers.

a) Consider a private ownership economy. Show that any Walras equilibrium is also a price equilibrium with transfers. Argue from an Edgeworth box example that the converse is false.

b) Consider an economy specified by $(\{(X_i, \succsim_i)\}_{i=1}^I, \{Y_j\}_{j=1}^J, \bar{\omega})$. Show that any price equilibrium with transfers is also a price quasi-equilibrium with transfers.

c) Assume that all consumers have locally non-satiated preferences. Show that $w_i = p \cdot x_i^*$ holds in any price quasi-equilibrium with transfers.

d) Explain how proposition 16.D.3 follows from proposition 16.D.2.

Exercise 4

Exercise 16.D.1 in Mas-Colell, Whinston and Green. Reconsider the relationship between Proposition 16.D.2 and Proposition 3.E.1 part (ii).