
(1) The private ownership economy \( \mathcal{E} = ((X_i, \preceq), (Y_i), (\omega_i), (\theta_i)) \) has an equilibrium if:

for every \( i \)

(a) \( X_i \) is closed, convex, and has a lower bound for \( \preceq \),

(b.1) there is no satiation consumption in \( X_i \),

(b.2) for every \( x'_i \) in \( X_i \), the sets \( \{ x_i \in X_i \mid x_i \preceq x'_i \} \) and \( \{ x_i \in X_i \mid x_i \not\preceq x'_i \} \) are closed in \( X_i \),

(b.3) if \( x^1_i \) and \( x^2_i \) are two points of \( X_i \) and if \( t \) is a real number in \( ]0,1[ \), then \( x^2_i > x^1_i \) implies \( t x^2_i + (1 - t) x^1_i > x^1_i \),

(c) there is \( x^0_i \) in \( X_i \) such that \( x^0_i \ll \omega_i \),

for every \( j \)

(d.1) \( 0 \in Y_j \),

(d.2) \( Y \) is closed and convex,

(d.3) \( Y \cap (-Y) \subset \{0\} \),

(d.4) \( Y \supset (-\Omega) \).