Corrected Question 2

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Related to Starr's *General Equilibrium Theory*, problem 7.9. Consider a two-person, two- commodity pure exchange economy, an Edgeworth Box, with $X^i \equiv R^2_+$ for both households. Households are named i = 1, 2. Assume axioms C.I - C.V, C.VII, C.VIII. This is an economy without active production so assume $\mathcal{Y}^j \equiv \{0\}$ (the set whose only element is the zero vector) for all $j \in F$. Note that this specification of $\mathcal{Y}^j$ trivially fulfills P.II, P.III, P.V, P.VI.

Recall Theorem 7.1: Assume P.II, P.III, P.V, P.VI, C.I–C.V, C.VII, and C.VIII. There is $p^* \in P$ so that p^* is an equilibrium.

• Demonstrate that the Edgeworth Box has a competitive equilibrium price vector, p^*. Hint: Check that Theorem 7.1 applies. If so, then check that p^* clears the Edgeworth Box. That is, show that

$(\tilde{D}^1(p^*) - r^1) + (\tilde{D}^2(p^*) - r^2) = \tilde{D}^1(p^*) + \tilde{D}^2(p^*) - r = 0$ (the zero vector) or $(\tilde{D}^1(p^*) - r^1) + (\tilde{D}^2(p^*) - r^2) = \tilde{D}^1(p^*) + \tilde{D}^2(p^*) - r \le 0$ (the zero vector ; the inequality applies co-ordinatewise) with $p^*_k = 0$ for a good k =1, 2, where the strict inequality holds.