Econ7115: Structural Models and Numerical Methods in Economics
Assignment W8

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1. Consider the following toy version of the model developed by Caliendo et al. (2019)

   - Two regions and one sector, *i.e.* $N = 2$ and $J = 1$, with total labor $L_t = 1$
   - The instantaneous utility function is $U\left(C_t^n\right) = \log\left(C_t^n\right)$, with discount factor $\beta = 0.95$
   - Productivity $A_t^n = 1$ and structure $H^n = 1$ for all t and n.
   - No intermediates and $\xi^n = 0.2$.
   - Migration elasticity $\nu = 5.34$. Trade elasticity $\theta = 4$.
   - Global portfolio share: $\iota^n = 0.5$ for all n
   - Migration cost: $\tau^{ni} = 2$ for $n \neq i$ and $\tau^{nn} = 0$ for all n

   Then

   1. Suppose that $\kappa_t^{ni} = 1.5$ for all t and $n \neq i$. Please define and compute the stationary equilibrium in this toy model.
   2. Suppose that at $t = 0$ the economy is in the stationary equilibrium derived above. Suppose that $\kappa_t^{ni} = 1.2$ for $t = 1, 2, \ldots, \infty$. Please define and compute the sequential competitive equilibrium.