定量マクロ経済学 後半 最終課題

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1. A stationary CE with policy is a list of functions $V(a,h), g_a(a,h), K, H, r, w, \mu(a,h), T$ s.t.

(1) (Household optimization) Taking r and w as given, $V(a,h)$ solves

$$V(a,h) = \max_{a'} u((1+(1-\tau_k)r)a + wh + T - a') + \beta \sum V(a',h')\pi(h'|h) \text{ s.t.}$$

$-\underline{B} \le a' \le (1+(1-\tau_k)r)a + wh + T$ *and* $g_a(a,h)$ is an optimal decision rule.

(2) (Firm optimization) Taking r and w as given, K and H solve firms problem

$$\max_{k.h} F(k,h) - (r+\delta)k - wh \text{ such that } k \ge 0, h \ge 0.$$

(3) (Government) $\tau r K = T$

(4) (Market clearing)

(i) Labor $H = \sum_h h\pi*(h)$,

(ii) Assets $K = \sum_a \sum_h g_a(a,h)\mu(a,h)$,

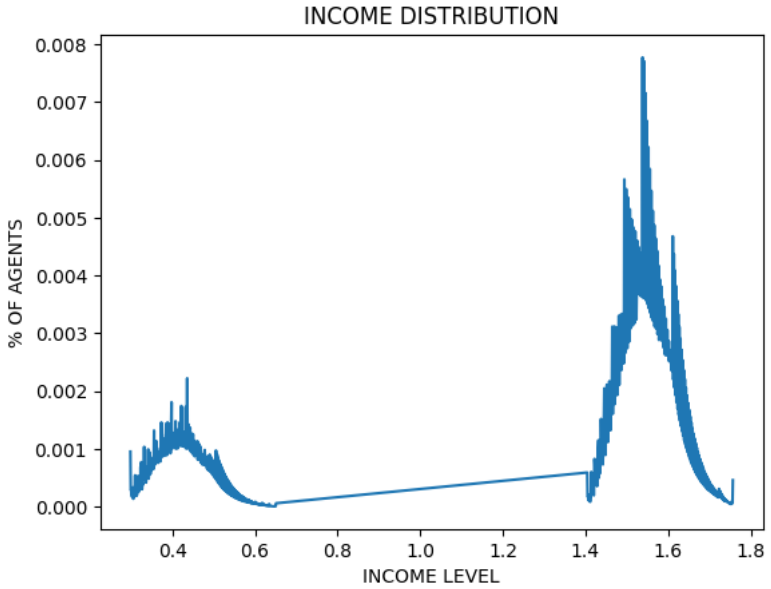
(iii) Goods $F(K,H) = \sum_a \sum_h ((1+(1-\tau_k)r)a + wh + T - g_a(a,h))\mu(a,h) + \delta K$

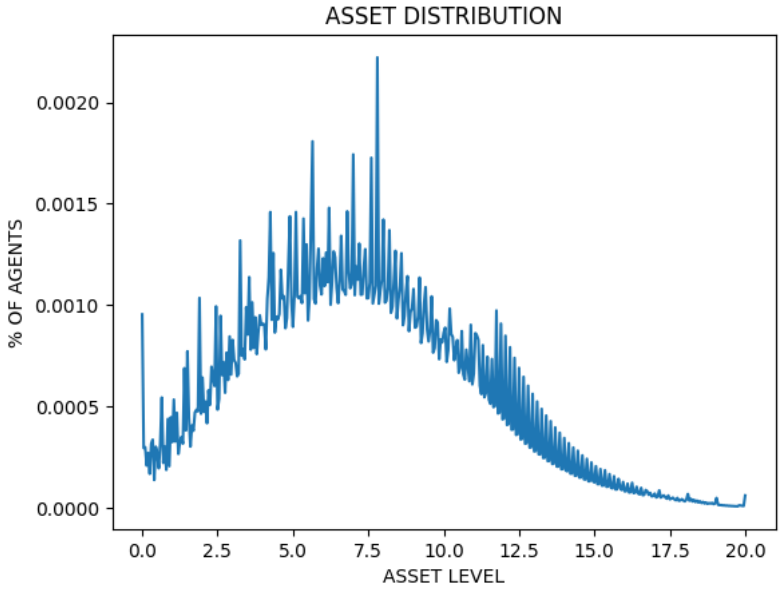
(5) (Aggregate law of motion) Distribution of agents over states μ is stationary

$$\mu(a',h') = \sum_a \sum_h 1\{a : g_a(a,h) \in a'\}\pi(h'|h)\mu(a,h)$$

2. $\tau_k = 0$のときの定常均衡は以下の通りである。
K: 8.041822600504139, r: 0.017633798605864934, w: 1.3033754232108015

また、横軸を所得$wh + ra$、縦軸を各所得ごとの割合とした分布の図 INCOME DISTRIBUTION と、横軸を資産aとした同様の図 ASSET DISTRIBUTION は以下の通りである。





3. $\tau_k = 0.05$のときの定常均衡は以下の通りである。

   K: 7.8637379482131875, r: 0.018442865334150668, w: 1.296078556201679