

Ec721B PROBLEM SET 1

to be done individually; due in class November 14

1. Consider the following variation in the nature of the credit market in the Galor-Zeira model: a borrower can ‘take the money and run’, i.e., not repay a loan at all, but incurs a fixed cost of d from this which does not vary with loan size. The credit market is competitive, and the cost of lending is constant (r , say). Each individual lives for two periods, and leaves a bequest to a single heir. In the first period, an individual either works as an unskilled worker or decides to acquire human capital at a fixed schooling cost of h . In the second period, the individual works as a skilled worker if human capital was acquired previously, and as an unskilled worker otherwise. Labor supply is inelastic, and there is no consumption in the first period. Second period wealth is divided in fixed proportions between consumption and bequest (as a result of Cobb-Douglas ‘warm glow’ bequest motives). The wage rate for unskilled and skilled labor are also fixed: w_n and w_s respectively, where $w_s > w_n$.

(a) Describe the way that the credit market functions.

(b) Provide a condition for human capital investments to be undertaken at all. In what follows, assume this condition holds.

(c) Given the distribution of inherited wealth for any given generation, characterize the nature of human capital investment decisions in the population.

(d) Describe the resulting dynamics of the distribution of inherited wealth. Provide a condition for the emergence of wealth inequality in the long run.

2. Consider the Ghatak-Jiang model, where each factory requires a setup cost of I , hires one worker, earns revenue of q ; the fixed wage in the traditional sector is $\underline{w}$, and the fixed lending interest rate is r (borrowing is not allowed). Suppose that the modern sector is productive in the sense that $\bar{w} \equiv \frac{q - (1+r)I}{2} > \underline{w}$. However, the fraction of lifetime wealth bequeathed γ by a parent to its child is such that $\gamma(1+r) < 1$ and $\gamma(q - \underline{w}) > I > \frac{\gamma \bar{w}}{1 - \gamma(1+r)}$. Describe: (a) the set of steady states; (b) the competitive equilibrium dynamics starting from a generation in which all families start with equal wealth $w_0 > I$; (c) the competitive equilibrium dynamics starting from a generation in which the wealth distribution has a positive density over a support $[0, W]$ where W is large compared to I .

3. Consider the Mookherjee-Ray model (RES 2003), with the variation that anyone can borrow any amount at a fixed rate i that exceeds the lending rate r . Does the result that every steady state has no mobility, and has persistent inequality, continue to hold? Explain your reasoning.