

Perfect Competition and Fixed Prices: Exercises

Exercise 1

1. A representative firm produces the unique homogeneous final good using the technology $Y = N$, with Y the output and N the employment. Note W the nominal wage and P the price of the final good. Determine the optimal behavior of this producer.

2. A representative consumer has preferences defined on consumption C , real money demand M/P and leisure $H - N$, with $H > 0$ the time endowment. His utility function is defined by:

$$C^{0.2} (M/P)^{0.7} + 0.1 \ln(H - N)$$

S/He has the stock of money $M_0 > 0$ as endowment, receives the profits of the firm and need to pay a lump-sum tax T .

(i) Write the budget constraint.

(ii) Determine the optimal behavior of the consumer.

3. Let G be the level of public spending. Using the balanced budget of the government $PG = T$, determine the equilibrium, especially the level of employment.

4. Determine the effect of an increase of G on N . Give an economic interpretation.

Exercise 2

We introduce the following notations: N^d the labor demand, N^s the labor supply, Y^d the demand of product, Y^s the supply of product, P the price of good, W the nominal wage, and $M_0 > 0$ the stock of money. We assume that:

$$N^d = \left(\frac{1}{\alpha} \frac{P}{W} \right)^\alpha, \quad N^s = 1/3$$
$$Y^d = \frac{1}{\alpha} \frac{M_0}{P}, \quad Y^s = \frac{1}{\alpha} \frac{P}{W}$$

and the production function is $F(N) = N^{1/\alpha}$.

1. Compute the perfectly competitive equilibrium.
2. Determine the conditions such that one obtains keynesian unemployment and represent it on a graph.
3. Determine the conditions such that one obtains classical unemployment and represent it on a graph.