Homework 1 Solution
ECON203: Macroeconomics 2
Semester 2, 2019
Australian Catholic University

Student Name:
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True/False Questions

Consider each of the following statements. Say whether you believe the statement is true or false. Briefly explain your answer in words. Note that most of the marks will be given for the explanation.

Question 1. [20 marks] Mason got promoted with a higher annual salary in Jan 2017, however, he anticipated that he would lost his job in Jun 2017 and remain unemployed for very long time. Assuming consumption-smoothing for consumers. Then savings by Mason increased in Jan 2017 and decreased in Jun 2017.

False. The change in Mason's life-time income is ambiguous. A rise in salary in Jan 2017 raises his life-time income while his life-time income will decrease in Jun 2017. The net effect is ambiguous. Hence, in Jan 2017, it is unclear whether Mason will raise his consumption or not.

Problem Solving Questions

Question 2. [80 marks] Consider an economy in which the marginal product of labour MPN is $MPN = 309 - 2N$, where N is the amount of labour used. The amount of labour supply is $NS = 22 + 2w + 2T$ where w is the real wage and T is a lump-sum tax levied on individuals.

(a) [20 marks] Explain why an increase in lump-sum tax may increase the amount of labour supply.

A rise in lump-sum tax shifts the labour supply curve outward which yields a higher labour supply. One possible explanation is, as the lump-sum tax goes up, individuals are now facing a lower income. The income effect makes individuals supply more labour (and consume less leisure).

(b) [30 marks] Suppose $T = 35$, what are the equilibrium value of employment and the real wage?

The labor demand curve is

$$w = 309 - 2N$$

Subsitute this into labour supply, we have

$$\begin{aligned} N &= 22 + 2(309 - 2N) + 2T \\ &= 22 + 2(309 - 2N) + 70 \end{aligned}$$

which implies that

$$N = 618 + 92 = 710 \Rightarrow N = 142$$

The real wage is

$$w = 309 - 2 \times 142 = 309 - 284 = 25$$

(c) [30 marks] With T remaining equal to 35, the government passes minimum-wage legislation that requires firms to pay a real wage greater than or equal to 17. What are the resulting values of employment and the real wage.

Since the minimum wage is lower than the equilibrium real wage in part (b), it has no impact on the employment and the real wage in this economy. We would obtain the same results as in part (b).