

1. Suppose a person works full time for a company. He earns  $Y$  dollars after taxes are taken out. Now suppose his consumption is measured by:  $100+0.7Y_d$ .
  - I. Find the Marginal Propensity to Consumer.
  
  - II. Based on the answer found above, explain what the MPC means in terms of how much is saved and how much is consumed given an \$1 increase to disposable income.
  
  - III. Suppose that the man gets a raise for working so hard. He earns \$200 in gross pay. The rate of taxes is 5%. Find the worker's consumption (C)?
  
  - IV. What happens to consumption when the MPC decreases? Feel free to display this graphically.
  
  - V. Would a rich person (i.e. Bill Gates) have a higher or lower MPC than the typical American worker? Explain
  
  - VI. Suppose this worker is young but is expect to move up the corporate ladder, ultimately becoming CEO who earns millions of dollars. How should this worker handle his finances? Save or consume? Explain.

2. Suppose the economy is described by:  $Y=3000$ ,  $G=1000$ ,  $T=500$ ,  $C=100+0.5(Y-T)$ , and  $I(r)=500-40r$ .

I. Find the equilibrium interest rate and the equilibrium investment.

II. Find the national savings.

III. What happens to  $Y$  if “ $r$ ” increases? Explain.

IV. What happens to  $Y$  if “ $G$ ” increases? Explain.

V. What happens to  $Y$  if “ $T$ ” decreases? Explain.

VI. Describe the relationship between “ $G$ ” and “ $r$ ” when a country is at war.

3. Suppose an economy is described by:  $C(Y-T)=50+0.2(Y-5)$ ,  $I(r)=70-40(r)$ ,  $G=35$ , and  $r=0.7$ .

I. Find the equilibrium  $Y$ .

II. Find private savings.

III. Describe what “M” means in terms of consumption.

IV. Explain what is occurring when the economy’s potential GDP is less than  $Y^*$ .

V. Explain how changing “M” effects  $Y$ ?



5. Show how aggregate supply equals aggregate demand. (Use the production function and expenditure formula)

I. Show the work here:

II. If  $Y > C+I+G$  holds true, what happens to the interest rate 'r'?

III. If  $Y < C+I+G$  holds true, what happens to the interest rate 'r'?

IV. Describe the government budget when  $G > T$ ?

V. Describe the government budget when  $G = T$ ?

6. Show how supply of loanable funds equals the demand of loanable funds.

I. Show the work here:

II. Explain what the Supply of Loanable Funds mean?

III. Explain what the Demand of Loanable Funds mean?



## Study Guide for Exam 2

### 1. Production Function

- Know how to find the Marginal Product of Labor
- Solve for  $L^*$
- Constant Return to Scale
- Increasing Return to Scale
- Decreasing Return to Scale
- Find the Marginal Product of Capital

### 2. Consumption Function

- Understand the relationship between consumption and disposable income
- Be able to understand the linear consumption function
- Find the Marginal Propensity to Consume
- Understand what the MPC means in terms of increasing disposable income by \$1
- Understand how the MPC would be different if a person was rich, poor, young, or old.
- Be able to explain the differences in consumption across different countries (i.e. US, UK, Germany, Japan)

### 3. Investment

- Define 'r.'
- Explain the difference between the nominal interest rate and the real interest rate
- Understand the Present value and future values (i.e. A dollar today is equal to a dollar + r tomorrow)
- Understand the relationship between 'r' and investments "I."
- Be able to explain how a change in 'r' can change the equilibrium equation.
- Define Supply of Loanable Funds
- Define Demand of Loanable Funds
- Be able to find National, private, or public savings

### 4. Government Purchases

- Understand how the government would look with a balanced budget, deficit, or surplus
- Understand the relationship between government purchases and 'r' when a country is at war.
- Explain how taxes affect the equilibrium equation

### 5. Bonds

- Be able to explain how bonds are used
- Be able to find the amounts owed today or tomorrow

# Equations

- $Y = F(K, L)$
- $MPL = W/P$
- $MPL(K, L) = F(K, L+1) - F(K, L)$
- $zF(K, L) = F(zK, zL)$
- $zF(K, L) < F(zK, zL)$
- $zF(K, L) > F(zK, zL)$
- $MPK(K, L) = F(K+1, L) - F(K, L)$
- $Y = C + I + G$
- $Y = C(Y_d) + I(r) + G$
- $Y > C(Y_d) + I(r) + G$
- $Y < C(Y_d) + I(r) + G$
- $F(K, L) = C(Y - T) + I(r) + G$
- $Y_d = Y - T$
- $Y_d = Y(1 - t)$
- $T = Y * t$
- $C = C^*(Y_d)$
- $C = a + b(Y_d)$
- $MPC = C(Y_d + 1) - C(Y_d)$
- $I = I(r)$
- $I(r) = Y - C - G$
- $Y - C - G = (Y - T - C) + (T - G)$
- $(\$1) \text{ today} = (\$1 + r) \text{ tomorrow}$
- $(\$1 / (\$1 + r)) \text{ today} = \$1 \text{ tomorrow}$