

In-class Exercise: General Equilibrium One-Period Model

Directions: Work in groups of up to four people and answer the following questions. All papers will be collected, but only one member's paper will be randomly selected and graded and all members of the group will receive the same grade.

By signing below, you agree that the following work represents the efforts of everyone in the group, and you are willing to accept as your own grade for the group project the grade earned from this representation of your group's work.

_____ Signature Group Member 1	_____ Print Name	_____ Date
_____ Signature Group Member 2	_____ Print Name	_____ Date
_____ Signature Group Member 3	_____ Print Name	_____ Date
_____ Signature Group Member 4	_____ Print Name	_____ Date

Directions: Answer all of the questions below using a one-period general equilibrium model with no frictions or distorting taxes. When commenting on the equilibrium effects for each problem, consider the following:

- Describe and illustrate the general equilibrium outcome on all endogenous variables, including consumption, real GDP, real wage, leisure, and employment.
- Describe the effect on the marginal utility of consumption, the marginal utility of leisure, the marginal product of labor, and the marginal product of capital.
- If income and substitution effects work in opposite directions, assume that the substitution effect dominates.

1. Suppose a past national investment in the quality of K-12 and post-secondary education leads to a more productive workforce. Describe and illustrate the equilibrium effects in the one-period socially optimal general equilibrium model.

3. Suppose government spending makes private firms more productive. For example, government spending on transportation systems lowers costs for firms, making all factors of production more productive. Suppose there is an increase in this kind of government expenditure.

(a) Conduct a separate general equilibrium analysis for each the increase in productivity and the increase in government spending.

(b) Combine the results for the endogenous variables, marginal utilities, and marginal products. What variables are indeterminate? What have a definite change in a particular direction? Comment on these directions.

(c) Comment on whether you think this was a good or bad policy. What should be taken into consideration to adequately answer this question?

4. Suppose a past lack of investment in infrastructure by both businesses and the government leads to a deterioration of capital stock. Describe and illustrate the equilibrium effects in the one-period socially optimal general equilibrium model.

5. Suppose households' preferences change such that more women enter the workforce. You can think of the representative consumer as a representative household, where the household's utility function changes such that it is willing to work more in order to earn more income for consumption. Describe and illustrate the equilibrium effects in the one-period socially optimal general equilibrium model. Hint: You will have a new indifference curve, with a new slope, that will intersect the original indifference curve.