

## Homework Week 3: Socially Optimal One-Period Model

**Directions:** Answer all of the questions below using the social planner's problem (mathematically equivalent to a one-period general equilibrium model with no frictions or distorting taxes). When commenting on the equilibrium effects for each problem, Describe and illustrate the general equilibrium outcome on all endogenous variables, including consumption, real GDP, real wage, leisure, and employment.

Write your answers in the space provided or on your own paper. When you have finished, scan or take pictures of your work, combine all images to a single PDF file, assure that all pictures are oriented right-side up, and upload your work as a single PDF file to the Canvas Assignment area. You may use <https://online2pdf.com/> to combine your images to a single PDF file.

1. Suppose during a global pandemic, businesses and production facilities alter their methods of production in order improve safety, but at the same time these accommodations lead to lower average worker productivity. Describe and illustrate the equilibrium effects in the one-period socially optimal general equilibrium model.

2. Suppose improvements in K-12 education in previous decades in a nation on aggregate lead to a more productive workforce. Describe and illustrate the equilibrium effects in the one-period socially optimal general equilibrium model.

3. Suppose the government increases its expenditure on public goods.

(a) Describe and illustrate the equilibrium effects in the one-period socially optimal general equilibrium model.

(b) Comment on whether you think this was a good or bad policy. Use the model outcomes or shortcomings of the model to defend your answer.