

# Socially Optimal One-Period Model

- 1 Suppose an improvement in artificial intelligence technology can be productively employed by workers, leading to higher average worker productivity. Describe and illustrate the equilibrium effects in the one-period socially optimal general equilibrium model. Describe and illustrate the impact on consumption, real GDP, leisure, employment, and consumer welfare (i.e. utility).
- 2 Suppose deterioration of capital stock makes labor and capital less productive. Describe and illustrate the equilibrium effects in the one-period socially optimal general equilibrium model. Describe and illustrate the impact on consumption, real GDP, leisure, employment, and consumer welfare (i.e. utility).
- 3 Suppose the government increases its expenditure on public goods. Describe and illustrate the equilibrium effects in the one-period socially optimal general equilibrium model. Describe and illustrate the impact on consumption, real GDP, leisure, employment, and consumer welfare (i.e. utility).
- 4 Consider the analysis in problem #3 to the benefits of providing public goods, the costs of providing public goods, or both. Comment on whether you think a cut to public goods expenditure is good or bad policy. Use the model outcomes and shortcomings of the model to describe your answer.