

In-class Exercise: Consumption / Leisure 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

1. Suppose that instead of collecting a lump-sum tax, the government instead collects a tax on dividend income. Consumer's dividend income is given by $(1 - \tau_\pi)\pi$, where π is are real dividends, $\tau_\pi \in [0, 1)$ is the tax rate on dividend income.

(a) Describe and illustrate the impact on consumers choices for consumption, leisure, and labor supply from increasing the tax rate on dividend income. If income and substitution effects have opposite effects, describe and illustrate these, and assume that substitution effects are quantitatively more important.

(b) Describe and illustrate the equilibrium effects on real wages and total employment.

(c) Describe and illustrate the impact of the change in equilibrium wage on firms' optimal choices for labor and production.

2. Suppose that instead of collecting a lump-sum tax, the government instead collects a tax on labor income. Consumer's real wage income is then given by $w(1 - \tau)(h - l)$, where w is the real wage, $\tau \in [0, 1)$ is the labor income tax rate, h is the total number of hours available, and l is leisure. Suppose consumers also earn real dividends from owning firms, given by π .
- (a) Describe and illustrate the impact on consumers' choices for consumption, leisure, and labor supply from increasing the tax rate on labor income. If income and substitution effects have opposite effects, describe and illustrate these, and assume that substitution effects are quantitatively more important.
- (b) Describe and illustrate the equilibrium effects on real wages and total employment.
- (c) Describe and illustrate the impact of the change in equilibrium wage on firms' optimal choices for labor and production.
- (d) How does your answer to all the above differ from the previous problem. Explain.

3. Suppose that instead of collecting taxes from consumers, the government instead collects a tax on firms' revenue. Suppose the tax rate on revenue is given by $\tau_R \in [0, 1)$, so that firms' after tax real total revenue is equal to $(1 - \tau_R)zf(k, n)$.

(a) Describe and illustrate the impact on producers' choices for labor demand and production.

(b) Describe and illustrate the equilibrium effects on real wages and total employment.

(c) Describe and illustrate the impact of the change in equilibrium wage on consumers' optimal choices for consumption, leisure, and labor supply.