Public Economics (ECON 131)
Section #6: Capital Income and Savings Taxation

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1 Capital Income and Savings Taxation

1.1 Key Concepts

- Intertemporal choice model: The choice individuals make about how to allocate their consumption over time.
- Savings: The excess of current income over current consumption.
- Intertemporal budget constraint (IBC): The measure of the rate at which individuals can trade off consumption in one period for consumption in another period. Note, the opportunity cost of first-period consumption is the interest income not earned on savings for second-period consumption.
  - Know how to graph the IBC
  - Understand how taxes impact the IBC → Income and substitution effects
- Tax incentives for retirement savings
  - Pension plan: defined benefit vs. defined contribution
  - 401(k) accounts
  - Individual Retirement Accounts (IRA)
  - Roth IRA

⇒ Why do these tax incentives increase the return to savings?

1.2 Practice problem

1.2.1 Gruber, Ch. 22, Q.13

Consider a model in which individuals live for two periods and have utility functions of the form $U(C_1, C_2) = \ln C_1 + \ln C_2$. *They earn income of \$100 in the first period and save* S *to finance consumption in the second period. The interest rate,* r, *is 10%.*

(a) *Set up the individual's lifetime utility maximization problem. Solve for the optimal* C_1, C_2, *and* S. *(Hint: Rewrite* C_2 *in terms of income,* C_1, *and* r.*) Draw a graph showing the opportunity set.*

(b) *The government imposes a 20% tax on labor income. Solve for the new optimal levels of* C_1, C_2, *and* S. *Explain any differences between the new level of savings and the level in part (a), paying attention to any income and substitution effects.*

(c) *Instead of the labor income tax, the government imposes a 20% tax on interest income. Solve for the new optimal levels of* C_1, C_2, *and* S. *(Hint: What is the new after-tax interest rate?) Explain any differences between the new level of savings and the level in (a), paying attention to any income and substitution effects.*

(d) *Returning to the labor income tax in part (a): What consumption tax rate would result in the same effects as the 20% labor income tax rate?*

Extra space:

2 Additional problems for practice

2.1 Gruber Ch. 22, Q.1

Suppose that a person lives for two periods, earning \$30,000 in income in period 1, which she consumes or saves for period 2. What is saved earns interest of 10% per year.

(a) *Draw that person's intertemporal budget constraint.*

(b) *Draw that person's intertemporal budget constraint if the government taxes interest at the rate of 30%.*

2.2 Gruber Ch. 22, Q.2

Suppose that the government increases its tax rate on interest earned. Afterward, savings increase. Which effect dominates, the income effect or the substitution effect? Explain.