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## Econ 4620 Public Economics S2010: Seminar assignment for week 8

Please, prepare for the seminar.

### Problem 1

Explain what it means that a tax has income effects and substitution effects. Discuss how income effects and substitution affect allocative efficiency.

### Problem 2

Suppose that if an income tax is used, capital income must be included in the tax base besides labour income. What may then be an efficiency case for imposing a general commodity tax, say in the form of a VAT (allowing a lower income tax)?

### Problem 3

Brewer et al. derive the following optimal tax conditions:

$$a) \tau = \frac{1-g}{1-g+ae} \quad \text{where } a = \frac{z}{z-\bar{z}}$$

$$b) \frac{T'(z)}{1-T'(z)} = \frac{1}{e} \frac{1-H(z)}{zh(z)} (1-G(z))$$

$$c) \frac{t(z)}{1-t(z)} = \frac{1}{\eta} (1-g(z))$$

- i) Explain verbally in each case what is the underlying optimisation problem.
- ii) Consider a). What happens to  $\tau$  when  $z$  approaches  $\bar{z}$ ? What is the intuition for this result?
- iii) Consider a). What happens to  $\tau$  when  $e$  approaches 0? What is the intuition for this result?
- iv) Combine b) and c), respectively, with the empirical insights from Røed and Strøm to discuss tax setting at different income levels.

### Problem 4

In Norway it has been debated whether it is appropriate to let the surtax on high income kick in already at a level where it hits "ordinary" (not particularly high) income. Suppose it is argued that the surtax kicks in at a too low income level. Present a suitable framework for organising the discussion of such a claim.

### Problem 5

Some countries have lower commodity taxes on close substitutes for commodities that the households can produce themselves. What may be the rationale for such a tax policy?

**Problem 6**

Most countries have an income tax, but in some, especially less developed, countries the income tax plays a minor part. What are the roles for commodity taxes in countries with and without income taxes, respectively?

**Problem 7**

- a) Explain verbally why imposing a VAT distorts labour supply.
- b) Discuss the following statement: "In order to achieve extensive redistribution from rich to poor under income taxation, the rich must be faced with a large marginal tax rate."
- c) Discuss the following statement: "It is more detrimental to economic efficiency when a marginal tax rate is increased on a worker with a high rather than a low wage rate".