

YORK UNIVERSITY  
Faculty of Graduate Studies  
Annual Examination  
December 21, 1992  
**Economics 5300.03A : Public Economics – Taxation**  
S. Bucovetsky  
time=2 hours

Answer any **five** of the following eight questions.

1. Discuss the effect on labour supply of the following modification to the income tax : allow a tax *credit* of \$1000 to the mother and father of each child under the age of 16, with the tax credit being reduced by \$100 for each \$1000 of income the parent has in excess of \$10,000, so that no tax credit can be claimed by any parent whose annual income exceeds \$20,000.

2. Discuss the effect on current savings of a permanent increase in the tax rate on all capital income ( with an offsetting deduction against taxes of all borrowing costs ), to a 25-year-old who has just entered the labour force.

3. Suppose an individual has a fixed amount  $W_0$  of wealth to allocate between a safe and a risky asset for some fixed holding period, and the person's utility from an end-of-holding-period wealth  $W$  is

$$U(W) = b - e^{(-aW)}$$

where  $a$  and  $b$  are positive constants. The safe asset has a sure positive return  $r_0$  ; the risky asset's return  $r$  is stochastic. How would a proportional tax ( with full loss offset ) on the return to investment affect the person's demand for the risky asset?

4. What does it mean for workers to “bear 100 percent” of a tax on employment in some industry? Explain under what circumstances this possibility might occur.

5. Suppose that a person's utility, as a function of her hours worked  $H$ , and a vector  $x$  of quantities consumed of  $n$  different goods, could be written

$$U(H, x) = \sum_{i=1}^n a_i \ln x_i - H$$

where the  $a_i$ 's are positive constants. Derive an expression for the excess burden of a set of taxes on the person's consumption of the  $n$  goods.

**continued**

6. Show the possibility of an efficient tax, in an economy with only two types of individual, when ability cannot be taxed, only income, which is “ability” times “hours worked”.

7. Derive an expression for the cost of capital to a firm, on some project whose returns will decline at the constant rate  $\delta$ , when the project is financed entirely by borrowing, if borrowing costs are deductible from the corporation income tax, and the project may be depreciated for tax purposes at the constant exponential rate  $\alpha$ , where it need not be true that  $\alpha$  equals the true depreciation rate  $\delta$ .

8. Explain and evaluate the view that the local property tax is a tax on capital income.

**the end**