

Microeconomics, income taxes, final exam practice problems

(The attached PDF file has better formatting.)

*Question 1.1: Income Tax and Head Tax

A cab driver earns (pre-tax) \$50,000 in 20X6. His income tax rate is 60% in 20X6, so his net after-tax income is \$20,000. Inflation is zero from 20X6 to 20X7, and the cab driver expects to earn the same income from his taxi business in 20X7.

The tax collector offers the cab driver a choice in 20X7 of a 60% income tax or a \$30,000 head tax. (A head tax does not depend on income.) Which of the following is true?

- A. The cab driver is indifferent between the two types of tax.
- B. The cab driver would prefer the income tax and would work more hours.
- C. The cab driver would prefer the head tax and would work more hours.
- D. The cab driver would prefer the income tax and would work fewer hours.
- E. The cab driver would prefer the head tax and would work fewer hours.

Answer 1.1: C

The income tax distorts the marginal value of leisure vs consumption; the head tax does not.

Suppose the cab driver earns \$20 an hour pre-tax and works 10 hours a day. With the income tax, the after-tax income is \$8 an hour. If an hour of leisure is worth \$8, the driver works no more than 10 hours a day.

When the income tax is replaced by a head tax, the after-tax income is \$20 an hour, and the cab driver also pays a lump sum tax of \$30,000. The driver works more hours and has less leisure time. As the hours of leisure decrease, the marginal value of an hour of leisure increases. When the marginal value reaches \$20 an hour, the cab driver stops working.

Actuaries are paid by salary, and the effects of marginal tax rates on hours worked are less evident. Cab drivers are paid by the hour, and the effects are clearer. A cab driver works until the value of leisure (sleep, spending time with spouse or children, eating, relaxing) is worth more than an additional hour of work.

*Question 1.2: Income Tax and Head Tax

A cab driver earns (pre-tax) \$50,000 in 20X6. His income tax rate is 60% in 20X6, so his net after-tax income is \$20,000. Inflation is zero from 20X6 to 20X7, and the cab driver expects to earn the same income from his taxi business in 20X7.

The tax collector offers the cab driver a choice in 20X7 of a 60% income tax or a \$30,000 head tax. (A head tax does not depend on income.) Which of the following is true?

- A. The cab driver is indifferent between the two types of tax.
- B. The cab driver would prefer the income tax and would work more hours.
- C. The cab driver would prefer the head tax and would work more hours.
- D. The cab driver would prefer the income tax and would work fewer hours.
- E. The cab driver would prefer the head tax and would work fewer hours.

Answer 1.2: C

The income tax distorts the marginal value of leisure vs consumption; the head tax does not.