Stockholm University

Department of Economics

Course name:	Public Finance
Course code:	EC2106
Type of exam:	Retake
Examiner:	David Seim
Number of credits:	7.5 hp
Date of exam:	February 15th, 2020
Examination time:	13.00-16.00 (3 hours)
Aids:	No aids are allowed.

Write your identification number on each answer sheet (the number stated in the upper right hand corner on your exam cover).

Start each new question on a new answer sheet.

Explain notions/concepts and symbols. If you think that a question is vaguely formulated, specify the conditions used for solving it. Only legible exams will be marked.

The exam consists of 3 questions. 100 points in total. First question is worth 40 points, second and third 30 points each, 100 points in total. For the grade E 45 points are required, for D 50 points, C 60 points, B 75 points and A 90 points.

Your results will be made available on your Ladok account (www.student.ladok.se) within 15 working days from the date of the examination.

Good luck!

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Question 1. True / False / Uncertain (40 points, 5 points per question)
Explain your answer in **five sentences or fewer**. Your grade depends entirely on the substance of the justification, not on whether you are correct in writing ”True” or ”False”.

a) Empirical evidence of bunching at thresholds in the marginal tax rate shows that the standard model of labor supply behavior (max u(c,l) subject to c = wl (1-tau) + R) is a good description of actual labor supply behavior.

b) Evidence from changes in cigarette taxes in the US shows that the price of cigarettes rises by the full amount of the cigarette tax. Therefore, cigarette producers bear the full burden of the cigarette tax.

c) The standard expected utility model shows that individuals demand partial insurance against adverse shocks, such as unemployment.

d) If the government increases the income tax by 10 percentage points (from 20% to 30%) and the average income is 300 000 SEK, it raises revenue by 30 000 SEK per capita.

e) According to labor supply theory, a decrease in the income taxes should increase labor supply.

f) When individuals win lotteries, they share the gains equally within the family.

g) Empirical evidence shows that increases and decreases in value-added taxes (VAT) have the same – but exactly opposite – effects on prices.

h) Inequality in terms of wealth is at the same level as that of income.

Question 2. Insurance (30 points)
Assume that everyone earns a wage earnings of 40 000 SEK per month. Individuals face a probability q of becoming sick. If they are sick their wage earnings are 0. Individuals buy insurance from private firms, which provides them with 40 000 SEK if they get sick. The price of insurance is p and is paid regardless of whether the person gets sick or not. Individuals either buy no or full insurance. Let us assume that there are three types of people who differ in (1) probability of getting sick, q, and/or their utility function over consumption:

- Type 1: $q_1 = 40\%$ and $U(c) = \sqrt{c}$.
- Type 2: $q_2 = 10\%$ and $U(c) = \sqrt{c}$.
- Type 3: $q_3 = 5\%$ and $U(c) = c$.

There are 10 people of each type.

a) Explain why only type 1 and 2 would benefit from insurance.

Assume further that (i) the market is competitive and (ii) firms know each consumer’s type. The second assumption implies that firms charge different prices for each type, (p_1, p_2, p_3).

b) Write down the profit function for each individual type.

c) Explain why in equilibrium, insurance providers make zero profits.

d) Calculate the equilibrium prices (p_1, p_2, p_3).

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Assume for the rest of the problem that firms do **NOT** observe types.

e) Calculate how much each type is willing to pay for insurance. Willingness to pay is defined as the price of insurance that makes each type indifferent between buying full insurance and buying no insurance at all.

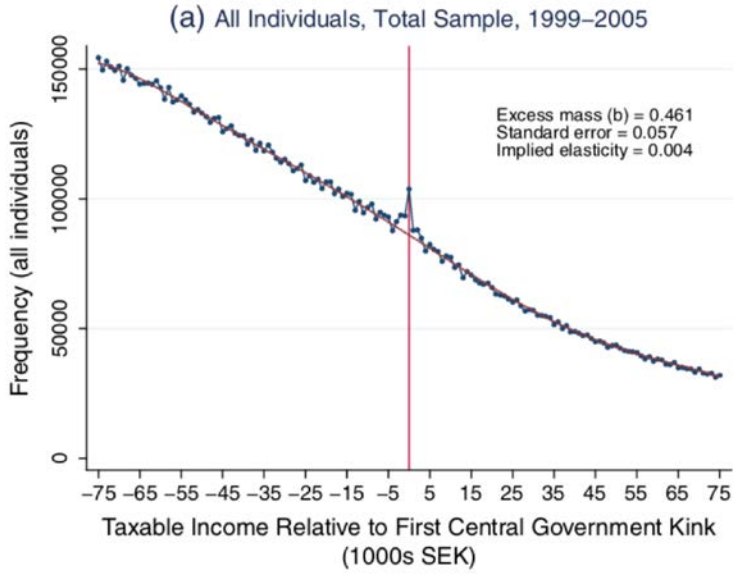
f) Give a reason for why the government should intervene in this market?

g) Should the government be worried about moral hazard?

Q3. Empirical application (30p): Bastani and Selin (2014): ”Bunching and non-bunching at kink points of the Swedish tax schedule” study how responsive individuals’ labor supply choices are to tax rates.

a) Explain the research design employed in the paper. Illustrate graphically.

b) The graph below illustrates they key result. Interpret the graph and the numbers.



c) What is the optimal level of the tax rate based on these results if the government is Rawlsian?