Exam 4620 spring 2022, exam #2

1. Short true, false or uncertain statements, explain briefly your answer (40% in total, same weight on each)

   (a) The Corlett-Hague rule says that you should impose a higher tax on the commodity that is more complementary with leisure.

   Correct. In order to reduce the distortion of taxation of labor income, one taxes the good which is most complimentary with leisure, as measured by the compensated demand elasticity.

   (b) The Atkinson-Stiglitz theorem can be used to argue that a commodity tax should supplement an optimally set tax on labor income, because it weakens the self-selection constraint (information constraint).

   Not correct. The Atkinson-Stiglitz theorem states that where the utility function is separable in labor (leisure) and the commodity, there is no case for a commodity tax. Then the commodity tax has no effect on relaxing the self-selection constraint.

   (c) A tax on annual wealth has the same distributional effects and economic efficiency effects as a tax on capital income.

   Not true, in general. Normally there is difference in the return on the capital, which varies across individuals. Then this has implications for both redistribution (income and wealth distributions) and economic efficiency. The students have been introduced to this through the argumentation of Guvenen et al. (2019). They argue that taxation of annual wealth shifts the burden towards the unproductive entrepreneur, compared to a tax on capital income: entrepreneurs with a low return are taxed harder through an annual wealth tax. Thus, one may argue (as Guevenen et al. do) that an annual wealth tax is beneficial for economic efficiency (it eliminates unproductive entrepreneurs). The distributional effects are different too, as an annual wealth tax represents a higher burden for the unproductive than for the productive (compared to a tax on capital income).

   (d) The top of the Laffer-curve shows the tax level for which one derives the maximum welfare in a society.

   In general not true, since a government maximizes welfare and not tax revenue. Only when the govenment assign no welfare weigth to the people around the top, the top of the curve also shows welfare maximum. In terms of the Saez-formula, we have the welfare maximizing tax as $t^* = \frac{1-g}{1-g+ae}$,where $a$ is the Pareto parameter, $e$ is the elasticity of taxable income (ETI), and $g$ is the welfare weight. No weight to people at the top means that $g = 0$ and the formula becomes $t^* = \frac{1}{1+ae}$, which defines the top of the Laffer-curve.

   (e) When taxation of a commodity is changed, the consumers (and not the suppliers) bear the burden of the tax change when the consumer demand is inelastic.

This is correct.

2. Taxation of intergenerational transfer (40%)

   The accidental, the altruistic, the egoistic (joy-of-giving) and the exchange models are all models which explain intergenerational transfers.

   (a) We have that $Y^P$ is the parent's earnings and the child earnings is $Y^C$. The parent recieves inheritance at the start of period 1, $I^P$. One period later the parent provides a transfer (inheritance) to the child, $I^C$. The altruistic model implies that the parents maximize $\left\{U\left(Y^P + I^P - I^C\right) + \lambda \cdot V\left(Y^C + I^C\right)\right\}$ with respect to the transfer to the child $I^C$ , where $U(.)$ measures the parent's utility from its own lifetime consumption, $V(.)$ measures parental utility from the child's consumption, and $\lambda$ is a parameter representing the strength of the parent's altruistic sentiments. Explain how, according to this altruistic model, a transfer to the child depends on the income of the parent and income of the child, and why a tax on the transfer (an inheritance tax) is distortive.

   Laitner and Ohlsson (2001) discuss this. When $T^*$ is the optimal transfer, $T^* = T^*\left(Y^P + I^P, Y^C, \lambda\right), , I^C = max\left(0, T^*(Y^P + I^P, Y^C, \lambda)\right)$. The altruistic model implies that $\frac{\partial T^*}{\partial Y^P} > 0$ and $\frac{\partial T^*}{\partial Y^C} < 0$. In the altruistic model the parent care about both his own consumption and the consumption of the child. As the parents reduce their labor effort because the value of a transfers to the next generation has been reduced, the tax is distortive.

   (b) If there is more than one child in the family, how will the parent divide the transfer between the two children: do they get identical shares?

   No, the child with lowest own income gets more.

   (c) Discuss to what extent a tax on intergenerational transfers (an inheritance tax) is distortive under the other models of intergenerational transfers (as referred to above)?

   No distortions under the accidental model. Tax is distortive under the exchange model as tax increases the price for a parent of obtaining service. In the egoistic model, if the donor cares about the amount his heir receives, the tax is distortive. This the net-of-tax transfer is the argument of $V$. If on the other hand the parent does care about the amount, it is the gross-of-tax transfer that enters into the maximization problem, and the tax on the transfer will not influence the behavior of the donor.

3. Insurance (20%)

   Consider a population of workers. Each of them earns $w$ and are identical in all aspects except that they have different probabilities $p_i \in [0, 1]$ of loosing their work capacity. Workers are risk averse and want to insure against this potential loss.

(a) What is meant with adverse selection in insurance?

(b) Explain why the marginal cost curve for the provision of insurance is downward sloping.

(c) Explain why adverse selection can be an argument for having public provision of social insurance.