Appalachian State University
Economics Department

Public Economics Final Exam
December 2016

INSTRUCTIONS: This is a take-home exam. Attempt ALL questions. All questions are of equal value. Show your work – remember you can get partial credit. Due December 5, 2016 at 5 PM.

1. To reduce alcohol consumption, the government is considering a $1 tax on each gallon of liquor sold. This tax will be levied on the producers. Suppose the daily demand for alcohol is $P = 50 - .1Q$ and the pre-tax supply is $P = .05Q$.

a) Compute the before tax P and Q and the after tax Q as well as the buyer price and the seller price.
b) How much revenue does the tax bring in each day?
c) How much of the revenue is paid by the sellers?
d) Compute the deadweight loss.
e) How effective is such a tax in reducing consumption?

2. Define Excess Burden as it applies to a tax. What factors affect the size of the excess burden for a given tax level? Apply this reasoning to rank the following taxes by largest to smallest excess burden. Explain your ranking.

i) A tax on land.
ii) A head or poll tax
iii) A tax on insulin
iv) A tax on notebook computers that weigh less than 3 pounds.
v) A tax on white bread.

3. In 2002 the US government levied a "luxury tax" on the amount a car's price exceeded $40,000. The tax rate was 3%. For example, a tax on a $50,000 car was $300 (=0.03 * $10,000). Discuss the equity and efficiency of this tax. Discuss the administrative costs that might arise with this tax.

4. Tennessee has a large number of uninsured motorists. Two of the proposed policies to address this problem are:

   A) a tax levied at the gas pump (say $0.10 per gallon) to finance an insurance program that would cover all motorists with basic liability (third party) insurance
   B) a fee of $50 levied at the time of registration of the vehicle which would provide for annual basic liability insurance.

   Those with insurance would have their premiums reduced by an amount of $50 since the state program would be providing basic liability. If you wanted additional coverage (more liability or collision, etc) you would obtain this through private insurance carriers. Evaluate each proposal according to the equity and efficiency (think dead weight losses) of each.

5. Under the Haig-Simons criteria for an income tax what annual expenses would be considered as valid deductions from an individual's income to compute taxable income? In view of these criteria, would an executive's annual "personal fitness expense" (say a gym membership and trainer) be a legitimate tax deduction? Explain. Would the same argument apply for similar membership for the executive's administrative assistant?

6. Consider two goods, widgets and gzots, which can be taxed to generate government revenue. The demand elasticity of widgets is 0.5 and of gzots is 1.2. For each good the supply elasticity is infinite (horizontal supply) and the equilibrium price before the tax is imposed is $2.25. The government proposes a tax of $0.25. What is the ratio of revenues to deadweight loss for each good? What principle does this demonstrate? If only one of the goods is to be taxed, which should it be?

7. Some have argued that the US should not tax income (the personal income tax) since this is a "tax on productivity," based on evidence of the link between income and productivity. Ignoring cases in which this link does not hold, argue for or against this argument. If we do not tax income, what would you recommend as a replacement for the personal income tax? The replacement tax would have to generate the same level of revenue for the Federal government.

8. Many economists argue that cash transfers would provide greater benefits to recipients than in-kind transfers (such as SNAP and subsidized housing). This gain is due to the fact that cash offers substitution options. If this is true, then the recipients could be made as well off at lower cost to the government if the low income benefits were paid in cash. Why then is so much use made of in-kind transfers?