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Postmortem: Public Finance Final Examination

Partial Answers

I.1 The corporate profit tax is said to involve "double taxation" because profits are taxed twice, first by the corporate profits tax and then again when the dividends received by stock holders are subjected to the personal income tax. Note, however, that undistributed corporate profits are taxed only once and capital gains on stock holdings are taxed only when realized and then only at favorable rates.

One of many reform suggestions abolishes the corporate profit tax but balances this by adding the full share of the corporate profits (retained earnings as well as dividends) to the stockholders' taxable income.

I.2 Tax evasion is violating the tax code, as when deliberately omitting taxable income from your personal income tax return or counting your dog as an exemption. Tax avoidance is adjusting your financial affairs to reduce the tax bite, as by purchasing municipal instead of corporate bonds.

The IRS attempts to estimate the extent of tax evasion by conducting intensive compliance audits of all the financial records of a randomly selected sample of tax payers.

Followers of Niskanen argue that the IRS is tempted to overestimate the extent of tax evasion in order to win a larger enforcement budget from Congress.

To maximize net IRS revenue one might want to adjust the level of tax evasion expenditure to the point where the marginal increase in tax revenue from such expenditure is equal to the marginal cost of additional control. From an efficiency point of view, it should be recognized that evasion control utilizes resources while evasion amounts to a transfer of purchasing power from the evader to the general tax payer.

I.3 In 1999 the Government of Never-Never Land had a debt of $100 billion and the Bureau of Labor Statistics reported that the CPI stood at 200 (1990= 100). In year 2000 the government collected revenue of $10 and had expenditures of $20 (including $15 billion of interest payments on its outstanding debt), and the price index had climbed to 220. The nominal deficit in year 2000 was $20-$10 = $10.

a. $D_{2000}^n = D_{1999}^n - R + E = 100 + 20 - 10 = 110$; $D_{1999}^r(1990 = 100) = 100/200 =$ \$50and $D_{2000}^r(1990 = 100) = 110/220 = \$50$

The real deficit, according to Eisner (also the Haig-Simon definition of income) is $D_{1999}^r - D_{2000}^r = 0$ and not $(20-10)/220 = 10/220$.

I.4 Its reunion day at Podunk University and members of the class of 1989 are talking about the generous gifts they made to their Alma Mater's scholarship fund. Each had given $1000 to the college! One alum said his gift had cost him only $720 in after-tax dollars; another said his gift had cost him $604 after tax; a third admitted that his gift had cost the full $1,000.

a. Alum #1 itemized deductions and was in the 28% tax bracket; #2 itemized and was in the 38.6% tax bracket; Alum #3 found that it was better to take the standard deduction rather than itemize.

b. A successful alum might reduce the after-tax cost of a gift below $604 by giving stock on which there was a large unrealized capital gain.

1.5 The Social Security Benefit/Tax ratio (the actuarial value of benefits/present value of social security taxes paid) was estimated in 1995 to be 78% for a high-income single male, 110% for a high-income single female, 110% for a for a high-income two earner couple, 180% for a high-income couple and 290% for a low income one earner couple. What provisions of the Social Security Act explain the discrepancies? Are they justified?

The ratio is higher for low income households (they need it), it is higher for women (they live longer on average), and it is higher for traditional single earner households (they are subsidized by Social Security).

1.6 The Dividend Paradox: It is sometimes said that everyone (except the Internal Revenue Service) would be ahead if firms did not pay dividends.

a. Stockholders would gain from a decision by a corporation's board of directors to not pay dividends if the retained earnings led to higher stock prices; when they realize the capital gain by selling stock they will be taxed at a rate lower than the marginal rate that applies to dividends and other income.

b. Because Wesleyan is tax exempt, a dollar of dividends is worth just as much as a dollar of capital gains.

1.7 Congratulations, you are in the 36% tax bracket! You have $10,000 to invest. If you place your funds in U.S. government bonds, you will earn 5% interest. If you place them in Connecticut bonds, you will earn only 4% interest.

a. Because interest on state and municipal bonds does not count as income in computing your federal tax return, such bonds are attractive investments even though they pay less than taxable federal and corporate bonds.

b. Because she can borrow at 4% rather than 5%, the State of Connecticut gains $100 on the $10,000 by borrowing at the lower rate. Uncle Sam loses 36% of $500 in interest income, or $180. Thus this subsidy is inefficient in that it costs Uncle Sam more in lost tax revenues than the states and municipalities gain from the exemption.

1.8 In developing his *Impossibility Theorem*, Nobel Laureate Kenneth Arrow included the requirement that the presence or absence of an "irrelevant alternative" should not affect the electoral outcome. Explain the nature and significance of this requirement.

When Mordecai dropped out of the Israeli elections, it helped give Barek a decisive victory over runner up Netanyahu.

Part II: Answer three (only 3) of the following four questions (1.5 hours)

II.1 In Never-Never Land the Benevolent Potentate maintains a bridge crossing the river separating the two halves of his kingdom. The costs per year of operating the bridge are

$$C = \$10{,}000 + 10q,$$

where q is the number of times the bridge is crossed.

The inverse demand curve is $p = 50 - 0.015q$

a. Marginal cost is $dC/dq = 10$.

b. A profit maximizing monopolist will produce where marginal revenue = $10 = marginal cost

c. If the bridge operated by a profit maximizing monopolist were subject to regulation by the Never- Never Land Public Utility Commission, a price of approximately $14 imposed by the regulatory authority would lead the profit maximizing monopolist to produce where the average cost curve crosses the demand curve, which implies zero profits but also maximizes welfare generated by the bridge, given the Constitutional constraint. This is the "second best" solution. A subsidy coupled with marginal cost pricing might lead to a more efficient allocation of resources, unless the tax used to finance the subsidy were too distortionary.

d. Suppose the bridge is socialized and the Potentate orders that all resources are to be allocated efficiently.

This requires that price be equated to marginal cost; i.e. the toll is $10 and 2,666 people will use the bridge.

e. According to Niskanen's analysis of bureaucracy, none of the above solutions is likely to prevail if a government agency is assigned the task of managing the bridge. Instead, the bureaucrat will allow 3,000 crossings of the bridge by charging a toll of zero, which maximizes the size of the government enterprise subject to the constraint that benefits exceed total cost. But it is inefficient because the value of the bridge crossing for some users is less than the $10 marginal cost of providing it.

II.2 Figure 2 shows the Utility Possibility Frontier for two individuals. Place an E on the point that would lead to equal satisfaction for the two individuals. Place a B on the point that would maximize the sum of their two utilities (Jeremy Bentham). Place an R on the point that would maximize the position of the least advantaged. (John Rawls)

Point E is on a 45^0 line emanating from the origin; point B is on a point where the slope of the Utility Possibility Frontier is –1; Point R is the "Max-Min" solution

II.3 Figure 3 shows how the economic profits earned by a monopoly depend upon output.

a. A 25% tax is imposed upon the firm's economic profits would lead to no change in output; the firm now maximizes $(1\text{-}0.25)\pi(q)$ instead of $\pi(q)$. The firm might consider avoiding the tax by moving to another state, but this is not likely to be feasible.

b. In practice, profits taxes are based on accounting rather than economic profit. Because accounting profit does not include the interest income earned by those lending money to the firm, the corporate tax is a burden on invested capital; hence the tax may lead to less equity investment, lower output and reduced demand for workers. Prices may rise and wages fall.

II.4 Figure 4 shows the indifference curve of a citizen with income of $10. Our citizen consumes only beer and pretzels. Pretzels cost $1.00 but beer costs $1.50 a glass, including a 50 cent tax. There is no tax on pretzels.

a. Show that the government could leave the consumer better off while still raising the same amount of revenue by replacing the beer tax with an income tax. [See graph on page 287 of Rosen.]

b. Explain the limitations of this argument concerning the relative merits of an excise versus an income tax.

One objection is that beer is a bad rather than a good, but that's paternalism. A tax on income discourages work effort, so there is a question of which type of taxation causes the least distortion.

If lower income people consume beer rather than scotch, replacing the beer tax with an income tax might reduce inequality.