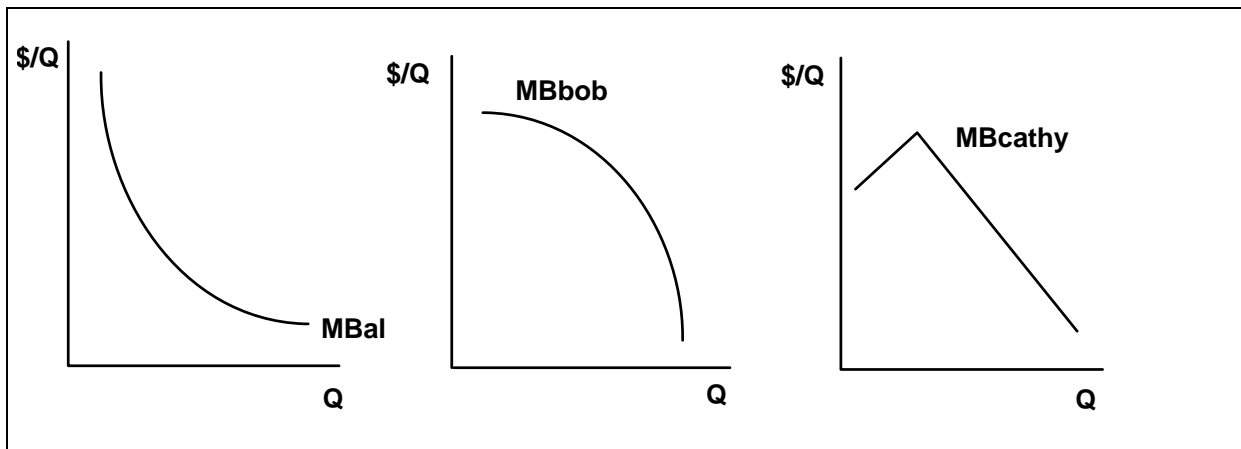


## I. Basic Concepts and Tools

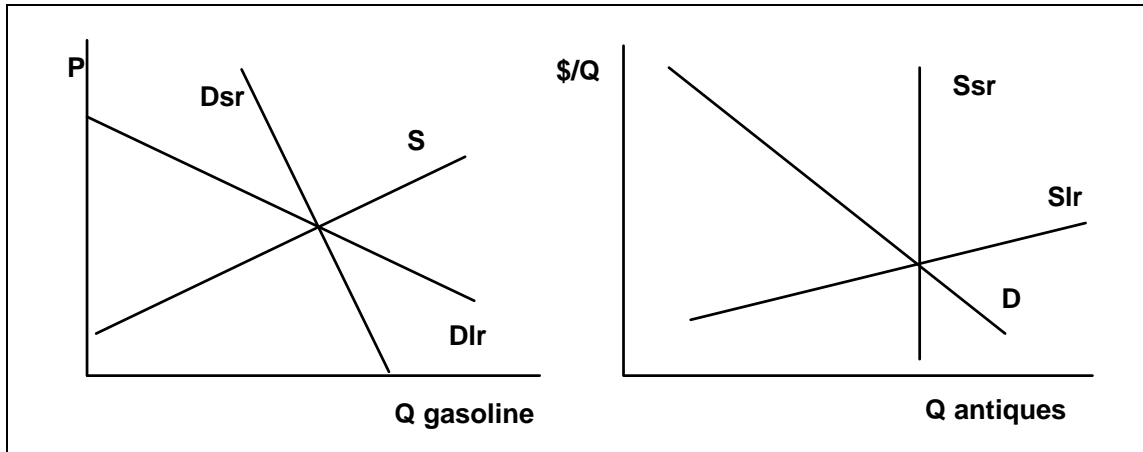
### 1. Identify and/or Define the following:

- a. marginal benefit
- b. marginal cost
- c. consumer surplus
- d. excess burden
- e. excise tax
- f. neutral tax
- g. tax base
- h. marginal tax rate
- i. pure public good
- j. externality
- k. club good
- m. free rider problem
- n normative statement
- o. social net benefit
- p. Pigovian tax
- q. Lindahl tax
- r. Ramsay tax
- s. progressive tax
- t. VAT
- u. conditional grant
- v. lump sum subsidy
- w. Ricardian Equivalence
- x. median voter
- y. voting paradox
- z. rational ignorance
- aa. fiscal illusion
- ab. fiscal federalism
- ac. Tiebout model
- ad. Nimby
- ae. negative income tax

### 2. Use the following individual marginal valuation curves to derive demand curves for each of the following consumers and for the market of three consumers. (Discuss your reasoning and label all important details.



3. Using diagrams for (i) a market, (ii) a typical consumer in that market, and (iii) a typical firm in that market, to show the short run and long run effects of an excise tax. Clearly label all important details, and discuss the logic of your analysis.
4. Repeat problems 3 for a subsidy.
5. Show the distribution of tax burden that would result in the following markets in the short and long run as a consequence of a \$2.00/unit excise tax. (Discuss your reasoning and label all important details.)



6. Use indifference curves to illustrate the superiority of a lump sum tax over an excise tax that generates the same revenue from an individual tax payer.
  - A. Label all important details and discuss the implication of your diagram.
  - B. On a separate diagram show the affects of a general sales tax that raises the prices of all goods by 10%.
  - C. Are either of these taxes neutral? Why or why not?
7. Discuss why, in spite of your answers to #6 above, lump sum taxes are rarely used but other neutral taxes such as sales taxes and VATs are widely used.
  - A. Use indifference curves and budget constraints to show that an income tax has many of the same properties as a general sales or VAT tax.
  - B. Is there a reason for using income rather than a lump sum tax? (100 words)
  - C. Is there a reason for using income rather than a VAT tax? (100 words)
8. Repeat 6-7 for a targeted subsidy.
  - A. Show that a conditional subsidy (matching grant) that affects relative prices always costs more than a lump sum subsidy when it attempts to achieve a particular increase in consumer welfare (given continuous and monotone increasing utility functions).
  - B. Discuss why economists often prefer a negative income tax to subsidies for housing and food.
9. It is sometimes claimed that firms and their employees "share" the social security tax. That is to say, by law **half of the money** is deducted from employee salaries and the other half is paid by the firm.
  - A. Use the tools developed in class to analyze this assessment of the tax burden of the social security tax.
  - B. Is there any case in which the distribution of the tax burden of social security is shared equally?

C. How would the burden of the social security tax vary among labor markets?

10. During the early 1980s, the Reagan administration proposed a radical "flattening" of the tax schedule faced by ordinary US income tax payers. A very finely graded tax schedule was replaced with one that included just three marginal tax rates 0, 15 and 28%, but generated essentially the same revenue as the previous more steeply progressive tax schedule.

A. Analyze the effects of this tax reform on the labor market using the tools developed in class.

B. (Hint: use supply and demand for labor to show what happens to employment levels, dead weight loss, and tax payments for low, middle, and high income earners as marginal tax rates decline.)

C. Discuss why reductions in marginal tax rates rather than average tax rates tend to reduce excess burden.

11. Determine marginal and average tax rates for the following income, Y, tax schedule:

$$T = -1000 + .20Y$$

A. Is this tax progressive, regressive, or proportional? Explain.

B. Suppose that instead of -1000, the intercept of the tax schedule is C.

C. Determine the values of C that makes the tax schedule (i) regressive, (ii) proportional, and (iii) progressive.

## II. Extensions and Puzzles

1. Many economists (and conservative commentators) argue that a consumption tax would increase savings rates of the average person in the U.S. which would increase long term growth rates. Use indifference curves and a choice setting defined over consumption in the present ( $C_1$ ) and consumption in the future ( $C_2$ ) to analyze the effects of (i) a temporary consumption tax that affects only consumption in the current period and a permanent one that is in effect for both periods. (To simplify a bit, assume that all life time income or wealth will be consumed, which implies that the two period budget constraint is  $W = C_1 + C_2/(1+r)$ , where  $r$  is the interest rate.)

A. Does a temporary consumption tax increase savings? (Why?)

B. Does a permanent consumption tax increase savings? (Why?)

C. Is there a deadweight loss from a temporary consumption tax?

D. Is a sales tax or a VAT (value added tax) a tax that only affects current consumption? (Why or why not?)

E. Is a sales tax normally progressive, proportional, or regressive? (In what sense?)

2. Use the neutrality, Ramsay, and benefit tax principles to assess the relative merits of a high excise tax on gasoline, a flat (proportional) corporate income tax, and a consumption tax.

A. To simplify, first assume that the same revenue is generated by each tax, and that all the revenue generated will be spent on general government services.

B. Now suppose that the gasoline tax is "earmarked" so that it is entirely spent on transportation services (roads, bicycle paths, and mass transit) and that the others are used to finance general government programs as before. How does this earmark affect your analysis of the merits of gasoline taxes?

C. Explain how positive analysis played a role in your normative analysis of the relative merits of these tax instruments.

3. Create four diagrams to illustrate (i) the normative problems associated with positive and negative **externalities**, and (ii) cases in which positive or negative externalities exist but the result is Pareto optimal.
  - A. Label all important details.
  - B. Illustrate how a Pigovian tax or subsidy can be used to solve the problems in part (i).
  - C. In what sense can it be argued that Pigovian taxes are the perfect Ramsay tax? Explain.
  - D. Buchanan and Stubblebine argue that Pigovian taxes may fail to achieve Pareto efficient results in cases in which transactions costs are "low." Explain their reasoning and explain why transactions costs are relevant for analyses of externality problems.
  
4. Use a two by two game matrix to illustrate the logic of the free rider problem associated with the provision of pure public goods. Suppose that the public good of interest provides benefits of \$5.00 to each "player" and costs a total of \$6.00 to produce. The cost is shared if both contribute, but must be paid entirely by one person if that person provides while the other free rides.
  - A. Label all payoffs, and explain the logic of the game.
  - B. Now suppose that provision of the good is subsidized. How much would the cost of the public good have to fall to eliminate the free rider problem?
  - C. Now suppose that the provision of the good is mandated and failure to comply is punished with a fine. How large would a "shirking fine" have to be to solve the problem?
  
5. Use labor supply and demand functions to analyze the effect of a proportional tax on labor income.
  - A. Show the effects of the tax on tax payers and firms, and note any deadweight losses that exist.
  - B. Show how reducing this tax affects the magnitude of the tax burden and tax revenue.
  - C. What tax rate maximizes tax revenue in your model? (Show this in a diagram.)
  - D. How is this income tax revenue maximizing tax affected by the price sensitivities of particular demand and supply curves for labor?
  
6. Use linear supply and demand functions to analyze the distribution of the tax burden generated by the social security program. Assume that  $L^d = a - bW + cK$  and  $L^s = d + eW$ , where  $W$  is the wage rate in the market of interest, and  $K$  is the average capital stock of a typical firm in the industry.
  - A. Develop a case in which the burden falls entirely on firms (employers).
  - B. Develop a case in which the burden falls entirely on workers (employees).
  - C. Develop a case in which the burden is equally shared.
  - D. According to law, the tax used to pay for social security is paid half by employees and half by employers. Discuss the two meanings of "pay" for the tax implicit in this law and in your models.
  
7. More Income Taxation Exercises
  - A. Use labor supply curves of varying slopes (and/or elasticities) to show how the effects of the same tax schedule can have quite different effects on people with steeper and flatter individual labor supply curves.
    - i. How would a Ramsay income tax assign tax rates to specific labor markets?

- ii. Given differences in demand and supply elasticities, what would a neutral tax on labor income look like?
  - iii. In what sense can a Pigovian tax or Henry George land tax be considered an ideal Ramsay tax?
- B. Use indifference curves and a budget constraint defined over current consumption and savings to illustrate how a value added tax might reduce consumption and increase savings for a typical tax payer.
- i. Use indifference curves and a budget constraint defined over work (earned income or consumption) and leisure to show how a flat income tax may increase unemployment by changing relative prices.
  - ii. Now, show that a progressive tax tends to have a larger effect--other things being equal.
  - iii. Can there be a completely neutral income tax or neutral value added tax? Explain.
- C. Which of these tax systems will tend to generate the least fiscal illusion? Explain your reasoning.
- 8.** Use a median voter model (with Marginal Benefit and Marginal Cost curves) to demonstrate how a "matching grant" from the central government can affect a local government's provision of local services.
- A. Use the median voter's government budget set and indifference curves to show the effects of block grants and matching grants on a local government's output of services.
- i. Show that a block grant can often improve the median voter's welfare relative to an equally costly matching grant. (Hint, this looks like the difference between lump sum and marginal subsidies developed studied earlier in the course.)
  - ii. Does your analysis suggest a "fly paper effect?" Why or why not?
  - iii. In what case, if any, will a conditional lump sum grant have a larger effect on local government expenditures than a block grant?
- B. Repeat using a utility function-based median voter model that determines policies under the assumption of a balanced budget.
- 9.** Use a series of diagrams to analyze several three person public goods problems.
- A. First, illustrate the "high demander provides" equilibrium, in which one person provides all of the public good.
- B. Next, determine whether this output level is Pareto efficient, that is maximizes social net benefits.
- C. Finally, consider the politics of public goods provision. Assume that the costs of this public good is shared equally and that the median voter determines the output level.
- i. Determine whether the new result is Pareto efficient.
  - ii. Would the median voter prefer the political solution or the initial free rider solution? Use your diagram(s) to explain why.
  - iii. Would your voters prefer a Lindahl tax (and output) over the initial free rider (high demander) outcome? Illustrate and explain?
- D. Use marginal benefit curves and marginal cost curves to illustrate how a progressive tax system can cause "rich" tax payers to prefer fewer government services, even if government services are a normal good.
- E. Is there a tax scheme (cost sharing arrangement) that will cause the median voter to prefer government supply to the initial free rider solution? Show this, and explain the logic of your diagram.
- F. Repeat using an algebraic representation of individual demand curves and the MC of the public good.

- 10.** Voters have fairly weak incentives to be well informed about candidates or public policy issues.
- A. Illustrate the demand for information about a candidate for the case in which the information is only useful for elections? Illustrate the case when information has direct private applications as well.
  - B. Illustrate what happens to the service level of a government services if voters systematically underestimate their tax costs.
  - C. Illustrate what happens to the service level of a government services if voters systematically underestimate their service benefits.
  - D. Discuss the sense in which fiscal illusion may be said to cause voters to make mistakes. In what sense(s) can fiscal illusion be said to be rational?

### III. Politics and Contemporary Public Finance Policy Issues

- 1.** For many years, social security has collected more in tax revenue than it has paid out in benefits. This surplus has been "borrowed" by the treasury for use in rest of the Federal budget. In exchange, the treasury issued IOUs to the trust fund (e.g. sells bonds to the Social Security Administration)..
- A. Explain why the government will have to raise taxes, borrow, or print money in order meet its future obligations to retired persons.
  - B. Explain why "a" is true regardless of whether the trust fund is accumulated as cash, government bonds, or treasury IOUs—and moreover would have been true even if no trust fund had been accumulated!
  - C. Explain why the Social Security Program will have a cash flow problem in the future if taxes and benefits are held constant.
- 2.** Use the present value formula to calculate the net benefit that Al receives from the social security program.
- A. Assume first that Al will retire in 30 years and live 25 years after retiring. Suppose that Al's tax is 10,000 per year and that his benefits are 15,000/year in real terms. Assume that the real interest rate is 3%/year.
    - i. Calculate the present value of Al's tax payments
    - ii. Calculate the present value of Al's benefits. (Hint: don't forget that the benefits are not received until 30 years in the future.)
    - iii. Is Al better or worse off under social security if his "opportunity cost rate of return" is 3%/year.
  - B. Now repeat a-d but assume that the real interest rate is 2%/year, 1%/year.
  - C. Suppose that Al were planning to retire in only 10 years. How would this affect the present value of his/her participation in the social security program? (Use some numbers to support your conclusion.)
  - D. Use a spreadsheet program or other computer program to find Al's rate of return in both a and c.
- 3.** Nominal social security benefits averaged \$43.45 per month in 1946, \$118 per month in 1970, \$567 per month in 1989, and approximately \$1150/month in 2007.
- A. What is the average annual percentage rate of growth of nominal social security benefits in each sub-period and overall?
  - B. The CPI was 18.2 in 1946, 37.8 in 1970, 121.1 in 1989, and 202 in 2007; what was the real benefit at each date.
    - i. What was the rate of growth in (real-inflation adjusted) average social security benefits overall and in each sub period?

- ii. If the real growth rate continued until 2050, what would real monthly social security benefits be?
  - iii. If the nominal rate of growth found above continued until 2050, what would nominal monthly benefits be?
4. Suppose that an environmental externality is known to impose external costs of 20 billion dollars per year. A variety of clean up and/or regulatory methods are possible. Determine the present value of the cost and benefits of each of the following programs. Assume that the interest rate is 5% and that each program continues forever.
- A. Program one imposes fixed regulatory standard (as in auto emissions) which is expected to increase industry operating costs by 18 billion per year and cost 1.5 billion to administer.
  - B. Program two uses a Pigovian tax on pollution to induce companies to use cleaner technologies. It is expected to increase operating costs by only 15 billion dollars per year, but have administrative costs of 6 billion dollars per year. There will also be an initial 10 billion dollar cost to set up the program. The Pigovian tax will generate tax revenues of 5 billion dollars per year.
  - C. Program three establishes a general target for this particular form of pollution and creates a tradable "effluent licenses" which entitle the owner to release effluents at some fixed rate (say  $K$  pounds per year). One expects low cost polluters to sell their licenses to high cost polluters. This program will increase operating costs by 14 billion dollars per year, and have administrative costs of 7 billion dollars per year. There will also be an initial 12 billion dollar cost to set up the program. (Initially, pollution licenses are given away and so the program generates no revenues.)
  - D. Which program do you prefer? Which program would a median voter prefer? Explain your reasoning.
5. Illustrate and discuss the logic of the median voter theorem using the spatial voting model and a uniform distribution of voter preferences.
- A. First, show a disequilibrium case in which two candidates (or parties) take positions to the left and right of the median voter.
    - i. Second, note incentives for one or both candidates to revise their strategies (campaign promises or platforms) in this case.
    - ii. Third, show that after complete convergence takes place, neither candidate has an incentive to change his or her election strategy.
    - iii. How does your model change if voter turnout is affected by the closeness of the two candidates?
  - B. What other considerations beyond the platforms of the candidates are likely to influence voter choices if candidates converge to fairly similar platforms?
    - Are their conditions under which there will still be an electoral equilibrium?
6. Construct a two person three strategy game that illustrates the Pork Barrel Dilemma. Briefly explain all relevant details.
- A. Explain why log rolling does not always generate gains to trade in the same manner that exchange in ordinary markets does.
  - B. Discuss why cost-benefit analysis potentially allows one to escape from the pork-barrel dilemma.
7. Construct a two person three strategy game that illustrates the fiscal commons problem experienced in federal systems of taxation. Briefly explain all relevant details.
- A. Explain why taxation in a federal system can be excessive even if each level of government adopts the Pareto efficient level of public services for its residents.



- B. Explain why such problems might be tolerated as a necessary cost of competitive governance in a federal system of governance.
  - C. Discuss how a revenue sharing program of block grants can reduce this problem, while preserving fiscal competition. Are their political risks associated with such programs?
8. Bureaucracy can be regarded as an “internal” interest group with better access to the elected officials that make policy decisions than most “outside” interest groups. Niskanen argues that most persons that work in bureaus (in both the private and public sector) have an interest in maximizing their budgets and that such bureaucrats can use their informational advantage to secure large than optimal budgets from policy makers.
- A. Discuss Niskanen’s characterization of “institutionally induced” behavior within bureaucracies.
  - B. Depict the largest budget that the budget maximizing bureaucrat could ever obtain, and explain the informational assumptions required for this result.
  - C. If Niskanen's view of bureaucratic behavior is correct, would it make sense to have bureaucracies?
  - D. Suppose that bureaucrats do try to maximize their budgets but are unable to obtain Niskanen's extreme budget, how would this change your answer to c?
9. Outside interest groups expend considerable resources to lobby for government services and tax preferences of various kinds.
- A. Develop a game theoretic model that demonstrates incentives for rival groups to compete for governmental privileges. (Hint: first use a 2x2 game matrix, and then construct a rent-seeking model.)
    - i. In what sense(s) can the investments of these lobbyist - rent-seekers be said to generate another source of deadweight loss for policy reform?
    - ii. Are there cases in which these losses are greater than the deadweight losses associated with the conventional “Harberger triangle” characterizations of the effects of poor public policies.
  - B. Suppose that interest groups provide benefits for individual's outside the group.
    - i. For example, politically active farmers generate benefits for all farmers not just politically active farmers. What does this imply about (i) the scale of special interest group lobbying, (ii) the extent of rent-seeking losses, and (iii) the kinds of groups that are likely to be most effective?
    - ii. Is there a case for Pigovian taxation of such activities? Summarize and critique.
    - iii. Suppose that instead of negative externalities, some interest groups produce positive externalities. How would this change your analysis?

#### IV. More Difficult Extensions and Puzzles

1. Analyze the privatization of Social Security—that is, the replacement of the current paygo system with a system of forced saving.
- A. First, contrast the behavior of pre-retired persons under a system in which a person is required to purchase private annuities (as in Chile) with the current paygo system in the US.
  - B. Second, analyze whether requiring purchases of private annuities tends to generate greater economic growth than a paygo system.
  - C. Third, discuss how a transition to a forced savings program can be managed without significantly reducing benefits for those close to retirement. Discuss why this tends to be a normative and political problem for many privatization proposals.



2. One common property of the public pension and health policies of Western democracies, is that they all promise larger benefits to future generations than can be paid for under current tax laws.
- Many public pension programs are financed with an earmarked flat tax on labor income. Is this efficient from an economic perspective? Why or why not?
  - To what extent should the promised payments to future retirees be regarded as part of the national debt?
  - Is the excess of future benefit levels relative to future taxes under existing laws consistent with either electoral or interest group models of fiscal policies? (Explain using a three generation overlapping generations model.)
3. Suppose that 10 individuals have the same underlying utility function for private and public goods,  $U = V^{.5} + G^{.5}$ , where  $V$  is a pure private good, and  $G$  is a pure public good. Let  $1000\tau = V^{.5} G^{.5}$  be the production possibility frontier faced by this community.
- Derive the Samuelsonian conditions for the Pareto optimal provision of this pure public good using a Benthamite social welfare function. (Hint: the substitution method works very well for finding the solution in this case.)
  - What is the total output of the pure private good at the Benthamite ideal?
  - What happens to the ideal level of the public and private goods if technological progress occurs (if  $\tau$  increases)?
4. Suppose that two adjacent community provide a similar public service to their own residents, and finance that service from local tax receipts generated by taxing “their base,”  $B_i$ . The tax base of Community 1 is  $B_1 = (G_1 - G^*) - 100(t_1 - t_2)$  and the tax base of Community 2 is  $B_2 = (G_2 - G^*) - 100(t_2 - t_1)$ . Neither community can borrow, so  $t_1 B_1 \geq cG_1$  and  $t_2 B_2 \geq cG_2$ . The residents of each community each want the same ideal service level,  $G^*$ , but do not like paying for them. Assume that both community’s have town managers that attempt to maximize their tax base.
- Characterize the best reply function for each government's tax and service levels.
  - Characterize the equilibrium tax and expenditure levels in the two communities, both mathematically and graphically. Explain your result.
    - (If you find the math difficult try setting up a PD game between the two town managers.)
  - How would the result have differed if there were two types of residents with different ideal service levels?
  - How would this equilibrium have been different if both governments had been net revenue maximizers rather than tax base maximizers?
5. Suppose that there are two regional governments in a given country. Both regional governments can invest in a local public good that improves the welfare of their residents. However, there are spillovers from their investment decisions. If region 1 provides the public good region 2 obtains some spillover benefits, and vice-versa. More precisely, let  $G_1$  be the local public good levels in region 1 and that in region 2 be  $G_2$ . Their respective welfare levels are assumed to be:
- $$W_1 = 2(a G_1^{.5} - b G_1^{.10} G_2^{.10}) - c$$
- $$W_2 = 2(a G_2^{.5} - b G_1^{.05} G_2^{.05}) - c \quad \text{where } a > 0 \text{ and } 0 < b < c.$$
- Find the Nash equilibrium levels of  $G_1$  and  $G_2$  when public investment decisions are taken simultaneously.
  - What is the equilibrium welfare level in each region?

- C. Suppose that public investment decisions are centralized. What levels of  $G_1$  and  $G_2$  maximize total welfare? Compare with parts (a) and (b), and explain.
- D. Assume that the central government can impose a interregional Pigovian transfer scheme based on the public investment of each region. Find the optimal scheme. Compare with b and a.
- E. Now find the solution for the case in which  $b < 0$ . Explain why the results in this case are so strange!
6. Some economists (and politicians) have suggested switching from income taxation to a national sales tax or consumption tax.
- A. Analyze the merits of this proposal with reference to economic theory.
- B. Now consider the political economy of such tax choices. Are there circumstances under which there would be unanimous agreement for such a change occur? Majority agreement? Explain.
7. Within democracies, the median voter model can be used as a first approximation of government expenditures and taxation.
- A. Explain the growth of government from the perspective of that model. Are there any conditions under which the government sector would stop growing or even decrease in size?
- B. In what sense can majority rule decision making be regarded as a technique for aggregating information?
- C. What kinds of political failures on average grow less severe as the number of voters increases? More severe? Carefully explain your reasoning.
- D. Given the incentives of the simple representative election model (and the more complex stochastic voting model), why don't the presidential platforms of the Democrats and Republicans fully converge?
8. Suppose there are 21 voters, including yourself. You are narrowly self-interested, risk-neutral, and it costs you \$50 worth of time to vote. Candidate A is \$200 better for you than Candidate B, and people other than yourself vote for A with  $p = .5$ .
- A. Using the standard probability of decisiveness formula, calculate *your expected net benefit of voting*.
- B. Now use a similar calculation to determine the net benefits of being informed about candidate policy positions.
- C. Are these direct (narrow) electoral benefits the only ones that individuals receive from participating in elections and being informed? Explain.
9. Barro argues that variation in the level of national debt can be explained as a method of smoothing intertemporal tax burdens in the context of an overlapping generations model.
- A. Explain why tax payers might have an interest in smoothing their intertemporal tax burdens via government borrowing rather than through their own private borrowing.
- B. Suppose that the real interest rate equals the long run growth rate of RGNP. Would a permanent increase in the real interest rate imply larger or smaller deficit levels?
- C. For a variety of reasons, Eisner argues that the governments public debt numbers are inaccurate and over estimate the extent of the national debt. Summarize his argument.
- D. What effect, if any, would a permanent increase in RGNP growth rates have on the stock of national debt? Explain.

10. The Laffer Curve expresses the idea that there are matched pairs of tax rates that will raise the same revenue, along with one rate that will yield the maximum revenue. There are both welfare arguments and empirical arguments to the effect that actual tax rates are below their revenue maximization rates.
- Is this claim analytically coherent?
  - Why would not analytical coherence require that revenue maximization is a condition of equilibrium in a model where taxes emerge through interaction among the participants, once resistance to taxation is taken into account?
11. President Bush's tax commission recommended that the deductibility of home mortgages be capped at about 80% the value of the median house in the region where a taxpayer's home is located. It also suggests that the interest tax "deduction" be replaced with a tax "credit." The plan (as a whole) is "revenue neutral" and is said to reduce the deadweight loss of the income tax.
- In what sense can the tax deductibility of mortgages be said to be inefficient? (Use a diagram and/or simple mathematics to illustrate your point.)
  - Explain how this plan redistributes the burden of income taxation among taxpayers with mortgages. Who wins and who loses under this proposed reform?
  - Given your answer to parts "a" and "b," should firms be able to deduct the interest cost of loans used to make capital investments? Explain your reasoning.
12. Erik Lindahl argued that inefficiencies of taxation can be eliminated by taxing persons so that each person faces a marginal tax rate equal to their marginal benefit from the goods financed through taxation (at the quantity provided).
- In what sense is efficiency increased through the use of a Lindahl tax system for funding public goods?
    - Is Lindahl taxation consistent with the usual theory of optimal taxation? (Hint: there are several theories of optimal taxation.)
    - In what sense, could Lindahl's tax scheme be said to minimize the coercive element of taxation?
  - Describe the preference revelation problem associated with Lindahl taxation and explain possible solutions.
  - What are the two most serious economic arguments against using Lindahl's proposal to finance all public services?
  - Can a Lindahl tax be used to finance redistribution? Explain.
13. Consider one regression among many that have been run of the following general form: The dependent variable is some such variable as the per capita cost of providing some particular service or per capita property value; the independent variables include the usual assortment of candidates, plus some kind of organizational variable that is the item of interest. This variable could denote whether the service is provided by a public bureau or a profit-seeking firm, it could denote alternative electoral systems, or any of a number of other possibilities. The central claim is that organizational form matters significantly in the provision of services.
- Is such a finding plausible?
  - Summarize some of the existing empirical public finance literature on this point.
  - How do you account for the existence of a variety of organizational forms?

14. “The existence of multiple taxing units always tends to reduce total government revenue.” Explain or critique the above using one or more clearly specified theoretical frameworks.
15. If you compare tax rates on gasoline in such states as California, Connecticut and New York, you will see that they are about twice as high as tax rates in such states as Alaska Wyoming and New Jersey. What is the likely explanation for the variation in gasoline tax rates?
16. In the nineteenth century, it was often argued that “voters are always poorly informed about public policies, consequently public policies in a democracy always tend to be inferior to those adopted by a king or queen.” Evaluate the strengths and weaknesses of this position.