I. Introduction: Voting for Public Services and Taxes

A. In democracies, both public service levels and taxes are chosen by elected representatives and the bureaucracy.

B. From the public choice perspective, elected representatives and bureaucrats are assumed to be **self-interested** in the same sense that consumers and firms are in the private sector.

  i. If politicians and bureaucrats are rational and self interested, one should expect them to choose the fiscal policies that maximize their own net advantages (utility) given the constraints that they face.

  ii. That is to say, if one wishes to understand the pattern of tax and expenditure policies, one has to take account of the interests and incentives faced by government agents.

  iii. Of course, politicians cannot simply choose any combination of expenditures and taxes that they wish, because they have to be elected to office in order to have the power to make fiscal decisions.

  iv. Elections and electoral politics, thus, have important effects on fiscal policies within democracies.

  v. (As we will see, electoral politics implies that one can not simply assume that tax and expenditure policies are made by some net-benefit maximizing all knowing "government," as sometimes seems to be suggested in ordinary text books.)

C. Although a wide variety of decision making rules can are used within democratic governments, we will focus our attention on implication of majority rule. (For a richer treatment, you should take a course in public choice.)

  i. Examples of other voting rules that are used include:

  ii. Unanimity (100% approval is required to pass new laws. Anyone can veto a new law.)

  iii. Super Majority (More than 50% approval is required to pass new laws. This is required for constitutional amendments and impeachment under the US constitution.)

  iv. Plurality Rule (The policy/rule/candidate with the most votes is adopted.)

  v. Committee rule (A relatively small elite makes decisions, possibly by majority rule within the committee.)

  vi. One person rule (Commander in Chief, Executive Mandates)

  vii. (For an important first analytical examination of which voting rules work best for a given circumstance : *The Calculus of Consent*, by James M. Buchanan and Gordon Tullock.)

D. An elected government is not free to pick any policy that it wants for several reasons.

  i. First, most elected officials wish to win the next election. To do that they will have to pick policies that please a majority of the voters relative to policies proposed by their rivals for office.

  ii. Second , there are constitutional constraints on the types of policies that can be put in place.

   a. The "takings clause" makes government pay for goods and services taken from individual citizens.

   b. The "equal protection" laws imply that a law should not treat different groups differently. That is to say, laws have to be based on general principles: all firms with characteristic F are subject to environmental regulation R.

  iii. Initially, we will focus all our attention on the electoral constraint because electoral competition plays a very important role in determining policy at the margin.

# II. Majority Rule and the Median Voter

A. The most widely used model of majoritarian politics is the median voter model. In a variety of electoral settings, self interested behavior implies that the "median voter" will get his way.

B. For example, suppose that three individuals: Al, Bob and Cathy are to make a decision about where to eat lunch based on majority rule.

  i. Al prefers a restaurant where lunch can be had for $5.00, Bob wants one where lunch costs around $10.00 and Cathy, a gourmet, prefers one costing around $20.00.

  ii. For convenience assume that, given any two options, each will prefer the restaurants whose price for lunch that is closest to their preferred one.

  iii. (This "spatial voting" can be shown to be the result when their marginal benefit and marginal cost curves are straight lines.)

  iv. Consider some votes on various alternative spending levels:

Options	Votes Cast			Outcome
a. $10 vs. 20$	A: 10	B: 10	C: 20	10 MP 20
b. $5 vs. $20	A: 5	B: 5	C: 20	5 MP 20
c. $5 vs. $16	A: 5	B: 5	C: 16	5 MP 16
d. $10 vs. $5	A: 5	B: 10	C: 10	10 MP 5
e. $12 vs. 10	A: 10	B:10	C: 12	10 MP 12

C. *Note that Bob always votes in favor of the outcome that wins the election.* (The B column and the Outcome column are EXACTLY the same.)

D. Note also that exactly the same number of individuals prefer a more expensive dinner as prefer a less expensive dinner than Bob. (This is the definition of a median ideal point or "preference.")

   i. *So, Bob is the median voter.* (He is the voter with the *median* ideal point.)

   ii. Note that the median voter's ideal point can beat every other possible alternative in pair-wise voting.

E. The **Weak Form of the median voter theorem** says that the median voter always casts his vote for the policy that is adopted.

F. The **Strong Form of the median voter theorem** says the median voter always gets his most preferred policy. [In the example above Bob's preferred expenditure level, $10, will defeat any other policy.]

III. Electoral Competition and The Median Voter

A. The previous illustration shows that the median voter determines the electoral outcome in direct elections. We now show that the median voter is also very important in representative democracy.

B. To make our analysis of elections more straight forward, we will assume that Voters all vote for the candidate (or policy) that is "closest" to them in the policy dimension.

C. This assumption allows competition between candidates for government office can be analyzed with a diagram that shows the distribution of voter ideal points.

   i. The distribution of voter ideal points can be used to form diagram with policy alternatives along the bottom (X) axis and with number of voters with a specific ideal point along the vertical axis.

   ii. The area under the resulting curve gives you a number of voters.
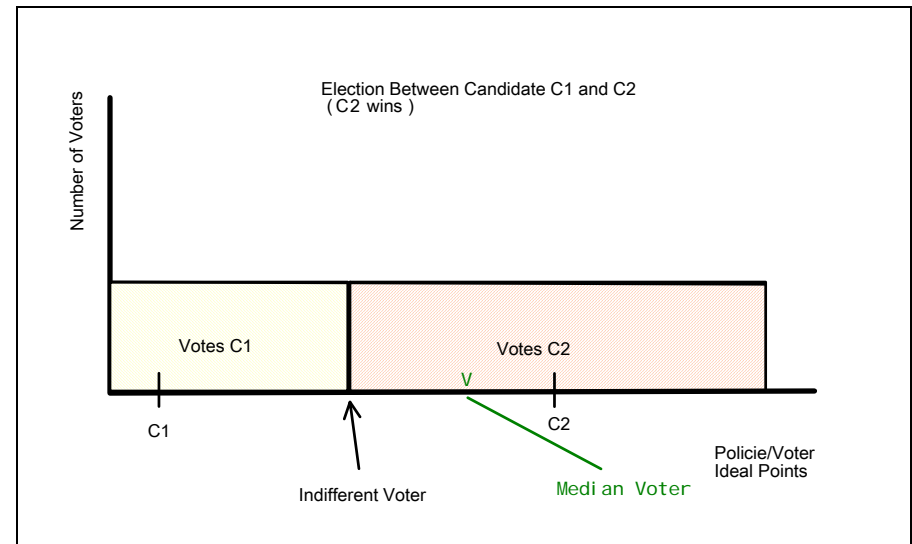
   iii. The assumption of spatial voting allows us to determine how all these voters will vote when there are two candidates or two policy options being voted on

   iv. (That is to say, every voter will vote in favor of the candidate whose position is closed to their own.)

   v. (Note that voters who are exactly half way between the two "alternatives" will be indifferent between them.

   vi. Voters to the left of the indifferent voters will vote for the policy on the left, and those to the right of the indifferent voter will vote for the policy on the right.)

D. The illustration above assumes that candidates 1 and 2 have taken positions and that voters vote for the candidate closest to their ideal point.

   i. The distribution of voter ideal points is assumed to be a "uniform" distribution.

   ii. As it turns out Candidate C1 loses this election.

   iii. How could he or she have done better? Clearly he or she should have chosen a policy position further to the right.

E. It turns out that the candidate who is closest to the median voter's ideal point will always win the election, because that candidate will always receive AT LEAST HALF OF THE VOTES.

F. Thus, if candidates are free to adjust their policy position to attract votes, they will each try to be closer to the Median Voter's ideal point than the other candidate.

G. In **equilibrium**, this kind of competition for votes implies that both candidates will take essentially the same position, namely that of the median voter.

  i.   At this equilibrium, the candidates take the same position, so they receive approximately the same number of voters.

  ii. At the equilibrium, the median voter gets exactly what he or she wants. *That is to say the strong from of the median voter theorem holds!*

IV. The Median Voter and Public Policy

A. One important insight that follows from the median voter model is that to understand the scale of government programs, one has to look at **both** the benefit and cost sides of programs from the point of view of the median voter.

B. The median voter is approximately the VOTER with MEDIAN characteristics.

  i.   That is to say he or she is a voter of median age with median income, median education, median family size, median political ideas and so forth...

  ii. Note that the median voter will not ordinarily be the same as the median member of the community because not all persons are equally likely to vote!

    a. In the US it turns out that the median voter is a bit older, richer, and better educated than the median member of the group of persons eligible to vote.

    b. Poor, young, and less educated person vote less frequently than older, richer, and more educated persons.

C. To the extent that the Median Voter gets what he or she wants, anything that changes the median voter's preferred policy will affect government policy.

  i.   [This neglects possible "agency problems."

  ii. Candidates may say one thing to get elected and do something else once in office.

  iii. Moreover, elected representatives may not be able to fully control the bureaucracy.

  iv. However, candidates that are known to have cheated and done poorly at overseeing the bureaucracy will be more likely to lose the next election than

those that have not since the median voter will not have gotten what he or she wants. So this is not a crazy assumption.]

D. To the extent that government services are normal goods, Government services will tend to increase as the median voter becomes wealthier, as their tax-cost relative to private services decreases, and as their perceived value increases.
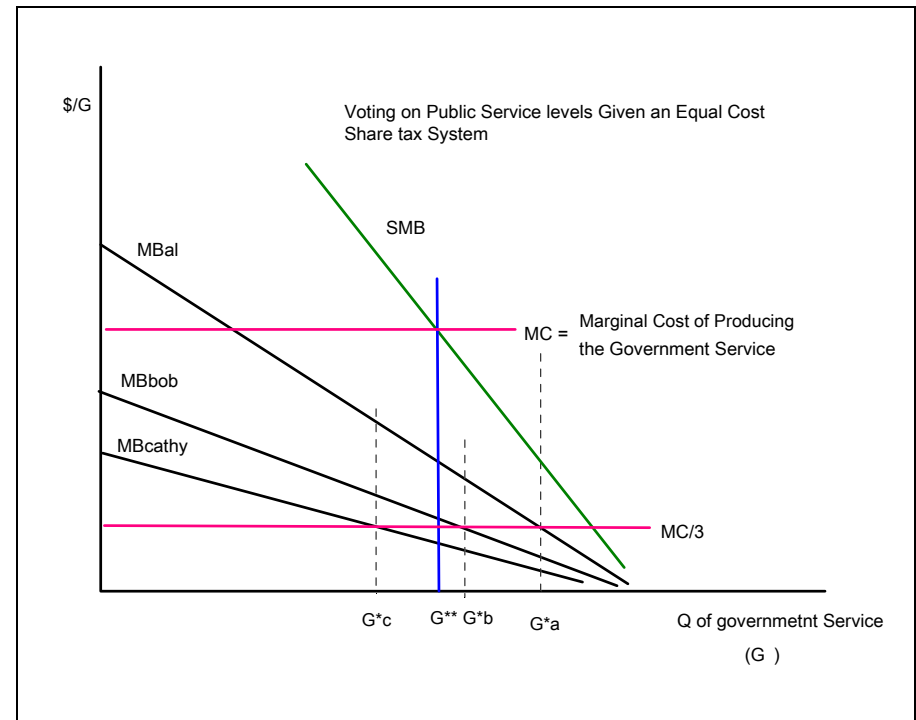
V. The Demand for Government Services and the Size of Government

A. Suppose that there are three voters, each with a somewhat different marginal benefit curve for the government service of interest (G).

  i.   For purposes of illustration assume that the tax system in place is an "equal share" system.

    a. (Recall, that this will satisfy the Samuelsonian conditions for the Pareto efficient supply of a public services if the "right" service level is produced.)

b. Given this tax system, these there voters will all **disagree** about the optimal level of the government services.

ii. If a referenda is held to determine the service level, we know from our previous analysis that the median voter will determine the outcome.

   a. (Recall that the median voter is the voter whose ideal point is exactly in the middle in the sense that there are exactly the same **number** of voters with ideal points to the left as to the right of his or her ideal point)

   b. In this case, Bob is the median voter. (Why?)

iii. Thus the predicted result of democratic politics is policy Q*b.

iv. However, this is not the same as the Pareto efficient level of the public service!

   a. Bob has no reason to take account of the benefits and costs imposed on other voters by his vote.

   b. (Remember we assuming self-interested voting, so Bob maximizes his own consumer surplus rather than social net benefits.)

   c. Q** is somewhat below Q*b.

   d. And, the supply of public services will be somewhat higher than the net-benefit maximizing level of services.

v. (It is also possible for Q** to be greater Q*b--draw such a case.)

vi. What does the above result imply about fiscal policy in a direct democracy?

B. Note that the median voter's demand for services depends in part on his tax price for that service.

i. There are two reasons for this.

ii. First, the tax system may affect WHO the median voter is, because it affects the demands of all voters.

iii. Most public services are normal goods, ordinarily a wealth person will demand higher services than a poor person.

   a. That is to say, a wealthy person's MB curve for a normal good tends to be higher than that of poorer persons.

   b. Wealthy voters are willing to pay a higher price to have one more unit of a public service than a poor person (just as they are for ordinary private goods).

iv. However, the tax system affects what QUANTITY of services each voter wants to purchase.

a. Rich voters will generally prefer more public services than poor persons under a flat tax or under a regressive tax.

b. However, rich voters may prefer smaller public service levels than poor persons under a progressive tax.

v. It is the quantity demanded that determines a voter's ideal point, and thus who the median voter is.

vi. Second, even if a change in tax price does not affect the identity of the median voter, it will affect the quantity demanded by her.

   a. For example, if one uses a flat tax to fund all services, the rank order of service demands will reflect differences in tastes and incomes of voters.

   b. Generally an increase in the marginal tax rate faced by individuals for services (an increase in the tax rate) will reduce demands for services without affecting their "rank order" -- that is to say, without changing the median voter.

VI. Rational Ignorance and Fiscal Illusion

A. An implication of the median voter theorem(s) is that the median voter gets what she/he wants. However, the median voter's ability to pick the policy that is most in her (or his) interest is limited by the information, theories, and time that she (he) has available for analyzing the alternatives.

B. Analyzing the relative merits of alternative public policies is just like any other activity--it is engaged in only up to the point that maximizes expected net benefits.

i. In most cases this occurs at the point where the expected marginal benefits of more information and more analysis equals its expected marginal cost.

ii. An implication of this (stressed by Downs and Tullock) is that voters will **rationally remain ignorant** of much useful information.

iii. They will use smaller than possible samples of data and ignore types and dimensions of information that are relatively costly to acquire and/or to analyze.

C. A bit of rational ignorance is not a problem for democracy as long as it does not induce "biased expectations" about the benefits and/or costs of public policy.

i. For example, if the sampling of information done by voters is reasonably complete they will tend to have unbiased estimates--although not perfect

ones--and the result will on average advance the interests of the median voter.

ii. Indeed, as long as voter expectations are unbiased, the Condorcet jury theorem implies that the outcomes of majority rule can also "aggregate" the information in the minds of voters (by using the median of their estimates when assessing candidates or policies).

iii. However, if the information included in the sample is not complete, voter expectations may be biased, and the results of elections will not necessarily advance even the interest of the median voter.

iv. (See Congleton 2007 and 2001 for more on this.)

D. When voters have biased expectations about the benefits and/or cost of public programs the are said to exhibit **Fiscal Illusion**.

i. In cases in which the median voter's expected marginal benefit from a public policy is greater than the actual benefit or her (or his) expected marginal cost is lower than the actual cost, the result will be an OVER demand for public services, relative to that which actually maximizes net benefits for the median voter.

ii. In cases in which the median voter's expected marginal benefit from a public policy is less than the actual benefit or her (or his) expected marginal cost is higher than the actual cost, the result will be an UNDER demand for public services, relative to that which actually maximizes net benefits for the median voter.

iii. It bears noting that both governments and interest groups may attempt to induce biased expectations by "subsidizing" (freely providing) information about the benefits of programs and/or "taxing" (withholding) information about the costs of programs.

E. [Draw a diagram of the policy preferences of voters with "biased" assessments of their marginal benefits or costs, and contrast the results with their actual interests.]

VII. Majority Rule, Interest Groups, and Representative Governance

A. The median voter model represents a pure electoral model of policy formation in democratic governments.

B. Although a very useful and powerful model, and also a quite accurate one for many policies on which voters are reasonably well informed and electoral competition reasonably intense, the median voter model neglects the effects of interest groups and the bureaucracy on public policy.

i. The effects of interest groups are especially important in areas in which voters are not likely to be well informed.

ii. Public finance examples include (narrow) tax loopholes, subsidies, and targeted (usually small) public services (such as a neighborhood park).

iii. Such "minor" policies may be of little interest to the average or median voter, but of great importance to particular businesses, industries, or voters.

iv. To the extent that such "interest groups" are successful, some public policies will tend to shift away from median voter outcomes.

C. Incorporating the activities of special interest groups into models of politics is more properly the subject of Public Choice than public finance, but a brief discussion of the method through which they affect policy is useful. (More will be developed next week.)

i. Interest groups inside (the bureaucracy) and outside of government can influence public policy by lobbying elected officials for particular policies.

a. When these groups are successful, the policies that we observe will depart from those preferred by the median voter toward those preferred by these "special interest groups."

b. Interest groups outside government may also make contributions to candidates and/or political parties that promise to advance their interests--if elected.

c. Note, however, if voters punish politicians for putting policies in place that are different from those announced during campaigns, that this will reduce the extent to which elected officials will listen to lobbyists and bureaucracy.

ii. **William Niskanan** suggests that **bureaucrats** have incentives to **maximize their budgets** for many private reasons.

a. Larger budgets often create new opportunities for advancement, more pleasant office environments, more staff support, and, perhaps, even opportunities for travel.

b. Note that even "public spirited" bureaucrats who want to advance their agency's "mission" will also lobby for larger budgets.

c. Thus, Niskanan argues that lobbying by bureaucrats creates systematic increases in government budgets to the extent that they are successful.

d. (Illustration of bureaucratic bargaining, using all or nothing offers.)

iii. The effects of other interest groups are less systematic, but in general one anticipates affects in policy areas in which benefits are substantial and

concentrated so that the interest group can over come its own "free riding problem." (**Mancur Olson,** *Logic of Collective Action*)

VIII. Some other Extensions to the Median Voter Model

A. Note that a good deal of what **interests groups** do is informational in nature.

   i. They sponsor research and testimony of researchers in Congress and before regulatory commissions.

   ii. They sponsor political advertising of various kinds.

   iii. To the extent that these informational strategies affect voter expectations about their costs or benefits, they **may induce fiscal illusion**.

   iv. Voter ignorance also allows candidates for office to trade favors for campaign resources.

     a. If voters knew everything, campaign resources would not matter.

     b. However, voters typically know relatively little about candidate positions, and have to be informed about them in various ways.

     c. Most of these methods require economic resources, so it turns out that a candidate's campaign resources also affects his probability of winning an election (along with his or her policy positions).

   v. Candidates can often move away from the median voter's position along dimensions of policies in which voters are ignorant of (or disinterested in) in order to secure campaign resources.

     a. Voters typically will not know very much about specialized issues, like the tax treatment of insurance companies, the specific details of farm subsidies, the manner in which public services are produced (by whom, how and where).

     b. On the other hand, interest groups may care deeply about such issues and be willing to pay for policies that advance their interests--either with campaign contributions or with other sorts of support during elections.

   vi. This allows interest groups to have direct effects on policy that is disproportional to the number of votes that they cast in an election.

   vii. (It is also one reason why **campaign reform law** tends to be discussed and eventually promoted. Voters know something goes one, even if they do not know what, and they demand some method of control over these deals. Politicians respond by passing legislation.)

B. Other topics in voter theory:

   i. Majority cycles: there is not always a median voter

   ii. Turnout: why do people vote if they have so little direct effect on electoral outcomes?

   iii. The role of morality, ideology, and "expressive voting" in voter behavior.