I. From Public Economics to Public Choice: An Overview of the Early Literature

A. Economists have long been interested in public policy questions. Indeed, it can be argued that economics as a field emerged as a method for persuading others about the merits of liberal policy reforms in the eighteenth and nineteenth century.

i. In the nineteenth century, there was not much distinction between positive and normative analysis, nor was there much distinction between economic, political, and legal analysis.

- Policies were analyzed for their impacts (positive analysis)
- And, suggestions for reform offerred--often based on utilitarian analysis.

ii. In the late nineteenth century, social science started to become more specialized and separate departments for the study of economics, political science, and sociology became commonplace in academia.

- Economists after that partitioning of social science focused more narrowly on markets and economic development.
- Normative and positive analysis became more separate, in part because the insights of "positivist philosophy" were internalized by the profession.

iii. Economists remained interested in public policy issues, but the politics behind public policy became a topic for political scientists rather than economists.

a. One could see this effect in textbooks and in research.

b. Specialization continued to increase and sub-fields of economics emerged.

B. In the twentieth century, most public finance, environmental economics, and macroeconomic text books and research assumed that public policies were "exogenous" (beyond their models and analysis) rather than part of the subject.

i. Text books in all these fields often criticized contemporary public policies and made suggestions about how those policies can be improved.

- Taxation was criticized from the perspective of optimal tax theory
- Externality problems were pointed out and possible solutions proposed.

ii. However, with minor exceptions, part they did not discuss why those policies have or have not been adopted.

C. During the late 1940s and 1950s, a small group of economists began to use rational choice models to analyze how public policies come to be adopted in democracies.

i. Duncan Black (1948, 1958) and Howard Bowen (1943) were the first economists to analyze voting with rational choice models.

ii. Subsequent contributions in the 1950s include papers and books by Kenneth Arrow (1951), James Buchanan (1949, 1954), Anthony Downs (1957), and Charles Tiebout (1956).

iii. In the 1960s, the field that would come to be called "public choice" began to take off with major books by Buchanan and Tullock (1962), Olson (1965), and Niskanen (1968).

a. The classics of public choice are largely from the first three decades of public choice research:

- Duncan Black's *Theory of Committees and Elections*
- Kenneth Arrow's *Social Choice and Individual Values*
- Anthony Down's *Economic Theory of Political Action in a Democracy*
- William Riker's *Democracy in the United States*
- James Buchanan and Gordon Tullock's *Calculus of Consent*
- Mancur Olson's *Logic of Collective Action*.

b. Other near classics from the 1970s and early 1980s include:

- William Niskanen's *Bureaucracy and Representative Government*
- Gordon Tullock's *the Social Dilemma*

- James Buchanan's *Limits of Liberty*
- Susan Rose Ackerman's *Corruption*
- Mancur Olson's *The Rise and Decline of Nations*,
- In addition there are important edited volumes on *Anarchy* (Tullock), the *Rent-Seeking Society* (Buchanan, Tullock, and Rowley), and a broad survey of the Public Choice literature by Dennis Mueller.

iv. Much of that work was considered to be political science rather than economics by other economists.

D. At about the same time that economists began thinking about rational choice models of politics and bureaucracy, a handful of political scientists began to be interested in rational choice models of political action.

i. For the most part, political science had been empirical (inductive) rather than theoretical (deductive) after the field was founded in the late nineteenth century.

ii. The work of William Riker (1962, 1968) arguably was most important.

iii. This was followed by many others including Steven Brams (1973, 2005), Bernard Grofman (1973, 1984, 1999), Barry Weingast (1979, 1989, 2009), and Elinor Ostrom (1986, 1990, 2009), who won the Nobel prize in Economics in 2009.

iv. Fellow travelers from sociology and philosophy included James Coleman (1966, 1988) and John Rawls (1955, 1971).

- Paradoxically, mainstream political scientists regarded "rational choice" politics, for the most part, to be part of economics, rather than political science.

E. Of course, their work was not entirely discounted by mainstream economists, political scientists, sociologists, and philosophers.

a. Their research attracted considerable interest.

b. Indeed, Arrow and Buchanan eventually won Nobel prizes in large part for their pioneering contributions to "rational choice politics" or "public choice" (Arrow in 1972, Buchanan in 1986).

c. Second and third generations of Public Choice scholarship was undertaken by many of the students of Buchanan, Riker, Olson, and Stigler.

F. During the 1960s and 1970s, the use of rational choice (self interest) models to explain public policy accelerated.

i. The name public choice was adopted to describe the field around 1969.

ii. A new journal (*Public Choice*) was founded in the late 1960s.

iii. And several centers for public choice research were established including ones at Virginia Polytechnic Institute (VPI), Carnegie Mellon, Rochester University, and Washington University (in St Louis).

iv. Nonetheless it remained an unconventional field of research until a decade after Buchanan won his Nobel prize for constitutional political economy in 1986.

G. In the past two decades, the field has become "mainstream" as members of the public choice, rational choice politics, and new political economy research circles extended the research to international issues in public finance and development.

- The field of public choice has experienced considerable specialization.
- Several sub fields emerged: theory of elections, interest groups, rent seeking, constitutional political economy, politics of development, social choice, experimental public choice and many others.

H. It also should be acknowledged that many of the issues explored by public choice research were not entirely new. However, it created a new methodology for thinking about politics and public policy that raised both new issues and insights, and also new ways to analyze issues that dated back to Aristotle.

i. There is a surprising overlap between the conclusions of the new work and work by political economists in the nineteenth century and a subset of philosophers from earlier times.

ii. The French physiocrats Condorcet and Borda pioneered rational choice models of voting systems in the late eighteenth century.

iii. A significant subset of political science, historical, and constitutional resaerch research going back to Aristotle and Plato might also be

considered public choice in the sense that people were assumed to adjust to incentives, constitutions were regarded to be important determinants of politics, and public policies the outcome of practical politics, given constitutional rules, rather than idealism on the part of rulers.[1]

I. By applying modeling tools from economics and game theory and applying new statistical techniques, public choice scholarship developed a new methodology that shed a good deal of new light the manner in which

i. public policies tend to be chosen,

ii. the manner in which alternative political institutions operate, and

iii. the prospects and best directions for institutional reform.

J. **This handout provides an overview of the main problems tackled by the public choice literature, its core models, and its main results and controversies.**

i. Of particular importance for this course are its contributions to the theory of policy making.

- Policies emerge from politics, in part because of consequences anticipated by public economics.
- The specific policies that emerge also vary with the institutional structures through which those policies are chosen.

ii. Thus the origin and evolution of political and legal institutions also affect public policy choices and through them economic outcome.

K. There are essentially **three subject areas** of public choice research, which operate more or less independently of each other: (i) the theory of elections and electoral driven policy choice, (ii) the theory of interest groups and interest group driven public policies, and (iii) the theory of constitutional design and reform.

L. In all three areas, there are a variety of **positive and normative** theories that have been developed and debated.

i. The positive branch attempts to understand the implications of public choice procedures on public policies and other collective outcomes.

ii. The normative branch attempts to determine which decision rule works best based on those models using systematic normative theories such as utilitarianism and contractarianism frameworks.

iii. The normative and positive branches are not entirely separate, because individuals may rely partly on norms (ideology) when voting, joining groups and selecting among constitutional arrangements.

iv. Dealt with simultaneously, the theory can provide an explanation for the productivity and defects of contemporary political institutions and public policy.

v. This handout is organized to analyze (1) rational choice models of the origin of government, (2) the organization and effects of interest groups, and (3) the effects of using majority rule to choose public policies.

II. The Practical Necessity of Collective Choice

A. In principle, every time a group of individuals undertakes a joint enterprise of some kind: choose a restaurant, play a game, create a firm, lobby for a particular public policy, found a state, they engage in public choice, or collective decision making. Every *group* requires some formal or informal method of making decisions.

[1] The early rational choice analysis of Condorcet and his French associates and rivals in the late Eighteenth century had largely been forgotten, until Duncan Black worked out the median voter theory. See for example McLean, Urken, Hewitt (1995). Other political science often used language and ideas that were consistent with rational choice models, but without associated models or mathematics. This analytical tradition could be said to have begun with Plato and Aristotle and continued through Hobbes, Montesqueiu, and Madison to the present day, with contemporary rational choice politics being a logical extension of that approach.

i. In small groups, the decision rule may be a matter of unanimous agreement. A dinner party may hunt for a consensus restaurant which all might consider "acceptable."

a. In some cases, as where one person of the dinner party is considered and expert, the collective decision made be made by one person, a "dictator."

b. In larger groups, decisions may be made by casting and counting votes. A restaurant could be chosen by majority rule.

c. In still larger groups, or regarding more complex decisions, the groups may create a formal institution for making collective decisions, as a firm makes a variety of decisions that affects all with "rights" to the company's output.

ii. To the extent that the decision making method is a formal and durable procedure for making group decisions, it may be regarded as grounded on a *constitution*.

iii. Within economics, most firms are not dictatorships of a single entrepreneur but often complex organizations in which a wide range of collective choices are made, some of which but not all are vote driven as with votes of shareholders and decisions by boards of directors and other committees within the organization.

iv. Even markets may be regarded as a possible procedure for making group decisions regarding the allocation of resources, the prices paid for goods and services, and the right to transfer ownership rights via production and sale.

B. To the extent that procedures for making collective decisions remain in place, they may be regarded as "constitutional" in nature. That as to say, the procedures for making policy choices can be regarded as the **Rules of the Game**, or when applied to governance as the **Rules for Making (lower level) Rules**.

i. Durable procedures for making decisions do not have to be written down to satisfy this condition.

a. It is sufficient that the basic pattern of "rule making" or "collective choice" is itself determined by rules that remain unchanged during day-to-day collective decision making.

b. A constitution, written or unwritten, that was not durable would not be a constitution in this sense of "the rules of the game."

ii. Constitutions affect collective decisions (e.g. public policies) by affecting the kinds of political equilibria that tend to emerge in a given society.

C. "Constitutional" choices are commonplace for small organizations and that constitutional reforms are fairly common within larger ones.

i. Every time a group agrees to a durable group decision process, a constitution has been chosen.

a. Every time a core procedure for making public policies is modified, a constitutional reform takes place. Political constitutions are chosen far less frequently than they are reformed. (Indeed, reforms are more common than most constitutional histories suggest.)

ii. Public policies, themselves, from this perspective are very rarely "accidents" or mistakes, but reflect the interests and constraints of persons with authority to adopt public policies.

D. Most of the academic public choice literature has focused on the political decisionmaking and public policies in more or less democratic states.

i. For the first thirty or forty years, a good deal of public choice research was focused on US institutions and policies, because that is were most of the researchers lived.

ii. For the past twenty or thirty years, research has focused on other democratic countries (Europe, Japan, etc.) and also begun to explore earlier political systems.

iii. Smaller literatures exist on Dictatorship, constitutional reform, and the institutions democracy (parliamentary vs presidential systems, PR versus plurality voting, judicial systems, and so on).

III. Majority Rule: One method of making decisions by counting votes

A. Majority rule is one of the most widely used procedures for making collective decisions within organizations and within democratic polities.

i. Committees of various kinds are commonplace within organizations, and in cases in which a consensus does not exist, majority rule provides a systematic way to take account of the balance of opinion.

ii. Majority rule has also long been used as a method for making decisions within parliaments and for selecting members of parliaments.

iii. Governance based on majority rule and universal suffrage, however, is a far more recent invention.

B. In many, perhaps most cases, voter preferences can be mapped into a left-right spectrum of some kind.

i. It turns out that, in such cases, voters at or near the middle of that spectrum are very important.

ii. Indeed, the **median voter** (the voter at the exact center of the distribution of voter preferences in such a one-dimensioned spectrum) (nearly) always votes for candidate or policy that wins.

- In this sense, the median voter determines the outcome.

iii. Duncan Black (JPE 1948) worked out both the median voter theorem and limits to it (e.g. the single peaked preference requirement).

- Both were major advance to political science.

C. **The Median Voter Theorems.** Suppose that three individuals: Al, Bob and Charlie are to make a decision about how much to spend on lunch based on majority rule. Al prefers to spend $5.00, Bob wants to spend around $10.00 and Charlie around $20.00.

i. For convenience assume that, given any two options, each will prefer the lunch that is closest to their preferred expenditure.

- This assumption is often made in "spatial voting models."
- It can be shown to be a good approximation of net benefit maximizing behavior.
- [Consider for example choices when marginal benefit and marginal cost curves are both straight lines.]

ii. Now consider some elections with spatial voters Al, Bob, and Charlie:

- $10 vs 20$ A: 10 B: 10 C: 20 10 MP 20
- $5 vs $20 A: 5 B: 5 C: 20 5 MP 20
- $5 vs $16 A: 5 B: 5 C: 16 5 MP 16
- $10 vs $5 A: 5 B: 10 C: 10 10 MP 5

iii. *Note that Bob always votes in favor of the outcome that wins the election.*

iv. Note also that exactly the same number of individuals prefer a more expensive dinner as prefer a less expensive dinner than Bob. *Bob is the median voter.*

D. The **weak form** of the *median voter theorem* says the median voter always casts his vote for the policy that is adopted.

E. The **strong form** of the *median voter theorem* say the median voter always gets his most preferred policy. [Note that in the example above $10 will defeat any other policy.]

F. In countries with two major political parties, there is a tendency for party platforms to converge toward the median voter's ideal point.

i. Illustrate electoral competition between candidates generating the median voter's ideal point. [See notes from class.]

ii. This result allows the median voter model to be used as the core model of democratic decision making in the U. S., much as the neoclassical model of competitive equilibrium is used as the core model of decisionmaking in markets.

- Both the median voter and competitive market theories have many limitations, but serve as a useful first approximation to the real world.

iii. The median voter theorems can also be generalized a bit and shown to apply for policies selected both direct democracy and for PR-based forms of representative democracy under a variety of plausible procedures.

- Under proportional representation systems (PR systems), the party that the median voter votes for is likely to be a member of the ruling coalition in parliamentary systems. Thus, at least the weak form of the median voter theorem should apply.

G. It bears noting that conditions sufficient to assure that a median voter exists requires some fairly severe assumptions.

i. Voter preferences over policies must be single peaked and symmetrically distributed about a particular policy (which will be the multi-dimensional median). [See CR Plott, *AER* 1967.]

► In spatial voting models, it is sufficient that voter preferences can be summarized with a single ideological dimension.

► Illustrate a majority cycle in a two dimensioned policy space in which voters are not symmetrically distributed using win sets.

ii. Fortunately, these fairly restrictive assumptions seem to be fairly realistic, at least as a first approximation.

- KT Poole and H. Rosenthal (1997) demonstrate that more than 85 percent of all role-call voting in the US House of Representatives can be explained with a single ideological dimension for the entire 200+ year history of the United States.
- An alternative model of electoral equilibrium, the **stochastic voting model**, was worked out during the 1970s and 1980s, which requires fewer assumptions to assure the existence of majoritarian equilibria.
- That theory allows voters to make mistakes about the candidates that they vote for, but assumes that voters are more likely to vote for the candidate nearer to them (in policy space) than the ones farther away.
- At the Nash equilibrium, candidate platforms converge to a weighted mean of voter policy positions. (The weights are determined by voter sensitivity to small changes in candidate platforms.)
- [See Mueller (2003) or Coughlin (1992) for overviews of that theory.]

H. In policy settings in which the strong form of the median voter theorem seems relevant, it is possible to model a wide variety of policies as those which maximize the welfare of the median voter.

i. This allows government decisionmaking to modeled as the result of a single person's optimization choice.

ii. In this respect, the median voter model is analogous to that of dictatorship models.

- However, the median voter has much less ability to make transfers to herself.
- At some point, transfers will change the distribution of voter ideal points and so produce a new median voter.

iii. The median voter model is consistent with, and provides an explanation of, what George Stigler (1970, JLE) has called **Director's Law**.

- Namely, that "Public expenditures are made for the primary benefit of the middle classes financed with taxes which are borne in considerable part by the poor and rich."

iv. There are, however, limits to which a median voter can make transfers to a specific person or group without changing the distribution of voter preferences and producing a new median voter.

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IV. Median Voter Models of Public Policy

A. Consider a referendum for a public service that is funded with a non-distorting "head tax."

i. Each voter in his capacity as a policy "maker" looks very much like the standard consumer in a grocery store, except that in addition to private budget constraints, he has a "public" budget constraint to deal with.

ii. Suppose that voter's have the same utility function defined over private consumption (C) and some public service (G). But suppose further that each voter has a different amount of money, Wi, to allocate between C and G, and, further, assume that the government faces a balanced budget constraint, and that all expenditures are paid for with a head tax, T. Assume that there are N tax payers in the polity of interest.

iii. Thus:

a. $U = u(C, G)$

b. $Wi = C + T$

c. $g(G) = NT$

iv. Note that T can be written as $T = g(G)/N$ and substituted into the private budget constraint to make a single unified budget constraint:

- $Wi = C + g(G)/N$

v. This in turn can be solved for C and substituted into the utility function:

► $U = u(Wi - g(G)/N, G)$

vi. Differentiating with respect to G yields a first order condition that characterizes the median voter's preferred government service level:

► $- U_C (g_G/N) + U_G = 0 = H$

► or equivalently as $U_C (g_G/N) = U_G$

a. The right hand side of the latter is the subjective marginal benefit (marginal utility) of the government service, the left-hand term is the subjective marginal opportunity cost of government services in terms of lost private consumption.

b. Note that the subjective marginal cost of the service is determined by both preferences (marginal utility of the private good C) and objective production or financial considerations, cG/N. The latter can be called the median voter's marginal cost share, or price for the government service.

vii. An implication of the first order condition together with the implicit function theorem is that each voter's demand for public services can be written as:

a. $Gi^* = \gamma(Wi, N)$ that is to say, as a function of his own wealth (holding of the taxable base) and the population of tax payers in the polity of interest.

b. The implicit function differentiation rule allows one to characterize comparative statics of how changes in wealth, Wi, and number of tax payers, N, affect a voter's demand for government services.

c. Specifically $G^*_W = H_W/-H_G$ and $G^*_N = H_N/-H_G$ where H is the first order condition above.

d. Recall that solving for these derivatives requires using the partial derivative version of the composite function rule and paying close attention to the location of all the variables in the various functions included in "H," the first order condition. We find that:

$$G^*_W = [- U_{CC} (g_G/N) + U_{GW}] /$$

$$-[U_{CC} (g_G/N)^2 - U_C (g_{GG}/N) -2 U_{CW} (g_G/N) + U_{GG}] > 0$$

and

$$G^*_N = [- U_{CC} (g_G/N)(g(G)/N^2) + U_C (g_G/N^2) + U_{GW}(g(G)/N^2)]/$$

$$-[U_{CC} (g_G/N)^2 - U_C (g_{GG}/N) -2 U_{CW} (g_G/N) + U_{GG}] > 0$$

e. That is to say, with head tax finance, each voter's demand for a pure public service rises with personal wealth and with population.

viii. *Moreover, since demand is strictly increasing in W, it turns out that the median voter is the voter with median income.*

a. It is this voter, whose demand for public services will lie in the middle of the distribution.

b. The voter with median income has a preferred service level G** such that the same number of voters prefer service levels greater than G** as those who prefer service levels lower than G**.

c. The comparative statics of a voter with median income can, in this case, be used to characterize the course of government spending through time, as other variables change (here, exogenous shocks to W or N, changes in tastes, etc.).

B. **Another Illustration**

C. Consider the following model of a voter's preferred level of environmental regulation.

i. Let U = u(Y, E) where Y is material consumption (income) realized by the median voter, and E is the (perceived) level of environmental quality. Suppose that environmental quality is a function of regulatory stringency R and national income, E = e(R, Y).

ii. To simplify a bit, suppose that the median voter gets a constant fraction "a" of national income which is decreasing in regulatory stringency, Y = y(R) and Ym = aY

iii. The constraints and definitions can be substituted into the median voter's utility function: U = (ay(R), e(R, y(R)))

iv. This can be differentiated with respect to R to characterize the median voter's ideal stringency of environmental regulation R*.

v. R* will satisfy $U_Y aY_R + U_E (E_R + E_Y Y_R) = 0$

vi. The first time is the median voter's marginal cost and the last is his marginal benefit from more stringent environmental regulation. (Explain why.)

vii. The implicit function theorem (see class notes) can be used to determine the comparative statics of environmental regulation with respect to parameters of the median voter's optimization problem. The results are (qualitative) forecasts of public policy in this area.

D. A somewhat more realistic electoral model of the demand for pure public goods can be developed by changing the fiscal constraints a bit.

i. Suppose that G is a public service received by the median voter (which may or may not be a pure public good). Again let his utility level be defined over other consumption, here C, a variable affected by the policy of interest, here the level of G provided.

ii. Let the level of G be an increasing function of the taxes collected, G = g(T) and suppose this time that the total tax revenue be a function of national income.

- Instead of a head tax, assume that a proportional tax is used. ($T = a + tY$ is a surprisingly good first approximation for aggregate taxation in the US.)
- Suppose further that national income, Y, is itself negatively affected by the marginal tax rate t, here Y = y(t). (That is to say assume that the tax has a deadweight loss.)

iii. Again assume that each voter's personal income is some constant fraction of national income, a_i, so that voter i's private consumption is $C = (1-t)\, a_i Y$.

iv. To characterize public policy using the strong form of the median voter theorem, substitute the median voter's constraints into the median voter's utility function.

- This yields an optimization problem with one control variable (here t, which implicitly determines both G and y).
- U = u((1-t) a Y, G(t y(t)))
- [Puzzle: why is there just one degree of freedom in this characterization of the median voter's optimization problem?]

v. Differentiating with respect to t characterizes his ideal tax level,. t* will satisfy:

- $U_C [(-1)aY + (1-t)aY_t] + U_G G_T (Y + tY_t) = 0$
- Given all the assumptions, the median voter's ideal tax rate, public service level, and private consumption level are all determined by the median voter's parameter *a, that is the share of gdp received by the median voter.*
- *That is:* $t^* = f(a_m)$ where m denotes the median voter.

vi. Given *t**, the median voter's ideal public service level can be written as:

- $G^* = g(t^* Y(t^*))$
- National income as $Y = Y(t^*)$
- and the median voter's private consumption as: $C_m = (1-t^*)\, a_m\, Y(t^*)$
- (t^* in all these equations is the the tax rate that satisfies the first order condition above.)

vii. The implicit function differentiation rule can be used to characterize the comparative statics of the median voter's choice.

- This allows us to make forecasts about the course of public policy in this area.

- ► However, the model is still a fairly lean one, in that there is just one exogenous parameter, namely the median voter's share of national income.
- ► (In a competitive economy, this would reflect his or her value marginal product.)

viii. As an exercise, construct a somewhat more "concrete" model where there is a balanced budget constraint, and G is produced via constant returns to scale, the cost of G is just cG. (This will produce another exogenous parameter of the median voter's choice problem.)

- ► One could also model national income in a more elaborate way, by for example including technology or capital in the aggregate production function.
- ► Other income tax schedules could also be used, E. G. a linear one T = a + tY]

E. Note that all of the above models have implication about the proper way to estimate the demand for services.

- ► They indicate which variables are endogenous and exogenous.
- ► They indicate which relationships belong in a simultaneous system of equations.
- ► They indicate variables that should be included in both the system of equations and in reduced form estimates.

F. Median voter models can also be used to characterize different "kinds" of median voters and different conceptions of state enterprises.

i. For example, Meltzer and Richard (1981) provide a Spartan but sophisticated analysis of how a median voter model can be used to represent the equilibrium size of a **pure transfer model** of government policies.

a. Their model assumes that a demogrant program is financed with a proportional income tax and that the tax has a deadweight loss.

b. Their analysis can be characterized with just two fiscal assumptions and one economic assumption that can be summarized in two equations:

- ► voter i's after tax income is: $Y_i = (1-t)\, y(t) + G$
- ► the demogrant, G, received is $G = 1/N\ (t\ \mathbf{S}\ Y_i)$ where N is the number of demogrant recipients
- ► Voter's choose t and G to maximize the income (or utility from income).

ii. In many cases, such a model implies corner solutions of complete or no redistribution.

a. Ignoring deadweight losses from taxation, all voters with below average income favor a tax of 100% and all voters with incomes above the average prefer no redistribution.

b. So, "extremism" is common among voters in such models.

iii. In the case they analyze, however, the deadweight loss of the tax system induces the median voter to redistribute at an intermediate level, because intermediate levels maximize the demogrant received.

- ► The deadweight loss of tax systems allows intermediate solutions.
- ► Intermediate solutions may also arise if voters are altruistic and the median voter's permanent income is above average.
- ► [illustrate]

G. **Caveats: Weaknesses of the Median Voter Model**

i. Median voter models are in some ways analogous the perfect competition models of neoclassical economics.

- It relies on intense competition between candidates and parties for the votes of informed voters.
- In cases in which voter preferences can be mapped into a single dimension, the median voter is the "pivotal" voter, whose identity and interests may change through time as demographics change or as economic circumstances change.

ii. Some of its implications change when voters are rationally ignorant.

iii. In a society in which most voters know a bit about public policy, the results can still approximate the median voter theory (Congleton 2007), however, if they do not, policies are not likely to advance the voter's true interests (Congleton 2001)

iv. In areas in which voters are entirely ignorant, voter interests are unlikely to be advanced through legislation or regulation, which creates areas in which interest groups may have more influence on policies than can be accounted for by their votes.

v. Turnout is also important in median voter models, since it is the median voter that actually turns out (or is expected to turn out) that is actually decisive, rather than the median person in society or in the electorate as a whole.

vi. Perhaps surprisingly, it is also difficult to explain why rational voter cast votes. Is it narrow interest? duty? or a desire to express oneself?

- Essentially no voters would turn out for their narrow economic interests alone. $Be < P(|B^l - B^r|)$ where P is the probability of being the decisive voter, $|B^l - B^r|$ is the net benefit of having candidate l or r win rather than the other, and C is the opportunity cost of voting.
- Some other benefits are necessary, for example D (the subjective benefit of undertaking one's civic duty, or E, the benefit of expressing one's opinion, etc.)

vii. Another critical problem arises when there are more than two dimensions in the policy space. The existence of a voter in such cases either requires multidimensioal symmetry (Plott 1967), which might arise if voter preferences are reducible to a single dimension (as with an ideological dimension).

- In other cases, no stable median voter or other equilibrium may exist (Black 1948, McKelvey 1979).
- Nonetheless, one observes remarkable stability in democratic budgets and other policies through time, although not complete stability. This may well be generated by institutions (Shepsely and Weingast (1981).
- In some cases, institutions can replicate single dimensional politics, as when votes are cast on one policy at a time. Although the overall result may not be exactly that that emerges from a median voter model, such models are useful "first approximations" of what emerges.
- There is also a literature that explores other equilibrium concepts in electoral models (Grofman and Merrill 1999, 2005).

V. Interest Groups: Rational Choice Politics without Elections

A. There are several areas of public policy in which the policies adopted do not seem to be consistent with either maximizing social net benefits or median voter interests.

B. If electoral outcomes are reasonably stable and competitive, such policies are likely consequences of ignorance on the part of voters in combination with agency problems of one kind or another.

i. Ignorance--whether rational or natural--implies that voters may be effectively indifferent about policies that they know nothing about.

ii. In those areas, elected officials can safely adopt policies that undermine rather than advance the interest of moderate voters.

iii. The only risk is an obvious scandal, which will cause care to be taken so as not to be too obviously against the median voter's interests. (Arnold 1993; Hopenhayn and Lohmann, 1996).

C. Partly to explain policies that did not seem to be in the interest of the median voters, a more or less separate public choice literature on the politics of **interest groups** emerged that explored how rational choice models could be used to understand how interest group activities might affect public policy choices.

D. There are a variety of perfectly legal methods by which interest groups can affect public policy.

i. First, and probably most important, there is persuasion.

- Interest groups may attempt to persuade the public (voters), their representatives, or regulators that the "best" policy just happens to be the policy that generates large transfers to the groups making the argument.
- Similar informational campaigns may also take place inside legislatures and in the courts.
- See Congleton (1991) for a comparison of the efforts of ideological and economic interest groups in persuasive campaigns.

ii. Second, in a democracy or dictatorship, such groups may provide financial or "in kind" support for those in power that makes it more likely that those in power (e.g. office holders) continue in office.

iii. In democracies this can be done with "single issue" voting, public protests/support, and with (conditional) campaign contributions.

iv. In dictatorships, it may be done by "trading favors" with those that have the power to make policy decisions.

v. There are also many illegal methods of influence: bribery, threats of violence, blackmail, etc. of relevant policy makers.

E. The literature on the political economy of interest group politics can be said to have begun with Mancur Olson's *Logic of Collective Action* published in 1965, although there were precursors to Olson's work., such as chapter 19 of the *Calculus of Consent* (1962) and in Riker's theory of coalitions in legislatures.

i. Olson's book represented the first careful analysis of the "economics" of interest group activities from the point of view of elementary game theory.

- This is not to say "special interests" had previously been ignored, the existence of special interests and "factions" have essentially always been part of the analyses of public policy formation, but Olson brought new tools and ideas to the analysis of interest groups.
- In particular, he noted that the collective action is, itself, a public good for those who may benefit from such action, and that various coordination and free-riding problems have to be overcome if collective action is to be undertaken.
- This has implications about the kinds of groups that are likely to form and their internal organizational structure.

i. Successful interest groups will be organized, and they will tend to have internal reward structures that favor "activists" and other members over nonmembers.

ii. **Small groups with relatively intense interests tend to be easier to organized than large groups with diffuse interests--which, for example, favors producer groups over consumer groups.**

F. The somewhat narrower rational choice literature on the political economy of regulation emerged out of the industrial organization literature at about the same time.

i. The economics of regulation literature can be said to have *begun* with Gordon Tullock's (1967, *Ec. Inq.*) analysis of the dead weight losses generated by political and other efforts to obtain monopoly power and tariff protection, and George Stigler's interest-based theory of economic regulation (1971).

ii. Tullock's 1967 paper, on what was later to be called "rent seeking," characterized dynamic losses from interest group and other activities that generate policy outcomes generally agreed to reduce social welfare. Not much additional work was done within the Tullock framework until in the middle seventies when Anne Krueger (1974, AER) independently reinvented the idea and named the phenomena rent-seeking,

- (A future next lecture will spend more time on rent-seeking models and applications.)

iii. Stigler's 1971 paper argued that regulations that look like they hurt the interests of firms and help consumers, actually help firms and hurt consumers, because firms will be more politically active than consumers (more or less for Olsonian reasons) and so are able to "capture" the regulators.

iv. The Stigler paper became the basis of what would be called the Chicago school of political economy. It was entirely interest group focused and for the most part focused on regulation rather than issues traditionally covered in public economics classes. It gradually became an important strand of the industrial organization literature.

G. Models of regulation were developed and extended by prominent Chicago economists with an interest in industrial organization.

- Sam Peltzman (1976) argued that regulators did not entirely ignore consumers as argued by Stigler, but made tradeoffs between the interests of consumers and firms, reflecting their political interests.
- Becker (1983) essentially ignored the role of regulators, arguing that in the end policies are determined by a balance of interest group

pressures with the result that public policies are efficient rather than inefficient--otherwise they would attract more oppositino.

- Essentially, these scholars applied Olson's analysis of interest groups in general to to model economic regulation, which has long been an important topic in industrial organization.
- Two of these University of Chicago professor won Nobel prizes partly for their work on the political economy of regulation: Stigler (1982) and Becker (1992).

i. Although this new "Chicago political economy" literature was linked to Mancur Olson's work on the *Logic of Collective Action* (1965), that research program was somewhat more rigorous (mathematical), and was more narrowly focused on US regulatory institutions and on politically active economic interest groups than Olson's more general analysis.

- This the Chicago group was a separate research circle is implied by their failure to mention the public choice literature in general or the rent seeking idea, in particular. Essentially no mention is made of the public choice literature beyond a passing citation of Olson's work on collective action.
- (Such a pattern of citation, could be an example of academic rent-seeking, which many in the VA political economy circles took offense at, as they would later take offense of the new political economy literature.)

H. More recent innovations in the interest group literature include:

i. a large series of papers inspired by Grossman and Helpman (1994, *AER*, "Protection for Sale"), which uses an auction model of interest group politics, in which rival groups bid for trade protections of one kind or another

- The model is very similar in spirit to the Peltzman model discussed below and will be discussed in the lecture(s) on rent seeking.

ii. a smaller series of papers on rent-extraction inspired by McChesney (1987) in which he argues that politicians actively develop rent-seeking contests as a method of "extracting" rents and support for their electoral campaigns from firms and other interest groups

iii. There also continues to be a good deal of research on rent-seeking models and applications, most of the former of which have been mathematical in nature (See, for example, Congleton, Hillman, and Konrad 2008, or Congleton and Hillman 2015).

VI. Interest Groups: Olson's *Logic of Collective Action* (1965)

1. Overview

A. Although it may be argued that many of the ideas contained in the *Logic of Collective Action* were in the "air" at the time the book was written, Olson's book stands out as a very readable, original, and impressive analysis of the problems of organizing collective action.

B. It is the beginning of what is arguably the most complete and extensive of the three major interest group theoretical frameworks, as well as the first, so we'll develop Olson's theory at some length.

- (It was essentially his Ph. D. dissertation at Harvard.)

i. The "Logic" deals with collective action in general. For the purposes of this part of the course, its implications for politically active groups are most relevant. However, to understand the scope of Olson's use of the Logic to analyze a very broad range social and eoconomic issues some broader overview is required.

i. To begin with, any activity involving more than a single person can be regarded as collective action.

- All groups have to solve a variety of free rider and coordination problems if they are to "productive enterprises."
- In many cases, to over comes such problems they will have to be organized--that is to say they will have internal incentive and decision making systems.

ii. With respect to political activity, Olson notes that **any** efforts to influence policy via coordinated voting, lobbying, campaign contributions, etc. **are all public goods for group members and so subject to the usual free rider problems**.

- That is to say, all members of the interest group (say farmers) benefit whether they have contributed to the collective effort to affect policy

or not, when a policy is "improved" (as farmers might consider increases in farm subsidies).

iii. The cost of organizing collective action, however, varies among groups.

- Small groups with intense interests (privileged groups) have the lowest organizational costs.
- Intermediate sized groups are small enough that individual effort levels can be observed, but still requite organization to function as a group.
- Large groups (latent groups) require much more organization to function as a group and tend not to be organized.

iv. [Illustrations of the free rider problem]

- [Figure: the private marginal costs and benefits of collective action for an individual relative to that generated for other persons with similar interests.]
- [Game Matrix of the free rider problem of organizing an interest group.]

C. Olson argues that small groups of persons or corporations with relatively intense or large interests in policy *are more able to organize* than large groups whose members have relatively small interests at stake.

i. Consequently, small groups are able to exploit larger groups.

- That is to say, small politically active groups they may be able to get preferential government policies adopted which benefit themselves at the expense of other larger groups in society.
- [Olson suggests that rational ignorance must play a role in the adoption of such policies in a democracy. Why?]

ii. The benefits received by the small group are often be less than the cost imposed on the large unorganized (latent) groups.

iii. In addition to group size and the intensity of individual member interests, Olson notes that various techniques can be used to overcome the organizational problems of intermediate and large groups.

- For example, most politically active groups provide benefits of some kind that are directly related to membership.
- That is to say, if it is possible to exclude non-members from at least some of the group's beneficial activities, there will be stronger incentives to join, and weaker incentives to free ride.

iv. Olson calls such devices: selective incentives.

- Thus farm coops provide many services to their members, in addition to lobbying for preferential farm policies.
- Environmental and senior citizen groups often sponsor trips, newsletters, and so forth, in addition to lobbying for social security and medicare increases, etc..
- The salary increases of unions tend to be limited to their members.

2. "The Logic" on Interest Groups

i. Although the *Logic* has been cited thousands of times, it is mainly the central idea that gets attention, rather than the arguments supporting it.

ii. Thus, it worthwhile to review the main elements of his theoretical framework. My purpose in doing so is to remind the reader of the logic behind the Logic.

iii. First, Olson assumes that men and woman are fundamentally self interested and take account of their own costs and benefits when engaging in collective action.

iv. Second, he assumes that the relevant costs and benefits are affected by group size and the nature of the collective issues of interest. Olson regards collective action with respect to "inclusive" collective goods to be ones for which the "more the merrier" rule holds, because costs because costs can be more widely shared without reducing benefits. These are what most economists would refer to as public goods. In contrast, collective action with respect to "exclusive" collective goods are ones for which benefits fall as the number of participants increases. Such goods would today be considered private or club goods.[2]

[2] Buchanan (1965) helped to establish the modern vocabulary for describing the spectrum of goods types that became conventional after the *Logic* was published. The relationship between group size and organizational ability is discussed in Buchanan and Tullock (1962, chs. 14 and 19), but for the most part

v. With respect to group size, he considers very small (privileged) groups, intermediate groups, and large (latent) groups. In privileged groups, single members have sufficiently strong interests relative to the costs of provision that they will provide it for themselves, even without collective action. No organization is needed for such groups to advance their common ends. An intermediate group is one for which no member has sufficient private interests to provide the collective good on his or her own, but the group is small enough to notice the contributions made by others. These groups require an organization to advance shared interests, but have relatively low monitoring and enforcement costs member effects on average cost shares and benefit levels are readily observable. Large groups tend to remain unorganized (and thus "latent") because they require organization and individual contributions have undetectable effects on average costs and benefits. Most of Olson's attention is focused on latent groups with inclusive interests, although the other possible cases also attract attention.[3]

vi. Third, he suggests that organization requires a combination of coercive punishments or private rewards. The latter are referred to as "selective" incentives. Conditional private rewards attract persons to join organizations (when they are not forced to) and encourage effort at producing the public collective goods of interest. In the absence of selective incentives, no member of a latent group would voluntarily contribute to their group's efforts to advance its collective aims, whether this be the production of a service or lobbying for policy reform. In intermediate groups, it is possible that moral suasion might be sufficient insofar as contributions are observable, but generally these modestly sized groups also require some organization, with its selective incentives and coercion, to advance collective aims. A large organized group Olson refers to as a "mobilized latent" group, a somewhat awkward term of expression, which is fairly rare in his writing.

vii. From this very spare group of models, Olson is able reach a number of broad generalizations and to analyze several major issues of his days, some of which have largely disappeared from public discourse fifty years later--arguably in part because of his penetrating analysis. Among the generalizations, other things being equal, the larger the group and smaller the average interests of its membership, the less likely a group is to be organized or effective at advancing shared interests. Conversely, the smaller the group and larger are an average member's interest, the more likely it is to be organized and effective at advancing its shared interests. All but "privileged" groups will have and organization of some kind that dispenses rewards and/or punishments that advance group interests.

viii. Olson uses this theoretical system to analyze (i) the Marxist theory of class, (ii) the organizational structures of labor unions, and (iii) interest group politics among several other applications. Marxist class theory is demonstrated to be inconsistent with rationality on the part of class members. All would rationally free ride, rather than participate in activities that advance general class interests. The latter are public goods freely available to all, whereas participation is costly and borne by each member of a group. In the absence of a group organization, no such activities would emerge spontaneously. Labor unions in turn require some degree of control over jobs and salaries (selective incentives) to function and tend to be stronger when membership is supported by government policies (and coercion), as with rights to adopt "closed shops" by a majority vote of union members.

ix. The groups that are mostly likely to secure special privileges from governments are the opposite of these latent groups, they are likely to be either privileged or intermediate groups will a central organization that provides exclusive members services along with lobbying services. Such groups may disseminate information in journals and magazines, secure discounts for useful services or inputs (as with insurance), and perhaps sponsor social events of interest to members. Lobbying for such groups, Olson argues, is simply icing on the cake.

x. Moreover, every organization will have a structures with a handful of "privileged" persons who have private reasons to engage in collective action for the organization as a whole. Large groups are normally led by much smaller ones, who often have private rewards for organizing group efforts (salaries, profits, power, etc.). Such structures create groups with sufficient interest in the organizational objectives to invest

in a voting or constitutional framework.

[3] Sandler (1992) and Cornes and Sandler (1996) subsequently develop more fine-grained classifications of collective ends and types of groups.

their time and energy in advancing those interests. In this manner the Logic can be extended to the emergence of organizational governance.

xi. As a project, the Logic was simple enough to be summarized with a sentence, insightful enough to open new research avenues on a host of topics previously thought settled in sociology, political science, economics, and biology, and also shed light on mainstream topics in the daily newspapers. In retrospect, it seems natural that it was an impactful book. The latter, however, was not entirely a consequence of Olson's excellent model, but also of his fine writing and erudition, which added credibility to this young scholar's simple, elegant, theory.

3. Extending the *Logic*, Special Interests and Prosperity

i. Originally written as a dissertation, the *Logic* continued to shape Olson's work for the rest of his life. His next big book *The Rise and Decline of Nations* (1982) uses the interest group models developed to account for differences in inequality, employment, national income, and growth rates among nations. Again the arguments are fine grained and well crafted, and again the main points are easy to summarize. Differences in the interests and relative effectiveness of privileged and latent groups account for a good deal of life in society. Preferred groups tend to have relatively narrow and limited interest, which make them willing to impose costs on the rest of society if they are able to realize gains for themselves. They bear only a very small portion of the costs associated with tax, trade, and regulatory privileges and capture most of the benefits--often simply profits--from those policies.

ii. As the number of groups proliferate, more and mores such privileges are created (and defended) which tends to make the regulations more complex, more burdensome, and less flexible. The gradual increase in the number of interest groups and the associated complexity of tax, tariff and regulatory law tend to reduce average income, increase unemployment, and make the economy less adaptable and less innovative. By reducing price flexibility, the same policies and organizations also tend to amplify business cycles. Inequality tends to increase because privileges also proliferate, which are captured by members of well organized groups, who consequently become relatively richer. Latent groups bear the costs without associated benefits and thus become relatively poorer. In contrast to the rent seeking literature, Olson stresses the "Harberger" losses associated with interest group activities rather than the resources that they consume. Adding the latter to the mix simply strengthens many of his arguments.

iii. Only great shocks that cut through the Gordian knot generated by interest group lobbying activities can restore an economy to a high growth path. W.W.II is an example of such a great shock and economies after W.W.II generally grew much faster than they did before the war. Exceptions to this general rule occur in cases in which the most powerful groups have "encompassing interests," which in *The Rise of Nations* occurs only when the groups themselves include a large fraction of the total population of the persons affected by their policies. Encompassing interests lead such groups to temper their demands for privilege, because their members bear a large fraction of the costs associated with those privileges, and so are given more attention. The existence of such groups are used in *How Bright the Northern Lights* (1990) to account for Scandinavian success relative to much of the rest of Europe.

iv. In his subsequent major line of research, Olson (1993, xxxx), interest groups play a smaller role, but the ideas of narrow and encompassing interests remain important. Some groups (roving bandits) have narrow or short term interests whereas other have encompassing long term interests (stationary bandits). Although the language of *Power and Progress* (2000) tends to rely upon singular nouns, for the most part Olson is analyzing the incentives of very privileged exclusive groups. They are privileged both in the sense of being small groups with well defined interests, but also in that they can choose a broad array of policies directly without competition from other similar groups. They are exclusive in the sense of the Logic because they "extract" private goods such as personal income from those unorganized (latent) groups subject to their policies. The powers that his stationary bandits and roving bandits can exercise are not available to single men or women acting alone.

v. Interpreted in this way, *Power and Progress*, like *Rise and Fall*, is simply an effort to further develop the interests of the *Logic of Collective Action* to groups with unique powers to impose rules and taxes on others. Roving

bandits, as true of the narrow interest groups of previous work, benefit from "theft" without bearing the costs of their actions. Stationary bandits, in contrast, bear part of the cost of their actions, because rates of present day extraction partly determine future possibilities for subsequent harvest. The latter provides a stationary bandit organization such as the Mafia or a Junta with reasons to restrain their taxation and regulatory policies. It also provides a reason to provide various services that increase the size of the "crop" to be harvested, such as infrastructure, law, and order. This encompassing interest provides and explanation for the services that nearly all stable autocracies "freely" provide their citizens. In this manner, Olson provides a productive theory of the state, but not one that attempts to maximize the welfare of its citizens, who remain directly and indirectly taxed at expected long run revenue maximizing rates.

vi. The ruling parties of democracies, in contrast, have encompassing interests because of the size of their memberships, which include half of the voting members of their societies. Here it could be noted that political parties have an inclusive range up to 50%, but become exclusive groups beyond that insofar as transfers or other privileges can be targeted at party members alone. With this in mind, it is not necessarily the case that a democracy will be wealthier than an autocracy, insofar as a ruling junta may capture more than half of the social surplus, but the typical life in them will be better because the fruits of power are more widely shared and the ruling party tends to alternate through time. In this final extension of the Logic, Olson demonstrates that the theory can explain much of human history as well as contemporary society

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i. Thought questions:

- Name several groups that appear to be effective at influencing public policy.
- What methods do they use to influence policy choices?
- Does the general flow of direct and indirect transfers resemble that implied by Olson's analysis?
- Is free-riding by potential interest group members necessarily a social problem in this case from the point of view of the Pareto criteria?
- What is the optimal size of an interest group?

VII. Interest Groups: Chicago Political Economy

A. George Stigler's (1971, *Bell Journal of Economics*) piece on the theory of economic regulation begins with:

> "The state--the machinery and power of the state--is a potential resource or threat to every industry in the society. With it s power to prohibit or compel, to take or give money, the state can and does selectively help or hurt a vast number of industries ... The central tasks of the theory of economic regulation are to explain who will receive the benefits or burdens of regulation, what form regulation will take, and the effects of regulation upon the allocation of resources.
>
> Regulation may be actively sought by an industry or it may be thrust upon it. A central thesis of this paper is that, as a rule, regulation is acquired by the industry and is designed and operated primarily for its benefit."

i. Stigler argued that what appear to be perverse economic regulations emerge as a consequence of economics advantages for large enterprises and (implicit) threats made by such enterprises to regulators and politicians.

> "If the [elected] representative denies ten large industries their special subsidies of money or governmental power, they will dedicate themselves to the election of a more complaisant successor."
>
> ".The industry which seeks regulation must be prepared to pay with two things a [political] party needs: votes and resources."
>
> " We can only make plausible conjectures such as that the more concentrated the industry, the more resources it can invest in the campaign for legislation."

ii. Stigler's economic theory of regulation is sometime referred to as the **"capture theory**" of regulation, because it concludes that regulated industries get the regulations that they want, rather than those that advance consumer or general interests.

a. Stigler's analysis includes numerous fairly detailed examples from the petroleum industry, the trucking industry, and occupational licensing (e.g. occupational entry barriers).

b. Stigler also analyzes why such regulations might be adopted in representative democracies, although this is a minor part of the paper.

- He argues that voters do not vote on issues one at a time, but rather have to vote on a number of policy issues (candidate platforms) simultaneously.
- If both candidates support perverse regulations in order to gain the support of a particular industry (or to avoid its opposition), voters will not see their best policy options on the ballot (or party platforms).

c. He also addresses the extent to which political parties might be limited in their ability to extort kickbacks and the like from industries, arguing that competition among political parties (potential entry) tends to prevent this from occurring.

B. Peltzman (1976, *Journal of Law and Economics*) extends Stigler's analysis in his "Towards a More General Theory of Regulation).

i. Peltzman clarifies, extends, and formalizes the Stigler model. Peltzman argues that:

> "the size of the dominant group is limited in the first instance by the absence of something like ordinary market-dollar voting in politics. Voting is infrequent and concerned with a package of issues. In the case of a particular issue, the voter must spend resources to inform himself about its implications for his wealth and which politician is likely to stand on which side of the issue. That information cost will have to offset prospective gains, and a voter with a small per capita stake will not, therefore, incur it."
>
> "A second major limit on the effective group size arises from costs of organization. It is not enough for the successful group to recognize its interests; it must organize to translate this interest into support for the politician who will implement it. This means not only mobilizing its own vote, but contributing resources to the support of the appropriate political party or policy."
>
> "while there may be some economies of scale in the organization of support and neutralization of opposition, these must be limited. ... The cost of lobbying and compagning willl rise faster than group size. The cost of overcoming "free riders" will also rise faster than group size. This diseconomy of scale in providing resources acts as another limit to the size of the group that will ultimately dominate the political process."
>
> "what is basically at stake in a regulatory process is a *transfer of wealth*."

ii. The Peltzman (1976) model of regulation is probably the most widely used model from the Chicago school.

a. The transfer, as Stigler had pointed out, "will rarely be in cash, but rather in the form of a regulated price, and entry restriction and so on." Peltzman goes on to argue that:

> "[T]he costs of using the political process limit not only the size of the dominant group but also its gains."
>
> "[Elected politicians] maximize net votes or majority in his favor. There is no presumption that the marginal utility of a majority vanishes at one...Greater majorities are assumed to imply greater security of tenure, more logrolling possibilities greater deference from legislative budget committees and so on."

iii. In his model, politicians maximize the size of their majorities M = nf - (N-n)h

- where M is the size of the majority, nf is the expected support of the beneficiaries of a regulation (n = number of potential voters, and f the probability they turn out and vote for (support) this politician.)
- (N-n) is the number of persons who do not benefit, and h is the probability that those who do not benefit support his opponent or simply oppose this politicians election to office.
- [This iimpliciety challenges Riker's theory of the minimum winnng coalition, which suggests that coalitions motivated by transfers and other policy objectives should be as small as possible (50%+e] to maximize rewards to group members.]

iv. The most widely-used version of the Pelzman model simply assumes that the regulator (or politician) maximizes his "political support" (often characterized with the regulator's utility function) which is defined over the welfare of consumers and firms subject to the regulation.

- Regulators and/or elected representatives need political support willingness to provide desired political support to the regulators (or elected representatives) increases with the welfare of the groups affected by the regulated.
- Regulators/Legislators set regulations (and transfers) to maximize political support (campaign contributions and the like).
- He goes on to develop a careful mathematical model and examine comparative statics--not all of which can be unambiguously determined.

v. Consider for example a regulator's decision to set some price, P.

- Let "support" be characterized as: $S = \Sigma_i \; S_i(P)$
- Differentiating with respect to P we find that the rational support mazimizer will set P set such that $\Sigma_i \; S_{iP} = 0$, where S_{ip} is the derivative of person i's support with respect toP.
- This first order condition (f. o.c.) implies that the regulated price, P, is set (raised or reduced) so that the marginal reduction in support from those favoring lower prices equals the marginal increase in support from those favoring higher prices.
- In cases where the policy variable is a vector and many different groups are affected by that policy, **all of these interests**--as expressed with promises of "support"--are balanced against each other at the margin.
- There is no "winner take all" or complete capture result as in the Stigler model.
- Rather, the organizational advantages of industry allow them to **partially capture** the regulatory process, because their political support will be more sharply affected by marginal changes in regulations than that of consumers.

vi. The support functions can be regarded as probabilistic voting functions in which expected votes increases or decrease with the policy positions.

a. In this respect, the Peltzman model is compatible with the results of those models.

b. However, it is clear that Peltzman want to consider all support, not simply votes, and treat that support in much the same manner as voting is treated in probabilistic voting models.

c. As in probabilistic voting models, "voters" are given more or less weight by politicians according to how much their "support" is affected by small shifts in policies.

d. (Probabilistic voting models that were developed at about the same time include Intriligator (1973) and Nitzan (1975), although none are cited.)

vii. In the usual Peltzman inspired analysis, not much attention is given to electoral constraints faced by the regulator, his incentives to pay attention to lobbyists, or the public goods incentives of groups that might affect their ability to lobby for regulatory preference.

a. Peltzman and Stigler, however, give more attention to elections and electoral pressures than most persons using those models do, although elections are clearly not the main focus of their analysis.

b. The focus of their analyses tend to be how a regulated industry reacts to proposals of the regulator (by making larger or smaller campaign contributions or other sorts of support).

viii. Peltzman's model differs from the Stigler model in that it assumes that the regulatory commissions is **politically obliged to take the interests of both consumers and the regulated into account.**

- Both firms and consumers can be sources of support.
- Thus, the interests of both firms and consumers affect the regulation adopted.
- However, the support from voters will rarely be organized and so generate less support or opposition at the margin for small changes in regulations.
- [Perhaps surprisingly, the interest group models of regulatory capture (and partial capture) helped to motivate a wave of deregulation in the late 1970s and early 1980s.]

- They helped to undercut the normative support for such regulations, by directing attention to the perverse politics of regulation (e.g. the possibility of "government failure" from the perspective of mainstream welfare analysis).
- (Many more mainstream I.O. persons, such as Kahn 1971, had reached similar conclusions.)
- [Why is deregulation surprising, given their analysis?]

C. In 1983 (*Quarterly Journal of Economics*), Becker developed a model that essentially overturned many of the normative implication of the Stigler and Peltzman models.

> Political influence is not simply fixed by the political process, but can be expanded by expenditures of time and money on campaign contributions, political advertising, and in other ways that exert political pressure. Political equilibrium has the property that all groups maximize their incomes by spending their optimal amount on political pressure, given the productivity of their expenditures, and the behavior of other groups.

i. Becker's model is similar in spirit to the Peltzman model, except that the model has no obvious regulatory policy maker, and it attempts to characterize a general equilibrium among competing interest groups.

- The policymaking process and institutions are essentially left to the reader's imagination.
- To the extent to which there is any voting going on, it is left in a very abstract and continuous form.

ii. He concludes that regulatory contests among interest groups tend to produce **economically efficient public policies**. That is to say, both economic regulation and taxes will minimize dead weight losses. (He ignores rent-seeking costs to reach this conclusion, although he later discusses such costs in his 1985 *J Pub Econ* piece.)

iii. Becker constructs a political influence game between (two) groups composed of self-interested expected net-benefit maximizers. Individual's contribute to politically active groups on be basis of their influence production functions.

iv. The mechanism which determines the extent to which a the taxed group is taxed and the subsidized group receives a subsidy is called political influence: $I_s = -I_t = i(P_s, P_t, X)$ where Ps is the pressure from group s, Pi is the pressure from group i and X is other variables that matter (say institutions). (Becker's model implicitly assumes perfect information among all affected groups and ignores both organizational costs and lobbying costs.)

v. The redistribution that takes place, will according to Becker always be via taxes and subsidy interests which are more or less efficient, **because this minimizes opposition to the transfers**.

vi. **Illustrating mathematical example** of the Becker analysis. Political pressure is the result of group membership size, n, and resources devoted, m, to generating pressure P = p(m, n). (If a is average member expenditure, then m= na.)

- The total tax burden of the taxed group is $n_t R_t$ where n_t is the number of members of group t, and R_t is the tax burden imposed on a typical member of group t. $F(R_t)$ is the amount of revenue actually raised by the tax, net of dwl, so $F(Rt) \leq R_t$.
- The total subsidy cost of transfers given to the subsidized group is $n_s G(R_s)$ where n_s is the number of members in group s and G(Rs) is the subsidy expenditure per group member. R_s is the amount actually received net of the dwl so $R_s \leq G(R_s)$.
- Note that $n_t F(R_t) = n_s G(R_s)$ [all revenues collected are paid out as subsidies.]
- The full income of a typical member of each group is $Z_s = Z_s + R_s - a_s$ for the subsidized group and $Z_t = Z_t + R_t - a_t$ for the taxed group.
- Individual will contribute the amounts, a_s and a_t respectively, which maximizes their income so that a_t^* is s. t. $R_t a_t = 1$ and as is s.t. $R_s a_s = 1$, e. g. each person contributes to their groups political activity up to where the marginal increase in money's received (or losses avoided) equals one dollar.
- Given that $I_s = n_s G(R_s)$ and $I_t = n_t F(R_t)$. $G(R_t) = I_s/n_s$ and moreover using the definition of an inverse function:

$$G^{-1}(G(R_s)) = R_s = G^{-1}(I_s/n_s)$$

- Differentiating R_s with respect to a_s
- $Rs_{aS} = [dG^{-1}/d(I_s/n_s)]\ [(dI/dPs\ dP_s/dm\ n_s)]/n_s$ since $dG^{-1}{}_R \approx 1/G_R$
- a_s* will be such that $[I_{Ps}\ Ps_m]\ /G_{Rs} = 1$ [note that this just restates ii above]
- and a_t* will be such that $[I_{Pt}\ Pt_m]\ /G_{Rt} = 1$ [again see ii above, f. o. c. again]

vii. These first order conditions can be used as the source of Cournot reaction (or best reply) functions for the political pressure game. But first, one can get some sense of the comparative statics of the first order conditions. [Diagram of a* at "MB"="MC"]

i. The higher the marginal cost of the subsidy (the less efficient the subsidy program) the lower the marginal benefit curve is and the smaller a* is.

ii. The greater the groups relative ability to create influence from pressure, I_{Ps}, the higher the marginal benefits of political contributions and the higher a* is.

iii. The more political pressure produced by an additional group expenditure, the higher the marginal benefits are and the greater a* is. [Figure with Nash equilibria for typical members of each interest group, comparative statics]

iv. Efficient policies are the best policies from the vantage point of both interest groups and those policies will call forth the most political pressure.

v. The balance of power equilibrium in a Becker type model can be shown with marginal pressure supporting and resisting some policy.

vi. [Illustrate with tug of war analogy and with a MB-MC diagram.]] To the extent that it is the MB of policy that elicits contributions and thereby creates pressure, the marginal support function can be regarded to be a function of the underlying MB of the program. This can be approximated as a proportion for purposes of illustration.

vii. Similarly, to the extent that the opposition is based on perceived MC of the program, the marginal opposition function is a function of MC, or roughly proportional to the MC curve.

viii. When the two groups use the same function (have the same proportion of MB or MC showing up as contributions at the margin) then the result of the political pressure equilibrium will be efficient in the sense that it maximizes social net benefits.

ix. However, if the groups are not equally effective at the margin, then too much or too little of the policy may be forthcoming.

- Note that rational ignorance can play a role in the latter setting to the extent that exaggerating MB's or minimizing MC's may cause interest group responses that produce Pareto sub-optimal programs.

VIII. Interest Groups: Rent Seeking: The Third Strand of Research on Interest Groups

1. Introduction to Rent-Seeking

A. Rent-seeking activities include a far broader range of activities than lobbying the government for special favors, although that is the most studied form of rent seeking, and the activity that the term is most often used to describe.

- Rent-seeking activities can be thought of (more generally) as a class of negative sum games in which the "negative sum" applies to players inside the game and also outside the game or contest of interest.
- To the extent that market activities can be represented using similar contests, many of those activities are negative sum for the players (firms) but positive sum when you include the benefits that consumers get from the competitive efforts of firms (price competition, product development, locational competition, informative advertising, innovation in production technologies, etc.).
- At least a subset of political activities by interest activities can be regarded in the same way, insofar as they produce significant benefits for the average citizen by improving public policies.
- Unfortunately, not all political contests have such benign properties.
- Any efforts to have policies adopted that economists believe generate deadweight losses can be considered instances of rent seeking.
- For example, most efforts to induce entry barriers to be adopted also constitute rent seeking.
- (Exceptions to the latter exist, as rules concerning information about quality, although not necessarily quality standards themselves.)

B. In the introduction to their two volume collection of the best papers on rent-seeking, Congleton, Hillman and Konrad (2008) described rent seeking as follows:

i. The quest for rents has always been part of human behavior. People have long fought and contended over possessions, rather than directing abilities and resources to productive activity.

The great empires and conquests were the consequences of successful rent seeking. Resources were also expended in defending the rents that the empires provided.

The unproductive use of resources to contest, rather than create wealth, also occurred within societies in attempts to replace incumbent rulers and in seeking the favor of rulers who dispensed rewards and indeed often determined life and death.

Sacrifices made by early peoples to their deities were instances of rent seeking; valuable possessions were given up with the intent of seeking to influence assignment of other rewards. In contemporary times, rent seeking takes place within democratic institutions and also under conditions of autocracy that are akin to the circumstances of the earlier rent-dispensing despots.

Incentives for rent seeking are present whenever decisions of others influence personal outcomes or more broadly when resources can be used to affect distributional outcomes.

ii. The search for rents, defined as rewards and prizes not earned or well above competitive market returns, is, thus, clearly ancient.

Efforts to understand how wealth, status, and other rewards can be acquired, and how contests for such prizes can be designed to reduce losses associated with unproductive conflict and encourage productive forms of competition, are also likely to have begun at the dawn of social life.

iii. The academic rent-seeking literature, however, is relatively new and emerged from papers by Gordon Tullock, Anne Krueger, and Richard Posner published during the course of some 10 years in the 1960s and 1970s (reprinted in Congleton, Hillman, and Konrad 2008).

iv. The early rent-seeking analyses attempted to develop more accurate measures of social losses from public policies and monopoly.

Tullock, Krueger, and Posner argued that the resources used to establish, maintain, or eliminate trade restrictions and monopolies are part of the social cost of those policies, but had previously been neglected.

- These early models assumed that there was complete dissipation of the "profits" or "rents" created by the rent-seekers.
- After 1980, that result (assumption) was no longer taken for granted, although there were more sophisticated models of the contests that reached the same conclusion as these classic treatments (Hillman and Samat 1987).
- Most of the rent-seeking literature analyzes the rational decision to invest in contesting pre-existing wealth or income, rather than undertaking productive activity.
- Such activities have an opportunity cost, which tends to imply that such contests are negative sum games overall.
- Bagwatti calls such activities: Directly UnProductive Efforts: DUPE.

v. The core idea has also been formalized and analyzed more rigorously, using the tools of modern game theory.

- See volume 1 of the Congleton, Hillman, and Konrad collection (2008).

vi. Although may researchers think of rent-seeking as an effort to secure transfers of one kind or another, this language is not the best one for thinking about all contests that resemble rent-seeking contests.

Rather, rent seeking contests should be though of as competitive (or conflict) settings in which resources are invested to "win" some price or increase one's "relative" payoff or position.

In generally, **rent-seeking models characterize resource-intensive forms of competition.**

The transfer approach tends to make (or limit) rent-seeking contests to a particular class of "negative sum" games. The prize is simply redistributed, the effort, thus, is the measure of dead weight loss.

However, many rent-seeking contests affect the size of the prize and at least a few such contests create (external) benefits for persons outside the game of interest.

- For example, when economists and other groups lobby to have trade barriers should be reduced, this tends to "transfer" social surplus from firms to consumers.
- So the "redistributive" language can be used to describe this lobbying activity as well as efforts to establish such barriers in the first place.
- There is competition between those wanting the trade barriers down and those wanting trade barriers maintained.
- However, neoclassical models imply that social surplus (profit + consumer surplus) is increased by the success of the "free trade" special interest groups (trade liberalization groups).
- This contest consumes resources, but increases social surplus, as long as the net costs of lobbying are less than the surplus increase generated by trade liberalization.
- [Draw a diagram to illustrate this, noting that demand can be used as SMB and supply as SMC (in the absence of externalities).]

All rent-seeking contests consumer resources, but not all such contests produce net losses.

vii. Idea that resources are unproductively used in rent-seeking contests has much broader application than the initial rent-seeking papers suggested. .

- See for example Tullock's original analysis of crime in his 1967 piece, which indirectly provides a SNB defense of property rights.
- See also Robert Frank, including his book on "positional" games and winner take all games.
- Many other contests have similar properties such as R&D, status seeking, sports competition, and academic publication contests.
- The rent-seeking logic has been applied to issues in history, sociology, anthropology, biology, and philosophy.
- See Congleton and Hillman (2015) for more on this.

viii. After **four decades of research** following the publication of Tullock's first paper on rent seeking, the literature expanding on the rent-seeking idea is substantial.

The JStor data base of academic journals reports that 74 papers include the term "rent seeking" in their titles.

The Scopus on-line search reports 170 papers.

The more representative *EconLit* data base of academic journals and books reports 401.

The still broader *Google Scholar* search engine reports that the **titles** of more than 2,500 papers on the Web include the term "rent seeking."

- Moreover, not every paper on rent seeking includes those words in its title. *EconLit*'s data base reports that more than 8,000 published papers and books use the terms "rent seeking" or "rent seeker" somewhere within their pages.
- Initiation the rent-seeking research program is thus one of the major contribution of Gordon Tullock and the Virginia school of political economy.

2. On Contest Success Functions and Institutions: "the Rules of the Game" and Rent-Seeking Losses

A. Analysis of how "the rules of the game" affect rent seeking losses began in several paper papers published in the 1980 collection edited by Buchanan, Tollison, and Tullock.

i. It is there where the rent-seeking literature began using various game theoretic representations of contests for rents (or similar prizes and privileges).

- Some of those games, as with the Tullock contest success function, imply limited "dissipation" in many cases.

- Others, as with Hillman and Katz (1984) and Hillman and Samet (1987) use models that imply mixed strategy equilibria under which exact dissipation occurs on average.

ii. Most of the theoretical literature on rent-seeking contests makes similar initial assumptions.

Normally a "prize" of some kind it assumed to exist, which can be given to any of a number of potential rivals.

- The special favor that may be obtained from the government--tax breaks, protection from foreign competition, contracts at above market rates etc.-- are the prize sought by rent seekers.
- In a few cases, the prize itself is assumed to be at least partially endogenous, although this is less common in most rent-seeking models.

iii. Potential recipients of the prize attempt to influence how the prize is allocated by investing scarce resources in a contest, often regarded as a political influence game.

How one most effectively competes for the prize is partly a consequence of the implicit "rules of the games," that is of the institutions that determine which rent seeker or rent seekers receive the prize.

- The production of "influence" (e.g. the manner in which one increases one's probability of winning or share of the prize) varies among contests--in large part because the "rules of the game" differ.
- Not all rent-seeking contests resemble lottery contests.
- Not all rent-seeking contests call forth the same sorts of competitive activities.
- Not all rent-seeking games are "winner take all" games, as in the case of Tullock's monopoly examples.

iv. Not all rent-seeking games are "all pay" auctions.

For example, the investments made to seek political favors differ from those which one would make to obtain status from mountain climbing or publishing academic papers.

It bears noting that **competition in most rent-seeking contests tends to be resource intensive,** in contrast to price competition in competitive market models.

- Competition in these models consists of specific investments in specific contests to increase one's share or probability of winning a specific prize.

B. The **process by which these prizes are awarded** in real world rent-seeking contests is normally more **complex and subtle** than modeled using game theory, just as decisions of firms and consumers are more complex than neoclassical models imply.

- The usefuleness of theory is that it reduces complexisty down to a level at which interdependencies and implications can be identified.
- These in turn (hopefully) shed light on underlying tendencies in the more complex phenomena of the real world.

i. The models ignore, for example, how unknown or unpredictable personalities and events partially determine who gets which prize.

- **These "idiosyncratic" and "unpredictable" factors cause many researchers to adopt a probabilistic representation** of the process through which rents are awarded or distributed among rent seekers.
- In such models, the **more resources are devoted** to securing preferential treatment **the more likely** it is that a particular rent-seeker will be successful, or the larger is their expected share of the "prize."

ii. As Olson argued, the better prepared and more widely heard provide the "rationalizations" for special preference.

- The rent seeking literature in turn suggests that the more resources they can invest, the more likely they are to succeed.
- Contrariwise, the greater the efforts of other rent-seekers, the less likely a particular rent-seeker is to win the prize..

C. **To account for that complexity, most, but not all, rent seeking models assume that the process of obtaining special privileges is a somewhat is analogous to lotteries: a random, but statistically analyzable process**.

- This was Tullock's 1980 characterization.
- What is important for the lottery representation of rent-seeking contests is that it provides a clear model of how the probability of getting "the prize" is affected by one's investment in the rent-seeking contests and that of other players in the contest of interest.
- The amounts invested in the contest (the ticket revenue) may be larger or smaller than the prize awarded according to various "rules of the game" and the number and types of players that participate in the contest.
- [Surprisingly, lotteries are often profitable for those organizing them, because the tickets sold more than pay for the prizes awarded.]

D. The effects of the "rules of the rent-seeking contest" (**institutions**) on the extent of the investments in rent-seeking contests is (implicitly) the main focus of the theoretical work on rent seeking.

- Most papers focus on relatively narrow aspects of the rules of the game, such as number of players, differences in the success functions, and so forth.
- Other papers focus on differences among the players themselves (informed or not, rational or not.)
- Others focus on the timing of the contests (one-shot or not, two-stage or one-stage, etc.)
- Others focus on the manner in which prizes are allocated (one person allocation, committee allocation, winner take all, sharing rules, etc.).
- Others, focus on finding new applications of the the rent-seeking approach to phenomena in the real world.
- (During the 1990s, it could be said that the generalized game theoretic approach to contests in general more or less broke off from the rent-seeking literature and became a separate field--or vice versa).
- See the papers in Congleton, Hillman and Konrad (2008) and the overview provided in Congleton and Hillman (2015) for examples and overview of such modeling efforts.

3. The Tullock Contest Success Function

A. The basic Tullock Success Function can be used to demonstrate that **rules that affect the number of competitors** in the contest **affect both individual and total investment levels** and, thereby, the (maximal) extent to which "rents" are dissipated by the overall investments of those seeking the "prize" of a particular contest.

i. Suppose that N risk neutral competitors participate in a rent seeking game with a fixed prize, Π.

Each player may invest as much as he wishes in the political contest, although those investments have an opportunity cost.

The prize is awarded to the player whose name is "drawn from a barrel" containing all of the political lottery "tickets."

The expected prize for player i is $\Pi[R_i / (R_i + R_O)]$, where R is the value of the prize, R_i is the investment in rent seeking by player i, and t_O is the investment by all other players.

If the rent seeking resource(s), R, cost C dollars each, the expected net benefit or profit of player i is $\Pi_i^e = \Pi[R_i / (R_i + R_O)] - CR_i$

The expected profit maximizing investment in rent seeking (political influence or lottery tickets) can be found by differentiating expected profits with respect to R_i and setting the result equal to zero.

- ► $\Pi [1 / (R_i + R_O) - R_i / (R_i + R_O)^2] - C = 0$, simplifying yields
- ► $\Pi [R_O / (R_i + R_O)^2] - C = 0$, or
- ► $\Pi R_O / C = (R_i + R_O)^2$
- ► This can be solved for Ri*, the expected profit maximizing investment in rent seeking by player *i*.

ii. This solution, $Ri^* = -Ro \pm (\Pi R_O/C)^{½}$, is player 1's **best reply function**. It describes his or her optimal investment in rent-seeking a s a function of the prize and the investments of other players in the game. (Only the positive root will be relevant here, because Ri has to be greater than zero.)

In a symmetric game, each player's best reply function will be similar, and at least one equilibrium will exist where each player engages in the same strategy.

Thus, if there are N-1 other players, at the Nash equilibrium, $R_o^{**} = (N-1)R_i^{**}$. which implies that $Ri^{**} = -(N-1)R_i^{**} \pm [\Pi (N-1)R_i^{**}/C]^{1/2}$.

which implies that $NRi^{**} = (\Pi (N-1)R_i^{**}/C)^{1/2}$ or squaring both sides, dividing by Ri^{**} and N^2 and gathering terms, that:

$$Ri^{**} = [(N-1)/N^2] [\Pi/C] = [(1/N) - (1/N^2)] [\Pi/C]$$

So for example, with N = 2 and C = 1, $Ri^{**} = (\Pi/4)$

► (This result was worked out directly in the previous lecture.)

iii. Total rent seeking effort is N times the amount that each player invests For example, in the two person cost case, the expected net benefit maximizing rent-seeking expenditure by each player is **RiC** = Π/4, so the total expenditure is twice this amount or **2RiC** = Π/2.

► Half of the value of the prize is consumed by the process of rent seeking.

► [Illustrate the 2-person Nash equilibrium.]

iv. In the more general N-player case, the total expenditures is

► **NRiC** = [(N-1)/N] [Π] = [1 - 1/N] [Π]

v. The **effect of entry** on individual and total rent seeking expenditures can be determined by inspection (or by differentiation) with respect to N.

It is clear that individual contributions fall as the number of rent seekers increase, but also the total amount of rent seeking "dissipation" increases.

In the limit, as $N \Rightarrow \infty$, [1 - 1/N] $\Rightarrow$ 1, so the total rent seeking investment approaches the value of those resources, RC.

► In the limit, the entire value of the prize, $\mathbf{R}^{**} C = [\Pi/C] C = \Pi$, is invested by the players that participate in the contest.

► The entire prize can be said to be exactly dissipated in such cases.

vi. The **effect of increases in the cost of participating in a political influence game** and/or changes in the value of the regulation to the rent-seeker can also be readily determined in this game.

B. This basic model of contests can be generalized to cover cases where the prize is endogenous, where the probability of securing the prize varies, to cases where the prize is shared rather than awarded to a single "winner take all" winner, and to cases in which the players differ in their skill at (or cost for) rent seeking.

For example, a generalized probability of winning function or rent-sharing function, P, and reward function, $\Pi_i(\mathbf{R})$, can be used to represent a variety of possibilities by making different assumptions about derivatives.

► $R_i^e = P(R_1, R_2, ...R_N)\Pi_i(\mathbf{R})$

The affects of economies of scale may also be examined in this general framework and in the earlier explicit one (as was done in Tullock 1980).

4. Institutions, Competitive Process, and Competitive Waste

A. The previous analysis should make it clear that the main losses of rent seeking activities arise for three reasons:

The **process used to influence policy is costly**. The resources invested in the contest have an opportunity cost. (They could have been used to produce new goods and services, rather than to reduce net benefits or redistribute existing resources.)

There is an externality among players, in that as each play increases his or her investment the expect net prize (returns) diminish for other players.

► It is the competitive nature of the contest the produces both the investments and the rent-seeking costs.

The **assumed rent seeking activities do not themselves create value** in excess of their opportunity cost

► Normally, spillover effects on those outside the contest are ignored except in applied research.

- ► In principle, however, such contests can have positive or negative externalities, as noted above.

i. Much of the rent-seeking literature stresses the redestributive consequences of such political games.

The rent-seeking literature suggests that the efforts of interest groups may not only produce inefficient public policies, but wastes resources doing so.

It also possible, as noted above, that lobbying (rent-seeking) may also improve public policies, as for example when barriers to trade are reduced or eliminated, infrastructure is improved, etc.

Costly forms of competition in markets are not necessarily "efficient" and have to be analyzed on a case by case basis. Resources may be "over invested" in R&D for example.)

- ► Price competition in markets, however, is essentially costless and produces external benefits for consumers.
- ► So, "rent-seeking" in markets may increase rather than reduce social net benefits.
- ► (Buchanan 1980, for example, distinguishes between profit-seeking and rent- seeking activities.)

ii. The extent of the dead weight losses from rent seeking are determined by the rules of the rent seeking game.

B. **The rules of rent-seeking contests can be interpreted as institutions.**

i. For example, the distributional rules, the process of making decisions about who will receive the prize can all be considered to be political institutions in the usual context of a rent-seeking contest (e.g. lobbying or elections).

ii. These institutions substantially determine the rates of return from alternative forms of influence.

- ► Institutions, thereby, *implicitly* determine the type of activities that must be undertaken by potential rent seekers, and the extent to which persons are free to compete in a particular contest.
- ► The rules of the game thereby encourage the use of particular rent-seeking techniques.
- ► These may, in some cases, induce forms of competition that benefit third parties outside of the contest. (Awarding the king's daughter to the Knight that wins an entertaining tournament.)

iii. The rules also determine who is eligible to participate in a given rent-seeking contest.

- ► In many cases, the extent of dissipation will increase as the number of competitors increases.
- ► Eligibility, also tends to determine who can win contests. Such rules can, for example, protect elite claims to the fruits of government regulations and positions.

C. Some of the main results from the theoretical literature are:

i. Losses from games where the rents are shared are below those in games where the rents all go to a single victorious group or individual (Congleton 1980, Long and Vousen 1987).

- ► Stochastic payoffs have similar effects, as in the usual lottery representation of rent-seeking contests.

ii. The losses from rent-seeking games tend to be smaller in cases in which majority rule is used to determine winners (Congleton 1980, 1984).

iii. The logic of rent-seeking contests applies to nongovernmental settings as well as governmental ones.

- ► See various works by Robert Frank, including his book on positional games and winner take all games. See also Congleton (1989) and Glazer and Konrad (1996).
- ► Bhagwati (1982) tried to rename such activities: Directly UnProductive Efforts: DUPE.
- ► (Indeed, one can argue that much of modern contest theory consists of extensions of various rent-seeking models.)

iv. Note that a good deal of market competition can also be regarded as a contest for rents (e.g. profits) in which the rules of the game are such that the efforts of competing firms tend to benefit consumers.

- ► Thus, the resource intensive parts of competitive markets that are largely neglected in mainstream neoclassical models (which tend to focus narrowly on price competition) may be examples of contests that dissipate profits for firms, but which produce considerable external benefits for consumers.
- ► Similar claims might be made regarding the academic competition--insofar as it adds (at least occasionally) useful information and knowledge to society's stockpile.

5. Non-stochastic Representations of Rent-Seeking Contests: "All Pay Auctions"

A. An Overview: in an "all-pay auction," unlike normal auctions, both winners and losers pay.

- ► In winner take all versions of those auctions (the kind most often analyzed, there is a tendency to escalate.
- ► Such contests lack a Nash equilibrium in pure strategies (Congleton 1980).

B. Hillman and Samat (1987) demonstrate the existence of a Nash equilibrium in mixed strategies. In cases in which players are free to distribute their investments among a variety of contests, they show that such "auctions" can produce exact dissipation, when players are risk neutral, even if there are small numbers of players.

C. Anderson Goeree and Holt (1998) incorporate a type of bounded rationality into winner take all all pay auctions and show that with such players, investments (dissipation) increases with the number of players, and that over investment in rent-seeking contests may occur.

6. Rent Extraction

A. An Overview: the rent-extraction literature notes that rent-seeking contests may not be accidents of public policy, but rather may be designed by policy makers (and others) in order to attract efforts by rent seekers.

- ► Those who design rent-seeking contests do so because they expect to benefit from the efforts of rent seekers.
- ► (This is, for example, true of lotteries in both the public and private sectors.)
- ► The analytical results of the rent-seeking literature implies that contests can be design to elicit all kinds of effort.
- ► Rent-seeking contests may, for example, be used to partly pay for government (monopolies may be auctioned off, via all pay auctions).
- ► Rent-seeking contests may be used to attract campaign contributions or bribes.

B. McChesney (1987, 1991, 1997) suggests that politicians create regulatory games (those analyzed by Stigler and Peltzman) as a method of obtaining campaign resources. In some cases, the mere threat of such regulations can call forth regulations.

C. Appelbaum and Katz (1987): develop the mathematics of the McChesney model (more or less simultaneously with McChesney's first paper). They model the contest as a two stage game (analogous to a Stackelberg contest) in which regulators take account of the responses of consumers and firms when they propose regulations (the creation of monopolies in their model).

D. Hillman and Katz (1987) note that such considerations should be taken into account when designing the institutions of bureaucracy. If lower level regulators have discretion over regulations and can be influenced by rent-seeking, they may be able to use their authority as an additional source of income.

- ► Insofar as their supervisors have authority to hire such persons, there will be contests for employment in which their supervisors can profit (e.g. can profit from the rent-seeking efforts of those seeking to be low level regulators).
- ► This rent-extraction / rent-seeking process continues throughout the hierarchy.
- ► In the end, competition within the organization tends to dissipate all the rents from regulatory authority.

E. Congleton and Lee (2009) note that rent-seeking contests can be constructed for the purposes of raising state revenue (or elite government official income). Insofar as the problems noted by Hillman and Katz (1987) are avoided, the rent-seeking contests adopted will take account of their burden on society and effects on rates of innovation.

- ► Well informed rent-extracting governments that are able to overcome problems of corruption will construct rent-seeking contests that produce revenue similar to what would be obtained from an efficient Ramsay tax system
- ► (Rates will be set somewhat higher than optimal for growth in cases in which elites can take some of the revenue for personal income.)
- ► (Their model of government is an extended form of the Olson-Buchanan&Brennan's Leviathan model.)

7. Applications

A. To Status Seeking (Congleton 1989, Frank and Cook 1995).

B. To Public Finance (Kornai 1980, Buccola and McCandlish 1999, Congleton and Lee 2009)

C. To Merchantilism (Tollison and Ekelund, 1981, Congleton and Lee 2009)

D. To Legal Contests in Court (Tullock 1975, Buchanan 1980, Parisi 2001)

E. To Economic and State Development (Murphy, Schliefer and Vishny 1993, Volckart 2000)

F. To the theory of the firm (Edlin and Stiglitz 1995, Scharafstein and Stein 2000)

G. See Congleton, Hillman, and Konrad (2008) Vol 2 for many more applications.

8. Empirical Evidence of the Magnitude of Rent-Seeking Losses

A. Early Estimates

i. Several early studies tried to **quantify the extent to which losses (might) have been generated by rent seeking for trade protection and for monopoly privileges.**

In the study where the term rent-seeking was invented, Ann Krueger, 1974, argues that up to 7.3% of GNP in India (1964) and about 15% of GNP in Turkey (1968).

Posner, 1975 estimates the DWL of monopoly in the US to be 3.13% of GNP.

- ► This estimate is significantly higher than Harberger's estimate deadweight losses of 0.1% of GNP and that of Schwartzman (1960) 2.209% of GNP.
- ► Cowling and Mueller (1978) estimate total (H+T) losses from monopoly to be as high as 7% of GNP in the US and as high as 3% of GNP in the UK.

B. Perhaps the most ambitious of the efforts to estimate the cost of "transfer seeking" activities is the study of Laband and Sopholeus (1992 *QJE).*

They attempt to use an GNP accounting method to characterize all of the activities which are under taken in order to secure or prevent transfers from taking place.

This include such things a the court system, trade protection, national defense, locks, etc.

To this they add actual transfers realized.

They estimate that approximately 25% of GNP (950 million dollars) is involved in the transfer industry.

- ► [Congleton (1980, 1988) examine the logic of **calculations to determine rent-seeking losses** from a more or less utilitarian perspective (as is adopted by most of the rent-seeking literature). Only avoidable losses

should be counted and benefits generated by the rent-seekers cannot be ignored.]

Sobel and Garret (2002) attempt to estimate the size of the political rent-seeking "market" by looking at increases in various kinds of market activities likely to be associated with political rent-seeking (lobbying). They focus on activities in US state capitals.

Abstract:

- Utilizing 4-digit industry data by county, we compare the allocation of resources across industries in state capital areas with noncapital areas.
- We are able to identify which industries are expanded and contracted relative to noncapital areas.
- Our results provide the first direct evidence and measurement of the forgone productive activity resulting from resources being reallocated toward rent seeking and interest group activity.
- Our data also allow us to measure total rent seeking, and also to isolate the extent of indirect and in-kind rent seeking, which can account for part of the Tullock paradox.

C. Experimental Evidence

i. Tullock's classroom experiment: take a twenty dollar bill and auction it off to one's class through an all-pay auction. The amount collected is normally quite a bit above 20 dollars.

ii. Shogren and Baik (1990) conduct a two person experiment in which payoffs from the Tullock contest success function (with exponents). The average payoff (net of rent-seeking costs) is consistent with the Nash equilibrium (e.g. were not statistically different at a 10% significance level).

iii. Potters, De Vries, and van Winden (1998) further explore the case in which the contest success function has exponents but focus on the simple case (exponent = 1) and the extreme case (where the exponent is infinite). Nash equilibria are calculated for these games (the former has an equilibrium in pure strategies the latter only in mixed strategies (it is an all pay auction in which the high bidder wins). Equilibrium play was more or less found (on average) in both series of experiments. although there was somewhat greater dissipation than predicted in the simpler case.

iv. Vogt, Weinmann, and Yang (2002) allow open ended participation in rent-seeking contests. They find that investments and dissipation approach predicted levels (e.g. those of the Nash equilibrium) when participants are given time to learn how the games operate.

IX. Agency Problems: the Problem of Bureaucracy

A. Many of the problems associated with interest group occur because bureaucrats are not perfect agents of the government, whether an authoritarian regime or a democracy.

B. Analysis of these agency problems have a long history in public choice analysis, beginning with Niskanen's (1971) simple budget maximizing model of a bureaucrat.

- Note that this model was developed a decade before the agency problem literature emerged in microeconomics. (Jensen and Meckling (1979), Fama 1980).

C. Issues associated with Niskanen's model are also present in other private organizations as well, although they are arguably more difficult to solve in governments than in private firms and also arguably have greater effects on social net benefits or aggregate utility.

D. Niskanen's model, for example, implies that government bureaus all tend to be too large, because of bureaucratic efforts to maximize their individual budgets.

E. In effect bureaucratic decisions may be influence by rent seekers and are themselves rent seekers with respect to government.

F. An important issue is the extent to which governments can properly align the interests of bureaucrats with those of the government, whether autocratic or democratic.

X. Public Choice of the Origin of the State

A. All group choices are "public choices."

i. As a consequence, there is a sense in which public choice is an ancient field of study.

ii. Every family, band, tribe, town, city, state, country, alliance, etc. uses some form of collective decision making to choose particular courses of action.

a. A group of individuals does not share the fundamental hardware of choice, a central nervous system, essentially by definition.

b. So, decision making cannot be fully induced by inherited biological traits and necessities--although human nature clearly helps human beings organize themselves and the environment around them.

- Humans, for example, are better at creating organizations, at communicating, at analyzing the world, and accumulating knowledge than other species.

iii. "Collective enterprises" are very useful to humans and so evolution favors the subset of human characteristics that make such organizations possible and effective--if not fully so.

a. Continued affiliation with such groups is largely voluntary, in the sense that exit is normally possible.

b. Exit tends to be costly in large part because of advantages of continued association with one's current group (family, club, tribe, community, etc.).

B. Practical theories of governance and the state are ancient, and thus political science is among the oldest fields in social science.

- Academic analysis of governments is also quite old, although less so than government itself.

C. To illustrate that academics have long studies these kinds of questions consider the following quotes from important analytical political theorists.

i. Confucius on Government (Analects, 500 BCE)

- Lead them by means of regulations and keep order among them through punishments, and the people will evade them and will lack any sense of shame. Lead them through moral force (de) and keep order among them through rites, and they will have a sense of shame and will also correct themselves.

- Zigong asked about government. The Master said, "Sufficient food, sufficient military force, the confidence of the people." Zigong said, "If one had, unavoidably, to dispense with one of these three, which of them should go first" The Master said, "Get rid of the military." Zigong said, "If one had, unavoidably, to dispense with one of the remaining two, which should go first" The Master said, "Dispense with the food. Since ancient times there has always been death, but without confidence a people cannot stand."

ii. Aristotle: On the origin of the state (the Politics, 350 BC)

- "Now, that man is more of a political animal than bees or any other gregarious animals is evident. Nature, as we often say, makes nothing in vain, and man is the only animal whom she has endowed with the gift of speech. And whereas mere voice is but an indication of pleasure or pain, and is therefore found in other animals (for their nature attains to the perception of pleasure and pain and the intimation of them to one another, and no further), the power of speech is intended to set forth the expedient and inexpedient, and therefore likewise the just and the unjust. And it is a characteristic of man that he alone has any sense of good and evil, of just and unjust, and the like, and the association of living beings who have this sense makes a family and a state.

- Further, the state is by nature clearly prior to the family and to the individual, since the whole is of necessity prior to the part ...

- The proof that the state is a creation of nature and prior to the individual is that the individual, when isolated, is not self-sufficing; and therefore he is like a part in relation to the whole. But he who is unable to live in society, or who has no need because he is sufficient for himself, must be either a beast or a god: he is no part of a state. A social instinct is implanted in all men by nature, and yet he who first founded the state was the greatest of benefactors. For man, when

perfected, is the best of animals, but, when separated from law and justice, he is the worst of all; since armed injustice is the more dangerous, and he is equipped at birth with arms, meant to be used by intelligence and virtue, which he may use for the worst ends. Wherefore, if he have not virtue, he is the most unholy and the most savage of animals, and the most full of lust and gluttony. But justice is the bond of men in states

iii. Aristotle on democracy (the Politics, 350 BC):

- The basis of a democratic state is liberty; which, according to the common opinion of men, can only be enjoyed in such a state; this they affirm to be the great end of every democracy. One principle of liberty is for all to rule and be ruled in turn, and indeed democratic justice is the application of numerical not proportionate equality; whence it follows that the majority must be supreme, and that whatever the majority approve must be the end and the just.
- Every citizen, it is said, must have equality, and therefore in a democracy the poor have more power than the rich, because there are more of them, and the will of the majority is supreme. This, then, is one note of liberty which all democrats affirm to be the principle of their state.
- Another is that a man should live as he likes. This, they say, is the privilege of a freeman, since, on the other hand, not to live as a man likes is the mark of a slave. This is the second characteristic of democracy, whence has arisen the claim of men to be ruled by none, if possible, or, if this is impossible, to rule and be ruled in turns; and so it contributes to the freedom based upon equality.

iv. On the nature of anarchy: from Thomas **Hobbes**, *Leviathan* (1651)

- "Whatsoever therefore is consequent to time of Warre, where every man is Enemy to every man; the same is consequent to the time wherein men live without other security than what their own strength, and invention shall furnish them withal. **In such condition .. the live of man [will be] solitary, poor, nasty, brutish and short**.

v. On the nature of anarchy: From John Locke (Second Treatise on Government 1689)

- O understand political power right, and derive it from its original, we must consider, what state all men are naturally in, and that is, a state of perfect freedom to order their actions, and dispose of their possessions and persons, as they think fit, within the bounds of the law of nature, without asking leave, or depending upon the will of any other man.
- And that all men may be restrained from invading others rights, and from doing hurt to one another, and the law of nature be observed, which willeth the peace and preservation of all mankind, the execution of the law of nature is, in that state, put into every man's hands, whereby every one has a right to punish the transgressors of that law to such a degree, as may hinder its violation: for the law of nature would, as all other laws that concern men in this world 'be in vain, if there were no body that in the state of nature had a power to execute that law, and thereby preserve the innocent and restrain offenders.
- And thus the common-wealth comes by a power to set down what punishment shall belong to the several transgressions which they think worthy of it, committed amongst the members of that society, (which is the power of making laws) as well as it has the power to punish any injury done unto any of its members, by any one that is not of it, (which is the power of war and peace;) and all this for the preservation of the property of all the members of that society, as far as is possible. But though every man who has entered into civil society, and is become a member of any commonwealth, has thereby quitted his power to punish offences, against the law of nature, in prosecution of his own private judgment, yet with the judgment of offences, which he has given up to the legislative in all cases, where he can appeal to the magistrate, he has given a right to the common-wealth to employ his force, for the execution of the judgments of the common-wealth,

vi. From John Locke, *First Tract on Government* (1689)

- ""Tis not without reason that tyranny and anarchy are judged the smartest scourges [that] can fall upon mankind, the plea of authority usually backing the one, and of liberty inducing the other...All the remedy that can be found is when the prince makes the good of the

people the measure of his injunctions, and the people...pay a ready and entire obedience."

D. Quotes from two of the founding Public Choice scholars are included below to show that the same sorts of issues are still being examined. The "correct" answers to many fundamental questions remain controversial.

i. From Mancur Olson, "Anarchy, Autocracy and Democracy" (1991)

- "The conqueror of a well defined territory has an encompassing interest in that domain given by the share of any increase in the territorial income that he collects in taxes. This encompassing interest gives him an incentive to maintain law and order and to encourage creativity and production in his domain. Much of the economic progress since the discovery of settled agriculture is explained by this "incentive."

ii. From James Buchanan, Limits to Liberty, 1975.

- "The state serves a double role, that of enforcing constitutional order and that of providing "public goods." This duality generates its own confusions and misunderstandings. "Law," in itself, is a "public good," with all the familiar problems in securing voluntary compliance. Enforcement is essential, but the unwillingness of those who abide by law to punish those who violate it, and to do so effectively, must portend erosion and ultimate destruction of the order that we observe.
- These problems emerge in modern society even when government is ideally responsive to the demands of citizens. When government takes on an independent life of its own, when Leviathan lives and breathes, a whole set of additional control issues cone into being. "Ordered anarchy" remains the objective, but ordered by whom?
- Neither the state nor the savage is noble, and this reality must be squarely faced.

XI. Three Reductionist Rational Choice Theories of the Origin of the State

A. There are survival advantages to being affiliated with groups, and insofar as groups "do things together," they have always required methods for collective decision making.

i. Diamond (1999) and others suggest that until about ten thousand years ago most people on earth associated with one another in relatively small groups (a few dozen people), who used a form of consensus based decision making.

ii. However, as towns and cities formed to take advantage of specialization and trade, the groups became larger and other collective decisionmaking procedures (including the "king and council" form) came to be widely used.

B. Collective decision making rules are clearly an important part of the productivity (survival advantage) of groups. Without some method of choice, a group will have a difficult time solving public goods and externality problems.

i. It is arguably the ability to solve these and similar "team production" problems that makes organized groups more viable than unorganized ones.

ii. A group that could not formally or informally make decisions, would not have an advantage over individual decision makers, because it would not realize economies of scale, produce public goods, solve coordination problems, etc.. (A group that could never make a decision about a restaurant or method of hunting would starve.) .

iii. Note that "group management" need not be particularly active. Often establishing and enforcing rules (as with a civil law code) is sufficient to solve a broad range of problems--including the one pointed out by Hobbes.

C. Because decision making methods and rules for living in a community can be revised both whole cloth and at the margin, there is good reason to believe that the ones that have "stood the test of time" are in some sense efficient.

i. One can use rational choice models to explore both the properties of existing institutions and to suggest and test possible reforms.

ii. As a consequence, the "technology" of collective decisionmaking tends to improve through time.

iii. Although it certainly does not look perfect, it has doubtless improved greatly, allowing both better decisions by a group of given size and also decisions by larger groups to be made and implemented.

iv. Governance has been evolving for far longer than written language has been--that is to say, for as long as groups have existed.

D. In order to understand some of the survival (economic) advantages of groups, it is often useful analytically to begin with the assumption that unaffiliated individuals find themselves in a setting of anarchy where no groups exist and no collective choice mechanism are employed--that is to say to make use of the setting imagined by Hobbes.

E. There are three pure theories of the origin of government, none of which is entirely satisfactory, but each of which points to some essential features of government.

XII. The Coercive/Extractive theory of the state (Montesquieu, Tullock, Olson, Acemoglu)

A. One of the most widely held theory of the state focus on the organization of force.

B. If mankind found itself in a state of Hobbesian anarchy, groups would naturally be formed for self defense and for conquest. (Montesquieu and Tullock).

i. In a given region, one group may gradually come to dominate all others.

ii. It may be said to be a territorial government when it can impose rules and taxes on others living in the territory.

iii. According to this theory, an authoritarian state emerges when one group conquers all those within a given territory.

C. Common Problems and Solutions for all Authoritarians

i. The first problem that must be over come is to retain power or avoid over throw. (Tullock, Buena de Mesquita)

ii. Tullock argues that ruling groups undertake common strategies to do so including:

a. censorship

b. secret police

c. rewards for information

d. the rotation of rivals among offices (to minimize their base of support)

e. distribution of organizational "profits" among those whose support is most needed to retain power

iii. After security of authority is assured, authoritarian regimes would next attempt to maximize the fruits (net benefits) of office. Their ability to tax the residents of their territory gives them an "encompassing interest" in the economic development of their territory (Tullock, Olson)

a. With this in mind, a court system may be established

b. Roads and ports improved

c. Education provided

d. (Prosperity is a good thing for authoritarians as long as it does not increase prospects for an over throw.)

e. Olson argues that this encompassing interest accounts for most of the emergence of civilization over the centuries.

f. Differences in planning horizon (security) would induce more or less long term planning and so more or less rapid economic development.

g. Tullock argues that rather than reinvest profits in their territories, less than perfectly secure dictators would invest outside the country, reducing a country's long term growth rate. (capital flight)

iv. Tullock and Buena de Mesquita argue that even authoritarian regimes need to have some minimum base of support to retain authority (Mequita terms such persons the "Selectric.")

a. This induces dictators/juntas to share the fruits of power among those whose support is most needed.

b. The result tends to be a highly unequal distribution of income.

v. Mancur Olson (1993, 2000) demonstrated that a net revenue maximizing dictator has good reason to provide law and order, national defense, highways, and so forth.

a. As a residual claimant on national output, a "**stationary bandit**" has an "encompassing interest" in the prosperity of his territory.

- In order to harvest taxes and other goods from "his garden," the stationary bandit must protect it from others (from **roving bandits**).

b. Olson also points out that roving bandits have no such incentive, because they "harvest" in an environment that closely resembles a prisoner's dilemma game. What they fail to harvest is likely to be taken by the next roving bandit rather than used to produce next years tax base.

vi. Tullock suggests that within a ruling group there is often a single decisive decisionmaker, who can be regarded as "the dictator."

XIII. The Contractarian Theory of the State

A. An alternative theory of the origins of the state also imagines the original setting being a Hobbesian jungle, but notes that groups may form voluntarily in such settings and form a government as a means of escaping from anarchy and producing public goods.

i. Hobbes argued that this can lead to an authoritarian state, such as France was during his life.

ii. Others argued, that society might do better than that if it could develop an effective constitutional system.

iii. The early constitutionalists (17th and 18th century) all believed that a government better than an authoritarian one could be achieved through appropriate constitutional designs (as with Locke and Montesquieu).

B. The contractarian (social contract) theory of the state conceives of **a state as the result of a voluntary contract among equals**.

i. According to this theory, states are productive., rather than extractive.

ii. Individuals create a state as a method for advancing common ends.

a. To make property and life more secure.

► This requires national defense

► and a legal system, with effective courts

b. Such governments may also be formed to solve other public goods and externality problems.

► The European Union might be thought of as such a state.

c. In such "contractarian" states, the **coercive means** used by the state to collect taxes, enforce laws, and assure national defense are all **grounded in voluntary agreement**, rather than imposed by outsiders.

C. Contractarians argue that a law enforcing state that protects life and property can allowed groups to escape from the dilemma of the thieves problem and so encouraged a more prosperous society to emerge as markets and specialization developed.

i. Hobbes (1651), Locke (1689), and Montesquieu (1748) developed early contract theories of the state.

ii. These were very influential in intellectual circles (among liberals) in the eighteenth century, and had significant impact on the idea of the "Founding Fathers" of the US Constitution.

- Many of the ideas regarding "the natural state" came from the experience of American settlers, where numerous communities were formed via contract.
- Important examples include the colonies of Plymouth, Massachusetts, Rhode Island, Connecticut, and New Jersey.
- The countries of Switzerland, the Netherlands, and the United States all began as defensive unions.

iii. James Buchanan (1975) extended the social contract theory of Hobbes by applying modern tools of economic analysis and game theory to the analyze the kinds of governments one could imagine persons adopting voluntarily.

a. His concept of social contracts is more optimistic than that of Hobbes in that he believes that leviathan can be constrained by a constitution.

b. Buchanan argues that there are often mutual gains that can be realized by agreeing to be "coerced" by a third party, which helps to explain the existence of both a rule-enforcing government and the tax collector.

c. In the absence of coercive methods, free rider problems would prevent the state (or a club) from advancing the interests of its citizens (members).

d. However, in settings in which persons are not initially more or less equal, the social contracts that emerge may violate contemporary norms for "good" governance.

e. Buchanan often suggested that one should focus on the process by which a state is formed rather than its characteristics to appraise its legitimacy.

XIV. Territorial Monopoly as a Foundation for Territorial Governance

A. An alternative explanation for the emergence of a state was proposed by Congleton in *Perfecting Parliament* (2011), chapter 4.

i. In that chapter it is argued that the fact that many organizations can impose rules on "outsiders" and "insiders" makes the boundary between the insiders and outsiders less than perfectly sharp in practice, although that distinction is a useful one for many purposes.

- For example, a commercial organization's "customers" are not "insiders" in the sense used above, because they do not ordinarily participate in the firm's team production, but they are nonetheless loosely affiliated with the organization and affect the organization's viability.
- Similar associations exist for a church's congregation, the victims served by charitable organizations, and the alumni of colleges and similar organizations.

ii. Organizations can often impose rules on such affiliated persons, although within limits, as noted above.

- In a setting in which customers may acquire the same services from a variety of organizations, their exit costs are low and the value of alternative sources of the services of interest are essentially equal.
- In such cases, no organization can demand a higher price for its services than any other, whether in cash or kind. However, in cases in which an organization provides an important, essentially unique service, a much higher price can be charged, that may well include cash and services to the firm.

► In such cases, customers must pay "the price" or do without.

B. Monopoly power potentially allows organizations to collect high fees, but also to impose rules and duties on their customers in exchange for the services provided.

i. Here, one can imagine a water monopoly that controls the local irrigation network.

- If a farmer wishes to have food on the table next year, he must have a reliable source of water and so is willing to pay a high price to the local water monopoly.
- If prices become too high, the farmer may sell his land and move, although prices would have to be very high to induce abandonment of fertile farmland.

ii. In such cases, the quality and extent of available substitutes plays a role that is very similar to exit costs.

i. It bears noting that a monopoly price may involve more than a simply transfer money from customers to the organization's treasury.

a. A monopolist that controls an important service is often able to earn additional profits by multipart prices that require both money and services from their customers.

b. For example, a water monopolist might set its prices in terms of money, farm output, hours of work, and deference to the organization's leadership.

c. Such complex pricing can generate significant improvements in the well-being of the water monopolist over cash payments alone, because well-developed markets for other resources may not exist, or because

some customer resources are worth more to the monopolist than to other organizations.

- Deference, for example, is not a tradable good.

d. A farmer would not pay exorbitant prices for unimportant services, but some services are worth more their weight in gold.

C. There are many important services that can be monopolized by organizations in an insecure world without extensive trading networks.

i. For example, suppose that a "protective wall cooperative" builds a protective wall around a plot of ground outside an existing village or a community that is available only to its members (subscribers).

a. This coop is clearly able to demand high membership fees in settings where external security risks are high and no other redoubts are available nearby.

b. It can also raise membership dues at times of unusually high risk. Indeed, at such times, potential members may be willing to pay essentially any price to join the club.

i. The implied offer is essentially "your money or your life," although in this case, the coop clearly offers a service, rather than a threat.

- However, the fact that the threat comes from "roving bandits" does not diminish the club's bargaining power or its ability to impose rules on members and potential members.
- In insecure times, the membership dues of such clubs can be as high as the wall is secure.

i. Monopoly power over a valuable service allows the organization to impose both high fees (taxes) and demanding rules on those who hope to gain access to the service.

D. By controlling the magnitude and mix of payments required for access to its services, the governing body of organizations with monopolies over important services within a geographic area can exercise significant control over all who live there.

- Note that the ability of an organization to impose rules in such cases arises not through the exercise of military power (although some police power may be necessary to protect their claims to the irrigation network or wall), but rather through their ability to deny access to extremely valuable services.
- If a person fails to pay, he or she might face starvation in the future or be banished from a redoubt or walled community, increasing their risks from roving bandits in both the short and long run.
- Moreover, more than one organization may be able to impose rules on outsiders in a given territory.

E. The ability of organizations to impose rules on outsiders clearly varies with their monopoly power.

i. Even firms in competitive markets often impose rules on their customers; for example, a grocery store will exclude unruly customers who impose negative externalities on other customers or significantly increase a firm's production costs by disturbing the arrangement of inventory on shelves or other displays.

ii. Such rules for customers, however, can be imposed only if they directly or indirectly benefit their customers. For example, shopping rules often allow firms to provide their services at lower costs to the customers. D

- Dress codes may create ambiance desired by a restaurant's customers.
- Ease of substitution (exit), however, clearly limits the ability of rival organizations to impose rules on their customers.
- McDonalds, for example, could not require all of its customers to wear tuxedos. Coercive proposals do not always yield additional net benefits for organizations or their customers.

F. Historically, all three of these theories of the state may operate simultaneously. An invading army can be a very strong reason to join forces under a social compact.

- (Military alliances are often voluntary agreements by communities to repel an authoritarian invader or to secede from an authoritarian regime.)

XV. Rational Choice and the Policies of a Secure Dictatorship

A. We start with the coercive theory of the state for three reasons: first, it is a relatively straightforward model of the state. Second, it represents a, more or less, worse-case theory of the state, but implies better public policies than might have been expected (indeed better than observed in most places). Third, until very recently, such governments have been the dominant form of large scale governance on the earth.

i. That is to say, dictatorships are an important type of government to analyze and also a fairly easy one to model.

ii. In spite of this, surprisingly little work has been done on dictatorship.

- (The books and papers of Gordon Tullock, Mancur Olson, and Ronald Wintrobe account for most of the rational-choice based literature on dictatorship.)

iii. Democracies have historically been a very small minority of the governments on earth.

B. The Olsonian model assumes that a dictator exists and analyzes the kinds of fiscal policies that a profit maximizing dictator would adopt.

i. The assumed goal of the dictator is analogous to that of a slave holder in the old south, except that the plantation can not be sold.

ii. It turns out that a revenue maximizing dictator's interest in tax revenue leads him to provide public goods that increase national wealth (taxable wealth) and to tax at less than 100%.

iii. The latter implies that his subjects share in any prosperity induced by the dictator's public policies.

iv. And, moreover, insofar as the dictator can not fully capture the fruits of his subjects' labor, the "ruled" are made better off by the dictator, at least relative to what they would have realized under Hobbesian anarchy. That is to say, the conquered parties realize greater net of tax income than required for subsistence. (Of course, their alternative state might not have been the Hobbesian jungle.)

C. (Note that security interests may make a dictator less interested in the interests of groups whose support is difficult to obtain at the margin or if he has a short time horizon.)

D. The simplest model is one where the dictator acts as an income maximizing Leviathan (as assumed in Brennen and Buchanan (1977), and in Olson and McGuire (1996).

i. A secure dictator, whose rule is unchallenged by potential rivals or invaders, will select tax and expenditure policies to maximize his income:

► $Y = t\,Ny(G,t) - c(G)$

ii. where y a function representing *average* or per capita national income and N is the number of subjects within the kingdom. Average income rises as G increases and falls as t increases. t is the tax rate and G is a national service that costs c(G) to provide.

iii. First order conditions of ii characterize t* and G* for the dictator.

a. $Y_t = t + tN\,y_t = 0$ at t* e. g. given G* set t to maximize tax receipts

b. $Y_G = tNy_G - c_G = 0$ at G* e. g. given t* set G to maximize tax receipts

c. Because the tax base can be increased by services, and the dictator has an interest in the tax base, he can be said to have an encompassing interest in the wealth of his subjects. After all that is where his taxes come from.

iv. On the other hand, this is not a complete encompassing interest. Note that *G tends to be underprovided* by the dictator insofar as he receives less than the complete marginal benefit from the service. The national income maximizing level of government services requires

► $Ny_G - c_G = 0$ not $\mathbf{t}Ny_G - c_G = 0$

► the marginal benefits from government programs should be set equal to the marginal cost of G.

► (Note that a very similar model can be constructed for monopolist-based governance for services that increase the profitability of the service monopolized.)

E. **Practice Problem(s)**

i. It bears noting that two dictators can be worse than one.

ii. To see this consider the case of two toll collectors on the Rhine.

iii. Each knows that the shipping along the river increases as public services are provided and falls as tax rates (tolls) increase other things being equal.

iv. Let shipping be simply $S = K - b(t_1+t_2) + c(G_1 + G_2)$ and net tax revenue be $T_i = t_iS - c(G_i)$

v. Holding public services constant ($Gi = k$) determine each river baron's optimal tariff rate. (Assume that neither river baron knows what the other is doing.)

vi. Compare this rate with that under a single ruler.

vii. Now, hold taxes constant, and determine the public service levels that will be forthcoming under the two vs. single river baron cases.

XVI. Institutions for a Constraining a Leviathan: Beyond Hobbes

A. It is possible that a group of individuals would agree to use a dictatorial (one man rule) collective decision making procedure--especially in times of war (supreme commander) or on occasions when that person could be removed from "office" very easily (as with a CEO or town manager). Hobbes suggests this solution as an escape from the endless war that he believes will be associated with anarchy.

B. On the other hand, if a group decides to use one man decision making for ordinary collective decision making, it is clear that they would prefer that the ruler abide by a variety of constraints, as noted by Buchanan (1975) and Buchanan and Brennan (1977). For example:

i. Some method of aligning the interests of the ruler and the ruled might be adopted. (Elections)

ii. There might be guarantees of property rights and due protection. (Rule of Law)

iii. The domain of policy might be constrained. (Civil and Political Rights)

iv. Only tax instruments with a relatively high deadweight loss might be permitted, or veto power over such policies may be retained. (Referenda)

v. Alternatively, the authority to make public policy may be divided between a king and a council or parliament. (This was true of most early constitutional monarchies in medieval Europe and east Asia.)

vi. The king and council is a very widely used template for governance and one that allows governmental authority to be distributed in a number of ways: from authoritarian regimes in which the king dominates policy formation to parliamentary regimes in which the council dominates.

C. Many of the features of modern states with elected governments can be thought of as the result of constitutional bargaining and bargains reached over the centuries.

i. Constitutional law and constitutional theory, however, is far older than contemporary constitutions.

ii. Settle agriculture began more than ten thousand years ago.

iii. Simple written descriptions of government emerged shortly after writing, as with the prologue to the legal code of the Hammurabi (1750 bce).

- Many of the Classical Greek city states often had formal constitutions.
- Aristotle's the *Politics* (330 BCE) began the academic analysis of constitutions. It includes a broad overview of the relative merits of those constitutions.

iv. European constitutionalism arguably emerged in the sixteenth and seventeenth centuries, as with the Dutch Republic and Cromwell's constitution following the English civil War.

v. The oldest written constitution in force is presently the US constitution which is just over 200 years old.

D. The Constitutional designers of the United States created a very new form of large scale government, based on elections, rights, the separation of powers and federalism.

i. In less revolutionary states, such as England, Sweden, Norway, Denmark, and so forth, their contemporary constitutions emerged gradually through constitutional bargaining and reform in the nineteenth and early twentieth centuries.

ii. Nearly all contemporary governments have written constitutions.

XVII. Elected Rulers (Democracy)

A. One advantage of democracies over dictatorships is that it is easier to replace rulers who generally reduce the welfare of their citizens. Another is that elections themselves tend to induce those competing for office to propose and implement policies that generate net benefits for a majority of the persons living in the country of interest.

B. A lean model of policy formation in a democracy implies that the policies adopted tend to be those which maximize the welfare of the median voter. (A future lecture develops the logic that underpins this claim.)

C. A model comparable to the dictatorship model developed above can be constructed where a "ruler" is elected:

i. Suppose that the median voter is restricted to similar fiscal policies: proportional taxes and public goods and is interested in maximizing his own after tax income.

ii. What would be the median voter's ideal combination of taxes and government services?

iii. Since the median voter can not keep net tax receipts, she faces a balanced budget constraint and her tax rates vary with the government services provided and the size of the tax base.

- ► Let c(G) be the cost of the government service(s) and y(G,t) be the average income associated with service level G and tax rate t.
- ► Given a balanced budget constraint and a proportional tax system, the tax rate can be determined as follows:
- ► $c(G) = tNy(G,t)$ which implies that $t \approx c/Ny$

iv. The median voter's after income is similar to that of the average voter's income although not identical unless the distribution of income is symmetric.

v. Let v(G,t) be the median voter's pretax income.

- (Note that v(G,t) is implicitly a "reaction" function that describes how job opportunities or wage rates are affected by government policies and how her family income is then affected by the leisure-labor choice made.)

vi. The median voter's after tax income is:

- $V = (1-t)v(G,t)$ which given the balanced budget constraint is
- $V = (1-c/Ny)\, v(G,t)$ or
- $V = v(G,t) - (c/N)\,(v/y)$

vii. Differentiating yields:

- $v_G - c_G/N\,(v/y) - (c)[\,v_G/y - vy_G/y2] = 0$
- and $v_t - (c/N)\,[v_t/y - vy_t/y2] = 0$

viii. An interesting **special case** of the median voter model is that where the median voter's income is the same as average income: v=y.

a. In that case, $V = v(G,t) - (c(G)/N)$.

b. If the median voter maximizes her own inccome, the median voter sets G such that $Ny_G = c_G$

- This sets G* to **maximize** national income
- Note that the result is better than that of leviathan above.

c. Selecting the t that **minimizes** tax burden of providing G* requires that $v_t = (c/N)$ with $t^*Ny = c(G^*)$

ix. This is one case where democracy will have broad appeal.

D. The general sense that we in the West have that democracies are superior to dictatorships should be apparent in policies.

i. One can observe, for example, that the Western democracies have been wealthier places than anywhere else for the past century or two.

ii. Thus, in spite of all of their flaws, Western liberal constitutional designs must be doing something right--they must be inducing policies that advance the interest of most persons living in those countries.

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