I. Two meanings of the term government are common in English.

A. One refers to the decisionmaking or policymaking part of a formal organization. Every club, nonprofit organization, and firm has a government in this sense, as noted in the previous two chapters. These policymaking bodies devise and enforce rules for their team members to solve team production problems and to direct an organization's resources to advance specific purposes.

B. The other meaning of the term refers to the subset of organizations that have extensive ability to impose rules on persons within a particular geographical territory. Today's lecture provides an explanation for how the former can become the latter

C. All organizations can impose rules on their own team members, because realizing the fruits of team production normally requires team members to perform certain tasks at particular times with particular persons in a particular manner.

i. The range of behaviors that can be induced by organizations varies substantially, but many organizations exercise significant control over their members.

ii. An organization's management is often able to tell team members how to dress, when and what to eat, and when and how to work, and even who their friends should be (other team members).

- The organization's management may induce team members to go on trips far away from families and friends (as with hunting clubs, commercial transport shipping, and military operations), via means and to settings that involve risks to life and limb.
- They may induce persons to sacrifice the necessities of life for a period—fasting and abstinence, for example, are often required for the members in religious organizations.

D. Many organizations can also impose rules on "outsiders."

- Both suppliers and customers may have to accept some rules in order to sell their products to an organization or purchase an organization's output. "Deliveries at the back," "Sales of our products take place only on Saturday from 10:00–14:00."
- Territorial governments are the rule-making, policymaking bodies of organizations that have relatively great ability to impose rules on outsiders within a geographic territory.

II. Coercive Rule with Mobile Subjects

A. The essential logic for requesting that outsiders follow particular rules, and for accepting such requests is represented in Table 4.1.

i. It is sensible for an organization to make such requests of outsiders (that is, please follow rule D) as long as the organization's surplus will be increased by the outsider's compliance (Π - R > C > X or Π - R > X > C).

- The outsider-resident expects to receive benefit R if he or she complies with the demand, expects to receive benefit B if he or she does not comply along with penalty P.
- He or she expects to **receive A - E if he or she chooses to leave** the community, where A is the expected net benefits from residence in the best alternative community and E is the member's exit cost.
- The outsider-resident accepts the organization's demand (obeys D) only if the (long term) reward, R, from doing is greater than the alternatives of (long term) noncompliance and exit, R > B-P and R > A-E.
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Table 4.1:
Payoffs for Formeteur-Ruler and Community Members

	Formeteur	Resident
Community member accepts the organization's demand.	Π - R	R
Community member(s) rejects the organization's demand.	C	B-P
Community member emigrates.	X	A-E

III. Exit Costs and Exit Control

A. It bears noting that exit costs are not entirely determined by the natural physical and emotional costs of relocating, but are partly determined by the policies of governments.

B. Exit may be discouraged by encouraging the dissemination of information about hardships in other communities and about the dangers of travel to them.

i. "You are lucky to be here, rather than there!" Information about hardships inside the community and about better alternatives may also be suppressed through censorship laws.

ii. Exit costs can be directly increased by punishing exit with fees of various kinds.

- Organizations may, for example, attempt to damage the departing member's reputation by declaring that the person leaving "is a shirker," "has never done his duties," "has violated our trust," "is a thief," and so on. Exit may be illegal.
- There may be harsh punishments for even attempting to exit. Extreme examples of the latter include the fugitive slave laws common in all slave-holding societies, restrictions on peasant and serf mobility that were common in feudal Europe and Japan, and the Berlin Wall and "**Iron Curtain**" of the former Soviet Union.

C. Territorial governments that increase the cost of exit can reduce their rewards for compliance and/or increase their penalties for noncompliance without inducing mass exit by residents and team members, albeit at the risk of attracting fewer immigrants.

i. Exit costs are also partly a consequence of the "entrance costs" of other organizations and territorial governments.

- Because there are cases in which it pays to banish a person for shirking (as when $X > C$ in table 4.1), it will be difficult for other organizations to judge whether a particular departure is a "voluntary exit" from a dysfunctional community or the "banishment" of a person for poor performance or criminal acts.
- Other organizations will not want to include shirkers or criminals from other communities on their teams, because they increase the cost of team production without producing sufficient offsetting benefits.
- Similarly, regional governments will hesitate to allow immigrants of questionable character to resettle in their communities.

ii. Rule-breakers increase enforcement costs and reduce the productivity of territorial rules.

- Productive rule-followers would normally be welcome, insofar as they contribute to team or community output, but they may need to prove themselves before being accepted.

D. In cases in which it is not easy to exit or join a given community, the calculus of remaining or becoming a resident will be based on the long-term average (expected) net benefits of affiliation relative to those available in other communities net of exit costs.

- Governments of communities whose residents have relatively high exit costs can use relatively severe penalties to enforce their rules, even if alternatives outside the community are somewhat better than those inside.

IV. Territorial Monopoly as a Foundation for Coercive Rule

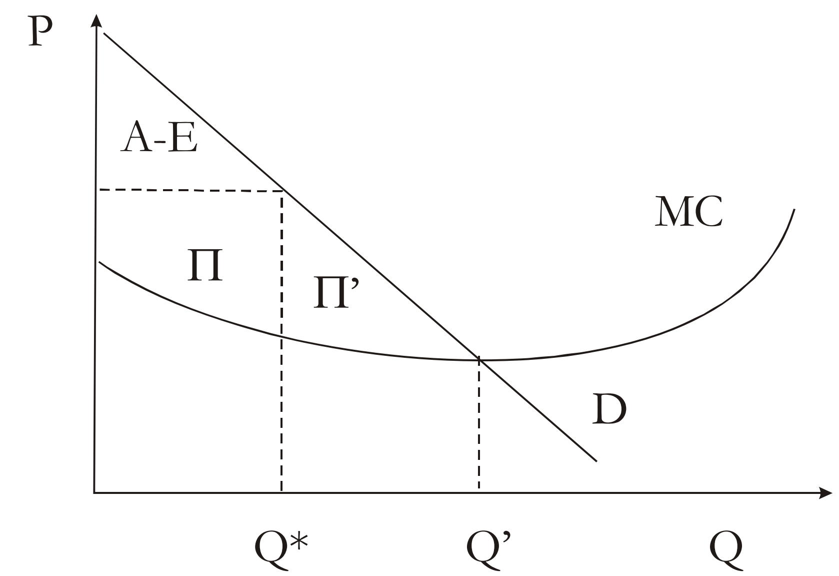
A. Economists devote a good deal of their time to thinking about settings in which customers may acquire the same services from a variety of organizations and exit costs are low.

i. In such cases, no organization and no territorial government can demand a higher price for its services than any other, whether in cash or kind. In cases in which an organization provides an important, unique service, a much higher price can be charged, because in monopolized markets, customers must pay "the price" or "do without."

ii. Figure 4.1 depicts the pricing decision of a local monopolist that charges a uniform price for its services, modified slightly to take account of the possibility of exit.

- 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 monopolist.
- The highest possible uniform price reduces water user net benefits from a maximum of $A\text{-}E + \Pi + \Pi'$ to $A\text{-}E$, the level which could be obtained from alternative sources of the water in other communities.
- If the prices is set any higher, the farmer would sell his land and move, although prices would have to be very high to induce abandonment of fertile farmland and buildings. In such cases, the quality and extent of fixed assets partly determine exit costs.

Figure 4.1



B. Monopolists are often said to extract "rents" (net benefits or profits) from their customers by controlling access to their services.

- The monopolist of figure 4.1 can be said to have "extracted" monopoly rents (profits) equal to area Π from its consumers.

i. It bears noting that the rents extracted from consumers may involve more than a simply transfer of money from customers to the monopolist's treasury.

ii. In cases in which money economies are not well developed, a monopolist organization may find it useful to accept a combination of money, farm output, hours of work, and deference to the organization's leadership as payment for the monopolized services.

- Such pricing can generate significant improvements in the resources available to the water monopolist and in the psychic rewards associated with leadership positions in the organization. Deference, for example, may be valued greatly by the monopoly's leadership, yet may not be directly purchased in markets.
- It also bears noting that "all or nothing offers" and price discrimination potentially allow a monopolist to increase its net receipts by up to the amount characterized by area Π'.

iii. In either case, the price paid for similar services varies among consumers.

- Some customers value the service more than others (have more inelastic demands), have less attractive exit alternatives, or can provide the water monopoly with especially valuable services.
- **There may well be inequality before the monopolist's "law" when price discrimination is feasible**.

C. Encompassing **Interests, Rent Extraction, and the Rule of Law**

i. Economics implies that regional monopolists have incentives to increase the demand for their services through every method that can increase their organizational surplus.

- Rent extraction can be increased, for example, by monopolizing several critical services, rather than just one.
- Rent-extraction can also be increased by reducing the availability of substitutes by blocking the entry of rivals in various ways.

ii. Such methods for increasing rent extraction tend to make community members worse off by shifting the terms of exchange in favor of the ruling organization—although there are, as noted above, limits to a monopoly organization's ability to extract rents from its client-customers.

D. Perhaps surprisingly, there are also methods for increasing rent extraction opportunities that provide additional benefits to a community's residents.

- For example, the demand for a monopolist's services can be increased by reducing transactions costs and increasing client-consumer income.

E. Such effects gives regional monopolists what Olson (2000) calls an "encompassing interest" in their communities' economic development.

- For example, a local monopolist may undertake or subsidize the construction of a network of roads to reduce production and distribution costs for all consumers and non-rival firms in its territory.
- Similarly, a regional monopolist may provide dispute resolution and other legal services, because "law and order" increases local prosperity and the demand for its services.

F. Religious services were also among the core monopoly services provided by many ancient governments (Bailkey 1967).

i. The monopoly power of state religions allows them to impose rules on believers and nonbelievers by espousing universal norms for behavior. "Thou shalt not ..."

ii. Formal laws and norms are often enforced through religious court systems.

- Such courts were run, for example, by Catholic, Jewish, and Islamic churches during the medieval period.
- When supernatural threats are believed, they can be a cost-effective method of encouraging compliance with the rules, and also for reducing resistance to the decisions reached in court proceedings.
- When religious services are not directly provided by governments, religious monopolies are often supported by regional governments.

iii. The state-supported church, in turn, normally reciprocates by encouraging support for the government.

- Even today, the sovereign of England is the head of the Church of England, and hold the title "Supreme Governor of the Church of England."

V. Military Threats, Rent Extraction, and Defense

i. As profits and deference are produced, rivals inside and outside the organization may attempt to take over the leadership posts in regional governments in order to enjoy the rewards associated with those positions.

ii. Such take over efforts may include threats of violence. Both formeteurs and their successors naturally take steps to avoid both internal and external overthrows.

iii. With respect to the latter, they will defend themselves, their organization, and their territory.

- They do so by organizing defensive teams and investing in defensive capital. The organization may fortify its offices and production facilities.
- The monopolist's team members and customers may be encouraged to turn out and defend the organization's capital assets (the irrigation system, wind mills, buildings, etc.).

A. An implication of the analysis of chapter 2 is that the cost of defensive teams can be reduced by encouraging militaristic norms (the warrior ethic) and other forms of loyalty (community patriotism) that tend to promote rule-following behavior, toughness, and a willingness to sacrifice for the government and its community.

- Defensive norms, teams, and capital can also be used to drive up exit costs, which allows greater penalties to be used to assure compliance with its rules adopted to defend the government's interests.

B. The infrastructure and teams organized to provide defense can also be used to increase an organization's monopoly power.

i. Economists often distinguish between natural and artificial monopolies, and this distinction is of some relevance for the present analysis.

ii. Natural regional monopolies tend to emerge when there are significant economies of scale in production that a regional market supports only a single efficiently sized firm, or when particular skills or natural resources are available from only a single source within the region of interest, because of natural genetic or geological variation.

- Examples of services that exhibit significant economies of scale include irrigation systems, village defense, theology, dispute settlement, urban planning, education, sanitation services, and social insurance.
- Regional monopolies also occur when a single organization or cartel controls a critical natural resources such as an artesian well or salt mine.

iii. In contrast, artificial monopolies arise when an "entry barrier" is created that allows only privileged organizations or persons to provide particular services in the region of interest.

- For example, religious services, exports and imports, and military training are often monopolized by making rival organizations illegal.
- Such barriers to entry tend to induce competition to join privileged groups, which can further increase income, authority, and support within the privilege organizations and groups.
- The possibility that such barriers can be created naturally induces competition for the government's favor, which can be a useful source of in-kind services for regional governments.

iv. Monopoly privileges may also be **sold or rented** to other organizations as an additional **source of government revenue** (Congleton and Lee, 2009).

C. **Artificial monopolies** can be created by government policies.

i. A monopolist's rule making and dispute resolution services, for example, can be used to enforce requirements that producers of particular products belong to specific clubs or families, or obtain special permission from the ruling organization.

ii. Rivals may also be prevented from serving particular markets, by forcibly closed them down through force of arms.

iii. Monopoly power can also be increased by adopting and enforcing rules that reduce the viability of potential rivals (Lott 1990).

D. **Providing community-wide defense services is another area in which monopolies may emerge.**

i. Persons whose life or property are at risk are willing to pay very high fees for access to a fortress or redoubt when external security risks are high, because exit options are of little value at such times.

ii. Those seeking protection are willing to pay essentially any price, which may include promises of cash payments and other services in the future.

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

E. **All these effects imply that a regional monopolist with military power will tend to have a greater organizational surplus than ones without such power.**

i. The organization of military force helps monopolists protect and extend their monopolized markets.

ii. The highest levels of dispute resolution will tend to be those run by the physically strongest organization in a given territory, because there are economies of scale in making credible military threats.

iii. In such cases, "might" may literally be said to make "right." Rule-enforcement may be enhanced by including physical punishments, as well as denial of services.

iv. The confiscatory powers and credible threats associated with military power also make it easier for such organizations to obtain the resources required to sustain their team members and to weather temporary setbacks.

F. **Military power thus tends to increase organizational viability in the short and medium term, as long as mass exodus is not induced and the cost of producing it is not too great.**

VI. Conclusions: The Form, Basis, and Limits of Territorial Governments

A. The ability of territorial monopolists to impose rules on their "customers" increases their command over resources and thereby provides those organizations with additional resources that can be used to weather difficult times.

i. This makes territorial governments unusually robust and durable organizations.

- Few organizations last as long as territorial governments, and those that do, such as religious organizations, often have similar monopoly powers and rule-imposing abilities.

ii. Economies of scale in the core services of major territorial monopolies often require, or at least support, relatively large organizations.

iii. Territorial governments are often the largest organization within the territory of interest.

B. The rules imposed by governments are still backed by threats that include denial of services (banishment from the community) and threats to take property, life, or limb forcibly.

i. However, a regional government is not free simply to take (or threaten to take) everything from those outside their organizations, as long as that which to be taken is produced by other organizations in the community (who may refuse to comply) or exit is possible.

ii. Moreover, a territorial monopoly that has its own interests at heart often has good reason to increase general prosperity, insofar as it profits directly or indirectly from greater demands for its services.

C. The rules enforced by regional governments tends to be stable, but unequal.

D. A rent-extracting regime has little interest in civic or economic equality for its own sake. Some persons are more important to their organization than others, and such persons may be privileged in various ways.

- Opportunities to profit from price and rule discrimination and from the direct sale of market privileges imply that the prevailing rules will be substantially unequal.

E. In other respects, regional governments are predicted to be very similar to other durable organizations.

i. As true of other organizations, a mixture of pecuniary and nonpecuniary rewards and punishments, as well as local norms, will be used to solve the government's internal (and external) incentive problems.

ii. As true of other organizations, their policymaking architecture will tend to be drawn from existing templates, among which the king and council template is likely to be prominent.

iii. The balance of authority within that template will reflect the origin of the governing organization.

- If founded by a single formeteur, a good deal of policymaking authority initially will reside with the organization's chief executive—mayor, governor, or king—and somewhat less authority will tend to be available to its council—town council, cabinet, or parliament.
- If founded as an alliance of local residents or a confederation of regional governments, the council will tend to be the dominant policymaking authority and the chief executive officer will, for the most part, simply implement council decisions.

iv. As true of other organizations, durable territorial governments are predicted to have standing procedures for making policy decisions and for replacing their leaders.

- Standing procedures for making policy decisions tend to remain in place, because of the advantages that those rules have for government leaders and because f uncertainties associated with experimentation.
- As a consequence, the persons inhabiting the policymaking offices of durable organizations normally change more frequently than the core procedures of governance.

v. As the English saying goes, "the king is dead, long live the king."

- Succession problems will often be solved by allowing kings and/or councils to appoint one another and through mechanistic succession based in family bloodlines.
- Even in cases in which an internal overthrow takes place, the preexisting procedures of governance are predicted to be retained for the most part.

VII. Appendix A: Risk Aversion and the Economic Advantages of Stable Rules

A. To illustrate the economic advantages of stable rules and patterns of enforcement, consider the effects of revising the organization's artificial reward system.

i. Suppose that the standing rules initially specify that if a team member performs duty D, he or she is entitled to reward R, but if not, he or she receives punishment Z. If the team member decides to leave the team, he or she receives payoff X.

ii. In lecture 1, following the rules was called "working" and disobeying the rules was called "shirking," which are plausible interpretations of choices to "follow" or "disobey" the rules that advance organizational (formeteur) objectives. A ruleful-behavior inducing reward system has payoffs $R > Z > X$.

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Inducing Rule-Following Behavior

Team Member A	Team Member B: Obey	Disobey	Exit
Obey	R^e,Re	Re, Ze	Re, Xe
Disobey	Ze, Re	Ze, Ze	Ze, Xe
Exit	Xe, Re	Xe, Ze	Xe, Xe

The cell entries are the (expected) subjective payoffs for team members A and B for obeying or disobeying organizational rules and for leaving the organization.

iii.

iv. Instability and arbitrariness in rules, rewards, or punishments make the payoffs associated with following the rules stochastic, rather than certain.

v. For example, suppose that, rather than certain reward R, there are two possible rewards for rule-following behavior, R_1 and R_2, which are received with probability P_1 and P_2 when duty D is performed.

vi. Similarly, rather than punishments Z, there may be penalties Z_1 and Z_2 received with probabilities F_1 and F_2.

vii. In such case, it is anticipated long term (average) rewards and punishments that matter rather than the specific rewards and punishments; here $R^e = P_1R_1+P_2R_2$ and $Z^e = F_1Z_1 +F_2Z_2$.

B. Risk aversion implies that even if the same average payments are received by team members, the subjective value of those rewards and punishments is lower than that of the original completely predictable case.

i. To flesh out the illustration, suppose that the subjective value of reward R is $U = R^{(0.5)}$. Let $R = 100$, $R_1 = 50$, $R_2 = 150$ and $P_1 = P_2 = 0.5$. The expected subjective value (utility) of certain reward R is $(1.0)\ (100)^{(0.5)} = 10$.

ii. The expected utility of the stochastic system of rewards is $(0.5)(150)^{(0.5)} +(0.5)(50)^{(0.5)} = 9.66$.

iii. The average reward for the stochastic system has to be more than five percent greater than the certain reward to generate the same subjective value.

C. When rewards are arbitrary or unpredictable, it will cost more to generate the subjective rewards that are greater than punishments and that are subjectively greater than rewards available outside the organization.

i. As rewards and punishments become less predictable, the net benefits of continued association with the organization becomes riskier, and less valuable for risk averse team members.

ii. In nasty environments, exit may not be an attractive option, but it is still a constraint on the arbitrariness of organizational incentive schemes. Even a pirate ship eventually arrives at port.

iii. In this manner, the economics of reward systems and exit possibilities reduce arbitrariness within voluntary organizations and also reduce the flexibility of reward systems.

D. Formeteur arbitrariness is thus constrained to the subset of "whims" that help solve team production problems or which have minor costs relative to the satisfaction obtained by the formeteur(s).

i. Arbitrariness is acceptable to team members only if Re > Xe, that is to say, only if the average reward for following the organization's rules are greater than that associated with opportunities outside the organization.

E. Risk aversion on the part of team members also implies that an organization's government cannot costlessly adjust the

Advantages associated with manipulating exit costs are discussed in chapter 4 for the case of territorial governments. Exit cost–manipulating systems tend to increase organization's rules to obtain modest short-term efficiency gains, because such adjustments tend to reduce rule-following behavior and increase recruiting and retention costs.

i. The anticipated efficiency gains (or formeteur advantages) from reforms have to exceed the higher retention and recruiting costs associated with less predictable reward systems.

VIII. Appendix B: Succession within King and Council Systems of Governance

A. Within the king and council systems of governance, another method of addressing CEO succession problems is possible. Namely, the council may be authorized to appoint successors.

i. Knowledgeable persons from inside the organization may be able to judge the skills necessary for effective organizational governance, which may differ from those necessary to launch a palace coup.

ii. The entire council is unlikely to die or depart suddenly.

iii. The use of councils for such decisions also tends to reduce unproductive conflict when council members make decisions through majority rule (Congleton 1984).

iv. Replacement members of the council may be chosen by departing council members, the remaining council members, the "king," or jointly determined.

v. In this manner, the king and council template allows an organization's government to be gradually renewed by those with the largest stakes in continuation of the organization and the most intimate knowledge of its operation.

B. Such arrangements have been common historically within a broad cross-section of organizations, including churches, commercial enterprises, and national governments. A council of cardinals selects the new pope, and the pope selects new cardinals. A board of directors hires a new CEO and the CEO appoints (or nominates) new board members. A parliament or council of electors directly elects a king or indirectly determines them by specifying rules for succession. Kings often had the authority to appoint (or nominate) new council members, as with elevations to the noble chambers of parliament.[3]

IX. Appendix C: Why an Almost Omnipotent Despot Might Grant Veto Power over Taxes to a Taxpayer Council

A. Fiscal Policies Fit for a King

i. Consider as a point of departure, the familiar leviathan model of government developed by Brennan and Buchanan (1980) and extended by Mancur Olson (2000).

- We shall refer to the "leviathan" as the king, since it is likely that Hobbes had the restoration of the English King, Charles II, in mind when he wrote his most famous book in the middle of the English civil war.

ii. For purposes of analysis, assume that the king has a utility function defined over his own private consumption, X, and two government services, guns, G_1, and butter, G_2:

- $U = u(X, G_1, G_2)$

iii. The king's budget is determined by his own household wealth, W, which is usually considerable and the taxes that he levies, T.

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retention at the same time that they increase the cost of recruiting new team members from outside the organization or territory of interest.

In cases in which errors are made in detecting disobedience, the expected payoffs will have a similar probabilistic structure. In this case, there will be some probability that an obedient team member will be punished (receive Z) rather than rewarded. And there will also be some probability that a disobedient team member will be rewarded (receive R) rather than be punished. Monitoring also tends to reduce the cost of compensation systems. See chapter 4 below.

[3] The British King's ability to appoint new members to the House of Lords, perhaps surprisingly, played an important role in early suffrage reform, as noted below in chapter 13.

iv. Suppose that the king can collect any tax that he wishes and spend the money as he sees fit. In this case, the feasible range of services and his personal consumption are determined by the cost of government services, $c(G_1,G_2)$, and the price of personal consumption.

- (A parliament, if one exists, may be used as a source of advice, but initially is assumed to play no direct role in policy formation.)
- Using personal consumption as the numeraire good allows the king's budget constraint to be written as $T + W = X + c(G_1,G_2)$, or
- $X = T + W - c(G_1,G_2)$
- where *c* is a separable convex cost function of the two government services.

v. Substituting for personal consumption and differentiating with respect to the control variables T, G_1, and G_2 yields the following first-order conditions that characterize the king's preferred fiscal policy:

- $U_{G1} - U_x C_{G1} = 0$
- $U_{G2} - U_x C_{G2} = 0$
- $U_x = 0$

vi. The first two first-order conditions imply that the king chooses public service levels so that the marginal utility of the service equals its marginal cost in terms of his diminished personal consumption of the private good.

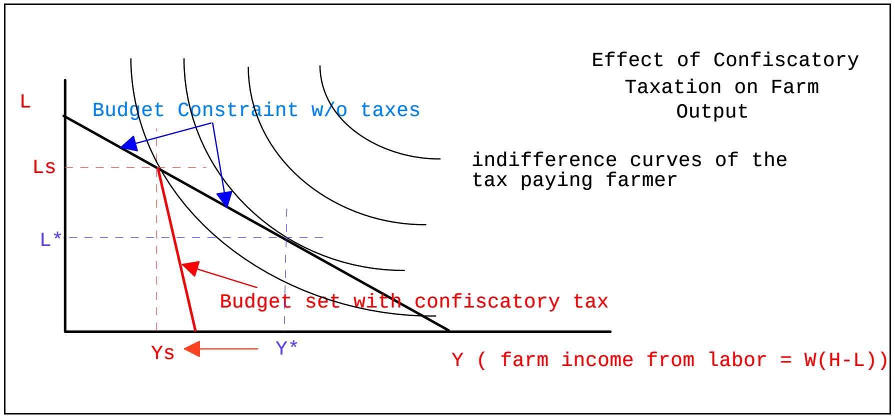
vii. The third implies that taxes will be collected until the marginal utility of his additional personal consumption falls to zero.

viii. Note that the latter can be satisfied as an equality only if the king has sufficient household and tax revenue to ***achieve satiety in all goods***.

- (Equation 5, $U_x = 0$, implies that both U_{G1} and U_{G2} also equal zero at the utility-maximizing public policy.)
- Whether these policy choices are feasible or not depends both on the king's preferences and the extent to which tax revenue may be "squeezed" from the kingdom.

ix. If the king's tastes are not such that satiation occurs within the feasible range of the kingdom's economic output, a secure king will be disposed to tax away the entire surplus of the kingdom.

- The geometry of this logic for the two good case (one government service, G1, and personal consumption, X) is depicted above.



B. Leviathan's Taxation Dilemma

i. However, if every potential taxpayer in the kingdom expects all of their production above subsistence to be taxed away, there is no private incentive to produce a taxable surplus; in which case, the king will have to rely upon his own household resources for government finance, because no taxable surplus will be produced.

ii. To obtain this hypothetical maximal tax revenue the king must enslave the entire population of the kingdom.

iii. Taxation of independent producers by leviathan can be represented as a three-stage game. In the first stage (the Spring), the king announces a tax rate; in the second (the Summer), the subjects produce their output; in the third (the Fall), the king collects his taxes.

- In a one-shot game, the king would announce a very low tax in the Spring, but, subsequently, take the entire surplus produced in the Fall regardless of the tax previously announced.
- Forward-looking subjects would anticipate the final confiscatory tax, and produce no taxable surplus no matter what tax he announces in the Spring.
- Consequently, the king's tax revenue in period 3 is zero in equilibrium, and taxpayers would live at subsistence income levels, but with plentiful leisure.
- The effects of a confiscatory tax is illustrated below for a typical farmer.[4] (It is assumed that only the "surplus production" can be taxed.)

iv. In exchange for a royal commitment to take only a specific fraction of the surplus, the subjects would produce a larger tax base by producing more than subsistence income.

- Unfortunately, the king's fiscal promises are not entirely credible by themselves, as noted by Weingast and North (1989) and others, because an all-powerful king may simply rewrite the tax code whenever he pleases.[5]

v. For this reason, the **possibility of tax avoidance or tax resistance together with the king's interest in tax revenue creates an opportunity for constitutional exchange** between a nearly all-powerful king and those who pay the taxes.

- **Any tax institution that can simultaneously assure positive surplus for the taxpayers and tax revenue for the king makes both better off.**

C. Parliamentary Veto as a Solution to Leviathan's Taxation Dilemma

i. One institutional method for making the king's tax "commitment" credible is to grant veto power to a parliament representing taxpayer interests over future tax increases in exchange for additional tax revenue.

- Vesting a tax council or parliament representing taxpayer interests with veto power transforms the previous three-period into a four-stage game in which the council may veto any increase in taxes in the fourth-period, forcing the king to adhere to his first period announcement.[6]
- In the new four-period game the king's announced tax policy in period one is credible, because a representative council will veto subsequent tax increases in period 4, barring unanticipated emergencies.
- At the subperfect equilibrium, an income-maximizing king announces the revenue-maximizing proportional tax rate in period 1, or perhaps a long-term revenue-maximizing lump-sum or head tax that allows substantial surplus to be realized by the average taxpayer.[7]

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4 The mathematics behind the diagram is the following. Consider a typical farmer-taxpayer whose utility is $U = u(L, Y)$ where $Y = (1-t)f(H-L, G_1, G_2)$, t is the marginal tax rate, f is a the taxpayer's strictly convex production function of farm output, L is leisure, and H is the available hours in the day. $H-L = W$ the hours spent farming.

Y can be regarded as income greater than subsistence income. The taxpayers works $H-L^*$ hours, and L^* is such that $U_L - U_Y(1-t)F_W = 0$. Note that given U monotone increasing, twice differentiable, and concave, whenever t = 100%, a corner solution emerges with $L^* = H$. If subsistence output, $Y=Y^S>0$, is required to survive, $L^* = H - f^{-1}(Y^s)$.

5 North and Weingast (1989) argue that the transfer of control over government finances from the King to the British Parliament in the Glorious Revolution made the government substantially more creditworthy by reducing the probability of a royal default. It bears noting, however, that veto power over new taxes had existed in England since the signing of the Magna Carta in 1215 which granted such power to an elected council of twenty five barons (section 61), although this power had waned somewhat during the reign of the Tudors. Similar arrangements were commonplace throughout Europe during the late Middle Ages.

6 Taxpayer utility always diminishes in *t* whenever tax receipts are increased to support additional consumption for the royal household. Given $U = u(L, Y)$ and $Y = (1-t)f(H-L, G_1, G_2)$, after tax utility can be written as $U^* = u(L^*, (1-t)f(H-L^*, G_1^*, G_2^*))$. The envelope theorem implies that $U^*_t = U_Y[-f(H-L^*)] < 0$.

7 Note that imposition of a nearly confiscatory lump sum tax in the Spring would require complete knowledge of each individual farmer's productivity as

- Because the revenue-maximizing tax rate is less than 100%, the subjects produce more than required for subsistence in period 2, and the king collects taxes according to the announced (or status quo) tax schedule in period 3.

ii. Under this constitutional arrangement, the subjects will produce more surplus and pay greater taxes than they would have in the absence of the veto authority, because they receive a more credible promise of lower future tax rates, which assures taxpayers of a more certain and larger share of their future surplus.[8]

- In this manner, granting a council of taxpayers veto power over future tax *increases* generates both a wealthier king and a wealthier kingdom.

iii. It bears noting, however, that *no vetoes will be observed* when the system is working smoothly, and consequently, such parliaments will appear to be "toothless," as commonly reported of medieval parliaments.

- Nonetheless, in the absence of the council's veto power over new taxes, both the king and the kingdom would have been substantially poorer.
- Authority to veto future tax increases creates credible tax laws, rather than vetoes when this tax constitution is working well.

D. Durability of a Parliamentary Tax Veto

- This assignment of powers to parliament or council of taxpayers is surprisingly stable once in place, because the *institutional* game is also subgame perfect.
- The king cannot formally reduce the veto power of the council without substantially undermining his tax base.

well as a perfect weather forecast. Without this quite impossible level of knowledge, the economist's "confiscatory tax less epsilon" cannot actually be imposed. In the long run, the maximal sustainable lump-sum tax system has to allow below-average farmers to keep something above subsistence in below-average seasons, because starvation clearly undermines the tax base. That talent, fertility, and weather vary so widely within farming and commerce probably accounts for the widespread use of roughly proportional taxes, as within manorial sharecropping systems.

8 Buchanan and Brennan (1980) analyze taxpayer interests in constraining the tax power of leviathan at a time when the fundamental institutions of governance are adopted by a constitutional convention. Although their path-breaking analysis clearly influences the approach taken here, the purpose of their analysis was normative rather than positive. Their research analyzes the properties of durable tax schedules and taxable bases that taxpayers might agree to as a means of advancing their own self-interests. That is to say, Brennan and Buchanan attempt to characterize the fiscal arrangements that should (and perhaps would) be adopted by a society that anticipated government by leviathan.

In the present analysis, the constitutional arrangements that characterize the division of power between the king and council emerge gradually as a consequence of ongoing trades between the king and those taxed. Moreover, taxes are assumed to be "standing" confiscatory taxes rather than a modern income tax. Little would change in the analysis if the tax agreements constrained tax rates in progressive or proportional income taxes instead of lump-sum taxes.

		Kings Strategies	
		Keep Tax Constitution	Revoke Tax Constitution
Farmer's Strategies	Produce Surplus	(F, K) (3, 10)	(F,K) (1, 12)
	Don't Produce Surplus	(2, 7)	(2, 7)

- Nor can the king simply add another stage to the game in which the king can accept or reject the council's veto of tax increases.
  - In such a game, a utility-maximizing king would be inclined to impose confiscatory taxes occasionally in period 3 and then overturn the council's period 4 veto in period 5, taking the entire surplus.
- The fact that the king is already maximizing expected tax income also implies that the king cannot occasionally "roll the dice" and renege on his assignment of veto power to the council by randomly calling out the army to raid a subset of taxpayers.
- In either case, production would fall below levels that maximize long-term government revenues, because such policies increase anticipated tax rates.

i. Such taxpayer responses to confiscatory taxation remain credible as long as production is a costly activity for the taxpayers and the king is not able to reduce his subjects to abject slavery.

ii. Moreover, the organization of the tax council, itself, reduces the collective action problem for those represented on the council insofar as meetings of the council both affirm their common interest in resisting tax increases and decisionmaking process by which they can organize to resist kings who, nonetheless, attempt to undermine the tax council.[9]

X. Historical Counterparts

A. These theoretical results have many real-world counterparts in European history.

B. In order to secure a more predictable or less costly tax revenue stream, medieval kings often agreed to create councils representing major taxpayers and to vest those councils with (substantial) veto power over taxation.

- Perhaps the most famous of these formal agreements is the British Magna Carta of 1215, which, among other provisions, established a representative council of 25 barons that made decisions via majority rule and had the power to veto new royal taxes.
- In the British case, this power was initially obtained and occasionally guaranteed by a threat of insurrection by these major taxpayers, but similar political arrangements were also peacefully adopted in France, Spain, Germany, and Sweden during the thirteenth and fourteenth centuries (Palmer and Colton 1965, 29-31).
- These new constitutional arrangements vested veto power in councils, parliaments, cortes, and tings representing major taxpayer interests, and the political institutions created lasted hundreds of years.

C. Several of these "tax councils" continue to the present time, albeit in substantially modified form.

- How a tax constitution might be transformed into a legislature, and then transformed into a parliament will be taken up in the next few lectures.

[9] This institutional equilibrium is one of many that are consistent with the folk theorem. If the taxpayers can make a credible commitment to reduce their surplus output to zero whenever the king attempts to undermine the council's veto power, the tax council is an equilibrium outcome in infinitely repeated games. Other credible commitments, such as a call to arms to resist taxation can achieve the same equilibrium.

XI. Philosophical Puzzle: Constrained Dictatorship?

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' *Leviathan* 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. For example:

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

- (Elections: perhaps surprisingly many, perhaps most, kings in Northern Europe were formerly elected to office.)

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

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

- Only tax instruments with a relatively high deadweight loss might be permitted, or veto power over such policies may be retained. (Parliament and Tax Councils)
- (In fact, the power to impose new taxes were reserved for parliaments rather than kings throughout Western Europe during until around 1600, when "absolutist" kings came to power. However, this institutions continued in place in much of Europe even during the "age of absolute monarchy," as in the constitutional monarchies of England and Sweden.)

iv. Many of the features of modern states with elected governments can be thought of as the result of gradual institutional innovations that came to be adopted over the centuries to address the problems associated with delegating authority to “the crown.”

- In that sense, constitutional design is a very old field of research and social engineering.

C. However, it bears noting that explicit design of written constitutions is a relatively new (rediscovered) activity.

i. The oldest **written constitution** in the world is presently the US constitution which is just over 200 years old.

- Constitutional law and constitutional theory can be said to be older than the modern constitutions.
- For example, the Magna Charta of England was signed in 1215, however very little of the constitutional law of England is incorporated into written constitutional documents.
- On the other hand, many Greek city states all had formal constitutions. Aristotle's *the Politics* includes a broad overview of the relative merits of alternative constitutions.

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

iii. In less revolutionary states, such as England, Sweden, Norway, Denmark, and so forth, the democracy emerged gradually through a series of constitutional reforms adopted over the course of the 19th century.

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