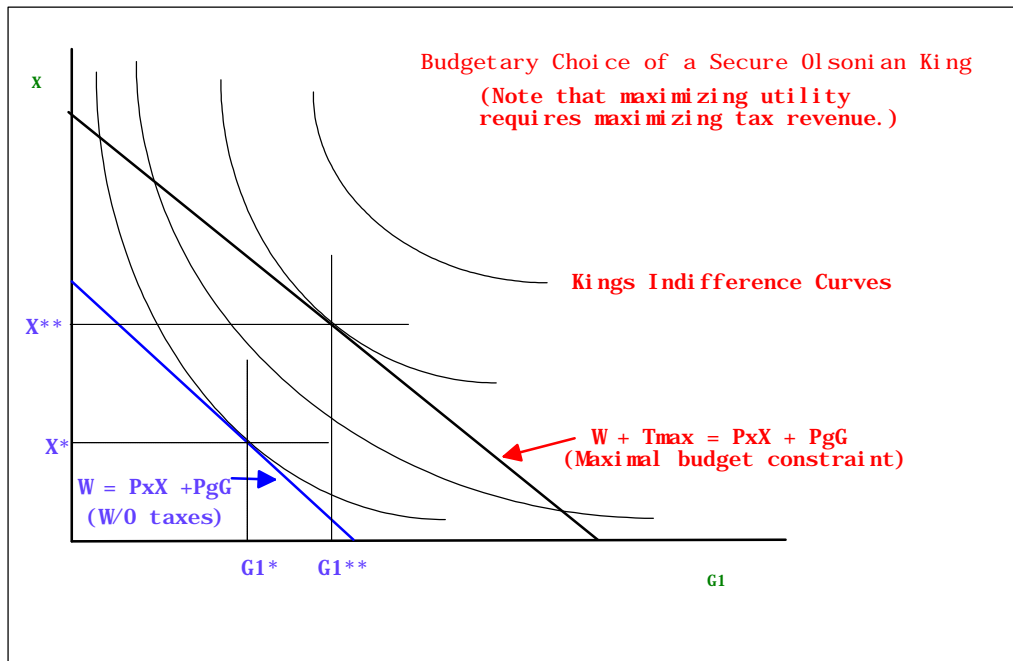


I. Why an Almost Omnipotent Despot Might Grant Veto Power over Taxes to a Taxpayer Council

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 .
- 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.



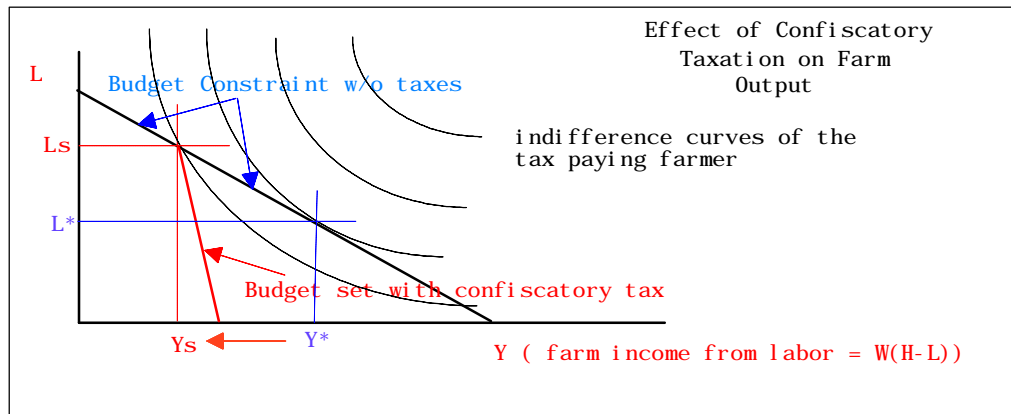
- ♦ (A parliament, if one exists, may be used as a source of advice, but initially is assumed to play no direct role in policy formation.)
- ♦ Using personal consumption as the numeraire good allows the king's budget constraint to be written as $T + W = X + c(G_1, G_2)$, or
- ♦ $X = T + W - c(G_1, G_2)$
- ♦ 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, G_1 , 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.¹ (It is assumed that only the "surplus production" can be taxed.)



¹ 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 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 taxpayer 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, $L^* = H - f^{-1}(Y^s)$.

² 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.

³ 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 $U^*_t = U_Y[-f(H-L^*)] < 0$.

⁴ Note that imposition of a nearly confiscatory lump sum tax in the Spring would require complete knowledge of each individual farmer's productivity as well as a

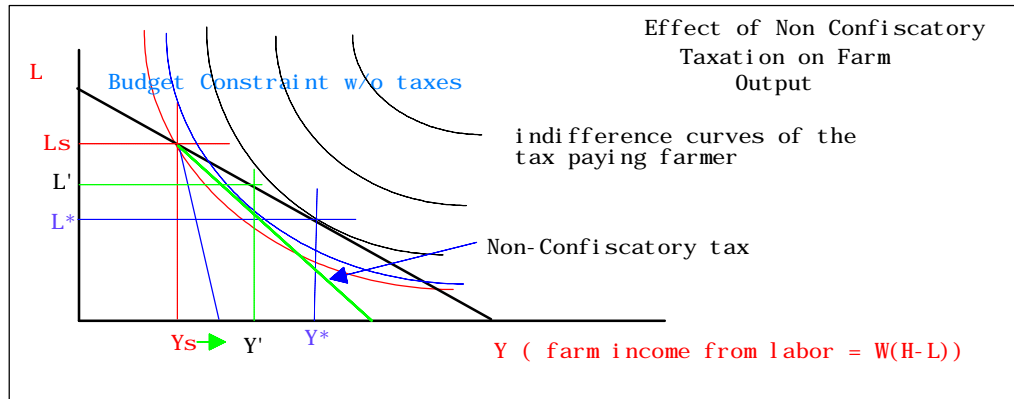
iv. In exchange for a royal commitment to take only a specific fraction of the surplus, the subjects would produce a larger tax base by producing more than subsistence income.

- ♦ 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.²
- 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.³
- ♦ 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.⁴



- ◆ 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.⁵
 - ◆ 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

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.

⁵ 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

- i. 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.
 - ◆ 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.

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

- ii. 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.
- iii. 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.⁶

II. 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.

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.

⁶ 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.