Why Ungoverned Space? A Political Economy Approach
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This note develops a simple model to illustrate formally why ungoverned spaces are an economic puzzle. It would be surprising for a social welfare maximizing government to leave space ungoverned (i.e., with no local public good provision) because we think of public goods as efficient. Yet if public goods are efficient enough for a responsive government to provide them, even a kleptocrat would prefer to govern and tax rather than leave space wholly ungoverned. It then sketches a research agenda to investigate that puzzle.

Social Welfare Maximization

We start with a textbook approach to social welfare maximization, with a public good and a cost of taxation, and then ask how it can generate ungoverned space.

Individual utility:

$U_i = u(c_i) + v(g)$, for i=1…N identical individuals,

g nonrival, nonexcludable public good, $g \geq 0$, $u(.)$ and $v(.)$ are concave, continuous functions, $u(0)=v(0)=0$.

Individual budget constraint:

$c_i = I_i - t_i$ $I \geq 0$ is income, $t \geq 0$ is a tax which cannot exceed I.

Government collects taxes and allocates part of receipts to producing the public good g using the technology $g = g(Nt- l -k)$.

$l \geq 0$ is *leakage* due to corruption which can be varied costlessly by government, while $k \geq 0$ is the fixed cost of taxation. $Nt \geq l$. $g(.)$ is concave and continuous, with $g(0)=0$.

Social welfare maximization:

$\max_{g,t,l} \sum_{i=1}^{N} U_i$ s.t. $g = g(N(I-c)-l)$

  yields $l^*=0$, $g^*>0$, $u'(c^*) = Nv'(g^*)g'(Nt^*)$, or $g=0$ if $U_i(I,0) > U_i(I-l-k,g^*)$.

Social welfare maximization yields governance only if the fixed cost of taxation does not exceed the benefits of public good provision. In the figure below the social welfare maximum is point A. Here the axes represent consumption and government services for a single individual, the dashed lines are indifference curves for all individuals, and the solid curve is the consumption / public good frontier available to government, $g = g(N(I-c)-l-k)$, with its' shape given by the government's production function of public goods, $g(.)$. Otherwise efficiency dictates that the space be left ungoverned (point D), as the cost of taxation outweighs the benefits of public good provision.

Democracy: Any voting rule that equally enfranchises all *N* individuals will trivially yield the efficient solution (point A), since individuals are homogeneous in their preferences and *g* is nonrival in use.

Free riding and coercion: Considering the equilibrium at A, this standard approach to taxation and public good provision has a glaring weakness. Why should individuals pay taxes? Optimizing individuals should free-ride in the absence of coercive taxation. Yet coercive power to tax, if unchecked, allows kleptocracy.[1]
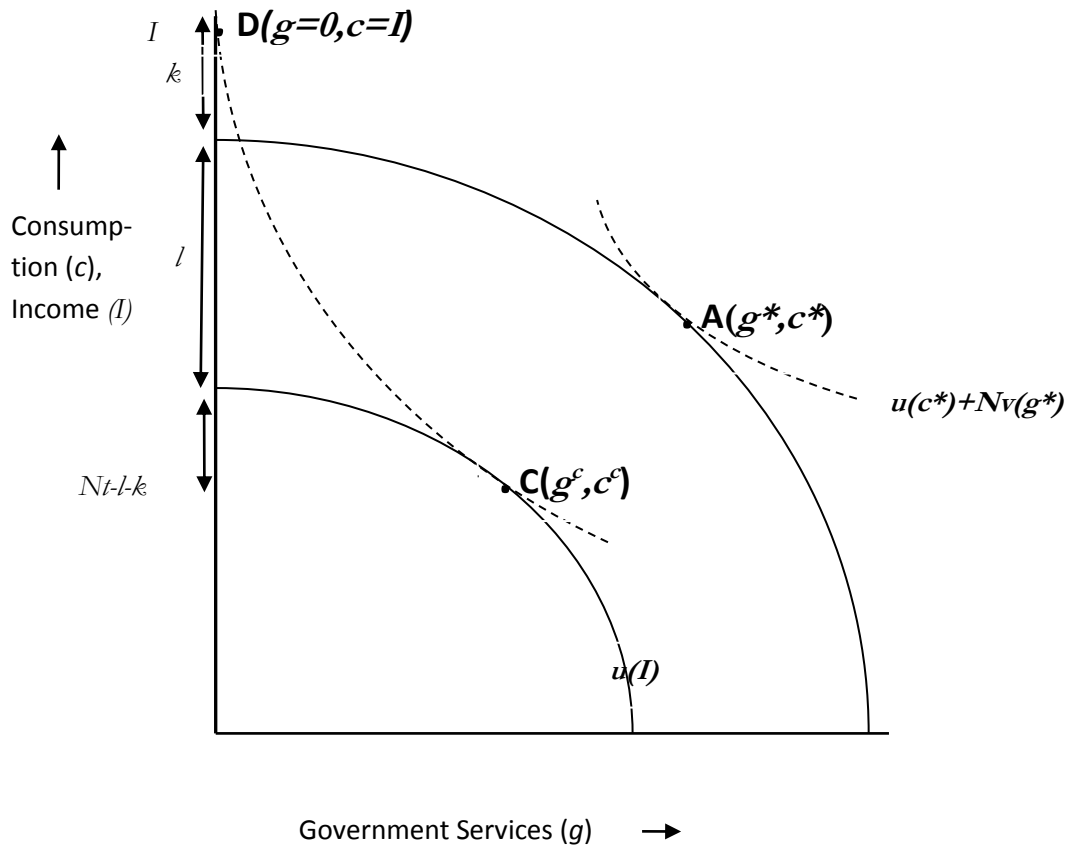

Figure 1: Ungoverned Space, Democracy, and Kleptocracy

Kleptocracy

Coercive taxation in the hands of an unfettered kleptocrat implies replacing social welfare maximization with

$\max_{g,t,l} u(l)$ s.t. $g = g(N(I-c)-l-k)$

which yields $t^{**}=I_i$, $l^{**}=NI-k$ and $g^{**}=0$.

That is to say, the kleptocrat completely taxes all income and allocates that revenue to her private consumption, which would be at the origin in the figure. *(A kleptocrat might also value public goods for her own use, a complication that will not alter the analysis.)*

Economists often don't worry about this tension between free-riding in tax collection and the dangers of a coercive kleptocrat. They implicitly assume some force, such as a strong independent judiciary, that reigns in the corrupt potential that a coercive tax authority presents. That force is tragically absent in many conflict zones such as Afghanistan, invoking a more recent strand of the political economy literature that models flawed government explicitly.[2]

Note: This is an extreme intepretation of kleptocracy. Martin McGuire and Mancur Olson (1996)[3], point out that a kleptocrat has reasons to tax less than all of income: there may be an efficiency loss to taxation, public goods may increase taxable income, and the expectation of future taxation may disincentivize investment in a dynamic "stationary bandit" model.

Constrained Kleptocracy

Why would individuals submit to kleptocracy? Following Herschel Grossman and Suk Jae Noh (1990, 1994), we impose a no revolt constraint on the kleptocrat.[4] The idea is that whatever coercive options the kleptocrat has, they won't work in the face of a unified effort by uniformly aggrieved individuals, who must be provided with some basic levels of services in order to submit to taxation. (For simplicity, we abstract from the actual costs of coercion and rebellion.) Assume that the kleptocrat must make individuals at least as well off as they would be without government. The kleptocrat's problem is then:

$\max_{g,t,l} u(l)$,

such that $u(I-t) + v(g) \geq u(I)$, and $g = g(N(I-c)-l-k)$, i.e., no tax revolt.

This solution will yield a constrained optimum

$l^{**}> l^c > l^* = 0, t^{**}> t^c > t^*$ and $0=g^{**}< g^c <g^*$, as long as $l = Nt-k >0$, which is to say that the kleptocrat achieves some positive leakage from imposing governance.

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[2] Besley (2006) provides an introduction for economists to this literature, which fuses elements of political science and economics.
[3] "The Economics of Autocracy and Majority Rule: The Invisible Hand and the Use of Force," *Journal of Economic Literature,* 34(1) (March, 1996) pp. 72-96.
[4] "A Theory of Kleptocracy with Probabilistic Survival and Reputation," *Economics and Politics*, 2(2), (July 1990), pp. 157-171. Proprietary Public Finance and Economic Welfare." *Journal of Public Economics* 53 (1994). Pp. 187-204.

In the figure, point C illustrates the optimal solution for a constrained kleptocrat. The constrained kleptocrat's optimum is represented by point C, where individuals are indifferent between paying taxes and enjoying g^c and c^c on the one hand, and no government at all, at u(I). The kleptocrat chooses the leakage maximizing point along this indifference curve, c, with the leakage illustrated by the vertical distance l , the part of tax revenue not dedicated to the production of g. The gap between service provision by the constrained kleptocrat and the social welfare maximum can provide some intution on the very low levels of governance in rural Afghanistan.

Note that the equilibrium at C is the result of a two-sided game between a kleptocrat and N individuals. It is a *contingent consent* equilibrium, in which the kleptocrat provides enough services to induce individuals to consent to taxation.[5]

The Puzzle of Ungoverned Space

Examining the figure, it would be tempting to conclude that kleptocracy is to blame for leaving a space ungoverned that a functioning democracy would not. The following proposition is then surprising.

Proposition: A space governed under social welfare maximization will be governed under a kleptocrat.

Proof: This is an immediate consequence of the continuity of u(.), v(.) and g(.). If individuals strictly prefer A to D then there must exist some l' >0 such that $u(I-t^*-l') + v(g^*') = u(I)$, and $g = g(N(I-c^*)-l'-k)$.

Intuitively, if a kleptocrat can capture space from a social welfare maximizer in which individuals strictly prefer governance over the lack, she can extract some leakage.

Kleptocracy alone cannot explain the existence of ungoverned space. One possible alternative explanation is that tax collection is prohibitively expensive, compared to the efficiency of public good provision so that even a democracy would not govern it. This seems unlikely since rebel groups often manage to levy taxes and provide security services in ungoverned spaces.

The reference to rebels suggests that this approach requires further development in three important senses. First, rebels are not passive inheritors of the space government chooses to leave them—as this model suggests. Integrating their behevior as active participants in a three-sided game (as we have in previous research) is therefore a priority. In particular, we're interested in extensions in which rebels can use violence to undermine the ability of government to tax and provide services, shifting the production possibility frontier to the left. Second, individuals are treated here as homogeneous, whereas heterogeneity should yield results in which a critical mass of citizens can accomplish a tax revolt so that the distribution of support for government within the N individuals should shift the "no revolt constraint." Lastly, responsibility for providing g may belong to a local level government that is not sufficiently incentivized by the level that receives taxes (perhaps the federal). This is also an extension we intend to pursue.

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[5] Levi, Margaret. 1988. *Of Rule and Revenue.* Berkeley: University of California Press; Levi, Margaret. 1997. *Consent, Dissent, and Patriotism.* New York: Cambridge University Press.

Putting these extensions aside, several strong empirical implications flow from this model as stated, as possible resolutions to the puzzle of ungoverned space controlled by rebels.

    a. Rebels could have access to taxation and governance technologies that are more efficient than those of government, perhaps stemming from the support of the local population.
    b. Rebels bureaucracies could better control leakage by subordinates than can government.
    c. Rebels might have access to a revenue source associated with the space that government does not, such as drug or smuggling revenue, or support from some foreign power.

Graphically, any of these would shift the "no revolt constraint" up to the right, making governance more expensive for government than for rebels. A general testable implication of this approach is that ungoverned spaces must have special characteristics that advantage rebels over governments. Discovering the predictors of ungoverned space would be a first step toward the design of appropriate policies, should the negative externalities (terrorism, insurgency, crime) from these spaces justify intervention.

The policy implications of distinguishing between these explanations are critical: elections and governance improvement would be recommended by (a) or (b), whereas rebel revenue-reducing policies would be preferred if (c) is the dominant explanation.

Another immediate policy implication of this analysis is that if the equilibrium is at C, for a constrained kleptocracy, then development assistance which expands the production possibility curve will be entirely captured, since the kleptocrat's binding constraint is the indifference curve at C.