Limited Autocracy

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All politicians, regardless of the nominal form of government within which they operate, face the trade-off between current period gains and tenure extension. That is, rulers can exploit their power for personal gain, but they risk being removed from their positions of power, either through a popular vote or a coup or revolution. If they temper their exploitation to remain in power, they sacrifice some of their current personal gain. Essentially, all politicians are limited autocrats, where the limitations imposed on them differ according to the institutional structure under which they rule. This paper presents a formal model of this trade-off in the Mancur Olson stationary bandit framework, where tenure length is explicitly endogenized in the politician's maximization problem.

1. INTRODUCTION

The distinction between democracy and dictatorship is smaller than it superficially appears. While it is true that dictators do not face the popular control of the voting booth, to claim their actions are untempered by the popular will would be a misstatement. Similarly, while the politician in a democracy is unlikely to ignore public opinion, he generally has considerable leeway to act under the voters' radar. Effectively, no politician is wholly constrained or completely unconstrained by public opinion in redistributing income to himself. Regardless of institutional structure, the underlying mechanism that determines the extent of his redistribution is the politician's desire to retain his control and his subjects' ability to unseat him if he redistributes too much.

The channels through which this mechanism works are determined institutionally. In a democracy, if the politician abuses his power to a degree

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greater than his people are willing to accept, they vote him out of office. In a dictatorship, removal requires some sort of coup or revolution. Other institutional arrangements can also limit the politician's power, such as constitutional or legal constraints on redistribution, but even these are indirectly dependent on the will of the people.

Just as democratic politicians can often safely ignore formal restrictions on their power, it may sometimes be in a dictator's interest to impose formal restrictions on his own power. For example, if a dictator is completely free to take any private property from his subjects at his discretion, the people's incentive to produce and invest will be largely extinguished, leading to a reduction of his ultimate potential tax revenue. However, if he could credibly commit to a regularized tax policy, the incentive would be restored. Such a commitment would necessarily imply some reduction in the dictator's power, as it would require some enforcement mechanism whereby the ruler would be penalized if he broke the commitment. Thus, even a dictator might rationally implement the rule of law, precisely because it would limit his powers.[1]

This paper discusses this view of government as a limited autocracy in which all politicians, regardless of the nominal form of government within which they operate, face the trade-off between abusing their power for current personal gain and tempering the use of that power in order to secure the continuation of their rule. Previously in the literature, there has been a surprising lack of continuity between the general focus on tenure extension in the public choice models of political activity and political economy explanations of the emergence and behavior of the state.[2,3] This paper represents an attempt to integrate the material analytically by extending McGuire and Olson's (1996) stationary bandit insight to include the importance of this tenure motive.

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[1] How a dictator, or any politician or group of politicians, can construct the institutions necessary to generate the rule of law is beyond the scope of this paper. In democratic regimes, such as the United States, this has involved designing a system of checks and balances under which the various power centers of the government can operate. For a dictatorship, it may involve lowering the costs of revolution in the event that the dictator oversteps his bounds. Alternatively, the dictator could invite some third party to monitor his activities, providing the population at large with information regarding the dictator's activities. With this kind of transparency, the dictator risks losing his reputation with his people, potentially leading to smaller long-term gains to him.

[2] For a review of this material, see Hardin (1997).

[3] One notable exception is Grossman and Noh (1990).

2. THE LIMITED AUTOCRACY MODEL

The desire to secure and extend tenure is one of the driving forces in every political activity, regardless of the surrounding institutional structure. This desire tempers the use and abuse of power by political actors, as they attempt to use their positions to expropriate as much surplus as possible without endangering their rule. The stationary bandit model (McGuire and Olson, 1996) represents the best attempt so far to incorporate the ruler's explicit income maximization in a story of how government emerges and functions, showing why a rational autocrat would limit his taxation and provide public goods to some extent. However, the stationary bandit model does not incorporate the centrality of the tenure extension motive in political decisions, limiting its usefulness as a positive description of government. This biases the empirical predictions regarding taxation and public good provision, as their effects on tenure extension are ignored.

The autocrat's problem then is one of maximizing the net present value of his rule, recognizing that his policy decisions affect the length of his tenure as well as his period-by-period draw from national income. The final period of his rule, *T*, is dependent on the security of his reign, *S*, which in turn depends on his policy decisions over the level of taxation, t_x, and the level of public good provision, *G*, as well as his direct investment in security, *I*.

(1) $$T = T\left(S\right)$$

(2) $$S = f\left(t_x, G, I\right)$$

Following McGuire and Olson's (1996) one-period stationary bandit model, the autocrat's provision of public goods is constrained by his level of income. Once the one-period model is abandoned, however, it would be possible for the autocrat to provide public goods out of his savings from previous periods. For simplicity, the no-borrowing/no-dissavings constraint is imposed here as well, though the qualitative results of the analysis are not dependent on this simplification. Also, to avoid diverging too far from the McGuire and Olson formulation, I do not include *I* as a choice variable, since the analytical effect of allowing the ruler to choose his security investment is trivial (i.e., as the effect of investment on tenure increases, the ruler will invest more in direct security). The problem facing the tenure-conscious, or limited, autocrat then is:

$$\underset{t_x, G}{Max}\left\{\left[T\left(S\left(t_x, G, I\right)\right)\right]\left[t_x r\left(t_x\right) Y\left(G\right) - G - I\right]\right\} \text{ s.t. } G + I \le t_x r\left(t_x\right) Y\left(G\right)$$

where:

G = Amount of public good factor input with a price = 1;
I = Direct investment in tenure security;
Y = Potential gross private good production;
Y- G = Potential net private good production; and

$$Y = Y(G);\ \frac{\partial Y}{\partial G} \succ 0;\ \frac{\partial Y^2}{\partial^2 G} \prec 0;\ Y(0) = 0.$$

In this set-up, the public good G is essential for production as it represents, at minimum, the social order necessary to avoid a completely anarchic and lawless state. The public good, in this model, has no direct consumption value for the ruler; thus, the autocrat will maximize national product net of the public good. The model also recognizes the difficulties of being able to exact perfectly lump sum taxation by incorporating the deadweight loss due to taxation:

t_x = constant average "income tax" rate;
$r(t_x)$ = percent of potential Y produced for given t_x;
$\frac{\partial r}{\partial t_x} \prec 0$, $r(0) = 1$;
$1 - r(t_x)$ = percent of $Y(G)$ lost due to excess burden of the tax;
$t_x r(t_x)$ = percent of potential $Y(G)$ collected through taxes.

As in the McGuire and Olson model, because the autocrat pockets the remainder of his tax revenues after paying for G and I, combined with the no-borrowing assumption, the constraint will not bind. Thus, maximizing (3) yields the following first-order conditions with respect to t_x and G respectively:

$$(3)\quad T \cdot \left(rY + t_x \frac{\partial r}{\partial t_x} Y \right) + \frac{\partial T}{\partial S}\frac{\partial S}{\partial t_x}\left(t_x r(t_x) Y(G) - G - I \right) = 0$$

$$(4)\quad T \cdot \left(t_x r \frac{\partial Y}{\partial G} - 1 \right) + \frac{\partial T}{\partial S}\frac{\partial S}{\partial G}\left(t_x r(t_x) Y(G) - G - I \right) = 0$$

Condition (4) implies that the ruler will increase the tax rate up to the point where his increased revenues equal the loss to him in terms of lower expected tenure and increased deadweight loss (i.e., a lower *r*). Condition (5) indicates that the ruler will increase government spending up to the point where its marginal benefit in terms of longer tenure and higher tax revenues equals the marginal cost of spending (1). The component $t_x r(t_x)Y(G) - G - I$, which is common to both first order conditions, represents the per-period surplus extracted by the ruler. Exploiting this commonality to combine the first order conditions yields:

$$\text{(5)} \qquad \frac{\left(\partial T / \partial t_x\right)}{\left(\partial T / \partial G\right)} = \frac{rY\left(1+\varepsilon_r\right)}{\frac{t_x rY}{G}\varepsilon_Y - 1}$$

where ε_r represents the elasticity of *r* with respect to the tax rate and ε_Y is the elasticity of potential income with respect to *G*. By assumption, the ratio of the tenure effects is negative, since raising the tax rate weakens a ruler's hold on power while increasing public spending improves it. If we further assume that the ruler operates in a range of taxation where an increase of the tax rate is less than fully offset by the drop in *r* (i.e., $\left|\varepsilon_r\right| \prec 1$), then the ruler will set the share of his revenue spent on *G* such that it is greater than the elasticity of national income with respect to *G*:

$$\text{(6)} \qquad \frac{G}{t_x rY} \succ \varepsilon_Y$$

As for the magnitude of the share spent on *G*, as the marginal effect of government spending on tenure grows relative to the tenure effect of taxation, the ruler will spend a greater share of his revenue on *G,* even if ε_Y implies a relatively low return to such spending in terms of increased national income. Also, all things equal, a higher tax share will imply greater investment in *G* just as the stationary bandit model predicts.

In general then, relative to McGuire and Olson's results, the politician will explicitly evaluate the marginal cost to increased taxation as being higher than just the present period income cost considered in their model. Similarly, he will evaluate the marginal benefit to public good provision as being higher than the present period increase in income.[4] Thus, all things equal, the limited autocrat will set lower taxes and provide a higher level of public goods than will McGuire and Olson's stationary bandit. Further, controlling for national idiosyncratic and institutional effects, the degree of public good provision and taxation should be related to a community's propensity toward coup or revolution, whereas the stationary bandit model makes no such prediction.

These differences also have some implications for the divergence between democratic and dictatorial regimes, to the extent that the effects of policy decisions on tenure differ under various institutional arrangements.[5] For example, because leadership changes in democratic regimes tend to be less violent than they are in dictatorial regimes, where deposing a leader might very well end up in his death, perhaps positive payoffs during time periods $t > T$ for democratic leaders lessen the incentive to extend their rule, generating relatively higher tax rates and lower public good provision under democratic regimes. On the other hand, it is imaginable that the marginal effects of policy variables on rule retention are lower for dictators because of the high costs that revolutionaries face in mounting a coup relative to the low cost that voters face in unseating a politician. While the exact differences among various institutional regimes are theoretically ambiguous, it is clear that the tenure extension motive will affect policy decisions in all polities.

More important, the limited autocracy model of government has some implications for the emergence of democratic regimes in the first place. While Olson (1993) was pessimistic about the ability of his stationary bandit model to provide insights into the improbable transition from autocracy to democracy, the limited autocracy model provides more hope. Specifically, incorporating the time dimension both muddies and illuminates the analysis of the autocrat's behavior. First, the time dimension creates the last period, or time consistency, problem that plagues much of the formal analyses of political behavior. That is,

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[4] Some publicly provided goods might actually reduce the politician's security on the margin (e.g., education, health expenditures, etc.). Extending the model to include both positive and negative tenure effect goods is trivial.

[5] In fact, it would seem that most of the effect of institutions operates through this effect on tenure extension. For example, in a world of explicit institutional constraints on the level of taxation, where those politicians who ignore these constraints face some kind of punishment, invariably the possible punishments can be reduced to a reduction in tenure. This reduction could be achieved through direct removal from office or some sort of imprisonment, necessitating a removal from office. Perhaps the primary distinction between democratic and dictatorial regimes involves the cost to the people of bringing about the tenure reduction. In well-functioning democracies, the vote or the legal system can generally be used to temper the politician, whereas much more costly mechanisms relying on organized violence might be necessary in a dictatorship.

how can the stationary bandit precommit to less than 100 percent taxation? McGuire and Olson (1996) leave this question unanswered, essentially assuming it away in their one-period analysis, but the forward-looking limited autocracy model is forced to address it.

Grady and McGuire (1999) make progress on this issue. Starting from a similar though independently developed framework, they claim a ruler's expropriation is limited by the costs involved with increased tax theft, including the increased likelihood of inciting a coup or inducing exit. They go on to detail how constitutions emerge to limit the sovereign's appropriations even further. Specifically, constitutions are forced upon the ruler through revolution or the threat of revolution. While this model fills some of the void left by Olson in explaining how democratic institutions can emerge within an autocracy, it does not specify the dynamics involved in what conditions will actually induce the revolution that in turn leads to a constitution.

Essentially, an economic description of the tenure extension motive provides some of the answer. The autocrat's recognition of the detrimental effects on his tenure of overly exploitive policies allows the people to rely on his claim not to plunder. This is a simple application of the folk theorem whereby the threat of revolt and loss of future expected surplus is sufficient to keep the bandit from reneging on his commitment, assuming the politician is sufficiently patient. In equilibrium then, the people can expect limited expropriation. Whether or not the conditions of the folk theorem are satisfied, however, presents some degree of uncertainty as to how the game unfolds practically. If the autocrat can manage to arrange for his succession, the game is effectively an infinitely repeated game for which the folk theorem will hold, and the autocrat's commitment would be credible. If, however, at some point during his reign the prospect of succession disappears, the game reverts to a finite game, albeit one with an uncertain end point, for which any commitment will not be credible.

Once this occurs, essentially there exist two scenarios facing the bandit. The bandit could revert to plundering the country, either fleeing with his gain to some other locale or remaining as the ruler of a very low production society where his inability to precommit extinguishes the population's incentive to invest or produce much beyond the subsistence level. Another option would involve resorting to institutional precommitment mechanisms such as constitutional protections, free elections, and some sort of fragmented government with its attendant checks and balances, where his ability to plunder during the last period is circumscribed. We might expect that a high-discounting bandit would choose the former, while a low-discounter would choose the latter. These distinctions, involving both the timing of the choice and the resolution of it, provide a framework in which the emergence of democratic institutions could be analyzed.

3. A NEW PERSPECTIVE

This limited autocracy model of government provides a different perspective on some of the anthropological research on various political units. Many have claimed that the least developed social groups, bands and tribes, are essentially egalitarian.[6] In these polities, it is argued, there is essentially no ruler and decisions are made collectively with a nominal leadership[7] occupying a very limited role for which they are rewarded with relatively small increases in wealth or social stature.[8] As these societies develop economically through the practice of more complex agricultural techniques, the communities grow in size and a chief generally emerges to coordinate the activities of the widespread population. In these chiefdoms, the chief taxes the production of his people, and, when certain segments of the community experience economic downturns, he provides for them out of his tax revenue.[9] In fact, the political strategies of chiefs, as identified by anthropologists (Earle 1989), fit nicely within the limited autocracy model. To secure and extend their power, chiefs regularly engage in the giving of wealth to their people through feasts or other channels; chiefs also generally provide infrastructure within their communities. In order to expand their leeway in expropriating their community's wealth, chiefs make extensive use of force and indirect control mechanisms such as seizing control of existing principles of legitimacy, such as religious institutions.

In the limited autocracy model of government, the degree to which a ruler uses his power for personal gain is dependent on his people's sensitivity to his abuses, conditional on the given institutional structure. This sensitivity includes both the people's ability to overthrow their government and their level of complacency with the government. These broad stroke distinctions among the various stages of development of societies do not refute the limited autocracy model. In the band and tribe societies, it is likely that the people's ability to overthrow their government is high and their complacency with that government is relatively low. The high ability is explained by the small size of the groups; the small scale eliminates the collective action problems that plague revolutions in general. Further, since production in these societies is barely

[6] See Middleton and Tait (1958).
[7] See Knauft (1991).
[8] See Service (1975).
[9] See Earle (1997).

above the subsistence level, the ruler's defense and bribery budgets are necessarily limited. Low economic production also explains the low level of complacency found in these societies. Bare subsistence does not allow for the ruler to bribe his people significantly,[10] and the people, in turn, have very little to lose from unseating their government. These factors together could explain the relatively low level of redistribution to the ruler exhibited within these tribes and bands. Conditional on retaining his position, perhaps the best the ruler can hope for is a marginal gain in social stature and wealth.

In the chiefdom, however, the size of the population, generally anywhere between 5,000 and 100,000 people, generates the typical collective action problems faced by a revolutionary movement. Further, the improved production found in chiefdoms allows the ruler to amass security mechanisms, while also providing the people with bribes when their economic situation worsens. Clearly, in this case, a given chiefdom will often represent a better alternative than does reverting to separate groups on the one hand or facing the uncertainty that comes with adopting a new ruler on the other. These factors would allow the ruler to expropriate a relatively higher proportion of his people's income than is possible within less developed groups, without jeopardizing his tenure. Thus, the same sort of behavior under the differing situations could plausibly generate the supposed egalitarian-hierarchical split between these types of social groups.

This model of political structure bears striking resemblance to Christopher Boehm's work on the propensity of humans and higher primates to resent domination.[11] His underlying claim in that work is that this resentment, operating at the communal level, battles with the individual disposition of primates and humans to want to dominate others to achieve status and its attendant material benefits. In light of this proposition, Boehm attempts to describe the various leveling mechanisms that less developed societies use to keep potential dominators in line, such as shunning or even executing those who aggressively seek power, and deposing leaders who take too central a role in community decisions. From this analysis, Boehm suggests that humans are either hardwired for or they easily learn this tendency toward egalitarianism, as its historic and geographic prevalence is too great to be attributed to environmental factors (Boehm 1993). Unfortunately, there is no extension of this "reverse dominance hierarchy" model that explains why more powerful leaders emerge in more advanced communities.

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[10] Though even in these societies, the most skilled hunters, who presumably would gravitate to positions of power, do generally divide up their kill among the community (Boehm 1999).

[11] For a general survey of this and related work, see Boehm (1999).

Perhaps the change in perspective suggested by the limited autocracy model of government can remedy this shortcoming by better explaining the cross-sectional variation in these groups. If individuals do indeed harbor both an inclination to dominate and a resentment of being dominated by others, it would seem that variables changing either the community's ability to resist domination by a talented politician or the politician's ability to dominate, should explain the degree of power invested in a given leader. The leader, as a rational actor, will recognize his strengths and weaknesses and act accordingly, expropriating quite a bit of surplus when he is relatively secure, or when he can appease the community through bribes, and demurring when his position is less secure.

4. CONCLUSION

McGuire and Olson (1996) conceived of the stationary bandit as basing his policy decisions upon the rational maximization of his wealth. That is, the autocrat will provide the public good up to the point where its marginal effect on realized income is equal to the reciprocal of his tax rate. Though the rhetorical thrust of the model conjures up images of dictatorial regimes, Olson and McGuire go on to compare these policy decisions to the similar decisions made by majority coalitions in democracies, generally finding that the democratic regimes will set lower tax rates, and they might choose to provide a higher level of the public good.[12]

While this model presents a historically attractive and parsimonious story of the emergence and activities of the state, its focus on a one-period income draw misses many of the subtleties involved in an autocrat's policy motivations. Specifically, McGuire and Olson only rhetorically consider the effects of a politician's time horizon, implicitly assuming that the politician's tenure is fixed or otherwise exogenous to his decisions. This represents a departure from other studies of the behavior of politicians, both democratic and dictatorial. In that sense, the limited autocracy model of government, a direct though distinct extension of McGuire and Olson's work, provides a more satisfying account of the emergence and behavior of government that seems to better fit both the standard behavioral assumptions of public choice and the historical evidence regarding political development.

[12] The actual difference in levels depends upon the relationship between the autocrat's share of national income (t_x) and the majority coalition's share of national income generated through redistribution and production. If the latter is larger, the democratic regime will exhibit a higher level of public goods.

Specifically, while both the limited autocracy and the stationary bandit models suggest that we should observe an inverse relationship between the distortionary effect of a tax and the chosen level of taxation, the limited autocracy model further suggests that we should see an inverse relationship between the level of taxation and factors making removal of a ruler cheaper. Also, while both imply that we should observe a positive relationship between public good provision and the share of national income received by the political decision maker, the limited autocracy model goes on to suggest that we should see more public good provision in those situations where the ruler's hold on power is more precarious.

The stationary bandit model of government is intuitively attractive in the way that it avoids many of the practical shortcomings of both the predatory and the contractarian models of government. However, it does not sufficiently incorporate the fundamental trade-off politicians face between current period gains and tenure extension. This paper presents a model that explicitly recognizes the trade-off which all politicians face and suggests that this limited autocracy model of government might be relatively robust in explaining what we observe empirically regarding the emergence and subsequent behavior of governments.

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