

The Dynamics of Repressive Dictatorships

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Abstract

We study the optimal strategy for a dictator hanging onto power by choosing how much repression to apply in every period. State variables are the amount of “hate” and “fear” in society which are both increasing in the amount of repression from the previous period. Hate, fear and a random shock, determine the quantity of repression required for the dictator to survive period t . We show under certain conditions that in every period there are only two possible optimal choices: the minimal repression necessary to retain power (“No Demonstration”) or the maximum possible repression (“Demonstration”). When Demonstration is optimal it will remain optimal after fear is reduced and when No Demonstration is optimal it will remain optimal when fear is increased.

“... but because it is difficult to combine them, it is far better to be feared than loved if you cannot be both.” (Machiavelli, *The Prince*, p. 96)

1. Introduction.

The persistence of dictatorships looms large in world politics. How do these regimes hold power and under what conditions do they lose it? What are the dynamics of normally functioning dictatorships and when do these dynamics indicate a regime heading for collapse? What can the outside world contribute to dictators losing power? I try to address these questions below.

Repression is one of the main instruments for dictatorships to maintain power. The role of repression in instilling fear into the people who might challenge existing conditions is obvious. However, far from clear are the mechanics of when and why a dictator would use the repression instrument and, when he does so, how vigorously he would apply it.

This paper addresses these questions in a dynamic rational choice framework by studying the optimal strategy for a dictator who uses repression to hang onto power, choosing how much to apply in every time period. “Hate” and “fear” in society are increasing in the amount of repression from the previous period and determine how much repression is required for the dictator to survive a particular time period. There turn out to be only two possible optimal choices: the minimal repression necessary to retain power or the maximum possible repression. Moreover, optimal survival strategy calls for periodic waves of massive repression alternating with permissive periods, i.e., rational dictatorships have repressive cycles. Moderate, uniform repression over time is not optimal.

An established tendency toward repressive cycles in dictatorships would have substantial policy ramifications. Western powers often monitor the behavior of repressive regimes, often rewarding, them during periods of relative liberality. However, if these lax periods are part of a natural cycle that tends toward reversal, such treatment is inappropriate. Therefore, our results should be of interest to both human rights organizations and Western governments. In addition, the policy implication of the conjecture about the link between the availability of international loans and the tendency of dictators toward repressive demonstrations is obvious.

Wintrobe (1990 & 1998) has developed a wide-ranging theory of dictatorship with repression as one of its central elements. In this scheme the a dictator’s utility

depends on his use of repression and his investment in loyalty building.¹ Wintrobe (1990) classifies dictatorships into two fundamental types. “Tinpot” find the least expensive combination of loyalty and repression that yields sufficient power to avoid being deposed while “totalitarians” maximize their power. Wintrobe (1998) expands on this scheme, notably adding the “despot” who has repression as his only instrument.² The dictator in the present paper has only repression at his disposal so can be viewed as a Wintrobian despot. My dictator is also similar in spirit to the tinpot because he is interested only in holding power for as long as possible. Although I do not allow for loyalty building in this paper, I do have the state variable “hate”. We could consider that when hate increases the dictator loses loyalty and when it decreases he gains loyalty. However, the dictator cannot invest money in manipulating the hate variable. The innovation here is the dynamic approach that, in particular, leads to a theory of repressive cycles.³

There is a growing literature endeavoring to explain when dictatorships arise as well as the forces governing transitions from dictatorship to democracy and vice versa. Wantchekon (2000) demonstrates a theoretical and empirical link between resource dependence and autocracy. Acemoglu and Robinson (1999a) show how unequal societies might oscillate between democracy and non-democratic repression. Acemoglu and Robinson (1999b) studies conditions under which an elite group might introduce full democracy, arguing that partial democratization can simply radicalize a population and, therefore, be self-defeating. Sutter (2000) reaches similar conclusions in his model of the transition from dictatorship to democracy

This work fits into a larger research agenda on models of how elite groups (or dictators) hang onto power. Each work in this series focuses on a single instrument. Thus, Overland, Simons and Spagat (2001) considers rapid growth, Bertocchi and Spagat (2001) studies co-optation and the present paper is about repression. Perhaps in the future we will be able to integrate some of the different approaches.

Olson (1993) and McGuire and Olson (1996) study dictatorships from a welfare point of view rather than analyzing their dynamics. Olson thinks of autocrats as

¹Loyalty building in this theory is roughly equivalent to co-optation in Bertocchi and Spagat (2001).

²In Wintrobe’s most general version of his model dictators are maximizing an objective function that includes both power and consumption as arguments.

³Wintrobe(1998) has dynamics but they concern the conditions under which dictatorships arise, not how they behave once in power.

“stationary bandits” that do a reasonable job of delivering public goods, essentially because they act as if they own the economy and, therefore, want it to function well. Moselle and Polak (2001) challenge this view, arguing that autocrats would tend to invest mostly in types of public goods that increase their ability to prey off the population at the cost of general welfare.

2. The Model

Time is counted off in discrete intervals, $t = 0, 1, 2, \dots$. There are two agents: a *dictator* and a *population*.⁴ The state of the population at time t is captured by the endogenous variables $H_t \geq 0$ and $F_t \geq 0$ where the former designates the quantity of *hate* and the latter describes the quantity of *fear* present in the population at this point in time.

There is also a random shock that affects the dictator’s survival prospects at time t . The shock variables Z_t have full support on the real line, and are independent and identically distributed with realizations denoted by Z_t . The distributions have the further property of being relatively flat in the sense that there exists a parameter $d > 0$ such that for any e and f with $f \geq e$, $\Pr \{e \leq Z_t \leq f\} \leq d(f - e)$ where \Pr denotes probability. Shocks relate to events like weather-induced crop failures that are beyond the control of the dictator.

In every period t the dictator, knowing the full state (H_t, F_t, Z_t) , chooses an amount of *repression*, R_t , to apply. The function $Q(H_t, F_t, Z_t) = \alpha H_t - \beta F_t + \gamma Z_t$ gives the minimum quantity of repression necessary for the dictator to retain power in period t when the state is (H_t, F_t, Z_t) . We assume that α, β , & γ are all positive. Q captures two intuitive ideas at once. A more hateful population requires more repression to keep in line, while more fear lowers the repression requirement for maintaining power. Positive random shocks are treated as bad news for the dictator.

Define \bar{Q} to be the maximum amount of repression that the dictator is willing and able to apply. This parameter relates to factors like the loyalty and capability of the army and police, the ruthlessness and determination of the dictator and the tolerance of the international community. A key assumption is that if the minimum repression requirement ever exceeds the dictator’s maximum capability,

⁴Of course it would be nice in future work to consider diversity within these two groups rather than treating them as homogeneous masses. However, I believe that the present simplification is essential for a first attempt at modeling the dynamics of repression.

he loses power immediately.

Suppose the relationship that translates repression and fear in period t into fear in period $t + 1$ has the following properties. First, fear decays at a certain rate due, for example, to suspicions a population develops about the power of a dictator who has not made a recent show of force. Second, a repression level that is low relative to the prevailing fear level in period t will do nothing to increase fear in period $t + 1$, i.e., only by exceeding repression quantities associated with current fear can a dictator actually increase fear. The idea is that regimes with a recent history of killing many opponents cannot increase the general level of fear by arresting a few dissidents. We can formalize these ideas with the following dynamic equation:

$$F_{t+1} = \max(cF_t, R_t) \tag{1}$$

where $0 < c < 1$.

We take a simple linear form for the relationship that translates hate and repression in period t into hate in period $t + 1$:

$$H_{t+1} = aH_t + bR_t \tag{2}$$

where a and b are both positive and $a < 1$.

We now make a key assumption;

Assumption (Machiavelli) - $\beta - \alpha b - a > 0$.

We can interpret this assumption as saying, along the lines of the quote that begins the paper, that fear is more effective than love for a dictator trying to maintain power. This interpretation makes sense since β is the coefficient on fear in the $Q(\cdot)$ function, α , a , and B relate to hate.

An initial state for the system, (H_0, F_0, Z_0) , is given with $H_0 < b\bar{Q}$ and $F_0 < \bar{Q}$. The dictator's problem is to choose a function $w(H, F, Z)$ giving the amount of repression to apply as a function of the state of the system to maximize $E\left[\sum_{t=0}^{\tau} \delta^t\right]$ where τ is a random variable giving the first time such that $Q(H, F, Z) > \bar{Q}$ and $0 < \delta \leq 1$ is a discount factor. The first thing to note is that if $\delta = 1$ then the dictator is simply maximizing the expected number of

periods he will hold power. When $\delta < 1$ the following interpretation applies. There is a fixed instantaneous utility the dictator collects every period he holds power based on things like his love of power and the amount of money he can steal per unit of time. However, dictators are impatient so current rewards are valued more highly than equivalent future ones and, therefore, we multiply instantaneous utility t periods in the future by the subjective discount factor δ raised to the t power.

3. Analysis

The first thing to realize is that when $Q_t \leq \bar{Q}$ it would never be optimal for the dictator to choose $R_t < Q_t$ since this would amount to voluntarily giving up power. Slightly less obvious is that the dictator would never repress more than the minimum amount without also investing in making himself more feared.

Proposition 3.1. *It is never optimal to choose R'_t such that $Q_t < R'_t \leq cF_t$.*

Proof. Repression of $R_t = Q_t$ will outperform $Q_t < R'_t \leq cF_t$. Both repression levels will allow the dictator to progress to period $t+1$ with certainty $H'_{t+1} - H_{t+1} > 0$ and $F'_{t+1} - F_{t+1} = 0$, i.e., there is more hate but the same amount of fear under R'_t compared to R_t . Clearly the continuation value of this problem from time $t+1$ on is higher under R'_t compared to R_t .

The following proposition significantly simplifies the analysis, since it essentially means that in each period the dictator is effectively choosing between just two options. I will refer to the action of applying maximum possible repression as “Demonstration” while the action of using the minimum amount of repression necessary to retain power I call “No Demonstration”.

Proposition 3.2. *Consider any repression level R'_t such that $cF_t < R'_t < \bar{Q}$. For a sufficiently small δ \bar{Q} will be a better choice (at least weakly) than R'_t .*

Proof. We can assume without loss of generality that $R'_t \geq Q_t$. Therefore both choices allow the dictator to survive until period $t+1$ and so they perform equally well in period t . In period t , using the Machiavellian assumption, $\Delta Q_{t+1} \equiv Q'_{t+1} - Q_{t+1} = (\beta - \alpha\beta)(\bar{Q} - R'_t) > 0$. This means, using the assumption that the distribution on Z_t has full support, that the dictator has a strictly greater

probability of surviving until period $t+2$ under Q_t than he does under R'_t . Denote the difference in these two probabilities by $p > 0$.

Let R'_{t+1} denote the optimal repression level in period $t+1$ given that R'_t when chosen in period t and given Z_t . On the comparison path that begins with \bar{Q} follow up with $R'_{t+1} - \Delta Q_{t+1}$. If the dictator survive until period $t+2$ under R'_{t+1} then he will survive until period $t+2$ with certainty under $R'_{t+1} - \Delta Q_{t+1}$. Moreover, the dictator will be less hated in period $t+2$ under $R'_{t+1} - \Delta Q_{t+1}$ compared to R'_{t+1} with the difference being, again using the Machiavellian assumption, $\Delta H_{t+2} = b(\bar{Q} - R'_t)(\beta - \alpha b - a) > 0$, i.e., by making a big demonstration of ruthlessness in period t the dictator actually ends up less hated in period $t+2$ than he otherwise would have. The only problem is that by repressing less than R'_t in period $t+1$ the dictator may be less feared in period $t+2$ than he would be on the alternate path. However, if there is less fear than the fear deficit cannot exceed $c\bar{Q}$. Therefore, the probability that the dictator survives until period $t+3$ on the path starting with R'_t cannot exceed the analogous probability beginning from \bar{Q} by more than $\beta c \bar{Q} d$ where d is the parameter governing the flatness of the distribution of the Z_t 's. Thus, the excess payoff from beginning with \bar{Q} rather than R'_t is at least as large as $p - (\beta c \bar{Q} d) \frac{\delta}{1-\delta}$. For sufficiently small δ this is strictly positive.

Corollary 3.3. *If $c = 1$ then the optimal choice is always either Q_t or \bar{Q} regardless of discounting (even $\delta = 1$ will work).*

Proof. The same argument works as in proposition 3.2 except that when $c = 1$ there will always be at least as much fear under the policy beginning from \bar{Q} as there will be from the policy beginning from R'_t .

Note that in case where discounting is not sufficiently strong to make proposition 3.2 there will still be a tendency for the optimal choice to be either R'_t or something close to \bar{Q} . In general it is not clear that heavy discounting is really essential for the result that the dictator will use either minimum repression or maximum repression in every period. In the future I plan to use a computational approach to investigate the issue further.

Define $P(R; H, F, Z)$ to be the expected payoff to the dictator from choosing repression level R when the state is (H, F, Z) and continuing optimally after than. The next proposition indicates that, under the right conditions, when Demonstration is optimal it will remain so after fear is decreased ceterus paribus and when No Demonstration is optimal is will remain so when fear is increased ceterus

paribus. Thus, we should expect massive repressions mainly from regimes that are not greatly feared.

Proposition 3.4. *Assume either that $c = 1$ or that there is sufficient discounting for proposition 3.2 to apply. a) Suppose $P(\bar{Q}; H, F, Z) \geq P(Q(H, F, Z); H, F, Z)$. i) Then $P(\bar{Q}; H, F', Z) \geq P(Q(H, F', Z); H, F', Z)$ for any $F' < F$. ii) If F' is sufficiently large then $P(\bar{Q}; H, F', Z) \leq P(Q(H, F', Z); H, F', Z)$ b) Suppose $P(\bar{Q}; H, F, Z) \leq P(Q(H, F, Z); H, F, Z)$. i) Then $P(\bar{Q}; H, F', Z) \leq P(Q(H, F', Z); H, F', Z)$ for any $F' > F$. ii) If F' is sufficiently small then $P(\bar{Q}; H, F', Z) \geq P(Q(H, F', Z); H, F', Z)$*

Proof. First note that $P(\bar{Q}; H, F, Z)$ is constant in F in the relevant range where $F \leq \bar{Q}$. First consider part i) of a). $Q(H, F', Z) \geq Q(H, F, Z)$. If $Q(H, F', Z) > \bar{Q}$ we are finished so suppose not. Following (H, F', Z) and the choice of $Q(H, F', Z)$ there will be strictly more hate and not less fear than following (H, F, Z) and the choice of $Q(H, F, Z)$. Therefore, if $P(Q(H, F, Z); H, F, Z) \leq P(Q(H, F', Z); H, F', Z)$ it must be that $Q(H, F', Z) > F'$, i.e., minimal repression beginning from (H, F', Z) must entail investment in creating new fear. But then by the proof of proposition 3.2 full repression must be better than minimal repression, i.e., and take any Consider any \bar{F} and \underline{F} with $\bar{F} > \underline{F}$. $P(Q(H, \underline{F}, L); H, \underline{F}, L) \leq P(Q(H, \bar{F}, L); H, \bar{F}, L)$, i.e., $P(\bar{Q}; H, F', Z) \geq P(Q(H, F', Z); H, F', Z)$.

For part ii) of a) just take $F' = \frac{\bar{Q}}{c}$ and the result will hold. Of course it will often hold for small F' . The proof of part i) of b) is a mirror image of that for part i) of a). For part ii) of b) take $F' = \frac{Q(H, F', Z)}{c}$.

4. Conclusion

There are two main results in the paper. First, there is idea that we should not expect repression levels in dictatorships to simply fluctuate randomly around a mean. Rather, we should expect there to be at least one, and maybe periodic major events. If there is no decay in the fear process, i.e., if $c = 1$, then the model would predict that a new dictator would once demonstrate his ruthlessness and then essentially live off that until he has a string a bad luck and must step down. If there is decay in the fear process, i.e., if $c < 1$, then there should be recurring big repressions as the dictator will have to repeatedly reestablish his credential.

The second interesting idea relates to how the optimal choices for dictator might or might not respond to changes in fear. An exogenous reduction in fear

could never have the effect of preventing major repression and could actually be among the causes of a Demonstration. An interesting possibility is that a warming of relations between a dictatorship and the outside world might decrease a population's fear of their dictatorship and actually precipitate a big crackdown on dissent. This example makes the more general point that knowledge of the dynamics of repressive regimes should be a very important ingredient into the formulation of foreign policy.

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