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Abstract
Building on the formal literature on democratization, this paper models a dictator’s choice between closed authoritarianism, electoral authoritarianism, and democracy in the shadow of violent revolt. Under autocracy, the dictator controls policy but lacks information on the policy demands of citizens and thus the likelihood of popular revolt. Electoral authoritarianism enables the dictator to tie policy choice to an electoral signal from citizens, which may be advantageous even if elections make revolt more likely to succeed. Implications are drawn for how economic inequality, regime strength, and uncertainty predict regime type, policy concessions, and political violence. A key result is that electoral authoritarianism is chosen for middle values of inequality and uncertainty.

Keywords
Autocracy; democratization; elections

1. Introduction
The world is no longer cleanly divided between dictatorships and democracies. Typified by countries like Singapore, Russia, and Jordan, electoral authoritarian (EA) regimes adopt many of the elements of democracy—such as elections, legislatures, and independent courts—but manipulate contestation to make turnover unlikely or impossible. Since 1991, roughly two-thirds of autocracies have allowed multi-party competition in legislative elections, with several more allowing single-party or local elections. Why do autocratic elites choose to adopt controlled elections? When do they instead consent to democracy or fight to maintain non-electoral authoritarianism?

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The formal literature on democratization has yet to incorporate the possibility of a third regime type that combines autocratic control with democratic institutions. This paper fills this gap with a model of transitions between closed (non-electoral) authoritarianism, EA, and democracy. As in the past formal literature (Acemoglu and Robinson, 2001; Rosendorff, 2001; Boix, 2003; Zak and Feng, 2003; Acemoglu and Robinson, 2006), the model focuses on an elite’s choice of regime type in the shadow of policy conflict and the threat of popular revolt. It differs by adding the EA option and incorporating information asymmetry regarding the revolutionary potential of citizens.

I argue that the distinguishing characteristic of EA regimes is that they allow citizens to reveal the intensity of their opposition to the regime, complementing recent comparative work on information revelation in autocratic elections (Magaloni, 2006; Cox, 2009; Malesky and Schuler, 2011; Miller, 2012). The model explains why autocratic regimes offer elections that do not provide the possibility of turnover, but do offer citizens an opportunity to register dissent. It further explains how this information is made credible and why regimes choose to tie their hands and implement policy concessions on the basis of the electoral results.

Autocrats are continually shocked by electoral outcomes that reveal them to be less popular than they believed. A classic case is the Polish election of 1989, in which the Communist government expected to be competitive, but failed to win a single one of the 261 openly contested seats. In some cases, these electoral surprises trigger democratic transitions (as in Chile and Poland in 1989) or a return to non-electoral authoritarianism (as in Burma in 1990 and Algeria in 1991). Here, I focus on the use of information for strategic policy concessions, including economic redistribution. To avoid revolt, autocrats can commit to shift policy after observing electoral signals of opposition. Despite the sacrifice of control, this opportunity to gather information can make EA preferable to closed autocracy, even if elections make revolutions more likely to succeed.

Although a number of empirical studies compare regime durability and the likelihood of democratization between closed and electoral autocracies (Geddes, 1999, 2006; Brownlee, 2007; Gandhi and Przeworski, 2007; Brownlee, 2009; Lindberg, 2009), there exists little theoretical work on what country-level characteristics predict the initial adoption of elections. In particular, the current literature offers few theoretical expectations for how transitions to and from EA relate to the central variables in the wider democratization literature, such as economic development, inequality, and regime strength.1

This paper offers several predictions concerning the choice to adopt autocratic elections or democratize, the likelihood of violent opposition, and policy choice under autocracy. The central predictive factors are inequality, autocratic regime strength, the international rewards from democracy, and the autocrat’s uncertainty concerning citizen preferences. In particular, the model implies that regime strength lowers the likelihood of EA relative to closed autocracy. In contrast, EA is adopted at middle values of inequality and uncertainty, whereas closed autocracy is chosen for both high and low values. Democracy is made more likely by lower regime strength, inequality, and uncertainty.

The next section provides an overview of past formal work on democratization and some of the common elements that I preserve. Section 3 discusses related formal work on EA and the distinctive characteristics of EA that are incorporated into this paper’s model. Section 4 describes the model and its solution. Section 5 discusses an extension.
2. The formal logic of democratization

The oldest and most widespread approach to democratization identifies the economic, cultural, or historical precursors of democracy. Dissatisfied with the sometimes unclear mechanisms and determinism presented in this literature, a second wave of democratization studies emphasized the agency of the key actors, contingency, and the processes of regime change (O’Donnell and Schmitter, 1986; Karl, 1990; Karl and Schmitter, 1991; Przeworski, 1991).

A novel approach to democratization fuses these two perspectives by formally analyzing the strategic incentives of the key actors (Weingast, 1997; Sutter, 2000; Acemoglu and Robinson, 2001; Rosendorff, 2001; Boix, 2003; Zak and Feng, 2003; Lizzeri and Persico, 2004; Llavador and Oxoby, 2005; Przeworski, 2005; Acemoglu and Robinson, 2006; Boix, 2008; Ansell and Samuels, 2010). Although maintaining focus on agency, this game-theoretic analysis brings structural country characteristics back in as elements of the strategic environment (or as parameters of the model). This ideally leads to testable hypotheses on both country-level predictors of democracy and individual behavior during transitions. Although the game-theoretic analysis of democratization is relatively new, several of the now-canonical models have attracted a great deal of attention and empirical analysis.

Formal models of regime transition widely share several central logical features. Since these are carried over into this paper’s model, it is worth discussing them explicitly. First, democratization is the product of strategic choice by autocratic elites (Acemoglu and Robinson, 2001; Rosendorff, 2001; Boix, 2003; Lizzeri and Persico, 2004; Llavador and Oxoby, 2005; Acemoglu and Robinson, 2006). Cases in which democracy is founded purely by force from below are exceedingly rare (Karl, 1990). This focus on autocrats’ agency contrasts with earlier approaches that characterized democratization as the result of broad societal forces.

Second, a primary motivation for dictators to choose democracy is the threat of popular revolt (Weingast, 1997; Acemoglu and Robinson, 2001; Boix, 2003; Acemoglu and Robinson, 2006; Gandhi and Przeworski, 2006; Smith, 2008). As Collier (1999) emphasizes, democratization frequently occurs from a combination of elite choice and mass pressure, particularly in third-wave transitions. To prevent mass violence, autocrats concede to democracy and often continue to compete for power through fair elections.

Third, there exists class conflict over redistribution (Acemoglu and Robinson, 2001; Rosendorff, 2001; Boix, 2003; Acemoglu and Robinson, 2006; Boix, 2008; Ansell and Samuels, 2010) or policy more generally (Lizzeri and Persico, 2004; Llavador and Oxoby, 2005; Gandhi and Przeworski, 2006; Desai et al., 2008). This provides elites with an incentive to maintain a monopoly of political power. Acceding to democracy is dangerous because of the implied threat of redistribution once the masses are empowered. As a result, Boix (2003) argues that democracy is more likely when a country’s economic characteristics lessen this threat. When inequality is low or capital is highly mobile...
(and thus the wealthy have easy exit options), the expected level of redistribution is low and thus elites more readily accept democracy.

Fourth, autocracy presents credibility problems. Although the dictator may be willing to offer policy concessions to prevent revolt or a coup, he often lacks an institutional structure that can guarantee this promise will be upheld. Several studies argue that this dilemma leads autocrats to tie their hands with constraining institutions, such as legislative assemblies of elites (North and Weingast, 1989; Congleton, 2001; Myerson, 2008; Wright, 2008) and parties (Magaloni, 2008; Gehlbach and Keefer, 2011). If this is infeasible, the inability to commit to policy may drive the autocrat to give up power.

All four elements are at play in Acemoglu and Robinson’s (2001, 2006) model of democratization. In their model, a wealthy autocrat chooses a level of redistribution and a representative citizen chooses whether to revolt. This sequence is repeated indefinitely, with the autocrat randomly becoming weak or strong in each round. As the citizen can only defeat a weak type, the autocrat only favors redistribution when weak. This presents a problem, however, in that redistributive promises are not credible: if the autocrat becomes strong in the next round, he can easily renege. To avoid revolt, a weak autocrat can accede to democracy, which locks in continual redistribution. The main empirical implication is that democracies should be found at middle values of economic inequality. For low inequality, the threat of revolt is absent and stable authoritarianism results. For high inequality, the expected redistribution under democracy is too great and the dictator accepts violent opposition under autocracy. For intermediate inequality, the moderate redistribution under democracy is an acceptable price to avoid revolt.

I consider a model similar in many respects to Acemoglu and Robinson’s (2001, 2006) model. Like theirs, it concerns an autocrat’s choice of regime type in the shadow of violent revolt and conflict over policy. Two key differences can be pointed out. First, I allow for information asymmetry, which applies to both the revolutionary potential of citizens and (in an extension) the strength of the dictator. In the model of Acemoglu and Robinson (2001, 2006), no information asymmetry exists; the only uncertainty is the dictator’s strength in the future. However, informational uncertainties are a core problem of dictatorship (Tullock, 1987; Wintrobe, 1990, 1998). In particular, autocrats struggle to ascertain the extent of their opposition, which Wintrobe (1990, 1998) refers to as the ‘Dictator’s Dilemma’. Second, I include an option of EA in addition to closed authoritarianism (CA) and democracy. As I discuss in the next section, a large part of EA’s value lies in easing these informational problems.

3. Electoral authoritarianism

Numerous explanations have been given for the adoption of autocratic elections (Hermet, 1978; Gandhi and Lust-Okar, 2009). Most obviously, they may be pure rituals designed to fool international observers (Carothers, 1999; Hyde, 2011). Early theoretical work focused on the use of elections to communicate ideology (Hermet, 1978) and to monitor local leaders (Barkan and Okumu, 1978). The recent literature has focused greater attention on their use in communicating regime dominance (Geddes, 2006; Magaloni, 2006; Simpser, 2008) and spreading patronage to retain the loyalty of elites and citizens (Lust-Okar, 2006; Magaloni, 2006; Blaydes, 2011).
This paper instead follows a growing literature on information revelation in autocratic elections. Specifically, elections can reveal information on citizens’ policy demands (Case, 2006; Geddes, 2006; Magaloni, 2006; Miller, 2012), the behavior and competence of local leaders (Barkan and Okumu, 1978; Blaydes, 2011; Malesky and Schuler, 2011), and the popularity of rival factions such as the military (Geddes, 2006; Cox, 2009). In particular, I argue that elections enable autocrats to credibly determine the intensity of citizen opposition and choose optimal policy concessions to prevent revolt.

In the model, autocrats are willing to concede on policy to prevent revolt, but lack information in CA on their subjects’ revolutionary potential. In EA, however, citizens with strong policy demands, and thus a high propensity to revolt, can signal opposition to the regime and gain policy concessions. To make this credible, I assume that they simultaneously sacrifice a direct payoff. I further assume that EA rulers can credibly tie policy choice to these electoral signals, since EA regimes establish durable institutions (such as ruling parties and legislatures) that can make credible commitments (Gandhi, 2008; Magaloni, 2008; Wright, 2008; Gehlbach and Keefer, 2011).

Past empirical work has shown that autocracies frequently react to election outcomes with policy concessions, but has not leveraged this insight to the prediction of regime transitions. Analyzing Taiwan and Singapore, Case (2006, 96) argues that autocratic elections ‘provide feedback, registering fluctuations in support so that governments might adjust their policy course but never leave office’. Case studies identify dominant parties responding to election outcomes with policy adjustments in Mexico (Eisenstadt, 2004; Magaloni, 2006), Singapore (Mauzy and Milne, 2002), and Egypt (Hinnebusch, 1985; Brownlee, 2007). In a cross-country sample of 86 EA regimes, Miller (2012) demonstrates that electoral declines for ruling parties predict policy concessions following elections, namely increases in education and social welfare spending and decreases in military spending.

Cox (2009) also models the adoption of autocratic elections as a response to information uncertainty, but focuses on bargaining between an autocrat and an armed rival. If the rival’s fighting capacity is unknown, Cox (2009) argues that the autocrat may adopt an informative election that reveals the rival’s strength but risks electoral turnover. This paper’s model instead focuses on policy disagreement between an autocratic regime and citizens. It is also broader in scope, encompassing transitions to both EA and democracy and predicting regime choice based on country characteristics such as inequality, regime strength, and uncertainty. Finally, the model differs by endogenizing the informational value of the election, rather than assuming the election provides an informative signal.

Other formal work has looked at the dynamics of autocratic elections and how they affect opposition protest and government repression (Ellman and Wantchekon, 2000; Przeworski, 2009; Collier and Vicente, 2012). A growing literature models the adoption of autocratic legislatures (Gandhi and Przeworski, 2006; Gandhi, 2008; Boix and Svolik, 2010) and parties (Magaloni, 2008; Gehlbach and Keefer, 2011), but focuses on bargains among elites and typically assumes perfect information. Gandhi (2008), for instance, argues that autocrats adopt legislatures to enable policy concessions designed to prevent violent opposition and spur economic cooperation. In this paper’s model, the autocrat is always free to concede on policy, but lacks information on the level of concessions needed to prevent revolt.
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Figure 1. The basic elements of the model: the autocrat’s ideal point \( z \), the citizen’s ideal point \( x \) (which the autocrat believes lies between 0 and \( \overline{x} \) with uniform probability), and the policy choice \( y \).

4. The model

4.1. Basic elements

The game involves two players: the autocrat (subscript \( a \)) and a representative citizen (subscript \( c \)). Play begins with the autocrat choosing between three possible subgames, which correspond to three distinct regime types: CA, EA, and democracy. The autocrat gets a direct benefit \( R > 0 \) if he chooses either CA or EA and holds onto power. If play ends in democracy, the citizen gets a direct benefit \( D_c > 0 \). If play ends in democracy without a coup or revolution, the autocrat gains \( D_a > 0 \), which represents the international rewards for peaceful accession to democracy.

Each subgame involves the choice of a policy \( y \in \mathbb{R} \), which encompasses all economic, social, and other policy issues. This is chosen by the autocrat in CA and EA and by the citizen in democracy. Both actors have policy ideal points and utility functions that decline with the squared distance of the final policy from their ideals. The autocrat’s ideal is \( z < 0 \) and is known to both players. The citizen’s ideal is \( x \), but this value is unknown to the autocrat, who believes \( x \) lies with uniform probability between 0 and \( \overline{x} > 0 \). Hence, \( |z| \) captures the polarization of the autocrat relative to citizens.9 Among other factors, economic inequality should increase \( |z| \) by raising the intensity of distributional conflict.10 Figure 1 presents a visualization.

Given the policy offer, the other actor can choose to violently rebel. The likelihood of the autocrat prevailing is \( \theta \) in CA, \( \theta' \) in EA, and \( \alpha \) in democracy. Each actor \( i \) faces a cost \( c_i > 0 \) if there is violence and a further cost \( k_i > 0 \) if he or she loses. If the violent revolt or coup fails, the regime type and the previously chosen policy do not change. If violence is successful, the winning actor chooses the regime type and policy. I assume that play ends after a single round.

To sum up, in CA, the autocrat offers \( y \) and the citizen chooses to revolt or not. In democracy, the citizen offers \( y \) and the autocrat chooses to stage a coup or not.

EA involves a slightly different structure that allows for citizen signaling. To avoid assuming too much about the richness of electoral communication, I consider a simple model of elections in which the representative citizen can signal either support or opposition to the regime. At the start of play in EA, the autocrat chooses a binding policy deal. If the citizen signals support of the regime, she gets a direct transfer \( r_1 \) and a policy offer of \( y_1 \). If the citizen signals opposition to the regime, she forgoes the transfer but receives a policy concession of \( y_2 \geq y_1 \). This represents the widespread pattern in which dissatisfied citizens who vote against the regime gain policy concessions but lose out on patronage.11 After this binding offer is presented, the citizen chooses the payoff or the
Figure 2. All of the possible actions in the game. The autocrat first chooses the regime type, which leads to a distinct subgame. In closed authoritarianism, the autocrat makes a policy offer \( y \) and the citizen chooses whether or not to revolt. In electoral authoritarianism, the autocrat makes a binding policy deal conditioned on the citizen’s choice of a payoff or policy concession. After the citizen chooses between these options, she has a final decision to revolt or not. In democracy, the citizen makes the policy offer \( y \) and the autocrat chooses whether or not to stage a coup.

concession and the promise is implemented. Lastly, the citizen chooses to revolt or not. Figure 2 summarizes the actions in the game.

I make three assumptions concerning the model’s parameters.

**Assumption 1.** \[ I \text{ assume that } \theta' < \theta < 1. \]

This posits that popular revolt has a higher likelihood of success under EA than under CA, which reflects the fact that autocratic elections give the opposition an advantage in coordination and organization (Tucker, 2007; Bunce and Wolchik, 2009). If \( \theta' > \theta \), then EA is always preferred to CA.

**Assumption 2.** \[ I \text{ assume that } D_c(1-\theta') < c_c + \theta' k_c. \]

If this assumption is violated, the citizen will always revolt under CA or EA. Knowing this, the autocrat will choose either CA with \( y = z \) or democracy.

**Assumption 3.** \[ I \text{ assume that } z > -\sqrt{\frac{c_c+\theta k_c-(1-\theta)D_c}{1-\theta}} - \frac{c_d+(1-\theta)(R+k_d)}{4\pi}. \]
It is simple to prove that if \( z \) is sufficiently negative, we get an uninteresting equilibrium in which the autocrat chooses CA and \( y = z \) even though it provokes all citizen types to revolt. This assumption eliminates that possibility.

I now turn to a detailed explanation of each regime subgame and solve for their equilibria. The solution concept is perfect Bayesian equilibrium, which requires subgame-perfection and Bayesian updating over types.\(^{12}\) In Section 4.5, I use these results to calculate which regime type the autocrat chooses in the first action. All proofs are contained in the Appendix.

4.2. Closed authoritarianism

In CA, the autocrat offers a policy \( y \). The citizen then chooses whether to revolt, with a \( 1 - \theta \) probability of success. If the citizen does not revolt, \( y \) is implemented, the citizen gets \(- (x - y)^2\), and the autocrat gets \( R - (y - z)^2\). In the event of revolt, each actor \( i \) loses \( c_i \). If the autocrat wins, the citizen loses \( k_c \), the autocrat retains \( R \), and policy \( y \) is implemented. If the citizen wins, the autocrat loses \( k_a \) and retains the loss from \( y \), whereas the citizen gains \( D_c \) and implements the policy \( x \).

To sum up, the utility function for the citizen is the following:

\[
u_{CA}^C(x, y) = \begin{cases} 
-(x - y)^2 & \text{if no revolt} \\
-c_c + \theta(-k_c - (x - y)^2) + (1 - \theta)D_c & \text{if revolt} 
\end{cases}
\]

For the autocrat, the utility function is the following:

\[
u_{CA}^A(y) = \begin{cases} 
R - (y - z)^2 & \text{if no revolt} \\
-c_a - (y - z)^2 + \theta R + (1 - \theta)(-k_a) & \text{if revolt} 
\end{cases}
\]

The subgame equilibrium is captured in the following proposition.

**Proposition 1.** The following constitutes the sole equilibrium in the CA subgame. Let \( d = \sqrt{\frac{c_c + \theta k_c - (1 - \theta)D_c}{1 - \theta}} \).

1. If \( z \geq \bar{x} - d \), the autocrat chooses \( y = z \). Otherwise, the autocrat chooses \( y = y^* \), constrained from above by \( \min(\bar{x} - d, d) \), where

\[
y^* = z + \frac{c_a + (1 - \theta)(R + k_a)}{2\bar{x}}
\]

2. The citizen revolts if and only if

\[|x - y| > d\]

For a range of \( \bar{x} \), Figure 3 shows the autocrat’s choice of \( y \) and the threshold value of \( x \) above which the citizen chooses to revolt. The remaining parameters are fixed as follows: \( z = -2, c_c = c_a = 6, k_c = k_a = 8, D_c = 6, R = 2, \) and \( \theta = 0.2 \).
Figure 3. Policy choice in closed authoritarianism: The policy $y$ chosen in the CA subgame as a function of $\bar{x}$ (representing uncertainty). Also shown is the threshold value of $x$ above which the citizen revolts, as well as $\bar{x}$ for comparison. Note that $y$ is non-monotonically related to $x$ and that revolt occurs only for sufficiently large values of $\bar{x}$.

Policy is a non-monotonic function of $\bar{x}$. To understand why, note that for small values of $\bar{x}$, the autocrat shifts $y$ sufficiently to guarantee no revolt. This is advantageous because a small $\bar{x}$ implies that the needed policy concessions are low. For larger values, the autocrat chooses $y$ to balance the loss from policy concession and the (probabilistic) gain from avoiding revolt. As $\bar{x}$ gets larger, the probability density of $x$ declines. This lowers the marginal benefit of raising $y$, as each degree of policy concession is thereby less likely to forestall revolt. The result is a decrease in $y$ for large $\bar{x}$. Section 6 includes a further analysis of how policy choice varies with the model’s parameters.

Finally, the citizen revolts when sufficiently dissatisfied with the offered policy. This occurs if and only if $x$ is sufficiently distant from $y$. As a result, revolt becomes increasingly likely for larger values of $\bar{x}$ or $|z|$.

4.3. Electoral authoritarianism

In EA, the autocrat implements a binding policy deal that is contingent on the citizen’s choice of payoff or policy concession. The payoffs are identical to those in CA, with the
exception that the autocrat survives a revolt with probability $\theta'$ and there is a transfer of $r$ from the autocrat to the citizen. However, the equilibrium is considerably more complex than in CA, as shown in the following proposition.

**Proposition 2.** The following constitutes an equilibrium in the EA subgame. Let $d' = c_c + \theta' k_c - (1 - \theta')(1 - D_c)$. Let $\pi = c_a + (1 - \theta')(R + k_a)$.

1. The autocrat offers $y = y_1$ and $r = r_1$ if the citizen chooses payoff and $y = y_2$ and $r = 0$ if the citizen chooses concession. The autocrat always offers $r_1 = -z(y_2 - y_1)$.
   - If $\bar{x} \leq z + d'$, the autocrat offers $y_1 = y_2 = z$.
   - If $\frac{z}{2} + d' < \bar{x} < -\frac{\pi}{z}$, there exists a threshold $b < -\frac{\pi}{z}$ such that the autocrat offers $y_2 = y_2^*$ and $y_1 = y_1^*$, where
     
     $$y_2^* = \begin{cases} 
     \min(\bar{x} - d', \frac{z}{2} + 3d') & \text{if } \bar{x} < b \\
     \frac{z}{2} + \frac{9}{16} \bar{x} - \frac{9}{16} \sqrt{\bar{x}^2 - \frac{16}{9} (z\bar{x} + \pi)} & \text{otherwise}
     \end{cases}$$

     $$y_1^* = \frac{z + y_2^*}{3}$$

   - Otherwise, the autocrat offers $y_1 = y_2 = z + \frac{\pi}{2\bar{x}}$ (constrained from above by $\bar{x} - d'$).

2. If $y_1 = y_2$, the citizen chooses concession if and only if $r_1 = 0$. Otherwise, the citizen chooses concession if and only if

   $$x > \frac{y_1 + y_2}{2} + \frac{r_1}{2(y_2 - y_1)}$$

3. The citizen revolts if and only if

   $$|x - y| > d'$$

For a range of $\bar{x}$, Figure 4 displays the autocrat’s choice of policy, depending on whether the citizen signals payoff or concession. Also shown is the threshold value of $x$ above which the citizen chooses to revolt. The parameters are the same as in the CA simulation, with $\theta' = 0.18$.

As with CA, the largest concessions occur for middle values of $\bar{x}$. Again, this occurs because the autocrat guarantees no revolt for small $\bar{x}$, but then increasingly pulls back on policy concessions as the probability density of $x$ declines. Unlike with CA, there is a discontinuity at the value of $\bar{x}$ for which the autocrat ceases to guarantee no revolt.

The autocrat offers $y_1 < y_2$ for a wide intermediate range of $\bar{x}$. (For very small and very large $\bar{x}$, the autocrat ignores the citizen signal and follows the same strategy as in CA.) In other words, the autocrat commits to respond to the citizen’s choice of payoff or concession, partially ceding control over policy. In turn, citizen actions correspond to three ranges of $x$: For $x$ close to 0, the citizen chooses payoff and no revolt; in the middle range, the citizen chooses concession and no revolt; and for large $x$, the citizen chooses concession and revolt.
Figure 4. Policy choice in electoral authoritarianism: The policy $y$ chosen in the EA subgame as a function of $\bar{x}$ (representing uncertainty) and the citizen’s choice of payoff or concession. Also shown is the threshold value of $x$ above which the citizen revolts, as well as $\bar{x}$ for comparison. Note that $y$ is non-monotonically related to $\bar{x}$.

The logic is straightforward. If $x$ is high, the citizen has high sensitivity to policy changes and thus prefers the policy concession to the payoff. The choice thereby credibly divides citizens into high and low $x$ types. This allows the autocrat to more efficiently target citizens in preventing revolt. Compared with CA, the autocrat is willing to concede more on policy because the concessions are limited to citizen types with high $x$ and thus a high propensity to revolt.

4.4. Democracy

In democracy, the citizen offers a policy $y$. The autocrat then chooses whether to revolt, with an $\alpha$ probability of success. The payoffs are a mirror image of the payoffs in CA:

$$u_c^{Dem}(x,y) = \begin{cases} D_c - (x - y)^2 & \text{if no coup} \\ -c_c - (x - y)^2 + \alpha(-k_c) + (1 - \alpha)D_c & \text{if coup} \end{cases}$$

$$u_a^{Dem}(y) = \begin{cases} D_a - (y - z)^2 & \text{if no coup} \\ -c_a + \alpha R + (1 - \alpha)(-k_a - (y - z)^2) & \text{if coup} \end{cases}$$
Proposition 3. The following constitutes the sole equilibrium in the democracy subgame. Let $d'' = \sqrt{D_a + c_a - \alpha R + (1 - \alpha)k_a}$. 

1. The citizen chooses the policy $y$ such that 

$$y = \begin{cases} 
  z + d'' & \text{if } z + d'' < x < z + d'' + \sqrt{c_c + \alpha(D_c + k_c)} \\
  x & \text{otherwise}
\end{cases}$$

2. The autocrat coups if and only if 

$$|y - z| > d''$$

Figure 5 displays the equilibrium value of $y$ as a function of $x$ for general parameters. The equilibrium differs substantially from CA and EA because the citizen knows the autocrat's ideal when choosing the policy, and thus knows with certainty when $y$ will prompt a coup. As a result, the citizen chooses $y = x$ whenever this does not lead to a coup. 

For larger $x$, the citizen has a choice. She can either compromise and pick $y$ low enough to prevent a coup or pick $y = x$ and accept the coup. Citizen types with large $x$ lose the most from compromise, thus choose the latter. For middle values of $x$, the citizen chooses the largest $y$ sufficient to avoid a coup ($z + d''$). Thus, coups occur in equilibrium only when $x$ is very large. 

A substantive interpretation is that these ranges correspond to consolidated, unconsolidated, and unstable democracies. In consolidated democracies, policy is set at the citizen ideal and no violence occurs. In unconsolidated democracies (occurring at middle inequality), citizens moderate their policy choices to avoid violence. Finally, in unstable democracies (occurring at high inequality), citizens implement radical policy choices and face coup attempts. 

4.5. Regime choice 

We now turn to the choice of regime by the autocrat, the first action in the game. Since it is cumbersome to express closed-form conditions, I establish some general comparative statics relating regime choice to $x$ (representing uncertainty), $z$ (polarization and inequality), $D_a$ (the rewards for democracy), and the dictator's strength ($\theta$, $\theta'$, and $\alpha$). I also display graphically how regime choice varies in equilibrium. I assume throughout that the autocrat chooses CA if indifferent between EA and CA. 

The first result establishes how regime choice relates to $x$ and $D_a$. 

Proposition 4. Fix all parameters except $\bar{x}$ and $D_a$. 

- CA is chosen for sufficiently low $\bar{x}$ and $D_a$, as well as for sufficiently large $\bar{x}$ (given any $D_a$). 
- If EA occurs in equilibrium, it is chosen for a middle range of $\bar{x}$. 


Figure 5. Policy choice in democracy: The policy $y$ chosen by the citizen in the democracy subgame as a function of $x$ (the citizen’s ideal point). For small $x$, the citizen chooses $y = x$ and avoids a coup. For middle values of $x$, the citizen prefers the largest $y$ sufficient to avoid a coup. For large $x$, the citizen sets $y$ at her ideal policy even though it provokes a coup.

- If $D_a$ is sufficiently large, democracy is chosen if and only if $\bar{x}$ is below a threshold, which is increasing in $D_a$.

Figure 6 displays the equilibrium regime choice for values of $\bar{x}$ and $D_a$. The remaining parameters are the same as above. The result for democracy is the most intuitive. The autocrat is only willing to democratize if the direct benefits $D_a$ are sufficiently high and the citizen’s expected policy choice is sufficiently moderate.

The central result is that EA dominates CA only for middle values of $\bar{x}$. For small $\bar{x}$, the autocrat concedes on $y$ just enough to avoid revolt. CA is then superior because citizen revolt is less likely to succeed, which implies that lower concessions are needed. For large $\bar{x}$, CA again dominates because revolt becomes highly likely and the autocrat prevails more often under CA. For middle values of $\bar{x}$, EA is superior because citizen signaling allows the autocrat to efficiently target payoffs or concessions and to avoid revolt for a larger range of $x$. 
Figure 6. Regime choice: The autocrat’s choice of regime type for ranges of $\bar{x}$ (representing uncertainty) and $D_a$ (the rewards for democracy). The step-like boundaries between regime choices are artifacts of the simulation. Note that EA occurs for middle values of $\bar{x}$. Democracy occurs only for high $D_a$ and sufficiently low $\bar{x}$.

Identical logic shows that Proposition 4 holds with $|z|$ in place of $\bar{x}$. Holding $\bar{x}$ constant, EA is chosen for middle values of $z$, whereas CA is chosen for high and low values. Figure 7 displays regime choice for values of $z$ and $D_a$.

The next proposition concerns regime strength.

**Proposition 5.** Assume that $\theta = \alpha$. If $R \geq D_a - z^2$, CA is chosen for sufficiently large $\theta$. Otherwise, CA is chosen for sufficiently large $\theta$ and large $\bar{x}$.

Figure 8 displays the equilibrium regime choice for ranges of $\bar{x}$ and regime strength ($\theta, \theta'$, and $\alpha$). Here $\theta$ and $\alpha$ are varied together, with $\theta'$ set 0.02 lower than $\theta$. I fix $D_a$ at 6.

Sufficiently strong regimes forgo elections because the autocrat has less to fear from revolt. EA is chosen for middle values of both regime strength and $\bar{x}$, when citizen signaling is most valuable. Democracy is chosen when regimes are weak and $\bar{x}$ is low, which implies that policy under democracy will be moderate.
Figure 7. Regime choice: The autocrat’s choice of regime type for ranges of \( z \) (where more negative values represent higher polarization) and \( D_a \) (the rewards for democracy). The step-like boundaries between regime choices are artifacts of the simulation. EA occurs for middle values of \( z \). Democracy occurs only for high \( D_a \) and \( z \) close to 0.

5. Extension: Multiple autocratic types

Consider the same game as the base model, but with two possible autocratic types (weak and strong) known only to the autocrat. The prior likelihood of the strong type is \( \gamma \). In CA, if revolt occurs, strong types win and weak types lose with certainty. In EA, strong types win with probability \( q < 1 \) and weak types lose with certainty. To keep the model tractable, the types have the same likelihood of coup success in democracy.

I limit attention to equilibria in which the strong type chooses the optimal action for the strong type. Since departures from this action cause the citizen to believe the autocrat is weak and thus revolt, the weak type copies the strong type’s strategy in each subgame. The resulting equilibrium within each subgame is highly similar to the base model’s. For the citizen’s choices, the analysis is the same except that \( \theta \) and \( \theta' \) are now endogenously determined by \( \gamma \) and the mixing strategy of the autocrat over regime types. For the autocrat’s choices, 1 stands in place of \( \theta \) and \( q \) stands in place of \( \theta' \).

It is straightforward to show that six types of equilibria are possible, as captured by the following proposition.
Proposition 6. In the model with multiple autocratic types, if we disallow knife-edge conditions, there exist six types of equilibria: pooling on each regime type and semi-separating for each pair of regime types. In the semi-separating equilibria including democracy, strong types choose autocracy with certainty and weak types mix between autocracy and democracy.

Perfect separation cannot occur in equilibrium, since this would lead all citizen types to choose no revolt in the regime chosen by strong types. In turn, weak types would have an incentive to defect to this regime type. Other equilibrium types can be ruled out with similar logic.

Figure 9 shows how the autocrat’s regime choice varies with $\overline{\alpha}$ and $D_a$. Here $\gamma$ and $\alpha$ are fixed at 0.2 and $q$ is fixed at 0.99. Compared with the base model, the results are similar but more complex. Again, EA occurs for middle values of $\overline{\alpha}$ and low $D_a$. Pooling on democracy occurs for high $D_a$ and low $\overline{\alpha}$. The main difference is the dominance of the semi-separating equilibrium in which strong types choose CA and weak types mix between democracy and CA (Dem/CA). This occurs for high $D_a$ and middle values of $\overline{\alpha}$. In other results, EA is again chosen for middle values of regime strength ($\gamma$), whereas CA is chosen for all sufficiently strong regimes.
Figure 9. Regime choice with multiple types: The autocrat’s choice of regime for ranges of $\bar{x}$ and $D_a$. The step-like boundaries between regime choices are artifacts of the simulation. CA, EA, and Dem indicate pooling equilibria. Again, EA occurs at middle values of $\bar{x}$. The most common regime choice is the semi-separating equilibrium in which strong types choose CA and weak types mix between democracy and CA (Dem/CA).

6. Implications

In this section, I outline some of this paper’s implications for regime choice, policy concessions, and political violence. For empirical testing, I consider EA regimes to be autocracies that hold elections and tolerate a level of opposition sufficient for citizens to signal their demands. In this way, multi-party EA regimes such as modern Malaysia and Singapore can be distinguished from single-party dictatorships such as the Soviet Union, in which single-choice ‘elections’ were held but the only opportunity to register dissent was ruining ballots (Karklins, 1986).

6.1. Inequality

As mentioned above, economic inequality is the best proxy for policy polarization. Since EA is chosen in equilibrium for middle values of $z$, a resulting hypothesis is that we should find EA regimes at middle levels of inequality. In contrast, we should find CA regimes at both high and low levels of inequality.
Since there is no existing work relating economic inequality to EA regime prevalence, I look at the distribution of inequality by regime type to see if these predictions are plausible. To code regime type, I use the dichotomous coding of Boix et al. (2013) to define democracy. I code as EA any autocratic regime that allows multiple parties to compete in legislative elections, according to Cheibub et al. (2010). Inequality is measured using the pre-tax and pre-redistribution Gini measure provided by Solt (2009), which limits the sample to 1960–2006. This measure is advantageous in that it omits a large part of the regime's redistributive effect, and hence approximates the pre-political level of economic inequality. Figure 10 shows kernel density plots of the probability distribution of inequality by regime type for 140 countries (N = 3,020). The results support the model's predictions. Both EA regimes and democracies are concentrated at middle values of inequality. In contrast, CA regimes are widely spread, with small peaks at high and low levels of inequality.

A further implication is that inequality (and uncertainty) should increase the likelihood of violent opposition in all regime types, which is consistent with much of the literature (Alesina and Perotti, 1996; Boix, 2003). Finally, in the model, democratization can occur voluntarily (at low inequality) or through violent opposition (at high inequality), whereas coups in democracy always occur at high inequality. This implies that economic inequality should be more strongly related to democratic breakdowns than democratic transitions, which is consistent with Boix (2003) and Houle (2009).

6.2. Regime strength

In contrast to inequality, regime strength should monotonically predict the relative likelihoods of non-electoral and electoral autocracy. Specifically, it should be the relatively strong autocracies that forgo elections. This is consistent with several results from the literature. Geddes (2006) shows that military regimes, which have an advantage in the application of repression, are less likely than civilian regimes to adopt elections. Gandhi and Przeworski (2007) and Gandhi (2008) show that natural resource wealth, an indicator of regime resources and repressive capacity, makes it less likely that an autocracy adopts a legislature.

6.3. Policy concessions

Propositions 1 and 2 lead to several predictions for how policy concessions vary within autocracy.

**Corollary 1.** The following comparative statics hold for the equilibrium choice of \( y \) in CA and both \( y_1 \) and \( y_2 \) in EA:

1. \( y \) is strictly decreasing in regime strength (\( \theta \) or \( \theta' \));
2. There exists a threshold value \( \eta \) such that \( y \) is strictly increasing in \( x \) if \( x < \eta \) and strictly decreasing in \( x \) if \( x > \eta \);
3. \( y \) is weakly increasing in \( z \), \( c_a \), \( k_a \), \( R \), and \( D_c \);
4. \( y \) is weakly decreasing in \( c_c \) and \( k_c \).
Thus, fixing the autocratic regime type, policy concessions will be greater when regimes are weaker, uncertainty is moderate, inequality is lower, the autocrat’s fighting costs are higher, and citizens value democracy more.

Another implication is that we ought to see greater average policy concessions in EA regimes compared to CA regimes. This arises partly because of the larger range of concessions under EA and partly because of selection, since EA regimes are chosen at middle ranges of $\tau$ that feature the largest concessions. Although there is no existing work comparing average policy concessions in EA, CA, and democracy, there is evidence that autocratic legislatures predict more widespread civil liberties (Gandhi, 2008), greater spending on education (Gandhi, 2008), and higher wages for labor (Kim and Gandhi, 2010). Similarly, Blaydes and Kayser (2011) find that highly repressive autocracies have greater levels of food scarcity than regimes with a mix of autocratic and democratic elements.

7. Conclusion

This paper introduced a formal model of regime transitions in the tradition of Acemoglu and Robinson (2001, 2006) and Boix (2003). The model explains why autocratic regimes often adopt elections that do not provide the possibility of turnover, but do offer citizens...
an opportunity to register dissent. By allowing the dictator to tie policy to an electoral signal provided by citizens, EA may be advantageous even if elections make violent revolt more likely to succeed.

The model leads to several testable implications concerning regime choice, political violence, and policy. In particular, the model implies that electoral autocracies will be the most prevalent at middle levels of economic inequality and uncertainty about citizens’ preferences. In contrast, regime strength should increase the prevalence of non-electoral autocracy. Political violence should increase with inequality and uncertainty. Finally, we should find greater average policy concessions when autocracies feature elections.

Scholars should continue to expand the analysis of transitions involving EA. Since the majority of the world’s democracy-promotion targets feature autocratic elections, greater insight into their strategic motivations may be highly valuable. Further, we must address the question of whether encouraging autocratic elections, a major plank of democracy-promotion strategy for decades (Carothers, 1999; Hyde, 2011), advances long-term democratic prospects and the well-being of average citizens. This paper’s results cut in two directions. On the one hand, autocratic elections may be an effective method of communicating popular demands and achieving substantive policy change, possibly including political rights. On the other hand, these elections may serve as powerful tools for reducing policy concessions in cases of weak opposition, enhancing regime durability, and forestalling democratization. Where the balance lies is an open and pressing question.

Appendix

Proof of Proposition 1: Closed Authoritarianism

We work using backward induction, first calculating when the citizen will revolt and then the autocrat’s choice of $y$.

Citizen

given the policy $y$, the citizen will revolt if and only if

$$-c_c + \theta \{-k_c - (x - y)^2\} + (1 - \theta)D_c > -(x - y)^2$$

$$\Rightarrow |x - y| > \sqrt{\frac{c_c + \theta k_c - (1 - \theta)D}{1 - \theta}} = d$$

Autocrat

The autocrat chooses $y$ to maximize

$$u_a^{CA}(y) = P(x \leq y + d)(R - (y - z)^2) + P(x > y + d)(-c_a - (y - z)^2$$

$$+ \theta R + (1 - \theta)(-k_a))$$

Note that the autocrat will never choose $y < z$ and will only choose $y > z$ if it reduces the likelihood of revolt. If $z \geq \bar{x} - d$, the autocrat will set $y = z$ and guarantee no revolt. Thus, assume this is not the case. The autocrat will not set $y$ higher than $\bar{x} - d$ (since
this guarantees no revolt) or \(d\) (since this provokes citizen types with \(x\) close to 0 to revolt, leading to no net gain). Hence, \(z, \bar{x} - d\), and \(d\) represent possible corner solutions. Otherwise, \(y\) will satisfy a first-order condition for \(-d \leq y \leq \min(\bar{x} - d, d)\). This must then be compared with the utility from choosing \(z\) and guaranteeing revolt.

Note that for arbitrary function \(f(\beta)\),

\[
\frac{\partial P(x < f(\beta))}{\partial \beta} = \frac{f'(\beta)}{\bar{x}}
\]

We get the following first-order condition:

\[
\frac{\partial u_a^{CA}}{\partial y} = 0 = -2(y - z) + \frac{R}{\bar{x}} - \frac{-c_a + \theta R + (1 - \theta)(-k_a)}{\bar{x}}
\]

\[
\Rightarrow 2(y - z) = \frac{c_a - \theta R + (1 - \theta)(k_a) + R}{\bar{x}}
\]

\[
\Rightarrow y = y^* = z + \frac{c_a + (1 - \theta)(R + k_a)}{2\bar{x}}
\]

Since the second derivative is \(-2\), this represents a maximum. Since the first derivative is positive for \(y < y^*\), \(\min(\bar{x} - d, d)\) is chosen if \(y^* > \min(\bar{x} - d, d)\). It only remains to verify that this solution provides a higher utility than choosing \(y = z\) and guaranteeing revolt. Plugging the two possibilities into the utility function shows that this holds exactly when Assumption 3 is satisfied.

\[\blacksquare\]

**Proof of Proposition 2: Electoral Authoritarianism**

We work using backward induction, first calculating when the citizen will revolt, then the citizen’s choice of concession or payoff, and finally the autocrat’s offer of \(y_1, y_2\), and \(r_1\).

**Citizen: Revolt**

The logic is the same as for CA, with \(\theta'\) in place of \(\theta\). Revolt occurs if and only if \(|x - y| > d'\).

**Citizen: Concession or Payoff**

If \(y_1 = y_2\) and \(r_1 > 0\), it is strictly better to choose payoff. Otherwise, the citizen will choose concession if and only if

\[
-(x - y_2)^2 \geq r_1 - (x - y_1)^2
\]

\[
\Rightarrow x > \frac{y_1 + y_2}{2} + \frac{r_1}{2(y_2 - y_1)} = x_1
\]

**Autocrat**

\(x_1\) is the division point between citizen types that choose payoff and concession. Let \(x_2 = y_2 + d'\) be the division point for revolt following concession. Thus, there are
three ranges (with some possibly empty) of citizen types corresponding to the following actions: payoff and no revolt \((x \leq x_1)\), concession and no revolt \((x_1 < x \leq x_2)\), and concession and revolt \((x > x_2)\).

It follows that the autocrat will choose \(r_1, y_1\), and \(y_2\) to maximize

\[
\begin{align*}
\frac{\partial u_a^{E_A}(y)}{\partial r_1} &= P(x \leq x_1)(-1) + (R - r_1 - (y_1 - z)^2) \frac{1}{2(y_2 - y_1)^2} \\
&\quad + (R - (y_2 - z)^2) \frac{-1}{2(y_2 - y_1)^2} \\
\Rightarrow P(x \leq x_1) &= \frac{x_1}{x} = \frac{1}{2(y_2 - y_1)^2} 
\end{align*}
\]

\[
\Rightarrow x_1 = -z + \frac{y_1 + y_2}{2} - \frac{r_1}{2(y_2 - y_1)}
\]

Substituting in the value for \(x_1\), we get

\[
r_1 = -z(y_2 - y_1) \Rightarrow x_1 = \frac{y_1 + y_2 - z}{2}
\]

Second, we calculate the first-order condition for \(y_1\), letting \(x_1\) and \(r_1\) vary with \(y_1\):

\[
\begin{align*}
\frac{\partial u_a^{E_A}}{\partial y_1} &= P(x \leq x_1)(-2(y_1 - z)) + (R - r_1 - (y_1 - z)^2) \frac{1}{2x} + (R - (y_2 - z)^2) \frac{-1}{2x} \\
&= \frac{(y_1 + y_2 - z)(z - 2y_1)}{2x} + \frac{1}{2x}(-(y_1 - z)^2 + (y_2 - z)^2 - z(y_1 - y_2)) \\
&= (y_1 + y_2 - z) \left( \frac{z}{2} - y_1 \right) + \frac{1}{2} \left( y_2^2 - y_1^2 \right) + z(y_1 - y_2) \\
&= (y_1 + y_2 - z) \left\{ \frac{z}{2} - y_1 - \frac{1}{2}(y_1 - y_2) \right\} \\
&= (y_1 + y_2 - z) \left( \frac{z - 3y_1 + y_2}{2} \right)
\end{align*}
\]

This implies that either \(y_1 + y_2 - z = 0\) or \(y_1 = \frac{z + y_2}{3}\). The first condition corresponds to \(x_1 = 0\), which we have assumed is not satisfied.
Lastly, we calculate the first-order condition for $y_2$, letting $x_1$, $r_1$, and $y_1$ vary as a function of $y_2$. Note that $x_1 = \frac{2y_2 - z}{3}$ and $r_1 = \frac{-z(2y_2 - z)}{3}$ after substituting in for $y_1$.

\[
\frac{\partial u^E_a}{\partial y_2} = 0 = P(x \leq x_1) \left\{ \frac{2z}{3} + \frac{2}{3} \left( \frac{2z - y_2}{3} \right) \right\} + \left\{ R - \frac{-z(2y_2 - z)}{3} - \left( \frac{2z - y_2}{3} \right)^2 \right\} \frac{2}{3x} + P(x > x_1)2(z - y_2) + \frac{2}{3x}(y_2 - z)^2 + \frac{R}{3x} - \frac{1}{x} \left\{ -c_a + \theta'R - (1 - \theta')k_a \right\}
\]

\[
= \frac{2y_2 - z}{27} \{10z - 2y_2\} - \frac{2z}{9} (z - 2y_2) - \frac{2}{27}(y_2 - 2z)^2 \\
+ \frac{2}{3}(3\bar{x} - 2y_2 + z)(z - y_2) + \frac{2}{3}(y_2 - z)^2 + c_a + (1 - \theta')(R + k_a)
\]

\[
= \frac{16}{9}y_2^2 + \left( \frac{-16z}{9} - 2\bar{x} \right) y_2 + \frac{4\bar{x}^2}{9} + 2z\bar{x} + c_a + (1 - \theta')(R + k_a)
\]

Applying the quadratic formula, this is solved at

\[
y_2 = \frac{z}{2} + \frac{9\bar{x}}{16} \pm \frac{9}{16} \sqrt{\bar{x}^2 - \frac{16}{9} \left\{ z\bar{x} + c_a + (1 - \theta')(R + k_a) \right\}}
\]

Only the smaller solution (call it $y_2'$) satisfies the second-order condition. For small $\bar{x}$, the quadratic has no real-valued solution and therefore $\frac{\partial u^E_a}{\partial y_2} > 0$ until $y_2$ reaches $\bar{x} - d'$ or a value that leads lower citizen types to revolt. This occurs if $y_2 \geq y_1 + 2d'$ or $y_1 \geq d'$, which thus constrains $y_2 \leq \min(\bar{x} - d', \frac{\bar{x}}{2} + 3d')$. As $\bar{x} \to -\frac{\pi}{z}$, $y_2'$ must dominate this corner solution since $\frac{\partial u^E_a}{\partial y_2} < 0$ from $y_2'$ to $\frac{\bar{x}}{2} + \frac{9\bar{x}}{8} > \frac{9\bar{x}}{8} - \frac{2d'}{z} > \bar{x} - d'$, with the first inequality using Assumption 3.

The above equilibrium is self-consistent as long as $2x_1 = y_1 + y_2 - z > 0$. This does not hold if $\bar{x} \leq \frac{\bar{x}}{2} + d'$, since then $y_1 \leq y_2 \leq \frac{\bar{x}}{2}$. This also does not hold if $\bar{x} \geq -\frac{\pi}{z}$, since then $y_2 \leq \frac{\bar{x}}{2} + \frac{9\bar{x}}{16} - \frac{9\bar{x}}{16} = \frac{\bar{x}}{2}$. Hence, $x_1 \leq 0$ holds for these conditions.

If $x_1 \leq 0$ in equilibrium, then all citizen types choose concession and thus $y_2$ must correspond to an equilibrium in CA (with $\theta'$ in place of $\theta$). If $\frac{\bar{x}}{2} + d' < -\frac{\pi}{z}$, this will be $y_2 = \bar{x} - d'$ for $z + d' < \bar{x} \leq \frac{\bar{x}}{2} + d'$ and $y_2 = z + \frac{\pi}{2\bar{x}}$ for $\bar{x} \geq -\frac{\pi}{z}$.

**Proof of Proposition 3: Democracy**

We work using backward induction. For the autocrat, the logic is the same as for the citizen in authoritarianism. A coup occurs if $|y - z| > d''$.

**Citizen**

The analysis differs since the citizen knows the ideal point of the autocrat. If $x \leq z + d''$, the citizen sets $y$ at her ideal and faces no coup. For higher values of $x$, setting $y = x$
provokes a coup. The citizen thus chooses between $y = x$ with a coup and $y = z + d''$ with no coup. The citizen accepts the coup if

$$-c_c - \alpha k_c + (1 - \alpha)D_c - 0 \geq D_c - (x - z - d'')^2$$

$$\Rightarrow x \geq z + d'' + \sqrt{c_c + \alpha(D_c + k_c)}$$

**Proof of Proposition 4: Regime Choice for $x$ and $D_a$**

For sufficiently small $\bar{x}$, if $z \leq -d$, the autocrat sets $y = \bar{x} - d$ under CA and $y = \bar{x} - d'$ under EA and guarantees no revolt. Since $\theta > \theta'$, $d > d'$. Thus, the autocrat sets $y$ closer to $z$ under CA, which therefore provides a higher utility than EA. If $z > -d$, the autocrat sets $y = z$ under both CA and EA and guarantees no revolt, making the autocrat indifferent.

For sufficiently large $\bar{x}$, $y$ approaches $z$ under both CA and EA. Thus, the likelihood of revolt approaches 1. Since $\theta > \theta'$, CA provides a higher utility than EA.

For sufficiently small $\bar{x}$, $y = x$ under democracy, so the autocrat’s utility approaches $D_a - z^2$. It follows that democracy is chosen for large $D_a$ and CA is chosen for low $D_a$. The payoff from democracy strictly declines with larger $\bar{x}$, since the expected value of $x$ strictly increases, whereas the CA payoff approaches a limiting value. Thus, CA is chosen for sufficiently large $\bar{x}$. Since $D_a$ is purely additive, the crossover point increases with $D_a$.

**Proof of Proposition 5: Regime Choice for $\theta$**

As $\theta \to 1$, $d \to \infty$. Under CA, it follows that $y = z$, the citizen never revolts, and the autocrat gets payoff $R$. The autocrat gets at best the same payoff under EA. In democracy in the limit of small $\bar{x}$, $y = 0$, no coup occurs, and the autocrat gets $D_a - z^2$. Thus, if $R \geq D_a - z^2$, the autocrat chooses CA for sufficiently large $\theta$. In the limit of large $\bar{x}$, CA is chosen since the payoff from CA reaches a limiting value.

**Proof of Proposition 6: Multiple Autocratic Types**

Equilibria can be eliminated one by one. Weak types cannot choose an autocratic regime not chosen with some probability by strong types, since this guarantees revolt. Strong types cannot choose an autocratic regime not chosen with some probability by weak types, since this guarantees no revolt. If this dominates democracy for strong types, it would also do so for weak types, a contradiction. Lastly, strong types cannot mix between an autocratic regime and democracy. Revolt must occur with positive probability (else a knife-edge condition is needed for indifference). It follows that weak types get a strictly higher utility from democracy, implying that only strong types choose the autocratic regime, a contradiction. The remaining possibilities are the six equilibria.

**Notes**

1. Studies predicting democratization from EA have focused on opposition coalitions (Howard and Roessler, 2006), international pressure (Levitsky and Way, 2010), economic crises (Reuter and Gandhi, 2010), and reductions in natural resource wealth (Greene, 2010). Epstein et al.
Miller (2006) investigate transitions involving ‘partial democracies’, but their categorization is not based on an explicit coding of EA.

2. Various studies in this literature discuss economic development (Lipset, 1959; Przeworski et al., 2000; Boix and Stokes, 2003), colonial history (Weiner, 1987), economic inequality (Boix, 2003; Ansell and Samuels, 2010), and education (Lipset, 1959; Kamens, 1988).

3. Przeworski (1991) provides an early example, focused on how government and opposition moderates ally using a basic extensive-form game.


5. Although O’Donnell and Schmitter (1986) emphasize divisions within the ruling elite, they still argue that democratization occurs when the dominant faction strategically favors democracy.

6. Alternatively, dictators face threats from other elites and government actors, leading to a great deal of formal work on how rulers maintain their elite coalitions (Congleton, 2001; Magaloni, 2008; Gandhi, 2008; Myerson, 2008; Svolik, 2009; Boix and Svolik, 2010).

7. These informational problems can be partially solved by allowing open media (Egorov et al., 2009) or protests (Lohmann, 1993; Lorentzen, 2009), but these are inherently difficult to control.

8. The use of patronage, often through direct cash payoffs, to reward supporters and punish opponents is a near-universal practice within EA regimes (Lust-Okar, 2006; Magaloni, 2006; Blaydes, 2011).

9. The expected difference between $x$ and $z$ is actually $|z| + \frac{x}{2}$, so the comparative statics below focus on variation in $|z|$ while holding $x$ constant.

10. A range of other issues could also raise polarization, such as social and ethnic divisions.

11. A potential avenue for future research, but one not explored in the current model, is to allow the electoral signal to trigger democratization, as occurred in Chile and Poland in 1989.

12. In this base model, there are no actions off the path of play by an actor with multiple types.

13. This only affects a small subset of cases in which $x$ is so small or $\theta$ and $\theta'$ are so large that the autocrat sets $y = z$ in equilibrium and avoids revolt.

14. For the figure, I relax Assumption 3, and hence allow $z$ to be sufficiently negative that the autocrat chooses CA and $y = z$.

15. The only exception is for a knife-edge condition in which perfect separation makes both types indifferent between democracy and autocracy with $y = z$ and no revolt.

16. Ties are broken in favor of pooling on CA.

17. The models also predict that EA regimes will occur at moderate levels of uncertainty. Although this is difficult to test cross-nationally, case studies often find that closed regimes adopt elections as a response to uncertainty (Cox, 2009; Miller, 2012). See, for example, Coulon (1990, 428) on Senegal’s 1981 adoption of multi-party elections, which were designed to renew ‘the lines of communication between the government and the civil service on the one hand and the citizens on the other’.

18. This suggests that the conflation of different autocratic types may be one reason Houle (2009) failed to find support for Acemoglu and Robinson’s (2001, 2006) prediction that democracy is most likely at middle levels of inequality.

19. For the range of parameters shown in Figure 6, the average $y$ chosen in CA is $-0.63$ and the average $y$ in EA is $0.32$. For comparison, the average $y$ chosen in democracy is $2.11$.

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