

# The Game of Electoral Fraud and the Ousting of Authoritarian Rule

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*How can autocrats be restrained from rigging elections when they hold a huge military advantage over their opponents? This article suggests that even when opposition parties have no military capacity to win a revolt, opposition unity and a consequent threat of massive civil disobedience can compel autocrats to hold clean elections and leave office by triggering splits within the state apparatus and the defection of the armed forces. Opposition unity can be elite-driven, when parties unite prior to elections to endorse a common presidential candidate, or voter-driven, when elites stand divided at the polls and voters spontaneously rebel against fraud. Moreover, the article identifies some conditions under which autocrats will tie their hands willingly not to commit fraud by delegating power to an independent electoral commission. The article develops these ideas through a formal game and the discussion of various case studies.*

Most autocracies today hold multiparty elections. What accounts for ruling parties' decision to commit fraud or respect the election results, and why would rulers ever tie their hands by delegating the organization of elections to independent electoral bodies? What explains that opponents protest against fraud or tacitly acquiesce to electoral tyranny? Why and when is the opposition expected to challenge clean elections? This article answers these fundamental questions by presenting a theory of the dynamics of electoral fraud and postelection opposition protest against it.

The article simultaneously seeks to contribute to the study of democratization and to shed light on the politics of what some scholars call "electoral authoritarianism," where a democratic façade covers authoritarian rule (Linz 2000, 34). Schedler calculates that the most common form of autocracy today is hidden behind elections: "The dream [of these regimes] is to reap the fruits of electoral legitimacy without running the risks of democratic uncertainty" (2002, 37). Diamond (2002) and Levitsky and Way (2002) also highlight the prevalence of electoral authoritarianism. After the end of the Cold War, this form of multiparty autocracy became the most common in the world, above single-party regimes, military dictatorships,

and monarchies (Hadenius and Toerel 2007; Magaloni 2008). Despite their commonality, there has not been much theorizing about the dynamics of electoral politics in these regimes.

The article spells out the strategic calculations of autocrats and their opponents during critical elections that might or might not lead to alternation of political power in office even when structural preconditions for the emergence of democracy are fulfilled (Boix and Stokes 2004; Levitsky and Way forthcoming; Lipset 1957). The theoretical model in the article builds on Weingast (1997), who conceives democracy and dictatorship as two distinctive equilibria, the former a coordinating one where society is able to unite to police and sanction potential abuses, and the latter a noncoordinating one where autocrats violate citizens' rights by dividing their opponents. However, in Weingast's approach citizens act in an institutional vacuum, and thus we fail to understand how the *institution of elections* shapes the strategic interaction between the autocrat and his opponents; we also fail to comprehend how societies shift from one equilibrium to the other.

The theory allows for alternative ways to defeat an electoral authoritarian regime. A first possibility is a "train crash" scenario where the autocrats hold clean elections

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and step down from office because a united opposition can credibly threaten to rebel in unison against potential transgressions. This was the route followed, for example, in Senegal in 2000 and Kenya in 2002.

The model offers a second route to democracy that entails “pacting over the institutions” such that the autocrats credibly tie their hands to not commit fraud by delegating the organization and monitoring of the elections to an independent electoral body. Mexico in the 1990s fits this characterization. The theory argues that autocrats will create institutions to restrain their ability to commit fraud when (1) they expect to win the elections; (2) parts of the opposition will protest *even if elections are clean*; and (3) this lack of credibility of the electoral process becomes too costly. After these types of “political pacts” (Karl 1990), the ruling party can go on winning, yet having established the conditions for elections to take place under democratic conditions.

A third way to defeat an electoral authoritarian regime is through what I call a “civil revolution.” In this equilibrium outcome, the ruling party steals the elections and voters respond with massive street protests. The outcome of this conflict is uncertain and depends on the choices made by the repressive apparatus. If the armed forces back the ruling party, the autocracy is likely to survive. But they can also switch sides and refuse to repress the masses, in which case democracy can emerge. This is what happened, for example, during the Orange Rev-

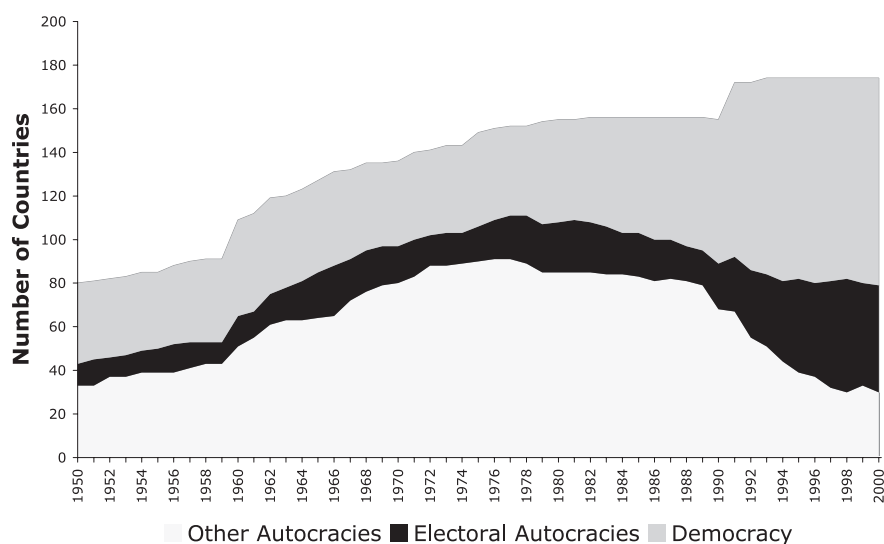
olution in Ukraine in 2004 and the Rose Revolution in Georgia in 2003. Despite the presence of military capacity, citizens were able to overpower the autocrats because their protesting in the streets induced the armed forces and other regime insiders to switch sides.

The article is organized as follows. The first section discusses the prevalence of electoral authoritarianism. The next section develops the theory of electoral fraud through the use of a game theory model where perfect voter information about the election results is presumed, and the third section discusses the implications to the game when there is limited voter information about whether there was fraud or not. I end with a conclusion that highlights the main findings and offers an agenda for future research.

## Elections in Autocratic Regimes

Most autocracies employ at least some repression to disarticulate the opposition—they murder or imprison its leaders and followers (Wintrobe 1998). “Electoral autocracies” do not ban the opposition, but allow it to organize into independent political parties and contest elections. This form of autocracy is the most common in the world today. Figure 1 displays the number of electoral autocracies in the world from 1950 until 2000. Electoral autocracies are defined broadly as

FIGURE 1 Electoral Autocracies in the World, 1950–2000



autocratic regimes that allow opposition parties to contest elections.<sup>1</sup>

Electoral autocracies include “hegemonic regimes” in which multiparty elections are little more than window dressing (e.g., Singapore, Uzbekistan, Mexico in the 1960s), as well as “competitive authoritarian” regimes in which elections generate at least some uncertainty (e.g., Malaysia, Kenya, Senegal, Russia, Ukraine, Gabon, Mexico after 1988, among many others) (Levitsky and Way 2002). Regime dynamics are different in these cases. Authoritarian rulers turn to their nastiest levels of repression, intimidation, and fraud when they are vulnerable, not when their political domination is secured at the polls (Diamond 2002). In the hegemonic regimes, electoral fraud often may not even be necessary because other steps have been taken to weaken or eliminate the opposition. By contrast, in competitive authoritarian regimes, electoral fraud and other malpractices are often present (Schedler 2002). The model developed in this article mostly applies to competitive authoritarian regimes.

The figure shows how the number of countries that can be considered democratic has increased in the last decade. But the graph clearly shows that after the 1990s electoral autocracies have become the most prevalent form of dictatorships—by 2000, 62% of the autocracies in the world were holding multiparty elections. Thus, the end of the Cold War is unquestionably associated with an explosion of competitive elections around the world. The multiparty autocracies in 2000 are predominantly concentrated in Africa (48%), followed by the Middle East/North Africa (21%), the former Soviet Bloc (10%), and Asia (8.33%). It should be noted that during the 1990s, the world is almost evenly distributed between democracy and autocracy, democracy becoming slightly more frequent at the end.

Elections in autocracies differ significantly from elections in democracies. In stable democracies, the armed forces are neutral and committed to enforce the result of the elections regardless of who wins (Przeworski 2008). In autocratic regimes, by contrast, the armed forces are often *partisan*, giving rulers ample leeway to subvert elections by fraud and force. Years of uninterrupted control of the state apparatus give autocratic parties huge incumbency advantages that come from their indiscriminate and asymmetrical access to the state resources and pa-

tronage networks (Greene 2007; Magaloni 2006). Ruling parties under autocracy normally exert strong control over the mass media, which tends to sponsor the rulers, misrepresent the balance of forces, and thwart the propagation of accusations of electoral corruption. In autocratic regimes the electoral rules tend to be biased in favor of the ruling party and are often used to fabricate and divide the opposition (Lust-Okar 2005). Finally, in autocratic regimes most of the state organs such as courts, electoral commissions, and prosecutors’ offices are in the hands of the ruling party, allowing it to unilaterally control the organization, monitoring, certification, and adjudication of elections. Thus, when opposition parties participate in autocratic electoral arenas, they are compelled to contest in biased playing fields, where their votes might not be counted fairly and the military might turn against them if they protest.

The next section discusses the set of strategic variables that spell out how opposition parties and their voters can coerce autocratic rulers to leave power when they lose. The theory presents two permutations of the game of electoral fraud. One game assumes perfect voter information about whether there was fraud or not, and in the other, voters do not know the actual election results.

## A Strategic Game of Fraud with Perfect Information

Three political parties, the autocratic ruling party, A, and two challengers, B and C, compete in a national election. The model in this article presumes that the opposition is divided. A divided opposition is defined as one in which both parties are “relevant” competitors. If the opposition is divided but one party concentrates most of the opposition vote, the model can easily be redrawn into a two-player game, as discussed below. In the game, the armed forces are presumed to remain *partisan* when the opposition fails to unite to protest against fraud, but when it coordinates to orchestrate massive protests, the military’s allegiance is no longer guaranteed and the outcome of this conflict is uncertain.

Parties care about office and the spoils of power and about some policy goals (e.g., they may want to extract rents for their cronies and may also seek to impose certain cultural norms, for example, about the role of women in society). The parties’ utility for office and policy, as detailed in the appendix, is weighted differently by each party, allowing for ample variance in the way parties compete in the political space (some parties might be programmatic and others might mostly care about spoils).

<sup>1</sup>To determine whether a country is democratic or autocratic, I employ the update to 2000 of the Przeworski et al. (2000) classification of political regimes from Matt Golder (2007). To determine whether multiple parties are allowed, I use the Arthur S. Banks, Cross-National Time-Series Data Archive.

The parties' strategic actions in the game of fraud follow once vote shares have been established. For the sake of simplicity, the strategy sets for the parties are binary. The ruling party, A, can commit fraud (strategy F) or enforce clean elections (strategy notF), while opposition parties can acquiesce to the electoral results (strategy A) or protest the electoral process (notA). In this game, "fraud" encompasses two types of behaviors on the part of the ruling party, one consisting of stealing votes from the opposition parties, and the other of enforcing the electoral fraud itself. The various technologies of fraud are not discussed (Lehoucq and Molina 2002; Schedler 2002; Simpser 2006).

The game of fraud is played over time—elections take place, the autocrats announce the election results, and the opposition obeys or protests. Having observed the parties' strategies, voters then must choose whether to remain loyal to their party in future elections or to switch allegiances. Voters are assumed to protest in favor of whichever party they chose to remain loyal. This means that even if opponents are not expected to last beyond the current elections, they still need to think about voters because these serve as potential street protesters, which are necessary to force the autocrats to make votes count.<sup>2</sup>

Voters are characterized by a very general vote function that is able to reflect electoral dynamics in a wide range of settings. In some cases (e.g., many of the African electoral authoritarian regimes), voters appear to be strongly driven by ethnicity and expectations of particularistic transfers. In other cases, voters are also motivated by policy issues and/or fundamental cultural divides (e.g., Malaysia, Mexico, Taiwan). Policy issues can be conceived as *distributive issues* where parties and voters divide along conventional topics such as taxation, tariffs, and social policy. Voters also may care about *cultural issues* such as the role of women in society, abortion, and the like.

The nonissue voting factors are (1) spoils and government transfers which are monopolized by the autocrats; (2) voters' group affinities that might be derived from ethnicity, religion, language, clan, or other group affiliations; and (3) voters' regime affinities wherein proregime voters identify with the existing political institutions and regard them as legitimate, and antiregime voters oppose the status quo and consider the existing institutions illegitimate. The appendix provides a general voter function

<sup>2</sup>The model presupposes certain stability in the party system (e.g., Mexico, Senegal, Gabon, Tanzania, Kenya, Malaysia, Botswana) because parties care about future electoral support. However, since voters are also important because they define the parties' "protest potential," the model also speaks to cases where parties are personalistic and less stable (e.g., Ukraine, Georgia, Peru).

that includes standard policy issues as well as nonpolicy factors.

The game of fraud is played through time such that changes in voter loyalty can be attributed to the *history of moves*. To simplify, the model assumes that voters remain loyal to their party and protest on its behalf on the grounds of their regime, ethnic or religious affinities, and their issue positions only if it follows the "right" course of action, namely upholding legality. This means that if elections are clean, all those voters who supported the ruling party at time  $t$  should vote again for this party at time  $t + 1$ . By the same token, all those voters who supported an opposition party should remain loyal to this party if it acquiesced to clean elections; and if this party challenged electoral fraud when this actually took place, its voters should protest against fraud *and* vote for this party in the next elections. This is a minimal form of social consensus about the value of upholding legality, which forms the baseline of citizens' calculations.

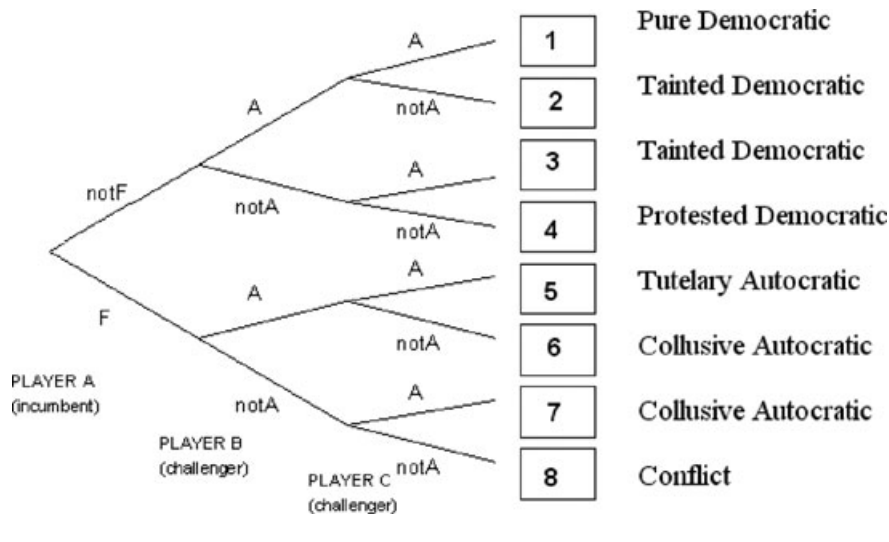
But when parties follow the "wrong" course of action the consensus breaks down, generating a *realignment of voter loyalty* depending on how voters factor the parties' fraud-related strategies in their utility functions and on their ranking of the alternatives. When the ruling party commits fraud, authoritarianism is harshening, which implies a movement farther away from the opposition on the regime-affinity dimension. This movement will translate into a drop of support from a voter subgroup, which I call *moderate ruling party voters*,  $M_A$ , for whom the disutility of electoral fraud is larger than the utility differential between the autocrat and the closest opponent. This subset of ruling party voters will switch support to the opposition and protest on its behalf against fraud.

When an opposition party accepts an electoral fraud, this party moves closer to the autocrat on the regime-affinity dimension. By acquiescing to fraud, party B will alienate a subgroup of its supporters. I label this group *radical opposition voters*,  $R_B$ , who will switch allegiances to party C and follow this party to protest against fraud.<sup>3</sup> *Ceteris paribus*, the more antiregime opposition voters are and the less polarized they are along ethnic, religious, or cultural lines, the higher the proportion of radical opposition voters who will sanction collusive oppositions and protest against fraud even when this is committed against a different party.

By a similar token, when opposition party B challenges clean elections, it becomes more antiregime

<sup>3</sup>If both opposition parties acquiesce to the electoral fraud, radical voters of both parties might just not turn out, or look for a fringe alternative to both opposition parties.

**FIGURE 2 Extensive Form Representation of the Game of Fraud**



because it endorses unnecessary political violence. Party B will be punished by a subgroup of its supporters,  $M_B$ , whom I call *moderate opposition voters* for whom the disutility of having party B challenge clean elections makes them no longer prefer this party. Voters belonging to  $M_B$  will punish party B by switching support to party C or the ruling party, whichever is closest.

Lastly, there are three sets of *core voters* for each of the parties; these voters will not punish their party for following the “wrong” courses of action because the disutility of those actions does not make them prefer a different alternative. Unlike radical voters, core voters will not protest against a fraud that is committed against a different opposition party. *Ceteris paribus*, the higher the polarization along economic, political, and cultural issues, and the more the opposition is divided by ethnicity and/or religion, the higher the percentage of core voters.

### The Strategic Game

Figure 2 presents the extensive form representation of the game. The game is sequential, which means the ruling party moves first knowing its vote support; party B moves second knowing the incumbent’s strategic choice; and party C moves last. The outcomes are numerated from 1 to 8. In the first four outcomes the ruling party refrains from electoral fraud. I call these “democratic outcomes,” although not all of them imply the establishment of democracy—the autocrat can hold clean elections and continue to rule without transforming the existing insti-

tutions, the patronage networks, or the threats of violence, and can still threaten to steal elections the next time.

The first of the outcomes is a “pure democratic outcome,” where alternation in power is not necessary, but elections are clean and accepted by everyone. The second and third outcomes are “tainted democratic outcomes”—the ruling party enforces clean elections, one of the opposition parties challenges these results, and the other accepts them. The fourth outcome is a “protested democratic outcome”: despite the absence of fraud, both of the opposition parties protest the results.

The last four outcomes are “autocratic outcomes” that entail that the ruling party resorts to fraud. When there is an electoral fraud, and both challengers consent to it, I call this a “tutelary autocratic outcome.” In a “collusive autocratic outcome,” one of the opposition parties becomes an accomplice of the regime, while the other is left to challenge the results alone. In the last outcome, social order is destroyed because both opposition parties contest the results through massive street demonstrations. Depending on the magnitude of the mass mobilization and on whom the armed forces back, office could go either way, or the military itself might step in.

Table 1 presents the payoff structure of the game. We can think of the payoffs for the parties as a shift in utility level as compared to a baseline of no fraud and acquiescence, ( $\bar{U}_i$ ). Fraud is a subversion of the electoral process, in which voter preferences are no longer respected in the allocation of the spoils of office, denoted in this model by the shorthand of S (cabinet positions, legislative seats, governorships, etc.). Fraud affects utility according to its marginal effect on seat shares  $S$ . F can be positive, in the

TABLE 1 Payoff for Game with Perfect Information

Democratic Outcomes	Party A	Party B	Party C
Pure Democratic (1)	$\bar{U}_A$	$\bar{U}_B$	$\bar{U}_C$
Tainted Democratic (2) (C Protests)	$\bar{U}_A + \delta L'_A M_C$	$\bar{U}_B$	$\bar{U}_C - \delta L'_C M_C - r$
Tainted Democratic (3) (B Protests)	$\bar{U}_A + \delta L'_A M_B$	$\bar{U}_B - \delta L'_B M_B - r$	$\bar{U}_C$
Protested Democratic (4)	$\bar{U}_A + \delta L'_A (M_B + M_C)$	$\bar{U}_B - \delta L'_B M_B - r$	$\bar{U}_C - \delta L'_C M_C - r$
<b>Autocratic Outcomes</b>			
Tutelary Autocratic (5)	$\bar{U}_A + S'_F(F)$	$\bar{U}_B + S'_B(F_B) - \delta L'_B R_B$	$\bar{U}_C + S'_C(F_C) - \delta L'_C R_C$
Collusive Autocratic (6) (B colludes)	$\bar{U}_A + S'_F(F) - \delta L'_A M_A - e$	$\bar{U}_B + S'_B(F_B) - \delta L'_B R_B$	$\bar{U}_C - S'_C F_C + \delta L'_C (M_A + R_B) - r$
Collusive Autocratic (7) (C colludes)	$\bar{U}_A + S'_F(F) - \delta L'_A M_A - e$	$\bar{U}_B - S'_B(F_B) + \delta L'_B (R_C + M_A) - r$	$\bar{U}_C + S'_C(F_C) - \delta L'_C R_C$
Conflict (8)	$E[W_A]$	$E[W_B]$	$E[W_C]$

most common case where autocratic incumbents remove votes from their opponents, but it can also be negative, reflecting a bribe in the form of seats and/or spoils that the ruling party may give to buy off some of its opponents. The payoff for the ruling party of electoral fraud is denoted by  $S'_A F = F$ , where  $F$  stands for the votes stolen from the opposition ( $F = F_B + F_C$ ).

As detailed in the appendix, the optimal choice of  $F$  by the autocrats is given by the utility of fraudulently obtained seats that must be traded off with some future “loss of legitimacy,” represented as  $L'$ , which is discounted by a factor  $\delta$ . The legitimacy loss of fraud can be conceived as the costs to the autocrat of damaging its reputation before its own supporters and/or before the international community.<sup>4</sup> The model thus assumes that if fraud is known, it will invariably be costly for the incumbent. When the opposition is divided, the repressive apparatus is expected to remain loyal to the autocrats. However, the ruling party still needs to pay a cost of  $e$  of enforcing the fraud.

The effect of fraud on the opposition is denoted by the marginal effect on seats  $S'$  multiplied by the size of the fraud ( $S'_B F_B$  and  $S'_C F_C$ ). The electoral benefits of contesting or acquiescing the elections are expressed as  $R$  and  $M$ , which represent radicals and moderates who shift their party allegiance in the next elections; these are discounted by a factor  $\delta$ . If the opposition protests the elections, it pays a cost of  $r$ .

Finally, the payoff for the three players of the Conflict outcome where *both* opponents contest the results through massive street demonstrations is denoted by the

expected net utility of a gamble of war,  $E[W_i]$ . The net expected value of Conflict is simultaneously shaped by whether the repressive apparatus will remain loyal to the regime, will act on its own, or will switch sides, and by each party’s “protest capacity.” Given that the military can oust the rulers through a coup, the sum of the probabilities of attaining power through war for each of the players is less than one,  $\sum P_i < 1$ .

### Solution of the Game with Perfect Information

Rather than finding a unique solution to this game, there are several possible equilibria, depending on the specific parameter values:

**Collusive Autocratic Outcome.** If at least one of the opposition parties is not willing to risk war,  $\bar{U}_i + S'_i(F_i) - \delta L'_i R_i > E[W_i]$  for some  $i$ , a collusive autocratic outcome will emerge, provided the incumbent is better off making fraud. The “tutelary autocratic outcome” where both parties comply after fraudulent elections are held is not equilibrium as long as the costs of protesting,  $r$ , are smaller than the expected electoral sanction by party’s  $i$  radical voters ( $\delta L'_i R_i > r > 0$ ) for some  $i$ . If  $r > \delta L'_i R_i$  a “tutelary autocratic outcome” is an equilibrium.

Thus, the model suggests that an “autocratic collusive equilibrium” will be more likely as the value of Fraud, ( $S'F$ ), to the compliant opponent increases. This means that one opponent is bought off with a bribe of seats and spoils, while the burden of fraud is mostly borne by the protesting opponent. An implication of this argument is that, *ceteris paribus*, where oppositions lack access to resources (due to state control of the economy,

<sup>4</sup>Levitsky and Way (forthcoming) suggest that in the post-Cold War era the external legitimacy costs of fraud have increased, particularly for countries with close ties to and/or high levels of dependence on the West.

large-scale patrimonialism, and/or sheer underdevelopment), they are far more likely to accept joining the government and endorse fraudulent elections than where they have alternative means to finance their organizations.<sup>5</sup> Autocrats most commonly co-opt opponents by offering them access to the executive (Arriola 2004). By entering the executive, the opposition gains more direct control of patronage jobs and state resources. But as suggested by Gandhi and Przeworski (2006) and Gandhi (2008), autocrats can also co-opt opponents by offering them a place in the legislature. The Mexican case below illustrates that legislative seats need to entail effective policy influence to serve as instruments of co-optation.

The model also suggests that the “autocratic collusive equilibrium” is more likely the smaller the size of radical voters,  $R$ , who will abandon the compliant rival in favor of the defiant one. A small number of radical voters works both to reduce the value of the electoral punishment afforded by the compliant rival, ( $L'R$ ), as well as diminishing the opposition’s “protest potential.” Thus, voters directly shape the opposition’s decision to collude or rebel by shaping the costs and benefits of these courses of action.

The model further suggests that the “autocratic collusive equilibrium” is more likely as the legitimacy costs of fraud and the costs of enforcing it decrease for the autocrat. An obvious implication of this result is that where states are strong, governing parties will be better equipped to carry out and enforce fraud. Where state capacity is low or governing parties are weak, it might be significantly harder to enforce fraud even against divided opponents.<sup>6</sup>

Lastly, it should be emphasized that the “autocratic collusive equilibrium” is sustained through a credible threat of repression, which dissuades one of the opposition parties from coordinating to rebel. The structure of the strategic interaction is akin to a prisoner’s dilemma, although in this game cooperating does not guarantee a Pareto optimal outcome. If both opposition parties mobilize their supporters to protest against fraud, they might be able to oust the autocrats only if the revolution is successful. Assuming that the opposition has no military capacity to win a revolt, the probability of ousting the autocrats through massive acts of civil disobedience will crucially depend on whether the military backs the rulers or switches sides (see Gandhi and Przeworski 2008). If the

military is expected to back the autocrats and repress the masses, the opposition elite will refrain from orchestrating a rebellion. A successful revolution is possible only when the masses coordinate a postelectoral revolt and the repressive apparatus defects either because they can’t kill everyone or because they are not willing to.

Mexico in 1988 fits this characterization. The PRI (Institutional Revolutionary Party) committed massive fraud in the 1988 presidential elections against Cuauhtémoc Cárdenas of the Frente Democrático Nacional (which eventually became the PRD or Party of the Democratic Revolution). The official results of the 1988 elections gave the victory to the PRI’s presidential candidate, Carlos Salinas. On election night the candidates of the Frente Democrático, the PAN (National Action Party), and the PRT (Workers Revolutionary Party) signed a joint petition, the “Call to Legality,” which denounced the fraud and called for the annulment of the elections. However, the PAN soon backed away and decided not to join Cárdenas and his supporters in protesting the fraud.

Two main reasons explain why the PAN chose not to join the cause of civil disobedience against the 1988 fraud: First, this party concluded that the dangers of confronting the government were too high—as reported by then-President Miguel de la Madrid in his memoirs, elements of the armed forces had gathered in the basements of several buildings in downtown Mexico City and were ready to confront the masses with force. Second, the PRI was able to offer the PAN significant side payments, including a large number of legislative seats that had the potential to translate into real policy influence. The official results implied that the distribution of legislative seats would give the PRI a majority in the Chamber of Deputies, but this party would no longer control the supermajority to modify the constitution. This meant that the PAN would become a veto player in the policymaking game for the first time since its creation in 1939. For example, this party would be able to trade its support for the president’s market-oriented reforms (which entailed constitutional reforms) for two major electoral reforms in 1991 and 1993 (Magaloni 2005).

The PAN had a long tradition of opposing the PRI. Throughout the late 70s and 80s, PAN voters engaged in numerous acts of civil disobedience to contest fraudulent local elections. Some of these voters abandoned their party and joined Cárdenas’s cause. But the majority of PAN voters refrained from protesting against the 1988 fraud and remained loyal because they confronted a dilemma: the left-wing alternative was a worse choice than tolerating the PAN’s collusion with the autocratic regime. Mexican voters divided along two main dimensions of party competition: the regime dimension, where

<sup>5</sup>I thank an anonymous reviewer for pointing out the connection of the model to the oppositions’ resource base. See Arriola (2006) for a discussion of the importance of economic resources in enabling the opposition to form electoral fronts in Africa.

<sup>6</sup>I thank an anonymous reviewer for highlighting this.

supporters for both opposition parties stood next to each other, and the socioeconomic and cultural dimensions, where these parties clearly divided. These ideological differences prevented PAN voters from resisting the 1988 fraud because it was not in their interest to empower the left.

Gabon provides another example of an “authoritarian collusive equilibrium.” El Hadj Omar Bongo was able to get away with electoral fraud by selectively co-opting the opposition into the government. In 1992 Bongo was elected over 13 competitors by a narrow 51.18% of the vote, and the result was challenged by runner-up Paul M’Ba-Abessole of the National Rally of Woodcutters (RNB), who announced the formation of a parallel government. Postelectoral unrest subsided as Bongo sent the armed forces and began to negotiate with other opposition leaders the formation of a government of “broad consensus.” Six opposition leaders were eventually incorporated in the Bongo government. In 1998 he was able to secure a massive victory for a seven-year term over a severely divided opposition, which again claimed that the elections were tainted by “massive fraud.” His massive victory allowed him to renege on his promise of significant institutional reforms, including the creation of an independent electoral commission.

*Democratic Outcome (Through Threat of a Train Crash).* In this scenario, the autocrat refrains from committing fraud and respects the outcome of the elections even when it loses because both rivals can credibly threaten to challenge the electoral fraud ( $E[W_i] > \bar{U}_i + S'_i(F_i) - \delta L'_i R_i$  for both B and C), and the ruling party is not willing to risk war,  $\bar{U}_A > E[W_A]$ . The “contested democratic outcomes” where one party or both parties falsely accuse the autocrats of fraud are not equilibria in the game with perfect voter information because moderate voters punish slandering, and because it is costly to protest against the elections.

Although peaceful, this “train crash” route to democracy is produced by a credible threat of mass revolt. In this case, democracy ensues only when both opponents can resist the temptation to get co-opted into the government. Voters can play a strong role in enticing rivals to resist this bribe. Suppose that the autocrats stole the election from party B and party C must decide to rally behind the call for civil disobedience or collect its institutional payoffs and remain silent. If party C’s voters are disproportionately *radical* and this party obeys, its voters will sanction it by rallying behind party B to protest against fraud and support this party in future elections. Anticipating massive desertions from its supporters and huge demonstrations in favor of party B, party C might be better off joining the revolt. This logic closely approximates the rebellion,

further discussed below, that spontaneously formed to defend Mikheil Saakashvili during the Rose Revolution in Georgia.

This form of spontaneous voter coordination against fraud will be hard to achieve where the opposition is highly polarized along ethnicity, ideology, religion, and/or cultural norms. The number of radical voters increases as the political system becomes more polarized along the regime-affinity dimension. More polarization along this affinity dimension implies that regime-related issues (human rights abuses, corruption, public insecurity, fear of state abuse, economic collapse, etc.) will dominate over distributive policy and/or cultural divisions, and over other group affinities such as ethnicity. Suppose that the dictator is highly predatory—he rules by confiscating property, levying harsh taxation on his subjects, violating human rights, and enriching himself and a small group of cronies. Opposition voters are likely to disagree on many grounds, but if the dictatorial nature of the regime is unambiguous and their lives are miserable under the current system, their disagreements are likely to be less important than their dislikes for the dictatorship. A clear implication of this result is that a mass revolution against fraud will paradoxically be more likely in more repressive or less compromising autocratic regimes. Times of crisis (corruption scandals, economic recession, loss in war, a natural disaster) should also facilitate collective action by turning the regime-affinity dimension more salient.

However, massive spontaneous voter coordination against fraud is not that common in institutionalized party systems. As Senegal, Mexico, Kenya, and Gabon, to name a few, suggest, “autocratic collusive equilibria” are likely to be enduring where voters are vested into institutionalized oppositions. In all of these cases, oppositions were selectively bought off with government positions and spoils, and rather than experiencing massive voter defections for colluding with the autocrats, these parties could use their access to government positions and spoils to deliver benefits to their supporters and bolster their organizations. The dilemma is that the more institutionalized the opposition becomes, the less prepared it is to coordinate a revolt and sanction electoral abuses.

One way out of this dilemma is to precommit to stand united against fraud by *coalescing prior to the elections* behind a common presidential candidate, as occurred in Senegal in 2000 and Kenya in 2002 (see Howard and Roessler 2006). Although the model presupposes at least two political parties that compete vis-à-vis the dictator and against each other, the approach can easily be extended to cases where there is only one relevant opposition party or where the opposition forms a united electoral front by erasing the payoffs of the second

opposition party. The clearest implication of turning the game into a two-player game is that it becomes harder for the dictator to rig the elections with impunity. The reason is that opponents will be able to more credibly threaten to mount a successful rebellion if the autocrat refuses to hold clean elections and cede power.

Senegal in 2000 and Kenya in 2002 fit the characterization of a “train crash” scenario wherein the credibility of mass revolt against potential electoral abuses came from the establishment of opposition fronts *prior* to the elections. The Senegalese Socialist Party (PS) governed for 40 years, since the nation’s independence in 1960. Elections prior to 2000 had been regularly tainted by allegations of electoral fraud and violent clashes with the opposition. The PS responded to these confrontations by, among other actions, selectively co-opting its opponents into the government. Before the 1998 legislative elections, the PS put in place a National Election Observatory (ONEL), but its independence was questionable because its president was appointed by President Abdou Diouf himself. Those elections were tainted by allegations of fraud. Prior to the 2000 presidential elections, 20 opposition parties came together under the Front for the Regularity and Transparency of the Election (RTE). They organized several thousands of supporters, mainly youth, to demand clean elections. For the first time in Senegal’s history, the PS did not obtain an absolute majority of the vote in the first round. In the second round, all seven opposition candidates swung behind Abdoulaye Wade in a coalition, “Alternance 2000,” in order to oust President Diouf. The main campaign issue uniting the opposition was change (“Sopi”). In the second round, Wade obtained 60% of the vote and Diouf 41%. This article’s theoretical approach suggests that the PS yielded power peacefully because the opposition was sufficiently strong and united to make a credible threat of rebellion had the ruling party attempted to reverse the outcome of the elections.

A similar dynamic led to KANU’s electoral defeat in 2002. The KANU governed consecutively from 1964 until 2002. After instituting multiparty elections in the early 1990s, KANU continued to rule by rigging the elections, excluding key opponents from the ballot, and coercing voters. With only 36% and 40% of the vote, Daniel arap Moi won the 1992 and 1997 presidential elections, respectively, because the opposition was severely divided, mostly along ethnic lines. Both of these elections were marred by allegations of electoral fraud and hideous violence. In the 1992 elections, the opposition divided into two main groups: the Democratic Party (DP) of the former Vice President Mwai Kibaki (a Kikuyu) and the Forum for the Restoration of Democracy (FORD), headed by Oginga Odinga (Luo) and by Kenneth Matiba (Kikuyu). FORD,

in turn, fell apart a few months before the elections into a group led by Matiba (FORD-Asili, which combined part of the Kikuyu and part of the Luhya communities) and a group led by Oginga Odinga (FORD-Kenya, a coalition of the Luo and part of the Luhya communities; Foeken and Dietz 2000, 126). In the 1997 elections, the opposition was even more divided—there were 14 opposition candidates for the presidency and 24 opposition parties took part in the general elections. In the 2002 presidential elections, the opposition stood united for the first time and KANU was defeated by the landslide victory for the National Rainbow Coalition. Despite the fact that electoral fraud had been a common practice in the 1990s, the KANU chose to respect the results of the 2002 elections and yielded power peacefully because this time the opposition could credibly threaten to rebel vis-à-vis a potential reversal of the electoral outcome.

*Massive Conflict.* This outcome emerges as equilibrium if the autocrats prefer the gamble of war to a transition to democracy:  $E[W_A] \geq \bar{U}_A$ ; and both opposition parties prefer this gamble to acquiescing with electoral fraud:  $E[W_i] > \bar{U}_i + S'_i(F_i) - \delta L'_i R_i$ . If the opposition is able to disrupt social order by coordinating massive street protests, the armed forces must decide to confront them by force, or to refrain from carrying out mass killings either by ousting the rulers through a military coup, or by switching sides and supporting the opposition. In this case, democracy will emerge as a result of a “civil revolution.”

For massive conflict to be the equilibrium of the game, *all* of the players must consider the payoff they will obtain from a gamble of war to be higher than what they can obtain by following a different course of action. Hence, both opposition parties must (1) discount the value of being bribed to join the autocratic government relative to what they expect to obtain if they fight together; (2) expect a successful revolution; and (3) anticipate they will be able to share the spoils of power after ousting the autocrats. The autocrats, for their part, must discount the value of losing over their chances of retaining power through fraud and force.

The Rose Revolution in Georgia and the Orange Revolution in Ukraine fit this characterization. Georgia held parliamentary elections on November 2, 2003. The presidential election would not occur until the spring of 2005, at the expiration of President Eduard Shevardnadze’s final term. Mikheil Saakashvili claimed that he had won the elections, and this claim was supported by independent exit polls as well as an independent parallel vote tabulation conducted by a local election-monitoring group. Massive antigovernmental demonstrations started in Tbilisi, soon involving almost all major cities and towns. The main

opponents (Nino Burjanadze and Zurab Zhvania) united to demand the ousting of Shevardnadze. He attempted to open the new session of parliament but was interrupted by the opposition, which ruptured into the building with roses in their hands (hence the name Rose Revolution).<sup>7</sup> Shevardnadze was forced to escape from parliament with his bodyguards. He later declared a state of emergency and began to mobilize troops and police near his residence in Tbilisi. However, the armed forces refused to support the government. On November 23, Shevardnadze met with the opposition leaders and after the meeting, he announced his resignation. More than 100,000 protesters celebrated the victory all night long. The outgoing speaker of parliament, Burjanadze, assumed the presidency until new elections could be held. The Supreme Court annulled the results of the parliamentary elections. In January 2004, Saakashvili was elected president.

Ukraine in 2004 provides another example of a conflict outcome that eventually resolved in a transition to democracy. Viktor Yanukovich attempted to rig the 2004 presidential elections, claiming a slim margin over Viktor Yushchenko (who was later confirmed to have been poisoned). However, the mass public mobilized forcefully against the fraud with widespread acts of civil disobedience. Television coverage of opposition rallies and opposition statements were for the first time reported after a revolt against government censorship by the broadcast media. Ukraine's outcome in 2004 was made possible to a large extent because the armed forces chose not to support Viktor Yanukovich. The "orange revolution" eventually led the Supreme Court to annul the elections and call for a repeat of the second round, which Yushchenko won with about 52% of the vote. He was declared the victor.

In both of these cases, transitions came as a result of "civil revolutions" where massive street demonstrations triggered the defection of the military and other elite insiders, including justices of the Supreme Court. In Ukraine the opposition stood united behind a major opposition force, making voter coordination against fraud more straightforward. In Georgia the spontaneous voter revolution played a decisive role in enticing Nino Burjanadze and Zurab Zhvania to join Saakashvili's cause. Massive antigovernmental demonstrations in Tbilisi and soon in all major cities and towns made it clear to party elites that it was better to join the cause of civil disobedience than to seek to forge alliances with the regime. A factor that facilitated the spontaneous voter revolution in Georgia was that the party system was centered on personalities rather than enduring party organizations, as oc-

curred in Mexico, Senegal, or Gabon. This made it easier for the mass public to follow the general call for civil disobedience wherein antiregime issues prevailed over other voter divisions.

*Democratic Outcome (Through Autocratic Self-Restraint).* When the conditions of a collusive outcome hold, except that the autocratic party no longer finds it profitable to engage in electoral fraud,  $S'_F \leq \delta L'_A L + e$ , a democratic outcome emerges. In this case electoral transparency can ensue even when the opposition remains divided. The autocrats find that they are better served by democracy because the legitimacy costs of engaging in fraud *and* the costs of repressing are larger than the benefits of fraud. The article will discuss in the next section the case of Mexico, where a divided opposition could curb electoral tyranny by persuading the autocrats to credibly commit to hold clean elections through the creation of an independent electoral commission.

## Limited Information about Fraud

The game thus far has assumed that voters know the actual election results. This assumption is problematic. Electoral fraud is often carried out in secret, and most of the time it is negotiated behind closed doors. Autocrats often control the mass media, and as a consequence, results of independent opinion polls and the oppositions' allegations of fraud are seldom broadcasted.

When there is no credible information about the actual election results, voters need to find ways to infer whether there was fraud or not, and they will invariably receive mixed messages from party elites. This problem would call for a revised model of imperfect information, in which parties might be able to signal through their actions to voters whether fraud has taken place or not. Rather than assuming a great degree of voter sophistication—as in signaling models in which equilibrium involves both rational strategic choices and consistency of beliefs—the article assumes that voters take cues from their parties as an informational shortcut and that these cues are filtered through their own preconceptions about the regime.

As before, voters are classified according to their dispositions to switch allegiances as a result of the parties' fraud-related strategies, and also according to their *prior beliefs about fraud*, which are shaped by their regime affinities or beliefs about the legitimacy of the existing electoral institutions. To simplify, voter types are presumed to share the same beliefs about fraud. Radical voters are presumed to be most distrustful about the

<sup>7</sup>Foreign donors also played a role in the Rose Revolution—George Soros provided substantial funds to the opposition.

**TABLE 2 Game of Limited Information**

PARTY A	PARTY B	PARTY C	
Not Fraud	Acquiesce	Acquiesce $\bar{U}_A$ $\bar{U}_B$ $\bar{U}_C$	Protest $\bar{U}_A + \delta L'_A M_C$ $\bar{U}_B - \delta L'_B R_B$ $\bar{U}_C + \delta L'_C (R_B - M_C)$
	Protest	$\bar{U}_A + \delta L'_A M_B$ $\bar{U}_B + \delta L'_B (R_C - M_B)$ $\bar{U}_C - \delta L'_C R_C$	$E[W_A]$ $E[W_B]$ $E[W_C]$
PARTY A	PARTY B	PARTY C	
Fraud	Acquiesce	Acquiesce $\bar{U}_A + S'_F(F)$ $\bar{U}_B + S'_B(F_B)$ $\bar{U}_C + S'_C(F_C)$	Protest $\bar{U}_A + S'_F(F) + \delta L'_A M_C$ $\bar{U}_B + S'_B(F_B) - \delta L'_B R_B$ $\bar{U}_C - S'_C F_C + \delta L'_C (R_B - M_C)$
	Protest	$\bar{U}_A + S'_F(F) + \delta L'_A M_B$ $\bar{U}_B - S'_B(F_B) + \delta L'_B (R_C - M_B)$ $\bar{U}_C + S'_C(F_C) - \delta L'_C R_C$	$E[W_A]$ $E[W_B]$ $E[W_C]$

democratic credentials of the regime; they will not believe elections are clean unless there is ample consensus and *both* opponents agree. Moderate voters are presumed to be less skeptical of the illegitimacy of the existing institutions; they will not believe allegations of fraud unless *both* opposition parties challenge the results. Core voters, for their part, are presumed to simply mimic elites from their own party.

These simple assumptions about voters' differing prior beliefs about fraud and how these shape their behavior allow me to transform the game reflecting limited voter information. Table 2 presents the payoffs in normal form for the subgame of no fraud in the upper panel, and the subgame of fraud in the lower panel (to simplify, the payoffs here ignore the costs of enforcing the fraud,  $e$ , and protesting the elections,  $r$ ). The basic differences between the payoffs of the game of imperfect information compared with the previous discussion are three: (1) Radical voters shift loyalty in favor of the defiant party and protest regardless of whether there is fraud or not. (2) Moderate opposition voters abandon the defiant party and refrain from protesting even if there is fraud. (3) When both opposition parties contest the election, conflict emerges irrespective of the material reality of fraud.

The game generates important results about the effects of limited voter information on the nature of the strategic interaction. Lack of information about fraud can work in favor of the autocrats but also against them, depending on the distribution of voter types and prior beliefs about fraud. If the opposition is *mostly moderate* and not too skeptical of the legitimacy of the existing institu-

tions, limited voter information about fraud will work in favor of the autocrats. In this case, unless both opposition parties agree that there is fraud, fewer voters will protest and a party that challenges the elections will confront the paradoxical result of being punished at the polls even when fraud actually took place. In the game with perfect voter information, these results do not hold: moderate voters always protest against a real fraud and they never punish their party for challenging it. These results suggest why lack of information about fraud can increase the opposition's coordination dilemmas. The findings parallel Fearon's (2006), where "partially rigged elections" for which there is no clear public signal about fraud make it hard for society to coordinate against potential dictatorial abuses.

However, this article differs from this work in two main respects: first, coordination against electoral fraud is problematic *even when everyone knows about it* because there is voter heterogeneity that prevents everyone from rebelling against it. Second, the model identifies ways in which limited information about fraud might actually end up working *against* the autocrats. Clean elections are never challenged when there is perfect voter information. By contrast, the opposition can protest clean elections in the game with imperfect voter information. In Table 2, a pure democratic outcome where the incumbents hold clean elections and both rivals obey is not an equilibrium when  $R_B + R_C > M_B + M_C$ . Here parties B and C both possess incentives to contest clean elections as a mobilizational strategy, to attract the support of the radical electorate. Assuming that war is a dominated

strategy, the strategic situation turns into a Chicken game. There are two equilibria in this game (party B acquiesces and party C challenges and party B challenges and party C acquiesces). This Chicken game is played out even when the autocrat refrains from committing fraud.

### Delegating to an Independent Electoral Commission

When would an autocrat willingly self-restrain by delegating the organization and monitoring of elections to an independent electoral body? This article provides an answer to this crucial question. An implication of the game of imperfect information is that opposition parties can challenge clean elections. This creates a dilemma for the autocrat: the opposition might refuse to endorse the electoral process *regardless of whether there is fraud or not*. The autocrat can't solve this dilemma simply by promising to uphold clean elections because this promise is not credible. The only way to commit an intransigent opposition to the electoral process is if the autocrat credibly ties his hands *ex ante* to not commit fraud. One way of doing this is by delegating the organization of the elections to a truly independent electoral commission. In delegating the organization of the elections to this type of institution, the autocrat can entice the opposition to invest in the existing institutions rather than rebel.

The incentives to delegate to an independent electoral body arise only when two conditions are met: the autocrat must reasonably expect to win clean elections; and the opposition must be able to credibly threaten to contest the elections even if these are clean. In this game, the credibility of this threat crucially depends on the opposition's electoral base or whether parties are endowed with a sufficiently large number of core and/or radical voters who will protest the elections if elites tell them to and even if there is no real fraud. Thus, independent electoral bodies are only expected to arise where autocrats expect to be able to win elections without resorting to fraud, and where their opponents can credibly jeopardize real electoral victories through costly protests. After a truly independent electoral body is established, the opposition should no longer contest the elections. For this solution to work, the electoral commission must be truly independent and credible—e.g., the autocrat and the opposition must have equal representation on its board; it must have sufficient power to control the electoral process; and it must be highly regarded by the mass public. In creating an independent electoral commission, a form of rule of

law in the electoral realm can emerge, even if the ruling party continues to win elections.

Mexico in 1994 clearly illustrates these arguments. Just after the Zapatista guerilla uprising in December of 1993 and the assassination of the PRI's candidate in March of 1994, the government began negotiations with the PAN and the PRD to persuade the major political players "to embrace institutional channels to process their differences" rather than violence. The electoral reform created an independent electoral commission, the Federal Electoral Institute (IFE), in charge of the 1994 presidential elections. One key reason why the PRI chose to enact the electoral reform, and to start negotiations with the PRD, just prior to the presidential elections was to deter violence from erupting after the elections. The reform was a way of committing the PRDistas to the electoral process. Salinas offered the independence of the IFE to persuade the PRD and its supporters to endorse the electoral process rather than joining the Zapatistas in their declaration of war against the government. Who was going to follow Cárdenas (three-time candidate for this party) into the streets to protest the election results if it was clear that the PRI had no way of stealing the vote from them? However, Carlos Salinas offered this concession because he knew that his party would comfortably win the coming presidential elections given that all major opinion polls gave him a huge lead. The IFE's reform credibly restrained electoral abuse. The PRI gave up its unilateral control of the IFE's board and the electoral body was given sufficient power and institutional resources to control the elections. Furthermore, since the ruling party no longer controlled the supermajority in the Chamber of Deputies, it was no longer possible to undo the IFE's reform after the elections.

The 1994 reform also had an international audience in mind. Carlos Salinas, his economic advisors, and the PRI cared about how a protested election would harm their international reputation and contribute to capital flight. After the Zapatista uprising, and especially after the killing of the PRI's presidential candidate, Luis Donaldo Colosio, national and international investors had given clear signals that they would leave if more violence erupted by switching their investments from *Cetes* that were denominated in pesos to the dollar-denominated *Tesobonos*. Moreover, the Zapatista uprising had received ample international media coverage, and this put the coming presidential elections at the center of attention in the United States and Europe, increasing the costs for the PRI of a protested election. Although the IFE's reform also had an international audience in mind, its primary cause and audience were domestic. That is, the IFE's reform necessarily had to be accepted by the PRD and its

supporters, or otherwise they would have protested the 1994 presidential elections. This discussion suggests that electoral bodies, to be effective instruments to curb electoral abuse, must necessarily be backed by effective threats of internal rebellion; otherwise they will mostly serve as window dressing.

## Conclusion

Even when their opponents are able to defeat them in elections, autocrats often resort to electoral fraud to maintain power. Under this condition, their survival simultaneously depends on whether the opposition fails to coordinate a mass revolt and on the ruler's reliance on the repressive apparatus to enforce this fraud.

The article begins by assuming a divided opposition, which is highly common in autocratic regimes (Lust-Okar 2005). When confronting electoral abuse, opposition party elites must decide to revolt even when fraud is not committed directly against them, or to collect their institutional payoffs and remain silent. If they cooperate in organizing massive acts of civil disobedience against fraud, opponents might be able to oust the autocrat, although they can also be crushed by the repressive apparatus. If they acquiesce to fraud, opposition party elites will be able to gain some access to government positions and spoils, which can be used to bolster their organizations in the future. The dilemma is that the more the opposition institutionalizes, the less prepared it is to restrain autocratic abuses because it becomes increasingly harder to unite to revolt against electoral fraud.

One way out of this dilemma, the article suggested, is for the opposition to precommit to stand united against a potential fraud by endorsing a single presidential candidate and coalescing *prior* to elections. This form of opposition unity makes mass revolt against potential electoral abuse more credible and a transition to democracy possible. But democracy can also emerge when the opposition elite remains divided. This route to democracy entails a spontaneous voter revolt against fraud. One of the crucial implications of the model is that a voter-led revolt against fraud might only take place where there is strong polarization along the regime-affinity dimension such that voters would be willing to desert compromising opponents who collude with the autocrat and switch support to whichever party leads the call for civil disobedience. Polarization along this dimension implies that regime-related issues such as human rights abuses, economic collapse, or fear of state abuse dominate over distributive policy and/or cultural divisions, and over other group affinities such as

ethnicity. This form of mass revolt against fraud is also more likely in less institutionalized party systems that are centered on personalities.

The article further identified some conditions under which autocrats will willingly tie their hands not to commit fraud by delegating power to independent electoral commissions: the opposition must be able to credibly threaten to contest the elections *even when these are clean*, and autocrats must know they can win without fraud. The article shows that contesting clean elections takes place in equilibrium when there is limited information about fraud and voters distrust the autocrat's claims of electoral transparency. The autocrat can't solve this dilemma simply by promising to uphold clean elections because this promise is not credible. The only way to commit an intransigent opposition to the electoral process is if the autocrat credibly ties his hands *ex ante* not to commit fraud by transforming the existing institutions. One way of doing this is by delegating the organization of the elections to a truly independent electoral commission that can persuade the opposition to endorse them.

The article demonstrates that opposition unity and a credible threat of massive civil disobedience make it *harder* for autocrats to steal the elections, but other factors also matter. The players' strategic calculations in each of the paths toward democratization the article identified are also influenced by structural factors, including the opposition's access to economic resources, state capacity to enforce fraud, and as in Levitsky and Way (forthcoming), the international environment. For example, international factors can affect the informational atmosphere—e.g., international observers (Hyde 2007) and the international media can mitigate information asymmetries about fraud. International factors might also influence the armed forces' behavior—e.g., repression will be more costly if events surrounding the elections receive international coverage and/or elite armed units fear they will be prosecuted before international courts.

Finally, whether the autocrats will commit fraud or not ultimately depends on the expected behavior of the repressive apparatus. Despite a mass revolt, despots will be able to rig the elections with impunity if the military (and other regime insiders) agrees that the best course of action is to repress, as recent events in Iran suggest. But we have seen that if there is a mass revolution against fraud, the military might instead switch sides, allowing democracy to emerge. An important limitation of this article is that it takes as exogenous the behavior of the repressive apparatus. Further extensions to the model should turn them into strategic players and should allow for imperfect information about voter types—who will rebel

against fraud and who will tacitly acquiesce. The article leaves these issues for further research.

## Appendix: Voter and Party Utility Functions

*Parties.* Parties are viewed as unitary actors seeking both office and policy goals. The value of policy is a standard loss function from an ideal point ( $x_i^*$ ) to a campaign promise ( $x_i$ ). The objective function of parties is given by the values of policy and office, weighted in an additive fashion:

$$U_i = -\alpha D_i(x_i, x_i^*) + O_i(.) \quad (1)$$

The value of the parameter  $\alpha$  depends on how each party values policy relative to office, and  $D$  denotes a standard Euclidean loss function. The value of office to the incumbent is a function of an exogenous component,  $O_A$ , which reflects the fixed rents of power; the decision-making power and spoils produced by the offices controlled ( $S_A$  which is derived from vote shares obtained in a legitimate manner ( $V$ ) and votes obtained through fraud ( $F_A$ )); and legitimacy to the party in the future ( $L_A$ ), discounted by a factor  $0 < \delta < 1$ .

$$O_A = \overline{O}_A + S_A(V_A(\mathbf{x}), F_A) + \delta L_A(F_A) \quad (2)$$

The  $S(.)$  function reflects the translation of votes into valuable posts (cabinet positions, municipal presidencies, governorships, legislative seats, etc.) to party members, which can be thought of, as a shorthand, as seats. Seats increase the value of office ( $dS_A/dV_A > 0$ ). Parties are presumed to maximize votes, rather than simply seeking to win the election. Large vote shares serve various goals to autocrats, including deterring the entry of potential opponents and controlling constitutional change (Magaloni 2006).

The utility function for challengers is analogous to that of the incumbent. In particular, the office component of the utility function of challengers is given by:

$$O_B = \overline{O}_B + S_{Bt}(V_B(x_t), F_B, A_B) + \delta L_{Bt+1}(A_B) \quad (3)$$

Challengers may strategically accept (A) or protest (notA) the results that emerge from the election.  $F_B$  denotes the share of fraud that is suffered by party B, decreasing the value of office ( $dS/dF < 0$ ). Acquiescing with fraud ( $A_B$ ) increases the value of office when there was an electoral fraud ( $dS/dA > 0$  if  $F > 0$ ) because the incumbent will reward “silence” with greater access to power, cabinet positions, and legislative seats and the consequent access to state resources. Thus, a challenger must assess

the costs of protesting and defending democracy vis-à-vis the advantages of complicity. The opposition party suffers legitimacy losses depending on the composition of its supporters, as discussed below.

Once the elections are held, the incumbent must pick an *optimal level of fraud*, which depends on its level of “real” electoral support and the discounted legitimacy costs of fraud, traded off with the office benefits of obtaining a higher  $S$  than the one generated by votes alone. The first-order conditions for the incumbent are given by:

$$\frac{\partial S}{\partial V} \left[ \frac{\partial V}{\partial x_i} + \frac{dV}{dF} \right] - \alpha \frac{\partial D}{\partial x_i} = \delta \frac{\partial L}{\partial F} \quad (4)$$

Thus, electoral fraud allows autocrats to be less responsive to voters. However, as expression (4) suggests, the autocrat needs to restrain the level of fraud according to the time-discounted loss of legitimacy. The first-order conditions for the challengers are similar:

$$\frac{\partial S}{\partial V} \left[ \frac{\partial V}{\partial x_i} + \frac{dV}{dA} \right] - \alpha \frac{\partial D}{\partial x_i} = \delta \frac{\partial L}{\partial A} \quad (5)$$

It will be convenient, for notation purposes, to express the first-order conditions as:

$$\begin{aligned} S'_{x_A} + S'_{F_A} - \alpha D'_{x_A} &= \delta L'_{F_A} \\ S'_{x_B} + S'_{A_B} - \alpha D'_{x_B} &= \delta L'_{A_B} \\ S'_{x_C} + S'_{A_C} - \alpha D'_{x_C} &= \delta L'_{A_C} \end{aligned}$$

where  $S'_{x_i} = \frac{\partial S}{\partial V} \frac{\partial V}{\partial x_i}$ ,  $S'_{F_i} = \frac{\partial S}{\partial V} \frac{\partial V}{\partial F_i}$ ,  
 $D'_{x_i} = \frac{\partial D}{\partial x_i}$ ,  $L'_{F_A} = \frac{\partial L}{\partial F_A}$ , and  $L'_{A_i} = \frac{\partial L}{\partial A_i}$

*Voters.* The voters’ utility function is defined following the unified voting model (Adams, Merrill, and Grofman 2005), as comprised by both policy preferences and nonpolicy considerations, within a probabilistic voting setting:

$$\begin{aligned} U_j = - \sum_m \alpha_j (v_{jm} - x_{im})^2 + \psi_j A_j \\ + \sum_k \gamma_{ik} f_{jik} + \beta_j E(t_j) + X_{ii} \end{aligned} \quad (6)$$

Where  $v$  refers to the voter’s ideal policy position,  $x$  refers to each of the parties, and  $X$  is a random utility term. Subscript  $i$  refers to parties,  $j$  refers to individual voters,  $m$  to policy issues, and  $k$  to nonpolicy factors. The parameter  $\alpha$  measures how much the voter weights issue voting;  $\psi$  measures the saliency of regime affinities; the  $\gamma$  parameters measure the weight of group affinities; and  $\beta$  is the value of cash transfers. This voter utility function

is consonant with the behavioral voting models that emphasize party identification and sociological, ethnic, and demographic features as critical determinants of voter choice (Adams, Merrill, and Grofman 2005).

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