Election Fraud and the Value of a Vote: A Cross-National Analysis*

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Abstract

This paper explores the relationship between malapportionment and overt electoral fraud. In developing countries, rulers resort to a variety of dirty tools to fabricate election results such as electoral cheating and election violence. Although these techniques of blatant electoral manipulation enable the incumbent to "win big," they may also undermine political legitimacy and encourage popular protests. Malapportionment makes it easier for the incumbent to win elections in the way that more seats are assigned to the ruling party's strongholds. Since malapportionment is primarily produced through gerrymandering and population change, it is less likely to spark protests, becoming a good substitute for overt electoral fraud. With these ideas in mind, this paper investigates how and when malapportionment mitigates blatant electoral manipulation. Cross-national statistical analysis of 82 countries shows that countries with higher malapportionment tend to rely less on both election cheating and electoral violence.

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1 Introduction

This paper explores the relationship between blatant electoral fraud and malapportionment. In advanced democracies, incumbents mobilize voters by carrying out election campaigns and proposing programmatic policy packages. In contrast, political leaders in the developing world often resort to illiberal electoral strategies to "win big" at elections. For instance, some may use blatant, relentless electoral cheating by simply stuffing the ballot box, intimidating opposition parties, imposing extreme media bias in favor of ruling parties, strengthening illegal vote-buying, and/or packing election management bodies (Kelley 2012). Others may excercise election violence by which they repress opposition figures and prevent opposition supporters from going to the polling stations. These techniques of overt electoral manipulation contribute to boosting up votes of governing parties to the level political leaders could not attain without relying on them (Simpser 2013).

In addition to blatant electoral manipulation,[1] ruling parties and their leaders often engage in institutional manipulation. Broadly, which electoral systems government chooses significantly impacts its electoral performance through affecting seats-votes disproportionality (e.g. Boix 1999 ; Higashijima and Chang 2016). Gerrymandering, namely redistricting electoral districts in favor of ruling parties, may be also employed as another form of institutional manipulation. Finally, malapportionment, "the discrepancy between the shares of legislative seats and the shares of population held by geographical units," (Samuels and Snyder 2001: 652) also helps incumbents win elections overwhelmingly by increasing the value of a vote primarily for the ruling party's strongholds. Besides institutional manipulation, leaders are also tempted to manipulate the economy prior to elections, i.e. engineer political

[1]Throughout this paper, I call election cheating and election violence in the above sense as "blatant electoral manipulation" or "overt electoral fraud." Following Simpser (2013), electoral fraud or blatant electoral manipulation includes both electoral cheating and electoral violence. Other election strategies such as institutional manipulation (electoral system change, gerrymandering, and malapportionment) and economic policy manipulation (pre-electoral economic distribution or political business cycles) are not included in the category of blatant electoral manipulation because these manipulation techniques have distinctive characteristics from overt election fraud. A more detailed discussion about each definition and example will be provided later.

business cycles.

We understand well the fact that "the menu of manipulation" exists at elections in hybrid regimes like new democracies and electoral authoritarian regimes (e.g. Schedler 2002). We know little, however, about the conditions under which incumbents prefer to choose one electoral strategy over another. In particular, little research has been done thus far on the relationship between blatant, relentless electoral manipulation and a form of institutional manipulation – malapportionment. This lacuna is highly unfortunate for policymakers as well as comparative political scientists, given the fact that predicting which election strategies governments are more likely to use is very important when designing and providing effective international election assistance in developing countries. This gap in the literature and the policy relevancy lead us to several research questions: Does high malapportionment reduce or encourage blatant electoral manipulation? What features does malapportionment have as political leaders' election strategy, compared to election cheating and electoral violence?

On the one hand, blatant, relentless electoral manipulation, although it helps incumbents win big, is a risky electoral strategy because due to its overt illegality it significantly undermines regime legitimacy and thus often magnify citizens' grievances, leading to popular protests and deadly riots. Such a political turmoil signals regime weaknesses and damages the leader's reputation in the domestic and international societies. In this respect, malapportionment is less risky because it is an indirect form of institutional manipulation at the ballot box. On the other hand, it may be difficult for political leaders to manipulate the value of a vote flexibly for their own sake because even pro-regime redistricting and/or adjusting geographical overrepresentation may face strong opposition from ruling politicians, many of whom often have different, irreconcilable preferences over the design of electoral districts and the adjustment of the number of electoral constituencies.

With these pros and cons of malapportionment and blatant electoral manipulation in mind, I empirically test observable implications on a cross-national dataset of the value of a vote and overt election fraud. Building upon Hafner-Burton et al.'s (2013) statistical

modeling explaining electoral violence, we test our hypotheses. Cross-national statistical analysis covering 82 countries on the globe (1993-2012) finds that, although malapportionment *per se* does not necessarily lower the probabilities of electoral cheating and electoral violence, political leaders tend to not use both electoral violence and election cheating at the same time when the level of malapportionment is high. These results suggest the possibility that political leaders may refrain from the high level of blatant electoral manipulation when malapportionment has already provided a significant seat premium to the ruling party. The results also imply that, at least compared to electoral cheating and election violence, government may not be able to flexibly manipulate the degree of malapportionment.

This paper proceeds as follows. The next section surveys previous literature on electoral manipulation, suggesting that the literature heretofore has not yet taken seriously the value of a vote as a tool of electoral manipulation. In the third section, I provide theoretical considerations on various election strategies and features of malapportionment as an institutional manipulation, arguing that malapportionment may disincentivize political leaders to use blatant electoral manipulation like election cheating and electoral violence. The forth section empirically examines testable implications by conducting a cross-national statistical analysis. Finally, conclusions follow to suggest policy implications and further research agenda.

2 Incumbent's Election Toolkit

Every political leader has to cope with the challenge of staying in power. In the developing world, election time is the occasion where incumbents may not only lose their office through election results but also be overthrown through post-electoral protests or coups. In this sense, be it new democracy or electoral autocracy, election periods are a critical moment for political leaders. Importantly, since developing countries have not institutionalized democratic procedures like well-functioning checks and balances, free and fair elections, and

matured media freedom as advanced democracies do, rulers hold a wider range of election strategies that leaders in matured democracies are usually unable to adopt at elections.

The manners in which political leaders attempt to win elections in the developing world have been much researched by many scholars. Similar to politicians in matured democracies, governments and the opposition may propose programmatic policy packages during election campaigns based on their ideological positions. What many researchers have found, however, is the case where rulers often engage in various ways of electoral manipulation. The most typical way is blatant electoral manipulation. For instance, electoral cheating is a series of undemocratic, non-violent measures that bias election results in favor of the political leader (cf. Simpser 2013: 34). During non-election periods, rulers may legislate the electoral law that clearly violates the core principles of democracy and thus significantly structures electoral battles in favor of ruling parties (Birch 2011). Most straightforwardly, opposition parties and multiple candidates may be prohibited to join elections. Even if allowed to participate in elections, rulers may also impose legal regulations on voting rights by certain social characteristics (i.e. gender and ethnicity), leave flaws in the complaints procedures, and/or put severe constraints on the right to run for office (through language and educational requirements). After an election is announced, government may try to undermine the level playing field by, for instance, putting strong restrictions on opposition's freedom to campaigns, pro-government media bias, and non-violent intimidation (Frye et al. 2016). And at the election day, the incumbent may again intimidate opposition voters to not go to polling stations, pack the central election committee to stuff the ballot box, encourage their supporters and party brokers to engage in illegal actions like voter impersonation, double voting, and vote-buying (Stokes 2005). Judith Kelley's (2012) *Quality of Elections data* tells us that elections in developing countries are significantly different in the extent of electoral cheating and politicians in those countries use various, different cheating techniques to bias election results. For example, according to the data, political leaders in the post-Soviet countries are more likely to use electoral cheating rather than election violence, compared

to those in other regions like Asia, Africa, and Latin America.

Political leaders may also resort to violent repression during election periods, so-called election violence, the other form of blatant electoral manipulation (e.g. Wilkinson 2004). Election violence is "physical violence and coercive intimidation directly tied to an impending election contest or an announced election result" (Strauss and Taylor 2012: 19). Of 17 elections held in African countries in 2011, approximately 60 percent (elections in 11 countries) was violent (Bekoe 2012: 1). Resorting to election violence, incumbents can prevent opposition figures from carrying out effective election campaigns. Election violence also plays an important role of depressing voter turnout among opposition supporters, thereby contributing to the incumbents' election victory. Using a cross-national data covering African countries, Strauss and Taylor (2012) find that the incumbents predominantly commit electoral violence and prevote violence is much more frequent than postvote one. Taking advantage of a global dataset, Hafner-Burton et al. (2013) argue that, when institutional constraints on the ruler is weak and an election result is expected to be very close, the incumbent is more likely to resort to election violence. Based on a cross-national data covering presidential elections in autocracies, Bhasin and Gandhi (2013) conclude that authoritarian governments are more likely to use state repression against opposition leaders as an election approaches yet less likely to repress citizens in the election time. Following Simpser (2013), thereafter I refer to both electoral cheating and election violence as "blatant electoral manipulation" or "overt electoral fraud."

Besides cheating and violence, political leaders may also manipulate economic policy before elections. Numerous studies on political business cycles demonstrate that in developing countries (both in new democracies and electoral autocracies), political leaders are more likely to adopt expansionary fiscal and monetary policy than those in matured democracies. In so doing, political leaders try to garner political support from voters and show their policy competence toward citizens (Schuknecht 1996; Shi and Svensson 2002; Brender and Drazen 2006; Higashijima 2016). For instance, Block (2002) focuses on 44 Sub-Saharan African

countries to find that governments in Africa tend to suffer fiscal deficits, experience high inflation rates, and allow higher real money growth in election periods. Similarly, Ames (1987) shows that under military rule (1947-1982) Latin American countries tend to overspend in election years, leading to excessive fiscal expenditures.

Governments in developing countries also manipulate electoral institutions to make election results favorable to them, which I thereafter call "institutional manipulation." Broadly, which electoral systems – Single-Member-District Systems (SMD) or Proportional Representation Systems (PR) – rulers adopt significantly impacts seats-votes disproportionality, thereby preserving majorities in parliament more easily with smaller shares of votes. Boix (1999), for example, contends that, when ruling parties are divided and weak, they tend to adopt PR systems to avoid devastative electoral defeat to the opposition in pre-war Europe. Lust-Okar and Jamal (2002) suggest that autocrats in the Middle East carefully choose their electoral systems depending on their political needs. Diaz-Cayeros and Magaloni (2001) assert that in Mexico under the PRI rule the ruling party manipulated electoral systems in the way that it was difficult for opposition parties to coordinate their behavior to form a majority. Higashijima and Chang (2016) show that, in electoral authoritarian regimes, SMD systems are more likely to bias seat shares in favor of ruling parties while PR systems are good at keeping the opposition divided at elections.

Even if rulers are unable to change electoral systems, they may still be able to manipulate other rules and institutions concerning elections. For instance, McElwain (2008) shows that incumbent politicians tended to enjoy advantages in elections by restricting lengths of electoral campaign period under the long Liberal Democratic Party rule in Japan. According to Washida (2016), gerrymandering is more likely to happen in Malaysia in the regions where ruling parties are either extremely strong or weak. A high level of malapportionment also occurs when the government allocates the greater number of seats to the area where ruling parties are strong. In so doing, it serves as an institutional manipulation technique. Conducting a case study of Imperial Austria, Thomson (2013) asserts that high malappor-

tionment was maintained in the country because the government allowed overrepresentation of the German rural and middle classes – the main political base for the incumbent – by allocating the larger seat share to less-industrialized German-speaking areas than non-German speaking regions.

Leaders do not necessarily use these election tools at random, independent of other electoral strategies. Among cheating, violence, economic distribution, and institutional manipulation, the incumbents may consider which sets of election strategies will be most efficient in strengthening their rule. Scholars have also explored various relationships among these election tools to characterize electoral politics in developing countries. Simpser (2013) claims that election cheating and election violence tend to go together because forcing regime elites and supporters to commit overt electoral fraud enables rulers to signal their strengths to potential opponents. Looking at the relationship between blatant electoral manipulation and electoral systems in the post-Communist countries, Birch (2007) argues that SMD systems lead to higher levels of electoral malpractice than PR systems do. Higashijima (2016) finds that in authoritarian regimes, less fraudulent, semi-competitive elections encourage dictators to overspend in election years to win big at elections. A large body of research has shown that PR systems lead to higher welfare spending and larger government deficits (e.g. Persson and Tabellini 2004; Bawn and Rosenbluth 2006; Iversen and Soskice 2006). According to Horiuchi and Saito (2003), Japanese municipalities in overrepresented districts received more fiscal transfers than those in underrepresented districts. Hiroi (2016) also shows that overrepresented jurisdictions tend to receive disproportionate shares of resource transfers from the federal government in Brazil.

What we know little, however, is how malapportionment is related to blatant electoral manipulation like electoral cheating and election violence. Previous research on the value of a vote has exclusively focused on its economic consequences (e.g. Horiuchi and Saito 2003; Hiroi 2016) or determinants of malapportionment including electoral systems (Samuels and Snyder 2001; Kamahara and Kasuya 2014), income inequality (Horiuchi 2004), and the rule

of law (Kasuya 2016). Do political leaders take advantage of both blatant electoral manipulation and high malapportionment simultaneously to ensure electoral winning as much as possible, as Simpser (2013) expects? Or, do these election strategies are a substitute rather than a complement for political leaders? In order to answer these questions, I theorize the relationship between blatant electoral manipulation and the value of a vote.

3 Electoral Fraud and the Value of a Vote

Leaders choose an election strategy or a set of strategies at elections to maximize the prospect of holding onto power. In order to stay in power, they have to consider at least the following two goals. First, they have to "win" elections in the sense that ruling parties maintain at least a simple majority. In order to craft a majority, they may use whatever electoral strategies they can take including cheating, violence, institutional manipulation, and economic distribution. Second, they may have to win elections as "cleanly" as possible to compellingly demonstrate that election results reflect their *de facto* popularity and thus regime legitimacy rather than the results are artificially manufactured by fraud. For this purpose, the ideal scenario is that political leaders refrain from using electoral manipulation and "honestly" compete with the opposition over policy packages without resorting to overt manipulation techniques, so do most leaders in advanced democracies.

In reality, however, it is highly difficult for governments in developing countries to rely exclusively on programmatic policy appeals to attract voters. This is because, in society ridden with dense patron-client relationships and low levels of economic development, most policy promises in elections are not credible and thus may be perceived that they will be reneged after the election. Therefore, election campaigns based on programmatic policy packages are not a strong option for political leaders. Alternatively, political leaders may increase the level of spending and distribute economic favors to their supporters and/or swing voters in elections. As clientelism in developing countries provides efficient monitoring

mechanisms and tightly connect ruling elites and voters, economic distribution may become a more effective strategy to gather votes than mere policy appeals. The strategy of economic distribution, however, is financially costly in the sense that it needs a vast amount of state resources and thus incur financial burdens. In this sense, the manipulation of economic policy is not always an ideal strategy for every political leader.

Compared to programmatic policy appeals and fiscal maneuvering, blatant electoral manipulation (including election cheating and electoral violence) may be a more accessible election strategy for leaders in the developing world. First, in clientelism-ridden society, political leaders find it easier to ask their brokers to commit electoral malpractices by using their dense local networks. Regional actors like local ruling politicians and party brokers are important perpetrators putting electoral cheating and election violence into practice (LeBas 2006; Rundlett and Svolik 2016). Employing patron-client relationships, leaders can use blatant electoral manipulation efficiently and thus becomes a relevant election tool in the developing world. Second, cheating and violence do not necessitate huge economic resources as the manipulation of the economy does. That being said, the drawback is that electoral cheating and election violence are direct and blatant in the sense that both methods involve overtly undemocratic measures like ballot stuffing and violent repression towards the opposition. Since nowadays most elections in developing countries are closely scrutinized by domestic and international election monitoring organizations, fraudulent action taken by the government is easily detected and soon becomes informed of voters and the international society. Due to this overt illegality of electoral cheating and election violence, both methods seriously damage popular perception about the fairness of elections and thus significantly undermine leaders' political legitimacy. Much research has shown that blatant electoral manipulation oftentimes backfires on political leaders. For instance, using *World Values Survey,* Norris (2014, Chapter 6) demonstrates that electoral malpractice tends to undermine people's confidence in governments and legal compliance. Probably due to this damaged legitimacy after the elections, excessive electoral cheating and electoral violence

are likely to be followed by popular protests (Tucker 2007; Hafner-Burton et al. 2013; Higashijima 2015). Moreover, international organizations and advanced democracies may also cut foreign aid as well as impose economic sanctions after such dirty elections.

Among the above-mentioned strategies, institutional manipulation (such as electoral system choice, gerrymandering, and malapportionment) may be a "less costly" manipulation technique in three senses. First, in order to exercise it, political leaders need not ask brokers and supporters to manipulate election processes in regions. What political leaders have to do is to revise the election law and then pass it through parliament to change electoral systems and/or execute redistricting. These parliamentary processes pose another important problem to political leaders when they manipulate electoral institutions (discussed later), yet institutional manipulation is less costly in that it does not need massive human resources and monitoring mechanisms, compared to the overt fraud strategies. Second, similar to blatant electoral manipulation, institutional manipulation does not need economic resources either. Only manipulating electoral institutions leads to boosting up seat shares of ruling parties without increasing vote shares via expansionary fiscal policy and economic distribution. This may help political leaders save their state resources. Third, at least compared to electoral cheating and electoral violence, institutional manipulation is a relatively "invisible" form of electoral manipulation. Institutional manipulation is often exercised before election campaigns start, enabling political leaders to distract citizens' and international organizations' attentions from the institutional manipulation. Even if rulers manipulate election rules during electoral periods, institutional manipulation is not "blatant" in the sense that it attempts to bias election results not through relentlessly intervening in opposition's and ruling party's election campaigns and their vote shares but through designing electoral rules influencing seats-votes disproportionality. Due to these indirect features of electoral manipulation, institutional manipulation would be less likely to provoke popular protests and undermine public perception on regime legitimacy.

Importantly, institutional manipulation enables rulers to win elections as much "cleanly"

as possible without resorting to election cheating and electoral violence. Considering the high political costs of election cheating and election violence, when political leaders successfully create the high level of malapportionment, they will be more likely to refrain from using blatant electoral manipulation. This observation leads to the first hypothesis:

Hypothesis 1-a: Malapportionment is likely to reduce electoral cheating.

Hypothesis 1-b: Malapportionment is likely to reduce electoral violence.

If institutional manipulation is the most cost-effective strategy, then most political leaders should use it without daring to employ inefficient strategies like election cheating and electoral violence. Yet, in reality, institutional manipulation has an important drawback as an electoral strategy – an intractable coordination problem among ruling elites. When political leaders manipulate electoral institutions, they have to pass the revised electoral law through legislature. The issue here is that ruling politicians, those who are a veto player and thus have crucial decision making power with regard to the adoption of the new electoral law, may have diverse, often mutually conflictive interests over the designs of electoral institutions and/or redistricting. For instance, Tsebelis (1990) argues that extant electoral systems may shape the interests of legislators within each party, which makes it difficult to change electoral systems, even if an alternative electoral system is rational for parties as a whole. When redistricting electoral jurisdictions, government may also face a strong objection from a group of ruling politicians who are electorally weak and thus concerned with their electoral performance in the next election. Put differently, although institutional manipulation is the most effective strategy to bias election results for the political leader, it may not be a flexible election strategy that the political leader can timely adopt when he really desires to use, due to the difficulty in coordinating political interests among ruling politicians.

Making electoral system choice and gerrymandering happen needs positive action aim-

ing at revising the electoral law "from above," namely, by strong initiatives of the political leader. In contrast, not only through gerrymandering, high malapportionment occurs also "from below," that is, through changes in population size across electoral districts. For instance, when a large number of people are moving from rural to urban areas and thus the value of a vote becomes higher in rural areas, the political leader whose main political base is in rural areas may not take any positive measures to fix the gap because such a population change increases the value of a vote in his or her strongholds. Without adjusting the gap between shares of seats and population size across different electoral jurisdictions, political leaders are able to engage in *de facto* institutional manipulation. When malapportionment has become already very high due to such demographic changes, political leaders may no longer rely heavily on electoral cheating and election violence. In this case, government needs not to take every fraudulent measure to win big as Simpser (2013) argued and thus we may not see the strong correlation between electoral cheating and election violence which is consistently found in the previous studies (Simpser 2013; Hafner-Burton et al. 2013). Rather, when malapportionment is high, political leaders come to be less dependent on blatant electoral manipulation while considering its political costs, leading to weakening an association between electoral cheating and election violence. Therefore, the second hypothesis can be formalized as follows:

Hypothesis 2: When malapportionment is high, electoral cheating does not go hand in hand with election violence.

4 Empirics

Data and Methodology

In order to test the two hypotheses proposed in the previous section, I conduct cross-

national statistical analysis. Using Kamahara and Kasuya's (2014) cross-national dataset of malapportionment in the world, my data includes 82 countries in total covering the period of 1993-2012. The unit of analysis is country-election year and includes 215 legislative elections. The main analysis includes both developing and developed countries to avoid possible selection bias issues, yet limiting the sample into developing countries does not alter the main results. All models of electoral violence are estimated by using random-effects logistic regressions, based on replications and modifications of the baseline model proposed by Hafner-Burton et al. (2013). For electoral cheating which does not have the relevant previous model that could serve as a baseline, I estimate random-effects ordered logistic regression with important control variables influencing election cheating, while setting an ordinal scale of election cheating as the dependent variable.

Dependent Variables

Election Violence Model The first dependent variable is election violence, namely whether a country experienced violent repression by incumbents during election campaigns, measured by using Hyde and Marinov's *National Elections in Democracies and Autocracies (NELDA)*. The NELDA dataset contains information on elections for national office for all sovereign countries with a population greater than 500,000. The dataset is constructed by using various sources including newswire reports, newspaper archives, academic research, archives from specific countries and from intergovernmental organizations. Following Hafner-Burton et al. (2013: 165), we code election violence as 1 if the government engaged in election-specific violence against civilians (coded from *Nelda33*) or harassed opposition members (*Nelda15*), and 0 otherwise.

Election Cheating Model The second dependent variable is election cheating. Following the conceptualization of election cheating given in the section 2, this variable sheds light on the

following three aspects of blatant, non-violent electoral manipulation: (1) legal problems, (2) pre-electoral cheating, and (3) election-day cheating. Kelley's (2012) *Quality of Elections* data (QoE) captures those aspects by coding (1) was the legal framework not up to standards, limits on the scope and jurisdiction of elective offices, and unreasonably limits of who can run for office etc.? (2) Were there restrictions on freedom to campaign, media restrictions, intimidations, and improper use of public funds? (3) Did any vote padding, tampering with ballot box, voter impersonation, double voting, vote buying, intimidation etc. occur? Each subcomponent has four values (0-3) and I aggregate the three into a variable *Electoral Cheating*, which ranges from 0 to 7 in my sample. Higher values indicate more serious electoral cheating. The QoE covers from 1977 until 2004 and I extend the dataset up to 2012 by using the US Department of States' Human Rights Reports for this paper's analysis.

Independent Variables

The main independent variable in this paper is the magnitude of malapportionment. I use the most extensive dataset of malapportionment originally constructed by Kamahara and Kasuya (2014), which includes 83 countries in the world. Malapportionment is defined as "the discrepancy between the shares of legislative seats and the shares of population held by geographical units" (Samuels and Snyder 2001: 652). It is measured as an index that employs the Loosemore-Handy index (see also Kamahara and Kasuya 2014: 4):

$$MAL_{i,t,j} = \frac{1}{2} \sum |S_{i,t,j} - V_{i,t,j}|$$

where i denotes a particular district, t a certain election-year, j a given country, s denotes the proportion of allocated seats in district i to all districts, and v the share of population or electorates in district i to the entire population or electorates. When MAL is zero, the country does not make any difference in the value of a vote across all electoral districts. As this

value increases, the legislature consists of representatives selected from more malapportioned electoral districts.

In order to test the hypothesis 1, I regress election violence/cheating on the malapportionment variable and other control variables. I expect the coefficient of the malapportionment variable to be statistically significantly negative on both election cheating and election violence. Following Hafner-Burton et al. (2013), the election violence model sets a dummy variable of election cheating as the main measure of election cheating. This variable comes from *Nelda11* indicating whether there were "significant concerns that the elections will not be free and fair." 1 indicates there are serious concerns that the elections will be fraudulent and 0 otherwise. As a robustness check, I alternatively use an ordinal measure of election cheating based on Kelley's (2012) QoE, yet the main results do not change. For the election cheating model, I use the binary variable of election violence, which I also employ as the dependent variable in the election violence model.

For the hypothesis 2, I investigate how the correlation between electoral violence and electoral cheating in the two models will change according to the level of malapportionment. More specifically, I interact the variable of malapportionment with the electoral cheating dummy (for the election violence model) and the electoral violence dummy (for the electoral cheating model) to see if the strong correlation between these two measures of blatant electoral manipulation disappears in the presence of high malapportionment. My theoretical expectation is that as malapportionment becomes higher, then election violence becomes no longer accompanied with electoral cheating and vice versa.

For the election violence model, I follow Hafner-Burton et al.'s (2013) model specification and include victory uncertainty,[2] executive constraints,[3] their interaction (victory uncertainty*executive constraints), physical integrity index (one-year lagged three years moving

[2]This variable is based on *Nelda12*, which indicates whether the incumbent or ruling party was confident of victory before the elections. The variable is coded 1 if the incumbent made public statements expressing confidence of victory and 0 otherwise.

[3]This is from the Polity IV dataset and measures institutionalized constraints on the decision-making power of chief executive ranging from the 1-7.

average),[4] political competitiveness (one-year lagged three years moving average),[5] executive recruitment (one-year lagged three years moving average),[6] logged population (one-year lagged, from the World Development Indicators [WDI]), logged GDP per capita (one-year lagged, from WDI), leader's tenure length (from *Archigos version 4.1*), leader's age (from *Archigos version 4.1*), civil war (from PRIO), and the number of demonstrations (one-year lagged, from Banks' (2016) *Cross-National Time Series Data Archive*.

Regarding the election cheating model. I include the following as control variables based on the previous literature on electoral cheating:[7] Freedom House Index (one-year lagged 3 years moving average, Kelley 2012), oil-gas value per capita (from Ross' (2012) dataset of natural resource wealth), leader's tenure lengths (from *Archigos version 4.1*), election administrative capabilities[8] (Hartlyn et al. 2008), logged GDP per capita (one-year lagged, from WDI), GDP growth (one-year lagged, from WDI), urban population (one-year lagged percent of total population, from WDI), and the presence of international election monitoring.[9] For both of the models, I first begin from a simple model which includes only the variables of interest to show that the main results with the controls do not suffer post-treatment bias. And then, I introduce a series of the control variables. Both of the election violence and election cheating models for the two hypotheses are expressed as follows:

$$Pr(ElectionViolence = 1) = f(\beta_1 Malapportionment + \beta_2 Cheating + \phi X_{it} + \gamma_i + \epsilon_{it}) \quad (1)$$

$$Pr(ElectionCheating > 0) = f(\beta_1 Malapportionment + \beta_2 Violence + \phi X_{it} + \gamma_i + \epsilon_{it}) \quad (2)$$

[4]This comes from the Cingaranelli-Richards dataset and measures pre-existing level of government repression distinct from pre-election violence by the 0-8 scale

[5]This is Polity IV's political competitiveness measure looking at the level of regulation of political participation and the competitiveness of participation.

[6]This also comes from Polity IV's variable of executive recruitment measuring the openness and competitiveness of executive selection, as well as the institutionalization of executive power transitions.

[7]Even if I adopt the same model specification as Hafner-Burton et al. (2013) and thus the election violence model in this paper for election cheating, the core results do not change.

[8]This comes from Kelley's (2012) QoE dataset and captures pre-electoral and election-day election administrative capabilities ranging from 0-6. I use Kelley's original data up until 2004 and my original coding covers the period of 2005-2012

[9]This is taken from *Nelda45* looking at whether international monitors present in the election.

$$Pr(ElectionViolence = 1) = f(\beta_1 Malapportionment + \beta_2 Cheating + \beta_3 Malapportionment * Cheating + \phi X_{it} + \gamma_i + \epsilon_{it}) \quad (3)$$

$$Pr(ElectionCheating > 0) = f(\beta_1 Malapportionment + \beta_2 Violence + \beta_3 Malapportionment * Violence + \phi X_{it} + \gamma_i + \epsilon_{it}) \quad (4)$$

where X_{it} is a vector of control variables and γ_{it} is country random effects that control for unit heterogeneity among countries beyond the control variables mentioned above. (1) and (2) are for the hypothesis 1, while (3) and (4) test the hypothesis 2. In random-effects ordered logistic regression models ((2) and (4)), I estimate the predicted probability that any magnitude of electoral cheating (1-7) occurs.

Estimation Results

[Table 1 and Figure 1 about here]

Tables 1 shows the estimation results of the random-effects logistic regression models, setting election violence as the dependent variable. In both Models 1 and 2, the malapportionment variable is positive yet not consistently statistically significant. This suggests that malapportionment does not necessarily reduce election violence, contrary to the expectation proposed in the hypothesis 1-a. Looking at the effect of electoral cheating on election violence, the coefficient of electoral cheating is statistically significantly positive, rendering supporting evidence on Simpser (2013) arguing that blatant electoral manipulation like cheating and violence tends to come together. Models 3 and 4 then test the hypothesis 2 asserting that political leaders may refrain from using both election violence and electoral cheating if the level of malapportionment is already sufficiently high. The coefficients

of the interaction term are negative and statistically significant, indicating that the higher malapportionment is, the weaker the positive correlation between cheating and violence becomes. Figure 1 graphically illustrates how the predicted probability of election violence will change according to the level of malapportionment. When the value of a vote is the same across all electoral districts, electoral cheating is accompanied with electoral violence with a high probability, approximately 70 percent. As the magnitude of malapportionment becomes larger, however, this positive association between cheating and violence is weakened. When the malapportionment score increases to more than 0.15, political leaders no longer use both electoral cheating and election violence simultaneously at the 5 percent statistical significance. This provides supporting evidence for the hypothesis 2.

[Table 2 and Figure 2 about here]

Table 2 presents the random-effects ordered logistic regression results of election cheating models to further test the hypotheses by setting election cheating as the dependent variable. In Models 5 and 6, the malapportionment and election violence variables are introduced individually without interacting them. The malapportionment variable is not distinguishable from 0 in a statistically significant way, again suggesting that malapportionment itself seems not to contribute to reducing election cheating and thus political leaders may not always freely manipulate the level of malapportionment, as the hypothesis 1 expected. Similar to the findings in Models 1 and 2, the election violence is again positively associated with election cheating at the 1 percent level also in Models 5 and 6, corroborating the findings in the previous literature. Models 7 and 8 then introduce the interaction term between malapportionment and election violence and again the result suggests that, when malapportionment is high, rulers tend to refrain from using both of electoral violence and election cheating. The conditional effect is statistically significant in the models with and without the controls. Figure 2 visualizes how the impact of electoral violence on election cheating changes depending on the level of malapportionment. The vertical axis represents the probability that a political leader employs any electoral cheating (the score is somewhere between 1 and

7) when he or she decides to resort to election violence. When there exists no malapportionment, the probability that any electoral cheating (albeit minor one) happens is about 58 percent when electoral violence occurs. On the other hand, when the country suffers from a very high level of malapportionment, say, 0.3 in the *MAL* score, then the probability goes down to approximately 22 percent. Again, this result is consistent with the hypothesis 2.

Robustness Checks

A battery of sensitivity analyses is conducted to show that the main results are robust to additional methodological issues such as (1) possible omitted variables biases, (2) a different measure of election cheating, (3) an alternative sample only focusing on developing countries, and (4) consideration of regional and time-specific effects. First, previous research suggests that malapportionment is correlated with majoritarian electoral systems and fiscal transfers or expenditures. And other research also finds that both majoritarian electoral systems and financial resources are related to the extent of blatant electoral manipulation (Birch 2007; Higashijima 2015). In order to test whether the main results are robust to possible omitted variables bias, I further introduce electoral system types[10] and fiscal expenditure[11] as controls yet the results are not sensitive to the inclusion of those variables. Second, I use the ordinal scale of the election cheating variable by Kelley's (2012) as a main independent variable in the election violence model. This alternative measure of election cheating produces consistent results with the main ones. Third, the main analysis includes both developed and developing countries, yet the theory focuses more on elections and politics of developing countries. I limit the sample to non-OECD countries (64 countries) and run the same models to find that this alternative sampling does not affect my main conclusions. Finally, in order to control for regional and time-specific effects, I add regional dummies and half-decade dummies to the

[10]This is measured by using the Effective Electoral Threshold. Higher values indicate more majoritarian electoral systems

[11]This is measured by using central government's annual fiscal expenditures (percent of GDP)

baseline models. The inclusion of these dummy variables does not alter the original results.

5 Conclusions

This paper has theoretically and empirically investigated how malapportionment is related to blatant electoral manipulation such as election cheating and electoral violence. Political leaders choose their election strategies while considering the benefits and costs of each strategy. Although blatant electoral manipulation helps rulers obtain election victories, such coercive measures may also backfire on rulers by undermining political legitimacy and encouraging popular protests. Malapportionment, a large gap in the value of a vote across electoral districts, enables political leaders to maintain legislative dominance by allocating more seats to their strongholds without using blatant electoral manipulation. Therefore, I have expected that, when malapportionment is high, political leaders should refrain from using electoral cheating and election violence. The cross-national statistical analysis has shown that, although malapportionment *per se* seems not to be associated with the reduction of election cheating and electoral violence, political leaders tend not to use both of cheating and violence simultaneously when malapportionment is already high. This suggests that political leaders may not be able to flexibly manipulate electoral districts as a complete substitute for cheating and violence. Instead, they may carefully take balance between "winning big" and "dirty results" by becoming less dependent on electoral cheating and election violence when malapportionment (produced by population change or other reasons) has already make electoral institutions highly in favor of incumbents.

This paper's findings may suggest several policy implications. Contemporary election monitoring tends to draw their attention to overt electoral fraud and concludes that elections have no serious problems as long as the elections are not exposed to blatant election cheating and violence. Yet, the core implication of this paper is that, even if political leaders do not resort to cheating and violence, when malapportionment is high, such relatively

"free and fair" elections may derive not from leaders' respect for transparent elections but from the fact that they still hold big electoral advantages brought by institutional manipulation. Policymakers and international organizations might need to more carefully consider the trade-off between overt electoral fraud and institutional manipulation and then design election monitoring schemes accordingly. Second, that being said, this research also suggests that international organizations may find it highly difficult to encourage political leaders to adjust huge gaps in the value of a vote in developing countries because the current level of malapportionment may be a product of the political equilibrium among ruling politicians. Even if the international society succeeds in correcting malapportionment, what follows may be the eruption of blatant electoral manipulation by the leader who wants to hold onto power and then popular protests by citizens, both of which may destabilize the country in the end. International support for correcting the discrepancy in the value of a vote may need to take into account what consequences are likely to happen after their assistance.

There are several issues that the paper needs to consider. As the paper's empirical analysis is based on cross-national data, it is generally difficult to test further observable implications on causal mechanisms postulated in the theory. For example, the theory expects that the high level of malapportionment should be associated with the absence of election cheating and electoral violence in the electoral districts where gerrymandering does not involve serious coordination problems among ruling politicians or where population change leads to favorable gaps in the value of a vote to ruling parties. In order to test such additional predictions and untangle causal mechanisms, disaggregated, election-district level data on election fraud and malapportionment will be needed while focusing on one or a few countries. Adding a single case study allows me to test my theoretical implications with additional data and real examples. Second, if my theoretical expectation is correct, then the high level of malapportionment will not induce popular protests or even lower the probability of protests, compared to countries with fraudulent elections, all other things being equal. A further cross-national empirical test on the relationships between malapportionment and protests

enables me to empirically examine this additional testable implication.

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Figure 1: Predicted Probability of Election Violence

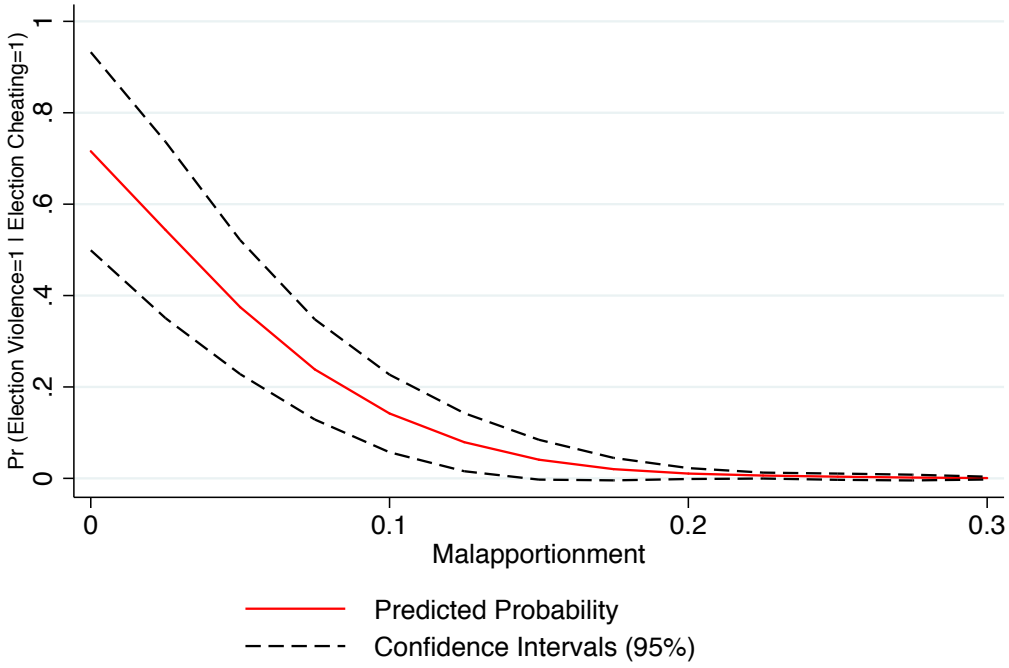

Figure 2: Predicted Probability of Election Cheating

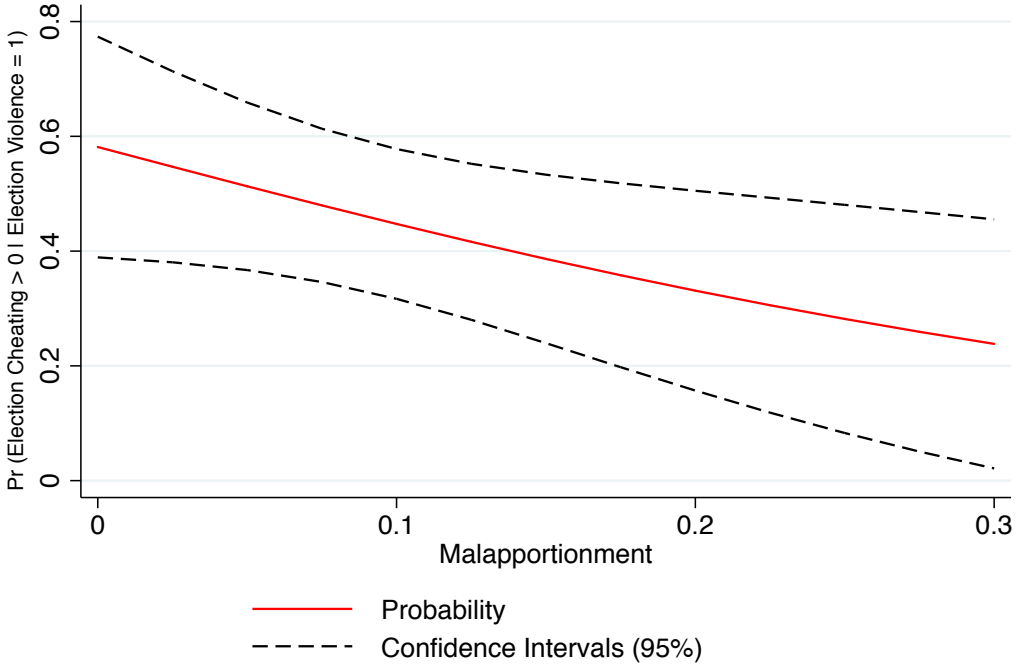

Table 1: Random-Effects Logistic Regression – Election Violence and Malapportionment

	Model 1	Model 2	Model 3	Model 4
Malapportionment	11.89*	4.778	24.75**	39.44
	(6.976)	(9.127)	(10.84)	(29.19)
Electoral Cheating	4.753***	3.436**	12.07***	23.43**
	(1.183)	(1.363)	(2.779)	(10.63)
Malapportionment*Cheating			-77.58***	-205.7**
			(22.96)	(91.93)
Victory Uncertainty		5.373		26.87*
		(4.538)		(15.59)
Executive Constraints		1.074		5.564*
		(0.760)		(3.039)
Uncertainty*Constraints		-0.772		-4.654
		(0.734)		(2.843)
Physical Integrity Index (avg)		-1.687**		-4.180**
		(0.668)		(1.772)
Executive Recruitment		-0.0149		0.785
		(0.358)		(1.095)
Political Competition		-0.290		-1.486
		(0.294)		(1.232)
Logged GDP per capita		-0.144		-1.023
		(0.438)		(1.740)
Logged Population		-0.261		-0.350
		(0.431)		(1.134)
Civil War		-2.440		-4.023
		(2.114)		(5.770)
Demonstration		-0.256		-0.312
		(0.438)		(0.747)
Leader's Tenure		0.342**		1.056**
		(0.142)		(0.532)
Leader's Age		-0.0239		-0.0111
		(0.0475)		(0.120)
Constant	-4.489***	5.691	-7.171***	-9.564
	(1.003)	(9.020)	(1.257)	(23.67)
N	214	211	214	211
Log Likelihood	-63.71	-44.82	-56.32	-34.14
Number of Countries	82	80	82	80

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Random-Effects Ordered Logit Regression – Election Cheating and Malapportionment

	Model 5	Model 6	Model 7	Model 8
Malapportionment	10.48	-9.212	15.90**	-4.926
	(7.116)	(7.518)	(7.417)	(8.229)
Election Violence	2.878***	1.839***	4.588***	3.242***
	(0.669)	(0.666)	(1.014)	(1.099)
Malapportionment*Violence			-23.46**	-17.79*
			(10.06)	(10.46)
Oil-Gas Value per capita (100 USD)		-0.0218		-0.0255
		(0.0330)		(0.0339)
Freedom House Index (avg)		1.067***		1.100***
		(0.231)		(0.248)
Leader's Tenure		0.0765		0.0881
		(0.0592)		(0.0611)
Election Administrative Capacity		0.595*		0.567
		(0.354)		(0.360)
Logged GDP per capita		-0.0350		0.0220
		(0.517)		(0.544)
GDP Growth		0.147*		0.137*
		(0.0781)		(0.0794)
Urban Population		-0.0382		-0.0461
		(0.0299)		(0.0323)
International Election Monitoring		-0.730		-0.847
		(0.843)		(0.885)
Cut 1	2.070***	3.738	2.379***	4.127
Cut 2	3.139***	5.058	3.448***	5.492
Cut 3	4.558***	7.007	4.906***	7.551*
Cut 4	6.126***	9.247**	6.594***	10.02**
Cut 5	7.374***	11.01**	7.898***	11.90**
Cut 6	8.659***	12.94***	9.231***	13.90***
Cut 7	9.888***	14.69***	10.56***	15.80***
N	215	212	215	212
Log Likelihood	-212.34	-172.15	-40.60	-170.63
Number of Countries	82	82	82	82

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Summary statistics

Variable	**Mean**	**Std. Dev.**	**N**
Electoral Violence	0.156	0.364	218
Election Cheating (ordinal)	0.977	1.687	217
Malapportionment	0.057	0.055	216
Election Cheating (binary)	0.106	0.309	216
Victory Uncertainty	0.279	0.45	215
Executive Constraints	6.295	1.289	217
Physical Integrity Index (avg)	5.687	1.918	217
Executive Recruitment (avg)	7.414	1.513	218
Political Competition (avg)	8.630	2.255	218
Logged GDP per capita (lag)	8.855	1.531	218
Logged Population (lag)	16.414	1.53	218
Civil War (lag)	0.092	0.289	218
Demonstration (lag)	0.431	1.081	218
Leader's Tenure Lengths	4.413	3.967	218
Leader's Age	57.899	9.651	218
Oil-Gas Value per capita (lag)	548.437	2002.053	218
Freedom House Index (avg)	4.385	2.62	218
Election Administrative Capabilities	0.24	0.629	217
GDP Growth (lag)	3.811	3.65	217
Urban Population (lag)	64.227	22.177	217
International Election Monitoring	0.528	0.5	214