

# Between ballots and bullets: Executive competitiveness and civil war incidence, 1976-2000

*Entre votos y balas: competitividad del Ejecutivo e incidencia de guerra civil, 1976-2000*

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## **Abstract**

Although recent research has yielded some determining elements to civil war, the influence of political factors on internal conflicts remains disputed. This article presents a critical review of the most widely used indices of democracy in civil war studies, and suggests that the competitiveness of the executive power can be a useful measure for quantitative conflict research. The paper also analyses, by means of statistical regression, the relationship between the competitiveness in the executive recruitment and civil war incidence from 1976 to 2000. The findings indicate that both single-candidate and multi-party elections reduce the incidence of civil war. Furthermore, the results lend support to the hypotheses put forward by recent literature that ethnic fractionalisation, mountainous terrain, large population and centralised political systems significantly heighten the risk of incidence of civil war, while high GDP per capita and economic growth decrease the likelihood of internal conflicts.

*Keywords: civil wars, elections, executive branch, political regimes, political violence.*

## **Resumen**

Investigaciones recientes han establecido diversos elementos causales para las guerras civiles. Sin embargo, la influencia de los factores políticos en conflictos internos permanece cuestionable. Este artículo presenta una revisión crítica de los índices de democracia más utilizados en los estudios de guerra civil, y sugiere que la competitividad del poder ejecutivo puede ser una medida útil para el análisis cuantitativo de conflictos internos. El texto también analiza, con el uso de técnicas de regresión estadística, la relación entre competitividad en el poder ejecutivo e incidencia de guerras civiles de 1976 a 2000. Los resultados obtenidos indican que tanto las elecciones con candidato único

como las multipartidistas reducen la incidencia de guerras civiles. Además, en línea con diversas hipótesis presentadas en la literatura reciente, dichos resultados apuntan que la división étnica, la existencia de un terreno montañoso, una alta población y sistemas políticos centralizados aumentan significativamente la probabilidad de ocurrencia de guerras civiles, mientras que un elevado PIB per cápita y crecimiento económico disminuyen su incidencia.

*Palabras clave: elecciones, guerras civiles, poder ejecutivo, regímenes políticos, violencia política.*

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## INTRODUCTION

Political factors have been frequently cited as major sources of civil wars<sup>1</sup>. Indeed, a number of recent studies indicate that regime transitions (Hegre *et al.*, 2001), majoritarian systems (Reynal-Querol, 2002), administrative centralism (Lake and Rothchild, 1996), and government repression (Zimmerman and Alves, 2007) tend to increase the likelihood of internal conflicts. On the other hand, the quantitative literature on civil wars has also shown that proportional representation (Saideman *et al.*, 2002), checks and balances in governments (Reynal-Querol, 2005) and the presence of democratic neighbours (Sambanis, 2001) make a state less prone to insurgencies and domestic conflicts.

Nevertheless, the relationship between political regimes and civil wars is still controversial. Although a number of authors have suggested the existence of a quadratic (“inverted-U”-shaped) relationship between political inclusiveness and internal conflicts (Ellingsen and Gleditsch, 1997; Hegre *et al.*, 2001; Regan and Bell, 2010), some scholars have stated that political variables have low explanatory power in civil wars models (Fearon and Laitin, 2003). Others have also claimed that most of the recent statistical results are biased due to problematic coding procedures in different indices of democracy (Cheibub *et al.*, 2010; Strand, 2007; Vreeland, 2008). Hence, by adopting a more specific variable we could shed some light on the contested relationship between political factors and civil conflicts. Not only we would be able to avoid the coding flaws of aggregated democracy indices, but such findings could also lend stronger internal validity to the empirical analyses of civil war incidence.

However, an important question remains: what disaggregated political variable is best suited for this task? In this paper, I adopt Schumpeter’s (2003) definition of democracy as a competition between leaders and argue that *the competitiveness of the executive power* is the most appropriate variable for this work. According to Carey (2007: 49), there are three important advantages in using such measure instead of aggregated democracy indices. First, focusing on the executive gives us considerably more precise results when compared to those obtained with broadly-defined categories as autocracy, anocracy<sup>2</sup> and

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1. In this article, I use the terms “civil wars”, “civil conflicts”, “internal wars”, and “civil strife” interchangeably.

2. Anocracies are usually defined as regimes that fall somewhere in the middle of the Polity IV scale (which goes from -10 to +10), hence featuring characteristics of both democracies and dictatorships (Fearon and Laitin, 2003: 81). However, the concept is purely “data-driven” with almost no theory behind it (Regan and

democracy. Second, the executive tends to be, mainly in developing countries, the most influential branch of the state, thus analysing its features would surely help us understand how those governments work. Last but not least, since the so-called anocracies share a few characteristics with both democracies and autocracies, adopting a specific aspect of the political institutions could reduce the ambiguity of that classification. Carey's work, nonetheless, also has its limitations. Since the author only deals with cases from Sub-Saharan Africa, one may argue the scope of the paper is bit narrow and should be broadened to a global study; moreover, due to the fact that its dependent variable is not limited to civil wars *per se*, since it includes minor violent conflicts as well (Carey, 2007: 50-53), her results are not directly comparable to those obtained in other studies.

The article proceeds as follows. In the first section I briefly present a literature review of the large-N studies of civil war with special attention to the relationship between political regimes and civil conflicts. The second part consists in a critical evaluation of some of the most commonly-used indices of democracy (Polity IV (Marshall and Jaggers, 2002); Freedom of the World (Freedom House, 2001); Polyarchy Dataset (Vanhanen, 2003); Database of Political Institutions (Beck *et al.*, 2001)) and in a justification of why the competitiveness of the executive branch clarifies important aspects of political systems<sup>3</sup>. Lastly, I analyse, using statistical regression, the relationship between the competitiveness of the executive power and the incidence of civil wars from 1976 to 2000.

## LITERATURE REVIEW

Although there is no consensus on what factors should be included in an explanatory “standard model” for civil wars (Dixon, 2009: 719), a number of variables are consistently mentioned as significant predictors of internal conflicts<sup>4</sup> (Blattman and Miguel, 2010; Dixon, 2009; Hegre and Sambanis, 2006; Mack, 2002; Sambanis, 2004). One of such predictors is *population size*<sup>5</sup> (Brückner, 2010; Collier and Hoeffler, 2004; Fearon and Laitin, 2003; Hegre and Sambanis, 2006; Sambanis, 2001). The authors suggest two main

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Bell, 2010: 748). Even the term itself is misleading, since it suggests a total absence of state control (*άνω* “above” and *κράτος* “state”). This is clearly not the case. Although also vague, “hybrid regime” is perhaps a better term than anocracy (Zimmerman, 2008: 70), and should be used more frequently to describe those forms of government.

3. These two sections are revised and abridged versions of Freire (2012a) and Freire (2012b).

4. Evaluating the similarities of between the factors associated with the onset and continuation of civil wars, Bleaney and Dimico (2011:145) argue that “if we start from the null hypothesis that the factors associated with onset and continuation are essentially the same, and if we only reject this where the data suggest that we should do so, then the conclusions that we are likely to draw from the empirical evidence are somewhat different from those reached by treating onset and continuation as independent”. Following the authors' conclusions, in this paper I shall treat both onset and incidence of internal wars as essentially similar phenomena and review texts that use either onset or incidence as a dependent variable.

5. According to Raleigh and Hegre (2009: 224), “a country with a population of 10 million inhabitants has an estimated risk that is twice as high as one of 1 million inhabitants”.

causal mechanisms that link a large population to an increase in the risk of civil conflicts<sup>6</sup>: one can argue that when a vast population lives in the same territory it puts strong pressures over scarce natural resources such as water or arable land, hence potentially leading the country to an internal conflict<sup>7</sup> (Homer-Dixon and Blitt, 1998), while others posit that, simply by its size, a large population could provide a vast supply of potential rebel group members (Fearon and Laitin, 2003: 83).

Low income levels are also frequently associated with higher risk of civil war (Blattman and Miguel, 2010; Collier and Hoeffler, 2004; Dixon, 2009; Fearon and Laitin, 2003; Hegre and Sambanis, 2006). Despite the fact that there is substantial evidence that the relationship between GDP per capita and civil war risk is negative (Dixon, 2009: 715), the causal mechanisms behind such finding are yet unclear. While Collier and Hoeffler (2004) posit that low GDP per capita is a proxy for reduced opportunity costs of rebellion, Fearon and Laitin (2003: 76) affirm that low levels of income actually captures state weakness and indicates that poor states are not able to mobilise resources and fight effectively against rebel groups<sup>8</sup>. More research is still needed in order to distinguish between them<sup>9</sup>.

Economic growth, in its turn, has a more evident relationship with civil war incidence: when there are better economic opportunities for the individuals, they tend to abandon dangerous activities (such as engaging in an armed conflict) in favour of less risky but still profitable occupations (Blattman and Miguel, 2010; Collier and Hoeffler, 2004; Dixon, 2009; Miguel *et al.*, 2004). Therefore, economic growth is negatively correlated with the likelihood of internal conflicts.

The role of ethnicity in internal wars, however, is not entirely clear. To begin with, the notion of ethnicity itself is notably hard to operationalise (Kalyvas, 2008), what makes the indices used to measure that concept predictably problematic (Posner, 2004). Moreover, there is no agreement on whether a conflict should be coded as predominantly ethnic or non-ethnic due to the potential changes in the influence of ethnicity at different levels of analysis (Kalyvas, 2006: 10). Considering such theoretical difficulties, it is not surprising that so far the results are inconclusive. Whereas some authors did not find any significant association between ethnicity (proxied by the *Ethnolinguistic Fractionalization Index*<sup>10</sup>)

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6. Although interesting and plausible, such mechanisms still have to be scrutinized in further detail by the academic community. So far it has not been possible to test or clearly differentiate their properties. Unfortunately, this is a recurrent problem in cross-national, large-N econometric studies: while statistical analyses are useful to determine which factors consistently predict an event across a variety of cases, they are usually silent about causality processes. For an interesting critique of how this problem affects the civil war literature, see Kalyvas (2008).

7. The argument is clearly neo-Malthusian in nature (see Malthus, 1826).

8. On the “greed versus grievance” debate, cf. Berdal (2005). For an article investigating the relationship between civil war onset and state capacity through a focus on the role of primary commodities see Thies (2010).

9. “[N]either of these two “pure” interpretations is entirely justified given the evidence at hand. The link between income levels and armed conflict is theoretically complex, and finer-grained data –say, on incomes that revert to the state versus the citizenry, or actual longitudinal measures of state capacity– is required to distinguish between these interpretation” (Blattman and Miguel, 2010: 23)

10. The ELF was built in 1964 by a group of Soviet social scientists and it reflects the probability that two random individuals are members of a different ethnic group. For two interesting critiques of the ELF see Laitin and Posner (2001) and Posner (2004).

and civil conflicts (Collier and Hoeffler, 2004; Fearon and Laitin, 2003), other researchers claim that the relationship is indeed significant, even if only upon certain conditions (Sambanis, 2001; Collier, 2010; Cederman and Girardin, 2007; Montalvo and Reynal-Querol, 2010; Toft, 2010).

The single geographical variable that has reached some level of consensus is *mountainous terrain* (Dixon, 2009: 720). Since neither the states nor the rebels groups can change a country's geography, mountainous terrain is one of the few variables in the civil war literature that is perhaps free from endogeneity. The causal mechanisms of this relationship, however, are still under-theorised. Even though it seems intuitive that many rebel groups have historically used mountains or forests as hideouts (Buhaug *et al.*, 2009: 544), the ways in which the terrain helps the insurgents (Fearon, 2010: 33) have not been rigorously tested. The positive relationship of mountainous terrain and internal wars, nevertheless, is relatively consistent and can be seen in a number of papers on the topic (Buhaug and Rød, 2006; Fearon and Laitin, 2003; Hegre and Sambanis, 2006).

With regards to political variables, their influence on civil wars is still widely discussed in the academia. Although many political factors have been used in statistical models over the last years, only a few variables consistently reach statistical significance across a number of studies. Federalism is one of them. Federalism is seen by many authors not only as an efficient tool to prevent conflicts in divided societies (Elazar, 1987; Gurr, 2000; Horowitz, 1985; Lijphart, 1977; Saideman *et al.*, 2002), but as the best option for structuring a country after it has been ravaged by a civil conflict<sup>11</sup> (Sambanis, 2002: 236). Political instability is often mentioned as an important predictor of civil violence as well. In his review of the civil war literature, Dixon (2009:718) states that “the only real disagreement is over the strength of the relationship [between political instability and civil war], not its direction: regime change is dangerous”. Regime changes may generate violent conflicts either because they profoundly shift the incentives and opportunities of political actors or due to the fact that they inevitably produces new “losers” and “winners” who might adopt violence strategies in order to obtain or remain in power (Cederman *et al.*, 2010: 387), and there is indeed substantial empirical evidence that confirms this finding (Hegre *et al.*, 2001; Fearon and Laitin, 2003; Gleditsch *et al.*, 2009).

The relationship between political regimes and civil wars, nonetheless, is yet far from clear. This finding (or lack thereof) is indeed puzzling, because even though insurgent groups usually justify their actions with slogans of freedom and democracy, recent statistical data seem not to support such claims. In fact, Dixon (2009: 718) shows that of the 27 articles on civil wars he analysed which included “democracy” as an independent variable, in no less than 19 of them the political measure could not reach statistical significance, and, what is curious, in 5 studies the authors found a *positive* relationship of democracy and civil conflicts.

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11. See also Christin and Hug (2012).

What are the possible causes of this lack of significant results on the influence of political regimes on civil war risk? One important point is that the most commonly-used indices of democracy Polity IV (Marshall and Jaggers, 2002), Freedom of the World (Freedom House, 2001), Database of Political Institutions (Beck *et al.*, 2001), Polyarchy Dataset (Vanhanen, 2003) and Scalar Index of Polities (Gates *et al.*, 2006) have very different coding and measurement rules. Hence, it is possible than one may find a strong, statistically significant relationship when using one of those indices but not obtain the same results using another. For instance, if one runs a simple Pearson correlation of “political rights” and “civil liberties” in Colombia (1972-2009) with data from Polity IV and Freedom of the World, the coefficient between the variables is .44, a remarkably low value considering that we are taking only two simple procedural aspects of political regimes into account<sup>12</sup>.

Moreover, Vreeland (2008) argues that the most robust link between political regimes and civil war risk, the existence of an “inverted-U” relationship where anocracies (hybrid regimes) are more likely to experience internal conflicts<sup>13</sup>, is due to errors in Polity IV’s (Marshall and Jaggers, 2002) coding procedures and not to the fact that anocracies are *per se* more prone to civil war. Since Polity codes countries in conflict as zero, right in the middle of their scale (-10 to +10), is indeed obvious that anocracies which are by definition situated between democracies and autocracies are over-represented in the models<sup>14</sup>. As the author notes, “[for political competition variables], observations are coded in the middle when political participation is factional, a situation where political competition between groups is ‘intense, hostile, and frequently violent. Extreme factionalism may be manifested in the establishment of rival governments and in civil war’. At worst, then, the finding is tautological: civil war is most likely where there is civil war” (Vreeland, 2008: 402). After replicating the regressions presented by Hegre *et al.* (2001) and Fearon and Laitin (2003), Vreeland (2008: 409-412) does not find a quadratic relationship between political regimes and civil war onset<sup>15</sup>.

But are the aggregated indices of democracy the only way to measure a country’s political dimensions? Certainly not. In the next chapter, I argue that the executive competitiveness is a good variable for researchers interested in evaluating the impact of political factors on civil war risk. In the next section I offer a criticism of the four most commonly-used indices of democracy [Polity IV (Marshall and Jaggers, 2002), Freedom in the World (Freedom House, 2001), Polyarchy Dataset (Vanhanen, 2003) and the Database of Political

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12. I thank Tiago Peterlevitz for the example.

13. See De Soysa (2002), Fearon and Laitin (2003), Hegre *et al.* (2001) and Sambanis (2001).

14. After analysing the data from Hegre *et al.* (2001), Strand (2007: 3) says that 2/3 of all civil wars (88 in 132 conflicts) occur in factional regimes, of which 72% were coded as anocracies by Marshall and Jaggers (2002).

15. Strand (2006: 185) also replicates the analyses of Fearon and Laitin (2003) and Hegre *et al.* (2001) to check the robustness of the “inverted-U”, but his results are identical to those obtained by Vreeland (2008): according to the author, there is no relationship between political regimes and civil war onset.

Institutions (Beck *et al.*, 2001)] in order to verify which political variables are more theoretically consistent and not correlated with civil violence.

## AN EVALUATION OF INDICES OF DEMOCRACY

Political regime classifications are perhaps as old as Western political thought itself. The first attempts to analyse government types can be found in the works of classic philosophers such as Herodotus, Plato, Aristotle, and Machiavelli, most of them focusing on how the number of people holding power changed the character of the political structures. More recently, two authors are frequently cited as the key theoretical contributors to the modern indices of democracy, namely Joseph Schumpeter (2003) and Robert Dahl (1972). Schumpeter (2003) places leadership competition at the core of its classification of political regimes<sup>16</sup>. His main assumption is that a democracy is exclusively “[...] that institutional arrangement for arriving at political decisions in which individuals acquire the power to decide by means of a competitive struggle for the people’s vote” (Schumpeter, 2003: 269) and should not be defined in normative terms as a regime that pursues “the common good”, once it is not possible to determine what the common good actually is (Munck, 2009: 122). Instead, democracy is a *procedure* adopted by institutions to make decisions regarding political power<sup>17</sup>.

Schumpeter’s definition of political regimes provides a consistent theoretical framework for researchers, and it has been widely used in an array of recent empirical studies on the topic (e.g. Alvarez *et al.*, 1996; Cheibub *et al.*, 2010; Huntington, 1991; Vreeland, 2003; Weffort, 1992). Due to Schumpeter’s clear theoretical formulation and his use of a simple measure (competitive elections), his conceptualisation of democracy is indeed appealing to many political scientists. Additionally, it stresses that alternation of power is “[...] a key criterion to distinguish democracies from nondemocratic government by guardians, who may claim to rule in the name of the people but do not allow for a process of public debate about government decisions and citizen choices among alternatives” (Munck, 2009: 122).

Although it is not true that Schumpeter completely disregarded other aspects of democracy and incurred in the “fallacy of electoralism” (Karl, 1995)<sup>18</sup>, it is true that the author

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16. Schumpeter’s emphasis on political competition as the defining characteristic of democracy may be parallel to his view that economic competition is the basis of the capitalist system (Hospers, 2004: 42).

17. Schumpeter may have been influenced by Max Weber’s political ideas when he wrote *Capitalism, Socialism and Democracy* (Held, 2006: 142). As summarised by Breiner (1996: 162), “The vote is the way in which the masses subordinate themselves under a leader chosen by themselves, ‘*die Unterordnung unter selbstgewählte Führer*’. The ultimate goal of such direct choice of leaders is, it seems, to turn the whole state into a “proving ground” for the selection of leaders”.

18. Terry Karl himself clearly states that Schumpeter could not be criticised on those grounds: “Schumpeter, unlike Jeane Kirkpatrick and other U.S. policymakers in the 1980s, considered civil liberties a necessary condition for the operation of democracy. Thus, it cannot be assumed that he would have shared the current

indeed limits his analysis of political regimes to the competition between leaders. In that sense, Robert Dahl (1972) provides an important complement to Schumpeter's theory of government and adds a second axis to that framework: *political participation*. Dahl (1972:29) writes that even though other characteristics of regimes could have been included in his model, those two dimensions — competition and participation — are undoubtedly the most relevant ones. For the sake of parsimony, the analysis should be limited to that pair of categories.

Dahl's conceptualisation of democracy has become the main reference for many political indices<sup>19</sup>. The criteria used in Freedom in the World (Freedom House, 2001) and in Polity IV (Marshall and Jaggers, 2002), for instance, are clearly derived from Dahl's bi-dimensional classification of regimes, and one may assume that Dahl's classification is perhaps close to a *de facto* standard in the field.

The theory advanced by Dahl (1972) is indubitably well-developed and consistent, but the way in which it is operationalised is worthy of criticism. Participation is particularly difficult to measure because one may easily incur in anachronisms when evaluating past political regimes. Universal suffrage, for instance, is currently a ubiquitous feature of democracies, but its absence in the beginning of the 20th Century does not mean that all those regimes should be classified as autocracies. As noted by Alvarez *et al.* (1996:19), according to Dahl's participation criteria, the United States should not be considered a democracy until the 1950s, and Vanhanen (2003: 257) acknowledges that in his index of democracy — The Polyarchy Dataset — many polities that had competitive elections could not be considered democracies exclusively due to their low suffrage compared to modern standards.

In fact, what we see is that those indices that tried to substitute the Schumpeterian minimalist definition of democracy for a wider theoretical construct have obtained very questionable results. It seems that even though the minimalist conceptualisations of regimes have their inconveniences, they are preferable to maximalist approaches due to their clarity and parsimony (Munck, 2009: 123). According to Munck (2007: 29), “[...] it is noteworthy that Dahl himself retreats considerably from his broad concept of democracy when he suggests ways to operationalise democracy. Ironically, the list of institutional features he has proposed to measure democracy is strikingly Schumpeterian, stopping at the point in the political process when public officials are elected”.

Hence, there is a trade-off between minimalist definitions of political regimes, limited in scope but clear in their conceptualizations, and maximalist positions, better grounded in modern political theory but potentially problematic. In this paper I adopt the first. The

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emphasis on the mere presence of elections, which I have elsewhere referred to as “electoralism”, that is, “the faith that merely holding elections will channel political action into peaceful contests among elites and accord public legitimacy to the winners in these contests” (Karl, 1990: 17).

19. Coppedge *et al.* (2008) aptly refer to Dahl's criteria as “the two persistent dimensions of democracy”, due to its widespread use in Political Science research.



Schumpeterian definition of regimes has not only a sound theoretical foundation but also an extensive coverage over time, since it relies on a single indicator and is based upon observable, not subjective judgements (Alvarez *et al.*, 1996: 3). One shall therefore consider what would be the indicator of existing datasets that better fits this definition. In the subsections below I briefly discuss the four most common democracy indices in order to choose a variable which is consistent with the Schumpeterian concept stated above and is not correlated with our variable of interest, civil war incidence.

### *Polity IV*

The *Political Regime Characteristics and Transitions* dataset, commonly known simply as *Polity* since its first version, is pervasive in civil war studies. Unfortunately, this index of democracy is not perfectly compatible with conflict research. As noted by Strand (2007: 3), there are serious endogeneity problems with two Polity indicators, PARREG (Regulation of Political Participation) and PARCOMP (Competitiveness of Participation). As mentioned above, category number 2 of PARREG tells us that “extreme factionalism can be manifested in the establishment of rival governments and in civil war” (Vreeland, 2008: 402). Needless to say, such category inevitable biases any statistical model of civil conflict. Using a dummy variable for factionalism, Strand (2007: 14-15) did not find any evidence of the so-called “inverted-U” relationship between political regimes and civil wars onset. Moreover, Vreeland (2008: 407) also draws the attention to another problematic feature of Polity IV (Marshall and Jaggers, 2002): “[...] “interregnum” or “anarchy” observations are coded as 0 (on the -10 to +10 scale, hence coding them as anocracies), and “regime transition” observations are coded as the average of the first and last Polity scores before and after the transition. The custodians of the data warn that these observations “are especially prone to outbreaks of political violence”. After removing this category from the dataset, Vreeland (2008) finds no evidence of an “inverted-U” relationship. The author then resumes his findings saying that “[...] the aggregate Polity scale should not be employed to test hypotheses about regime and civil war in the future. My work suggests that we should employ more sharply defined variables to capture the effects of political institutions. [...] We certainly should not group executive powers, elections, and political violence into one scale to figure out the relationship between civil war and political institutions” (Vreeland, 2008: 419-420).

In a nutshell, while the Polity IV (Marshall and Jaggers, 2002) is indeed a useful index for many areas of comparative politics, its use for civil wars research should be avoided. However, since the authors offer the index’s components in a disaggregated form, one may modify and recode the index in different ways. This procedure may help to mitigate some of the index’s problems, thus making it perhaps useful for a wider range of fields of research.

### *Freedom in the World*

The *Freedom in the World* (Freedom House, 2001) is another index which is widely used in international relations (Norris, 2011; Reynal-Querol, 2002), although it is employed less frequently than the Polity IV (Marshall and Jaggers, 2002). The index bases its classification of regimes on only two dimensions, “political rights” and “civil liberties”, but curiously its definitions are considerably broader than most indices of democracy (Munck and Verkuilen, 2002: 9). In fact, the *Freedom in the World* includes a series of concepts that would rarely be considered essential to a strictly defined concept of democracy, such as academic publishing freedom, lack of corruption and equality of opportunity (Rydland *et al.*, 2008: 73). Moreover, not only the *Freedom in the World* has a number of categories that are only loosely related to each other (Munck, 2009: 23), but it is also frequently deemed as a partial index (Archibugi, 2008: 40) because some of its questions are clearly open to subjective answers (Berg-Schlosser, 2007: 22). Lastly, the authors do not offer any information on what are the sources for the coding procedures or how the different variables are combined into a single aggregated scale (Rydland *et al.*, 2008: 75). It is impossible, therefore, for any researcher to recode or modify the *Freedom in the World* to fits his or her needs (Vreeland, 2008: 414).

Regarding its adequacy to civil war research, *Freedom in the World* performs even worse than Polity IV. Although Polity IV does have variables that are endogenous with civil conflicts, it is possible to remove and recode its problematic components; on the other hand, this is not the case for the index built by the Freedom House. The *Freedom in the World* clearly mentions political violence in its coding<sup>20</sup>, but since there are no means of removing the contaminated elements from the index, the *Freedom in the World* should not be used in civil war studies.

### *Polyarchy Dataset*

The *Polyarchy Dataset* (Vanhanen, 2003) aims to empirically evaluate Dahl’s (1972) bi-dimensional theory of democracy, and since 1984 it has brought data on political competitiveness and inclusiveness for almost 200 countries. The *Polyarchy Dataset*’s two variables are based strictly upon observable qualities of elections (Strand, 2006: 22) — voting percentages of the winner party and the ratio of voter to the total population

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20. Civil violence is mentioned in one coding question (“F3: Is the population free from wars and insurgencies?”) and is one of the “general characteristics” of the political rights’ rating in the index (Rating of 7 – Countries and territories with a rating of 7 have few or no political rights because of severe government oppression, sometimes in combination with civil war. They may also lack an authoritative and functioning central government and suffer from extreme violence or warlord rule that dominates political power”). See Freedom House (2001).

(Vanhanen, 2000: 253) — what makes their measuring and aggregating procedures easy and straightforward to evaluate.

In contrast to Freedom of the World (Freedom House, 2001) and Polity IV (Marshall and Jaggers, 2002) datasets, Vanhanen's index of democracy has no problems of endogeneity with civil conflicts (Vreeland, 2008). Nevertheless, it still has a few shortcomings that may negatively affect the quality of statistical models. First, the manner in which Vanhanen codes political competition is questionable, since it may take the values either of the presidential election, or of the parliamentary election or both, depending on which of those institutions is "predominant" in the government (Vanhanen, 2000: 254). Furthermore, although Vanhanen provides individual tables for each of the countries described in the Polyarchy Dataset, he unfortunately does not mention the voting share of the executive power in states where the legislative is predominant and vice-versa. Therefore, it is impossible for a researcher to recode the variable and create a 'pure' indicator of the executive power, for instance.

Second, the index is highly biased towards countries that have a fragmented political system and adopt compulsory voting. Due to Vanhanen's conceptualisation of political competition, a country in which the elected party received, say, around 25% of the votes is considered two times more democratic than another country whose winning group had 63% of the electorate (Hegre, 2003: 17). In that sense, countries like Brazil or Italy, that have a high number of effective political parties, tend to score higher than, for instance, the United Kingdom, although no one would affirm that the UK is less democratic than those two nations. With regards to the share of the voting population as the measure of participation, the Polyarchy Dataset over-represents countries that have compulsory voting and, as acknowledged by the author himself (Vanhanen, 2000: 255), developed countries in general. In both cases the share of the voting population tends to be artificially inflated, not only because of the legal obligation to vote, but also due to the fact that rich countries tend to have an older population, what places more people at the voting age.

The Polyarchy Dataset (Vanhanen, 2003) do not have coding procedures that are incompatible with civil war research, but due to their own operationalisation it should be used with caution by political scientists.

### *Database of Political Institutions*

The last dataset to be reviewed here is the *Database of Political Institutions* (DPI) (Beck *et al.*, 2001). Of all the indices I evaluate in this paper, the DPI is the only that does not provide any suggested criteria for creating an aggregated measure of democracy; instead, the authors argue that this task should be done by the researchers themselves, who could combine any of the DPI's measures according to their specific needs. This innovative approach makes the DPI one of the most flexible political databases in the field of

comparative politics. Also, DPI's wide coverage and detailed coding procedures are worth mentioning, as they show a serious commitment to scientific standards by the authors.

Nonetheless, the DPI also has some limitations regarding its use in political violence studies. In DPI's "Legislative Index of Political Competitiveness" (LEIC) one of the coding rules includes a clear mention to civil violence in its first category (*I - No Legislature*)<sup>21</sup>, and unfortunately it cannot be removed without causing problems to the scale. One may argue that a possible solution to this problem would be simply to code such cases as missing. However, this practice would be mistaken because it would exclude values that *do not* refer to civil wars, but instead represent strong autocracies which have no legislative power. For instance, the LEIC is coded 1 for Bahrein from 1976 to 2002, but once the country had no civil conflict during the period, it is easy to infer that it is reflecting the autocratic nature of the regime. Iran and Zimbabwe, on the other hand, were coded as 1 in 1980, certainly for the turbulences that occurred after their respective Islamic revolution and war of independence. As two very different political situations are included in a single category and there is no way of removing the problematic part from the variable, the use of LEIC is not recommended.

The "Executive Index of Political Competitiveness" (EIEC) shares the same coding procedure with LEIC. But while its first category (*I - No Executive*) is not inherently problematic since it clearly describes civil wars where the sovereign power is being contested<sup>22</sup>, there is a serious flaw with the category 5: "multiple parties are legal but only one party won seats" (Keefer, 2010: 15). In a majoritarian election for executive, by definition *only a single party* win the seat, regardless of how free and fair the voting procedures had been<sup>23</sup>. But since only 15 observations are coded as EIEC = 5 in the whole dataset, they can be removed from the dataset without causing any significant problem to the analyses<sup>24</sup>.

### *Competitiveness of the Executive Power*

In short, *none* of the most commonly-used indices of democracy is perfectly compatible with civil war research. In that sense, using a simple, intuitive measure as a proxy for different political regimes may be more interesting than adopting the indices' aggregated

21. "1 - No Legislature. Assemblies operating under conditions of civil war or where there are power struggles within a country, with the result that its institutions do not control most of the territory or the most important parts of the territory, are scored as 1. This is irrespective of how competitively the assembly has been elected and its formal powers" (Keefer, 2010: 15).

22. In DPI's codebook, the author writes: "Rival chief executives in one country, particularly in the setting of armed conflicts, are counted as No Executive, and thus a score of 1" (Keefer, 2010: 16).

23. In a private communication via email (5th March 2011), Philip Keefer acknowledged that "[...] EIEC = 5 should be rare or even non-existent. In fact, the 2010 version of DPI has 5900 observations, but only 15 cases of EIEC = 5; I think these are probably mistakes". The message is available upon request.

24. The DPI does not have any measure that directly assesses the political participation, and for that reason I limit my review of the index to their competitiveness variables.

scale. I argue that the competitiveness of the executive power is the best possible measure since it fits Schumpeter's (2003) minimalist definition of democracy and have many other practical advantages. As mentioned by Carey (2007: 49), the indices of democracy have very broad and complex rules to define a political regime is, and concentrating on a single aspect of the political system would allow the researchers to draw more specific conclusions about the role of the institutions in civil war incidence. On the one hand, it is easy to divide the competitiveness of the executive power in a small number of categories (three as in Polity IV, or seven as in the Database of Political Institutions), whereas there are no less than 360 possible combinations for "democracy" and 144 for "autocracy" if we use all the measures available in the Polity III dataset (Gleditsch and Ward, 1997: 367).

Also, the executive power is a major component of the political institutions in a given state: in developing countries, where the vast majority of civil wars occur, the political power tends to be highly concentrated in the hands of the executive, so the competition for this branch has a high impact on the lives of individual citizens and of the nation as a whole. The executive power is usually the most significant feature of regime changes: the transition from an authoritarian to a democracy government (or vice-versa) can only be considered permanent after the chief executive has been replaced, as it has been the case in Latin America's or Asia's recent political history. Although the competitiveness of the executive power is not a perfect proxy for the openness of political institutions, the relationship between both is indeed a close one. As Collier (2010: 6-36) affirms, "in the typical election in one of the developed countries, as defined by membership in the Organization for Economic Cooperation and Development (OECD), the incumbent government has a chance of reelection of around 45 percent. [...] Among those countries of the bottom billion in the range -10 to zero [autocracies in Polity IV], the president has [a] healthier chance of electoral victory: an amazing 88 percent. [...] I had no idea who would win the American election of 2008, but I had a pretty clear idea about the outcome of the Zimbabwean elections: I confidently expected that President Mugabe would be reelected".

There is an additional reason for using the competitiveness of the executive power in civil war research. In contrast to the competitiveness of the legislative power, many databases measure the competition of the executive, thus enabling us to test the robustness of the models by using different coding procedures for the same variable. Both Polity IV (Marshall and Jaggers, 2002) and the DPI (Beck *et al.*, 2001) have specific variables for the executive competitiveness, and the Polyarchy Dataset (Vanhanen, 2003) includes in its coding a vast number of countries where there is a predominance of the executive power in government<sup>25</sup>.

Nevertheless, there are also some shortcomings associated with using the executive competitiveness as a proxy for political regimes. The most evident one is that we do not include any measure of political participation, the second regime dimension discussed by

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25. The Freedom in the World (Freedom House, 2001) also has a measure for that concept, but since the Freedom House does not provide disaggregated data I was not able to evaluate this variable.

Dahl (1972). However, although participation is clearly important and could add to our understanding of political institutions, we believe the omission can be justified. As argued in the previous section, measures of political participation vary widely, and often do not follow consistent criteria over time. Should the US or Great Britain not be considered democratic in the beginning of the 20th century, since participation was low by today's standards? The answer is not clear. Moreover, states with compulsory voting systems tend to have higher participation rates than countries with facultative voting. If this measure is taken into consideration, the first group will have their scores artificially inflated in democracy indexes, thus biasing the results of our analyses.

I believe that the omission of such variable does not change the results of this paper. On the one hand, our data set starts in 1975, where all democracies had already legally adopted universal suffrage, thus making the participation criterion less relevant. On the other hand, restrictive authoritarian regimes can be correctly identified by the lack of competitiveness for the executive power (absence of elections). In this regard, including participation would probably add noise to the estimators without bringing relevant information to the models present in this article.

A problem that cannot be easily overcome is the direct comparison between different measures of executive competitiveness. Although the variables designed to classify executive competition were created with a clear goal in mind, the reliability of the measures are far from perfect. In order to minimise this issue, we include all of them in the models below.

## DATA ANALYSIS

In this section, I run a series of logistic regression models to estimate the relationship between the competitiveness of the executive power and civil war incidence from 1976 to 2000. The period was chosen due to data availability concerns: since we only have data on all three measures of executive recruitment and the remaining control variables for those years, that was a natural choice. The dependent variable is *incidence of civil war* as measured by the Armed Conflict Dataset (Gleditsch *et al.*, 2002) in its third version (2005). It indicates a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 1000 battle-related deaths<sup>26</sup>. In this article I shall consider both internal and internalised armed conflicts equally as civil wars. I shall analyse the incidence, where all the country-years in which there is a conflict are counted as 1, instead of onset of civil wars, where only the first country-year is coded as 1, due to the short time period I deal

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26. The dataset's codebook can be accessed on the following electronic address: [http://www.pcr.uu.se/digitalAssets/55/55205\\_Codebook\\_v3-2005.pdf](http://www.pcr.uu.se/digitalAssets/55/55205_Codebook_v3-2005.pdf). In this article, I decided to use the threshold of 1000 instead of 25 battle-related deaths in order to restrict the analysis to civil wars and not include minor violent conflicts.

with in this paper. Civil wars onsets are an extremely rare event, and had I included only those years in the analysis the number of cases would have been severely limited and probably no independent variable would reach statistical significance. Actually, even after choosing civil war incidence, we see that conflicts occur in mere 9.8% of the cases<sup>27</sup>. A number of studies make use of the incidence of civil war as their dependent variable (Caprioli, 2005; Collier and Hoeffler, 2002; Elbadawi and Sambanis, 2000; Garcia-Montalvo and Reynal-Querol, 2005; Melander, 2005), and I consider it to be an adequate measure for this work as well.

The variables that measure the competitiveness of the executive come from three democracy datasets, the Polity IV (Marshall and Jaggers, 2002), the Database of Political Institutions (Beck *et al.*, 2001) and the Polyarchy Dataset (Vanhanen, 2003). As with many variables I use in this article, they are also available in the Quality of Government Dataset (Teorell *et al.*, 2011). The variable from Polity IV was transformed into dummies and, as recommended by the authors<sup>28</sup>, the values of -66, -77 and -88 were coded as “system missing”<sup>29</sup>. The first category of the scale (“0 - *Non-regulated*”), non-elected government, is used as a reference, and it describes situations in which “changes in chief executive occur through forceful seizures of power”. 1 – *Selection* implies that “chief executives are determined by hereditary succession, designation, or by a combination of both”, and it includes rigged elections, military selection of civilian executives, selections within a single party, etc. 2 – *Dual/transition* are regimes that those who have both hereditary and competitive succession, and is also used for “transitional arrangements between selection (ascription and/or designation) and competitive election”, and 3 – *Elections* refers to leaders who have been chosen by competitive elections with two or more parties.

The measure from the DPI was also modified. Apart from the coding of dummy variables for all the categories of the scale, the category number one (1 – *No Executive*) was removed due to its endogeneity with the dependent variable. Since it also includes cases where a country is facing a civil war, it was coded as “system missing”. Category number five (5 – *Multiple parties are legal but only one party won seats*) was also coded as missing due to the issues discussed in the previous section of this paper. The category used as reference is 2 – *Non-elected executive*. Category 3 – *Elected, 1 candidate*, describes a common situation in many authoritarian countries, where there are elections but there is only one candidate running for the office. It also includes executive selection via referenda and “popular acclamation” votes (Keefe, 2010: 16). The next category is 4 – *1 party, multiple*

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27. There are 4092 country-years in the data set, of which 402 are coded as civil wars.

28. See [http://www.qogdata.pol.gu.se/codebook/codebook\\_standard\\_20dec13.pdf](http://www.qogdata.pol.gu.se/codebook/codebook_standard_20dec13.pdf).

29. According to the Polity IV codebook, -66 refers to “cases of foreign “interruption” are treated as “system missing”, -77 are “cases of “interregnum,” or anarchy”, and -88 represent “transition years”. They were all coded as “system missing” in this article in order to avoid either endogenous results with our civil war measures (as it is the case of -77), or to exclude regimes which have not been correctly defined. Please refer to Polity IV’s website for more information on the coding of the executive competitiveness variable. The descriptions above are taken from [http://www.qogdata.pol.gu.se/codebook/codebook\\_standard\\_20dec13.pdf](http://www.qogdata.pol.gu.se/codebook/codebook_standard_20dec13.pdf). Access: 10/10/2014.

*candidates*, what used to happen in several Communist nations: more than one candidate in the elections, but all linked to a single party. Categories 6 - *largest party received more than 75% of the seats* and 7 - *largest party received less than 75% of the seats* both describe elections where two or more parties were allowed to compete. The difference is the number that one of the parties received, what serves as an informal proxy for democratic yet unequal elections (use of the state apparatus for electoral means, etc.).

Lastly, the competitiveness variable from the Polyarchy Dataset. It is a continuous measure calculated by subtracting from 100 the share of total votes received by the winning party. However, it is indeed necessary to mention that, although the vast majority of its observations refer to the executive power, it may also be that some of their cases are in fact considering the votes received in legislative elections. Despite this shortcoming, it is perhaps useful to use it as a robustness check for the tendencies described by the other measures.

Following Strand (2007) and Vreeland (2008), I expect that:

- *H1: The relationship between the competitiveness of the executive power and civil war is negative.*
- *H2: There is no inverted-U relationship between the competitiveness of the executive power and civil war incidence.*

The control variables were chosen according to their degree of consensus in the specialised literature. In order to evaluate regime changes, I coded two pairs of variables indicating if there is a negative or positive change in both nominal measures of competitiveness of the executive power (autocratisation or democratisation)<sup>30</sup>. As previously mentioned in this text, regime changes alter the distribution of power in a country and groups that are then marginalised may resort to violence. The impact of federalism on civil war incidence will be analysed using Norris's (2009) measure of decentralisation. It assigns 1 for unitarian states and zero for federal countries. I assume that a decentralised political and fiscal framework is able to provide a more equitable distribution of resources to the population, thus decreasing the risk of civil conflict. In unitarian countries we may assume the opposite effect.

Ethnic fractionalisation is going to be proxied by the *Atlas Narodov Mira* (Teorell *et al.*, 2011) in its original coding. I expect that ethnically-fragmented nations have a higher incidence of civil wars, not only because ethnic divisions may foster animosity amongst different groups, but also because governments that are structured along ethnic lines tend to favour their own groups when providing public policies (Easterly and Levine, 1997).

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30. The Polyarchy Dataset's competitiveness' variable was not coded in a similar fashion because it is a continuous measure.



I included a dichotomous variable for oil exports from Fearon and Laitin (2003), which indicates if oil comprises more than 1/3 of a country's total exports. Since oil generates a significant amount of wealth that could be explored by both the government and the rebels. I also added a logged measure of mountainous terrain to assess the proportion of such type of terrain in a nation's territory (Hegre and Sambanis, 2006). The literature affirms that mountains can be used as hideouts and provide shelter to rebel groups.

The three most recurrent variables in civil war models were added to the regressions below. The first is a logged measure of population as computed by the United Nations Statistics Division (2009). Fearon and Laitin (2003) and Hegre (2003), state that a populous country has a vast supply of possible insurgents and a higher demand for different kinds of resources, therefore such variable is present in all models. Real GDP growth also appears as an independent variable (United Nations Statistics Division, 2009). Since economic growth can be seen as a proxy for better work opportunities, it reduces the chances of civil war incidence (Fearon and Laitin, 2003; Collier and Hoeffler, 2004).

Lastly, a measure of GDP per capita which was created by dividing "real GDP" (in constant 1990 thousand US dollars) (United Nations Statistics Division, 2009) by the non-logged population variable mentioned above was added to the models. Either by reducing the costs of rebellion or by acting as a proxy for strong state capacity, real GDP per capita is associated with lower risks of civil war incidence.

With the exception of ethnic fractionalisation and mountainous terrain, which have constant values for each country, all the variables were lagged in one year ( $t-1$ ) in order to prevent eventual multicollinearity issues. Due to the fact that two of the independent variables (ethnic fractionalisation and mountainous terrain) do not vary across the units, only random effect models were estimated. All models were run in Stata 12<sup>31</sup>. Table 1 shows the descriptive statistics and Table 2 summarises the results.

TABLE 1.  
DESCRIPTIVE STATISTICS

Variable	N	Mean	St. Dev.	Min	Max
Incidence	4,092	0.098	0.298	0	1
Unelected (Polity IV)	3,520	0.148	0.355	0	1
Selection (Polity IV)	3,520	0.386	0.487	0	1
Dual/Transition (Polity IV)	3,520	0.112	0.315	0	1
Election (Polity IV)	3,520	0.355	0.479	0	1

31. I also estimated the same regressions using the "rare events" correction suggested by Tomz *et al.* (2008) with  $\tau = 0.098$ . The results were virtually identical to those obtained with regular logistic regression.

TABLE 1.  
DESCRIPTIVE STATISTICS (CONT.)

Variable	N	Mean	St. Dev.	Min	Max
Autocratisation (Polity IV)	3,353	0.013	0.111	0	1
Democratisation (Polity IV)	3,353	0.026	0.158	0	1
Unelected (DPI)	3,779	0.262	0.440	0	1
Election, 1 candidate (DPI)	3,779	0.197	0.398	0	1
1 Party, many candidates (DPI)	3,779	0.015	0.122	0	1
Multiparty Election, winner >75% (DPI)	3,779	0.091	0.287	0	1
Multiparty Election, winner <75% (DPI)	3,779	0.435	0.496	0	1
Autocratisation (DPI)	3,601	0.015	0.122	0	1
Democratisation (DPI)	3,601	0.038	0.191	0	1
Political Competitiveness (Vanhanen)	4,189	27.404	25.682	0	70
Unitarian	4,177	0.729	0.444	0	1
Ethnic Fractionalisation	3,354	0.404	0.290	0.010	0.930
Oil Exporter	3,547	0.158	0.364	0	1
Mountains (log)	3,700	2.099	1.434	0	4.557
Population (log)	4,494	15.139	2.274	8.863	20.936
Economic Growth	4,467	3.072	7.717	-66.720	106.280
GDP per capita (1000 US\$1990)	4,491	5.098	8.165	0.050	74.292

Source: Author's elaboration.

TABLE 2.  
LOGIT ANALYSES OF THE DETERMINANTS OF CIVIL WAR INCIDENCE, 1976-2000

Dependent Variable: Civil War Incidence	Model I	Model II	Model III
Selection (Polity IV)	-1.022*** (0.183)		
Dual/Transition (Polity IV)	-2.239*** (0.382)		
Election (Polity IV)	-0.767*** (0.210)		
Autocratisation (Polity IV)	0.448 (0.437)		

TABLE 2.

LOGIT ANALYSES OF THE DETERMINANTS OF CIVIL WAR INCIDENCE, 1976-2000 (CONT.)

<b>Dependent Variable: Civil War Incidence</b>	<b>Model I</b>	<b>Model II</b>	<b>Model III</b>
	0.104 (0.431)		
Democratisation (Polity IV)			
		-0.046 (0.179)	
Election, 1 candidate (DPI)			
		-2.067** (1.045)	
1 Party, many candidates (DPI)			
		-0.581* (0.306)	
Multiparty Election, winner >75% (DPI)			
		-0.188 (0.173)	
Multiparty Election, winner <75% (DPI)			
		0.770** (0.388)	
Autocratisation (DPI)			
		0.439 (0.295)	
Democratisation (DPI)			
			-0.008*** (0.004)
Political Competitiveness (Vanhanen)			
	0.859*** (0.207)	0.866*** (0.198)	0.848*** (0.187)
Unitarian			
	1.097*** (0.249)	1.233*** (0.248)	1.350*** (0.236)
Ethnic Fractionalisation			
	0.229 (0.178)	0.170 (0.172)	0.178 (0.159)
Oil Exporter			
	0.298*** (0.049)	0.299*** (0.045)	0.310*** (0.043)
Montains (log)			
	0.347*** (0.049)	0.246*** (0.047)	0.274*** (0.044)
Population (log)			
	-0.028** (0.011)	-0.029*** (0.008)	-0.026** (0.009)
Economic Growth			
	-0.040** (0.016)	-0.037** (0.015)	0.025* (0.015)
GDP per capita (1000 US\$-1990)			
	-9.5474*** (1.071)	-8.555*** (1.039)	-9.028*** (0.974)
Constant			
N	2, 570	2, 591	2, 809
Log likelihood	-764.140	-832.626	-904.943
Akaike Inf. Crit.	1, 554.281	1,693.252	1, 827.887

Standard errors in parentheses. \* p < .1, \*\* p < .05, \*\*\* p < .01.  
Source: Author's elaboration.

The models lend strong empirical support to most of the hypotheses suggested above. It is indeed important to note that all variables that measure the competitiveness of the executive power have a negative sign, regardless of the dataset being used. The

variables that reach statistical significance are also all negative, thus confirming *H1* and *H2*. In this sense, the results also generalise the findings of Carey (2007) and, with respect to civil war incidence, the results show that “[...] any election of the executive is better than choosing the executive without election” (Carey, 2007: 60). Even non-democratic selection processes seem to significantly reduce the likelihood of civil war incidence. In the first model (Polity IV), setting all variables to their medians, I see that the probability of a country with a “selected” executive having a civil war in any given year<sup>32</sup> is about 4%, and with a “dual or transitional” the odds are a mere 1.3%. When using the DPI data set for estimating the chance of civil war for a median country which has one party with several candidates, I found a 6.2% risk of civil war incidence, and if the country had a multiparty election where the winner received more than 75% of the votes the odds are about 4%.

Model III shows that the negative effect of the political competition from the Polyarchy Dataset (Vanhanen, 2003) on civil war incidence, also pointing out that an increase in competition decreased the probability of internal conflicts. Setting the remaining independent variables to their medians, we see that a country which scores 0 at the Vanhanen index has about 3% chance of civil war incidence, whereas another one scoring 70 sees its odds reduced to about 1%.

Moreover, none the models show the “inverted-U” relationship between the competitiveness of the executive power and civil wars, what is also in line with the results presented by Strand (2007) and Vreeland (2008). Although we cannot rule out the possibility that such curvilinear relationship might occur in other political variables, it certainly cannot be seen in the executive power.

The regressions also show other robust findings. Six independent variables are significant in the three models, all with the expected signs and largely in accordance to the quantitative literature on civil wars. On the one hand, unitarian government, ethnic fractionalisation, mountainous terrain and large population increase the risk of civil war incidence. Of all these factors, ethnic fractionalisation and large population have the largest impact on the dependent variable. Using the first model as an example and holding the independent variables at their medians, we see that a democracy with a homogenous population has a predicted likelihood of civil war incidence of 3%, but if the population is highly fractionalised its civil conflict incidence risk triples to 9%. With regards to a large population, a hypothetical country which sees its population increase from 10 to 100 million would see its odds of civil war incidence rise from 5% to 11%.

On the other hand, economic growth and GDP per capita, as expected, reduce the risk of civil war incidence. We see that a democratic country which has experienced a negative economic of growth of 5% has about 6.7% risk of civil war incidence, and a positive 5% economic would reduce this chance by almost 2%. Moreover, our models confirm that GDP per capita is indeed one of the most factors to reduce the incidence of civil conflicts.

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32. All post-estimation analyses in this paper were performed using Clarify for Stata 12 (Tomz *et al.*, 2003).

Our results show that that whereas a democratic country at the lowest 10th percentile of GDP per capita has about 5.6% likelihood of civil war incidence, the odds for the same country at the 90th percentile of GDP per capita are virtually zero. The measure for oil-exporting country, however, does not reach statistical significance in any of the three models.

Despite having the predicted signs in all the models, regime change is only significant when we measure the impact of DPI's measure of autocratisation on civil war incidence. For a country with elections where the winning party won more than 75% of the votes, the odds of civil war incidence when it moves from democracy to autocracy increases about twofold, from 3.9% to 8.2%.

We observe that, in Model I, "selection" and "dual/transitional" are correlated with higher reduction of civil war incidence than democratic elections when we take "unregulated" as the base category. In Model II, "elections with multiple candidates from a single party" also reduces the chances of civil war incidence, while democratic elections, albeit also with the expected negative sign, are not statistically significant. This finding is indeed relevant, but it should be interpreted very cautiously: since there are only a small number of observations for both "selection" in Model I (11.5%) and "elections with multiple candidates from a single party" in Model II (1.5%), the absence of civil wars in those few cases probably leads us to over-estimate the effect of those variables in the analyses presented above.

## DISCUSSION

In the first section of this article, I discussed the theoretical problems of several indices of democracy and its applications in civil war research. Following Strand (2007) and Vreeland (2008), I argued that there are several endogeneity issues that affect the Freedom in the World and Polity IV's full index. In the case of Polity IV, the index can be easily disaggregated and recombined in different ways, thus minimising its potential problems. Unfortunately, as mentioned by Vreeland (2008), one cannot remove the contaminated parts of the Freedom in the World, so the Freedom House index is not recommended for civil war analyses.

The Polyarchy Index is not endogenous with civil wars, but the index is not consistent in its coding of political competition. Also, its participation category may not be accurate since it is biased in favour of countries with an older population and compulsory voting system. The index can be used in civil war studies, but one should be aware of its limitations. Regarding the Database of Political Institutions (DPI), the index allows researchers to combine variables in any way they prefer, although it is important to not include indicators that are problematic for civil war studies. I have also shown that the first category in DPI's "Executive Index of Electoral Competitiveness" variable is endogenous with civil conflicts (*1 – No Executive*), and that category 5 contains a logical error and should be

classified as system missing. Apart from these two cases, the variable can be employed by civil war scholars with no further qualifications.

I have suggested that the competitiveness of executive power is a relatively unbiased proxy for political competition. If one decides to adopt a strictly Schumpeterian/minimalist definition of political regimes, focusing on executive competition seems adequate. One can have at least three similar measures of competitiveness to compare the findings (Polity IV's "xrcomp", DPI's "eiec" and Polyarchy's "competition"), the variable is coded in a relatively straightforward manner, and its interpretation is simple. As noted by Carey (2007), it captures the most important aspects of the government, mainly in developing countries, so authors might consider using that variable in their research.

The article also empirically evaluated the relationship of the competitiveness of the executive power and civil war incidence from 1976 to 2000. The results show that, when compared to leaders who have been selected by force, all other methods of executive recruitment are correlated with a lower likelihood of civil conflicts. Although some of the political variables do not reach statistical significance in the models, all measures of competitiveness of the executive power which are statistically different from zero show a negative sign. This includes indirect nomination via political parties and competitive elections.

The findings presented here also dialogue with the literature on regime transition and federalism. In contrast with other civil war studies, the statistical regressions discussed above do not lend support to the existence of an "inverted-U" relationship between political regimes and internal conflicts. The models suggest that countries which are strongly autocratic become less prone to civil conflicts once they engage in a process of democratisation, even if such process is incomplete. Therefore, promoting elections in closed regimes does not seem to be a bad idea: its positive effects can be seen in this paper. On the other hand, decentralisation/federalism has a negative effect on the probability of civil war incidence, what reinforces the idea that power-sharing arrangements reduce the risk of civil strife.

Additionally, in consonance with most of the civil war literature, the statistical findings indicate that high GDP per capita and fast economic growth make a country less war-prone, whereas a large population, ethnic fractionalisation and mountainous terrain increase the chances of domestic conflicts.

Nevertheless, there is plenty of room for further research on the role of the executive power on civil conflicts. It is indeed necessary to evaluate whether the results presented here would still hold if I had adopted a longer time span for our analysis. Due to DPI's data limitations, such test was not possible. But when more data on executive competitiveness become available, such analysis must be done in order to check the robustness of the findings presented in this work. Moreover, the impact of the competitiveness of the executive power on duration and intensity of civil wars still has to be evaluated. It is plausible to suggest that the executive power affects other dimensions of civil wars rather than their incidence, and this research is still to be written. Due to data limitations, this paper

did not assess the immediate risks of civil outbreak deriving from elections themselves. The data used in this article are only available in country-year format, what is not sufficient to grasp the immediate influence of the election over civil conflicts. This is a promising agenda for new research, but currently we are still dependent on the availability of more disaggregated data.

Finally, not all factors that contribute to civil war incidence can be modelled using large-N statistical tools. Whereas quantitative methods help us to visualise patterns across a wide range of cases, in-depth qualitative studies and formal models can shed light on what causal mechanisms shape conflict dynamics. In this regard, both methods can provide insights on the causes of conflict. By adopting a complementary approach we might be able to have a better understanding of the yet widely unknown phenomenon of civil wars.

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