Geography, Development, and Power: Leaders and Local Economies

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Abstract

While most formal institutions are stable in Western countries, those in Latin America and the Caribbean (LAC) are not. In this context, although less obvious, patterns of favoritism and rent-seeking are observable among particular elites. This paper explores the degree to which the development of subnational regions is affected by their proximity to parliament leaders' birthplaces, and how this might arise from the *de facto* influence given by the unstable *de jure* frameworks of LAC countries. We collect data on 283 political leaders and 153 distinct birth locations over the 1992–2015 period, and construct a panel of approximately 183,000 uniformly distributed subnational micro-regions across 42 countries of LAC. Our results show that parliament leaders hold significant power to divert resources to regions in the closest vicinity to their birth places, as measured by increases in night-light emissions, and World Bank and Chinese aid. The effect is greater than the executive branch leader's, and is informed by the degree of influence given by the peculiar Constitutional frameworks of LAC countries.

JEL Codes: H83, O18, R11

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1 Introduction

Political favoritism and pork barrel politics are phenomena older than democracy. The Roman historian Tacitus mentioned widespread favoritism as one of the main problems of the early empire under Augustus, and pork barrel politics have been a consistent feature of US politics since, at least, the 19th century (Shepsle and Weingast, 1981). In modern political systems, favoritism is often associated with the (mis-)use of political power to benefit particular industries or particular regions. Aghion et al. (2010), for example, document that when a congressman joins the Appropriations Committee —responsible for allocating funds for research university expenditure— his or her state receives larger federal university funds in subsequent years. Such mechanisms also operate at the supranational level in the UN Security Council (Vreeland and Dreher, 2014) as well as at local levels, as Carozzi and Repetto (2016) show for Italy. Their findings document that municipal governments receive larger government transfers when legislators are born there, even when they are not elected there. Favoritism moreover, is not a problem unique to developed democracies. As national accounts of data are imprecise in most developing countries and subnational accounts of development often do not exist, Hodler and Raschky (2014) instead use changes in light intensity at night in their seminal study of favoritism. Thus, apart from exposing the significantly higher levels of night light in leaders' birth regions, they find suggestive evidence —without claiming causal identification— that increased inflows of Official Development Assistance (ODA) aid in a country typically result in more economic activity in the home region of the country's president – suggesting aid as a specific channel of favoritism. Dreher et al. (2019) repeat the exercise using local level data of World Bank and Chinese aid instead. By focusing on inflows on African countries, they find substantial evidence that Chinese aid is diverted to leaders' home regions.

This literature typically focuses on heads of state or government —the former in the form of presidents in presidential systems and the latter as prime ministers in parliamentary ones. For the case of the Americas in particular, Hodler and Raschky (2014) do not find a conclusive result.[1] Moreover, in Latin America and the Caribbean (LAC) political systems have very influential leaders of parliament, and thus alternative centres of power. Furthermore, while Constitutions and basic institutions delimiting governance are very stable in Western countries, those in LAC countries change substantially over time. Ecuador for instance, since its formal independence from the Spanish empire in 1830, has had 20 Constitutions —averaging an outstanding figure of 9.5

[1] Hodler and Raschky (2014) look at executive branch leaders of 126 countries, 21 of those countries being from the Americas. As results stand in column (1) of Table 4, when categorizing by continent, leaders birth regions have a non-significant coefficient equal to zero, indicating by this, a lack of statistical power. Doubling their sample size for the LAC region, our results, later detailed in sections 3 and 4, show that the effect for executive branch leaders is, if anything, negative.

years per Constitution. One of the consequences of this institutional instability comes in the form of ephemeral *de jure* power residing in various political actors, which in principle would make their *de facto* influence precarious. While this may mean that exercises of favoritism cannot become entrenched in particular political elites, the institutional instability of the region have created other consequences. One of the most important is the constant tension between the executive and the legislative.

Two of the many anecdotes of the region portray this tension well. On the one hand, the former Ecuadorian executive branch leader Rafael Correa has repeatedly argued that "...to win the presidency is not to win [discretionary] power [over national affairs]. There are several *de facto* powers that have informed, historically, our economic and public policy..." Fundamedios (2007). Correa was thereby referring to the *de facto* power over key economic and political decisions historically held by the Ecuadorian Parliament,[2] which he claimed needed to be rebalanced in order to improve the country's, usual, poor economic performance. On the other hand, parliament leaders in Venezuela have publicly challenged the power of President Nicolas Maduro in recent years. Maduro and his predecessor, among other things, have been accused of enriching their families and home regions (Baverstock and Foster, 2013). Most notably however, as recent as 2019 the leader of the national assembly Juan Guaidó reacted to an allegedly rigged election —by the Maduro regime— and declared himself interim president of Venezuela arguing that the constitution in such situations grants him the power to do so. These stories, besides illustrating the very common tension between the executive and legislative branches in LAC countries, illustrate the significant influence the leaders of the legislature can have in the region. Thus, while the direct and quite visible favoritism and rent-seeking of heads of state may be pronounced elsewhere (Hodler and Raschky, 2014; Dreher et al., 2019), the typical unstable allocation of *de jure* power in the region leaves substantial *de facto* power in the hands of party or faction leaders. A hitherto unexplored phenomenon is then the regional favoritism enacted by parliament leaders of Latin America and the Caribbean.

While favoritism occurs at different levels and in different manifestations, it can take three basic forms. First, politicians can favor specific regions or groups of voters with subsidies or other forms of policy concessions in order to buy votes in upcoming elections (Cox and McCubbins, 1986; Dahlberg and Johansson, 2002; Dixit and Londregan, 1996). Second, politicians and political parties can favor special interests with subsidies, protection or specific regulation in return for direct campaign or party support, bribes or less direct support (Cox and McCubbins, 2007; Bertelli and Grose, 2009; Berry et al., 2010) . Finally, politicians can also engage in *pure* favoritism in the form of support or other policies that directly benefit their family, friends and immediate network (Bates, 1974; Kramon and Posner, 2013; Hodler and Raschky, 2014; Burgess et al., 2015; Bommer

[2]Correa was also referring to diverse other interest groups from the banking and media sector.

et al., 2018; Dreher et al., 2019). In the following, we argue that the theoretically relevant geographic area in which favoritism can be seen differs across these manifestations. On the one hand, in order for it to be effective, vote-buying favoritism must necessarily affect a relatively large area or a large demographic group, whereas on the other hand, support-buying policy is more geographically focused on *pure* favoritism and in most cases will have visible consequences in very sharply defined areas. As such, we specifically ask if the particular institutional division of political power in Latin America implies that parliament leaders can channel resources to client regions in approximately the same dimension as is usually found for heads of government or prime ministers.[3] We argue that a basic mechanism emerges from the uncertain normative framework underpinning governance in the region, and explore how and to what extent the influence given by *de jure* and *de facto* mechanisms shapes the favoritism of parliamentary leaders.

To do so, we collect data on 283 Latin American and Caribbean leaders' birthplaces. Most of these data are from parliament leaders —from Upper and Lower houses. We also collect information on executive leaders that are not included in the data directly shared with us by Hodler and Raschky (2014). The panel data consist of 153 specific leader locations over the 1992–2015 period, which we analyze in relation to 200,007 subnational regions in models that control for province-year and regional fixed effects, and that include relevant covariates such as lagged night-light and a control for the executive leader's birth region. To shed light on the transmission mechanism, we further develop an Index of Parliamentary Powers (IPP), which is then interacted with leaders' birthplaces to control for the quite different degrees of *de jure* powers allocated to the parliament. We, nevertheless, test other plausible proxies of institutional resourcefulness. For example, we run a specification where we use the age of the current constitution, as a measure of constitutional entrenchment, or an index of shared power with the executive branch, instead of our own IPP. By exploiting the cross-sectional and time-varying data of our preferred model, we avoid capturing a historic association between higher levels of economic development (night-lights) and the location of a leader's birthplace. That is, relying on variation within regions over time in tandem with our control variables —and later, even with the inclusion of pre- and post-trends dummies— allows us to argue for a plausible causal effect of the parliament leaders' birth place on the development of neighbouring regions and the quantity of aid they receive.

Our results show that parliament leaders are able to divert resources to regions in close vicinity of their birthplaces (in a radius of 11 km from the leader's birthplace), represented by an 7.2% increase (significant at the 10% level) of the regions' night-light emissions just one year after the leaders' taking office. The discretionary influence of parliament leaders is greater than that estimated for executive branch leaders, which is negative

[3]We use the terms heads of state, heads of government, prime ministers, executive leaders, and presidents interchangeably to refer to leaders of the executive branch throughout the paper.

(11% decrease significant at the 1% level). The effects are larger in countries with less entrenched constitutions, as measured by the age of the last introduced constitution in the country. Every extra constitution year generates a 0.2% additional decrease (10% level) of the region's night-light figure while countries within the first quartile of constitution age experience a 15.7% increase (5% level). Similarly, the effects are larger when extremely little *de jure* power is allocated to the parliament as countries with very low IPP evidence an increase of 18.9% (5% level) in its light indicator.

The effects are also apparent when studying aid as outcome variable. For World Bank aid in general, being in the vicinity of a parliament leader's birthplace (55 km) means an increase of 7.4% (at 5% level). Parallel to the light indicator; for every extra year the Constitution is in place, the effect of aid decreases by 0.1%, and having a very low IPP generates a 21.9% growth of the aid output. The effects on Chinese aid conversely, are only apparent when discretionary power given to the parliament via the constitution is not very low. Like for night-lights, we show how this favoritism is already semblant in the year after the assumption of power by the parliament leader.

To address the potential endogeneity of the leaders' birth region, we also test if the homelands of the future parliament leaders exhibit significantly more intense nighttime light in the years prior to or after a parliamentary transition, i.e., prior to or after their parliament's leadership. We find no evidence pointing towards post- nor pre-trends in the night-light figures of these regions. We thus conclude that parliament leaders' distributional power in LAC countries then, is larger than that of presidents or prime ministers, emerges already in their first year in office, and is at least as important as the degree of *de jure* and *de facto* influence given by the institutional frameworks within which it operates.

We contribute to the literature that explores the importance of institutions on resource redistribution, by documenting how different forms of institutions can strengthen or weaken subnational favoritism (Robinson et al., 2005; Acemoglu and Robinson, 2012; Prebisch, 2016). Furthermore, we add to the literature on channels of favoritism by assessing the effects of leaders' geographic characteristics on foreign aid (Hodler and Raschky, 2014; Dreher et al., 2019). Whereas some previous studies focused on prime ministers in a smaller sample of the Americas, we exploit changes in night-light intensity within subnational regions of almost all parliament leaders' LAC countries. Finally, our paper is related to a literature that recognizes the interplay between geography, institutions and regional development (Banerjee and Iyer, 2005; Henderson et al., 2001; Henderson et al., 2018). We complement these studies however, by focusing on the phenomenon of favoritism in the LAC region, which has a particularly unstable context and thus is worth separating from other supra-regions.

In general, our findings are of political and economic relevance as they are consistent with the existence of *pure* favoritism targeted at politicians' immediate network, i.e.,

direct transfers to family, friends or acquaintances —as parliament leaders are only able to divert resources to regions in a radius of 11 km from the leader's birthplace. This *pure* favoritism undermines a nation's distributional efficiency beyond a more general favoritism, as the benefits are concentrated in even less people. We nevertheless also observe favoritism effects on larger areas when focusing on foreign aid. For instance, the results related to World Bank's aid-related favoritism are consistent with a more general form of favoritism, which focuses on buying votes by directing resources to larger areas and rally more voters behind the leaders —as they are only able to divert resources to regions in a radius of 55 km from their birthplace. Overall, these effects and the key institutional mechanism on *de jure* and *de facto* influence given to the parliament via the Constitution, highlights the importance of a clear delimitation of control of such branch of the state.

While our work exploits high-spatial resolution data associated to economic activity, we recognize we thereby ignore other, equally important, indicators of development. For instance, in this piece we do not explore the potential direct effects of such favoritism in terms of human health, education, or security. Similarly, we say little about how our results on aid reconcile with recent contributions that find that leaders from the executive branch channel aid to places that have —historically— received less of such funds Seim et al. (2020), or that suggest that government officials move governmental funds to other regions or sectors from places that recently received aid (Cruzatti C. et al., 2020).

The rest of the paper is structured as follows. Section 2 outlines our data and the empirical strategy. Sections 3 and 4 describe our findings, while section 5 presents the main robustness checks conducted. Section 6 concludes.

2 Identification Strategy

2.1 Data Structure

We base our analysis on a panel dataset for 42 Latin American and Caribbean countries between 1992 and 2015 rendering a total of 183,082 subnational micro-regions, our units of observation. We gather information about political leaders' birthplaces, and geocode 153 distinct localities at the centre of their official second administrative border division (ADM2) —depending on the country, this could be either a municipality, city or town. We use the cut-off date of January 1st to deal with half years or acting parliament leaders. In other words, if a leader was in office on January 1st, the year is "allocated" to them.[4] For countries with a bicameral system, we define the parliament leader as the one exercising the leadership of the lower House, as they are institutionally —for instance, the lower

[4]For countries where a number of individuals alternate the leading position during the same year, we allocated the legislature leadership to the individual who spent the most time as the leader.

House can usually override Upper House's decisions— and historically more influential. Nevertheless, in robustness tests that we show in the appendix, we make a distinction between Upper and Lower House leaders.

To account for regional favoritism, we rely on a common measure among development scholars (Henderson et al., 2012; Hodler and Raschky, 2014; Donaldson and Storeygard, 2016; Weidmann and Schutte, 2016; Bruederle and Hodler, 2018). This literature has validated the use of night light emissions as a proxy for economic activity or human development, given its need for most forms of production and consumption nowadays. Therefore, our dependent variable $Light_{ict}$, accounts for the intensity of nighttime lights in region i in country c and year t. Produced by the National Oceanic and Atmospheric Administration (NOOA), nighttime lights is an indicator that ranges between 0 and 63 —with an added standard 0.0001 constant for emission when using logs— that allows us to account for a spatial resolution of 1 by 1 km, and a balanced panel between 1992 and 2013 for all the regions under study. We also replicate our main results using aid as the main dependent variable instead. We run regressions both on World Bank disbursed aid amounts $Aid_{i,c,t}$, and Chinese committed figures $China\ Aid_{i,c,t}$ —committed, as Chinese aid data does not include disbursement details.

Assigning latitude and longitude coordinates to birthplaces of Parliament leaders allows us to create a binary variable, $LeaderBR_{i,c,t}$, that takes the value of one when region i is close to the leader's birth region of country c in year t, and zero otherwise.[5] Similarly, we argue that a potential transmission channel is associated with the executive branch leaders' birth regions. We build on the data shared with us by Hodler and Raschky (2014), and code $PresidentialLeaderBR_{i,c,t}$ as a binary variable that is equal to one if the executive leader of country c in year t was born near a region i, and zero otherwise. As Hodler and Raschky's data do not cover all the countries that we look into, we collect information on the birth place of executive leaders by searching official government and personal websites, and geo-code this information ourselves.

However, institutions in Latin America and the Caribbean are known for their constant change and overall instability. Thus, changes in the amount of *de jure* power granted to the different political actors may affect their behavior directly as well their *de facto* influence. As such, we expect heterogeneous favoritism effects across LAC countries and therefore include proxies that capture the redistribution of power among different factions of the political composite. While the specific Parliamentary Powers Index, developed by Fish and Kroenig (2009) exists; their index is based on 32 criteria intended to capture different aspects of the power allocated to the legislature —relative to the other branches of government. This index is, nevertheless, not a practical option for

[5]We exclude two Parliament leaders who were born abroad from our sample; Victor Jeame Barrueto (born in Madrid, Spain), who was leader of the Chilean parliament between 2000 and 2001, and Alfred T. Oughton (born in London, England), leader of the Bermuda Senate in the 1998-2008 period.

this study as several elements of the index are not available for a large sample of countries, and the full index is only available as a cross-section. Given the substantial constitutional instability in most of Latin America, we cannot assume that the power allocation is stable over a 23-year period. We therefore develop our own Index of Parliamentary Power (IPP). Inspired by a similar exercise in Bjørnskov and Voigt (2018), we construct an indicator based on the constitutionally defined allocation of powers and separation of competences. We base our index on 15 variables available from the Comparative Constitutions Project (Elkins et al., 2009), which we update and expand to cover all sovereign countries in the region —as well as all colonies with effective home rule with data on light intensity. Table A.1 in the Appendix section details the 15 indicators included in our index. Our IPP measure first captures information on whether the constitution directly appoints a speaker or similar official leader of the legislature, i.e., if there indeed exists a *de jure* leader of the parliament. The IPP further includes elements that account for the degree of power discretion within which the parliament operates. That is, whether it legislates without the consent of any other political actor or faction, or, if cabinet members have immunity from prosecution. In sum, we use the IPP as a measure of concentration of discretionary power in the parliament. For each element listed in Table A.1, we code a score of 1 when the legislature has actual power, 0.5 if the provision is uncertain, and 0 if the legislature does not have actual influence on the topic. The final *IPP* is a simple rate between 0 and 1, describing the average across the 15 components of Table A.1. As illustrated in Figure 1, the power index is distributed between a minimum of 0.13 in a number of former British colonies in the Caribbean, and a maximum of 0.67 in Nicaragua in recent years. We mainly use this index in interactions with variables at the local level, while it allows us to separate potential effects of having greater power allocated by the constitution at the subnational level —as it could later translate in larger influence for favoritism.

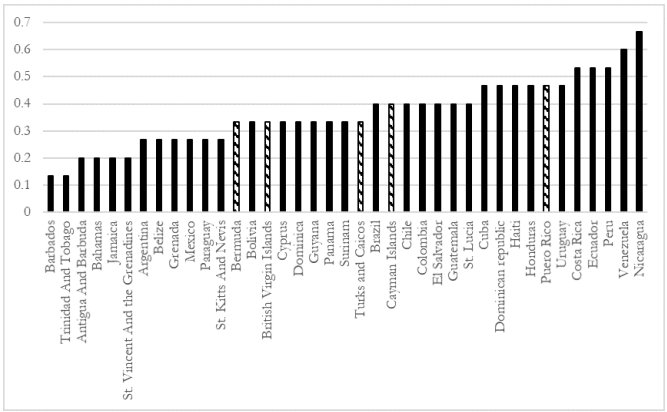


Figure 1 – Index of Parliamentary Powers, all included countries in 2015

Furthermore, given the unstable jurisdictional framework within which our observation units are likely to operate, we exploit other, perhaps more direct proxies of

de jure- and *de facto*-originated influence. *AgeConstitution* then refers to the number of years since the adoption of full new constitutions, not only reforms. For the number of years since the last reform or amendment was introduced to the constitution, we create a variable labeled *AgeAmend*. Both are arguably institutional sources of influence, yet, politics do not operate in a social vacuum. Therefore, we use data on leaders from other branches or houses to generate interactions that would indicate, a priori, larger room for discretionary action for our leaders of interest. Therefore, we use $PresidentialLeaderBR_{i,c,t}$, and a dummy representing the birth regions of leaders of the Upper House $LeaderUpperHouse_{i,c,t}$ to interact them with our main dummy $LeaderBR_{i,c,t}$. In robustness tests we also construct an index portraying the degree of unclear delimitation of jurisdiction between the executive and the legislative in the constitution, $SharedPower_{c,t}$. We also use elements of our IPP directly and interact it with our Leader dummy. In particular, we use the dummy called LHLEAD in Table A.1 and we rename it $Speaker_{c,t}$. The latter variable captures information on country-year pairs where the constitution defines a formal position of leadership within the Parliament. All variables rely on information from the Comparative Constitutions Project (CCP) (Elkins et al., 2009) which we update and expand to cover all the constitutions within our sample. We also use a dummy variable *Independent* representing the independent status of the country under study —as for the colonial past of countries of LAC. Finally, we additionally account for time-in-office-related mechanisms that could inform varying degrees of power redistribution. Using our gathered data on legislative leaders we build a variable *Experience*, which reports the number of years the Parliament leader has been in power until year t, and a variable *Tenure*, that accounts for the total number of years in office between 1992 and 2015. Table A.2 provides the sources and definitions for the variables used throughout this paper, while Table A.3 provides summary statistics for all of them.

2.2 Empirical Strategy

In order to study the extent to which parliament leaders in LAC countries can channel resources to client localities, we employ a model based on the work on favoritism by Hodler and Raschky (2014). To calculate the average change in emissions of Night-Light within each subnational region per year, we estimate:

$$Light_{i,c,t} = \alpha_i + \eta_{j,t} + \beta_1 LeaderBR_{i,c,t-1} + \beta_2 Light_{i,c,t-1} + \beta_3 PresidentialLeaderBR_{i,c,t-1} + \epsilon_{i,c,t} \quad (1)$$

where β_1 is our main coefficient of interest, $LeaderBR_{i,c,t\text{-}1}$ is a dummy detailing whether the region under study is close to the parliament leader's birthplace, whereas

$PresidentialLeaderBR_{i,c,t\text{-}1}$ is a dummy detailing whether the region is close to the executive-branch leader's birthplace. We also include $Light_{i,c,t\text{-}1}$ to capture previous levels of development or economic activity, to address concerns about reverse causality, i.e., leaders being elected as result of particular socioeconomic conditions (proxied by $Light_{i,c,t}$) preceding him/her. [6]

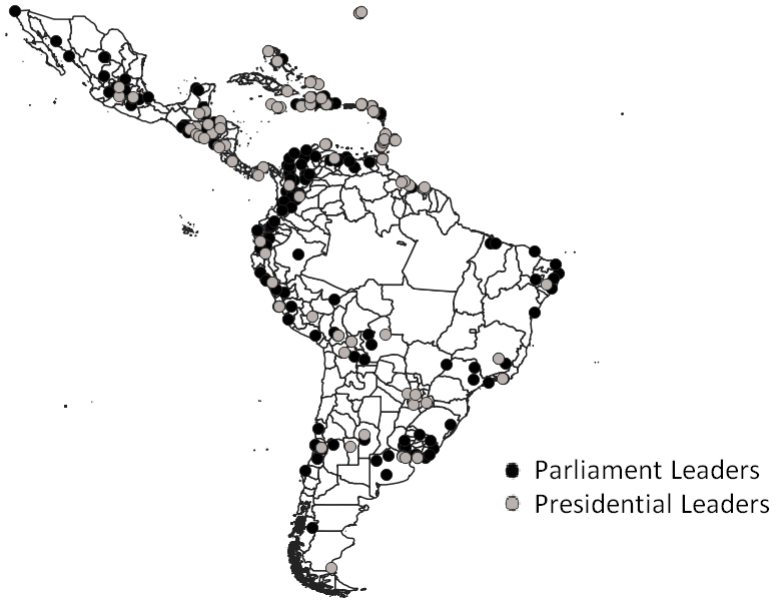


Figure 2 – Leaders' Birth Regions

Notes: Black points refer to the Parliament leaders' birthplaces. Gray points to prime ministers' (Presidential) birth regions.

Figure 2 shows a map of the birth regions of political leaders across the LAC region at the ADM2 level. Regional variation between areas where the leaders of the Parliament (in black) were born and the birth places of Executive leaders (in gray) can be observed, particularly for the larger countries. Favoritism is likely to be present in more than one political faction, and more so, as discussed, in regions with volatile institutional incentives for discretionary action such as in LAC countries. To the extent that leaders of the executive have been consistently shown to favor their birth regions in other continents, and these regions might coincide with the ones where the parliament leaders were born, $LeaderBR_{i,c,t\text{-}1}$ might capture the impact of presidential leaders instead. Thus, the role of the birth region of the leader of the executive branch might very well belong in the model as an independent covariate. For this reason, we include in our main specification a control $PresidentialLeaderBR_{i,c,t}$, which would capture information similar to the $LeaderBR_{i,c,t}$ variable but now referring to the leader of the executive branch. We also lag this covariate

[6] In robustness specifications we use other plausible proxies of development that can be seen in Table B.2 of the appendix. Results do not vary qualitatively.

$PresidentialLeaderBR_{i,c,t\text{-}1}$.

Our preferred units of observation are circular-shaped micro-regions —with a radius of 5 km— uniformly dispersed throughout all Latin American and Caribbean countries. In all preferred specifications, to account for general shocks in all regions within a province/state-year, and time-invariant traits of the regions under study —such as latitude, size, elevation, etc.— we control for ADM1-year ($\eta_{j,t}$) and (α_i) regional fixed effects.[7] We cluster standard errors at the level of parliament leaders, such that clusters contain all regions and years where the same leader has been in office.[8] To account for potential geographically-related spill-overs, we use different cut-off distances from leaders' birth regions, i.e., distances of 111km, 55km, 28km, and 11km, in different regressions.

As noted before, we expect systematically heterogeneous favoritism effects as the degree of power allocated (in-) formally to parliament leaders varies considerably in our sample (as we can see, for instance, in Figure 1). Note that the uninteracted effects ($beta_1$) of constitutional features are captured by the province-year fixed effects of equation (1), as they vary at the country-year level. Thus, in equation (2), we only include an interaction between our country-year level variables (e.g., Index of Parliamentary Powers) and our variable of interest $LeaderBR_{i,c,t\text{-}1}$. This interaction is meant to take into account the local-level effect of institutionally, (in-)directly-originated, country-level variation in power given to the parliament. As the effects of institutional differences on the entire country and ADM1 regions are captured fully by the fixed effects, the interactions thus capture the additional effects relevant at the local level. We thus estimate:

$$Light_{i,c,t} = \alpha_i + \eta_{j,t} + \beta_1 LeaderBR_{i,c,t-1} + \beta_2 (LeaderBR \times CYV)_{i,c,t-1} + \beta_3 Z_{i,c,t-1+} \epsilon_{i,c,t} \quad (2)$$

Where CYV would represent any country-year level institutional variable (IPP, AgeAmend, AgeConstitution, etc.). Adding this interaction term implies —conditional on β_1— that the coefficient on $(LeaderBR \times CYV)_{i,c,t-1}$ will now measure the effect of being near a Parliament leader's birth region on night light intensity in countries with different amounts of *de jure* or *de facto* influence granted to the legislative branch directly (e.g., IPP, SharedPower), or indirectly (e.g., AgeConstitution, AgeAmend). Z is the vector of individual (region) controls ($Light_{ict\text{-}1}$ and $PresidentialLeaderBR_{i,c,t\text{-}1}$) included in equation (1).

Along the same lines, following the same equation (2), we further test for any

[7] ADM1 refers to the first official administrative division of a country. Depending on the country, this could either refer to a State or a Province.

[8] For completeness, we lag the clusters by one period, even though results without this lag structure are qualitatively identical and can be requested directly to the authors.

potential effects of informal devices such as partisanship or political networks as an important source of redistributive practices. Research on distributional politics, has shown that cooperation often provokes an intensified effect on the parties' utility functions (Arulampalam et al., 2009; Baskaran and Hessami, 2017; Brollo and Nannicini, 2012; Curto-Grau et al., 2018). Again, by expanding the existing local data on elected politicians of Hodler and Raschky (2014), we include an interaction term between parliament leaders of the Lower House —our sample of interest— and presidential leaders. Later, we also test an interaction with the parliamentary leaders of the Upper House.

In the following section, we present baseline results and some variations using different proxies for constitutional instability in Latin America and the Caribbean. We run our specifications on different distances around the leader's birthplaces to account for the geographical extent of the possible regional favoritism. While potential, regionally-broader effects —i.e., regions that are more than 11km away from the region where the leader was born— would indicate a more general form of favoritism that mostly look to buy "votes from home and beyond", effects on closer regions — 11km or less— would be more consistent with *pure* favoritism, as that would mean that leaders are directing resources to friends, family and immediate contacts.

3 Results

To get a first impression on how nighttime light data may capture changes in economic activity as a result of regional favoritism exercised by parliament leaders, we briefly explore the Dominican Republic as a pertinent case between 1996 and 2005. Figure 3 displays the average night light emissions between 1999 and 2005 in a radius of roughly 10 km from the center of the municipality "San José de Los Llanos" of the province "San Pedro de Macorís" in the Dominican Republic, which is the birthplace of the parliament leader Rafaela Alburquerque. Between the presidencies of Leonel Fernández in 1996-2000 and Hipólito Mejía in 2000-2004, Rafaela Alburquerque acted as president of the Lower House of the Dominican parliament between 1999 and 2002. The three individuals belonged to different political parties when concurrently in power, and did not share their region of birth. This particular dynamic exemplifies the phenomenon that we address in this paper, i.e., we look into a regions' growth when it is geographically close to the birthplace of the parliament leader in office —that for this example on the Dominican Republic, was between 1999-2002.

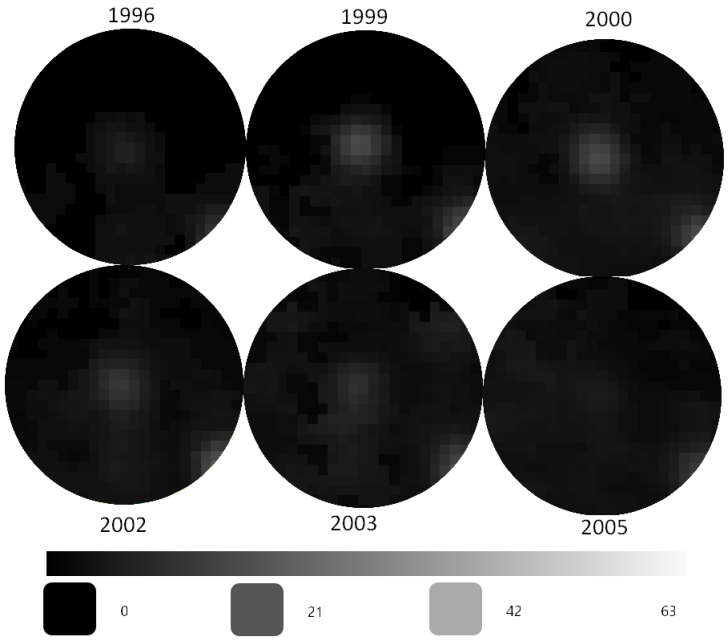


Figure 3 – Images generated by authors that represent the change in Night Light emissions between 1996 and 2005 in regions within approx. 10 km Rafaela Alburquerque's birthplace. Rafaela Alburquerque acted as president of the Dominican Republic assembly between 1999 and 2002.

Before Rafaela Alburquerque's arrival into office (1996-1998), nighttime light emissions in regions within roughly 10 km of her birthplace, had a maximum output of 14. These emissions however, increased dramatically upon her arrival into office (2002) climbing up to 18.5 —-a 32.14% growth rate. Shortly after she left office (2005) these numbers went down to 14, as can be clearly seen for the year 2005. The fact that light intensity significantly grew during her term, and reversed shortly after the end of her leadership (post-2002) suggests that when in office, Rafaela Albuquerque may have deliberately favoured her birth region. While such an example is obviously not evidence of either causality or generality, this first example from our data is similar to the findings by Hodler and Raschky (2014). Although not conclusive for the Americas, they show that the birth regions of executive-branch leaders tend to light up soon after they come to power or gain access to additional funds. Furthermore, they show that immediately after leaving office it is common to notice a decrease in the region's light output, in line with our example reflected in Figure 3.

3.1 Main Results: Parliament's favoritism

Our baseline results for equation (1) are reported in Table 1. As such, we estimate all coefficients relative to province-specific changes in any given year. Similarly, all time-invariant characteristics of the micro-regions under study are controlled for by the regional

fixed effects.

In Table 1, we report three sets of results for each distance cutoff (111km, 55km, 28km, 11km): 1) results with ADM1-year fixed effects only and the lagged dependent variable; 2) results including the full set of fixed effects and lagged light intensity; and 3) results including the fixed effects, lagged light intensity and the executive branch leader dummy. The latter is our preferred specification, as the estimates of 1) and 2) are likely to capture selection effects if leaders are more likely to be appointed when they are from a particular, historically relevant location, come from well-performing regions, or their role is highly correlated with the birth region of the leader of the executive branch.[9] We also prefer closer localities to those farther away because we are more interested in signs of *pure* favoritism rather than in vote-buying patterns. Moreover, defining treated localities as those within 111 km would take treatment variation off a number of small Caribbean countries.

[9]We are aware of the potential Nickell (1981) bias produced by the use of a lagged dependent variable on the right-hand side of the equation. Therefore, one can also read the results of our preferred specifications as lower bounds of the main average effect that should reside between the estimates in specifications with lagged light intensity and without regional fixed effects as in columns 1,4,7 and 10, and without lagged light intensity but with regional fixed effects that we ran but do not include in the final table for simplicity (Angrist and Pischke, 2009). The results of the latter specification are indeed between our most rigorous specification of equation (1) and the ones of columns 1,4,7 and 10, and can be directly requested.

Table 1 – Leader effects on Economic Activity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	**Light 111km**	**Light 111km**	**Light 111km**	**Light 55km**	**Light 55km**	**Light 55km**	**Light 28km**	**Light 28km**	**Light 28km**	**Light 11km**	**Light 11km**	**Light 11km**
$LeaderBR_{t-1}$	0.143***	-0.001	-0.001	0.181***	-0.026	-0.026	0.280***	-0.004	-0.005	0.359***	0.074*	0.072*
	(2.827e-02)	(2.420e-02)	(2.417e-02)	(4.426e-02)	(3.549e-02)	(3.552e-02)	(5.888e-02)	(4.395e-02)	(4.385e-02)	(5.312e-02)	(4.067e-02)	(4.038e-02)
$PresidentialLeaderBR_{t-1}$			0.008			0.012			-0.042			-0.110***
			(2.508e-02)			(2.918e-02)			(3.387e-02)			(4.194e-02)
$Light_{t-1}$	0.918***	0.346***	0.346***	0.918***	0.346***	0.346***	0.918***	0.346***	0.346***	0.918***	0.346***	0.346***
	(3.759e-03)	(1.330e-02)	(1.330e-02)	(3.795e-03)	(1.345e-02)	(1.345e-02)	(3.801e-03)	(1.349e-02)	(1.349e-02)	(3.798e-03)	(1.349e-02)	(1.349e-02)
Observations	3,653,726	3,653,726	3,653,726	3,653,726	3,653,726	3,653,726	3,653,726	3,653,726	3,653,726	3,653,726	3,653,726	3,653,726
Adjusted R-squared	0.888	0.920	0.920	0.888	0.920	0.920	0.888	0.920	0.920	0.888	0.920	0.920
ADM1-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	NO	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES
Leader SE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Regions	183038	183038	183038	183038	183038	183038	183038	183038	183038	183038	183038	183038
Leaders Diff.			-0.009			-0.038			0.038			0.182***

Notes: The values on Light and $\text{Light}_{\text{t-1}}$ are on log form. Leader clustered standard errors in parentheses; significance levels denoted *** p<0.01, ** p<0.05, * p<0.1

The main finding in Table 1 is that parliament leaders in LAC countries appear able to redistribute substantial resources to their birth regions, reflected in an average increase of 7.2% of night-light emissions in those regions. Across Table 1, when we do not include regional fixed effects (columns 1, 4, 7, 10) the estimates for $LeaderBR_{t\text{-}1}$ are always positive and statistically significant at the 1%, providing evidence of regional favoritism for all distance cut-offs. When regional fixed effects are used, results are only significant at the 10% level and for the 11km cut-off (to the leader's birth region). These results indicate that when one 'zooms in' on sufficiently specific localities, namely the median city size in LAC countries, favoritism from parliament leaders becomes consistently apparent. Thus, regional favoritism seems to concentrate in areas at the closest vicinity of the birth place of LAC parliament leaders. In principle, one can start explaining these results by looking at LAC region geographical characteristics, while provinces in the region have an average size of 2.61 km2. To further test the latter the role of such characteristics, we rerun our main specification including a dummy that represents regions from provinces that are bigger than the median in LAC in our Table B.1 included in the appendix. As can be seen, results reflect how the identified favoritism effects are concentrated in regions that belong to provinces that are smaller than the median province. In tandem, these findings are consistent with our hypothesis on the existence of *pure* favoritism as expressed by direct resource transfers to family, friends and business contacts instead of more broadly defined regional favoritism with the aim of buying votes beyond their home provinces.

Another of the main findings of Table 1 is the smaller favoritism effect of executive-branch leaders $PresidentialLeaderBR_{t\text{-}1}$, detailed in columns 3, 6, 9, 12. The impact difference between parliament leaders' and executive leaders' favoritism can be calculated by substracting β_1 from β_3 - in equation (1) - in the row called "Leaders Diff." at the bottom end of the table. The results show a non-significant effect and a non-significant difference between parliament leaders' and the executive's favoritism for larger distance cut-offs (111km, 55km, and 28km). Yet, the executive impact is negative (-11%) and significant (1%), and statistically smaller than parliament leader's favoritism (18.2%) for the regions at the closest vicinity (11km) of the leaders' birthplaces. These results are in line with the overall behavior of parliament leaders' favoritism, which seems to be explained better as a pure favoritism phenomenon rather than a more general, vote-buying one.

Nevertheless, one could argue that even conditional on ADM1-year and regional fixed effects, the identification of favoritism could be threatened by omitted variable bias. That indeed is a valid concern, especially when considering that our lagged light variable might be capturing something different than what is intended —previous economic development. Bluhm and Krause (2018) show for instance that night-lights are a valid proxy for agglomeration, yet whether they are equivalent to economic development is still unclear when referring to units with high spatial-resolution as ours. For this reason, we

test whether our main control of previous development ($Light_{i,c,t\text{-}1}$) does indeed capture previous development -and not just agglomeration- and add a variable of population ($(log)Population_{t-1}$) to equation (1). Table B.2 in the appendix shows that our results are highly robust to its inclusion, rendering almost identical point estimates (7.2% vs. 7.3%).[10] Finally, one might also worry about the potential confounder effect of other types of leadership to regions' economic development. While this concern is mostly proxied by the use of a dummy on executive branch leaders' birth regions we also wanted to test the influence of other leaders of the legislative branch. For that reason, we ran the same specification as in equation (1), including a dummy for Upper House leader birth regions. The inclusion of this dummy does not qualitatively modify the results of Table 1. These estimates are displayed in Table B.3 of the appendix.

3.2 Mechanism: Institutional influence

3.2.1 De jure influence

A basic mechanism of favoritism arises from the characteristically uncertain regulatory framework that influences governance in the LAC region. Table 2 displays the results for equation (2) —using the Index of Parliamentary Powers (IPP) as the relevant Country-Year-Variable (CYV)— in Panel A, and a modified version in Panel B that categorizes our index on parliamentary powers into two indicators capturing very low values of IPP ($VeryLowIPP_{t-1}$) and very high ones ($VeryHighIPP_{t-1}$), respectively.[11]

Panel A yields a positive (75%) and statistically significant (10%) coefficient on the interaction term $LeaderBR_{t-1} \times IPP_{t-1}$ for the regions closest to the leaders' regions (11km), while all other results for further away regions (111km, 55km, 28km) are non-significant. In tandem, this suggests that parliament leaders in countries with at least some allocation of discretionary powers to the Parliament via the Constitution can and do favour their birth regions. However, most of our sample is included in the interacted term $LeaderBR_{t-1} \times IPP_{t-1}$, i.e., most countries assign at least some de jure power to their parliament. Therefore, we argue a more enlightening iteration of equation (2) would be one that groups values of IPP to differentiate the role of different degrees of parliamentary powers on favoritism. As expected, this grouping gives us clearer insights into the role of formal powers given to the parliament. As is visible in the first row of

[10] We also included a variable on GDP per capita information (Kummu et al., 2018) to separate development as more holistic indicator of welfare, from just economic output. Results are qualitatively the same.

[11] In order to test for the non-linearity of IPP levels, we created several groupings for the IPP indicator. Initially, we created categories referring to all the IPP values in our sample: 0, 0.067, 0.133, 0.2, 0.267, 0.333, 0.4, 0.467, 0.533, 0.6, 0.667, 0.733. Then, we regrouped them in more cohesive categories: Very Low= 0-0.14, Low= 0.14-0.2, Mid-Low= 0.2-0.3, Mid-High= 0.3-0.4, High= 0.4-0.5, Very High= 0.5-1. Overall, the results always pointed towards categories with lower IPP values behaving differently to categories with higher IPP values. The upper and lower bounds of the different ranges used for these IPP categorizations were also randomized in placebo tests, and are available upon request.

column (4) and Panel B, the variable representing the observations with very low IPP $LeaderBR_{t\text{-}1}$ is the only one with a positive and significant estimate at the 5% level. In countries with very low IPP (0-0.14), parliament leaders can generate, an average 18.9% increase of night-light emissions in the closest regions to his/her birthplace and within one year of taking office. Conversely, countries with relatively higher discretionary power assigned to the parliament (e.g., $LowIPP_{t1}$, $MidLowIPP_{t1}$), i.e., less discretionary power in the hands of the parliament leader, show a statistically (5% level) negative impact (e.g., -38.4%, -34.1%) of leaders' birthplaces onto the regions' economic activity. Taken together, the results imply that parliament leaders' favoritism is a phenomenon particular to countries that give, by *de jure* means, very little influence to the parliament, and in line with the results of Table 1 and B.1, is only evident at the closest proximity to the leader's birth region (11 km).

3.2.2 De facto influence

Similarly, constitutions are supposed to be stable and entrenched documents in order to work as literally intended. As discussed in Sections 1 and 2 however, this is not the case for LAC. For that reason, we look deeper into proxies of constitutional instability, which represent strong sources of *de facto* influence —as captured by the IPP. We thus test the effects of constitutional entrenchment by ($AgeConstitution_{t-1}$) and ($AgeAmend_{t-1}$). Using equation (2) and replacing CYV_{t-1} with $AgeConstitution_{t-1}$ and $AgeAmend_{t-1}$ in different specifications, we test the role of other sources of *de facto* influence and display them in columns 1 to 3 in Table 3.[12]

Constitutional entrenchment, measured as significant amendments introduced and the adoption of a new constitution, is important when trying to understand how favoritism is operationalized by parliamentary leaders. On the one hand, the introduction of constitutional amendments translate into an average increase of 8.5% in night-light emissions. On the other hand, when a new constitution is adopted, we observe an increase of night-light by about 11.8% in the regions in the closest vicinity to their birthplaces. The results in column (3) indicate a heterogeneous role of constitution's stability however. Due to the role of constitutions in the third and fourth quartiles of the age distribution (the older ones, and therefore more entrenched), the output of light decreases in regions close to the leader's birth region. Note that both coefficients of the third and fourth quartile are larger in absolute value than younger constitutions represented in $LeaderBR_{t\text{-}1}$. These results support the interpretation of accountability as a channel between constitutional stability and economic activity, given that more entrenched rules might be discouraging leaders from adopting clientelistic practices at the regional level. Overall, the results in columns 1 to 3 in Table 3 suggest that parliament leaders' home regions benefit

[12] As regions farther than 11km away from leaders' birthplaces are consistently not affected, from this point forward and when not explicitly mentioned, we refer to results on 11km localities only.

Table 2 – Leader effects and IPP

	(1)	(2)	(3)	(4)
VARIABLES	**Light 111km**	**Light 55km**	**Light 28km**	**Light 11km**
		Panel A		
$LeaderBR_{t-1}$	0.070	-0.065	0.116	-0.262
	(1.057e-01)	(2.075e-01)	(2.602e-01)	(1.777e-01)
$LeaderBR_{t-1} \times IPP_{t-1}$	-0.164	0.087	-0.272	0.750*
	(2.288e-01)	(4.942e-01)	(6.258e-01)	(4.169e-01)
		Panel B		
$LeaderBR_{t-1}$	0.034	0.042	0.048	0.189**
	(7.477e-02)	(7.113e-02)	(7.534e-02)	(8.320e-02)
$LeaderBR_{t-1} \times LowIPP_{t-1}$	0.172	-0.065	-0.362**	-0.384**
	(1.605e-01)	(1.235e-01)	(1.578e-01)	(1.528e-01)
$LeaderBR_{t-1} \times MidLowIPP_{t-1}$	0.085	-0.066	-0.171	-0.341**
	(8.233e-02)	(1.036e-01)	(1.278e-01)	(1.456e-01)
$LeaderBR_{t-1} \times MidHighIPP_{t-1}$	-0.076	-0.105	-0.029	-0.149
	(8.484e-02)	(8.626e-02)	(9.548e-02)	(1.032e-01)
$LeaderBR_{t-1} \times HighIPP_{t-1}$	0.005	0.001	-0.023	-0.144
	(8.515e-02)	(1.017e-01)	(1.089e-01)	(1.168e-01)
$LeaderBR_{t-1} \times VeryHighIPP_{t-1}$	-0.045	-0.060	-0.095	0.008
	(8.425e-02)	(1.108e-01)	(1.375e-01)	(1.194e-01)
Observations	3,637,167	3,637,167	3,637,167	3,637,167
Adjusted R-squared	0.920	0.920	0.920	0.920
Controls	YES	YES	YES	YES
ADM1-Year FE	YES	YES	YES	YES
Region FE	YES	YES	YES	YES
Leader SE	YES	YES	YES	YES
Regions	182213	182213	182213	182213

Notes: All specifications include a lagged night-light (log), and a lagged Presidential leader dummy as controls. The values on Light are on log form. Leader clustered standard errors in parentheses; significance levels denoted *** p<0.01, ** p<0.05, * p<0.1

when the constitutions of such leaders' countries give more room for non-accountable or discretionary action to the parliament. Note that this constitutionally constrained discretion nonetheless has two dimensions. First, one formal (or de jure) reflected in powers clearly given to the parliament (IPP) constitutionally, and second, an informal (or de facto) one as measured by the stability of the ruling Constitution (AgeConstitution and AgeAmend). As such, the de jure constraints may only become de facto binding once the constitution is sufficiently entrenched.

Table 3 – *De jure* and *de facto influence*

	De jure influence			*De facto* influence	
	(1)	(2)	(3)	(4)	(5)
VARIABLES	**Light**	**Light**	**Light**	**Light**	**Light**
$LeaderBR_{t-1}$	0.085*	0.118**	0.157**	0.081*	0.072*
	(5.080e-02)	(5.014e-02)	(6.821e-02)	(4.192e-02)	(4.044e-02)
$LeaderBR_{t-1} \times AgeAmend_{t-1}$	-0.004				
	(7.102e-03)				
$LeaderBR_{t-1} \times AgeConstitution_{t-1}$		-0.002*			
		(1.157e-03)			
$LeaderBR_{t-1} \times AgeConstitution2Q_{t-1}$			-0.094		
			(9.045e-02)		
$LeaderBR_{t-1} \times AgeConstitution3Q_{t-1}$			-0.200**		
			(9.491e-02)		
$LeaderBR_{t-1} \times AgeConstitution4Q_{t-1}$			-0.255**		
			(1.081e-01)		
$LeaderBR_{t-1} \times PresidentialLeaderBR_{t-1}$				-0.133	
				(9.892e-02)	
$LeaderBR_{t-1} \times LeaderUpperHouse_{t-1}$					-0.057
					(5.530e-02)
Observations	3,637,502	3,637,502	3,637,502	3,653,726	3,653,726
Adjusted R-squared	0.920	0.920	0.920	0.920	0.920
Controls	YES	YES	YES	YES	YES
ADM1-Year FE	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES
Leader SE	YES	YES	YES	YES	YES
Regions	182229	182229	182229	183038	183038

Notes: All specifications include a lagged night-light (log), and a lagged Presidential leader dummy as controls. The values on Light are on log form. Leader clustered standard errors in parentheses; significance levels denoted *** p<0.01, ** p<0.05, * p<0.1

Leaders' incentives to arbitrary action are nevertheless not only shaped by formal institutions such as the constitution, and politics do not operate in a social vacuum. One particular strand of research on distributional politics, for instance, highlights the role of informal devices such as partisanship or political networks as the source of redistribution (Arulampalam et al., 2009; Baskaran and Hessami, 2017; Brollo and Nannicini, 2012; Curto-Grau et al., 2018). In a nutshell, these authors show how more social interaction (institutionalized or not) between political figures can render benefits for both in the form of greater allocation of votes, government funds, infrastructural projects, or grant information.

Column (4) in Table 3 shows the results of interacting the executive leader's region of birth $PresidentialLeaderBR_{t-1}$ with our main variable of interest $LeaderBR_{t-1}$ as

in equation (2) —-with $PresidentialLeaderBR_{t\text{-}1}$ featuring as the relevant CYV. If a systematic cooperation between the executive and legislative leaders existed, we would expect to see larger and significant effects of such an interaction $LeaderBR_{t-1} \times PresidentialLeaderBR_{t-1}$. As they stand, the results show that the parliamentary leader's favoritism is not affected by coinciding with the presidential leaders' birth regions. Similarly, column (5) in Table 3 shows the results of interacting a Upper House leader's dummy $LeaderUpperHouse_{t\text{-}1}$ with our main variable of interest $LeaderBR_{t\text{-}1}$ — as mentioned, in the main analysis $LeaderBR_{t\text{-}1}$ refer to the leaders of the lower House only. Again, if a significant cooperation between the executive and legislative leaders existed, we would expect to see a larger point estimate as result of the interaction $LeaderBR_{t-1} \times LeaderUpperHouse_{t-1}$. Nevertheless, as with the executive leaders, we do not find evidence in this regard.

Overall, the evidence presented in Table2 and Table 3 suggests two things. First, that institutionalized sources of discretionary power, i.e., *de jure* influence, are relevant mediators of parliament leaders' favoritism. This is not only true when just analyzing established formal regulation, but also when abrupt changes to such fundamental institutions are introduced, as reflected in columns 1 to 3 of Table 3. We argue that these abrupt contextual changes are also sources of non-accountable redistribution of power, i.e., of *de facto* influence. Second, informal sources of power related to political networks, do not seem to be relevant in the establishment of redistributive practices coming from parliament leaders. The latter in turn highlights the influence that parliament leaders hold on their own in the region, which coincides with cases such as parliament's historical influence in Ecuador, Guaidó's overtake in Venezuela, and more comparably, with the increase of night-light in the regions at the closest vicinity of Rafaela Alburquerque's birth region, which we briefly outlined above.

3.3 Transmission Channel: Aid

When analyzing African countries, Dreher et al. (2019) find that Chinese aid is one of the transmission channels of regional, presidential favoritism. As very precise, georeferenced data are available for World Bank (WB) and Chinese projects, we test this mechanism in Table 4 and Table (5) using a similar setup as in equations (1) and (2). While the right-hand side of the equations remains the same, we now use the logarithm of World Bank disbursed and committed Chinese aid —instead of (log) night-lights— as outcome variable.[13] We use all the distance cutoffs explored in Tables 1 and 2 in order to give a full geographic picture of the phenomenon.

On the one hand, as can be seen from columns (1) to (4) of Table 4, our coefficients of interest are mostly positive and of similar size as our main results on light, suggesting

[13]Similar to the nightlights variable, we added a constant value of 0.0001 on both log aid variables.

that regions receive more WB aid when being the birth region of the current Parliament leader. These results are nevertheless only significant at a distance cutoff of 55 km while the direct favoritism results pertain to smaller regions. These findings suggest that aid on average is used more as an instrument of vote-buying than of *pure* favoritism. In columns (5)-(12) we turn to the analysis of whether institutional differences are of importance, as we focus on IPP and AgeConstitution. The results suggest that in countries where the constitution allocates little power to the parliament, (Very Low IPP) the patterns associated with favoritism are more visible and similar to the pattern depicted by Tables 2 and 3. In particular, in regions experiencing very low IPP, leaders can generate significant increases —for all distance cutoffs— that range between 11.8 (11 km) and 21.9% (55 km) on the geometric mean of aid. This results therefore does not provide a clear distinction between aid used as a tool for both vote-buying and *pure* favoritism. Contrary to the more general results of columns 1 to 3, the results in columns 9,10, 11 and 12 indicate that in contexts where a new constitution has recently been introduced, parliamentary leaders channel more aid to regions closest to their birthplaces, suggesting that in institutionally unstable settings, parliament leaders typically implement *pure* favoritism.[14]

On the other hand, results in Table 5 show how inflows of Chinese aid give rise to a different behavior. Such stark differences between WB and Chinese aid are in line with the main arguments of the extensively discussed aid conditionality literature (Hernandez, 2017; Li, 2017), and with latest empirical contributions comparing their effects on development (Cruzatti C. et al., 2020). In particular, the distance threshold that drives the effect of Chinese aid is 111 km, vis-a-vis the 55 km of WB aid, and the general effect of parliament favoritism is negative (-0.2% at the 5% level). Combined, these results suggest that a priori, Chinese aid is less accessible for parliament leaders. The most compelling difference, however, between parliamentary favoritism effects on WB and Chinese aid arises when comparing the role of de jure source of influence (IPP). In contrast to the WB figures, when extremely low formal power is given to the parliament leaders, their redistributive capacity is severely compromised. Yet, once larger shares of formal power are given to the parliament such redistributive capacity re-emerges: A very low IPP generates an aid decrease of around 279.3% for the regions furthest away and 375.8% (both at the 1% level) for regions' in the closest vicinity of parliament leaders' birth places. As such, this indicates that in countries with relatively decent formal power granted to the parliament, their leaders may use Chinese aid for two purposes: 1) to benefit their close networks back at home, and 2) as a vote-buying tool. Results on the most relevant de facto devices for favoritism (AgeConstitution) also show qualitatively different figures vis-a-vis those of the World Bank. Apart from a small yet significant

[14]Note how results are robust for certain cutoffs (55 km, more strongly) that exceed the significant distances for the indicator on light. This is expected however, as aid is a much simpler indicator —therefore more malleable— than a more abstract, complex indicator of economic development as night-lights.

and negative effect on a 111 km distance cutoff (-0.1% at the 5% level) for countries with rather new Constitutions, the other results are non-significantly different from zero, suggesting informal sources of influence are of no real importance for the understanding of the overall behavior of Chinese aid redistribution by parliament leaders.

In sum, and comparable to our results on light, The actual distribution of World Bank and Chinese aid across micro-regions is affected by where the parliament leaders in office were born, as well as by of the formal and informal power granted to the parliament. This points towards aid as, indeed, a channel through which leaders improve economic performances of their birth regions.

Table 4 – Favoritism and World Bank Aid

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	**WB 111km**	**WB 55km**	**WB 28km**	**WB 11km**	**WB 111km**	**WB 55km**	**WB 28km**	**WB 11km**	**WB 111km**	**WB 55km**	**WB 28km**	**WB 11km**
$LeaderBR_{t-1}$	-0.006	0.074**	0.053	0.025	0.217**	0.219**	0.215**	0.118*	-0.003	0.093**	0.075	0.082
	(7.387e-03)	(3.350e-02)	(4.648e-02)	(6.725e-02)	(1.087e-01)	(1.077e-01)	(1.074e-01)	(7.104e-02)	(8.504e-03)	(3.827e-02)	(5.394e-02)	(8.430e-02)
$PresidentialLeaderBR_{t-1}$	0.016	-0.025	-0.026	-0.043	0.017	-0.023	-0.024	-0.044	0.016	-0.025	-0.026	-0.042
	(1.326e-02)	(2.126e-02)	(4.658e-02)	(9.094e-02)	(1.328e-02)	(2.111e-02)	(4.678e-02)	(9.130e-02)	(1.328e-02)	(2.128e-02)	(4.674e-02)	(9.095e-02)
$LeaderBR_{t-1} \times LowIPP_{t-1}$					-0.359***	-0.405	-0.529*	-0.681**				
					(1.291e-01)	(2.567e-01)	(2.926e-01)	(3.262e-01)				
$LeaderBR_{t-1} \times MidLowIPP_{t-1}$					-0.225**	-0.216*	-0.202	-0.068				
					(1.090e-01)	(1.167e-01)	(1.647e-01)	(2.583e-01)				
$LeaderBR_{t-1} \times MidHighIPP_{t-1}$					-0.210*	-0.088	-0.102	-0.076				
					(1.095e-01)	(1.270e-01)	(1.424e-01)	(1.335e-01)				
$LeaderBR_{t-1} \times HighIPP_{t-1}$					-0.240**	-0.208*	-0.204*	-0.162				
					(1.098e-01)	(1.121e-01)	(1.228e-01)	(1.549e-01)				
$LeaderBR_{t-1} \times VeryHighIPP_{t-1}$					-0.232**	-0.180	-0.220*	-0.038				
					(1.092e-01)	(1.134e-01)	(1.125e-01)	(1.339e-01)				
$LeaderBR_{t-1} \times AgeConstitution_{t-1}$									-0.000	-0.001***	-0.001*	-0.003**
									(7.206e-05)	(2.977e-04)	(5.717e-04)	(1.230e-03)
Observations	3,736,839	3,736,839	3,736,839	3,736,839	3,719,934	3,719,934	3,719,934	3,719,934	3,720,274	3,720,274	3,720,274	3,720,274
Adjusted R-squared	0.118	0.118	0.118	0.118	0.118	0.118	0.118	0.118	0.118	0.118	0.118	0.118
ADM1-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Leader SE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Regions	183038	183038	183038	183038	182213	182213	182213	182213	182229	182229	182229	182229
LeadersDiff	-0.022	0.099**	0.079	0.068								

Notes: All specifications include a lagged night-light (log), and a lagged Presidential leader dummy as controls. Leader clustered standard errors in parentheses; significance levels denoted *** p<0.01, ** p<0.05, * p<0.1

Table 5 – Favouritism and Chinese Aid

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	**China 111km**	**China 55km**	**China 28km**	**China 11km**	**China 111km**	**China 55km**	**China 28km**	**China 11km**	**China 111km**	**China 55km**	**China 28km**	**China 11km**
$LeaderBR_{t-1}$	-0.002**	-0.003	-0.003	-0.027	-2.794***	-2.794***	-2.793***	-3.758***	-0.001**	-0.002	-0.005	-0.015
	(6.388e-04)	(2.765e-03)	(1.129e-02)	(2.338e-02) (9.128e-01)	(9.175e-01)	(9.181e-01)	(1.113e+00)	(5.691e-04)	(1.624e-03)	(6.376e-03)	(2.618e-02)	
$LeaderBR_{t-1} \times LowIPP_{t-1}$					2.793***	2.749***	2.595***	3.351***				
					(9.163e-01)	(9.313e-01)	(9.593e-01)	(1.185e+00)				
$LeaderBR_{t-1} \times MidLowIPP_{t-1}$					2.793***	2.786***	2.766***	3.704***				
					(9.130e-01)	(9.187e-01)	(9.223e-01)	(1.121e+00)				
$LeaderBR_{t-1} \times MidHighIPP_{t-1}$					2.794***	2.793***	2.792***	3.755***				
					(9.128e-01)	(9.175e-01)	(9.182e-01)	(1.114e+00)				
$LeaderBR_{t-1} \times HighIPP_{t-1}$					2.793***	2.791***	2.794***	3.767***				
					(9.128e-01)	(9.175e-01)	(9.183e-01)	(1.117e+00)				
$LeaderBR_{t-1} \times VeryHighIPP_{t-1}$					2.793***	2.805***	2.830***	3.744***				
					(9.128e-01)	(9.176e-01)	(9.189e-01)	(1.114e+00)				
$LeaderBR_{t-1} \times AgeConstitution_{t-1}$									-0.000	-0.000	0.000	-0.001
									(1.201e-05)	(8.684e-05)	(5.233e-04)	(5.149e-04)
Observations	3,736,839	3,736,839	3,736,839	3,736,839	3,719,934	3,719,934	3,719,934	3,719,934	3,720,274	3,720,274	3,720,274	3,720,274
Adjusted R-squared	0.159	0.159	0.159	0.159	0.161	0.161	0.161	0.161	0.159	0.159	0.159	0.159
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
ADM1-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Leader SE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Regions	183038	183038	183038	183038	182213	182213	182213	182213	182229	182229	182229	182229

Notes: All specifications include a lagged night-light (log) control variable. Leader clustered standard errors in parentheses; significance levels denoted *** p<0.01, ** p<0.05, * p<0.1

4 Robustness, Time mechanics, and Potential Channel of Parliamentary Favoritism

Conditional on the use of our controls —lagged light, presidential dummy, and ADM1-year and regional fixed effects— there could still remain unobservable trends affecting our main output of interest (Night-Light), or whether parliament leaders were born in or near a particular region. For that reason, in this section we test the robustness of our main results to timing in our models of interest. Following Hodler and Raschky (2014) we construct a series of dummy variables *Past1, Past3, Future1, Future3* detailing whether a certain location is soon to become a leader region, i.e., in one year (*Future1*) or in any of the following three years (*Future3*), or has ceased to be so in the previous year (*Past1*) or in any of the last three years (*Past3*). Similarly, to further strengthen identification we control for pre-trends (*Pretrend*) and post-trends (*Posttrend*). (*Pretrend*) is a time trend for all periods when *Future3* is equal to one, whereas (*Posttrend*) is a time trend for *Past3*.Table 6 reports the results for these tests.

Table 6 – Time robustness tests

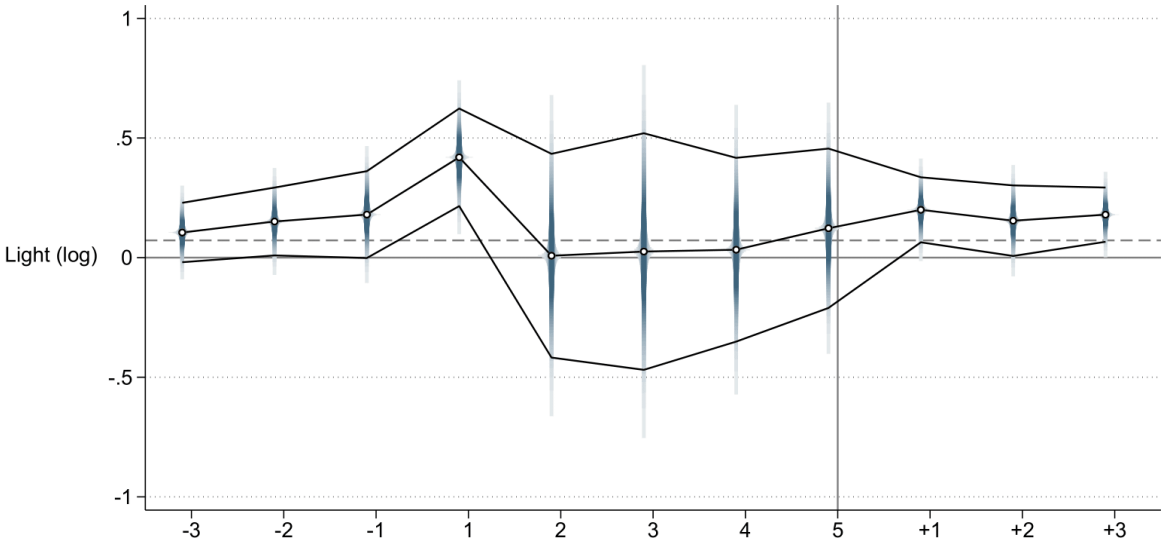
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	**Light**	**Light**	**Light**	**Light**	**Light**	**Light**	**Light**	**Light**	**Light**
$LeaderBR_{t-1}$	0.187**	0.182**	0.162*	0.115**	0.108*	0.061	0.263**	0.259**	0.230**
	(8.357e-02)	(8.581e-02)	(8.939e-02)	(5.214e-02)	(6.049e-02)	(8.660e-02)	(1.035e-01)	(1.074e-01)	(1.091e-01)
$LeaderBR_{t-1} \times LowIPP_{t-1}$	-0.390**	-0.389**	-0.388**				-0.408***	-0.407***	-0.405***
	(1.504e-01)	(1.510e-01)	(1.516e-01)				(1.481e-01)	(1.486e-01)	(1.490e-01)
$LeaderBR_{t-1} \times MidLowIPP_{t-1}$	-0.342**	-0.347**	-0.364**				-0.215	-0.220	-0.251
	(1.457e-01)	(1.452e-01)	(1.540e-01)				(2.140e-01)	(2.141e-01)	(2.170e-01)
$LeaderBR_{t-1} \times MidHighIPP_{t-1}$	-0.150	-0.154	-0.151				-0.199*	-0.203*	-0.202*
	(1.031e-01)	(1.031e-01)	(1.134e-01)				(1.058e-01)	(1.057e-01)	(1.170e-01)
$LeaderBR_{t-1} \times HighIPP_{t-1}$	-0.144	-0.145	-0.150				-0.191	-0.192	-0.198*
	(1.166e-01)	(1.165e-01)	(1.194e-01)				(1.167e-01)	(1.166e-01)	(1.189e-01)
$LeaderBR_{t-1} \times VeryHighIPP_{t-1}$	0.008	0.006	0.001				-0.040	-0.043	-0.052
	(1.195e-01)	(1.199e-01)	(1.285e-01)				(1.238e-01)	(1.241e-01)	(1.328e-01)
$LeaderBR_{t-1} \times AgeConstitution_{t-1}$				-0.002*	-0.002*	-0.002**	-0.002	-0.002	-0.002
				(1.160e-03)	(1.167e-03)	(1.147e-03)	(1.894e-03)	(1.906e-03)	(1.923e-03)
$Future1_{t-1}$	-0.080			-0.084			-0.079		
	(8.041e-02)			(8.001e-02)			(8.043e-02)		
$Past1_{t-1}$	0.036			0.035			0.036		
	(8.454e-02)			(8.428e-02)			(8.455e-02)		
$Future3_{t-1}$		-0.082	-0.064		-0.082	-0.073		-0.082	-0.065
		(8.414e-02)	(1.271e-01)		(8.377e-02)	(1.261e-01)		(8.414e-02)	(1.269e-01)
$Past3_{t-1}$		0.024	0.120		0.024	0.117		0.025	0.119
		(7.168e-02)	(7.916e-02)		(7.154e-02)	(7.906e-02)		(7.172e-02)	(7.919e-02)
$Pretrend_{t-1}$			-0.010			-0.006			-0.009
			(3.112e-02)			(3.098e-02)			(3.106e-02)
$Posttrend_{t-1}$			-0.045			-0.043			-0.044
			(2.874e-02)			(2.851e-02)			(2.880e-02)
$LeaderBR_{t-1} \times Experience_{t-1}$			-0.045			-0.048			-0.045
			(3.053e-02)			(3.108e-02)			(3.079e-02)
$LeaderBR_{t-1} \times Tenure_{t-1}$			0.023			0.035			0.027
			(2.858e-02)			(3.107e-02)			(2.883e-02)
Observations	3,637,167	3,637,167	3,637,167	3,637,502	3,637,502	3,637,502	3,637,167	3,637,167	3,637,167
Adjusted R-squared	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Controls FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
ADM1-Year FE FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Leader SE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Regions	182213	182213	182213	182229	182229	182229	182213	182213	182213

Notes: All specifications include a lagged night-light (log), and a lagged Presidential leader dummy as controls. The values on Light are on log form. Leader clustered standard errors in parentheses; significance levels denoted *** p<0.01, ** p<0.05, * p<0.1

The main finding of Table 6 is that given controls for previous and posterior trends, the main results shown in Table 1, 2 and 3 do not qualitatively change. More specifically, regional increases in economic activity due to favoritism (including favoritism informed by de jure and de facto power) are evidently not mediated by past $Future1_{t-1}$, $Future3_{t-1}$, $Pretrend_{t-1}$, or future trends $Past1_{t-1}$, $Past3_{t-1}$, $Posttrend_{t-1}$. Thus, the favoritism effects that we identify coincide quite precisely with the incumbency of parliament leaders from specific regions. Moreover, based on the statistical significance of the trends' coefficients (p-value<10%), potential trend bias does not seem to be present, strengthening the claim of exogenous variation in $LeaderBR_{t-1}$, or said differently, changes in the intensity of night-light emissions in a leader region are unlikely to be explained by the presence of trends in unobservables. To further capture the role of time in these redistributive dynamics

in columns 3, 6 and 9 apart from the inclusion of the trends, we account for effects of the leader's experience ($Experience_{t-1}$), as captured by the number of years the leader has been in power until t. We also include a variable to account for the leader's tenure ($Tenure_{t-1}$), i.e., the total number of years the political leader has been in power. The inclusion of such leader time-characteristics does not affect our results, suggesting that such experience and tenure traits are not needed for parliament leaders to favor their home regions.

Figure 4 – Time dynamics of $LeaderBR_{t-1}$.



Notes: We label the X axis as -1 if $LeaderBR_{i,c,t+1}$= 1 and $LeaderBR_{i,c,t}$= 0 , -2 if $LeaderBR_{i,c,t+2}$= 1 and $LeaderBR_{i,c,t}$= 0, -3 if $LeaderBR_{i,c,t+3}$= 1 and $LeaderBR_{i,c,t}$= 0. Similarly, we code as +1 if $LeaderBR_{i,c,t-1}$= 1 and $LeaderBR_{i,c,t}$=0, +2 if $LeaderBR_{i,c,t-2}$= 1 and $LeaderBR_{i,c,t}$= 0, +3 if $LeaderBR_{i,c,t-3}$= 1 and $LeaderBR_{i,c,t}$= 0. Finally, we code 1 if $LeaderBR_{i,c,t-1}$= 1 and $LeaderBR_{i,c,t}$= 1, 2 if $LeaderBR_{i,c,t-2}$= 1 and $LeaderBR_{i,c,t}$= 1, 3 if $LeaderBR_{i,c,t-3}$= 1 and $LeaderBR_{i,c,t}$= 1, 4 if $LeaderBR_{i,c,t-4}$= 1 and $LeaderBR_{i,c,t}$= 1, and we code as 5 if $LeaderBR_{i,c,t<-4}$= 1 and $LeaderBR_{i,c,t}$= 1.

Finally, to further illustrate leaders' redistributive choices in LAC countries, we plot effects over time. Figure 4 displays the effects on night-light emissions over time of parliament leaders' births regions. The coefficients are comparable to our estimates in Table 1. We construct dummies representing 3 years before (-3, -2, -1) and 3 years after (+3, +2, +1) the parliament leader enters/leaves office, their 4 first years in power (1, 2, 3, 4), and 5 or more years (5).[15]

As is clear in the figure, there is no effect in the three-year periods before and after the region starts and ends being a leader region. Conversely, night light emissions show a significant increase in the first year (t=1) in office —much greater than the one computed

[15]99% of the leaders in our sample has a tenure lasting between one and five years, with only few observations having a maximum of 7 years.

for column (12) in Table 1. Yet, similar to our first look at our data with the Dominican Republic as example, as soon as the leader leaves office, emissions go back to pre-leadership levels. One can also note that light emissions sharply drop after the first year of the leader in power. Considering that most legislatures in LAC countries last one year or less, our figures further suggest a sequence that might as well be capturing political cycles. As new Parliament members are elected, regional favoritism abruptly stops, consistent with a short-term activity impact of parliament leaders' influence, but no longer-lasting growth effects.

5 Conclusions

Recent studies document that presidents and prime ministers often favor their home regions by channelling resources to them. This phenomenon, which is known in developed democracies as a specific type of favoritist pork barrel politics, is likely to cause overall economic losses due to their politically determined inefficient reallocation of resources.

Other than heads of state and government, due to deeply entrenched political traditions in the region, parliament leaders in Latin America and the Caribbean also hold significant redistributive power. We have therefore explored whether parliament leaders in the region are able to exert similar kinds of favoritism as previous studies document for presidents and prime ministers. We have done so by exploring changes in light intensity at night as our measure of economic activity, and aid, as a specific channel of geographical favoritism. As both indicators share a high spatial resolution, we thus sidestep the problem of either missing or misleading regional and local economic data common in our sample countries.

Our findings show that when regions are close enough to the birth places of parliament leaders and better match the average size of their provinces, we find evidence of favoritism expressed as increased night-lights. In general, our findings are thus consistent with the existence of *pure* favoritism targeted at politicians' immediate network, i.e., direct transfers to family, friends or acquaintances. However, favoritism effects can also be seen in larger areas when aid is analyzed, making transmission channels of such favoritism consistent with attempts to buy votes by directing resources to sufficiently many voters.

Overall, the actual effects seem to occur mainly when *de jure* and *de facto* power frameworks give more discretionary influence to the parliament. Thus, political favoritism in Latin America and the Caribbean is a real phenomenon that arises out of parliament leaders' political opportunities when the ruling institutional framework fails to clearly delimit their practical influence on their nation's matters.

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List of appendices

A Descriptives

Table A.1 – Elements in the Index of Parliamentary Powers

Variable	Variable in CCP
Who presides over the legislature? Coded as 1 if the constitution defines a 'Speaker' or similar official leader of the legislature	LHLEAD
Is the first (or only) chamber of the legislature given the power to legislate?	LHLEGIS
Do members of the legislature have immunity?	IMMUNITY
Does the legislature have the power to interpellate members of the executive branch	INTEXEC
Does the legislature have the power to investigate the activities of the executive branch?	INVEXE
Can members of the legislature initiate legislation?	LEG_IN_5
Can the legislature approve / reject legislation?	LEGAPP
Can the legislature override executive vetos?	OVERWHO
Can the legislature propose amendments to the constitution?	AMNDPROP_4
Can the legislature approve amendments to the constitution?	AMNDAPPR_4
Can the legislature dismiss the head of state?	HOSPDISS_2
Can the legislature approve a dismissal of the head of state?	HOSADISS_2
Does the legislature appoint the cabinet?	CABAPPT_3
Does the legislature need to approve the cabinet?	CABAPPR_3
Can the legislature dismiss the cabinet?	CABDISS_3

Table A.2 – Sources and Definitions

Variable	Definition	Source
LeaderBR	Dummy=1 if region i is within 11, 28, 55 or 111 km from the parliament, lower house leader's birth region.	Own construction.
PresidentialLeaderBR	Dummy=1 if region i is within 11, 28, 55 or 111 km from the executive branch leader's birth region.	Hodler and Raschky (2014), and own construction.
LeaderUpperHouseBR	Dummy=1 if region i is within 11, 28, 55 or 111 km from the parliament, upper house leader's birth region.	Own construction.
Light	The yearly average nighttime luminosity within 5 km of region i.	National Centers for Environmental Information (2015).
Aid	Total amount of World Bank aid disbursed within 5 km of region i.	AidData (2017)
China Aid	Total amount of Chinese aid committed within 5km of region i.	Bluhm et al. (2020)
IPP	Yearly average across the 15 components of Table A.1.	Own construction based on Bjørnskov and Voigt (2018).
AgeConstitution	Number of years since the last new Constitution was introduced.	Own construction based on (Elkins et al., 2009).
AgeAmend	Number of years since the last amend was introduced to the Constitution.	Own construction based on (Elkins et al., 2009).
Independent	Dummy=1 if LeaderBR has independency to take action or if has immunity to prosecution.	Own construction based on (Elkins et al., 2009).
Speaker	Dummy=1 if LHLEAD of table A.1 is coded as 1.	Own construction based on (Elkins et al., 2009).
SharedPower	Yearly average across multiple components that portray shared/ambiguous functions between the executive and the legislative power.	Own construction based on Bjørnskov and Voigt (2018).
Population	(log) number of people within a 5 km buffer surrounding region i.	Klein Goldewijk et al. (2010), Klein Goldewijk et al. (2011)
GDPpc	The (log) average gross domestic product per capita within a 5 km buffer surrounding region i.	Kummu, M., Taka, M. and Guillaume, J. (2018)

Table A.3 – Descriptive Statistics

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	Mean	SD	Min	Max
LeaderBR	3.654e+06	0.000	0.02	0	1
PresidentialLeaderBR	3.654e+06	0.03	0.17	0	1
LeaderUpperHouseBR	3.654e+06	0.000	0.01	0	1
Light	3.654e+06	0.99	4.39	0	63
Aid	3.736e+06	1,892.44	374,135.50	0	5.751e+08
China Aid	3.736e+06	1,544.44	1.247e+06	0	2.220e+09
IPP	3.637e+06	0.38	0.08	0	0.73
Ageconstitution	3.638e+06	43.90	50.75	0	160
AgeAmend	3.638e+06	2.22	4.31	0	58
Independent	3.638e+06	0.99	0.03	0	1
SharedPower	3.637e+06	0.54	0.07	0.18	0.91
Population	3.508e+06	2,129.31	18912.46	0	1.516e+06
GDPpc	3.419e+06	11,609.07	8,461.75	581.11	147,678.40

B Further Results

Table B.1 – Robustness: Big vs. Small cities

	(1)	(2)	(3)	(4)
VARIABLES	**Light 111km**	**Light 55km**	**Light 28km**	**Light 11km**
$LeaderBR_{t-1}$	-0.006	-0.001	0.025	0.082*
	(2.212e-02)	(3.698e-02)	(4.703e-02)	(4.492e-02)
$LeaderBR_{t-1} \times BigAdm1$	0.018	-0.152	-0.229**	-0.081
	(6.610e-02)	(1.047e-01)	(1.087e-01)	(7.832e-02)
$PresidentialLeaderBR_{t-1}$	0.008	0.012	-0.042	-0.110***
	(2.504e-02)	(2.918e-02)	(3.386e-02)	(4.194e-02)
$Light_{t-1}$	0.346***	0.346***	0.346***	0.346***
	(1.330e-02)	(1.345e-02)	(1.349e-02)	(1.349e-02)
Observations	3,653,726	3,653,726	3,653,726	3,653,726
Adjusted R-squared	0.920	0.920	0.920	0.920
ADM1-Year FE	YES	YES	YES	YES
Region FE	YES	YES	YES	YES
Leader SE	YES	YES	YES	YES
Regions	183038	183038	183038	183038
LeadersDiff.	-0.0141	-0.0126	0.0671	0.192***

Notes: The values on Light and $Light_{t-1}$ are on log form. Leader clustered standard errors in parentheses; significance levels denoted *** p<0.01, ** p<0.05, * p<0.1

Results using separating units of observation by ADM1 regional sizes –above and below the median—are consistent with our main specification in Table 1, as results suggest that the effect is consistently palpable in micro-regions where the leader has actual, formal prerogatives. Or said differently, results indicate that when one 'zooms in' on sufficiently specific localities (11 kilometers), parliament leaders do favour their birth regions.

Table B.2 – Robustness: Other plausible controls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	**Light 111km**	**Light 111km**	**Light 111km**	**Light 55km**	**Light 55km**	**Light 55km**	**Light 28km**	**Light 28km**	**Light 28km**	**Light 11km**	**Light 11km**	**Light 11km**
$LeaderBR_{t-1}$	-0.001	-0.004	-0.006	-0.026	-0.027	-0.027	-0.005	-0.001	-0.006	0.072*	0.073*	0.072*
	(2.417e-02)	(2.430e-02)	(2.455e-02)	(3.552e-02)	(3.597e-02)	(3.626e-02)	(4.385e-02)	(4.432e-02)	(4.468e-02)	(4.038e-02)	(4.094e-02)	(4.308e-02)
$PresidentialLeaderBR_{t-1}$	0.008	0.006	0.009	0.012	0.010	0.007	-0.042	-0.044	-0.050	-0.110***	-0.110**	-0.112***
	(2.508e-02)	(2.525e-02)	(2.595e-02)	(2.918e-02)	(2.927e-02)	(2.912e-02)	(3.387e-02)	(3.484e-02)	(3.586e-02)	(4.194e-02)	(4.265e-02)	(4.278e-02)
$Light_{t-1}$	0.346***	0.346***	0.346***	0.346***	0.346***	0.346***	0.346***	0.346***	0.346***	0.346***	0.346***	0.346***
	(1.330e-02)	(1.348e-02)	(1.356e-02)	(1.345e-02)	(1.362e-02)	(1.369e-02)	(1.349e-02)	(1.366e-02)	(1.374e-02)	(1.349e-02)	(1.366e-02)	(1.374e-02)
$(log)Population_{t-1}$		0.030**	0.031**		0.030**	0.031**		0.030**	0.031**		0.030**	0.031**
		(1.356e-02)	(1.371e-02)		(1.350e-02)	(1.365e-02)		(1.351e-02)	(1.366e-02)		(1.352e-02)	(1.367e-02)
$(log)GDPpc_{t-1}$			-0.026			-0.026			-0.026			-0.026
			(2.176e-02)			(2.311e-02)			(2.326e-02)			(2.328e-02)
Observations	3,653,726	3,622,981	3,508,049	3,653,726	3,622,981	3,508,049	3,653,726	3,622,981	3,508,049	3,653,726	3,622,981	3,508,049
Adjusted R-squared	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
ADM1-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Leader SE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Regions	183038	181543	181405	183038	181543	181405	183038	181543	181405	183038	181543	181405
LeadersDiff	-0.009	-0.00978	-0.0147	-0.038	-0.0376	-0.0333	0.038	0.0437	0.0439	0.182***	0.183***	0.184***

Notes: The values on Light and $Light_{t-1}$ are on log form. Leader clustered standard errors in parentheses; significance levels denoted *** p<0.01, ** p<0.05, * p<0.1

Results show how the (non-) inclusion of other plausible controls such as population, or GDP per capita, do not qualitatively modify the main results of our work. Population can control for trends of agglomeration instead of development that already is captured by the lagged variable on light (log). GDP per capita on the other hand, control for relative levels of production/output, making the control variable on light one that is supposed to control other forms of human development uniquely –e.g., degree of development of public services, local wealth measured in infrastructure, etc. However, this control seem to be already captured by lagged variable on light, as its point estimate is not statistically significant.

Table B.3 – Lower vs. Upper House Leaders

	(1)	(2)	(3)	(4)
VARIABLES	**Light 111km**	**Light 55km**	**Light 28km**	**Light 11km**
$LeaderBR_{t-1}$	-0.001	-0.027	-0.005	0.072*
	(2.418e-02)	(3.552e-02)	(4.385e-02)	(4.039e-02)
$LeaderUpperHouseBR_{t-1}$	-0.014	-0.121*	-0.133*	-0.073
	(6.108e-02)	(7.144e-02)	(8.021e-02)	(5.596e-02)
$PresidentialLeaderBR_{t-1}$	0.008	0.013	-0.042	-0.110***
	(2.529e-02)	(2.891e-02)	(3.388e-02)	(4.199e-02)
$Light_{t-1}$	0.346***	0.346***	0.346***	0.346***
	(1.330e-02)	(1.345e-02)	(1.349e-02)	(1.349e-02)
Observations	3,653,726	3,653,726	3,653,726	3,653,726
Adjusted R-squared	0.920	0.920	0.920	0.920
ADM1#Year FE	YES	YES	YES	YES
Region FE	YES	YES	YES	YES
Leader SE	YES	YES	YES	YES
Regions	183038	183038	183038	183038
LeadersDiff	-0.00941	-0.0392	0.0370	0.182***
ParLeadersDiff	0.0125	0.0942	0.128	0.145**

Notes: The values on Light and $Light_{t-1}$ are on log form. Leader clustered standard errors in parentheses; significance levels denoted *** p<0.01, ** p<0.05, * p<0.1

Results show the insignificant effect of leaders of the Upper House ($LeaderUpperHouseBR_{t-1}$) on the development of the regions in the vicinity of their birth places.

Table B.4 – Other sources of influence

	(1)	(2)	(3)
VARIABLES	**Light 11km**	**Light 11km**	**Light 11km**
$LeaderBR_{t-1}$	0.053	-0.323	0.711
	(5.278e-02)	(2.391e-01)	(5.462e-01)
$LeaderBR_{t-1} \times Speaker_{t-1}$	0.022		
	(7.589e-02)		
$LeaderBR_{t-1} \times SharedPower_{t-1}$		0.751	
		(4.548e-01)	
$LeaderBR_{t-1} \times Independent_{t-1}$			-0.641
			(5.479e-01)
Observations	3,637,167	3,637,167	3,637,502
Adjusted R-squared	0.920	0.920	0.920
Controls	YES	YES	YES
ADM1-Year FE	YES	YES	YES
Region FE	YES	YES	YES
Leader SE	YES	YES	YES
Regions	182213	182213	182229

Notes: All specifications include a lagged night-light (log), and a lagged Presidential leader dummy as controls. The values on Light are on log form. Leader clustered standard errors in parentheses; significance levels denoted *** p<0.01, ** p<0.05, * p<0.1

Results how other potential sources of institutional instability, as the role of speaker, the independency status of the country under study —whether a (ex-) colony can take independent administrative action— or the division of power between the executive and the legislative branch do not inform the favoritism at local levels.

While, a priori, we expected that the signalling on *de facto* leadership would leave increased the room for interpretation, thus increasing influence and ultimately favoritism, the statistical insignificance of our point estimates makes difficult a rigorous analysis of them.