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Quantifying the Value of a Political Connection: The Case of Presidential Elections in Colombia

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Abstract

Using a novel biographical database including all Presidents and presidential candidates in Colombia for the period 1833-2010 I show that the value of a political connection can be quantified in terms of the votes transferred within a political network. I consider three types of political networks depending on whether links are created by a cabinet or foreign service appointment and a family connection. I find that a one standard deviation increase in votes received by connections generates a maximum gain of three-fourths of a standard deviation. I also reject for the presence of network endogeneity that may bias the estimates.
Keywords: Political Networks, Political Dynasties, Economic and Political History, Colombia, Elites.
JEL Classification: D85, P16, D72, N46, O54.

Resumen

Utilizando una novedosa base de datos biográfica que incluye a todos los Presidentes y candidatos presidenciales en Colombia para el periodo 1833-2010, muestro que el valor de una conexión política se puede cuantificar en términos del número de votos que se transfieren dentro de la red de conexiones políticas. Considero tres tipos de redes políticas dependiendo de si las conexiones son creadas por una designación a un ministerio o embajada o por una conexión familiar. Encuentro que una desviación estándar adicional en el número de votos recibidos por las conexiones políticas genera una ganancia máxima de hasta tres cuartos de desviación estándar. También rechazo la presencia de endogeneidad de la red que puede sesgar los resultados.
Palabras Clave: Redes Sociales, Redes Políticas, Dinastías Políticas, Economía Política, Persistencia de las Élites.

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1 Introduction

What is the value of establishing a political connection? In this article I seek to answer this question by showing that, at least in the case of Colombia, one may quantify the value of being in a political network in terms of the votes that are partially transferred from political parents to their political children.

In order to accomplish this, I construct a rich biographical data base consisting of all presidential candidates that have run for office in Colombia from 1833 to 2010. The data base includes total votes received, as well as information on personal characteristics (age, city and department of birth, gender, political party, school and university attended and degree received) and political experience. Importantly, with this information I am also able to link candidates to previous presidents and candidates whenever they had established in the past a visible working relationship in the cabinet or foreign service, whether they have any type of family ties, or whether they were raised in the same social or geographical environments.

Controlling for personal characteristics, several measures of political experience and election and period fixed-effects, I find that a one standard deviation increase in total votes received by political parents generates a maximum electoral gain of more than three-fourths of a standard deviation for a given presidential candidate. Interestingly, the magnitude of this gain depends on the quality of the political link: the maximum gain is obtained for those candidates that were member of cabinets of previous presidents and who ran for office in direct elections. Moreover, when I separate the effects of each ministerial position I

find that being a Foreign Affairs secretary generates the highest gain, followed by Defense and Interior positions; in clear contrast, although not statistically significant, there is some evidence of an electoral loss from being appointed Secretary of the Treasury.

I also find that political networks at the social and geographical level generate important electoral gains: an additional standard deviation in votes received by a previous president or candidate who was born in the same department or who went to the same school generates between one-fifth and one-half of a standard deviation. This finding is consistent with the idea of existing barriers to entry in the "market for politicians" at the local and social levels, well documented in the historical and political literature for Colombia.

Political dynasties constitute one special class of political network to study since, absent strategic marriages, political links are mostly exogenous and might also signal the existence of entry barriers and self-selection to the market for politicians. I show that family ties matter especially when candidates run for office in direct elections. Combined with the result that being appointed in the foreign service may harm a future-to-be presidential candidate, these findings suggest that at least for direct elections a likely transmission channel is that of candidate recall or memorability.

In order to give a causal interpretation to these results I propose a simple regression specification where total votes received by each candidate can be decomposed into three orthogonal components: a network component that captures the (gross) transferability of votes within a political network, a personal-

characteristics component that includes a full set of candidate-specific controls and an idiosyncratic component. This allows me to study one specific source of concern created by the possible endogeneity of the network: estimates of the value of the political connection are upwardly biased whenever (i) the political connection was traded for votes in the (possibly unobserved) past, and (ii) the number of votes potentially given to any individual at any given time depend on candidates' characteristic that are accumulated or persistent in time (e.g. political experience).

To see this, consider the case of a cabinet position. Assume that at some point in the past, Candidate *A* promised a cabinet position to citizen (and future-to-be candidate) *B* in exchange for votes, i.e. *A* and *B* enter into a coalition where votes from *B* will be transferred to *A* in exchange for a position in the cabinet. When *B* runs for office later in the future, the total number of votes received may depend on personal characteristics that accumulate in time giving rise to trivial positive correlation between the votes received by candidates A and B different from the one I wish to estimate in this paper, i.e. the transfer of votes *from A* to *B*. Importantly, this is true even when in fact *B* did not inherit any votes from *A*.

Whenever there is two-way transferability of votes— from *B* to *A* in the usually unobserved past and from *A* to *B* in the future—, the estimated effect will be biased upwardly because of the endogeneity of the political network. Using a Hausman test I then show that there is no evidence of two-way transferability, implying that, absent any other misspecification problems, the effect

can be given a causal interpretation, i.e. it quantifies the value of the political connections.

With this setting in mind, I then show that if total votes for a coalition are separable in the possibly unobserved votes from each of the parts, I can transform the problem of the endogeneity of the network into one of measurement error where now, personal characteristics for connections' connections— i.e. of second degree connections— constitute a natural set of instruments that can be used to test and correct for this source of inconsistency. Going back to the example with only two candidates A and B, as long as the total votes obtained by A, and observed by the econometrician, are separable in the unobserved votes from each of the parts, I can use the personal characteristics from A's connections as an instrument for his unobserved share of the votes for the coalition.

Nonetheless, although my objective is to quantify the value of a political connection using presidential elections data I do not say anything about the likely transmission channels of votes within a political network. As mentioned above, one likely interpretation of some of the results is related to the demand of politicians, i.e. voters view politicians as a vector of attributes, rank them accordingly and in the absence of complete information or perfect rationality may use certain heuristics— such as using their family name— at the time of voting. But one may pose alternative explanations for the results presented here, from either the demand or supply sides. A trivial supply-side explanation is the case of pure fraud, where a President chooses his successor and literally transfers the necessary "votes", as was the case with the infamous Mexican *dedazo*. After

reviewing some of the historical evidence on fraud in Colombian elections I argue below that this cannot explain by itself some of the results. Needless to say, identifying the source of these political frictions is necessary to discuss their impact on welfare but I leave this task for future work.

To conclude this Introduction it is important to emphasize that the finding that votes are at least partially transferred within a political network matters because it creates barriers to entry to the "market for politicians": the quantity and quality of political connections gives an initial advantage to insiders of a political network, possibly disincentivizing the entry of potentially good politicians.

The rest of this article is organized as follows. I review the existing literature in section 2. In Section 3 I summarize the relevant electoral and political history of Colombia. This knowledge is necessary to understand and qualify the results provided Section 6. Data construction, sources and description is provided in Section 4. In Sections 5 and 6 I present and discuss the empirical specification used and the econometric results. In Section 7 I discuss my results and concludes.

2   Relation to the Literature

This article contributes to several strands in the economics and the social sciences literatures. First, this article is related to the long theoretical and empirical literature seeking to explain the determinants of voting and more generally of

some of the frictions that arise in the market for politicians.[1] Generally speaking one may consider game and choice-theoretic voting models; among other things, the former provide predictions about the total turnout, strategic voting and self-selection and competition between politicians, whereas the latter also provide predictions about turnout and systematic patterns in the preference for bills' issues or candidate attributes.[2] In both cases enough structure is imposed on the econometric model in order to estimate structural parameters such as voter preferences on bills' attributes or other structural determinants for turnout.

Although the object of study in this article is voter turnout in presidential elections, my focus is on the transferability of votes across a network of political connections. Compared to the articles in this literatures I ostensibly put less structure on the econometric specification and estimate reduced-form models for the total number of votes that each candidate receives, expressed as a function of average votes received by their political connections in previous elections and an extensive array of personal characteristics for each candidate. Relative to choice-theoretical models, although I assume that the voters' utility functions depend on each candidate's attributes— measured from the extensive biographical data—, I neglect the attributes of the other candidates in each election;[3] relative to game-theoretical models I neglect the decision to vote (i.e. I

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[1]Fisman, Harm, Kamenica, and Munk (2012) empirically explore some aspects of the self-selection of candidates.

[2]Recent articles that test some of the game-theoretical models of turnout are Berger and Lewis (2004) and Coate, Conlin, and Moro (2008) or the less recent work of Hansen, Palfrey, and Rosenthal (1987). A review of the theoretical literature can be found in Feddersen (2004). Choice-theoretic models have been studied empirically for example by Heckman and Snyder (1997) in the economics literature and extensively in the political science literature following the influential work of Poole and Rosenthal (1991).

[3]But see the discussion in Section 7, and specifically Footnote 47.

do not seek to explain total turnout) and also assume away the possibility that candidates' attributes converge to a unique value.[4]

Because the aim of this article is to quantify one specific aspect of the value of a political connection, it is closely related to the literature on social networks.[5] In political science, an emerging literature has shown that social networks help increase voter participation, and also that politicians that are better connected are also more successful.[6] Similarly, there is a growing literature in economics quantifying the value of political connections for firms and sectors.[7] If we define *political capital* as the quantity and quality of political connections, this article is also related to the literature on the effects of social capital that has emerged with force in development economics.[8] To the best of my knowledge this is the first article where the value of a political connection is quantified in terms of the number of votes that are received in the future as a result of the connection. Moreover, at the methodological level, one contribution to this literature is my treatment of the endogeneity of the network by transforming it into a computationally simpler measurement error problem.[9]

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[4]That is, the econometric exercise is closer to citizen-candidate models (e.g. Osborne and Slivinski (1996), Besley and Coate (1997),Caselli and Morelli (2004)) than to the standard Downsian model of political competition.

[5]A textbook treatment of social networks can be found in Jackson (2008).

[6]On turnout and network effects see, e.g., Abrams, Iversen, and Soskice (2011), Nickerson (2008) or McClurg (2003). On the latter see Fowler (2006) that shows that better connected congressmen and women in the United States are more successful in getting approved the bills they support.

[7]See, e.g.Fisman, Galef, Khurana, and Wang (2012), Fisman (2001), Cingano and Pinotti (2009), Faccio, Masulis, and McConnell (2006), Kwaja and Mian (2005), Li, Liu, Zhang, and Ma (2007) or Li, Meng, Wang, and Zhou (2008).

[8]See, for example, Fisman, Paravisini, and Vig (2012), Jackson, Rodriguez-Barraquer, and Tan (2012), Beaman and Magruder (2012). A review of the literature can be found in Durlauf and Fafchamps (2005).

[9]See Goldsmith-Pinkham and Imbens (2011) for a through discussion of the econometric

The results of the article are also relevant to the political economy literature on elite persistence and political dynasties.[10] Within-network vote transferability is sufficient (but not necessary) for elites to perpetuate themselves in power. By relying on complete biographical data, I show that an elite social background (as measured, for example, by the school attended) generates strong electoral gains. Moreover, as discussed above, I also show that the existence of effective political dynasties create inertia in the electoral institutions.

3   Historical and Institutional Background

As historian Malcolm Deas has put it succinctly, one of the remarkable features about Colombia is that it "has been the scene of more elections, under more systems— central and federal, direct and indirect— than any other Latin American or European country."[11] This makes Colombia an interesting case study, but at the same time poses certain technical difficulties that must be addressed in the empirical section of the article. I will first provide a brief historical account of the political and electoral institutions in Colombia, necessary to understand the econometric specifications in the next section.

Even though Colombia declared its independence from Spain in 1819, for the purposes of this article I will take as a starting point the Presidential elections

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issues raised by the endogeneity of the network when estimating peer effects.

[10]On elite persistence see Acemoglu and Robinson (2008), Acemoglu, Angélica, Querubín, and Robinson (2007) and García Jimeno and Robinson (2010). The main reference on political dynasties is Bó, Bó, and Snyder (2009), but more recent and unpublished contributions are Querubín (2011) and Rossi (2009).

[11]Quoted from Deas (1973) in Posada-Carbó (2000).

of 1833.[12] After several years of internal turmoil— most prominently the War of the Supremes (1839-41)—, in 1848 and 1849 the Liberal and Conservative parties were founded, and since then, until the end of the 20th century, Colombia remained primarily bipartisan.[13] This bipartisan system has been the source of continued political upheaval— including several civil wars of which one of the most prominent is the *War of the Thousand Days* (1898-1902) after which Panama secedes (1903)— that has shaped Colombian political institutions.[14] The main political cleavages were the structure of internal organization (strong centralized national state or a federal, decentralized regime with state autonomy) and the degree of separation between the state and the Catholic Church.[15]

In order to give a brief historical account on the political institutions in Colombia, one may subdivide the country's subsequent political history in seven distinct periods:[16] (i) during the *Radical Olympus* (1853 - 1885)[17] the Liberal

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[12]In 1819 the *Gran Colombia* is founded, including Venezuela, New Granada (Colombia and Panama) and Ecuador. In 1830 Ecuador and Venezuela secede and the Constitution of 1832 gives birth to the Republic of New Granada. Although the name of the country changed several times, hereafter I will use indistinctly the name Colombia.

[13]Although recognizing the bipartisan nature of Colombia's electoral regime, Oquist (1980) also emphasizes the importance of intraparty competition: "In a very real sense it is a misnomer to speak of Colombian politics as being traditionally a two-party system, given the constant proliferation of factions within parties." Quoted in Posada-Carbó (1997).

[14]As the early twentieth century statesman and political analysist Laureano García Ortiz said, the "War of the Thousand Days began in 1840. (...) He meant of course that the war sprang from the same political exclusiveness, regionalism, and elite factionalism that by Jorge Holguín's (President in the early twentieth century) count had generated nine major civil wars, fourteen localized conflicts, three military coups, and two international wars over the first century of national history." (Henderson, 2001)

[15]As Safford (1972) has shown, neither class or occupational differences are important in understanding the differences between the two leading national parties in Colombia. See also Bushnell (1993) and Uribe-Urán (2000).

[16]This division is more or less standard in Colombian historiography. See, for example, Palacios (2007) and Bushnell (1993).

[17]See Jaramillo and Franco (1993).

party was (mostly) in power and many radical reforms were introduced, including universal male suffrage and universal primary education, separation between church and State, a decentralized political system and even a Federal constitution in 1863 that gave each of the nine states total political autonomy. (ii) From 1886 to 1930, Conservatives overtook the Presidency in what has been aptly called *the Conservative Hegemony*; a new Constitution was signed in 1886 (except for several amendments it would last until 1991) and the country moved back to a centralized, authoritarian political regime that gave ample powers to the Catholic Church. (iii) The period from 1930 to 1946 marks the return of the Liberal party to power (the "Liberal Republic"),[18] (iv) followed by the period known as *La Violencia* (1948-58) characterized by widespread regional political conflict between sympathizers of each party. (v) In the interlude, General Gustavo Rojas Pinilla's military regime was in power from 1953 to 1957, followed (vi) by the bipartisan power-sharing agreement known as the National Front (1958-74) that put an end to the generalized state of public disorder.[19] Since then, (vii) a new Constitution was signed in 1991, broadening political

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[18]As Posada-Carbó (1998) ascertains the 1930 elections defined an important turning point in Colombia's political history.

[19]In July 1957 the two leaders of the Liberal and Conservative parties — Alberto Lleras Camargo and Laureano Gómez— signed the Stitges Declaration where they proposed a "National Front". A national referendum was passed in December 1 of the same year where citizens were asked to approve several measures, including full political equality for women, a larger share in the national budged for education (at least 10%), restoration of the phrase "God, supreme source of all authority" to the Constitution and a bipartisan government with equal representation for Liberals and Conservatives in all official bodies. The referendum was approved by an astonishing 95% of the votes. Some time later it was proposed that for a 16 year period, Liberals and Conservatives would take turns in the Presidency, and the conservative leader— Laureano Gómez— proposed that the Liberal party, headed by Alberto Lleras Camargo, would be in power from 1958-62. The other Presidents during the National Front were Guillermo León Valencia (Conservative, 1962-66), Carlos Lleras Restrepo (Liberal, 1966-70) and Misael Pastrana Borrero (Conservative, 1970-74).

participation to less traditional parties, and party violence was replaced by an internal conflict with communist guerrilla's and drug cartels.[20]

As this historical summary has shown, several periods were characterized either by a clear dominance from one of the parties, or by an explicit power-sharing rule between the two dominant parties, raising the question of how fraudulent and competitive were elections in the period under study. Considering that the main objective of the article is to quantify the extent to which votes can be transmitted within a political network, this issue is of utmost importance, because, in the extreme case of pure electoral fraud, transmission of votes is trivial at best.[21]. For this reason, I will now summarize some of the historial evidence on political corruption in Colombia.

First, although not claiming that elections were generally clean, historian Eduardo Posada-Carbó has shown that elections in Colombia were more competitive than most historians have previously assumed.[22] For instance, Bushnell (1971) has shown that the 1856 elections between the Conservative Mariano Ospina Rodríguez (who would win this election), Liberal Manuel Murillo Toro and General Tomás Cipriano de Mosquera were relatively competitive, compared to Latin American standards.[23] Palacios (2007) also argues that compared with elections during the Conservative Hegemony, fraud was less common during the subsequent Liberal Republic.

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[20]As the last column in Table (6) in the Appendix shows, the 1991 Constitution had the clear effect of increasing the number of candidates (and parties) that ran for office.

[21]This is the case of the Mexican "dedazo" where a successor to the presidency was chosen by the incumbent. See, for example, Langston (2006).

[22]In particular, see Posada-Carbó (1997) and Posada-Carbó (2000).

[23]See also Bushnell (1993).

Second, even when elections were not relatively competitive between parties, there was fierce competition *within* parties. The 1930 "landmark elections" (Posada-Carbó, 1998, 1997) that marked the return of the Liberal party to power, for example, were won by Enrique Olaya Herrera mainly because the Conservative party presented itself divided between two separate factions (led by Guillermo Valencia Castillo and Alfredo Vásquez Cobo).

Third, political upheaval was an indicator of how competitive elections were, or, as Bushnell (1993) says: "the intensity of party competition created a potentially unstable situation; petty outbreaks of violence at the local level were a normal accompaniment of election campaigns, and from time to time general civil war broke out."

Finally, the high degree of electioneering is also indicative of how competitive elections were. For instance, during the last quarter of the nineteenth century and the twentieth century, it was not uncommon for a presidential candidate to own his own newspaper, or to be explicitly backed by one.[24] It is also well known that the Catholic Church explicitly supported the Conservative candidates, another reason why the religious theme was so divisive between the two parties.[25,26]

For future reference, Table (1) summarizes the major changes in the electoral rules throughout the period.[27] Until 1936 and with the short exception of

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[24] See Posada-Carbó (2010).

[25] A clear example is given by Posada-Carbó (1997): "By 1930 Monseñor Ismael Perdomo, the archbishop of Bogotá, was known as the 'elector of electors in Colombia'."

[26] For an empirical test of what came to be know as "El que escruta elige" (*He who counts elects*) see Chaves, Fergusson, and Robinson (2009).

[27] A succinct history of electoral institutions in Colombia can be found in Jaramillo and Franco

the period 1853-63, suffrage was restricted by income, property or literacy requirements. The 1886 Constitution reintroduced literacy and property requirements in order to elect members of the lower chamber and members of the electoral college that would choose the President.[28] The 1910 reforms would introduce direct presidential elections, lower income and property requirements and remove the executive's right to appoint electoral juries (Posada-Carbó, 1997). Women suffrage was granted first during Rojas Pinilla's dictatorship (1954), but because all of the reforms during the military regime were declared null, it was put in place on a permanent basis with the Military Junta 1957 plebiscite. Finally, the 1991 Constitution included, for the first time, a two-round system where, in the absence of winner by absolute majority in the first round, the top two candidates compete again in a second and definite round. Moreover, the Constitution not only decrees the right to establish, support and run for any given party (art.107), but also dictates that the state will partially fund all parties and political movements that have obtained their legal status (art.109).[29] Importantly, the state also partially funds all campaigns, depending on the share of votes they obtain. The significance of this last restriction is worth emphasizing, because under the 1991 Constitution, those candidates who run in the

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(1993) or a more authoritative historical treatment can be found in Bushnell (1993).

[28]According to Posada-Carbó (1997), the \$500 yearly income or \$1500 estate value requirements were not necessarily binding: "Whereas the 1886 requirement of 500 pesos a year excluded most farm laborers and all domestic servants, it was not beyond the means of middle-income groups, such as schoolteachers, clerks, shopkeepers, and miners. (...) By the turn of the century, moreover, given the depreciation of paper money, the agregados and chapoleros of the Hacienda Jonás, for example, were earning much more than the required sum."

[29]To obtain the "personería jurídica" or legal status, a party must obtain at least a 3% share of total national votes in Senate or Chamber of Representatives elections (with the exception of those ethnical and political minorities that are defined in the Constitution). See also *Acto Legislativo 1, 2009*.

first round knowing that they have no chance of winning the election but hoping that they will be able to be part of a winning coalition (with the corresponding bureaucratic benefits) must expect, a priori, that they will be able to achieve the minimum voting threshold in order to guarantee that the state will payback (some fraction) of their campaign expenses.

—-**Table 1 around here**—-

Finally, to understand how local politics may have played a role it is also important to briefly describe the political or administrative organization of the country throughout the period.[30] From 1832 to 1858 the fundamental administrative units were the provinces, each divided in cantons and municipalities. The *Granadine Confederation*, created by the 1858 Constitution, increased the provincial autonomy, allowing the creation of states within the country.[31] This effort was deepened with the creation of the *United States of Colombia*— as the 1863 Constitution renamed the country— which not only included the state of Tolima to the list of members of the union, but also, among many other features, granted complete political autonomy to each member state.

The country was renamed again (*Republic of Colombia*) by the 1886 Constitution, which marked the return to a centralized politico-administrative system; *departamentos* took the place of states, which not only lost their previous label

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[30]See Aguilera Peña (2002) and Mendoza Morales (1988).

[31]The states of Panama, Antioquia, Santander, Bolívar, Boyacá, Cauca, Cundinamarca and Magdalena came into being, with Bogotá as its federal capital. Interestingly, it was a conservative President (Mariano Ospina Rodríguez) — and not a liberal— who supported and passed this federal constitution.

but also most of the federalist prerogatives granted by the previous Constitution, most important of all, their political autonomy. Departamentos' maximum executive leaders were the president-appointed *gobernadores*. After a short-term increase in the number of departamentos during Rafael Reyes' (1904-09) administration— from the original 9 to 26— by 1948 the country was divided into 15 departamentos, further expanded to 23 between 1951 and 1981.

In order to incorporate some degree of local administrative decision power and control into the highly centralized organization devised a century earlier with the 1886 Constitution, two important innovations were introduced by the liberals in the second half of the twentieth century. The *Juntas de Acción Comunal (JAC)* (community action boards)— introduced by Alberto Lleras Camargo (1958-82)— and the *Juntas Administradoras Locales (JAL)* (local administrative committees) —introduced with the 1968 constitutional amendment (Carlos Lleras Restrepo, 1966-70) and further specified and regulated in 1986 and finally with the 1991 Constitution. Importantly, this additional autonomy was quickly captured by the already present local political bosses.[32] Finally, the 1991 Constitution increased the number of departamentos to 32, and deepened the decentralization efforts of the two previous reforms.

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[32] A vivid description of a local patronage network can be found in Archer (1990). As stated by Palacios (2007), "in the long run (the JACs) served to buy votes."

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4 Data

Total votes for all presidential elections in the period 1833 to 1990 were taken from Appendix B in Bushnell (1993), and data for all subsequent elections come from official records.[33] As described in the previous section, for all elections after 1991 a two-round system was put in place. The electoral data I use for these elections comes from the first round where (generally) more than two candidates run for office and before the second-round strategic coalitions are formed.

Substantial effort was put into the construction of complete biographical histories for all candidates. Appendix B describes additional sources taken from the internet, and the Additional Biography at the end details some other bibliographical material used in the construction. The general biographical data includes personal data (year, city and department of birth, gender, primary and secondary school attended, university attended and degree obtained) as well as information on political experience for each candidate: ministries occupied (year and under which president), other positions occupied in the legislative (national, departmental or local assemblies as well as members of constitutional conventions, with time and geographical information), executive (mayor, governor or previous presidencies and vicepresidencies,[34] with time and geographical information) and judiciary branches; I also have information on foreign service experience (location and under which president) and family connections that

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[33]See the webpage of Colombia's electoral authority *Registraduría Nacional del Estado Civil.*

[34]This also includes information on the figure of Presidential Designate ("designado") that has been substituted several times for the figure of Vicepresident. Whereas the Vicepresident was chosen in the same or independent (direct or indirect) elections as the President, *designados* were generally chosen by the Senate, and both would substitute the President had he not been able to continue.

include ties with other members in the list of presidential candidates and else-
where in politics.

With this information I am able to construct networks of political connec-
tions at different levels, but I focus on three different channels: ministerial, am-
bassadorial and family ties, i.e. candidates who were linked to a President (or
presidential candidate) by being appointed in the cabinet, foreign service, or by
(direct or indirect) family connections. Table (2) presents descriptive statistics
for all control variables and political networks for Presidents and candidates.
Out of the 48 Presidents in the period, 19 (39.5%) were of clear Liberal ori-
gin (even if they represented a liberal dissidence), 11 (22.9%) Conservative, 8
(16%) represented a coalition of the two parties, and the remaining cannot be
clearly identified along this bipartisan division. More than half of all presidents
in the sample (56%) were chosen by direct elections, 16% through an electoral
college, and 25% by congressional (or constitutional convention) elections. In
terms of the regional composition, almost 30% of the presidents were born in
Bogotá, 15% in Cauca, 12.5% in Antioquia, and smaller numbers come from
Valle and Santander (an the remaining departments).[35] A vast majority (56%)
held law degrees, and four presidents held economics and engineering degrees,
each.[36]

In terms of the political experience, Presidents held more than twice as
many cabinet positions and embassies than competing candidates, and almost
1.5 times more positions in departmental or local executive branches; these dif-

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[35]Departments used here correspond to the current political-administrative organization.
[36]On the occupational distribution of the elites in Colombia see Uribe-Urán (2000).

ferences are all statistically significant. Interestingly, there is no statistically significant difference between Presidents and competing candidates in terms of legislative experience: on average both held between 2.4 and 2.9 positions in local, departmental or national assemblies.

The second panel in Table (2) reports frequencies in each reported ministry for all Presidents and candidates, as well as the corresponding differences. It is noteworthy that, on average, relative to candidates, Presidents have previously occupied more positions as Defense, Development, Interior, Treasury, Public Instruction and Foreign Affairs. With this criterion in mind, the four more important ministries have been Treasury, Foreign Affairs, Interior and Defense, i.e. two of them related to diplomatic and internal political conditions (Foreign Affairs and Interior), and the others of a more technical nature.

The third panel provides a description of family ties for Presidents and candidates. The only noteworthy difference between successful and unsuccessful candidates has to do with 2nd degree ties— defined as candidates with parents in law, grandparents, siblings, uncles (aunts) and adoptive parents who participated in politics— where Presidents have 2.5 more ties, on average, than candidates. In terms of overall magnitudes, the number of 1st (biological and foster parents) and 2nd degree ties are considerably larger than the number of 3rd degree (great grandparents and cousins), and 4th degree ties (great great grandparents and grandparent's siblings).

—-Table 2 around here—-

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Two additional pieces of information are necessary to understand the econometric specifications presented in the next section. First, as noted above, the variety of political and electoral institutions makes Colombia a unique case study, but it also presents some challenges for the econometric analysis. Figure 1 and Table (6) in Appendix A present summary statistics at the election level. It can be readily seen that (i) average and total turnout, as well as the variance in the election-specific voting, increase in time and change between electoral systems (direct, electoral college and congressional voting); because the objective is to study the transmission of votes within a political network, it is unclear that the units of account are comparable across election years and electoral systems.[37] I take care of this difficulty by standardizing at the *election level* the number of votes, so that the relevant unit of analysis are election-specific standard deviations.

Also of interest is the interaction of the network structure with the electoral system. Focusing only on ministry, embassy and family networks, i.e. the collection of links between presidential candidates at each of these levels, Table (3) shows that candidates in elections decided by an electoral college or the congress have more links at the ministerial level than those who run for office in direct elections. Focusing only on embassy positions, candidates elected by the congress have a larger number of links than those in the remaining electoral systems, whereas for family networks there are no notable differences across electoral systems.

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[37]For example, if a given president was elected by an electoral college, and his Treasury minister elected through direct elections, we need to be able to convert one electoral vote into units of direct votes.

—-Figure 1 around here—-

—-Table 3 around here—-

Finally, to get a sense of the structure of the political networks considered here, Figures (2)-(4) display graphically the ministerial, embassy and family networks; remaining networks are displayed in Appendix A. In the figures, time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS-1833) on the horizontal axis (zero degrees in polar coordinates) and finishing with Juan Manuel Santos (JMS), elected president in 2010. Each of the markers corresponds to a candidate, in chronological order, filled (blue) circles denote those candidates linked (with a line) to any other candidate in the network, and filled (red) diamond-shaped markers correspond to Presidents, labeled also with their initials.[38]

—-Figure 2-4 around here—-

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[38]For a list of Presidents see Table (7) in Appendix A.

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5 Framework

As discussed above, I wish to estimate the causal effect that being in a specific political network has on the voting outcome in presidential elections in Colombia. Denote by $C = \{1, 2, \cdots, N\}$ the set of presidential candidates, where elections have been sorted in chronological order, i.e. for any two candidates $m < n$ the election date for candidate m is never later than that of candidate n.

For every candidate $i \in C$, denote by $p(i) \subset C \cup \emptyset$ the set of *political parents* of i. A political parent is defined as any other candidate $j \in C$ that ran for office in *previous* elections such that there is a visible link between the two candidates. In line with this parental metaphor, in what follows I will use interchangeably the terms *inherit* and *transfer from* to refer to the transmission of votes from political predecessors. As shown in the previous section, there are many possible ways two candidates may establish a political relationship, and each of these is captured by a row-normalized contiguity matrix W, where $w_{ij} = 1/n_i$ if and only if $j \in p(i) \neq \emptyset$ (and 0 otherwise) where n_i is the number of political connections that candidate i has. Note that by construction $j \in p(i) \Rightarrow j < i$, restricting the network W to be lower triangular.

In what follows I seek to estimate models of the form

$$v \;=\; \rho W v + X\beta + \epsilon \tag{1}$$

where v denotes the total observed number of votes for all candidates in vector form, X is a matrix of individual characteristics as well as election and period

fixed effects and ϵ is a vector of unobserved disturbances.

Underlying this model specification is the assumption that one may decompose total votes given to any candidate in three orthogonal components: (i) the sum of votes obtained from a network component, (ii) votes from a personal-characteristics component and (iii) an idiosyncratic term that capture everything else. The orthogonality of (i) and (ii) should be understood in the sense of the Frisch-Waugh theorem, and the orthogonality of the error term is necessary for consistent estimation.

The main source of concern arises from the potential endogeneity of the network: votes received by political parents (right-hand side of Equation 1) may already take into account votes from a coalition made in the past. For our purposes, the effect of the endogeneity can be better understood in terms of measurement error. To illustrate, assume that there are only three candidates $1, 2, 3$, with $\{j\} = p(j + 1)$. The econometrician wishing to estimate the average marginal transfer of votes from will run regressions of the form:

$$v_i \;=\; \rho v_{i-1} + X_i' \beta + \epsilon_i$$

Under the assumption that i and $i - 1$ had entered into a coalition when $i - 1$ ran for office, the votes observed by the econometrician include unobserved votes brought to the coalition by each of the parts, i.e. $v_{i-1} = g(v_i^u, v_{i-1}^u)$. To transform the problem of endogeneity into a classical measurement error problem I assume that the coalition production function g is linear in each of the terms. The problem for the econometrician is now clear: to estimate the net

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marginal transfer of votes from $i - 1$ to i she should use the unobserved votes v_{i-1}^u and not the observed coalition votes v_{i-1}.

These two decompositions— the votes equation (1) and the linear production function of coalition votes— generate a natural set of instruments: personal characteristics for candidate one, X_1 can be used to instrument for the unobserved votes obtained by candidate 2, since (1) Cov $(v_2^u, X_1) \neq 0$— 1's personal characteristics have a direct effect on votes obtained by him, that directly impact the votes obtained by 2 *outside* of the coalition with 3; and (2) Cov $(\epsilon_3, X_1) = 0$.

This example with three candidates can be generalized to the general case of N candidates, and the natural set of instruments will now be the average personal characteristics from the connections of all political parents, $\overline{X}_k \in p(j)$ for all $j \in p(i)$.[39,40] Given these set of instruments one can then use a Hausman test in order to assess the extent of the measurement error problem, by estimating the following equation augmented by the predicted (from the first-stage) unobserved effect $\hat{v}_{j \in p(i)}^u$:

$$v_i = \rho \frac{1}{n_i} \sum_{j \in p_i} v_j + X_i'\beta + \epsilon_i + \gamma \frac{1}{n_i} \sum_{j \in p_i} \hat{v}_{j \in p(i)}^u \qquad (2)$$

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[39]For IV solutions to the measurement-error problem see, e.g. Cameron and Trivedi (2005), Lewbel (1997) or Dagenais and Dagenais (1997).

[40]Readers accounted with the literature on peer effects will notice the similarity of this approach to the framework proposed by Bramoullé, Djebbari, and Fortin (2009).

6 Results

To attain full generality I estimate an augmented version of Equation 1 where I simultaneously include all networks:

$$v = \sum_{n \in \{m,e,f\}} \rho_n W_n v + \sum_{s \in \{d,c,s,u\}} \rho_s W_s v + X\beta + \epsilon \qquad (3)$$

where the first sum in the right includes contiguity matrices W_n for ministry (m), embassy (e) and family networks (f), and W_s denotes social and geographical networks— department (d), city (c), school (s) and university (u).

I do this for two different samples: in the *Unrestricted Network* case I use all political connections, including those connections that I know were created after the election, possibly because of a coalition. In the *Restricted Network* case I only take connections that were observed before the election. This gives me a first simple test of the extent of potential measurement error: for OLS to yield inconsistent results, it must be that the estimated effect is larger using the unrestricted network.[41]

Before proceeding it is useful to discuss the identification strategy. Of key importance is the assumption that the three components are independent and additive. Although there is no guarantee that this is the case, by using the rich biographical data I include a full set of individual controls that include age (and squared age), gender, a dummy variable for a candidate running for the Liberal

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[41]Relative to the restricted case, the unrestricted Ministry and Foreign Service networks have 10 and 4 more links, respectively, corresponding to an excess of 8.3% and 7%.

party, the number of times each candidate has been President or candidate in the past, dummies for Law, Economics and Engineering undergraduate degrees, an dummy indicating whether the candidate was a Secretary of the Treasury, the number of times they have been appointed to the cabinet, elected to a national or local Congress or assembly, the number of family relationships with or without candidates included in the list and geographical dummies for being born in Antioquia, Bogotá, Cauca, Santander or Valle and finally, whether the candidate had been part of the military (see Table (2)). This large array of controls provides some assurance that no other unobserved personal characteristic is left inside the idiosyncratic term ϵ_i.

Also, as discussed in Section 2, the electoral system in Colombia has changed several times since the first election in 1833. In all of the results I also include dummy variables for each of the periods described in that Section. Moreover I always standardize all variables at the election level: demeaning with respect to a particular election is equivalent to including election fixed-effects, and standardizing facilitates the interpretation of the results as the number of votes varied across electoral systems and time.

Finally, in order to control for several potential network effects, I include separately and jointly four different types of political connections: in the first two I observe whether a candidate was appointed in the past to the cabinet or the foreign service by a President. Because these two are endogenous, they are potentially affected by the measurement error problem discussed in the previous section. I also include two classes of exogenous connections: first, I wish

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to estimate the effect of being in a political dynasty broadly defined. Although endogenous strategic marriages may be included, I call these connections exogenous because in the most part they were chosen by nature.[42] The other partly exogenous class of connections is given by birth in a given department or city or school and university attendance. The first three are exogenous choices made by someone different from each candidate, and the choice of a university may be endogenous.

Table (4) summarizes the results for all of these networks. Panel A includes six different specifications using each of the unrestricted networks, and Panel B repeats each estimation using only the restricted networks. In the first three specifications I separately include each of the networks. In the fourth and fifth specifications I first estimate each of the network effects controlling for the remaining networks, and then define a grand network W^G where two candidates are linked if they are linked in any of the three individual networks (Columns 5). In the last specification I repeat the exercise in specification (4) but now control for the social network effects. It is important to remember that all of the results in Table (4) include the full set of personal controls, state and period fixed effects have been included.

By comparing corresponding columns in both panels, a first finding is that in general, the estimates for the restricted network (Panel B) are *larger* than those when I use unrestricted networks. As discussed above, this suggests that the problem of measurement error is not important because estimates should be biased upwards if there is two-way transmission of votes between political

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[42]Out of 88 observed family connections, 16 include in-law connections.

parents and children. I will formally test for this below, but this said, I now focus on the results using he Restricted Networks only (Panel B).

First, notice that each of the political connections are statistically significant when included independently (Columns 1-3). When I allow for the three simultaneous effects (Column 4) I find that cabinet and foreign service connections have an important statistical effect: an additional standard deviation (SD) in votes receives by political parents increased the votes of their children by 0.41 and 0.24 of a SD the votes received by their children. As Figure (1) and Table (6) in the Appendix show, these magnitudes are non-negligible. Important also is the finding that family relations still have a positive but statistically insignificant effect.

Column (5) shows that the joint effect is not additive, i.e. the effect of the grand network is not the sum of the independent effects. Here, an additional SD in votes received by political parents is translated into an additional 0.335 of an SD for their children (as opposed to the 0.65 that would be obtained if the effect was additive).

Specification in Column (6) is the most comprehensive, as it allows for both endogenous and exogenous political and social network effects. Here two striking results emerge. First, even after controlling for these social political connections, being part of a cabinet or foreign service of a previous president has a strong and significant effect. Compared to the results in Column (4), the net transmission of votes is smaller when one controls for these other effects. More surprising is the result that social exogenous effects are positive and significant,

and even stronger than the first set of political connections. A connection due to being born in the same department or attendance to the same primary and secondary school generates gains of 0.2 and 0.45 of an SD. Importantly, these are exogenous from the point of view of the candidate, i.e. they did not decide where to be born or attendance in a given school.

The fact that a candidate's social standing and local political connections may have played an important role is not new and anecdotic and qualitative evidence has been documented in the literature.[43] Moreover, as local "caudillos" have played an important role in shaping political and electoral informal institutions in Colombia, the result that being born in the same department as a previous candidate or president has electoral effects is important, not only because it cleans the first set of estimates,[44] but also because it provides a point estimate of the magnitude of the phenomenon.

As discussed above, these results suggest that measurement error is not generating a set of possibly spurious results, but I now go one step further and formally test for the effects that this specific type of measurement error may have. Using the average personal characteristics for all political *grandparents* as instrumental variables I estimate Equation (2) and if I cannot reject $H_0 : \gamma = 0$ then there is no evidence of measurement error. Results in Panel C show that

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[43]Hierarchical segmentation in Colombia, as well as in most of the rest Latin America, has well known colonial origins. For Colombia, see the (rather informal) treatment in Kalmanovitz, López, López, Brando, Jaimes, and Vidal (2010). More generally, the long run causes of inequality in Latin America have been discussed in the seminal work of Engerman and Sokoloff (2006) and Acemoglu, Johnson, and Robinson (2002).

[44]Specifically, it is possible that the correlation found between a political parent and her children is driven by the fact that they belong to a local political network and not because votes are directly transferable.

there is no evidence of measurement error, thereby confirming the previous findings that there is no evidence of two-way transmission between political parents and children.

—-Table 4 around here—-

Given this general finding, there are two additional tests and robustness checks one may wish to conduct, and these are summarized in Table (5); for ease of comparison, the first column copies the results from Panel B, Column (6) in Table (4). In the first robustness check (Column 2) I exclude from the sample all candidates that did *not* participate in direct elections. Although standardizing the number of votes at the election level allows me to control for systematic differences in the mean and variance of total votes, it is likely that political connections have a differential effect under different electoral systems, e.g. because the transferability of votes operates through the general electorate as opposed to an electoral college.(Table (3)). The results show that the effect of being in the cabinet is substantially stronger than with the full sample: each additional SD in average political parents' votes increases by than three fourths of an SD the number of votes received by each candidate. Interestingly, being in the foreign service (Embassy) now decreases the total number votes received, and family connections still have a small but positive and significant effect. Note also that the strength, sign and significance of the social-context networks remain the same.

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Finally I check whether different cabinet positions have differential effects. Although I have information on each ministry, embassy and type of family tie, only for Defense, Interior, Treasury and Foreign Affairs ministries is the information substantial enough to pursue this objective (see Table (2)). Results in Column 3 show that being appointed to the Foreign Affairs ministry provides the largest gains (one half SD for each additional SD in political parents' votes), followed by the Defense and Interior (more than one fourth of a marginal gain); interestingly, Treasury ministerial positions give no electoral gains.

These results are consistent with the following marketing story: gains in direct elections come from higher candidate remembrance or recognition, possibly independently of their actual performance in each position. Being in the cabinet provides such recognition, as well as being part of a political dynasty because people may associate candidates through their last names. By definition, people appointed to the foreign service are less easily remembered as their job takes place abroad. Although candidate recollection matters, it is also the case that negative recollection may harm a candidate, as it appears to be the general case for the Treasury cabinet position.

—-Table 5 around here—-

7 Discussion and Conclusions

Using a novel biographical database for all presidential candidates since 1833 in Colombia, in this article I have quantified the value of a political connection in terms of the number of votes that are partially transferable from political parents to their children. I find that after controlling for individual characteristics, political experience and other local and social-context networks, being connected to someone who has run for office in the past increases the number of votes received by any specific candidate.

This result is quite general and robust to different specifications, and I also show that the quality and strength of a political connection matter. For instance, using the full sample of elections and candidates I find that being connected to a previous president through a cabinet or embassy position, or through geographical or social proximity, generates positive and significant gains. In contrast, being part of a political dynasty matters only when a candidate participates in a direct election. This finding, combined with the result that past foreign service connections may harm a candidate who runs for office in a direct election, suggests that one likely channel for the transferability of votes in competitive elections is the ability of a candidate to be remembered, i.e. public exposure.

I have also shown that these gains are non-negligible, with an estimated maximum of a three-fourths of a standard deviation gain for each additional standard deviation received by their political parents. To the best of my knowledge these are the first findings quantifying the value of a political connection in actual presidential elections.

This said, I now discuss the validity of the identification strategy. First, I have used a reduced-form model where by assumption the number of votes received depend on the votes inherited from the political parents, on personal characteristics and an idiosyncratic term that captures all other factors, e.g. within-election characteristics. As usual, OLS estimates are consistent as long as (1) there is no measurement error, and (2) the idiosyncratic error term is uncorrelated with the observed regressors. I now expand on these issues.

Concerning the econometric specification, a first observation is that the regression model is a reduced-form model as I have expressed the number of votes in terms of candidates' personal characteristics (plus network and idiosyncratic components), as opposed to political proposals or programs (e.g. religious issues, tax and fiscal proposals, etc.). One may defend this specification on theoretical grounds if voters care only about personal observable characteristics related to a candidate's political experience— e.g. possibly because they know that political proposals are non-binding — or if the mapping of personal characteristics to votes is the composition of two choice-theoretic mappings: one for the voters linking proposals to votes and one for the candidates mapping personal characteristics to the choice of a political platform.[45]

Given this model specification, the assumptions in Section 5 allow me to precisely point at one specific source of concern: estimates are upwardly biased whenever there is two-way transferability of votes, i.e. the political connection

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[45]The first mapping arises naturally in any theory of political competition in which candidates are vectors of proposals and possibly other personal characteristics and voters choose the one that maximizes their expected utility. The second mapping is less standard because at first sight it may not be part of political equilibrium; for example, in the classic Downsian model all candidates choose the same proposal irrespectively of their personal characteristics.

is traded for votes correlated with electoral results in the future. To see this, suppose that a political connection is formed at a previous, unobserved, time and that, in exchange, the political child provides the parent with votes. In this case, OLS estimation of Equation (1) provides an estimated gross two-way transferability of votes, as opposed to the one-way causal effect that I intend to estimate.

Thanks to this transformation from a problem with possibly endogenous network ties to one of measurement error, this framework provides a natural set of instruments: personal characteristics for all political *grandparents* are correlated with the number of votes political parents received, and uncorrelated with the idiosyncratic term for their political children, as well as with the measurement error (unobserved votes for the political child at the time of the formation of the connection). The validity of the instruments follow from the separability assumptions of the data generating process for votes and the production function for coalition votes, both discussed in that section. Using this set of instruments and a Hausman test I showed that there is no evidence of two-way transferability of votes.

Nonetheless, other potential sources of concern are omitted variables correlated with votes for political parents and children or the likelihood of the connection. For example, one may pose that candidate *B*'s charm makes him appealing to both the general electorate (direct effect on *B*'s votes) and candidate *A*.[46] Alternatively, there might be a third variable shared by both *A* and *B*

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[46]Note that the case where *B* is appealing to candidate *A* not for intrinsic reasons, but for extrinsic reasons— *because* her charm may increase votes from a potential coalition— can be

that generates spurious correlation, e.g. shared geographical environments or elite upbringing.

While these unobservables will bias upwardly the estimates, using the extensive biographical information in my data I have been able to include personal characteristics, political experience and shared geographic and elite environment, as measured by having attended the same school or university. Going back to the examples, if charm has an intrinsic political value for both political parents and the electorate, the potential bias is reduced by controlling for previous positions in the legislative or executive powers.

Finally it is still possible that the exogeneity condition is violated because the reduced-from model is misspecified. Suppose, for simplicity, that the voting decision follows from a standard multinomial choice procedure, i.e. a ballot is given to the candidate that maximizes the voter's utility that depends, say, only on personal characteristics that may include information on political connections. To further simplify the discussion, assume that the probability is linear in the pairwise differences in personal characteristics for any two candidates in an election. It follows that the personal characteristics for all other candidates are omitted in the specification discussed in Section 5, possibly invalidating the exogeneity assumption of the idiosyncratic component ϵ_i.

Note first that because of candidate self-selection, even though the omitted variables are uncorrelated with the votes received by political parents these may still be correlated with all other regressors included in the personal-characteristics component. Even in the simplest linear-probability scenario the magnitude or

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covered by the method outlined and used above.

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direction of the bias is impossible to establish, as the correlation may be positive for some variables such as political experience, and negative for variables related to a party platform. Moreover, given that the number of candidates varies in each election, it is infeasible to include the full set of personal characteristics for all candidates unless more structure is imposed on the problem, e.g. neglecting the personal-characteristics component, and modeling explicitly the idiosyncratic component as a multinomial choice problem. But even if this makes the estimation of the parameters feasible, the choice of structure matters because, for example, a purely choice-theoretic voting model as the one used in this discussion neglects the possibility of strategic voting.

Because it is unclear what is the cost of this misspecification and the potential solutions are either infeasible or made feasible by imposing strong assumptions in this article I have decided not to pursue this issue further.[47]

One theme left for future research is the analysis of the transmission channel. While a structural model is more appropriate for these purposes, there are the

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[47]I have, estimated a simple model where, as before, total votes received can be decomposed into three components: a network-component that averages the votes transferred from all political parents, a competitive-elections component modeled as a conditional logistic probability (augmented by net total turnout) and an idiosyncratic component. Although most of the signs remain the same— I find a positive effect for most network components— only the family network remains significant with a marginal effect of 0.22 of a SD for each additional SD received by political parents. Estimation of this purely choice-theoretic model is made feasible by several problematic assumptions: first, it neglects the possibility of strategic voting. Second, the separability of the two components is strong, as the pairwise comparison of candidates might include the quantity and quality of political connections. Third, the conditional logit imposes the *independence of irrelevant alternatives* that is particularly problematic in this context. Results are available upon request. Following the IO literature on market shares for different firms (e.g. Berry, Levinsohn, and Pakes (1995)) a better solution is to estimate a multivariate probit or a mixed logit model for politicians voting shares. Two complications arise in this frameworks: first, the number of candidates change in each election making the choice of an identified covariance matrix nontrivial. Second, not only does the number of alternatives change, but the set itself changes.

findings are suggestive of several hypotheses.

First, the fact that embassies have a negative effect in direct elections suggest that the pure case of fraud can be rejected, otherwise, it would not matter whether the preferred successor has been active in local politics or not. The finding that belonging to a political dynasties have a positive effect in direct elections only suggests that a likely channel is through candidate recall, akin to brand recall. Nonetheless, it is also likely that a family name acts as a signal of unobserved candidate quality. Which of the two matters the most is left for future research.

But candidate recall is also suggested by the heterogeneity across ministerial positions: except for being a secretary of the treasury— possibly related to the fact that voters generally dislike being taxed — cabinet positions active in local politics, as opposed to an embassy abroad, have a much larger effect. As a matter of fact, being sent to an embassy abroad— a practice frequently used during 19th and 20th century politics in Colombia— amounts to political depreciation, or depreciation of a candidate's political capital, understood as the potential to get votes.

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Tables and Figures

Table 1: Summary of Presidential Electoral Institutions

Date	Elections	Restrictions	Criteria[†]	Term Length (years)
1833-53	Electoral College	Restricted	Abs.Majority	4
1853-1863[a]	Direct	Universal	Rel.Majority	4
1863-1885[b]	States	Restricted	One vote for each of 9 states. Abs.Majority.	2
1886-1910[c]	Electoral College	Restricted	Abs.Majority	6
1910[d]	Direct	Restricted		4
1936[e]	Direct	Universal (males only)		4
1957[f]	Direct	Female suffrage		4
1975[g]	Direct	Minimum voting age is 18 (down from 21)		4
1991[h]	Direct	Universal	Abs.Majority and two-round system with top two candidates.	4

Source: Jaramillo and Franco (1993)

Notes: *a.* 1853 Constitution. *b.* 1863 Constitution. *c.* 1886 Constitution. *d. Acto Legislativo No. 3, 1910 e. Acto Legislativo No. 1, 1936. f. Plebiscito del 1 de diciembre de 1957. g. Acto Legistlativo No. 1, 1975. g. 1991 Constitution.* † *Abs.Majority.*: Absolute majority, otherwise chosen by the Congress. *Rel.Majority*: Relative majority.
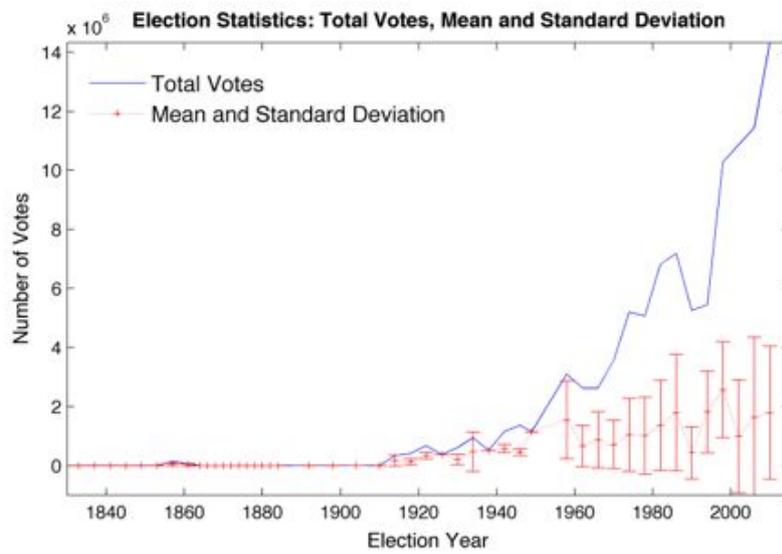
Figure 1: Descriptive Statistics: For each election, the figure shows total and average (per candidate) number of votes, as well as standard deviation. See also Table (6) in the Appendix.

Table 2: Sample Means for Presidents and Candidates

	Controls		
Variable	Presidents	Candidates	Difference
Liberal	0.396	0.239	0.157*
Conservative	0.229	0.23	-0.001
Direct Election	0.563	0.673	-0.11
Electoral College	0.167	0.159	0.007
Congressional Election	0.25	0.159	0.091
Antioquia	0.125	0.115	0.01
Bogotá	0.292	0.239	0.053
Cauca	0.146	0.071	0.075
Santander	0.021	0.097	-0.077**
Valle	0.042	0.097	-0.056
Law Degree	0.563	0.46	0.102
Economics Degree	0.083	0.035	0.048
Engineering Degree	0.083	0.035	0.048
Total Ministries	2	0.876	1.124***
Total Embassies	1.104	0.531	0.573***
Total Executive	1	0.699	0.301***
Total Legislative	2.896	2.407	0.489
Army (1 if any militar experience)	0.5	0.345	0.155*

	Ministry Connections		
	Presidents	Candidates	Difference
Agriculture	0.042	0.009	0.033
Trade	0.021	0	0.021
Communications	0	0.027	-0.027*
Defense	0.313	0.186	0.127*
C&T	0.021	0.018	0.003
Development	0.104	0.018	0.086*
Education	0.021	0.027	-0.006
Interior	0.313	0.106	0.206***
Treasury	0.479	0.15	0.329***
Public Instruction	0.083	0.009	0.074*
I&E	0.042	0.053	-0.011
Justice	0	0.018	-0.018
Energy	0.021	0.009	0.012
Public Works	0.083	0.027	0.057
Foreign Affairs	0.438	0.133	0.305***
Health	0	0.018	-0.018
Labor	0.021	0.044	-0.023
Housing	0	0.009	-0.009
Industry	0	0.018	-0.018

	Family Connections		
	Presidents	Candidates	Difference
1st Degree	0.292	0.221	0.07
2nd Degree	0.333	0.133	0.201***
3rd Degree	0.042	0.009	0.033
4th Degree	0.083	0.027	0.057

Notes: Results for test of difference of means. *** Significant at the 99% level, ** Significant at the 95% level, * Significant at the 90% level.

Families ties were classified as follows: Ties with biological parents are classified as 1st degree relations. Remaining ties were classified in terms of the number of (biological or social) steps needed to reach each candidate: 2nd degree ties are those parents in law, grandparents, siblings, uncles (aunts) and adoptive parents, 3rd degree ties are links with great grandparents and cousins, and 4th degree ties are with everyone else (great great grandparents and grandparent's siblings).

Table 3: Number of Political Connections and Electoral System

	Ministry Network	Embassy Network	Family Network	Nobs
Direct Elections	1.049	0.583	0.456	103
	(0.133)	(0.106)	(0.071)	
Electoral College	1.654	0.654	0.346	26
	(0.228)	(0.235)	(0.123)	
Congressional	1.467	1.1	0.767	30
	(0.274)	(0.268)	(0.149)	

Notes: Table presents average number of political connections between political parents and children for Ministry, Embassy and Family networks for each electoral system. Standard errors in parenthesis. Congressional includes all candidates running for President in elections decided by the Congress or a constitutional convention.
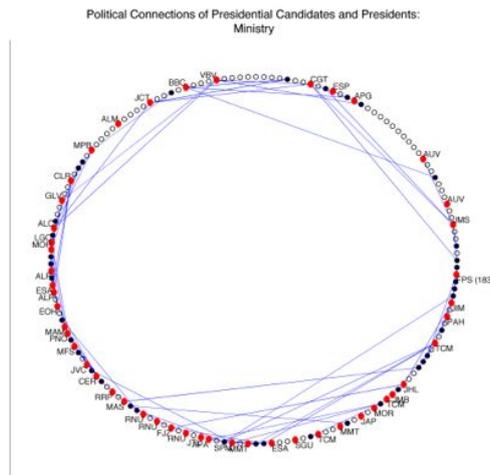
Figure 2: Ministry Network: Figure displays the Ministry network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents. A line is traced between any presidential candidate that was part of a cabinet of a previous president.
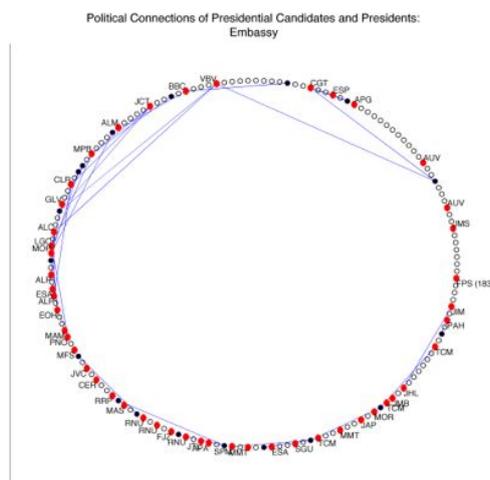
Figure 3: Embassy Network: Figure displays the embassy network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents. A line is traced between any presidential candidate that was part of a cabinet of a previous president.
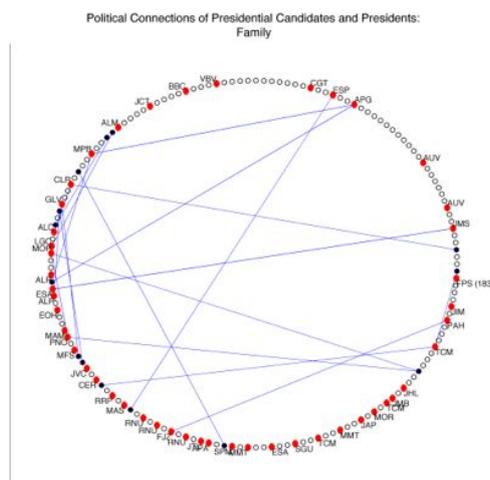
Figure 4: Family Network: Figure displays the department network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents. A line is traced between any presidential candidate that had any family ties with a previous candidate.

Table 4: Summary of Results for Different Network Specifications

	Panel A: Unrestricted Network						Panel B: Restricted Network					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
Ministry	0.248** (0.1)			0.071 (0.1)		0.125 (0.08)	0.446*** (0.08)			0.414*** (0.08)		0.373*** (0.07)
Embassy		0.351*** (0.09)		0.403*** (0.09)		0.222*** (0.06)		0.285*** (0.09)		0.241** (0.09)		0.135** (0.06)
Family			0.32** (0.16)	0.205 (0.14)		0.146 (0.12)			0.32** (0.16)	0.127 (0.13)		0.17 (0.11)
All					0.093 (0.09)						0.335*** (0.09)	
Social: Department						0.295*** (0.11)						0.204** (0.1)
Social: City						0.006 (0.1)						0.033 (0.1)
Social: School						0.433*** (0.07)						0.451*** (0.06)
Social: University						0.032 (0.06)						0.037 (0.06)

Panel C: Hausman Test for Presence of Measurement Error

	(1)	(2)				(6)						(6)
t-stat	0.385	0.222				0.198						0.199
P-Value	0.701	0.825				0.844						0.843
R^2 First stage	0.73	0.93				0.78						0.92

Notes: *** Significant at the 99% level, ** Significant at the 95% level, * Significant at the 90% level. All specifications include a full set of personal characteristics, state and period fixed effects, as described in text. All variables have been standardized with respect to each election. Standard errors estimated using FGLS with random effects at the election level. *Unrestricted Network* includes all links irrespectively of the year of candidacy and link formation. *Restricted Network* includes only the links that were formed before the candidacy year. *Panel C* presents heteroskedastic-consistent t-statistics and p-values for the Hausman test that $H_0 : \gamma = 0$ in Equation (2) using only the specifications with Ministry and Embassy networks.

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Table 5: Robustness Checks

	(1)	(2)	(3)
All Ministries	0.373***	0.777***	
	(0.07)	(0.14)	
Different Ministries			
Defense			0.292***
			(0.08)
Interior			0.253**
			(0.11)
Treasury			-0.032
			(0.15)
Foreign Affairs			0.509***
			(0.11)
Other Networks			
Embassy	0.135**	-0.231**	0.242***
	(0.06)	(0.1)	(0.06)
Family	0.17	0.267**	0.15
	(0.11)	(0.13)	(0.12)
Department	0.204**	0.319*	0.211**
	(0.1)	(0.16)	(0.1)
City	0.033	0.187	0.022
	(0.1)	(0.15)	(0.09)
School	0.451***	0.355***	0.348***
	(0.06)	(0.07)	(0.08)
University	0.037	-0.137**	0.002
	(0.06)	(0.07)	(0.05)
R2	0.86	0.93	0.94
Nobs	142	84	142

Notes: *** Significant at the 99% level, ** Significant at the 95% level, * Significant at the 90% level. All specifications include a full set of personal characteristics, state and period fixed effects, as described in text. All variables have been standardized with respect to each election. Standard errors estimated using FGLS with random effects at the election level. For comparison, Column (1) copies the results from Column 6 in Table (4), Panel B. Column (2) includes only candidates that participated in direct elections. Column (3) includes four separate ministry networks.

Appendix A: Additional Statistics

Table 6: Election Descriptive Statistics

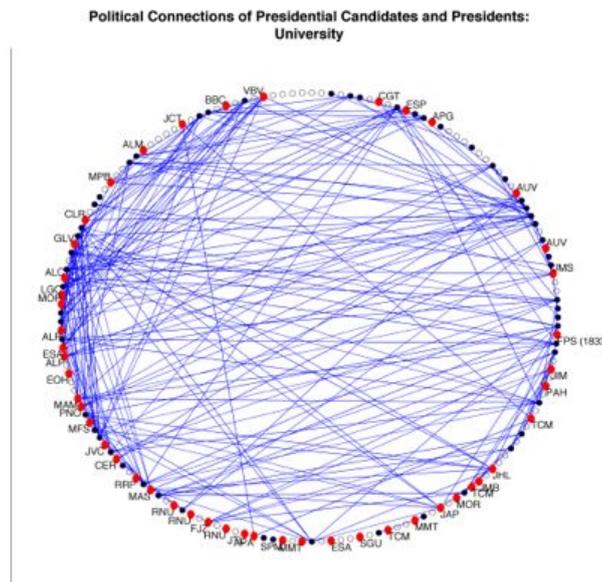| Election Year	Total Votes	Avg. Votes	Std.Dev	No.Candidates
1833	1133	566.5	630.0	2
1837	1466	366.5	244.2	4
1841	1554	518.0	122.3	3
1845	1487	495.7	256.6	3
1849	1693	241.9	250.3	7
1853	1877	938.5	862.0	2
1857	138462	46154.0	46115.8	3
1861	60645	30322.5	39857.5	2
1864	9	3.0	2.6	3
1866	9	3.0	3.5	3
1868	9	3.0	2.6	3
1870	9	3.0	2.0	3
1872	9	3.0	2.6	3
1874	9	4.5	2.1	2
1876	9	3.0	1.7	3
1878	9	9.0	0.0	1
1880	9	4.5	3.5	2
1882	9	4.5	4.9	2
1884	9	4.5	2.1	2
1892	2584	1292.0	1107.3	2
1898	2045	681.7	806.5	3
1904	1976	988.0	8.5	2
1910†	43	14.3	11.0	3
1914	337499	168749.5	186655.7	2
1918	407134	135711.3	99900.6	3
1922	669850	334925.0	111290.1	2
1926	370493	370493.0	0.0	1
1930	607553	202517.7	173214.3	3
1934	942209	471104.5	661432.6	2
1938	511947	511947.0	0.0	1
1942	1147806	573903.0	140383.3	2
1946	1366095	455365.0	104215.6	3
1949	1140122	1140122.0	0.0	1
1958	3097809	1548904.5	1320937.0	2
1962	2622107	655526.8	692694.3	4
1966	2623302	874434.0	947504.0	3
1970	3564527	712905.4	814332.5	5
1974	5199536	1039907.2	1235930.0	5
1978	5060555	1012111.0	1300192.6	5
1982	6816414	1363282.8	1522480.6	5
1986	7178123	1794530.8	1973913.5	4
1990	5245281	437106.8	888063.2	12
1994	5447222	1815740.7	1382640.0	3
1998	10278164	2569541.0	1629705.4	4
2002	10855529	986866.3	1920735.7	11
2006	11435637	1633662.4	2717580.3	7
2010	14317278	1789659.8	2255765.3	8

Notes: † A Constitutional Convention elected the President.

Table 7: Presidents and Labels Used in Figures

Year	Label	Full Name
2010	JMS	Juan Manuel Santos
2002	AUV	Álvaro Uribe Vélez
1998	APG	Andrés Pastrana Arango
1994	ESP	Ernesto Samper Pizano
1990	CGT	César Gaviria Trujillo
1986	VBV	Virgilio Barco Vargas
1982	BBC	Belisario Betancur Cuartas
1978	JCT	Julio César Turbay Ayala
1974	ALM	Alfonso López Michelsen
1970	MPB	Misael Pastrana Borrero
1966	CLR	Carlos Lleras Restrepo
1962	GLV	Guillermo León Valencia Muñoz
1958	ALC	Alberto Lleras Camargo
1949	LGC	Laureano Eleuterio Gómez Castro
1946	MOP	Mariano Ospina Pérez
1934	ALP	Alfonso López Pumarejo
1930	EOH	Enrique Olaya Herrera
1926	MAM	Miguel Abadía Méndez
1922	PNO	Pedro Nel Ospina Vásquez
1918	MFS	Marco Fidel Suárez
1914	JVC	José Vicente Concha Ferreira
1910	CER	Carlos Eugenio Restrepo Restrepo
1904	RRP	Rafael Reyes Prieto
1898	MAS	Manuel Antonio Sanclemente Sanclemente
1882	FJZ	Francisco Javier Zaldúa
1880	RNU	Rafael Núñez Moledo
1878	JTL	Julián Trujillo Largacha
1876	APA	Aquileo Parra
1874	SPM	Santiago Pérez Manosalva
1870	ESA	Eustorgio Salgar Moreno
1868	SGU	Santos Gutiérrez
1864	MMT	Manuel Murillo Toro
1861	JAP	Julio Arboleda Pombo
1857	MOR	Mariano Ospina Rodríguez
1853	JMB	José María Obando
1849	JHL	José Hilario López
1845	TCM	Tomás Cipriano de Mosquera
1841	PAH	Pedro Alcántara Herrán
1837	JIM	José Ignacio de Márquez
1833	FPS	Francisco de Paula Santander

Notes: Table excludes Presidents who were reelected: Tomás Cipriano de Mosquera (1845, 1861 (military coup), 1866), Manuel Murillo Toro (1864,1872), Rafael Núñez Moledo (1880,1884,1892), Alfonso López Pumarejo (1934,1942),Álvaro Uribe Vélez (2002,2006)

Figure 5: Notes: Figure displays school network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents.

Figure 6: Notes: Figure displays the university network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents.

Figure 7: Notes: Figure displays the undergraduate degree network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents.

Figure 8: Notes: Figure displays the city network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents.

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Figure 9: Notes: Figure displays the department network using the following conventions: time is displayed in clockwise order, starting with Francisco de Paula Santander (FPS - 1833) on the horizontal axis and finishing with Juan Manuel Santos (JMS) on the first quadrant. All markers denote a presidential candidate. Filled (blue) circles denote a candidate that is linked to some other candidate in the sample. Filled (red) diamonds denote Presidents.

Appendix B: Biographical Sources

Table B.1. Internet Sources

Name	Website	Description
Presidencia de la República	*web.presidencia.gov.co/asiescolombia/ presidentes/01.htm*	Biographical information for all presidents starting with Simón Bolívar and ending with Álvaro Uribe Vélez. Constructed by the Colombian national government during President Uribe's mandate.
Biblioteca Virtual Biblioteca Luis Ángel Arango	*www.banrepcultural.org/blaavirtual/biografias*	Biographical information on presidents, ministers, ambassadors, and other illustrious Colombians. Includes very large digital archive with all issues of Revista Credencial Historia (magazine), as well as a large digital archive of several national and regional newspapers starting in the 19th century and the biographical volume of the *Gran Enciclopedia de Colombia del Círculo de Lectores*. Constructed and maintained by country's largest public library (and funded by Colombia's Central Bank)
BioSiglos	*biosiglos1.blogspot.com*	Biographical information on many presidents and statesmen from Colombia and the world.
Centenario del Nacimineto del doctor Jorge Leyva Durán	*somosconservadors.org/pcc/frontend.php /Noticias/post/id/848*	Biographical information on Jorge Leyva Durán (1962 Presidential Candidate)
Latin American Elections Statistics (UC San Diego)	*libraries.ucsd.edu/locations/sshl/ resources/feautred-collections/latin-american-elections-statistics/colombia/*	Large bibliographical and quotations collection for elections starting in 1810 and finishing in 2000. Maintained by UC San Diego.
Political Database of the Americas: Colombia	*pdba.georgetown.edu/ElecSys/Colombia /colombia.html*	Maintained by the Center for Latin American Studies at Georgetown University, contains information on the electoral system, political parties and other political dimensions of interest, at a comparative level for several countries in Latin America.
Diccionario Biográfico Ecuador	*www.diccionariobiograficoecuador.com*	Maintained by Ecuadorian biographer and historian Rodolfo Pérez Pimentel, includes biographical information of several *Gran Colombian* statesmen that were born or lived temporarily or permanently in Ecuador (eg. Bartolomé Calvo)
Biografía de Jaime Hernando Pardo Leal	*www.revistacontornojudicial.com/adjunts/ biografia_jpl1.pdf*	Biographical information on 1986 presidential candidate Jaime Pardo Leal.
Wikipedia article on Colombian Elections	*es.wikipedia.org/wiki/Elecciones _presidenciales_en_Colombia*	Contains statistics and information for all elections in Colombia (article in Spanish).