THE REVIEW OF ECONOMIC STUDIES

Review of Economic Studies (2009) **76**, 115–142 0034-6527/09/00050115$02.00

Political Dynasties

ERNESTO DAL BÓ
University of California, Berkeley and NBER

PEDRO DAL BÓ
Brown University and NBER

and

JASON SNYDER
University of California, Los Angeles

First version received December 2007; *final version accepted April* 2008 (*Eds.*)

Political dynasties have long been present in democracies, raising concerns that inequality in the distribution of political power may reflect imperfections in democratic representation. However, the persistence of political elites may simply reflect differences in ability or political vocation across families and not their entrenchment in power. We show that dynastic prevalence in the Congress of the U.S. is high compared to that in other occupations and that political dynasties do not merely reflect permanent differences in family characteristics. On the contrary, using two instrumental variable techniques we find that political power is self-perpetuating: legislators who hold power for longer become more likely to have relatives entering Congress in the future. Thus, in politics, power begets power.

1. INTRODUCTION

Political dynasties have long been present in democracies, raising concerns that inequality in the distribution of political power may reflect imperfections in democratic representation. Such concerns extend back to Mosca (1966 [1896], p. 74) who, writing in 1896, argued that "every class displays the tendency to become hereditary, in fact if not in law" (our translation) and that even when political positions are open to all, a family tie to those already in power would confer various advantages. Michels (1999 [1911]), writing on "the iron law of oligarchy", stated that even in democratic organizations, the leadership, once elected, would entrench itself in power, undermining the democratic principle of a level playing field.

But the persistence of political elites does not necessarily imply that political power is self-perpetuating. Mosca himself considered (skeptically) the argument that persistent inequalities in political attainment reflect hereditary inequalities in talent and drive. If traits such as talent run in families, this may yield persistent advantages to some families that are not due to their already occupying positions of authority. The question is then: do political dynasties exist because some families are somehow more politically able or talented than others or is political power self-perpetuating?

In this paper, we show that political power in the U.S. is self-perpetuating and that the presence of political dynasties does not merely reflect differences in ability across families. We define self-perpetuation as a power-treatment effect, whereby holding political power for longer increases the probability that one's heirs attain political power in the future regardless of family characteristics. In order to prove a causal relationship between political strength (defined as length in office) and subsequent dynastic success, we use two instrumental variables approaches. Our first approach uses a regression discontinuity design relying on the (presumably random)

outcome of close elections as an instrument for tenure length (on regression discontinuity, see Hahn, Todd and Van der Klaauw, 2001, and for an application to elections, see Butler, Lee and Moretti, 2004). We find that legislators who barely won their first reelection have a significantly higher chance of having a relative enter Congress in the future than legislators who barely lost their first reelection. In the second approach, we instrument for whether a legislator's first reelection attempt is successful using the reelection rate of fellow party legislators in the same state and year. The second instrumental variables approach corroborates our findings. Overall, we find that holding legislative power for more than one term doubles the probability that a politician will have a relative entering Congress in the future. Because exogenous shocks to dynastic power have an effect on dynastic permanence, superior fixed traits (*i.e.* original endowments in terms of genes, for instance) cannot be the whole explanation for political dynasties in the Congress of the U.S. We thus conclude that in politics, power begets power.

We follow the study of self-perpetuation with an assessment of the possible channels through which political power is transmitted. It could be that a longer tenure induces a public service vocation in some family members of the legislator. However, we find that dynastic politicians (defined as those from a family that had previously placed a member in Congress) are less likely to have previous public office experience. Another possibility is that a longer tenure allows a legislator to accumulate an asset that he then bequests—like financial or human capital, name recognition, or contacts. In this paper, we do not attempt to disentangle these various channels, but a couple of findings are suggestive that contacts and name recognition may play a role. First, dynastic legislators are more likely to represent the same state they were born in. This suggests that dynastic politicians may inherit a form of political capital that is especially useful at the local level, such as local political connections or name recognition as opposed to talent or drive. Second, we find that dynastic legislators are less common in more competitive environments. One possible explanation is that when a party safely controls a state, those in control of a party can afford to favour candidates to whom they are connected by family or social ties, suggesting that the dynastic transmission of political power may be more related to superior contacts with party machines—for example—than to features valued by voters, such as higher human capital. Last, we compare dynastic prevalence across occupations and show that dynastic prevalence in Congress is extremely high relative to that in other occupations. This suggests that the mechanisms behind the transmission of political power may be stronger or different than the mechanisms behind the transmission of occupations in general.

Our finding that shocks to political power have persistent effects by increasing the probability that relatives will gain power has multiple implications. First, while the inheritance of political power may be considered undemocratic, we find that existing democratic processes still allow for the *de facto* inheritance of political power. This inheritance is potentially troublesome for those concerned with the legitimacy of the process by which representation is achieved.[1]

Second, our self-perpetuation result underscores the importance of dynamic effects in shaping the composition of the political class. This is important for several reasons. One, there is recent evidence that the identity of political officials matters in terms of the policies they implement.[2] Two, granting political power to new social groups may entail a transfer of power to their descendants and, as a result, institutions that extend political representation—even if temporarily—may have long-lasting effects and therefore be hard to reverse. This offers an

1. Dal Bó, Foster and Putterman (2007) show in an experimental setting that, given the same rules, subjects behave differently depending on the process through which rules were selected.

2. Jones and Olken (2005) show that national leaders appear to have large impacts on national growth. Pande (2003) shows that the group membership of legislators affects targeted redistribution. Chattopadhyay and Duflo (2004) show that the gender of village leaders affects the composition of public goods. Washington (2008) shows that U.S. legislators who have relatively more daughters take more progressive stances on women issues.

explanation for why democratization may work as a commitment device, as assumed by Acemoglu and Robinson (2006*a*) to explain the rise of democracy in Western nations. Last, political mistakes by confused electorates may impose costs that are more long-lasting than simply conferring office to a bad candidate (see Wolfers, 2002, on how voters reelect lucky, but not necessarily talented, incumbents).

The next section discusses related literature. Section 3 describes our data and documents the historical evolution of political dynasties in the Congress of the U.S. since its inception in 1789. The descriptive contribution of this section gives an idea of the environments associated with political dynasties. Section 4 contains our analysis of self-perpetuation. First, we present a simple framework that clarifies our definition of self-perpetuation and the challenges to its empirical identification. Then, we present the empirical results. Section 5 describes the profile of dynastic legislators and examines the connection between political competition and dynastic prevalence. Section 5 also shows that dynastic effects are stronger in legislative politics than in other occupations. Section 6 concludes.

2. RELATED LITERATURE

A handful of papers have documented the presence of political dynasties in the U.S. and elsewhere. Camp (1982) documents that high percentages of Mexican political leaders between 1935 and 1980 belonged to politically established families. Clubok, Wilensky and Berghorn (1969) use biographical data of U.S. legislators to look at the percentage of legislators belonging to politically connected families. They describe the evolution of that magnitude over time and across regions of the U.S. until 1961 and argue that the observed decrease cannot simply be explained by population growth. Brandes Crook and Hibbing (1997) examine the impact of the change towards direct election of senators on a number of dimensions, including the percentage of senators with relatives previously in Congress.

Our work is also related to work on legislative careers (Diermeier, Keane and Merlo, 2005; Merlo and Mattozzi, 2005; Snyder and Padró i Miquel, 2006) and the composition of the political class (Dal Bó and Di Tella, 2003; Caselli and Morelli, 2004; Messner and Polborn, 2004; Besley, 2005; Dal Bó, Dal Bó and Di Tella, 2006). Also related is a paper by Acemoglu and Robinson (2006*b*) who offer a model of the persistence of elite power through investments in political influence.

Our paper is related to the incumbency advantage literature in that we attempt to measure the effect of political attainment on future political prospects (see, among many others, Erikson, 1971; Gelman and King, 1990; Levitt and Wolfram, 1997; Ansolabehere, Snyder and Stewart, 2000). An important difference with the incumbency advantage literature is that we identify a spillover effect that is *interpersonal* rather than *intrapersonal.* As such, our work underscores the social network dimension, given by family ties, of the effects that current political selection has on the future political class. As most papers in the incumbency advantage literature, we focus on identifying the effect and abstract from the interesting problem of its direct consequences (an exception is King and Gelman, 1991, who specifically investigate the impact of incumbency advantage on political responsiveness and partisan bias).

Finally, our work is also related to a vast empirical literature measuring within-family income correlations across generations (see, for instance, Solon, 1999, and references therein) and to a vast literature in sociology that has measured intergenerational mobility across occupations and status levels (see Ganzeboom, Treiman and Ultee, 1991, for a survey).[3] However, our work

3. There is also a large theoretical literature on the intergenerational transmission of income (see, *inter alia*, Becker and Tomes, 1979; Loury, 1981; Galor and Zeira, 1993; Fernández and Rogerson, 2001; Mookherjee and Ray, 2003; for a network-based perspective, see Calvó-Armengol and Jackson, 2005).

differs in two important ways. First, our focus is on the transmission of political power. Although our results do not necessarily imply that the reproduction of political inequality contributes to the reproduction of economic inequality, our paper does expand the study of the reproduction of inequality from economics to politics. Second, we go beyond the measurement of correlations by showing that shocks affecting the political power of a person will have a causal effect on the future political power of the family.[4]

3. DATA AND HISTORICAL EVOLUTION

3.1. *Data sources and key variables*

The data for this project come from multiple sources. First, the *Roster and Biographical Characteristics of Members of the United States Congress* (ICPSR study 7803; see ICPSR and McKibbin, 1997) contains basic biographical information such as year of birth, prior experience, and information regarding the legislator's career in Congress (*i.e.* years and chambers) for every legislator from 1789 to 1996. Second, our data on family relationships come from the *Biographical Directory of the United States Congress*, which has detailed information on the family relationships of legislators. This allows us to construct the matrix of family relationships for all members of Congress. This level of detail will be useful to show that our results are robust to the definition of relatives and assess the quality of the data.[5] Table A1 in the appendix shows the main types of family relationships observed in the data. Around 75% of the family relationships in Congress can be categorized as close (parent-child, uncle-nephew, siblings, grandparent-grandchild, and spouses).

We create two indicator variables to characterize political dynasties: *Postrelative* and *Prerelative*. The former is an indicator equal to 1 when a legislator has a relative entering Congress after he or she did and 0 otherwise. The latter is equal to 1 whenever a legislator had a relative enter Congress before she did and 0 otherwise. Approximately 8·7% of legislators had a previous relative in office (*Prerelative* = 1), and 8·6% had a posterior relative in office (*Postrelative* = 1)—see Table A2. This table also shows that 65% of legislators stay in Congress for more than one term. A term is one congress (2 years) for House Representatives and three congresses (6 years) for a Senator. The average tenure length (in congresses) is 3·73. We now define two variables that will be used frequently: $Longterm$ is a dummy variable equal to 1 if the legislator stayed in Congress for more than one term, and $Totaltenure$ is a variable recording the total number of congresses served by a legislator.

Table A3 displays information on large congressional dynasties. The Breckinridge family is the "largest" political dynasty in terms of both the number of members placed in Congress (17) and the total number of congresses served (72). Its presence in Congress spans the period from 1789 to 1978. Other large families in Congress include the Hale, Sheppard, Lodge, Baker, and Claiborne families.

The data on election results we use in Section 5 come from the *Candidate and Constituency Statistics of Elections in the United States* (ICPSR study 7757; see ICPSR 1994).[6] Finally, we

4. See Currie and Moretti (2003) for how education shocks have intergenerational spillover effects.

5. We assess the quality of the data provided by the *Biographical Directory* by focusing on missing links (*i.e.* A appears as relative of B, but B does not appear as relative of A). We found a very small number of missing links (2% of all links), and more importantly for our analysis, the number of missing links is not negatively correlated with tenure length.

6. Since this database does not have common individual identifiers with the Congressional Biographical Database, we employed a complex merging procedure described in the working paper. For the universe of House elections, we were able to match 28,560 elections out of the possible 30,028 that occurred. We only found minor differences among observables between elections that merged and those that did not, save for the fact that elections that did not merge correctly seemed to occur earlier in our sample. This is consistent with the quality of recording being poorer earlier in time. Otherwise, the missing elections appear to be random.

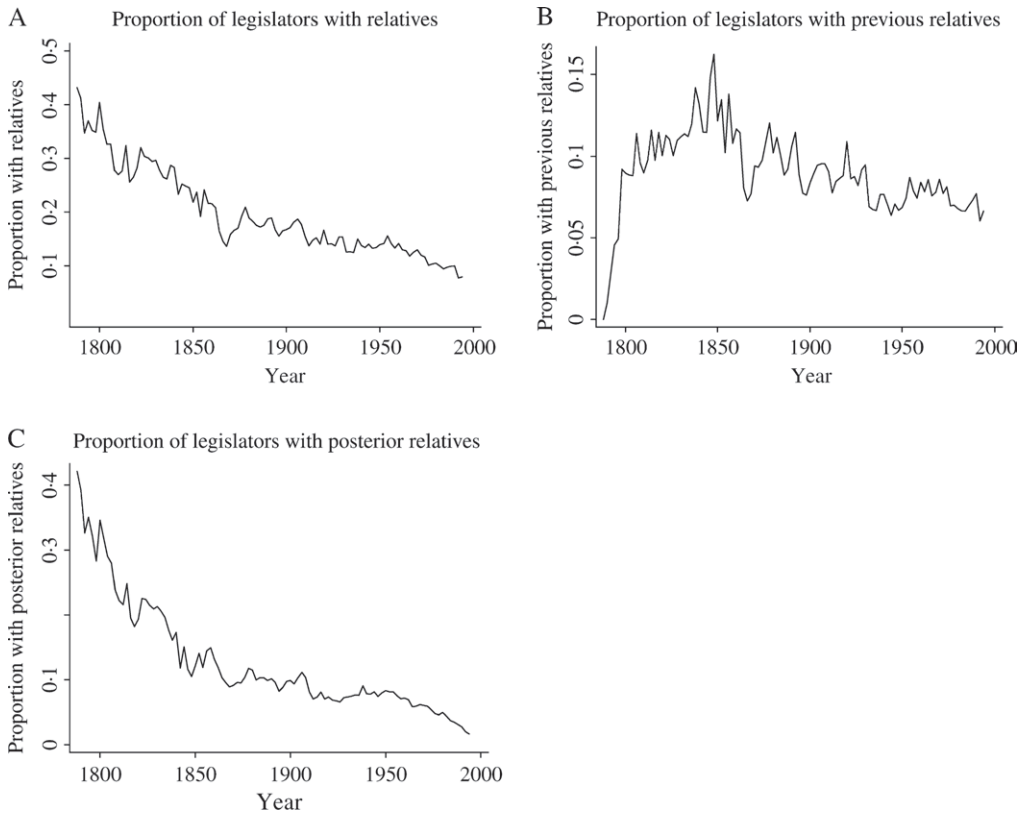


FIGURE 1

Trends in legislators with relatives

merged an additional data set that was used to construct the measure of political competition used in Section 5. This data set contains the party affiliations of members of state houses and senates from 1880 until 1994 and was merged by state and congressional term.[7]

3.2. *Historical evolution of political dynasties*

We describe the evolution of political dynasties in Congress across time, regions, chambers of Congress, and the two main political parties. The objective of this section is to show the basic features of our data on the prevalence of political dynasties. We find that the proportion of legislators with relatives in Congress has significantly decreased over time (Figure 1A), consistent with Clubok *et al.* (1969). We also find that this is true for the proportion of legislators with previous and posterior relatives (Figure 1B and 1C). We refer to legislators who had a previous relative in Congress as "dynastic legislators". As shown in Figure 1B, there has been a significant decrease over time in the presence of dynastic legislators: while 11% of legislators were dynastic between 1789 and 1858, only 7% were dynastic after 1966.[8]

7. This data set was generously provided by Rui De Figueiredo and was originally collected by him and Brian Gaines. It has been used in De Figueiredo (2003) and De Figueiredo and Vanden Bergh (2004).

8. The statistical analysis of the evolution of dynastic prevalence can be found in the working paper version (NBER No. 13122).

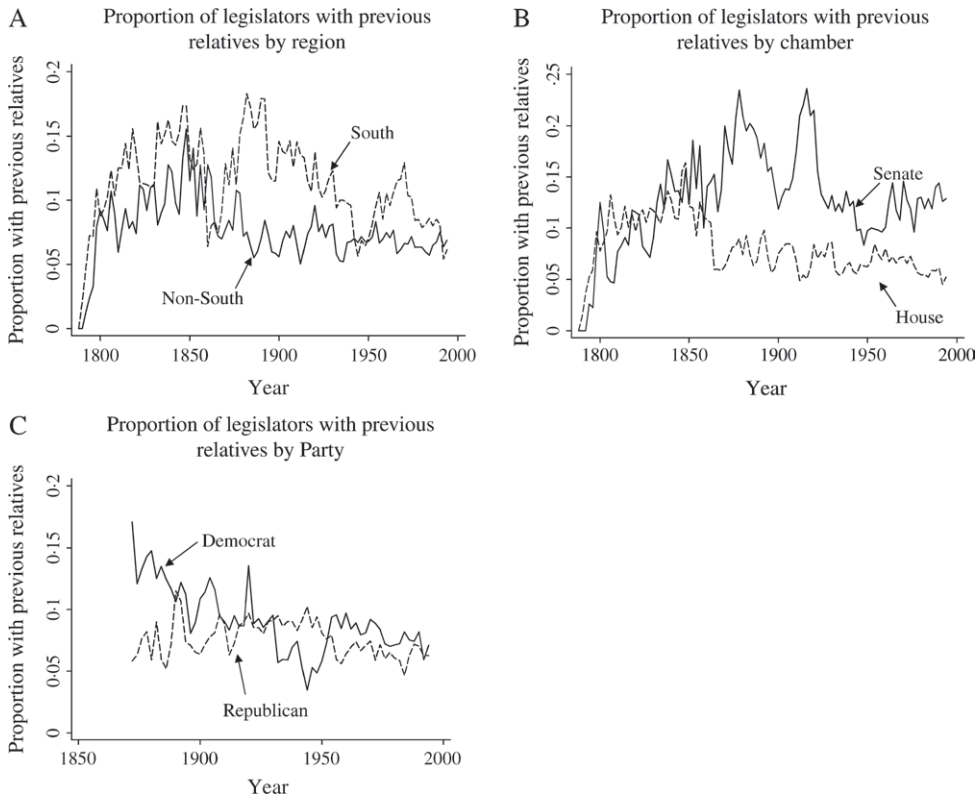


FIGURE 2

Trends in legislators with previous relatives

There are regional differences in the presence of dynastic legislators (Figure 2A). Dynastic legislators used to be more prevalent in the South than in the rest of the country. Contrary to the trends portrayed by Clubok *et al.* (1969), we find that regional differences in the presence of dynastic legislators have disappeared over time.

There are important differences across chambers of Congress. The Senate displays a greater share of dynastic politicians than the House in terms of historical averages—13·5% vs. 7·7%. A statistically significant difference persists into current days (Figure 2B). Finally, dynastic legislators were significantly more prevalent in the Democratic party than in the Republican party until the end of Reconstruction but not since then (Figure 2C). The higher dynastic prevalence within the Democratic party in the 19th century disappears if one excludes Southern legislators, suggesting that the differences across parties were due to the Democrats holding a disproportionate share of the Southern seats.

4. SELF-PERPETUATION

Scholars studying the phenomenon of political elites, such as Pareto, Michels, and Mosca, observed that even representative regimes could be vulnerable to the emergence of *de facto* nobilities.[9] Mosca (1966 [1896]) thought that *de facto* nobilities might arise from personal contacts, notoriety, and insider information—all helpful elements to an individual seeking power.

9. For a discussion, see Putnam (1976).

However, persistent inequality in political attainment across families may arise from differences in talent and drive that run in dynasties. Therefore, showing that representative systems admit entrenchment effects (as argued by Michels) or an "aristocratic tendency" (as argued by Mosca) requires proving that the presence of political dynasties is not wholly due to heterogeneity across dynasties. Instead, one must show that assigning more political power to a person augments the future political prospects of his or her family. In other words, we need to show that political power is self-perpetuating, that power begets power.

4.1. *Self-perpetuation: Definition and main estimation challenges*

We define self-perpetuation as a power-treatment effect, whereby holding political power increases the probability that one's heirs attain political power in the future regardless of family characteristics. We now present a simple model that clarifies the nature of the self-perpetuation effect and highlights challenges to its empirical identification.

Assume that the amount of political power y_i enjoyed by citizen i depends on the amount of political capital k_i available to him,

$$y_i = \alpha + \beta k_i + \upsilon_i,$$

where β is a positive scalar and υ_i is a random shock. Political capital is defined as any personal characteristic that has an effect on political attainment, from raw talent to human capital to name recognition. Citizen i has a successor, whose amount of political power is determined as follows,

$$y_i^s = \alpha + \beta k_i^s + \upsilon_i^s,$$

where k_i^s is the political capital of the successor and υ_i^s is an independent shock affecting the successor's amount of political power. We assume that the political capital of the successor depends on the political capital k_i and the political power y_i of her predecessor. In particular, the process of political capital is

$$k_i^s = \delta k_i + \gamma y_i,$$

where δ and γ are scalars. From the previous two equations, we find the relationship between the political power of the successors and the political capital and power of predecessors,

$$y_i^s = \alpha + \beta\delta k_i + \beta\gamma y_i + \upsilon_i^s. \tag{1}$$

This equation shows how the political attainment of a successor y_i^s depends on the political capital of her predecessor k_i and the contribution made by her predecessors' political power y_i to her own political capital. We might observe that both the predecessor and the successor display high values of political attainment for two reasons. Either because the political capital of the successor, and her political power, is augmented by her predecessor's power ($\gamma > 0$) or because of a high level of original capital which is inherited regardless of the predecessor's power ($\delta > 0$). Equation (1) then clarifies the distinction between the idea that persistence in dynastic political attainment reflects inheritable heterogeneity in dynasty types ($\delta > 0$) from our hypothesis of self-perpetuation ($\gamma > 0$).

As said above, our notion of political capital is broad. In some of its forms (*e.g.* talent), it may be socially valuable, and in some others (*e.g.* contacts with the party machine), it may primarily yield private benefits to its holder. What will be important to us is whether holding power augments the political capital that is transmitted within a family, creating an advantage of a cumulative, rather than fixed, nature.

The possibility that different families may have different and unobserved amounts of initial political capital (k_i) creates a problem when attempting to establish empirically that self-perpetuation is present. A simple OLS regression (with u_i denoting the error term),

$$y_i^s = a_1 + a_2 y_i + u_i, \tag{2}$$

may yield a positive estimate of a_2 but is not necessarily evident of self-perpetuation (*i.e.* it does not follow that $\gamma > 0$). Estimation of the effect of y_i on y_i^s will be biased given the omitted variable k_i, the political capital of the predecessor which is unobserved and inheritable. To better understand the bias of an OLS estimate of a_2, we write $k_i = \frac{y_i - \alpha - v_i}{\beta}$, and using (1), we get

$$y_i^s = \alpha(1-\delta) + (\delta + \beta\gamma)y_i - \beta v_i + v_i^s,$$

which indicates that a simple OLS regression would yield an estimate of $a_2 = \delta + \beta\gamma$. It follows that even if there is no cumulative effect of power on political capital (*i.e.* $\gamma = 0$), we would obtain $a_2 = \delta > 0$ due to the fact that the predecessor's political capital k_i that affects power attainment is inheritable ($\delta > 0$). Thus, to identify the impact of a predecessor's political power attainment on a successor's power attainment, one must control for characteristics of the predecessor that may affect the power attainment of both.

4.2. *Self-perpetuation: OLS estimates*

In our study of self-perpetuation, we focus not on the universe of citizens but on the universe of politicians who served in the U.S. Congress. The variation in legislators' political power is measured by their tenure length since tenure in congressional office is associated with more political power (*i.e.* more senior legislators develop more name recognition, become more deeply embedded in party networks, and obtain more influential committee positions). Our measure of political power is whether the legislator served for more than one term (our variable *Longterm*, introduced in Section 3). Our measure of the political power of the successors is whether the legislator has posterior relatives in office (our variable *Postrelative*).[10]

In this section, we study the relationship between tenure in Congress and the probability of having posterior relatives in Congress by estimating the following OLS regression:

$$Postrelative_i = a_1 + a_2 Longterm_i + a_3 X_i + b_s + b_y + \varepsilon_i.$$

Recall that $Postrelative_i$ is a dummy variable equal to 1 if legislator i has a relative in Congress in the future, and $Longterm_i$ is a dummy variable equal to 1 if legislator i stayed in Congress for more than one term. $\boldsymbol{X}_i$ is a vector of legislator i's personal characteristics, b_s and b_y are state and year fixed effects, and ε_i is the error term.[11]

Column (1) in Table 1 shows that 6·9% of the legislators who were in Congress for only one term had a posterior relative, while that percentage increases to 9·5% if the legislator stayed in office for more than one term; the difference is significant at the 1% level. Column (2) shows a similar comparison after introducing a number of modifications. First, we add state and year fixed effects; control for personal characteristics like gender, age at entry, previous occupation, and party affiliation (Democrat, Republican, other); and control for chambers of Congress (and

10. The OLS results presented in this section are robust to considering other measures of own and relatives' power attainment; the instrumental variables results reported later include those alternative measures.

11. The use of binary outcome variables would suggest that non-linear maximum-likelihood methods would be desirable. However, the consistency of these estimators is dubious in the analysis of panel data; this is the well-known incidental parameters problem (see Neyman and Scott, 1948; or Lancaster, 2000). Therefore, we focus on the analysis using OLS; as we show later, however, the results are robust to using a potentially inconsistent probit estimator.

TABLE 1

Tenure length and posterior relatives in office

	Dependent variable: Postrelative			
	(1)	(2)	(3)	(4)
	OLS	OLS	OLS	Probit
Longterm	0·025	0·029	0·032	0·026
	[0·006]***	[0·006]***	[0·006]***	[0·005]***
Prerelative			0·076	
			[0·015]***	
Female		0·034	0·035	0·095
		[0·043]	[0·043]	[0·118]
Age at entry		0	0	0
		[0·000]	[0·000]	[0·000]
College attendance		0·013	0·007	0·011
		[0·008]	[0·008]	[0·006]*
Outsider		−0·004	−0·001	−0·004
		[0·006]	[0·007]	[0·005]
Previous public office		0·001	−0·003	0
		[0·008]	[0·007]	[0·008]
Military		0·015	0·018	0·014
		[0·006]**	[0·007]**	[0·005]**
Lawyer		0·013	0·012	0·016
		[0·008]	[0·008]	[0·008]*
Farmer		0·015	0·016	0·018
		[0·011]	[0·012]	[0·012]
Business		0·02	0·014	0·025
		[0·008]**	[0·009]	[0·011]**
Senate only		0·05	0·054	0·048
		[0·012]***	[0·013]***	[0·012]***
House to Senate		0·068	0·075	0·054
		[0·025]***	[0·024]***	[0·020]***
Senate to House		0·063	0·085	0·037
		[0·062]	[0·067]	[0·045]
Democrat		0·012	0·001	0·006
		[0·015]	[0·017]	[0·010]
Republican		0·02	0·016	0·02
		[0·014]	[0·017]	[0·011]*
Constant	0·069	0·306	0·301	
	[0·007]***	[0·067]***	[0·065]***	
Year and state effects	No	Yes	Yes	Yes
Died in office excluded	No	Yes	Yes	Yes
Born after 1910 excluded	No	Yes	Yes	Yes
Members with previous relatives excluded	No	Yes	No	Yes
Observations	11,463	7782	8527	7404
R^2	0·00	0·09	0·09	0·13

Notes: Results in columns (1)–(3) are from OLS regressions; results in column (4) are from a probit regression. The dependent variable is *Postrelative*, which is a dummy variable for whether the legislator had a relative entering Congress after him or her. The variable of interest is *Longterm*, which is a dummy variable that indicates whether the legislator stayed in Congress for more than one term. Columns (2)–(4) include controls for personal characteristics: gender, age of entry to Congress, whether the legislator attended college, whether he/she was born in a different state than the one he/she represents (*Outsider*), whether he/she had previous public office experience, whether he/she served in the military, his/her previous occupation (indicator variables for lawyer, farmer, and business), and political affiliation (Democrat, Republican, other). We also control for the career of the legislator in Congress (Senate only, House then Senate, etc.) Column (3) controls for whether the legislator had a relative entering Congress before him/her (*Prerelative*). The coefficients in column (4) correspond to a discrete change from 0 to 1 for dummy variables valued at the mean value of other explanatory variables. Standard errors are given in brackets, clustered at state level for columns (1)–(3): *significant at 10%; **significant at 5%; ***significant at 1%.

order) in which the legislator served. Second, we limit the sample in several ways. We omit legislators with previous relatives in office to avoid the possible problem of correlation of error terms for members of the same family. We omit legislators born after 1910 so as to account for the censoring that occurs because legislators at the end of the sample period have less time to establish dynasties. And we omit legislators who died in office to ensure that our results are not driven by the convention that when an individual dies in office, a relative might step in to take his place. With these changes, the estimate of the effects of a longer tenure is statistically equivalent to that in column (1) while the estimate is larger. This suggests that it is unlikely that omitted variables bias upwards the estimate of the effect of tenure on having posterior relatives in office.

In addition, column (2) shows that personal characteristics correlate with having posterior relatives in office. Senators and legislators whose chamber of entry was the House but eventually moved to the Senate have a 5% and 6·9% higher probability, respectively, of having a posterior relative in office relative to legislators who were only members of the House. These findings suggest that more successful career patterns (politicians who are always senators or who start as representatives but eventually ascend to the Senate) are associated with a higher likelihood of starting or continuing a dynasty. For completeness, column (3) shows that the results are robust to including legislators with previous relatives in office and shows that they are 7·6% more likely to have posterior relatives in office. Finally, column (4) shows that similar results arise from a probit specification (unreported results from a logit specification are equally significant).

Overall, the OLS results yield evidence consistent with self-perpetuation. However, as argued before, the fact that legislators with longer tenures are more likely to have relatives in future congresses could be due to unobserved family characteristics. In the following two subsections, we employ two strategies to determine whether tenure in office has a causal impact on the probability of having relatives in future congresses. First, we focus on House Representatives who attempted a reelection and compare those who barely won their first reelection with those who barely lost. In other words, we use a regression discontinuity approach. Second, we use the reelection rates of a representative's cohort as an instrument for a representative's reelection. We describe each strategy in greater detail below.

4.3. *Establishing a causal link: Close elections*

To identify the causal impact of tenure, we start by using a very simple approach that relies on a comparison of legislators who barely won their first reelection with those who barely lost. The identifying assumption in this regression discontinuity analysis is that close elections provide a random assignment of legislators across the categories of winners and losers, independent of family characteristics. This assumption could be criticized if elections were rigged, such that winning could depend on personal characteristics that are also correlated with having posterior relatives in office. Snyder (2005) finds evidence consistent with the idea that the vote counting process is biased in favour of long-time incumbents in the U.S. House. However, there is no evidence of such manipulation taking place in first reelection attempts, which is the focus of this study.

Table 2 shows the percentage of Congress members with posterior relatives in office, conditional on the results of the first reelection attempt (barely lost vs. barely won). As in the previous section, we omit from our sample legislators who were born after 1910, who died in office, or who had previous relatives in office. Of the legislators who lost by less than a 2·5% margin of the vote, 3·6% have posterior relatives in office. Instead, of those who won by up to a 2·5% margin, 8·2% have posterior relatives in office. A similar increase is observed for the 5% window, and both differences are statistically significant.

We argue that in such a small window, winners and losers are identical in terms of unobserved characteristics such as political capital; therefore, any difference in the proportion who

TABLE 2

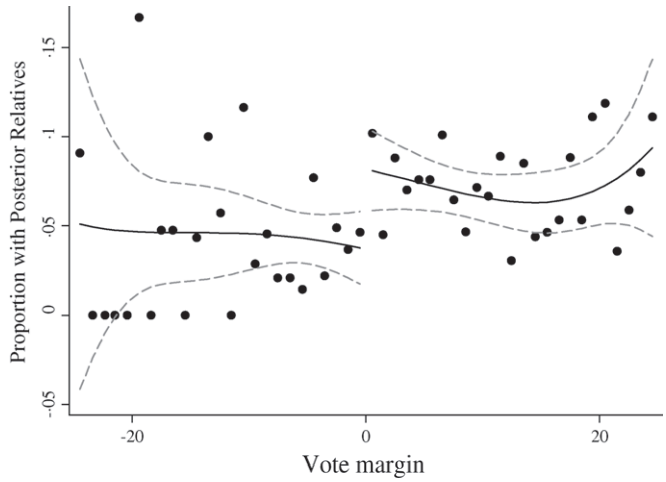
Characteristics of close winners vs. close losers in first reelection attempt

	2·5% Margin of vote window			5% Margin of vote window		
	Win	Lose	Difference	Win	Lose	Difference
Postrelative	0·082	0·036	0·047	0·078	0·040	0·038
			[0·021]**			[0·015]***
Year	1885·62	1887·57	−1·947	1884·93	1888·74	−3·806
			[2·948]			[2·167]*
Female	0·007	0·008	0·000	0·005	0·004	0·001
			[0·008]			[0·004]
Age at entry	44·87	45·62	−0·748	44·85	45·72	−0·869
			[0·805]			[0·571]
College attendance	0·607	0·632	−0·026	0·602	0·602	0·000
			[0·043]			[0·030]
Outsider to state	0·446	0·419	0·027	0·418	0·432	−0·014
			[0·044]			[0·031]
Previous public office	0·787	0·870	−0·083	0·804	0·825	−0·022
			[0·033]**			[0·027]
Military	0·300	0·296	0·003	0·316	0·282	0·034
			[0·040]			[0·028]
Lawyer	0·659	0·595	0·064	0·614	0·567	0·047
			[0·043]			[0·031]
Farmer	0·042	0·065	−0·023	0·062	0·062	0·000
			[0·020]			[0·015]
Business	0·184	0·223	−0·039	0·209	0·239	−0·030
			[0·036]			[0·026]
Democrat	0·439	0·498	−0·059	0·485	0·486	−0·001
			[0·044]			[0·031]
Republican	0·427	0·412	0·015	0·401	0·402	−0·001
			[0·043]			[0·030]
Observations	267	253		591	475	

Notes: Variables are defined as in Table 1. The sample includes House Representatives without previous relatives in office, born before 1910, and who did not die in office. The vote margin windows of 2·5% and 5% include legislators who won or lost their first reelection by less than 2·5% and 5%, respectively. Standard errors are given in brackets: *significant at 10%; **significant at 5%; ***significant at 1%.

have relatives following into office should be attributed to the different outcome of the election and not to personal or family characteristics. The data support this assumption. As Table 2 shows, at the 2·5% and 5% windows, only 1 characteristic out of 12 is significantly different at the 10% level between winners and losers. Moreover, these imbalances in personal characteristics change depending on the window, while the imbalance in the proportion of legislators who have posterior relatives in office persists. Finally, as shown in Table A4 in the appendix, the difference in posterior relatives between winners and losers is robust to controlling for all the personal characteristics included in Table 2 or using propensity score matching methods. These results suggest that staying in power for longer increases the probability of forming a dynasty and not that an observed or unobserved family characteristic causes both long tenures and posterior dynastic success.

However, focusing on small windows of the vote margin discards information from legislators who won or lost by larger margins. Of course, legislators who won or lost by large margins are unlikely to be comparable to each other, nor should their election outcomes be regarded as random. As will be clear later, regression discontinuity techniques (Hahn *et al.*, 2001; Van der Klaauw, 2002) allow us to exploit the discontinuity in the outcome (from losing to winning) that occurs at the zero vote margin, while still incorporating in the analysis those legislators whose margins were far away from zero.



Note: Sample includes individuals who did not die in office, were born before 1910, and were without previous relatives in office. Quartic polynomial is used for interpolation.

FIGURE 3

The discontinuous impact of victory on having posterior relatives

Figure 3 shows the proportion of legislators with posterior relatives in office depending on the margin of votes by which they won or lost their first reelection attempt in a 25% window.[12] The figure also shows the estimated quartic polynomial in vote margin with a 95% confidence interval, allowing for a discontinuity at the 0% margin. There is a clear discontinuity at that value: winners are more likely to have posterior relatives in office even when the polynomial is absorbing any direct effect that the margin of votes (or the variables that cause it) may have on *Postrelative*.

However, the analysis in Figure 3 has two limitations. First, it does not control for observables that may differ among winners and losers by large vote margins. We will address this issue by adding a series of controls for personal characteristics. Second, the analysis fails to consider that not all losers of a first reelection were one-term legislators: some ran again and reentered Congress after losing their first reelection attempt. Therefore, some of the losers in Figure 3 (and Table 2) are really long-term legislators with high chances of having relatives entering office later on. It follows that the differences between winners and losers in Figure 3 (and Table 2) underestimate the effect of tenure on having posterior relatives in office. An upwards rescaling of the discontinuity in Figure 3 is needed to get the true measure of the effect of interest. To address this issue, we use the result from the first reelection to predict the probability of being a long-term legislator. This constitutes the first stage of an instrumental variables regression of the impact that being a long-term legislator has on having posterior relatives in office.

The equation we estimate in the first stage is as follows:

$$Longterm_i = b_1 + b_2 W_i + b_3 X_i (1 - W_i) + \sum_{s=1}^{4} q_s Marginvote^s (1 - W_i) + b_r (1 - W_i) + b_d (1 - W_i) + \varepsilon_i,$$

12. We focus on the 25% window since a large fraction of the observations fall in this interval and data with extreme vote margins seem less reliable. As we will show, the results that follow are not specific to that window.

TABLE 3

Self-perpetuation, regression discontinuity approach

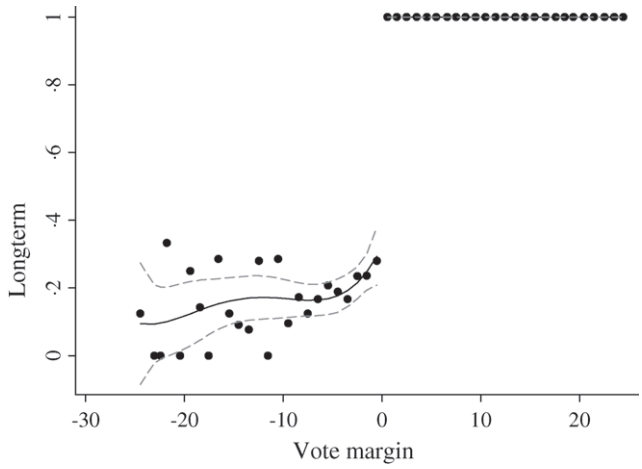
Panel A: First stage		
	Dependent variable: Long term	
	(1)	(2)
Win	0·569	0·562
	[0·119]***	[0·114]***
Members with previous relatives excluded	Yes	No
Observations	3035	3295
R^2	0·77	0·78
F statistic	13,140·14	17,791·68
Panel B: Second stage		
	Dependent variable: Postrelative	
	(1)	(2)
Longterm	0·062	0·057
	[0·027]**	[0·027]**
Prerelative		0·027
		[0·015]*
Members with previous relatives excluded	Yes	No
Observations	3035	3295

Notes: All results are from instrumental variables–regression discontinuity estimations. *Win* is an indicator variable for whether the legislator won his or her first reelection attempt. Other variables are defined as in Table 1. The sample includes House Representatives who were born before 1910, did not die in office, and won or lost their first reelection by less than 25% of the votes. Controls include a vote margin quartic polynomial, personal characteristics as in Table 1, and region and decade fixed effects. First stage includes the interaction of personal characteristics and fixed effects with losing. Robust standard errors clustered at state level are given in brackets: *significant at 10%; **significant at 5%; ***significant at 1%.

where $Longterm_i$ is an indicator equal to 1 if legislator i was in Congress for more than one term, W_i is an indicator equal to 1 if the legislator won his first reelection attempt, the $q's$ are coefficients on the vote margin polynomial (set to a quartic), and $\boldsymbol{X}_i$ is the vector of personal characteristics. The coefficients b_r and b_d are region and decade fixed effects. All controls including the region and decade fixed effects are interacted with losing. This is done to adjust for the fact that all winners of the first reelection attempt had long-term careers, but not all losers had short-term careers; in other words, controls are used to explain variation across losers.[13] In this way, the first stage provides an estimate of the probability that a loser will have a long-term career while allowing this probability to change depending on personal characteristics, margin of votes, state, and decade.

Panel A in Table 3 shows the estimated coefficients from the first stage, and Figure 4 presents this graphically. Column (1) shows our preferred specification in which we do not include legislators with previous relatives in office. Winning the first reelection and its interactions predict becoming a long-term legislator in the 25% window when controlling for the margin of votes and various legislator characteristics. The explanatory variables of the first stage are jointly significant with a large F statistic: the instruments are strong. Column (2) shows that the first-stage results are robust to considering legislators with previous relatives in office as well.

13. Since all winners have $Longterm = 1$ and all personal characteristics and fixed effects are interacted with losing, $b_1 + b_2 = 1$.



Note: Sample includes individuals who did not die in office, were born before 1910, and were without previous relatives in office. Quartic polynomial interacted with margin vote > 0 is used for interpolation.

FIGURE 4

The impact of the vote margin in first reelection on Longterm

In the second stage, we estimate the following equation:

$$Postrelative_i = a_1 + a_2 \widehat{Longterm}_i + a_3 X_i + \sum_{s=1}^{4} t_s Marginvote^s + a_r + a_d + \varepsilon_i,$$

where $\widehat{Longterm}_i$ is the estimated probability of having more than one term in office as predicted by the first stage and the t's are coefficients in the (quartic) vote margin polynomial.

The second-stage results in panel B of Table 3 show a clear positive effect of *Longterm* on *Postrelative*. In our preferred specification, shown in column (1), *Longterm* is significant with an effect of 6·3%. This effect represents more than a 100% increase over the baseline probability of having a posterior relative in office (only 5·8 % of short-term representatives have posterior relatives in office). Column (2) shows that the result is robust to including legislators with previous relatives in office.[14]

Our analysis shows that the longer one's tenure, the more likely one is to establish a political dynasty and that this relationship is causal. This result is robust to a variety of changes. Table 4 shows the estimated coefficient of *Longterm* in the second stage under a variety of different specifications, samples, and measures of power. Columns (1)–(3) in panel A show that results are robust to considering different windows for the vote margin. Column (4) shows that the results are robust to including year and state fixed effects instead of region and decade effects. Panel B shows that the results are robust to different samples: the positive effect of *Longterm* on *Postrelative* remains large and significant if we focus on Southern states or on the rest, if we restrict attention to years after the Civil War, and if we split the analysis for the two main political parties.

14. As could be expected, the estimate is somewhat smaller (being a long-term legislator should have a lower effect for those who already belong to a dynasty if power has decreasing marginal effects on future dynastic power). However, the difference in the estimate is not statistically significant.

TABLE 4

Self-perpetuation, regression discontinuity approach. Alternative specifications

Panel A: Different margin of vote window and fixed effects

	(1)	(2)	(3)	(4)
	Margin of vote window			State and year fixed effects
	2·5%	5%	100%	
Longterm	0·062	0·036	0·036	0·049
	[0·028]**	[0·016]**	[0·012]***	[0·023]**
Observations	508	1049	4217	3035

Panel B: Different samples

	(1)	(2)	(3)	(4)	(5)
	South	Non-South	After 1870	Republican	Democrat
Longterm	0·149	0·04	0·072	0·084	0·072
	[0·071]*	[0·022]*	[0·028]**	[0·033]**	[0·032]**
Observations	576	2459	2109	1325	1389

Panel C: Different measures of present and future power

	(1)	(2)	(3)	(4)
	Number of postrelatives	Total tenure of postrelatives	Close postrelatives	Postrelatives
Longterm	0·059	0·335	0·043	
	[0·033]*	[0·133]**	[0·020]**	
Total tenure				0·041
				[0·017]**
Total tenure^2				−0·003
				[0·001]**
Observations	3035	3035	3035	3035

Notes: All results are from instrumental variables–regression discontinuity estimations. The dependent variable is *Postrelative* in panels A and B. In panel C, the dependent variable changes for each column. Close postrelatives indicate that the legislator had a parent, spouse, sibling, child, or grandchild entering Congress after him or her. Controls include a vote margin quartic polynomial for all vote margin windows but 2·5% and 5%, personal characteristics, and region and decade fixed effects (but for column (4) in panel A which includes state and year fixed effects). Sample includes House Representatives without previous relatives in office, who did not die in office, were born before 1910 and had first reelection margin of votes in the 25% window unless noted otherwise. Robust standard errors clustered at state level are given in brackets: *significant at 10%; **significant at 5%; ***significant at 1%.

Panel C shows that the results are robust to considering other measures of power. In columns (1) and (2), the measures of future dynastic political attainment are, respectively, the number of posterior relatives in office and the sum of the tenures in Congress of those relatives. *Longterm* has a significant and large effect on both measures of dynastic political attainment. Column (3) shows that the effect of *Longterm* on future dynastic attainment remains large and significant if we focus on close relatives (parents, children, siblings, spouses, grandparents, and grandchildren). Finally, column (4) shows that the total tenure of a legislator has a positive, significant, and large effect on the probability of having posterior relatives in office. This specification includes a quadratic term that is negative and significant, showing that the effect of an extra term in Congress is decreasing in the number of congresses served.[15]

15. Again, this is indicative of decreasing marginal returns to power. See the working paper version for a complete description of the model estimated in column (4).

4.4. *Establishing a causal link: Using the reelection rates of a legislator's cohort*

In this section, we implement an alternative instrumental variables strategy to estimate the causal effect of congressional tenure on having a posterior relative in office. We use the reelection probabilities of a legislator's current cohort, by state and party, as an instrument for her reelection probability.[16] For example, consider a House member going for his first reelection in California in the year 1892. The instrument for this legislator's first reelection is the reelection rate of legislators of the same party in California in the year 1892. The idea is that there is an underlying common shock to all the individuals in this cohort that is independent of the characteristics of the individual attempting to get reelected. We use this common shock as a source of exogenous variation in congressional tenure to identify the impact of tenure on having posterior relatives in office. The identifying assumption is that the electoral shock to a predecessor's cohort will affect the probability of having a relative entering office only through its impact on the predecessor's election to another term.

We use the following formula to construct the instrument for legislator i within a state/year/party with a cohort of size N:

$$Electinstrument_i = \frac{[\sum_{j=1}^{N}(reelect_j)] - (reelect_i)}{N-1},$$

where $reelect_j$ is a dummy variable equal to 1 if legislator j, from the same state-party-year, was reelected. This formula gives the probability of an individual in the cohort being reelected.[17] We estimate the following first-stage equation:

$$Longterm_i = b_1 + b_2 Electinstrument_i + b_3 X_i + b_s + b_y + \varepsilon_i,$$

where $\boldsymbol{X_i}$ is a vector of personal characteristics and b_s and b_y are state and year fixed effects. We then proceed to estimate the second-stage equation with the instrumented *Longterm*:

$$Postrelative_i = a_1 + a_2 \widehat{Longterm}_i + a_3 X_i + a_s + a_y + \varepsilon_i.$$

Table 5 presents the estimated coefficients from both stages. Column (1) shows our preferred specification of representatives without previous relatives in office, who did not die in office, and who were born before 1910. The reelection instrument is significant and strong. The second-stage estimate of the effect of *Longterm* on *Postrelative* is large and significant. The estimate is similar to the one obtained using the regression discontinuity approach.

Columns (2) and (3) in Table 5 address two possible weaknesses in the identification strategy used in this section. First, it could be the case that shocks affecting the reelection rates of a legislator's cohort are correlated with shocks affecting the chances that the legislator's relatives will subsequently enter Congress. For example, the estimate of *Longterm* may reflect the fact that both father and son faced a similar political environment favouring members of a particular party and that members of the same family tend to belong to the same party. To address this problem, we exclude from our analysis any relatives who entered Congress within 10 years of the reelection of their predecessor. If there is a correlation of shocks, it is likely to be lower among relatives who are more distant in time. We find that the estimate of the effect of *Longterm*

16. A related strategy was used by Levitt and Snyder (1997) to examine the impact of federal spending on electoral outcomes.

17. Note that we subtract out the reelection outcome of the individual for whom the instrument is being created.

TABLE 5

Self-perpetuation, instrumental variables estimates using cohort reelection rates

Panel A: First stage	Dependent variable: Longterm		
	(1)	(2)	(3)
Cohort reelection rate	0·369	0·364	0·49
	[0·028]***	[0·028]***	[0·027]***
Relatives enter at least 10 years later	No	Yes	No
Exclude legislators from cohorts three or smaller in size	No	No	Yes
Observations	6479	6394	5502
R^2	0·15	0·14	0·16
F statistic	170·14	166·51	340·63
Panel B: Second stage	Dependent variable: Postrelative		
	(1)	(2)	(3)
Longterm	0·055	0·064	0·083
	[0·033]*	[0·034]*	[0·037]**
Relatives enter at least 10 years later	No	Yes	No
Exclude legislators from cohorts three or smaller in size	No	No	Yes
Observations	6479	6394	5502

Notes: All results are from instrumental variables estimations. The instrument is the reelection rate of legislators from the same party, state, and year. Controls include personal characteristics as in Table 1 and state and year fixed effects. The sample includes House Representatives without previous relatives in office, who did not die in office, and were born before 1910. Robust standard errors clustered at state level are given in brackets: *significant at 10%; **significant at 5%; ***significant at 1%.

on *Postrelative* does not decrease, suggesting that our estimate in column (1) is not capturing a positive correlation over time in the political environment.

Second, it could be the case that unobserved family characteristics of a legislator affect the reelection rate of his peers. If so, our instrument may be correlated with unobserved family characteristics. To address this issue, we present in column (3) the estimate of the effect of *Longterm* on *Postrelative* when we restrict our analysis to large cohorts (we focus on state-year-party cohorts above the median number of three legislators). Arguably the effect of the personal characteristics of a single individual on the reelection rate of his peers should be smaller in larger peer groups. We find that the estimated coefficient does not decrease when we restrict attention to large cohorts, suggesting that our estimate is not capturing the effect of personal characteristics through the reelection rate of peers.

Overall, our two identification strategies, while being very different, provide similar, large, and significant estimates of the effect of having a longer tenure in Congress on the probability of starting a dynasty. We find that staying in Congress for more than one term doubles the probability of having a relative entering Congress afterwards.

5. CHARACTERISTICS OF DYNASTIC POLITICIANS AND POLITICAL COMPETITION

In this section, we compare dynastic and non-dynastic legislators in terms of personal characteristics and political careers. We also study the relationship between political competition and dynastic prevalence and compare the dynastic prevalence in Congress with that in other occupations. This section has two objectives. First, it completes the description of political dynasties in the U.S. Congress that we started in Section 3. Second, it sheds some light on the possible mechanisms behind the self-perpetuation effect identified in the previous section.

TABLE 6

Personal characteristics of dynastic legislators

	(1)	(2)	(3)	(4)	(5)	(6)
	Pre-public office	Pre-public office	Outsider	Outsider	Female	Female
Prerelative	−0·06	−0·059	−0·038	−0·031	0·022	0·024
	[0·016]***	[0·015]***	[0·019]**	[0·017]*	[0·008]***	[0·008]***
Pre-public office				−0·078		−0·003
				[0·012]***		[0·004]
College attendance		0·004		−0·086		0·003
		[0·011]		[0·016]***		[0·002]
Outsider		−0·063				0·008
		[0·011]***				[0·004]**
Female		−0·034		0·111		
		[0·049]		[0·049]**		
House		−0·013		−0·022		0·01
		[0·015]		[0·015]		[0·004]**
Age of entry		0·005		0·005		0·001
		[0·001]***		[0·001]***		[0·000]***
Observations	9029	9028	9028	9028	9029	9028
R^2	0·04	0·05	0·2	0·22	0·09	0·1

Notes: All results are from OLS estimations. The dependent variable changes by column. All regressions include state and year fixed effects. The sample includes legislators who did not follow a relative's death and were born after 1800. Robust standard errors clustered at state level are given in brackets: *significant at 10%; **significant at 5%; ***significant at 1%.

5.1. *Personal characteristics and political careers of dynastic politicians*

In this section, we study how the personal characteristics and the political careers of dynastic legislators differ from those of other legislators. Given the difference across regions and time in the number of dynastic politicians, it is necessary to control by year and state in which the legislator is observed. We present the results in Tables 6 and 7. We find that dynastic legislators are less likely to have previous public experience, even when holding constant their age of entry and their college attendance. This suggests that dynastic politicians may not be characterized by a stronger vocation for public service and that it is unlikely that the self-perpetuation effect we identify is due to preference formation.

We find that dynastic legislators are less likely to come from a state other than the one they represent. This is consistent with the idea that dynastic politicians may inherit a form of political capital that is differentially useful at a local level, such as local political connections or name recognition, as opposed to sheer talent or drive. Dynastic legislators are significantly more likely to be female than non-dynastic ones. This suggests that dynastic membership may have facilitated female political representation (31·2% of women legislators are dynastic vs. 8·4% of men). Regarding political careers, we find that dynastic legislators enter Congress younger, but this difference is small (less than a year—see Table 7). We also find that dynastic politicians are less likely to start their career in the House, suggesting that they have the ability or means to enter directly through the Senate, a much smaller and more prestigious body. Finally, we find no evidence that dynastic legislators have longer careers in Congress.

5.2. *Dynastic prevalence and political competition*

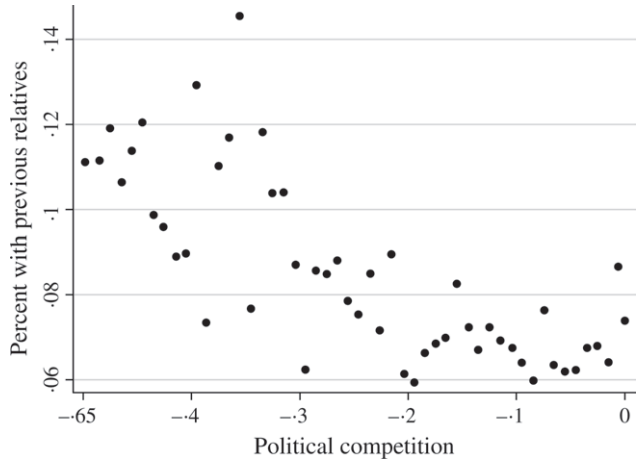
In this section, we provide evidence that higher political competition is associated with fewer political dynasties, suggesting that political competition reduces the dynastic transmission of political power.

TABLE 7

Career profile of dynastic legislators

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	House	House	Age of entry	Age of entry	Longterm	Longterm	Total tenure	Total tenure
Prerelative	−0·074	−0·078	−0·828	−0·695	0·018	0·027	0·242	0·094
	[0·016]***	[0·015]***	[0·294]***	[0·250]***	[0·018]	[0·019]	[0·125]*	[0·124]
Pre-public office		−0·007		2·338		0·058		0·503
		[0·008]		[0·250]***		[0·011]***		[0·094]***
College attendance		−0·026		−2·95		0·037		0·194
		[0·007]***		[0·175]***		[0·013]***		[0·069]***
Outsider		−0·01		1·913		−0·019		−0·174
		[0·006]		[0·285]***		[0·010]*		[0·077]**
Female		0·059		4·05		−0·003		−0·233
		[0·025]**		[0·719]***		[0·037]		[0·232]
House				−5·273		0·222		−1·025
				[0·325]***		[0·020]***		[0·136]***
Age of entry		−0·007				−0·007		−0·089
		[0·001]***				[0·001]***		[0·007]***
Observations	9029	9028	9029	9028	9029	9028	9029	9028
R^2	0·1	0·13	0·15	0·22	0·1	0·15	0·17	0·21

Notes: All results are from OLS estimations. The dependent variable changes by column. All regressions include state and year fixed effects. The sample includes legislators who did not follow a relative's death and were born after 1800. Robust standard errors clustered at state level are given in brackets: *significant at 10%; **significant at 5%;***significant at 1%.



Note: Political competition is measured by how divided the state legislature is between the two dominant parties at the time a legislator is first elected to Congress.

FIGURE 5

Impact of political competition on proportion of legislators with previous relatives

For this analysis, we use a political competition index constructed upon party dominance of state legislatures between the years 1880 and 1996. This index has a minimum value of −0·5 when 100% of the seats in the state legislature in a given year belong to the same party. This index increases as the percentage of seats held by a majority party decreases. The maximum value of the index is zero, corresponding to the case when the total number of seats (including the two chambers) held by the two largest parties is split 50–50 between them. More formally, the political competition index for state i and year j is given by $\mathrm{PC}_{ij} = -\left|\frac{\mathrm{LHD}_{\mathrm{ij}}+\mathrm{UHD}_{\mathrm{ij}}}{\mathrm{LHD}_{ij}+\mathrm{UHD}_{ij}+\mathrm{LHR}_{ij}+\mathrm{UHR}_{ij}} - 0{\cdot}5\right|$, where LHD_{ij} (LHR_{ij}) and UHD_{ij} (UHR_{ij}) represent the number of seats that Democrats (Republicans) hold, respectively, in the lower and upper chambers of the state legislature that was elected in year j. This measure of political competition is superior to simply using the vote shares of national legislators, which may depend on the characteristics of those legislators. Arguably, however, our measure of political competition is better suited to capturing the environment facing a state-wide official, like a Senator, than the environment of a House Representative, whose district is typically much smaller than the state.

Figure 5 shows the (uncontrolled) association between political competition and the proportion of dynastic legislators (those with a previous relative in office). This figure shows that as the index moves from −0·5 to 0 (*i.e.* as political competition increases), the percentage of politicians coming from politically established families decreases. Table 8 presents estimates of the association between the percentage of dynastic legislators (including both House and Senate members) who are elected to Congress in a given year and state and the political competition index in the same year and state. The first specification, in column (1), shows that our measure of political competition is a significant predictor of the prevalence of dynastic politicians even after controlling for year and state effects. The estimate suggests that if political competition had been perfect in all states and years, dynastic prevalence would have been 40% lower than what is observed (4·7% instead of 7·7%). Column (2) reports estimates from a regression of the percentage of legislators with relatives previously in office on an indicator variable equal to 1 when the

TABLE 8

Political competition and dynastic legislators

	Dependent variable: Prerelative					
	(1)	(2)	(3)	(4)	(5)	(6)
Political competition	−0·124		−0·055		−0·165	
	[0·045]***		[0·035]		[0·072]**	
High political competition dummy		−0·032		−0·016		−0·056
		[0·012]***		[0·009]*		[0·023]**
High political competition × House					0·127	
					[0·072]*	
High political competition dummy × House						0·044
						[0·023]*
House					−0·031	−0·086
					[0·021]	[0·017]***
Weighted	No	No	Yes	Yes	Yes	Yes
Observations	2047	2047	2047	2047	2510	2510
R^2	0·07	0·07	0·08	0·08	0·07	0·07

Notes: All results are from OLS estimations. The dependent variable is the ratio of legislators (House and Senate) from a given state and year who had relatives previously in Congress. Columns (5) and (6) consider separate ratios for House and Senate. All regressions include state and year fixed effects. The sample includes new entrants to Congress who did not follow a relative's death and years after 1879. The political competition index ranges from −0·5 (all seats in the state legislature held by one party or least competitive) to 0 (seats held evenly by the two major parties or most competitive). The high competition dummy takes the value 1 whenever the political competition index is higher than the mid point −0·25. Robust standard errors clustered at state level are given in brackets: *significant at 10%; **significant at 5%;***significant at 1%.

political competition index takes a value in the upper half of its support (*i.e.* above −0·25). This estimate suggests that moving from districts in the bottom half in terms of competition to districts in the top half lowers the prevalence of dynastic politicians by 3 percentage points (this represents around a 30% reduction in the rate of dynastic prevalence for these districts).

The next two columns reproduce the analysis of the first two columns but weighting observations by the size of the entering cohort of legislators from each state and year. When observations are weighted, the relationship between political competition and *Postrelative* weakens. This could be due to the fact that small states are overrepresented in the Senate and that our measure of political competition is more appropriate for senators (as they are elected by the whole state).

Columns (5) and (6) reproduce the weighted analysis but compute separate dynastic percentages for House and Senate state delegations. We find that political competition is negatively associated with dynastic senators and that this relationship is lower for House representatives. This is consistent with the idea that the measure of political competition we use, being defined at the state level, is more relevant for senators than for House members, because the former represent the whole state, while the latter represent a single district within the state.

One possible reason why political competition is related with fewer dynastic legislators is that when a party safely controls a state, the state and national leadership of the party can afford to favour "elite" candidates with whom they are connected by family or social ties.[18,19]

5.3. *Dynastic prevalence across occupations*

We have shown that a self-perpetuation effect contributes to the observed levels of dynastic prevalence in U.S. politics. One relevant question is whether this level of dynastic prevalence could be considered high. It could be the case that other occupations show even higher degrees of dynastic prevalence. While a full comparative study of the intergenerational transmission of occupations is beyond the scope of this paper, in this section we show that dynastic prevalence among legislators is very high when compared to other occupations.[20]

Table 9 presents data for the years 1972–2004 from the General Social Surveys (ICPSR study 4295; see Davis, Smith and Marsden, 2005) corresponding to a selected group of occupations. Column (1) reports the percentage of respondents in each occupation whose father was in the same occupation. According to these data, almost 14% of doctors have fathers who were doctors, while less than 2% of economists have fathers who were economists. But to compare the importance of dynastic effects across occupations, one must control for the share of the population in each profession (*i.e.* the fact that economists are much less common than doctors). Column (2) reports the percentage of fathers in each occupation (note that, indeed, economists are a lot less common among fathers than doctors). Column (3) then reports the ratio of column (1) over column (2), which controls for the relative frequency of occupations among fathers. This

18. This argument resonates with the model by Besley, Persson and Sturm (2005), where more political competition reduces politicians' room for making suboptimal policy choices.

19. A related problem occurs in family firms. Burkart, Panunzi and Shleifer (2003) study a model where firm owners can decide to place an heir as manager, rather than a professional, at the cost of worse managerial performance. Bennedsen, Nielsen, Pérez-González and Wolfenzon (2007) estimate that cost to be large using a sample of Danish firms.

20. Sociologists have written extensively on correlations of socioeconomic status (see, for instance, Ganzeboom *et al.*, 1991). These studies tend to focus on coarse categories such as manual vs. intellectual work, status, or income, rather than particular occupations. Galor and Tsiddon (1997) offer a theory linking skill premia and intergenerational occupational mobility.

TABLE 9

Dynastic bias across occupations

Occupation	(1) % with father in same occupation	(2) % of fathers in each occupation	(3) Dynastic bias
Federal public administration	7·29	1·74	4·20
Carpenter	14·39	2·72	5·29
Electrician	10·18	1·07	9·53
Dentist	2·56	0·19	13·31
Plumber	12·50	0·85	14·65
Lawyer	10·16	0·57	17·83
Doctor	13·91	0·59	23·73
Economist	1·54	0·04	37·26
Legislator	3·55	0·01	354·06

Notes: Column (3) = (1)/(2). The data for non-political occupations come from the General Social Surveys (ICPSR 4295). For legislators, column (1) is calculated from our data based on the *Biographical Directory of Congress* and the methodology for column (2) can be found in our NBER working paper No. 13122 (it provides an upper bound to the prevalence of legislators among fathers, hence a lower bound for dynastic bias among legislators).

ratio represents the odds that both son and father are in the same profession relative to the benchmark situation where the professions of respondents are independent from those of their fathers.[21] Notice that the adjusted dynastic prevalence index in column (3), or what we call "dynastic bias", is higher for economists than for doctors: although doctors have fathers who were doctors roughly 9 times more often than economists have fathers who were economists, doctors were roughly 14 times more common among fathers, so dynastic effects appear to play a larger role in economics than in medicine.[22]

The last row contains data for legislators. Column (1) presents the percentage of legislators elected in the 1990s who had fathers who were legislators. In column (2), we report a conservative estimate of the percentage of fathers who were legislators.[23] The dynastic bias is strongest for legislators relative to all other selected occupations. The dynastic bias is almost 10 times stronger for legislators than for economists, the second most dynastic occupation in our group, and almost

21. To see why column (3) can be read this way, consider a matrix where we have the profession of sons in rows and the profession of fathers in columns. Denote the content of cell (i, j) with $F(i, j)$, which captures the fraction of individuals where the son has profession i and the father has profession j. Denote with $F^I(i, j) = f(i)g(j)$ what that fraction would be if the professions of fathers and sons were selected independently, where $g(j)$ is the fraction of fathers with profession j and $f(i)$ is the fraction of sons with profession i. The chance that both son and father will be in profession i relative to what that same chance would be if the professions of fathers and sons were selected independently can be calculated as $\frac{F(i,i)}{F^I(i,i)} = \frac{F(i,i)}{f(i)g(i)}$. Column (1) reports the magnitude $\frac{F(i,i)}{f(i)}$, column (2) reports the magnitude $g(i)$, and column (3), being the ratio of columns (1) and (2), reports each profession's dynastic bias $\frac{F(i,i)}{f(i)g(i)}$.

22. This is not to say that our measure of dynastic bias is driven by the rarity of the profession. Note that a profession's rarity affects both the numerator and the denominator of its dynastic bias index $\frac{F(i,i)}{f(i)g(i)}$.

23. We used a methodology that takes an extremely conservative position at every step. In fact, it yields an estimate indicating that, among fathers, there was a legislator for every four economists. This is clearly a gross overestimation. For example, U.S. universities granted nearly 24,000 masters and PhDs in economics between 1910 and 1952 (Bowen, 1953, p. 23), while only 2410 legislators were elected in the same period. See the working paper for the details of these calculations.

15 times stronger than for doctors, the third most dynastic profession in our sample. Even if we assumed that, among fathers, legislators were exactly as common as economists, we would obtain a dynastic bias that is more than twice as strong for legislators than for economists.

Our finding that the dynastic bias is high in Congress compared with other occupations is not dependent on the set of occupations chosen for Table 1. In fact, if we consider all occupations in the General Social Surveys (following the 1980 Census occupational categories), we find that only 5 occupations of 483 have higher dynastic bias than legislative politics.[24] If we limit our analysis to occupations with more than 10 observations in the survey, no occupation among the 483 has a higher dynastic bias than legislative politics.

6. CONCLUSION

In this paper, we show that political power is self-perpetuating using historical data from the Congress of the United States. This has important implications for understanding the formation of the political class. When a person holds more power, it becomes more likely that this person will start, or continue, a political dynasty. Thus, political power in democracies becomes inheritable *de facto* for reasons other than permanent differences in family characteristics. These conclusions are sustained by two instrumental variables approaches that are quite different but yield similar results. An interesting question for future research is whether similar results can be obtained by using data from other countries and political systems. Our methodology for the identification of self-perpetuation can certainly be applied in other contexts.

In addition, our descriptive analysis provides historical context and sheds some light on the mechanisms behind the dynastic transmission of political power. These results suggest that self-perpetuation may not be driven by preference formation or the development of skills valued by voters and that locally useful assets, such as contacts or name recognition, may play a role. Fully identifying the channels for the dynastic transmission of political power constitutes an interesting agenda for future research.

APPENDIX

TABLE A1

Major types of family relationships

Relationship	Count	%	Cumulative
Parent-child	396	29·03	29·03
Uncle-nephew	224	16·42	45·45
Siblings	194	14·22	59·68
Cousins	155	11·36	71·04
Grandparent-grandchild	113	8·28	79·33
Spouses	52	3·81	83·14
Great grandparent/child	44	3·23	86·36
Other	186	13·64	100·00
Total	1364	100	

24. These occupations are elevator installers and repairers, social scientists n.e.c., glaziers, lathe and turning machine set-up operators, and pest control occupations. The average dynastic bias for all occupations (weighted by occupation size) is 9·12.

TABLE A2

Summary statistics

Variable	Observations	Mean	S.D.	Minimum	Maximum
Previous relative in office	11,463	0·087	0·28	0	1
Posterior relative in office	11,463	0·086	0·28	0	1
Long term	11,463	0·651	0·48	0	1
Total tenure (in congresses)	11,463	3·729	3·55	1	29
Age at entry	11,463	44·939	9·24	22	87
Previous public office	11,463	0·806	0·40	0	1
College attendance	11,463	0·651	0·48	0	1
Female	11,463	0·015	0·12	0	1
Outsider to state	11,462	0·392	0·49	0	1
House (vs. Senate)	11,463	0·891	0·31	0	1
Military	11,463	0·356	0·48	0	1
Lawyer	10,954	0·594	0·49	0	1
Farmer	10,954	0·071	0·26	0	1
Business	10,954	0·197	0·40	0	1

Notes: The age at entry minimum is not a mistake. William C. C. Claiborne (1775–1817) entered Congress without satisfying the constitutional age requirement.

TABLE A3

Large families in Congress

Family name	Year entered	Year left	Number of congresses	Number of members	Notable members
Breckinridge	1789	1978	72	17	Henry Clay
Hale	1805	1958	65	7	Eugene Hale
Sheppard	1899	Present	48	4	Morris Sheppard
Lodge	1887	1952	46	6	Henry Cabot Lodge
Baker	1933	1996	44	5	Everett McKinley Dirksen
Claiborne	1793	1990	42	8	Thomas Claiborne
Wadsworth	1881	1976	41	4	James Wolcott Wadsworth Jr.
Macon	1789	1840	40	5	Nathaniel Macon
Long	1931	1986	40	7	Huey Pierce Long
Muhlenberg	1789	1880	39	13	Frederick Augustus Conrad Muhlenberg
Vinson	1913	1996	39	2	Carl Vinson
Bankhead	1887	1946	38	4	William Brockman Bankhead
Flood	1901	1982	38	4	Harry Flood Byrd
Frye	1871	1948	37	2	William Pierce Frye
Kennedy	1895	Present	37	6	John Fitzgerald Kennedy
Bayard	1789	1928	36	6	Thomas Francis Bayard Sr.
Frelinghuysen	1793	Present	25	6	Frederick Theodore Frelinghuysen
Harrison	1793	1968	20	6	William Henry Harrison
Call	1813	1896	19	6	Wilkinson Call

Notes: We include families in the top 15 in terms of the number of members in Congress or number of congresses served. Sometimes the family names are not consistent within families. For example, Henry Clay came from a family where the predominant last name was Breckinridge. For ease of exposition, we identify dynasties by the modal last name.

TABLE A4

Robustness of difference in posterior relatives between close winners and close losers

Panel A: Difference in posterior relatives controlling by representatives' characteristics		
	(1)	(2)
	Margin of vote window	
	2·5%	5%
Difference	0·051	0·032
	[0·021]**	[0·015]**
Panel B: Difference in posterior relatives with propensity score matching		
Matching method	(1)	(2)
	Margin of vote window	
	2·5%	5%
Nearest neighbour	0·062	0·050
	[0·020]**	[0·013]***
Two nearest neighbours	0·048	0·046
	[0·020]**	[0·012]***
Stratification	0·050	0·037
	[0·025]**	[0·014]***
Radius, $r = 0{\cdot}01$	0·054	0·038
	[0·021]***	[0·015]***
Radius, $r = 0{\cdot}005$	0·043	0·037
	[0·026]**	[0·014]***
Kernel	0·053	0·038
	[0·020]***	[0·013]***

Notes: Results in panel A are from OLS regressions with the dependent variable *Postrelative*, which is a dummy variable for whether the legislator had a relative entering Congress after him or her, and the explanatory variable of interest *Win*, which is a dummy variable for whether the representative won the first reelection attempt. The regressions include controls for personal and career characteristics present in Table 2. Panel B presents the estimates of the difference in posterior relatives betwen winners and losers under propensity score matching. The propensity score of each representative was calculated by considering the personal and career characteristics included in Table 2 plus the square of *Year* and *Age of entry.* Robust standard errors clustered at state level are given in brackets in panel A and Bootstrap standard errors in panel B: *significant at 10%; **significant at 5%; ***significant at 1%.

Acknowledgements. For useful comments and suggestions, we thank Andrea Prat, the editor, anonymous referees, Anna Aizer, Severin Borenstein, Bruce Bueno de Mesquita, Tom Campbell, Matías Cattaneo, Rafael Di Tella, Andrew Foster, Oded Galor, Juan C. Hallak, Brian Knight, Ashley Lester, David Levine, Alexandre Mas, Enrico Moretti, Ben Olken, Ignacio Palacios-Huerta, Gerard Roland, Ken Shepsle, Andrei Shleifer, Steve Tadelis, Marko Terviö, and seminar participants at UC Berkeley, Brown, Columbia, UPenn, Washington U St Louis, Stanford GSB, George Mason, and the Political Economy group at NBER; we thank Victor Bennett, Janice Kim, and Sanny Liao for excellent research assistance and the Hellman Family Faculty Fund for financial support.

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