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When running for office runs in the family: Horizontal dynasties, policy and development in the Philippines

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Citation

WHEN RUNNING FOR OFFICE RUNS IN THE FAMILY: Horizontal Dynasties, Policy and Development in the Philippines

Abstract

Political dynasties exist in practically every variant of democracy, but take different forms in different places. Yet the types of dynastic structures have remained unexplored. We argue that horizontal dynasties—multiple members from the same political family holding different political offices concurrently—affect policymaking by replacing potential political rivals, who may oppose an incumbent's policy choices, with a member of the family. But in developing countries, the policy change that accrues from dynastic status may not lead to higher levels of economic development. We test this argument's implications in the Philippines. Employing a close elections regression discontinuity design on a sample of mayors, we show that (i) horizontally dynastic mayors have higher levels of government spending, (ii) direct institutional constraints are the mechanism that drives this core result, and (iii) horizontally dynastic mayors do not lead to economic growth or lower poverty.

Key Words: Political Dynasties; Economic Policy; Preference Alignment; Political Parties; Regression Discontinuity Design; The Philippines

1 Introduction

Political dynasties exist all over the world, from developing countries in Asia and Africa to industrialized Western democracies like Sweden and the United States. As a result, a growing literature has examined the ways that dynasties perpetuate themselves through the incumbency advantage (Chhibber, 2013; Feinstein, 2011; Fiva and Smith, 2018; Querubin, 2016; Van Coppenolle, 2017) and the implications of dynastic politics on political, economic and social outcomes (George, 2019; Asako et al., 2015; Braganca et al., 2015). The majority of this literature examines family relationships across time. Yet intertemporal linkages between family members are clearly not the only type of family linkage. Horizontal dynasties—family members holding multiple political offices concurrently—and the outcomes that accrue to horizontal dynastic status are still relatively unexplored.

It is important to study horizontal dynasties because the concurrent structure of these dynasties allows us to examine novel strategies that dynasties use to achieve their political and policy goals. In addition to traditional mechanisms such as the incumbency advantage, horizontally dynastic politicians have access to other strategies that non-dynastic politicians do not. In particular, if politicians from the same family hold different offices concurrently they can coordinate, and circumvent potential roadblocks, to implement joint policy goals. Horizontal dynasties thus operate via distinct mechanisms and may lead to different outcomes. This paper answers the following question: How do horizontal dynasties affect economic outcomes and what is the mechanism that allows them to do so?

We argue that the horizontal dynastic structure allows politicians to more easily enact policy by replacing potential political rivals in other offices with a member of the

same family, thus rendering conventional constraints on policymaking—institutional impediments such as veto power or coalitional politics between two potential rival politicians—ineffective. Replacing a potential political rival with a family member greases the wheels of policymaking; the various constraints of political infighting are replaced by joint effort towards mutual goals. This result is being driven by positions with the most direct constraints on the dynastic politician. In other words, policy change happens when potential rivals who share a similar jurisdiction over the reference politician (and hence are directly engaged in the policymaking process), and have the most access to institutional/legal constraints, are replaced by a member of the politician's family. The argument further implies that members of the same family have similar preferences, and hence share political goals. However, policy change does not necessarily imply improvements in economic development. In contexts of low electoral accountability and where clientelism and other non-programmatic policies determine electoral success, the policy changes that accrue to horizontal dynastic status do not lead to higher levels of economic development, implying that policy change may have simply facilitated rent-seeking.

The predictions of this argument guide our empirical analysis. We study the Philippines over the past 20 years, an ideal setting for several reasons. First, horizontally dynastic politicians are present at multiple levels of local government: 15% of all municipal mayors and 45% of all provincial governors are horizontally dynastic. Second, because several existing papers on dynastic incumbency advantage and the socioeconomic effects of dynastic status are set in the Philippines (Querubin, 2016; Labonne et al., 2017; Mendoza et al., 2019), our research directly extends and provides channels beyond the incumbency advantage by which dynasties affect Philippine

politics.

This paper focuses on Philippine municipal mayors. We identify a mayor as horizontally dynastic if he/she has a relative who is concurrently serving in a local executive or legislative position within the province the mayor is a part of: the governor or vice governor of the province, or congresspersons, mayors and vice mayors in the same province. We choose to focus on mayors because they are the primary decision-makers in setting and executing policy in the municipality. On the other hand, these other local positions influence the mayor's capacity to set policy. Most changes along local policy dimensions can be attributed to the preferences and incentives of the local mayor. We also choose mayors for statistical reasons. There are over 1,600 mayors serving concurrently in any given year. The large number of mayors gives us enough sample size for identification.

Testing our predictions could be undermined by the endogeneity of horizontal dynastic status. The presence of horizontal dynasties may be both a cause or a consequence of the policy decisions of the mayor. A third factor, such as local economic and political conditions, may also bring about dynasties and policy change. To overcome such difficulties, our identification strategy employs a regression discontinuity design that exploits close elections of mayors' relatives to account for the presence of a horizontally dynastic mayor. Using the ruling mayor as the reference politician, we consider a relative who runs for another political office (the vice mayor, mayor, vice governor, governor or congressman within the same province). If his/her relative barely wins, the mayor is considered horizontally dynastic, because two of them are in office concurrently. We exploit close elections as a quasi-experiment that randomly assigns whether the mayor belongs to a dynasty (when a relative barely wins an elec-

tion) or non-dynasty (when a relative barely loses an election). Following the dynastic incumbency literature, we use close elections as our exogenous variation.

Our empirical results are consistent with the predictions of our argument. We use government spending as our measure of policy change, and find that municipalities with horizontally dynastic mayors spend 4-5% more than municipalities with non-dynastic mayors. This result is robust to different functional forms of the running variable, to various optimal bandwidth selection methods and the inclusion of a variety of control variables. Furthermore, we show that this increase in spending is being driven by mayors who are horizontally dynastic with their vice mayors, suggesting that positions with the most direct constraints over the mayor—in terms of the formal laws that enable vetoes as well as proximity to the policymaking process—are driving the spending result. We also show some suggestive evidence that this particular type of dynastic linkage leads to increases in specific components of total spending: economic services and health. Despite this, we see no relationship between horizontal dynastic status and night light luminosity (a proxy for growth) and poverty incidence. The results imply that in settings, like the Philippines, where clientelism and rent-seeking are prevalent, the policy change that accrues to horizontal dynastic status does not necessarily lead to development. Finally, we show that these results are not driven by alternative explanations, such as dynasties serving as a proxy for political parties, or the networks of the dynasty.

This paper extends and deepens scholarship on political dynasties. The recent boom in research on political dynasties has thus far focused on dynastic selection, most particularly the dynastic incumbency advantage—holding political office has a causal effect on the probability of having future relatives in office (Querubin, 2016;

Fiva and Smith, 2018; Van Coppenolle, 2017)—or on the social and economic outcomes that accrue from dynastic status (Folke et al., 2017b; Geys and Smith, 2017). This paper complements the existing literature by focusing on horizontal dynasties and linking this particular dynastic structure with economic outcomes such as government spending and economic growth, and arguing for the removal of direct institutional constraints as the mechanism that mediates dynastic structure with policy.

Our results also contribute to a growing literature on how social structures affect electoral success in young democracies, and in particular the Philippines. Our work builds on Querubin (2016), who provides evidence for the dynastic incumbency advantage—individuals who barely win political office are much more likely to have future relatives in office. We also provide supporting evidence for empirical work that has linked dynasties to negative development outcomes in the Philippines (Tusalem and Pe-Aguirre, 2013; Mendoza et al., 2016). Finally, we build on a series of papers (Cruz et al., 2017, 2020; Cruz, 2019) that show that a variety of political networks (networks among voters and politicians' extended families for example) facilitate strategies that lead to electoral success. Like these papers, we agree that political linkages matter. We provide our own unique contribution in two ways. First, we break down the definition of dynasties to show how a particular type of dynasty (in this case a horizontal dynasty) uses the specifics of this structure to craft electoral strategies. Second, while the extant literature focuses on clientelism as politicians' core electoral strategy, we emphasize policymaking and public spending (and by proxy public goods provision) as an alternative or augmenting strategy by which politicians may achieve political goals.

2 Horizontal Dynasties: Policy, Direct Institutional Constraints, and Development

In this section we propose a simple argument that links a politician's horizontal dynastic status with policy and development outcomes. The argument is set-up as follows: Consider a reference politician, which we call the mayor.[1] Mayors set and execute policy in their municipality. Mayors attempt to win elections and extract rents. In principle, they may use a variety of tools to achieve these goals. Here, we focus on policymaking. For example, a policy like building a road may benefit a mayor's constituents and win their votes, or otherwise be a conduit for the mayor's own enrichment. Regardless of the mayor's underlying goals, they face constraints in the form of other rival politicians. These rival politicians wield institutional tools, such as the ability to veto a mayor's policy, that will prevent the mayor from enacting his/her preferred policies. Mayors therefore need to find a way to circumvent these constraints in order to achieve their political objectives.

Horizontal dynastic linkages allow mayors to circumvent these constraints from rival politicians by replacing a would-be rival with a member of their family. Consider the following simple scenario: A mayor wants to build a road but is vetoed by a rival politician. The road does not get built. The alternative scenario is one where the rival is replaced by a member of the mayor's family. Consider again the same road-building project. The mayor proposes the project. But now, with the family member in place of the rival, the road is now built. Extending this logic to policy more broadly, we can say that horizontally dynastic mayors will implement differential policy versus

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[1]The argument extends to any politician who has control over the setting and execution of policy.

non-dynastic mayors.

There are a variety of mechanisms that may mediate the relationship between horizontally dynastic mayors and spending. We argue that direct institutional constraints and their removal by replacing a potential rival politician with a member of the family are a relevant mechanism mediating this result. By direct constraints we mean the legal and institutional tools a rival politician has to constrain the mayor through, for example, the vetoing of ordinances and the jurisdiction-based constitutional mandate to serve as a check on the mayor's local autonomy. Some horizontal linkages have more of these institutional constraints than others, and if direct institutional constraints are indeed driving spending, then the spending result should be disproportionately driven by these positions. Thus, the increased spending for horizontally dynastic mayors will be driven by positions with the most direct institutional constraints.

While horizontally dynastic mayors differentially affect policy, it is unclear whether these policy differences imply improvements in welfare and development. On the one hand, studies have argued that policy may be used as a way to generate kickbacks for corrupt politicians (Boas et al., 2014; Rose-Ackerman and Palifka, 2016). If this is the case, then horizontaly dynastic politicians further facilitate rent-seeking because they eliminate potential checks on corrupt politicians. On the other hand, policy may be welfare enhancing and politicians hoping to enact such policies do so in the hopes of maintaining political office (Ashworth, 2012; De Mesquita et al., 2005; Lake and Baum, 2001). In this sense, horizontal dynasties facilitate development because they are able to circumvent the inefficiencies inherent to checks and balances in order to provide citizens with policies they desire.

In the context of the Philippines we expect the former case to accrue. Horizontally dynastic mayors do not spur development. First, the Philippines lacks electoral accountability (Hutchcroft, 2000; Quimpo, 2007). In the absence of accountability channels, winning elections does not hinge on public service provision and instead becomes a matter of facilitating clientelistic political exchange (Cruz, 2019; Cruz et al., 2017). Furthermore, the Philippines has a weak bureaucracy and low state capacity. Even if spending were ostensibly to be used for welfare-enhancing purposes, the quality of the output may be low and spending may be inefficient. Our argument is consistent with an empirical literature that claims that in places with poor governance, government spending is not correlated with improved development outcomes (Devarajan et al., 1996; Rajkumar and Swaroop, 2008).

The argument yields three testable hypotheses:

Hypothesis 1: Horizontal Dynasties and Policy Outcomes

Horizontally dynastic mayors enact differential policy than non-dynastic mayors.

Hypothesis 2: Horizontal Dynasties and Direct Institutional Constraints

The increase in spending of horizontally dynastic mayors is being driven by the dynastic linkages with the most direct institutional constraints on the mayor's policymaking.

Hypothesis 3: Horizontal Dynasties and Economic Development

Municipalities with horizontally dynastic mayors do not lead to higher levels of economic development than municipalities with non-dynastic mayors.

At the outset, we acknowledge limiting conditions for our argument. The argument likely does not apply to horizontally dynastic politicians who are powerful enough to completely override the political system. These horizontally dynastic politicians do not need to work within (and hence attempt to circumvent) checks and balances. Perhaps a more appropriate model for these "strong" dynasties is warlord governance (Mukhopadhyay, 2014) or the Mafia (Gambetta, 1996). Furthermore, the argument likely does not hold in countries with stable party systems. In these countries, parties already facilitate the role of coordination and preference alignment between members of the party organization (Aldrich, 1995). This implies that horizontal dynasties may be an institutional solution to the problem of weak, unstable party alignments that plague countries like the Philippines (Hicken, 2009; Montinola, 1999).

3 The Philippines: Background and Institutional Context

This paper focuses on mayors in the context of the post-Marcos Philippines, spanning the early 1990s to the present. We focus on mayors for specific reasons: first, mayors are considered the central actor in local politics, close enough to the people to be accountable to their needs while having substantive relationships with other local officials within the municipality, across municipalities, and with other branches of local government. Second, mayors also face institutional and extralegal constraints (or opportunities for coordination) from other local politicians.

3.1   Local Political Structure

Mayors are the head of the executive branch of a Philippine city or municipality, the backbone of local politics in the Philippines.[2] Mayors preside over a variety of executive functions at the local level, and the extent of their control ranges from the exercise of general supervision over all projects and programs at the city level, initiating and maximizing the generation of revenue, and ensuring the delivery of basic services (Local Government Code (LGC) Section 455). As a branch of the executive, mayors are tasked with enforcing local laws or ordinances that are created through a city legislature, composed of the municipal board.

Research has identified mayors, their incentives and their behaviors as among the major drivers of local Philippine politics. In his study of local politics in Cavite, Sidel (1999) argues that the position of mayor is a major prize, the benefits associated with it being *"the awarding of building permits, the passage of municipal zoning ordinances, the use of government-owned land, the allocation of public works, the approval of reclamation projects.....[and] the awarding of petty monopoly franchises and concessions" (p.33).*

Mayors operate within a larger infrastructure of local politics (see Figure 1). Among the local political linkages, the relationship between the mayor and the vice mayor is most direct. By law (delineated in the LGC), vice mayors assist the mayors in implementing policy at the municipality level. Assistance also means serving as a check on the mayor, thus granting the vice mayor with direct institutional constraints on the mayor. Most importantly, vice mayors serve as the presiding officer of

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[2]The difference between when a locality is defined as a city or a municipality is a function of income, population size and land area, with larger and more populous municipalities garnering more transfers from the national government. For this study the terms are used interchangeably.

Figure 1 Political Structure in the Philippines
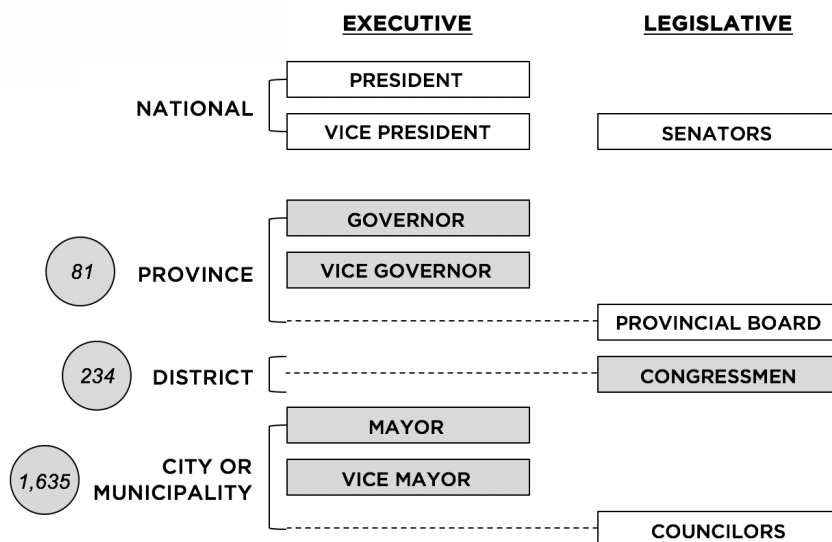
the municipal board, which has veto power over the mayor's ordinances—the primary legal means by which mayors set laws and enact policies. Major policies are enacted through ordinances. Particularly relevant to this paper is the fact that the budget, and thus the line items for spending in the fiscal year, can *only* be enacted through an ordinance that is approved by the vice mayor-led municipal board, via LGC Section 319 and the LGC Implementing Rules and Regulations Sections 414-415.[3] The specifics of this budget are written up in the Revenue Code, as outlined by LGC Section 13.

Moreover, the vice mayor's mandate, and the fact that both he/she and the mayor have jurisdiction over the municipality, implies that they are required to engage themselves with all of the mayor's policies. Thus vice mayors may exert formal opposition

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[3]Section 415 reads: *"On or before the end of the current fiscal year, the sanggunian (municipal board) concerned shall enact, through an ordinance, the annual budget of the LGU for the ensuing fiscal year on the basis of the estimates of income and expenditures submitted by the local chief executive."*

to the mayor very directly and oppose the mayor's most relevant policies. This jurisdictional autonomy granting checks and balances responsibility to the vice mayor vis-à-vis the mayor is enshrined in Article 10 of the 1987 Philippine Constitution, and further delineated in LGC Section 16, a catch-all provision for local autonomy.

Cities and municipalities make up one of 81 provinces, the most aggregated level of local government in the Philippines. The executive branch of a province is headed by a governor and vice governor, who attain office through plurality elections. Although the political responsibilities of governors and vice governors are similar in each jurisdiction, the provinces themselves vary widely in terms of measures such as levels of economic development. Governors also have oversight responsibilities over mayors. LGC Section 39 mandates governors to ensure that mayors' projects fall within prescribed duties and responsibilities. Since they have oversight responsibilities over the mayor, they may constrain them. However, they do not have formal vetoes over mayors' ordinances and do not formally preside over the municipal board like the vice mayor. They do have veto power over executive orders—minor local policies that do not include the majority of budget items. This implies that they may serve as an institutional barrier, but since they have no veto power over the more important ordinances and the autonomy of municipalities is legally protected by the Constitution, they have less direct constraints on mayors than vice mayors do. Note that governors may of course impose indirect constraints on mayors through means like delaying approval of projects, but these are less effective than straight-up legal constraints.

Multiple cities and municipalities also comprise a legislative jurisdiction called a district. Districts are headed by congresspersons, who are in charge of represent-

ing their district in the House of Representatives, which is in turn responsible for drafting national legislation.[4] Congresspersons affect mayors' spending through less direct means. The congressperson or a congressional representative sits on the local development council, and this may influence mayors' policies with regard to public spending. While mayors do have substantial discretion over final policy, congresspersons may exert some influence in these councils via indirect coordination, i.e. by tying discretionary pork barrel spending to particular mayoral policies.

The remaining linkages—mayors in other municipalities and vice governors—influence the mayor through indirect means. Mayors may collaborate with other mayors in large scalable projects, and vice governors may influence municipal outcomes through their influence on the governor. Neither has direct (or formal) constraints on a given municipal mayor.

For this paper, mayors will be considered horizontally dynastic if they are related to any of the local positions expounded on above—vice mayor, mayor, congressperson, vice governor or governor.

These positions are all simultaneously elected at-large every three years. Each position faces a term limit of three consecutive terms. In general, elections for all local positions have an average number of 2.9 to 3.5 candidates running for any position and a mean vote share concentration of 0.50 to 0.54.[5] At first glance, mayoral and vice mayoral elections seem to be more competitive, having fewer candidates compared to gubernatorial and congress elections (2.9-3.0 vs. 3.5 candidates). However, looking at the HHI shows that mayoral, gubernatorial and congress elections feature vote

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[4]Appendix A describes in greater depth how these different positions relate to the mayor.

[5]Formally, we use the Herfindahl-Hirschman Index (HHI) to measure vote share concentration, which is defined as the sum of squared vote shares of all candidates competing for the same position.

shares that are equally concentrated (see Appendix B for a complete breakdown by position). Positions like the vice mayor and mayor also serve as stepping stones to higher office like that of the mayor and governor, respectively.[6] For example consider Dennis Pineda, from the Pineda dynasty of Pampanga province and its incumbent governor. He served as mayor of Lubao, Pampanga for three consecutive terms from 2001-2010. He was vice governor from 2013 to 2019 before his current position. Also note that he replaced his mother, Lilia Pineda, as governor. We also see this pattern in the data: 22% of governors have held the mayoral office in the past.

Horizontal dynasties are also more prevalent at higher levels of governance. For example, 45% of governors are horizontally dynastic, while only 15% of mayors are horizontally dynastic. Mayor-governor links are thus potentially indicative of more advanced dynasties, as not all dynasties successfully reach higher levels of government. This has implications for the later analysis breaking down the particular dynastic linkage with the mayor, since dynastic pairs with governors potentially differ in resources or ability (which affect spending) from dynastic pairs with vice mayors. We will discuss these concerns when we test H2. Finally, voters in the Philippines vote for individuals and not parties. It is therefore possible that a voter votes for a mayor and another local politician (such as the vice mayor or the governor) from an opposing party.

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[6]In Appendix B, we show what proportion of current politicians have occupied different political offices in the past. This depicts a picture of political progression—which positions are used as springboards for higher office—in Philippine local politics.

3.2 Political Dynasties in the Philippines

Political dynasties—a collection of family members occupying political office either concurrently or through time—are the core unit of local political organization, existing alongside and embedded within formal institutions such as political parties (Fegan, 1993).[7] Prominent political analysts have noted that dynasties are an organizational expression of the century-long dominance of local governments by local elites. Political clans *"are an enduring feature of Philippine politics"*, and have *"displayed an uncanny ability to adapt to the changing landscape of Philippine politics"* (Coronel, 2004). That is, while Philippine politics features the formal rules and institutions that usually accompany democratic governments, these rules and institutions are underpinned by informal structures, in this case the political family (McCoy, 2009).

4 Data and Descriptive Statistics

4.1 Sample Construction

The paper focuses on mayors' relationships with vice mayors, mayors, congresspersons, vice governors, and governors within the same province. A horizontally dynastic mayor is identified when that mayor and a politician from any one of these positions is from the same family concurrently. We obtain elections data for these positions from the Commission on Elections from 1992 until 2013. During this period, there were 74 to 80 provinces, 200 to 234 districts and 1,610 to 1,634 cities and municipalities in

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[7]It is again worth stressing that parties continue to be relegated to the sidelines of Philippine politics. Apart from parties having no significant ideological or political differences, politics has been candidate-based and personality-driven instead of party-driven (Manacsa and Tan, 2005; Querubin, 2016).

the Philippines. All local elections are held simultaneously every three years, and all local positions have a three-term limit. The initial sample includes 625 governors and vice governors, 1,691 congresspersons, and 12,891 mayors and vice mayors, totaling 28,723 local officials across 8 election years.

From the initial sample of 12,891 mayors, we focus on those mayors with *exactly one* relative running for office at the same election year, leaving us with 1,962 observations in the final sample.[8]

This sample is then split into the treatment group or horizontally dynastic mayors (mayors whose relative barely won the other local position), and control group or non-dynastic mayors (mayors whose relative barely lost the other local position). Table 1 breaks down the final sample into winning (and hence horizontally dynastic) and losing (non-dynastic) relatives, by position. There are 966 mayors in the treatment group and 996 mayors in the control group. Overall, the total number of horizontally dynastic politicians across treatment and control groups as well as for each local position is relatively balanced.

Table 2 compares the initial and final samples to see how our chosen sample differs from the universe of mayors in the Philippines. We find that municipalities in the final sample have a larger population, although they are less urban. Reassuringly, both samples do not differ in most other demographic, economic and political variables: spending per capita, land area, mayor's term, number of candidates, voter turnout and party affiliation (i.e. alignment with president's party).

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[8]The reason for focusing on mayors with exactly one relative in office simultaneously is for the validity of our identification strategy which will be explained in detail in the subsequent section.

Table 1 POSITION OF MAYOR'S RELATIVES IN THE FINAL SAMPLE

Position	All	%	Won	%	Lost	%
Governor	144	7.34	66	6.83	78	7.83
Vice Governor	101	5.15	56	5.80	45	4.52
Congressperson	320	16.31	155	16.05	165	16.57
Mayor	501	25.54	211	21.84	290	29.12
Vice Mayor	896	45.67	478	49.48	418	41.97
Total	1,962	100	966	100	996	100

Table 2 SUMMARY STATISTICS, INITIAL VS. FINAL SAMPLE

Variable	Initial Sample		Final Sample		Difference
	Mean	Std. Dev.	Mean	Std. Dev.	
Spending (log per capita)	7.070	0.714	7.091	0.717	0.021
Population	50,281	106,632	61,510	124,219	11,229***
Land Area (hectares)	21,018	23,089	20,087	22,077	-931
Urban	0.798	0.271	0.766	0.297	-0.032***
Mayor's Term	1.617	0.740	1.631	0.744	0.014
Number of Candidates	2.897	1.504	2.850	1.508	-0.047
Voter Turnout	79.610	7.768	79.480	8.154	-0.130
Party Affiliation	0.340	0.474	0.324	0.468	-0.016
N	12,891		1,962		

Note: The initial sample consists of all mayors while the final sample consists of all mayors with exactly one relative in office at the same time. ***, ** and * denote statistical significance at 1%, 5%, and 10% level, respectively.

4.2 Independent Variable: Horizontal Dynasty

The key independent variable for this study is whether the mayor is horizontally dynastic or not. Using the final sample, we define a mayor in city i at election year t to be horizontally dynastic if he/she has exactly one family member occupying a local political office j within the larger province where the municipality is located in, also at election year t. Hence the requirements for satisfying the horizontal dynasty definition are: (1) the mayor has exactly one relative in another office, (2) both the mayor and his/her relative *win* the election, (3) both are in office at the *same election*

year, (4) both come from the *same province*, and (5) the relative occupies a *local position* as defined above. For example, a winning mayor in the province of Cebu is horizontally dynastic in 2013 if he/she has a relative who is also elected as the governor, vice governor, congressperson, mayor or vice mayor in the same province in 2013. It is important to note that this definition of dynasties is more specific than the definition taken by other authors (Querubin, 2016).[9] Because our argument focuses on the concurrency of dynastic status, limiting dynastic status to multiple family members *within* a given year constitutes the most valid variable to test our argument.

We identify family members by exploiting naming traditions and matching surnames (Braganca et al., 2015; Querubin, 2016). We follow the existing literature by identifying family networks via a matching procedure where individuals with identical surnames residing in the same province are considered related. Appendix C expounds on the matching process in greater detail and addresses potential concerns such as false matches (positive and negative) in the data.

4.3   Dependent Variables

Hypothesis 1 states that horizontal dynastic status (politicians from the same family holding political positions simultaneously) leads to differential policy than non-dynastic status. Our measure of policy outcome is government spending. Furthermore, we claim that in the Philippine context, horizontally dynastic mayors will spend more than non-dynastic mayors. The data on government spending is at the municipal

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[9]He uses two definitions: *dynastic recent* (if the candidate had a relative who served in the 20 years prior to the election) and *dynastic incumbent* (if the candidate is related to an incumbent at the time of the election). We use a variant of the latter, where politicians from the same family are horizontally dynastic if they are elected *simultaneously*.

level obtained from the Bureau of Local Government Finance (BLGF). We consider the three year average of a municipality's spending after every election. For example, for the election year 2007, we consider the dependent variable to be the municipal government spending for 2008-2010 since mayors only have control over the budget after they assume office and budget planning starts the year before its enactment. Finally, we use log per capita measure to ensure comparability across differently sized municipalities, to decrease the impact of outliers, and to make the coefficients easier to interpret. Consistent with our argument, this measure includes all the programs that benefit the mayor's constituency—including public and social services such as schools, hospitals, and roads, public goods such as security, and exclusive goods such as titles, permits, and other forms of property rights.

We choose government spending as our measure of policy outcomes for the following reasons: First, the level of government spending represents an observable measure that politicians attempt to manipulate, and hence is often used as a policy outcome in the literature (Alt and Lowry, 1994; Fiorina, 1996; Alesina and Rosenthal, 1995). Second, the level of government spending is consistent with both winning votes and extracting rents (Birdsall, 1996; Dixit and Londregan, 1996). For example, if a politician wants to win elected office, he or she may increase the level of spending on schools and hospitals to increase welfare and hence win votes. On the other hand, politicians who hope to engage in rent-seeking may also increase local government spending, creating a bigger pie for them to pilfer from. An increase in government spending thus captures a variety of political goals—from winning votes to stealing resources. Finally, Philippine spending data is reliable, standardized across years, and available for the entirety of our sample.

While we argue that in the Philippine context spending is higher for horizontally dynastic mayors, in principle, horizontally dynastic mayors may instead reduce local government spending. An alternative argument is that horizontal dynasties solve the common pool resource problem (Weingast et al., 1981). By this logic, two politicians both spend beyond what is socially optimal because each seeks to provide for their constituency. Horizontal dynasties align preferences and therefore allow both politicians (particularly the mayor) to reduce spending. The specifics of the Philippine context do not fit this argument. Mayors have control over budget allocation and executing policy, and therefore control over the municipality's resource pool (Esguerra, 2001). The implication of this arrangement is that political rivals do not have access to the mayor's resources. They thus constrain the mayor by blocking policy, for example via a vice mayor vetoing the mayor's road construction project.

Finally, the argument presumes that credit for higher government spending goes to the mayor (and not to other politicians like the vice mayor or the governor). In the Philippines, mayors use their significant control over both the budget and the execution of government projects to claim credit (Cruz and Schneider, 2017). Figure 2 below shows mayors putting their names on completed projects in order to claim credit for them.

Hypothesis 2 states that direct institutional constraints are the mechanism that mediate the positive link between horizontally dynastic mayors and spending. This analysis examines the effect of each horizontal link to the mayor, but the dependent variable is still municipal spending.

Hypothesis 3 states that horizontally dynastic mayors do not spur economic development. We operationalize the development implications of horizontal dynasties

Figure 2 MAYORS AND GOVERNMENT PROJECTS

This Pasig City public high school is named after its longest-serving mayor. The Eusebio dynasty has ruled Pasig City since 1992, starting from the patriarch (Vicente Eusebio), his wife (Soledad Cruz-Eusebio), the son and incumbent (Robert Eusebio) and the incumbent's wife (Maribel Andaya-Eusebio). Currently, brothers Robert and Richard Eusebio are the incumbent mayor and congressman, respectively.

by examining their effect on economic growth and poverty reduction. We use the log of night light luminosity as a proxy for economic growth. Moreover, night time lights have been shown to be very highly correlated with traditional measures such as GDP, and especially advantageous for measuring output at the lowest levels of development (Henderson et al., 2012; Pierskalla et al., 2017). This paper employs night lights data from the Defense Meteorological Satellite Program's Operational Linescan System. Luminosity intensity scores are scaled from 0-63 for each square kilometer. The unweighted average of each 1 km × 1 km grid cell within the boundaries of

the municipality is calculated to obtain a luminosity score for each municipality. We take the night lights data two years after every election as the outcome variable. We also use municipal poverty rates as a second measure of economic development. We obtained the small-area poverty estimates from the Philippine Statistics Authority, which is based on the triennial Family Income and Expenditures Survey from 2000 to 2012. For consistency with the night lights measure, we assign the poverty rate two years after every election as the corresponding outcome variable.

It is worth noting that both night light luminosity and poverty rates are not perfect proxies for development. First, there may be a lag between policy, in terms of spending, and development, in terms of luminosity and poverty reduction. The developmental benefits that accrue from spending may bear fruit beyond the first few years of a mayor's term. We choose not to test longer-term economic development because this leads to an identification problem—it is not clear to which mayor do we credit long-term development. Second, economic development is a multifaceted concept, and our measures may not fully capture the potential ways spending may affect it. Still, we believe that the evidence provided above is suggestive of our argument that horizontally dynastic mayors do not lead to short-run development.

5   Identification Strategy and Empirical Results

5.1   Testing H1: Horizontal Dynasties and Spending

We first test whether horizontally dynastic mayors spend more than non-dynastic mayors. However, this presents an identification challenge since a naive comparison of horizontally dynastic and non-dynastic mayors may confound the effect of dynastic

status with other variables that lead to higher spending. In practice, dynastic and non-dynastic areas are different along several dimensions: population, poverty incidence, political competition, urbanity and many others. For example, wealthier and more developed areas collect higher tax revenues, which can lead to higher spending and attract the formation of dynasties due to the potential for rent-seeking. Another confounder is politician ability, where more talented politicians are better able to navigate existing rules to increase spending. In addition, highly skilled politicians may have greater chances of starting dynasties. Hence, the statistical relationship we see may therefore be an artifact of political ability or local development, and not of intrafamily cooperation.

In order to estimate the causal effect of dynasties on spending, the ideal experiment would be to randomly assign horizontal dynastic status to two otherwise similar mayors (one is horizontally dynastic, while the other is non-dynastic) and observe consequent differences in their respective municipalities' spending. In this imagined setting, the treatment is assigning a mayor to belong to a dynasty: that is, the mayor and at least one relative are simultaneously elected and occupy political office, whether as a vice mayor, mayor, congressman, vice governor or governor in the same province.

While this is impossible to experimentally manipulate, using regression discontinuity designs closely mimics this experimental scenario (Lee, 2008). By definition, a mayor achieves horizontally dynastic status when he/she has a relative occupying another political office within the province during the same election term. Whether a mayor's relative barely wins or loses is therefore synonymous to quasi-random assignment of horizontal dynastic status to that particular mayor. Consistent with previous

literature, close elections serve as a "near-experimental" setting where a candidate (i.e. the mayor's relative) is deemed to win or lose at random. Hence, comparing mayors whose relative barely wins (and therefore achieve horizontally dynastic status) with those whose relative barely loses (and therefore do not achieve horizontally dynastic status) allows us to causally identify the effect of horizontal dynasties on local government spending.[10]

Thus, the treatment group consists of mayors who have relatives simultaneously elected for any of the following positions: the provincial governor or vice governor, a congressperson, mayor or vice mayor, and the control group then includes mayors who have relatives who failed to get elected (in the same year) for any of the above local positions.[11]

Note that we choose to define the mayor's dynastic status broadly, identifying a mayor as horizontally dynastic if he/she has concurrent family members in office across a variety of positions. We do this because, conceptually, coordination with mayors can exist across several positions, and we show the net effect to ensure that we are not cherry-picking horizontal linkages. This does leave room to further delineate a mechanism. Thus, in the next section we examine the effect of specific dynastic linkages on municipal spending.

Our identification strategy differs somewhat from the standard RD. While typical RD designs consider the *same* politician's close election, forcing variable, treatment

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[10]In order to properly implement this design, we limit our sample to mayors with *exactly* one other relative running for local office. Including mayors with two or more relatives invalidates our design since now we need to consider more than one election for the RD. This introduces the problem of reducing the multidimensional margin variable (one for each family member) to a unidimensional margin variable, or the issue of choosing which election to include in the RD analysis. In the data, 74% of horizontal dynasties are composed of two member dynasties.

[11]Note that we do not make a distinction between first-term mayors and those who have previous political experience. We examine whether experience is driving the results in a later section.

and his/her eventual outcome, ours looks at a relative's close election and forcing variable to determine the mayor's treatment and eventual outcome. The difference stems from the definition of our independent variable and our sampling choice.

First, the label of horizontal dynasty implies that a mayor is dynastic if at least one of his/her family members also holds local political office. Hence, a mayor's treatment is defined by the electoral outcome of his/her relative. While this is not standard, the underlying ideas of RD designs remain consistent. Echoing the close elections RD literature, the close election of a politician (e.g. the relative) can be considered an as-if random assignment. In our case, the relative's electoral outcome assigns mayors into treatment (those with winning relatives) and control (those with losing relatives) groups. Using this design, there is a one-to-one mapping between a relative's electoral outcomes and the mayor's dynastic status. Hence, the quasi-random election of the relative dictates the quasi-random dynastic or non-dynastic status of the mayor.

Second, our choice of sample defines the treatment and control categories, and is crucial in ensuring that we consider the correct counterfactuals.[12] We do not take all close elections available—only the close elections of winning mayors' relatives. The former would measure the impact of winning which is applicable only to the candidate, while the latter would measure the impact of a relative winning and the mayor becoming horizontally dynastic which has an effect on the mayor and the dynasty. The latter is the parameter we seek to causally estimate. Although subtle, this sampling choice is central to understanding that the treatment group becomes

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[12]This mirrors gender-based RDDs where the sample is limited to elections where both the winner and runner-up should be male and female (or vice versa). In these studies, the choice of sample allows them to study the impact of the politician's gender on various policy variables.

not just the winning politician, but the horizontal dynasty.

Marshall (2019) provides an extensive discussion on these non-standard RDDs and notes that these designs may identify not only the specific characteristic of interest (in our case, dynastic status), but also candidate- or context-level characteristics that ensure winning candidates who possess the specified characteristic remain in close races. To address this issue, we perform a battery of robustness checks by including a variety of politician-level and district-level variables to control for the potential effect of these compensating differentials.

Following the standard RDD specification, we exploit close elections to test our first hypothesis:

$$Spending_{it} = \alpha + \beta HorizontalDynasty_{ijt} + f(MV_{jt}) + g(MV_{jt}, HD_{ijt}) + \delta_i + \tau_t + \epsilon_{ijt}$$

$$\forall j \ s.t. \ MV_{jt} \in [-h, h]$$

where $Spending_{it}$ is (log) government spending per capita in municipality i and year t, $HorizontalDynasty_{ijt}$ is a dummy variable equal to one if a mayor i's relative j wins at year t, $f(\cdot)$ and $g(\cdot)$ are linear and quadratic functions of MV_{jt}, relative j's vote margin, as well as the interaction with the $HorizontalDynasty_{ijt}$ dummy, and δ_i and τ_t are municipality and year fixed effects. We cluster standard errors by province to account for the fact that naming dynasties aggregates at the provincial level. The coefficient of interest β therefore measures the treatment effect of horizontal dynasties on municipal spending.[13]

Figure 3 presents suggestive evidence of the effects of horizontal dynastic status on

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[13]Given how we operationalize horizontal dynasties, our design can only compare horizontal dynasties with two members with non-dynasties. In this section, we can only speak to the 'extensive margin' effect of horizontal dynasties instead of the 'intensive margin', which we explore in Appendix E.

Figure 3 Municipal Spending and Relative's Vote
Margin
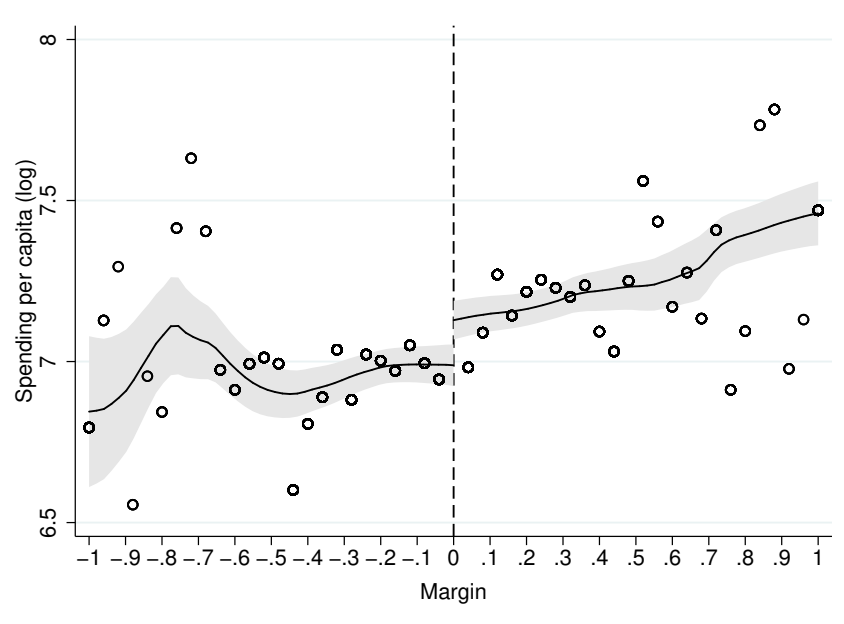
Note: Horizontal axis shows the vote margin of the mayor's relative running for another local office, where a positive vote margin implies horizontal dynastic status. Each circle is the average local government spending per capita (log) within 0.04 intervals of the vote margin. Solid lines are smoothed local polynomials on either side of the discontinuity. The shaded gray areas are the 95% confidence intervals.

spending. We see a discontinuous jump in spending around the cutoff, which implies that winning and hence gaining horizontal dynastic status leads to greater spending.

Table 3 presents the regression results using the full sample with parametric control functions in Columns 1-6, and the limited sample using optimal bandwidth selection procedures proposed in the literature (Imbens and Kalyanaraman, 2012; Calonico et al., 2014) in Columns 7-10. Odd-numbered columns are models without fixed effects, while even-numbered columns include both municipality and year fixed effects to control for potential time- and place-invariant factors.

In all specifications, we see that having another relative in government leads mayors to spend more on their respective municipalities. In the more conservative spec-

ifications with fixed effects, municipalities led by dynastic mayors spend 4-5% more than their non-dynastic counterparts. These estimates are statistically significant and economically meaningful. They are equivalent to the municipality's average spending on education and housing. The positive and statistically significant relationship is robust to the inclusion of fixed effects and to various functional forms of the winning margin. However, coefficients from specifications with fixed effects differ from those without fixed effects. In general, what is driving the attenuation is the inclusion of the year fixed effects. This is due to the source of variation of our dependent variable, log spending per capita. While cross-municipality differences are minimized due to the per capita adjustment, spending largely varies across time, experiencing a five-fold increase from 1992 to 2013. Municipality fixed effects marginally decrease the coefficients in full samples, but lower them more in optimal bandwidth approaches where sample sizes are halved. By reducing the average number of observations per group or municipality to less than two, the smaller samples make it more challenging to uncover effects due to lower or no variation within municipalities. Combining both fixed effects, we obtain lower, but still statistically significant, estimates.

We then address the identifying assumptions and the robustness of results in the RD design. First, we control for the urban imbalance, past wealth and politician-level variables such as tenure, gender and past dynastic status. Using a specification chart in Figure D4, we show that controlling for these variables does not impact our coefficients, which remain generally statistically significant.[14] Second, we test for

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[14]Given that our regression equation includes forcing variables from different levels, there might be an issue with regard to the comparison of these potentially different elections. First, we show that elections for different positions are fairly similar in terms of competitiveness (see Table B1). Second, we compare different municipal variables by the type of dynastic linkage and find most to be similar across types, with population showing significant differences (see Table D1). Note that we indirectly control for population by using a per capita measure for our dependent variable. Finally,

Table 3 HORIZONTAL DYNASTIES AND SPENDING

|	Full Sample						Optimal Bandwidth			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Basic Specification										
Horizontal Dynasty	0.259***	0.0426***	0.0982**	0.0521***	0.0792	0.0515**	0.137***	0.0427**	0.132***	0.0430**
	(0.0385)	(0.0145)	(0.0451)	(0.0157)	(0.0588)	(0.0226)	(0.0428)	(0.0187)	(0.0419)	(0.0193)
Panel B: Control for Same Party										
Horizontal Dynasty	0.230***	0.0443***	0.0885*	0.0527***	0.0770	0.0517**	0.140***	0.0447**	0.134***	0.0454**
	(0.0391)	(0.0161)	(0.0450)	(0.0162)	(0.0590)	(0.0226)	(0.0441)	(0.0195)	(0.0434)	(0.0202)
Same Party	0.0792**	-0.00630	0.0562	-0.00466	0.0558	-0.00353	-0.0187	-0.0165	-0.0114	-0.0191
	(0.0363)	(0.0169)	(0.0375)	(0.0174)	(0.0381)	(0.0177)	(0.0475)	(0.0282)	(0.0463)	(0.0272)
Dep Var Mean	7.09	7.09	7.09	7.09	7.09	7.09	7.05	7.05	7.05	7.05
Municipal FE		×		×		×		×		×
Year FE		×		×		×		×		×
Function	None	None	Linear	Linear	Quadratic	Quadratic	None	None	None	None
Bandwidth	1	1	1	1	1	1	CCT=.2	CCT=.2	IK=.21	IK=.21
Adj. R²	.033	.879	.048	.879	.049	.879	.009	.867	.009	.872
N	1,943	1,943	1,943	1,943	1,943	1,943	924	924	962	962

Note: Robust standard errors clustered at the province level are in parentheses. Dependent variable is log spending per capita in a municipality or city. Horizontal dynasty is a dummy that takes the value 1 (0) if the mayor's relative wins (loses) the election.

balance on a number of predetermined variables that may cause discontinuities in spending. We find that covariate means are balanced around the cutoff (see Figures D2 and D1). To ensure the validity of the RD design, the running variable has to affect the potential outcomes only through the treatment assignment indicator. We explore the potential role of gender and party affiliation, both potentially affected by the running variable and can influence our spending measure.[15] However, we show that the intermediate variables do not seem to be discontinuous around the threshold (see Figure 4). Next, one concern would be that mayors can differentially exert influence when family members are running in a close race, making their relatives more likely to win close elections, and thus undermining a core RD assumption. If this were the case, then we would see a discontinuity in the density around the cutoff. To address this concern, we check for potential manipulation using the McCrary (2008) test. Figure 5 shows that the vote share distribution is continuous around the cutoff, implying that we find no evidence of manipulation.

While the RD provides us with a causal estimate of the mayor's horizontal dynastic status on spending, its generalizability can be limited in two ways. First, our design focuses on dynastic pairs: precisely two politicians from the same family holding office contemporaneously. Yet the theory can be straightforwardly extended to families with more than two members holding office at the same time. Second, RDs provide causal

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we compare the distribution of forcing variables by the type of dynastic linkage (see Figure D3). In general, distributions seem to be more skewed to the right and smooth around the cutoff using the McCrary (2008) test. Although there are spikes at $|margin| = 1$, our close elections RD design excludes them by choosing a narrow bandwidth.

[15]When a relative barely wins, apart from dynastic status, both gender and party affiliation can also be discontinuous at the threshold. That is, it is possible that female relatives or relatives in the same party win, and increase municipal spending. In the literature, it has been shown that gender can impact the type of policies that politicians implement (Chattopadhyay and Duflo, 2004). Similarly, party affiliation has also been shown to impact spending (Larcinese et al., 2006).

Figure 4 CHECKS FOR DISCONTINUITY (H1)
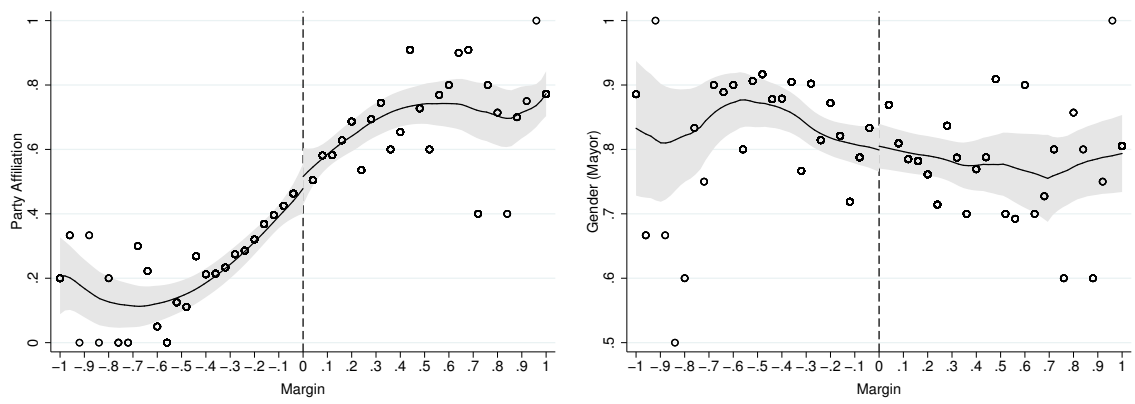
(a) Party Affiliation

(b) Gender

Note: The figure shows whether intermediate variables like party affiliation and gender are also discontinuous around the vote margin threshold. This provides evidence that the forcing variable does not seem to affect other important variables, apart from dynastic status.

Figure 5 MCCRARY DENSITY TEST (H1)
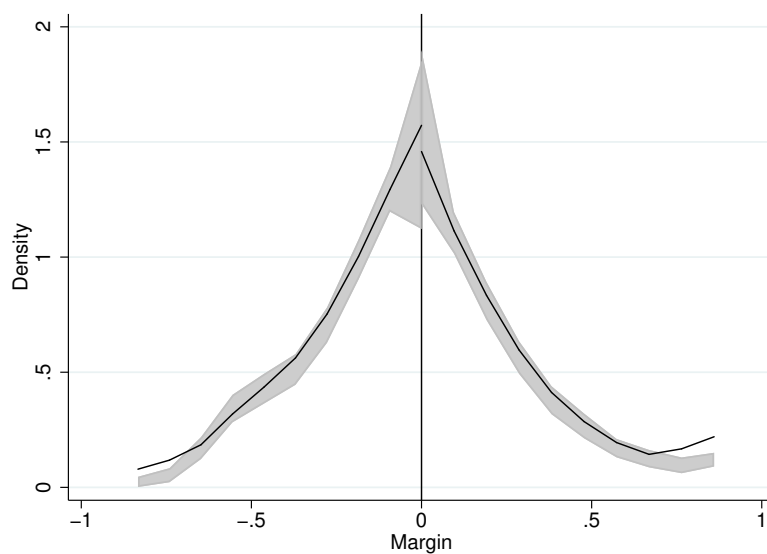
Note: The figure shows the McCrary (2008) test for discontinuity in the density of observations around the vote margin threshold. The formal test cannot reject the null of a continuous density around the cutoff, where the magnitude of the discontinuity is very close to zero and is not statistically significant (*p*-value = 0.782).

Figure 6 Robustness to Alternative Bandwidths (H1)
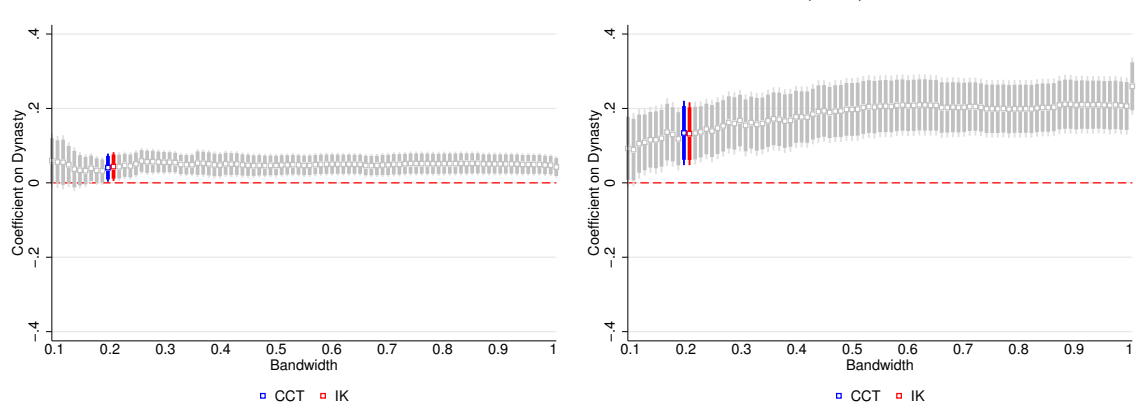
(a) Municipality & Year Fixed Effects **(b)** No Fixed Effects

Note: Each sub-figure plots the point estimates for different bandwidth values between 0.10 and 1 in 0.01 increments. In Panel A, the coefficients are estimates based on the specification with municipality and year fixed effects. In Panel B, the coefficients are based on the specification without fixed effects. Thin lines stemming from the point estimates show 95% confidence intervals while the slightly thicker lines show 90% confidence intervals. Estimates shown in blue are for the optimal bandwidth proposed by Calonico et al. (2014) ($h = 0.20$) while the estimates shown in red are for the optimal bandwidth proposed by Imbens and Kalyanaraman (2012) ($h = 0.21$)

results for close elections, yet these results do not necessarily speak to municipal elections that do not fall within the bounds of RD analysis. This limits generalizability because campaign strategies and the underlying characteristics of both the mayors and municipalities may differ between close elections and non-close elections. The specifics of the RD sample have implications for the theory. If the sample is limited to places where institutional rules constrain policymaking, then in places where rules are not binding (warlord municipalities for example), the benefits to having a family member in office concurrently may not be as beneficial. Regardless of the underlying implications of the sample, we address these limitations and attempt to generalize our theory with the OLS analysis. In Appendix E, we find that OLS results—using the full sample of mayors and various definitions of horizontal dynasties accounting for more than two concurrent family members in office—mirror those of the RD. These

results support the generalizability of the theory to elections that are not necessarily close and to a wider definition of horizontal dynasties.

5.2 Testing H2: Direct Institutional Constraints, Preference Alignment, and Spending

The previous section has provided causal evidence for the relationship between a mayor's horizontal dynastic status and municipal spending. Further tests also suggest that the theory is generalizable to horizontally dynastic mayors beyond those in the RD sample and valid for more than two members of the family holding office concurrently.

In this section we further refine our mechanism. We argue that direct institutional constraints, and thus the removal of these constraints by replacing a potential political rival with a family member, is the primary mechanism driving our results. We define these direct institutional constraints as the constitutional or legal constraints that allow a rival politician to use his/her mandated powers to prevent the mayor from enacting policies and increasing spending. Thus, the particular linkages that should be driving the spending result should be from positions that have the most direct institutional constraints over the mayor.

Yet other mechanisms may exist. Instead of direct institutional constraints, potential political rivals may enforce a variety of "informal" tactics to curb the mayor's spending. Higher level officials may resort to intimidation and violence to curb spending. More "benign" stalling tactics, such as simply refusing to meet with the mayor or stalling to sign approval documents also serve to constrain a mayor's ability to implement policy.

In the Philippine context vice mayors impose the most direct institutional constraints on the mayor's ability to spend. Therefore, municipalities where mayors are horizontally dynastic with their vice mayors are driving the overall increase in spending. Recall that the vice mayor's role as a check on the mayor is constitutionally mandated (the local autonomy provision) in Article 10 of the 1987 Constitution and reinforced in Section 16 of the Local Government Code. More specifically, vice mayors lead the municipal board, which has veto power over the mayor's budget and hence all the spending line items (LGC Sections 319 and 414-415).

As noted previously, other positions, such as the governor and congressperson, have some direct institutional capacity to constrain the mayor. But their institutional constraints (especially for congresspersons) are far more limited. Moreover, they do not have the jurisdictional mandate that vice mayors do that is codified in the Constitution. Furthermore, it is worth noting that other positions such as vice governor or mayors from other municipalities have no (or at best extremely indirect) constitutional constraints over the mayor. On the other hand, these positions also have the greatest capacity for "informally" constraining mayors.

Thus, evidence in support of direct institutional constraints would be a significant and positive relationship between spending and mayors horizontally-dynastic with their vice mayors. Evidence in support of more informal constraints would be a positive and significant relationship between the mayor and the other horizontal linkages.

To test this, we expand the original RD equation and include an indicator for each

position. We also interact each position indicator with the forcing variable.

$$Spending_{it} = \alpha + \beta HD^p_{ijt} + f(MV^p_{jt}) + g(MV^p_{jt}, HD^p_{ijt}) + \delta_i + \tau_t + \epsilon_{it}$$

$$\forall j \ s.t. \ MV^p_{jt} \in [-h, h]$$

where HD^p_{ijt} is a vector indicating whether the dynastic link is with position p (i.e. $[HD^{VM}, \ HD^M, \ HD^{VG}, \ HD^G, \ HD^C]$) and MV^p_{jt} is similarly defined. All the other variables are defined as before. Again, we cluster standard errors by province.

Our results are consistent with direct institutional constraints; spending is being driven by mayors that are horizontally dynastic with vice mayors. For this section, we focus on the full sample given that the breakdown by position requires significantly more variation to be able to detect significant effects. In Figure 7, each bar represents the coefficients (in black diamonds) and confidence intervals (in shades of gray) of a particular dynastic linkage for a given specification combining the inclusion of fixed effects (none, year only, municipality only or both) and the function of the forcing variable (none, linear or quadratic). The first set of specifications (in dark gray) represents the estimates for links with the vice mayor, and the following sets (in alternating light and dark gray) for mayors, vice governors, governors and congresspersons, respectively. The black (gray) circles at the bottom of the figure mean inclusion in (exclusion from) the regression. For example, the first bar is the vice mayor's coefficient estimate for the specification with no fixed effects and no control function.

We find that the coefficients for vice mayor are not only generally statistically significant, but also are larger in magnitude compared to other positions. This provides suggestive evidence of the larger role that vice mayors play in influencing policy

Figure 7 SPECIFICATION CHART BY POSITION
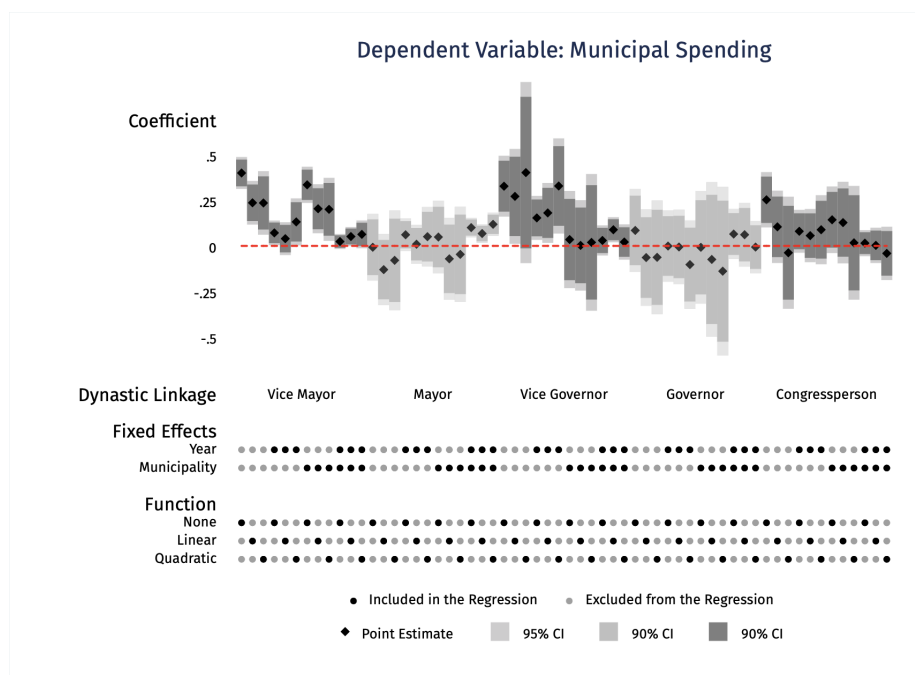
Note: The figure splits the original horizontal dynasty variable into separate variables for dynastic linkages with vice mayors, mayors, vice governors, governors and congresspersons (see Position panel). Each bar represents a specification of a dynastic linkage, with or without fixed effects, using no, linear or quadratic functions of the running variable. The black diamond represents the point estimate, while the light (dark) gray bars are the 95% (90%) confidence intervals. The black (gray) circles mean inclusion in (exclusion from) the regression.

decisions made by the mayor. Alignment with vice mayors allows mayors to skirt around these direct institutional constraints, and provides them greater control over policy, which in this case, implies higher spending for their constituents.

A potential confounding explanation is that the spending differences across types of dynastic linkages are not driven by institutional constraints but reflect differences in the inherent quality of these dynastic pairs. For example, mayor-governor links are potentially indicative of more advanced dynasties, as not all dynasties successfully reach higher levels of government. This may suggest that certain dynastic linkages (mayor-governor or mayor-congressperson) represent higher quality politicians, who

are better able to circumvent formal rules to implement their preferred policies. If this were the case, we would expect spending to be larger for these more advanced dynasties, but our results do not support such a model.

A potential caveat to these results is that we cannot test a plausible alternative mechanism: increased spending is being driven by transfers from higher levels of government. This would be particularly relevant to the position of congressperson, which for the entire duration of our sample could provide mayors with discretionary pork barrel spending. We cannot test this because pork barrel transfers are not available in our dataset. Nonetheless, other work has shown that political alliances between congresspersons and mayors lead to increased discretionary transfers (Ravanilla, 2017; Atkinson et al., 2015; Hutchcroft, 2014).

Next, we test an implicit assumption of our theory: that politicians from the same family have aligned preferences and work together to achieve shared policy goals. This preference alignment mirrors arguments of the role of parties and coalitions in aligning preferences between politicians and thus making policies easier to implement (Tsebelis, 1995; Treisman, 2000). In particular, we follow the logic of Cox and McCubbins (2001), who argue that "sameness of purpose"—in other words preference alignment—may allow politicians to circumvent institutional constraints without removing the constraint itself. Note that while preference alignment is difficult to test, the argument implies that aligned preferences will lead to reduced conflict across political offices. Politicians work together via access to multiple offices rather than fight over a particular position.

To test this, we examine whether mayor-vice mayor pairs from the same family are less likely to come in political conflict, i.e. whether vice mayors are more or less likely

to run against the incumbent mayor if they are related. While this methodology is not without caveats, we believe that testing conflict over political office is a sufficiently good measure of the alignment of preferences between politicians. This result bears out. We find that mayor-vice mayor pairs from the same family are less likely to compete with each other, compared to those from different families. To save space, we detail the specifics of our identification strategy, and address further concerns with the data, in Appendix F.

Finally, we break down spending into its component parts to see which elements of spending are driving the results. Figure 8 displays these results. Similar to the previous specification chart, each bar represents the coefficient and confidence interval of a spending component for a given specification combining the inclusion of fixed effects (none, year only, municipality only or both) and the function of the forcing variable (none, linear or quadratic). Given that vice mayors have been shown to be driving the spending result, we only present their coefficients on the figure. The first set of specifications (in light gray) represents the coefficients for public services, and the following sets (in alternating dark and light gray) are for social services, economic services, education, health, housing and debt services, respectively.[16] As before, the black (gray) circles at the bottom of the figure mean inclusion in (exclusion from) the regression.

We see that of the spending components, the mayor-vice mayor dynastic linkage has a moderate impact on economic services and health. Given that the health system has been decentralized while the education sector has remained centralized, it is interesting to observe positive impacts on health but null effects on education. Un-

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[16]For presentation purposes, we remove employment from the figure due to its large standard errors. Similar to housing and debt services, employment is not significant for any specification.

Figure 8 Specification Chart by Spending Component
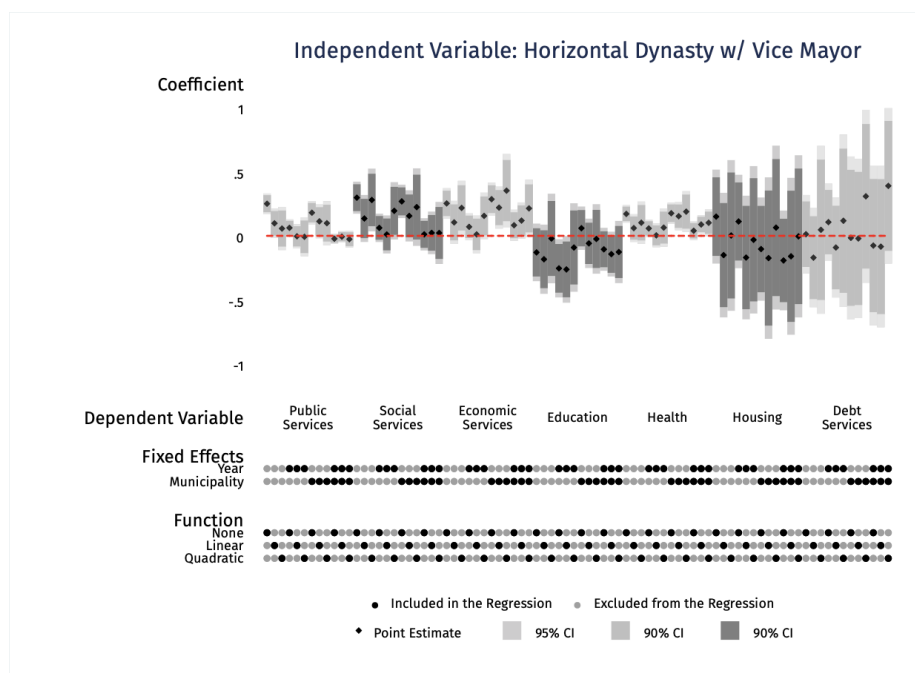
Note: The figure considers the dynastic link with the vice mayor as the independent variable and the different components of spending as the dependent variable. Each bar represents a specification of a spending component, with the full or bandwidth sample, using no, linear or quadratic functions of the running variable. The black diamond represents the point estimate, while the light (dark) gray bars are the 95% (90%) confidence intervals. The black (gray) circles mean inclusion in (exclusion from) the regression.

fortunately, the vagueness of the local government data does not lend itself to further theorizing. It is worth noting that the increase in economic services and health should ostensibly lead to higher economic growth and lower poverty. If increased spending, particularly in these specific components, does not lead to increased development, then this strengthens our claim that waste and corruption are driving the spending result.

5.3   Testing H3: Horizontal Dynasties and Economic Development

We now empirically test the relationship between horizontally dynastic mayors and economic development. The argument posits that in the context of the Philippines—rampant rent-seeking, vote-buying, and clientelism—higher government spending associated with horizontally dynastic mayors does not lead to higher levels of development. Similar to Hypothesis 1, the treatment group (horizontally dynastic mayors) consists of mayors who have relatives simultaneously elected for any of the following: governor, vice governor, mayor, vice mayor or congressperson. The control group then includes mayors who have relatives who failed to get elected (in the same year) for any of the above local positions.

Similar to our previous regressions, we estimate the following model but with the development outcomes as our dependent variable:

$$Development_{it} = \alpha + \beta HD_{ijt} + f(MV_{jt}) + g(MV_{jt}, HD_{ijt}) + \delta_i + \tau_t + \epsilon_{ijt}$$
$$\forall j \ s.t. \ MV_{jt} \in [-h, h]$$

where $Development_{it}$ is either the poverty incidence or (log) night lights in municipality i and year t, and the other variables are defined as before. We also cluster standard errors by province to account for the fact that our treatment is defined at the provincial level.

The results from Table 4 show that horizontal dynasties do not lead to greater economic growth. Columns 1 to 10 mirror the specifications from Table 3. The point estimates are very small and noisy, but suggest that increased government spending

Table 4 HORIZONTAL DYNASTIES AND NIGHT LIGHTS

	Full Sample						Optimal Bandwidth			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Horizontal Dynasty	0.0553	-0.0122	-0.0536	0.00112	-0.0575	-0.0302	-0.00631	0.00997	-0.00506	0.0135
	(0.132)	(0.0309)	(0.148)	(0.0357)	(0.203)	(0.0484)	(0.141)	(0.0518)	(0.143)	(0.0516)
Dep Var Mean	-.484	-.484	-.484	-.484	-.484	-.484	-.508	-.508	-.506	-.506
Municipal FE		×		×		×		×		×
Year FE		×		×		×		×		×
Function	None	None	Linear	Linear	Quadratic	Quadratic	None	None	None	None
Bandwidth	1	1	1	1	1	1	CCT=.18	CCT=.18	IK=.18	IK=.18
Adj. R^2	0.0003	0.2823	0.0012	0.2885	0.0014	0.2901	0.0000	0.3290	0.0000	0.3334
N	1,653	1,653	1,653	1,653	1,653	1,653	725	725	734	734

Note: Robust standard errors clustered at the province level are in parentheses. Dependent variable is log night lights per capita in a municipality or city. Horizontal dynasty is a dummy that takes the value 1 (0) if the mayor's relative wins (loses) the election.

Table 5 HORIZONTAL DYNASTIES AND POVERTY

	Full Sample						Optimal Bandwidth			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Horizontal Dynasty	-1.408	0.0349	-1.689	-1.062	-3.095	-1.071	-3.442*	-1.755	-2.599*	-1.539
	(1.260)	(0.800)	(1.593)	(1.037)	(2.281)	(1.390)	(1.920)	(1.744)	(1.530)	(1.439)
Dep Var Mean	33	33	33	33	33	33	34.3	34.3	34.5	34.5
Municipal FE		×		×		×		×		×
Year FE		×		×		×		×		×
Function	None	None	Linear	Linear	Quadratic	Quadratic	None	None	None	None
Bandwidth	1	1	1	1	1	1	CCT=.14	CCT=.14	IK=.21	IK=.21
Adj. R²	0.0016	0.3789	0.0032	0.3850	0.0055	0.3864	0.0093	0.4068	0.0053	0.3627
N	1,194	1,194	1,194	1,194	1,194	1,194	422	422	580	580

Note: Robust standard errors clustered at the province level are in parentheses. Dependent variable is poverty incidence in a municipality or city. Horizontal dynasty is a dummy that takes the value 1 (0) if the mayor's relative wins (loses) the election.

does not lead to policies and projects that are conducive to wealth accumulation. Similar to the previous specifications, Table 5 shows the results with poverty rates as the dependent variable. Similarly, we see that horizontal dynastic status does not cause a reduction in poverty.

The takeaway is that horizontal dynastic status leads to higher levels of government spending but not to higher levels of development. In particular, the results suggest that increased spending is potentially driven by corruption and rent-seeking.

To test the RD's identifying assumptions, we augment our previous test for covariate balance to include the night lights and poverty variable. We find that covariate means are smooth around the cutoff (see Figure D2). In addition, we check for potential manipulation using the McCrary (2008) test and find no evidence of manipulation (see Figure D5).[17]

6   Identification Checks

6.1   Political Parties and Political Dynasties

Despite the significant effects documented in the previous sections, it is possible that what is driving our results is not horizontal dynastic status *per se*, but the fact that members of the same family are more likely to belong to the same party. Party alignment may also serve to align preferences, induce coordination, and increase government spending in the municipality (Aldrich, 1995). To address this concern, we include a control for whether the dynasty pair belongs to the same party or not. As the results in Table 3 Panel B show, being in the same party does not matter, or

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[17]As before, we also perform an OLS analysis for both development outcomes and show that results mirror those in the RD design. The results are shown in Tables E2 and E3.

when it does, the effect of family similarity is not diminished and remains statistically significant. This result corroborates our first hypothesis: horizontally dynastic mayors spend more than non-dynastic mayors, even after controlling for belonging to the same party.

Apart from the statistical results, there are conceptual reasons as to why parties do not serve as vehicles for coordination in the context of the Philippines. Parties in the Philippines have low levels of party institutionalization, little differentiation between parties in terms of ideology, and fleeting alliances of convenience rather than stable unions of like-minded politicians (Hicken, 2009; Montinola, 1999). In particular, these fleeting alliances of convenience suggest that politicians from the same party cannot work together over policy because they cannot trust that their preferences will be aligned throughout the span of the policy. For example, two politicians from the same party may agree to build a road, but one politician may jump to a rival party in the middle of road construction. This would potentially prevent the road from being completed, and in the case of a rent-seeking politician, potentially prevent extraction from taking place.

6.2   Local Resources and Family Networks

To test the claim that preference alignment, and not village networks or brand name advantage, is driving our results, we use an alternative measure called $FamilyNetworks_{it}$, which measures the number of family members who run for office as a control variable augmenting the panel fixed effects regression.[18] This measure captures political

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[18]Note that we cannot test this mechanism using the RDD where our sample is limited to two-member dynasties. For this test, we make use of panel fixed effects regression where $HorizontalDynasty_{it}$ is defined as dynasties with two or more members simultaneously holding office.

resources because it takes substantial resources to run for local office while disentangling the effect of actually holding office. This measure does not imply the actual holding of political office—a *necessary* condition for our argument. In Table 6, $FamilyNetworks_{it}$ is either negative or not statistically significant, while the coefficient on $HorizontalDynasty_{it}$ remains positive and statistically significant. This result implies that the effect of dynastic status on spending was being driven by multiple family members explicitly using the powers of political office to forward policy change, rather than through the resources or networks that these families already possessed.

Table 6 LOCAL RESOURCES AND FAMILY NETWORKS

	(1)	(2)	(3)	(4)
Horizontal Dynasty	0.117***	0.219***	0.0181**	0.0268***
	(0.0302)	(0.0352)	(0.0075)	(0.0090)
Family Networks		-0.0736***		-0.0077
		(0.0134)		(0.0052)
Dep Var Mean	7.06	7.06	7.06	7.06
Municipal FE			×	×
Year FE			×	×
Adj. R^2	0.0028	0.0074	0.897	0.897
N	12,220	12,220	12,220	12,220

Note: Robust standard errors clustered at the province level are in parentheses. Dependent variable is log spending per capita in a municipality or city. Horizontal dynasty is a dummy that takes the value 1 (0) if the mayor's relative wins (loses) the election. Family networks is the number of members in a political dynasty who run for any local office within the province.

This result synergizes well with existing results, also on the Philippines, that emphasize the importance of political networks for politicians' electoral success. (Cruz, 2019; Cruz et al., 2017). These papers argue that politician-voter networks facilitate political exchange, group monitoring and clientelism. This result builds on these pa-

pers by noting a potential limitation of political networks. We show that intra-family elite networks do not necessarily lead to preferred policy when one member of the family is not in power. Resources or innate ability may not be enough; what is needed is an institutional means to affect policy.

In Appendix G, we discuss the potential role that other alternative mechanisms—politician experience and state capacity—could be playing in our results. Reassuringly, we find that neither of these mechanisms is driving our results.[19]

7   Conclusion

This paper has argued that horizontally dynastic Philippine mayors increase levels of government spending. This result is being driven by mayor-vice mayor horizontal linkages, which suggest that the mechanism behind increased spending is the removal of institutional constraints. But increases in spending do not lead to higher levels of development, indicating that spending may be a source of rent extraction. We tested this argument's implications by using a regression discontinuity design leveraging close elections for local political office. Our results show that: (i) horizontally dynastic mayors have higher levels of spending than non-dynastic mayors, (ii) direct institutional constraints are a relevant mechanism mediating the above result, and (iii) horizontally dynastic mayors do not lead to higher levels of development in terms of economic growth or lower poverty.

Although empirically specific to the Philippines, the argument provides a general framework exploring how horizontal political dynasties navigate the constraints foisted upon politicians by political conflict. If political actors can organize themselves

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[19]Replication materials and code can be found at Dulay and Go (2021).

in social groups that (i) share similar preferences over political goals and (ii) concurrently hold positions of political power, then these groups may be able to strategically place themselves across various political positions in a way that undermines formal checks and balances. Potential scope conditions for our argument include: (i) different political offices with the potential for political conflict due to politicians' potentially divergent preferences, and (ii) the weakness or inability of formal institutions, such as political parties, to coordinate behavior across offices.

This paper builds on a growing body of work on the consequences of political dynasties. We contribute to this literature by examining how the link between a dynasty's horizontal structure interacts with the formal rules of the political system to facilitate policymaking. We also build on literature specific to the Philippines emphasizing the role of political networks in enabling political goals. We add to this literature by emphasizing the role of formal rules and how they interact with (dynastic) political networks.

Although we have explored an argument of how dynasties function, more work needs to be done on this topic. For example, it would be fruitful to consider how dynastic strength affects economic and political outcomes. Furthermore, existing research has not yet examined the causes or consequences of dynastic prevalence across forms of government. The potential differences between dynastic functioning in strong and weak democracies, or in autocracies, is still a relatively unexplored area, especially in the theoretical sense. Ultimately, understanding informal political structures like political dynasties provides us with a deeper comprehension of the ecosystem of organizations that politicians form to circumvent or aid formal institutions like political parties, providing us with a richer appreciation of the dynamic elements of

politics.

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Online Appendix A: Key Horizontal Relationships

This subsection examines the horizontal dynastic relationships most relevant to the mayor. It is worth noting that these relationships are not restricted to the mayor's own municipality. For example, mayors may coordinate with other mayors in the same province. These insights also add credibility to the decision to identify horizontal dynasties at the province (and not municipality) level.

Mayors and Vice mayors: Vice mayors have the capacity to affect a mayor's policy choices. A vice mayor's most general responsibility is to assist the mayor in a variety of ways as the mayor sees fit. According to the LGC, the vice mayor shall *"exercise such other powers and perform such other duties and functions as may be prescribed by law or ordinance"*, which in practice corresponds to what the mayor prescribes. A specific responsibility of interest for this study is to be the presiding officer of the municipal board (LGC Section 445)—the municipality's legislative arm with veto power over the mayor. Vice mayors can thus potentially exert substantial influence over the municipal board's voting patterns. This is a potential legal means by which vice mayors may exert pressure on the mayor when political conflict ensues.[20]

Mayors and Governors: Governors and mayors are another dyadic relationship that often interact in ways that affect the mayor's public spending policies. In many ways governors function like mayors at a higher level of jurisdiction. According to LGC Section 465, governors *"exercise general supervision and control over all programs, projects, services, and activities of the provincial government"*. As the local executive of a similar yet larger jurisdiction, they have their own set of policies to

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[20]A mayor we interviewed provides an example of how vice mayors may facilitate projects. If the vice mayor is a political ally, then they could *"fast track the projects or proposal of the local chief executive, [and] serve a bridge between the mayor and the councilors"*.

implement. As such governors are also subjected to similar political constraints, for example from the provincial legislature. In relation to mayors, one relevant function of governors is the approval of municipal projects. This implies that they have oversight responsibilities over their constituent mayors. In particular, governors approve two types of projects: maintenance and operations projects (such as social services) and capital outlay projects (such as infrastructure). Maintenance projects need to be approved within a specified amount of time, but curiously, capital outlay projects have no specified approval period, and hence may be held in limbo indefinitely. We can see here how governors who are in conflict with their mayors may use their legally provided supervisory power to stifle a mayor's projects.[21]

Mayors and Other Mayors in the Province: Two mayors from different municipalities in the province can, if their interests are aligned, work together to affect each other's government spending choices. This is possible because each mayor has substantial control over the budget, and therefore working with other mayors becomes a matter of whether both are interested in doing business with the other. For example, mayors may coordinate over infrastructural projects, such as roads that go from one municipality to the other. Conversely, the failure of mayors to coordinate may lead to lower levels of government spending. A current pressing issue in the Philippines today is the lack of infrastructure and relevant urban planning in Metro Manila. The major constraint is that mayors fail to coordinate over these infrastructure projects, and hence these projects are yet to be enacted (Talabong, 2019; Vergara, 2019).

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[21]In another interview, it was said that conflict over politics *"may lead to the project just being scrapped. Even if there is an approved appropriation, if the governor does not sign the papers, it will just never get done"*. Another mayor echoes this sentiment: *"I am in conflict with the governor because I allied with his opponent. I cannot get projects from him...No funds for events. Funding goes to political allies."*

Online Appendix B: Statistics by Political Office

Table B1 ELECTION VARIABLES, BY POLITICAL OFFICE

	Number of Candidates		HHI		
Position	Mean	Std. Dev.	Mean	Std. Dev	N
Vice Mayor	2.976	1.591	0.498	0.197	12,891
Mayor	2.897	1.504	0.535	0.194	12,891
Congressperson	3.530	1.972	0.543	0.200	1,691
Vice Governor	3.190	1.669	0.506	0.196	625
Governor	3.458	1.704	0.532	0.182	625

Note: The table shows the number of candidates and the Herfindahl Hirschman Index (HHI) for each position's election. In this case, the HHI is defined as the sum of squared vote shares, ranging from 0 (highly competitive) to 1 (highly concentrated).

Table B2 PAST POSITIONS OF CURRENT POLITICIANS, BY POLITICAL OFFICE

Past / Current	Vice Mayor	Mayor	Congress-person	Vice Governor	Governor
Vice Mayor	0.912	0.164	0.001	0.001	0.000
Mayor	0.334	0.849	0.016	0.008	0.004
Congressperson	0.058	0.184	0.831	0.058	0.126
Vice Governor	0.088	0.451	0.076	0.659	0.043
Governor	0.024	0.220	0.365	0.149	0.697

Note: The matrix shows the current positions on the first column and the proportion of these politicians occupying the respective past positions on the first row.

Online Appendix C: Identifying Dynastic Relations

How do we identify family members given our data? For some existing studies, identification follows naturally from definition given the availability of data. For example, Folke et al. (2017a) and Eggers and Hainmueller (2009) use birth registers and historical biographies to identify family connections. However, in the absence of high quality data, we exploit naming conventions to identify dynastic relations (as is common in the literature in developing countries).

In the Philippines, the naming tradition is as follows:

$$given\_name \quad middle\_name \quad last\_name$$

The given name may consist of one or more names. Although the middle name is used as in the United States, the main difference is that it must be the mother's maiden name. The middle name is not considered a surname, and the mother's maiden name comes before the father's surname. In the Philippines, only the last name, which comes from the father's last name, is considered an individual's surname. When males get married, no change occurs in their names.[22]

Following the existing literature, we identify family networks via a matching procedure where individuals with identical surnames residing in the same province are considered related. Two errors associated with this method: (i) false negatives and (ii) false positives.

The issue of false negatives is not very problematic in that a dynasty that is not identified only makes it harder to detect a significant effect. If one believes that dynasties are better (worse) in a particular outcome, then being identified as non-dynasty decreases (increase) the point estimate. In both cases, the effect is attenuated

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[22]For females, however, the usual practice is to take on the spouse's last name.

and serves as the lower (upper) bound of the true parameters. Another reason why this does not pose a significant problem is that married women who are part of a dynasty normally use the name that provides greater electoral advantage.[23]

The issue of false positives is that if there are many common last names within a province, then there would be substantial errors in how we identify dynasties. Compared to other countries, we argue that this is not a major issue for the Philippines, because the modal surname accounts for only 0.32% of all last names.[24] Moreover, Querubin (2016) recounts that in 1849, Spanish officials, concerned with the arbitrary selection of surnames by Filipinos, assigned different names to different family heads in each town. This led to a catalog of about 61,000 different surnames.[25] Although this may not completely eliminate concerns over correctly identifying dynasties, we believe that in the Philippines the concern of incorrectly matching last names is greatly ameliorated.

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[23]For example, the Binay dynasty has ruled the city of Makati from 1986 until the present, where several family members have simultaneously and sequentially held office as mayor, vice mayor and congressperson. The current mayor of Makati is Abigail Binay-Campos, who does not use her husband's last name in campaigns and other election-related documents. In the dataset, she is listed as Abigail Binay, her maiden name. On the contrary, consider Lucy Torres-Gomez, wife of Richard Gomez, a popular actor in Philippine show business. Given the prominence of her husband, she has constantly used her hyphenated surname in campaigns and other paraphernalia. She appears as Lucy Torres-Gomez in the dataset and therefore is considered a member of the Gomez dynasty in Ormoc City.

[24]Fafchamps and Labonne (2017) note that in other Asian countries, modal last names are more common: China (7.25%), India (5.5%), Taiwan (11%) and Vietnam (38%).

[25]Querubin (2016) explains in detail the historical account of name distribution in the Philippines.

Online Appendix D: Robustness Checks

Figure D1 Balance of Predetermined Variables - Dynasty (H1)

(a) Dynasty: Any Position

(b) Dynasty: Governor

(c) Dynasty: Vice Governor

(d) Dynasty: Mayor

(e) Dynasty: Vice Mayor

(f) Dynasty: Congressperson
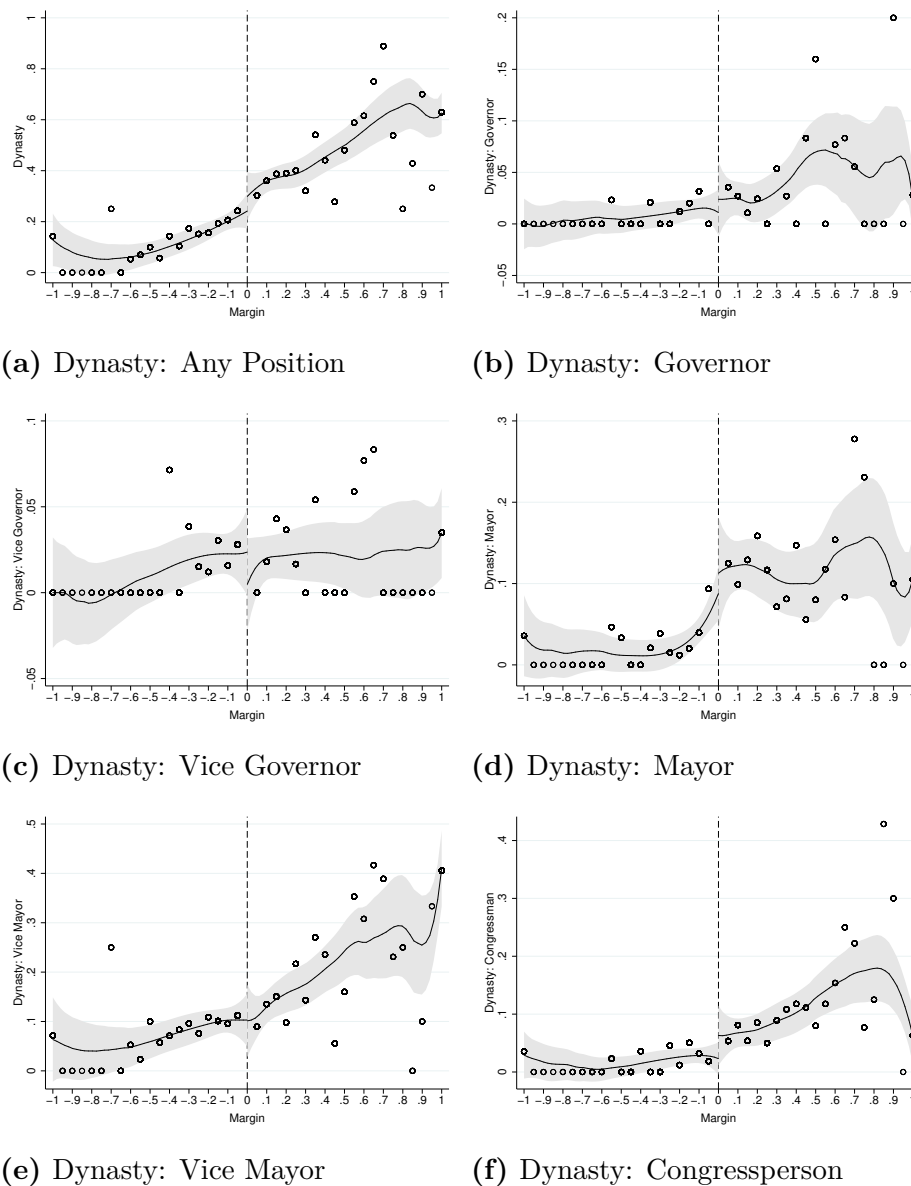
Note: The panels represent different dynastic variables with respect to each local position. Horizontal axis shows the vote margin of the winning mayor's relative running for another local office. Each circle corresponds to the unconditional mean within 0.05 intervals of the vote margin. Solid lines are smoothed local polynomials on either side of the discontinuity. The shaded gray areas are the 95% confidence intervals.

Figure D2 BALANCE OF PREDETERMINED VARIABLES (H1)

(a) Spending per capita (log)

(b) Poverty

(c) Night Lights

(d) Term

(e) Number of Candidates

(f) Party Affiliation

(g) Voter Turnout

(h) Urban

(i) Land Area

(j) Population
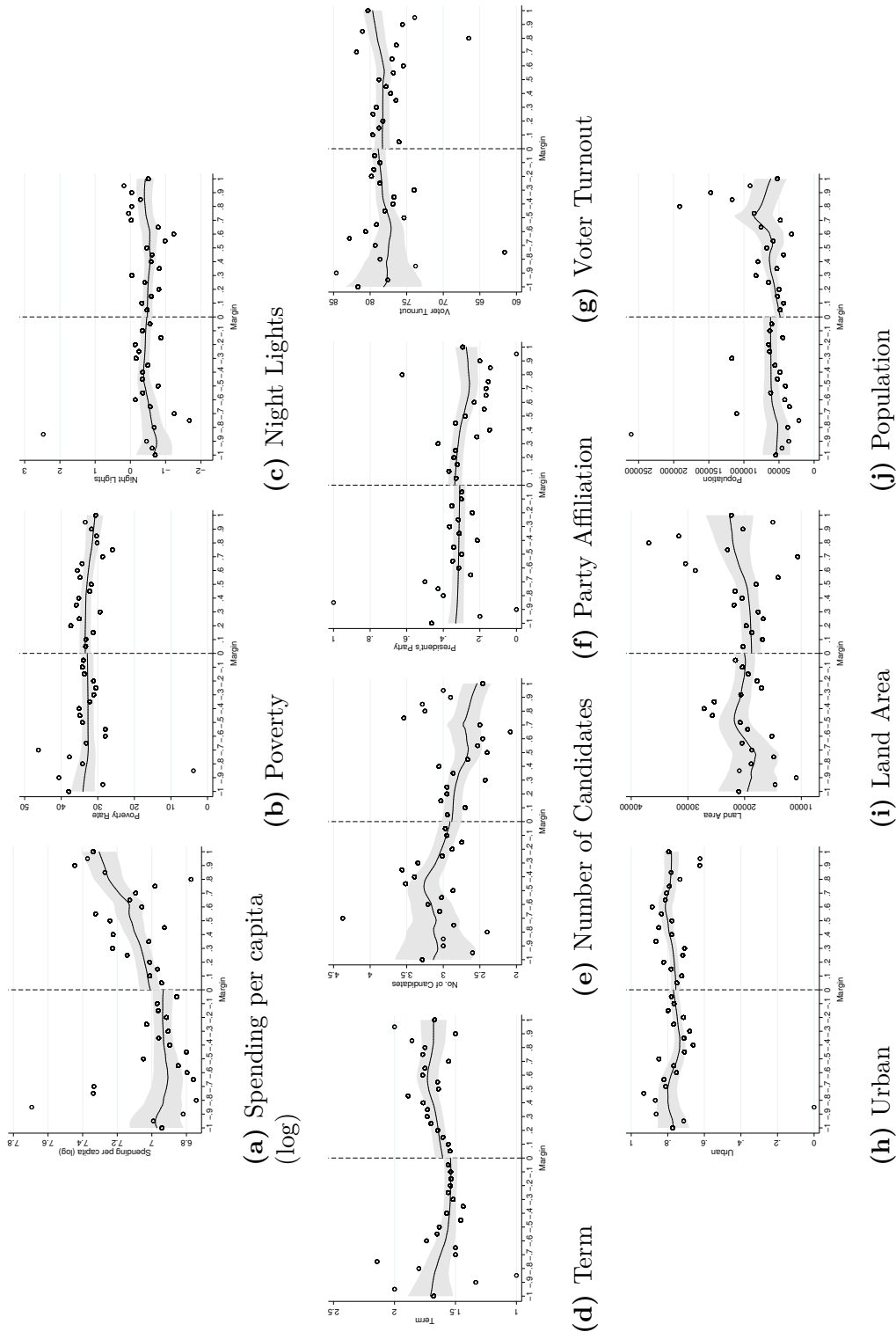
Note: The panels represent different variables including the lagged dependent variable, politician's term, election-related variables and demographic/geographic variables. Horizontal axis shows the vote margin of the winning mayor's relative running for another local office. Each circle corresponds to the unconditional mean within 0.05 intervals of the vote margin. Solid lines are smoothed local polynomials on either side of the discontinuity. The shaded gray areas are the 95% confidence intervals.

Figure D3 FORCING VARIABLE HISTOGRAM, BY DYNASTIC LINKAGE (H1)
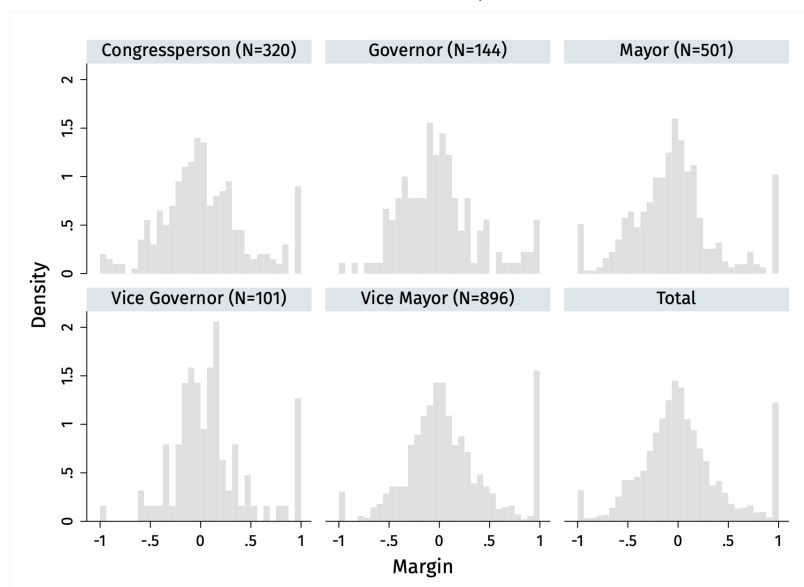
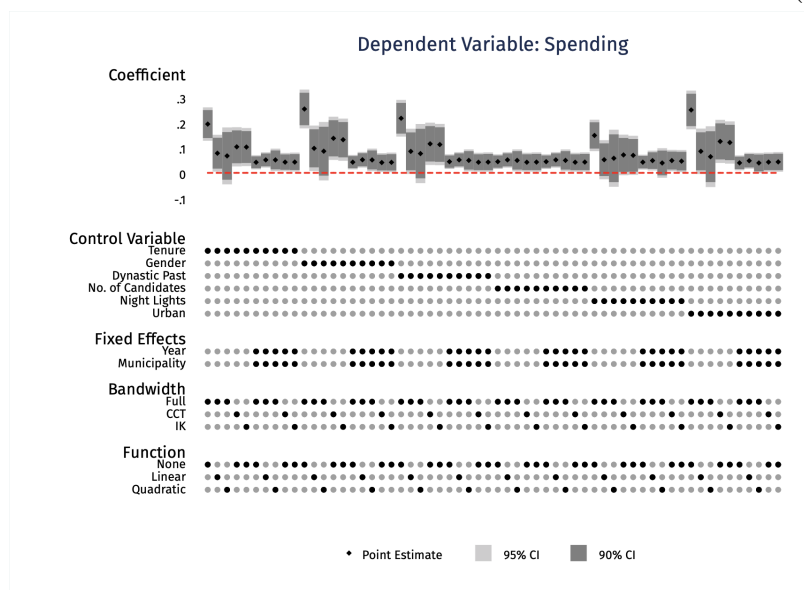*Note:* The figure shows the histograms of the forcing variable (i.e. vote margin), separately for each political office that the mayor's relative ran for: congressperson, governor, mayor, vice governor and vice mayor. The histogram of the entire sample is also presented.

Figure D4 SPECIFICATION CHART BY CONTROL VARIABLE - RD (H1)

Note: The figure shows the coefficient on horizontal dynasty for different specifications: (i) adding control variables, (ii) including fixed effects, (iii) choosing different bandwidths, and (iv) using functions of the forcing variable. The dependent variable is municipal spending per capita (log). The control variables are: tenure (total years in politics), gender of the mayor, whether the mayor was dynastic in the past, number of candidates, night lights and the urbanity of the municipality.

Table D1 STATISTICS, BY DYNASTIC LINKAGE

	Congressperson	Governor	Mayor	Vice Governor	Vice Mayor
Spending	7.45	7.39	7.42	7.5	7.46
	(.525)	(.484)	(.464)	(.531)	(.48)
Poverty	25.2	27.9	30.1	30.3	28.9
	(17.4)	(16.8)	(16.5)	(13.8)	(16.1)
Night Lights	.257	-.169	-.624	-.598	-.525
	(2.1)	(2.1)	(1.73)	(1.68)	(1.68)
Population	127,786	100,498	47,431	50,967	47,710
	(181,551)	(156,658)	(43,241)	(56,552)	(89,273)
Land Area	18,472	25,511	23,432	18,855	18,095
	(18,303)	(25,101)	(24,475)	(14,569)	(21,600)
Urban	.662	.711	.792	.796	.778
	(.38)	(.353)	(.271)	(.283)	(.279)
Voter Turnout	78	77	79.4	79	79.3
	(7.19)	(9.15)	(8.71)	(6.66)	(9.11)
Party Affiliation	.326	.292	.407	.316	.334
	(.47)	(.459)	(.493)	(.471)	(.472)
Term	1.77	1.65	1.9	1.95	1.77
	(.816)	(.729)	(.77)	(.868)	(.8)
Tenure	5.39	3.81	5.15	4.82	5.37
	(4.68)	(3.95)	(3.85)	(3.38)	(4.39)
Sex	.773	.708	.869	.711	.777
	(.421)	(.459)	(.339)	(.46)	(.417)

Note: Municipal-level and mayor-specific variables are presented by dynastic linkage or the relative's position. Computed for each subsample, means are shown across each variable, and the standard deviation is in parentheses.

Figure D5 McCrary Density Test (H3)
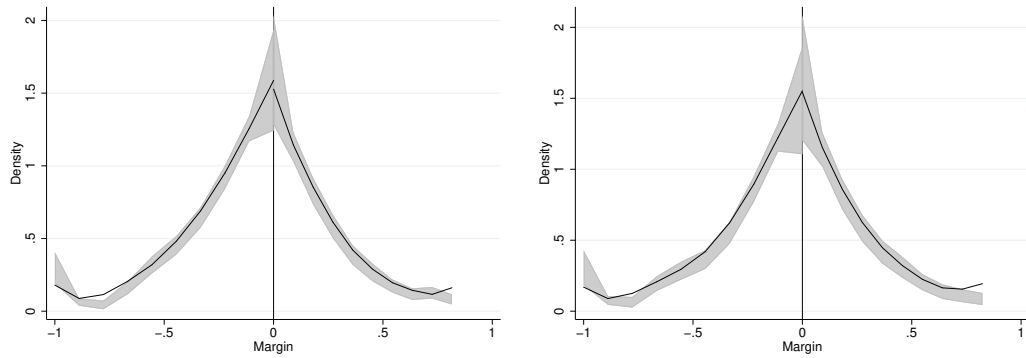
(a) Night Lights **(b)** Poverty Incidence

Note: The figure shows the McCrary (2008) test for discontinuity in the density of observations around the vote margin threshold. The formal test cannot reject the null of a continuous density around the cutoff, where the magnitude of the discontinuity is very close to zero and is not statistically significant (p-values = 0.626, 0.816).

Online Appendix E: Addressing Generalizability with OLS

To address these outstanding limitations and assess the generalizability of our theory, we perform a simpler analysis on a panel OLS, using the same specifications, with and without fixed effects and controls. Moving away from the RD model, we test the relationship between the *size* of the horizontal dynasty (i.e. number of family members in local office concurrently with the dynastic mayor) and municipal spending. Now, we are able to consider several definitions of horizontal dynasty. First, we define $HD(Linear)$ as the number of related incumbent politicians in a province at the same election year, a discrete variable greater than or equal to one. When $HD(Linear) = 1$, the politician is non-dynastic, and when $HD(Linear) > 1$, the politician is horizontally dynastic. Second, we define $HD(1\ vs. > 1)$ as a dummy variable which equals 1 if $HD(Linear) > 1$ and equals 0 if $HD(Linear) = 1$. Third, we limit the sample to dynasties with exactly two members in office and define $HD(1\ vs.\ 2)$ as a dummy variable equal to 1 if $HD(Linear) = 2$ and 0 if $HD(Linear) = 1$. Finally, we further restrict our sample to families that field exactly two candidates in different positions, and define $HD(1\ vs.\ 2, limit)$ as a dummy variable equal to 1 if $HD(Linear) = 2$ and 0 if $HD(Linear) = 1$. From the first to the last definition, we start from the universe of all mayors to confining our sample to more closely resemble the RD sample.

Using a simpler OLS model is the appropriate method to test our extensions because it allows us to explicitly examine the effect of the number of family members on spending as well as whether our results hold on the full sample of mayors. While these results are not causal, we control for a variety of potential confounding factors,

such as term, tenure, gender, past dynastic status, party affiliation and urbanity.

The basic specification we use is as follows:

$$Spending_{it} = \alpha + \beta HorizontalDynasty_{ijt} + \delta_i + \tau_t + \epsilon_{ijt}$$

where $Spending_{it}$ is (log) government spending per capita in municipality i and year t, $HorizontalDynasty_{ijt}$ is any of the four definitions above, and δ_i and τ_t are municipality and year fixed effects. Again, we cluster standard errors by province.

The results are displayed in Table E1. For all definitions of horizontal dynasty, we see that coefficients of interest are statistically and economically significant. For example, considering $HD(Linear)$, we see that larger dynasties have higher municipal spending, around 2-6% higher for an additional family member in office. Next, $HD(1\ vs. > 1)$ shows that horizontally dynastic mayors spend 2-13% higher than their non-dynastic counterparts. The results are similar even if we restrict the sample to two-member dynasties given that they comprise a significant majority of the total dynastic pool. Finally, limiting the sample further to families fielding exactly two candidates, we see an almost doubling of the effects. Similar to the RD design, we observe similar patterns for models with (without) fixed effects having smaller (larger) coefficients.

To show robustness of the OLS model, Figure E1 shows that the panel OLS is likewise robust to the inclusion of the control variables. Reassuringly, all these results are consistent with those using the RD design. Overall, we see that the OLS results support the theory's generalizability.

Table E1 HORIZONTAL DYNASTIES AND SPENDING (OLS)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Horizontal Dynasty (Linear)	0.0633***	0.0194***						
	(0.0189)	(0.00521)						
Horizontal Dynasty (1 vs. >1)			0.127***	0.0188**				
			(0.0300)	(0.00725)				
Horizontal Dynasty (1 vs. 2)					0.117***	0.0181**		
					(0.0302)	(0.00750)		
Horizontal Dynasty (1 vs. 2, limit)							0.228***	0.0475***
							(0.0391)	(0.0128)
Dep Var Mean	7.07	7.07	7.07	7.07	7.06	7.06	7.09	7.09
Municipal FE		×		×		×		×
Year FE		×		×		×		×
Adj. R²	0.0038	0.897	0.0041	0.896	0.0028	0.897	0.0252	0.881
N	12,728	12,728	12,728	12,728	12,220	12,220	2,163	2,163

Note: Robust standard errors clustered at the province level are in parentheses. Dependent variable is log spending per capita in a municipality or city. Horizontal dynasty can be: (i) 'linear' - the number of politicians in a family, an integer greater than or equal to one, (ii) '1 vs. >1' - a dummy for whether there are two or more politicians in a family or just a lone politician, (iii) '1 vs. 2' - a dummy for whether there are two politicians in a family or just a lone politician, and (iv) '1 vs. 2, limit' - a dummy for whether there are two politicians or just a lone politician in a family with exactly two members.

Table E2 HORIZONTAL DYNASTIES AND NIGHT LIGHTS - OLS

|	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Horizontal Dynasty (Linear)	0.0680	0.00933						
	(0.0516)	(0.0129)						
Horizontal Dynasty (1 vs. >1)			0.248***	0.00364				
			(0.0709)	(0.0153)				
Horizontal Dynasty (1 vs. 2)					0.287***	-0.00460		
					(0.0675)	(0.0157)		
Horizontal Dynasty (1 vs. 2, limit)							0.166	-0.0220
							(0.136)	(0.0311)
Dep Var Mean	-.76	-.76	-.76	-.76	-.763	-.763	-.548	-.548
Municipal FE		×		×		×		×
Year FE		×		×		×		×
Adj. R^2	0.0007	0.2359	0.0028	0.2358	0.0030	0.2348	0.0022	0.2760
N	11,188	11,188	11,188	11,188	10,777	10,777	1,853	1,853

Note: Robust standard errors clustered at the province level are in parentheses. Dependent variable is log night lights per capita in a municipality or city. The horizontal dynasty variable is defined as follows: (i) HD(Linear) - the number of related incumbent politicians in a province at the same election year, (ii) HD(1 vs. >1) - an indicator equal to one if there are two or more related incumbent politicians or zero if there is only one incumbent politician in the family within the province, (iii) HD(1 vs. 2) - an indicator equal to one if there are exactly two related incumbent politicians or zero if there is only one incumbent politician in the family within the province, and (iv) HD(1 vs. 2, limit) - an indicator equal to one if there are two related incumbent politicians or zero if there is only one incumbent politician in the family within the province. This last definition limits the sample to families with exactly two members running for two local positions.

Table E3 HORIZONTAL DYNASTIES AND POVERTY - OLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Horizontal Dynasty (Linear)	1.226 (1.119)	0.237 (0.377)						
Horizontal Dynasty (1 vs. >1)			-1.336 (1.443)	-0.253 (0.382)				
Horizontal Dynasty (1 vs. 2)					-3.104*** (0.854)	-0.137 (0.391)		
Horizontal Dynasty (1 vs. 2, limit)							-2.883** (1.370)	-0.198 (0.696)
Dep Var Mean	35.8	35.8	35.8	35.8	35.6	35.6	33.8	33.8
Municipal FE		×		×		×		×
Year FE		×		×		×		×
Adj. R^2	0.0028	0.3956	0.0007	0.3956	0.0032	0.3977	0.0064	0.4035
N	8,021	8,021	8,021	8,021	7,684	7,684	1,355	1,355

Note: Robust standard errors clustered at the province level are in parentheses. Dependent variable is poverty incidence in a municipality or city. The horizontal dynasty variable is defined as follows: (i) HD(Linear) - the number of related incumbent politicians in a province at the same election year, (ii) HD(1 vs. >1) - an indicator equal to one if there are two or more related incumbent politicians or zero if there is only one incumbent politician in the family within the province, (iii) HD(1 vs. 2) - an indicator equal to one if there are exactly two related incumbent politicians or zero if there is only one incumbent politician in the family within the province, and (iv) HD(1 vs. 2, limit) - an indicator equal to one if there are two related incumbent politicians or zero if there is only one incumbent politician in the family within the province. This last definition limits the sample to families with exactly two members running for two local positions.

Figure E1 SPECIFICATION CHART BY CONTROL VARIABLE - OLS (H1)
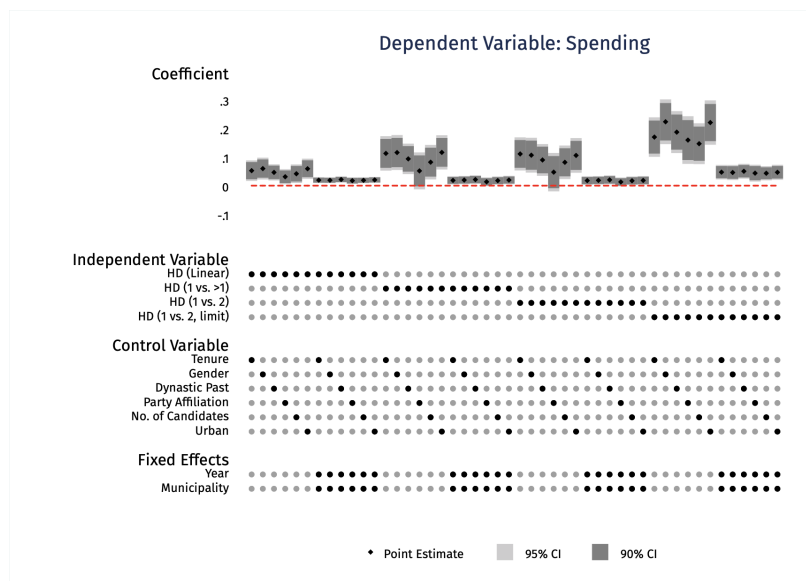
Note: The figure shows the coefficient on horizontal dynasty for all four definitions: (i) HD(Linear), (ii) HD(1 vs. >1), (iii) HD(1 vs. 2), and (iv) HD(1 vs. 2, limit). The control variables are: tenure (total years in politics), gender of the mayor, whether the mayor was dynastic in the past, party affiliation, number of candidates and the urbanity of the municipality.

Online Appendix F: Horizontal Dynasties and Preference Alignment

We now empirically test for preference alignment across political offices for horizontal and non-horizontal dynasties. Institutionally, the natural progression in political ranks is most commonly observed among vice mayors vying to become mayors.[26] Given our focus on municipal-level analysis, we consider only mayor and vice mayor (MVM) pairs because this provides us with (i) a clear test of preference alignment, as mayors and vice mayors often engage in political conflict over the office of the mayor[27], (ii) a larger sample size to test this hypothesis[28], and (iii) methods and analyses consistent with those in the empirical section.

Finding an appropriate dependent variable to indicate preference alignment is difficult for a few reasons. First, conflict between political offices is difficult to measure directly. Second, different dyadic relationships may differ in the ways that conflicts manifest themselves.[29] Ideally, we would hope to obtain a more direct measure of conflict between politicians—number of bills passed, whether projects were delayed

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[26]In fact, around 33% of mayors were vice mayors in the past, making the vice mayor position a stepping stone to becoming a mayor.

[27]The emphasis on this particular dyadic pair stems from the need to capture the type of political conflict that best embodies our argument. For example, gubernatorial contests between incumbent mayors and governors are a much more selected sample from the pool of electoral challenges. When a municipal mayor challenges the provincial governor, this is a signal that the mayor has high *'politician quality'*, broadly defined, and therefore is not representative of the conflict we are interested in. The same is true for electoral contests between mayors and congresspersons, and mayors and vice governors.

[28]Among horizontal dynasties that have exactly two members (one of which is the incumbent mayor), 46% are MVM pairs.

[29]For example, for mayors and vice mayors, conflicts arise through the vetoing of ordinances by the municipal board, whereas for the governor and the mayor, conflict may manifest itself through governors using their supervisory powers over the mayors in their province to stifle the mayor's policy changes.

or canceled, and the like. Unfortunately, this data is extremely difficult to collect at the municipal level. We instead measure conflict by focusing on the ultimate outcome of this conflict—contests over political office. Our dependent variable is therefore whether the vice mayor and mayor face each other for the mayoral position in the next election. Preferences are aligned if vice mayors do not challenge for the mayor's office; preferences are not aligned if they do. Challenges between the mayor and the vice mayor are the most literal and direct indicators of conflict over political office because they directly speak to divergent preferences over who holds political power.

We acknowledge that this is an imperfect measure of preference alignment. More direct measures, such as transcripts of meetings between the mayors and other politicians, or actual records of vetoed spending, are unavailable. Many municipalities state that they do not have these records. While imperfect, we believe that this measure is suggestive of underlying preference alignment and is our best effort, given data constraints, at capturing this concept.

In this case, the ideal experiment is to randomly assign MVM pairs that belong to the same or different families to similar municipalities and observe whether this affects the likelihood that a vice mayor challenges the mayor in the succeeding election. Electing a MVM who both belong to one family is largely an endogenous process. For example, municipalities that have political leaders who are related to each other might be a result of uncompetitive elections which in turn lead to less conflict in political office. Again, using relatives' close elections skirts around this endogeneity issue. Because the dependent variable is the likelihood that the vice mayor runs for mayor in the next election, we use the vice mayor as the reference politician. We

compare vice mayors whose relatives barely win mayoral elections (making the MVM pair come from the same family) with those whose relatives barely lose (making the MVM pair come from different families) and examine the effect on the vice mayor's decision to run for mayor in the succeeding election.

For this test, we only consider the sample of vice mayors with relatives simultaneously running for mayor. Among those with mayoral relatives, we only include mayors who are not term-limited and run again for mayor. Limiting our sample to these 246 vice mayors assures us that there is real conflict between the mayor and vice mayor. The treatment group consists of vice mayors who have relatives simultaneously elected for mayor in the same municipality while the control group includes vice mayors who have relatives running for mayor who failed to get elected in the same year.

As in the previous section, we exploit close elections to test our second hypothesis:

$$RunMayor_{it+1} = \alpha + \beta SameFamily_{it} + f(MV_{it}) + g(MV_{it}, SF_{it}) + \delta_i + \tau_t + \epsilon_{it}$$
$$\forall i \ s.t. \ SameFamily_{it} \in [-h, h]$$

where $RunMayor_{it+1}$ is an indicator for whether the incumbent vice mayor i runs for mayor in election year $t + 1$, $SameFamily_{it}$ is a dummy variable equal to one if a vice mayor's relative wins in election year t, $f(\cdot)$ and $g(\cdot)$ are linear and quadratic functions of the relative's vote margin, as well as the interaction with the $SameFamily_{it}$ dummy, and δ_i and τ_t are municipality and year fixed effects. Standard errors are clustered at the province level as before. The coefficient of interest β is the treatment effect of the mayor and vice mayor being in the same family on the probability of political challenge between the two positions.

Figure F1 shows the decreased likelihood of political challenge when the MVM come from the same family. Due to limited sample size, the points are quite noisy although there is evidence of a discontinuity around the cutoff.

Figure F1 RUNNING FOR MAYOR AND FAMILY SIMILARITY
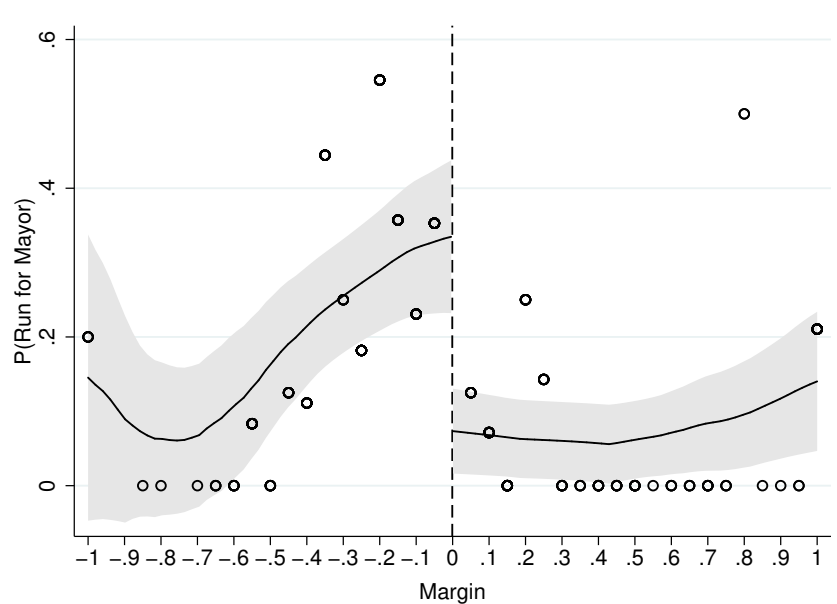
Note: Horizontal axis shows the vote margin of the vice mayor's relative running for mayor, where a positive vote margin implies that the mayor and vice mayor pair belongs to the same family. Each circle is the vice mayor's average probability of running for mayor within 0.05 intervals of the vote margin. Solid lines are smoothed local polynomials on either side of the discontinuity. The shaded gray areas are the 95% confidence intervals.

Table F1 shows that having a MVM pair come from the same family decreases the probability of political challenge (see Panel A). Estimates imply an economically significant impact of family similarity on decreased political conflict.[30] To make sense of the coefficients, if we assume that all non-horizontal dynasties become horizontal dynasties (52% of the sample), then we see a 22 to 29% decrease in the probability of challenging the incumbent, reversing the baseline probability of running for

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[30]As before, results are relatively stable conditional on including or excluding fixed effects. Using the Oster (2017) bounding estimator, we find that our results are fairly stable and robust to the presence of omitted variable bias.

Table F1 Horizontal Dynasties and Preference Alignment Across Political Office

	Full Sample						Optimal Bandwidth			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Basic Specification										
Same Family	-0.155**	-0.431***	-0.315***	-0.501***	-0.287***	-0.126	-0.254***	-0.566***	-0.238***	-0.557***
	(0.0461)	(0.154)	(0.0797)	(0.172)	(0.106)	(0.207)	(0.0649)	(0.146)	(0.0591)	(0.159)
Panel B: Control for Same Party										
Same Family	-0.108**	-0.424***	-0.233***	-0.499***	-0.216**	-0.138	-0.180**	-0.552***	-0.167***	-0.551***
	(0.0446)	(0.148)	(0.0826)	(0.173)	(0.101)	(0.199)	(0.0711)	(0.184)	(0.0635)	(0.196)
Same Party	-0.206***	-0.0248	-0.182***	-0.00437	-0.175***	0.0302	-0.217***	-0.0281	-0.214***	-0.0126
	(0.0521)	(0.1027)	(0.0551)	(0.0995)	(0.0549)	(0.0787)	(0.0789)	(0.1394)	(0.0715)	(0.1497)
Dep Var Mean	.167	.167	.167	.167	.167	.167	.23	.23	.209	.209
Municipal FE		×		×		×		×		×
Year FE		×		×		×		×		×
Function	None	None	Linear	Linear	Quadratic	Quadratic	None	None	None	None
Bandwidth	1	1	1	1	1	1	CCT=.36	CCT=.36	IK=.41	IK=.41
Adj. R²	0.0431	0.2900	0.0816	0.3619	0.0962	0.5391	0.0897	0.5656	0.0837	0.5334
N	246	246	246	246	246	246	140	140	158	158

Note: Robust standard errors clustered at the municipality level are in parentheses. Dependent variable is the incumbent vice mayor's probability of running for mayor in the next election. Same family is a dummy that takes the value 1 (0) if the vice mayor's relative wins (loses) the mayoral election.

non-horizontal dynasties. Simply put, the coefficients are significantly large to deter political challenge when competitors belong to the same family. In sum, the empirical results support our hypothesis. Preference alignment tends to be greater between members of the same political dynasty.
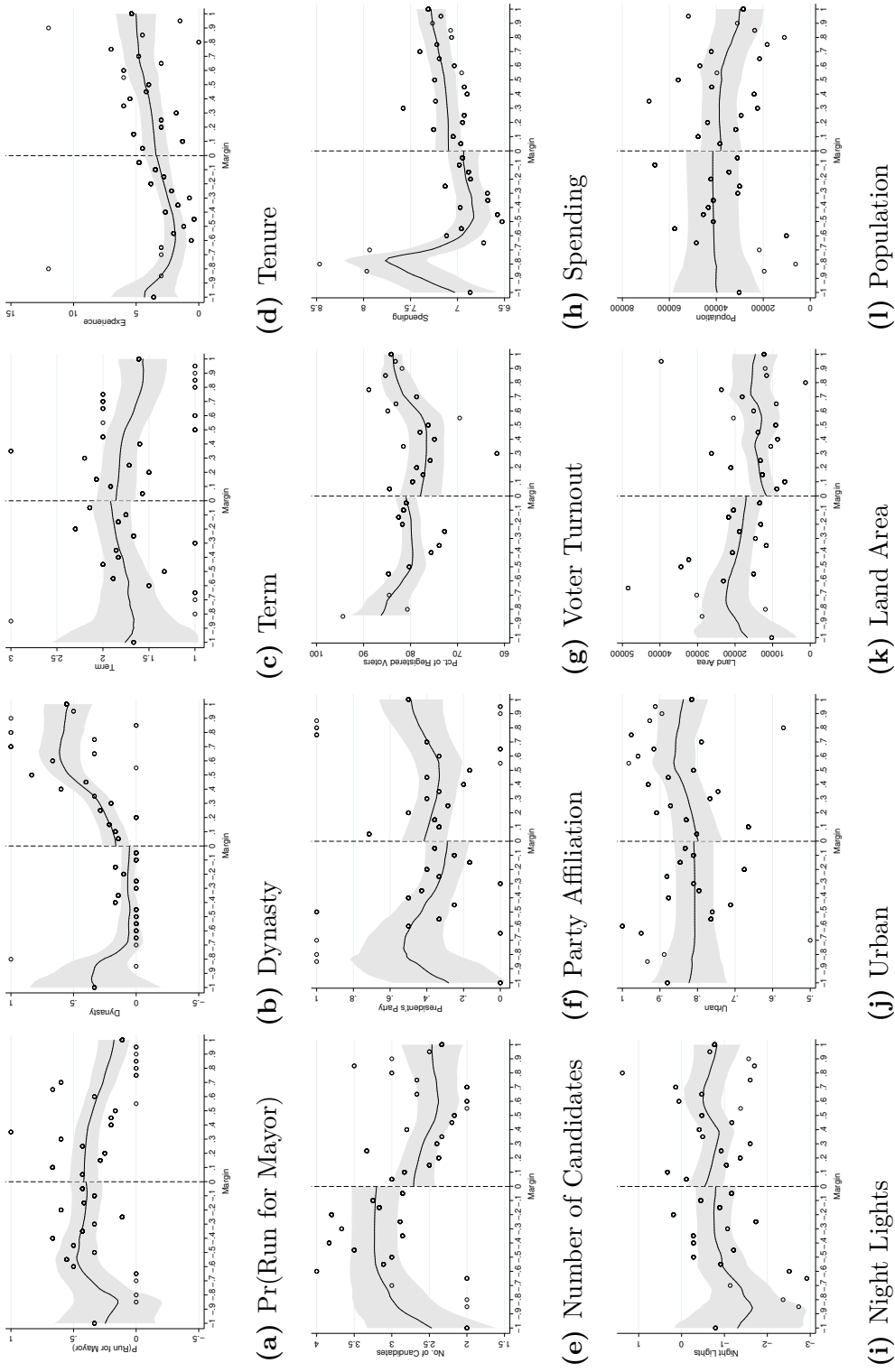
However, competing explanations for our results exist. The dependent variable, whether the vice mayor challenges the mayor, is not a perfect measure for preference alignment. Other alternate mechanisms, that are not necessarily preference alignment, are observationally equivalent to vice mayors being less likely to challenge horizontally dynastic mayors. First, horizontally dynastic mayors may be more able to buy off vice mayors and prevent political challenge. While we cannot categorically reject this alternative interpretation, Figure F2 Panels H and I show that dynastic mayor-vice mayor pairs on average do not come from richer municipalities or do not spend more than their non-dynastic counterparts. Second, vice mayors who contest mayors may simply be of lower quality than those who avoid political conflict. Yet we see that both groups of vice mayors do not differ substantially in terms of number of years in political office, providing some evidence against this alternative channel (see Figure F2 Panel D).

We then check if the identifying assumptions hold. First, we check for manipulation using the McCrary (2008) test and find no evidence of manipulation (see Figure F3). Second, we test for balance on several predetermined variables and find that covariate means are balanced around the cutoff (see Figure F2). Finally, as an additional robustness test, we show that coefficient estimates are stable for a wide range of bandwidths (see Figure F4).

As with the first hypothesis, we may again be concerned that being from the same

family proxies for being in the same party. That is, it is possible that belonging to the same political party, not having kinship ties, is what prevents political conflict due to established party rules (party leaders deciding who to field and disallowing party mates to compete against each other). Results in Table F1 Panel B support our argument: being in the same party generally does not matter, or when it does, the effect of family similarity is not diminished and remains statistically significant.

Figure F2 BALANCE OF PREDETERMINED VARIABLES

(a) Pr(Run for Mayor) **(b)** Dynasty **(c)** Term **(d)** Tenure

(e) Number of Candidates **(f)** Party Affiliation **(g)** Voter Turnout **(h)** Spending

(i) Night Lights **(j)** Urban **(k)** Land Area **(l)** Population

Note: The panels represent different variables including the lagged dependent variable, dynastic status, politician's term and tenure, election-related variables, lagged night lights and demographic/geographic variables. Horizontal axis shows the vote margin of the vice mayor's relative running for mayor, where a positive vote margin implies that the mayor and vice mayor pair belongs to the same family. Each circle corresponds to the unconditional mean within 0.05 intervals of the vote margin. Solid lines are smoothed local polynomials on either side of the discontinuity. The shaded gray areas are the 95% confidence intervals.

Figure F3 McCrary Density Test
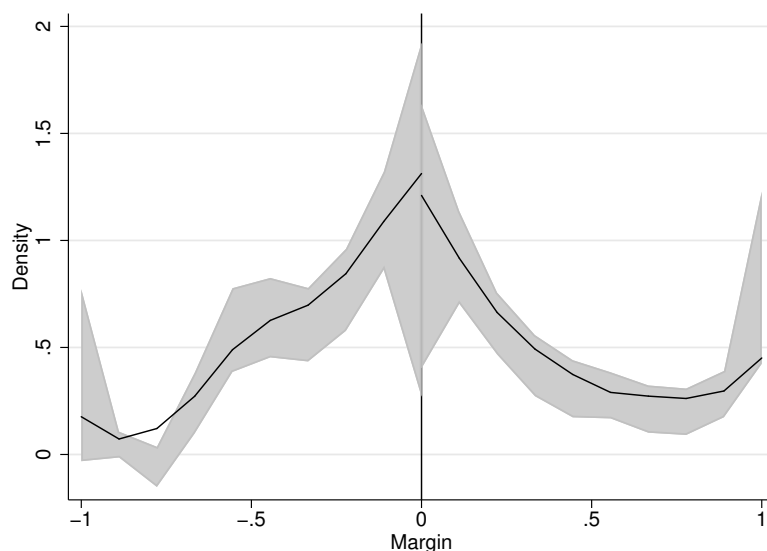
Note: The figure shows the McCrary (2008) test for discontinuity in the density of observations around the vote margin threshold. The formal test cannot reject the null of a continuous density around the cutoff, where the magnitude of the discontinuity is very close to zero and is not statistically significant (*p*-value = 0.888).

Figure F4 Robustness to Alternative Bandwidths
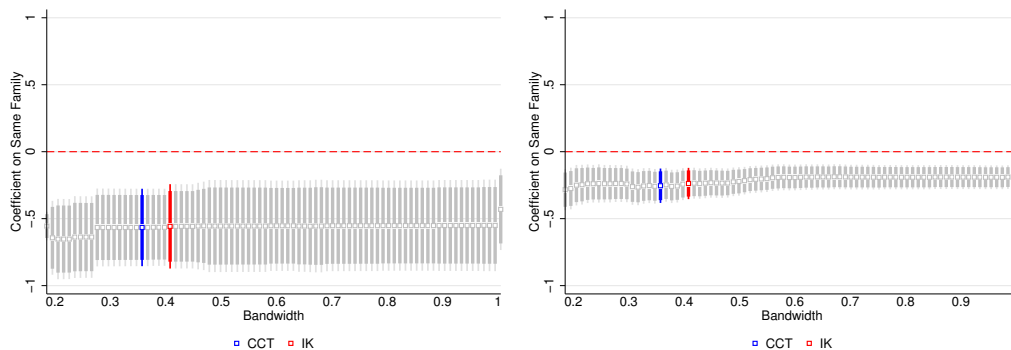
(a) Municipality & Year Fixed Effects   **(b)** No Fixed Effects

Note: Each sub-figure plots the point estimates for different bandwidth values between 0.20 and 1 in 0.01 increments. In Panel A, the coefficients are estimates based on the specification with municipality and year fixed effects. In Panel B, the coefficients are based on the specification without fixed effects. Thin lines stemming from the point estimates show 95% confidence intervals while the slightly thicker lines show 90% confidence intervals. Estimates shown in blue are for the optimal bandwidth proposed by Calonico et al. (2014) ($h = 0.36$) while the estimates shown in red are for the optimal bandwidth proposed by Imbens and Kalyanaraman (2012) ($h = 0.41$)

Online Appendix G: Alternative Mechanisms

Political Experience and Term Limits

Another explanation for why horizontally dynastic mayors lead to higher spending is that they may be more experienced, have more political connections or obtain greater political ability through longer tenure. We construct a variable for whether the mayor is a first termer and see that controlling for political experience does not impact the horizontal dynasty coefficient (see Panel A of Table G1). A similar test is to compare term limited and non-term limited mayors. Results in Panel B show that while for some specifications, term limits are correlated with higher spending, the effect of horizontal dynastic status does not diminish and remains significant. We also control for term more flexibly in Panel C and find similar results. Apart from a politician's term, we also operationalize experience using his/her tenure, the number of years the politician has occupied any political office. In Figure D4, we show that controlling for tenure does not impact our results and that dynastic status remains significant for spending.

State Capacity

Another potential mechanism consistent with our results is state capacity. First, more competent states are able to spend more through a variety of mechanisms: less bottlenecks in the bureaucracy, more efficient generation of local revenues for government projects and potentially higher human capital (Dittmar and Meisenzahl, 2019; Grindle and Hilderbrand, 1995). Second, higher state capacity areas may be less prone to political conflict—rent-seeking politicians have less incentives to extract

in higher quality states because the office has lower economic value.

To address this concern, we control for state capacity and observe the change in the $Horizontal\ Dynasty_{it}$ coefficient. Although it is hard to capture state capacity in a single variable, we follow the existing literature and use the municipality's share of tax revenues in total municipal revenues as our measure for state capacity (Dincecco, 2017). Across all specifications, the coefficient on $HorizontalDynasty_{it}$ from Table G2 is unchanged compared to coefficients in Table 3. State capacity does not seem to matter for spending once we account for horizontal dynastic status.

Table G1 DYNASTIES AND TERMS

	Full Sample						Optimal Bandwidth			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: First-Termer vs. Second/Third Termer										
Horizontal Dynasty	0.241***	0.0433***	0.0849*	0.0533***	0.0701	0.0534**	0.118***	0.0432**	0.116***	0.0434**
	(0.0368)	(0.0147)	(0.0428)	(0.0160)	(0.0585)	(0.0232)	(0.0424)	(0.0190)	(0.0415)	(0.0195)
First Termer	-0.281***	-0.0147	-0.279***	-0.0149	-0.278***	-0.0147	-0.302***	-0.00920	-0.312***	-0.00684
	(0.0255)	(0.0132)	(0.0258)	(0.0132)	(0.0259)	(0.0134)	(0.0435)	(0.0202)	(0.0440)	(0.0194)
Panel B: Term Limited vs. Non-Term Limited										
Horizontal Dynasty	0.249***	0.0427***	0.0932**	0.0521***	0.0853	0.0520**	0.137***	0.0430**	0.133***	0.0432**
	(0.0358)	(0.0146)	(0.0422)	(0.0157)	(0.0573)	(0.0226)	(0.0410)	(0.0186)	(0.0399)	(0.0192)
Term-Limited	0.382***	0.00792	0.374***	0.00768	0.374***	0.00696	0.374***	-0.00627	0.379***	-0.00507
	(0.0260)	(0.0124)	(0.0256)	(0.0125)	(0.0257)	(0.0124)	(0.0424)	(0.0263)	(0.0398)	(0.0252)
Panel C: Terms										
Horizontal Dynasty	0.240***	0.0433***	0.0856**	0.0533***	0.0770	0.0534**	0.123***	0.0439**	0.121***	0.0439**
	(0.0354)	(0.0147)	(0.0416)	(0.0160)	(0.0577)	(0.0231)	(0.0415)	(0.0190)	(0.0406)	(0.0195)
Term: First	-0.192***	-0.0146	-0.193***	-0.0150	-0.193***	-0.0150	-0.228***	-0.0132	-0.236***	-0.0101
	(0.0287)	(0.0136)	(0.0292)	(0.0136)	(0.0293)	(0.0139)	(0.0484)	(0.0231)	(0.0498)	(0.0223)
Term: Third	0.262***	0.000191	0.253***	-0.000236	0.253***	-0.000932	0.234***	-0.0131	0.232***	-0.0102
	(0.0291)	(0.0120)	(0.0288)	(0.0122)	(0.0291)	(0.0121)	(0.0452)	(0.0303)	(0.0439)	(0.0289)
Dep Var Mean	7.09	7.09	7.09	7.09	7.09	7.09	7.05	7.05	7.05	7.05
Municipal FE		×		×		×		×		×
Year FE		×		×		×		×		×
Function	None	None	Linear	Linear	Quadratic	Quadratic	None	None	None	None
Bandwidth	1	1	1	1	1	1	CCT=.2	CCT=.2	IK=.21	IK=.21
Adj. R²	0.0706	0.8791	0.0859	0.8792	0.0860	0.8795	0.0541	0.8673	0.0569	0.8717
N	1,943	1,943	1,943	1,943	1,943	1,943	924	924	962	962

Note: Robust standard errors clustered at the province level are in parentheses. Dependent variable is log spending per capita in a municipality or city. Horizontal dynasty is a dummy that takes the value 1 (0) if the mayor's relative wins (loses) the election.

Table G2 STATE CAPACITY

	Full Sample						Optimal Bandwidth			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Horizontal Dynasty	0.263***	0.0401***	0.103**	0.0524***	0.0864	0.0530**	0.137***	0.0482***	0.133***	0.0462**
	(0.0392)	(0.0136)	(0.0463)	(0.0154)	(0.0591)	(0.0228)	(0.0428)	(0.0184)	(0.0419)	(0.0186)
State Capacity	0.496*	-0.538	0.505*	-0.549	0.504*	-0.561	0.0367	-1.647***	0.0654	-1.494**
	(0.280)	(0.421)	(0.277)	(0.416)	(0.275)	(0.417)	(0.366)	(0.620)	(0.354)	(0.579)
Dep Var Mean	7.09	7.09	7.09	7.09	7.09	7.09	7.05	7.05	7.05	7.05
Municipal FE		×		×		×		×		×
Year FE		×		×		×		×		×
Function	None	None	Linear	Linear	Quadratic	Quadratic	None	None	None	None
Bandwidth	1	1	1	1	1	1	CCT=.20	CCT=.20	IK=.21	IK=.21
Adj. R²	0.0395	0.8801	0.0557	0.8802	0.0557	0.8807	0.0093	0.8752	0.0088	0.8785
N	1,943	1,943	1,943	1,943	1,943	1,943	924	924	962	962

Note: Robust standard errors clustered at the province level are in parentheses. Dependent variable is log spending per capita in a municipality or city. Horizontal dynasty is a dummy that takes the value 1 (0) if the mayor's relative wins (loses) the election. State capacity is the municipality's share of tax revenues in total municipal revenues.