Dynastic Political Rents

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Abstract

We exploit close elections between the right and left bloc in Swedish municipalities to test whether children or siblings of politicians who enter into a top executive position obtain economic benefits. On a restricted sample of relatives who live in the municipality of their politician relative, we find no rents for the siblings of leading politicians, but sizeable rents for children: a parent appointed to the top political executive raises children's' average earnings by about 15 percent. These higher incomes accrue to children at the lower end of the earnings distribution and amount to an average of 10 percent of a full-time median wage. Exploiting administrative information on the children's occupational and residence status, we find that the higher earnings are unlikely to be rooted in an illegitimate allocation of jobs. Instead, children of parents who win an election are more likely than those of political losers to remain in the municipality instead of moving away for schooling.

Keywords: Reward to politics; family ties; rent extraction; local politics

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1. Introduction

"*The obvious starting point for analyzing incentives faced by politicians is to quantify the relative costs and benefits of a career in politics*." (Keane and Merlo 2010)

In this paper, we investigate if top political executives can extend dynastic rents to their close relatives in Sweden. Our paper is one of very few to investigate the personal gains from having family links to powerful politicians. Moreover, we believe that our approach to estimating the gains from relatives in political office has major advantages to those in other recent papers on the same topic.

Recent work on the Philippines by Fafchamps and Labonne (2014) and on Italy by Gagliarducci and Manacorda (2015) approximate kinship links by common last names. We do not have to rely on such approximations, as every citizen in Sweden has a personal ID code, and all children are formally linked to their parents' ID codes at birth. The ID codes for politicians are reported to the electoral agency ahead of every election, giving us a dataset that comprises all elected politicians and their rank order on the party ballot. Each politician can then be linked to administrative records for his or her children and siblings. This procedure creates a balanced panel of annual earnings and employment for the close relatives of all politicians over two decades, 1991-2011. These data are of uniquely good data quality: they are collected from the tax returns of every individual on a yearly basis which lets us differentiate between income generated by employment and business ownership. We can also disentangle potential sources of monetary benefits, e.g., by exploring whether relatives obtain jobs in the public sector.

Amore et al. (2015) also rely on detailed administrative data, although for Denmark. However, they identify the effect of larger political power from a set of municipality mergers, comparing re-elected politicians in merged municipalities with re-elected politicians in non-merged municipalities. This kind of treatment effect raises some questions about interpretation and external validity. Instead, we rely on close elections in Swedish municipalities to allocate positions of power to top-ranked politicians in the ruling party, defined as the party that appoints the top local executive. We then compare the economic outcomes of relatives to ruling politicians with those of relatives to close electoral losers, i.e., top-opposition politicians. Such a treatment effect of political power is more readily interpretable, and more easily extended to other contexts, than one that rests upon the relative size of the local political assembly.

The Swedish case offers similarities and dissimilarities to other countries. In terms of quality of governance, transparency and political stability, Sweden should perhaps be considered at one extreme of the opportunities for political rent-seeking (Transparency International 2013). As

measured in surveys of citizens and politicians, the level of corruption is very low (Wångmar 2013, Dahlström and Sundell 2014). As in most other countries, Sweden's local political assemblies still have substantial economic and political powers, and these powers are largely concentrated in top political executives (Jonsson 2003, Montin 2007). For example, municipalities employ about one fifth of the whole Swedish labor force, most of them in the sectors of child care, elderly care, and K-12 education. The employer responsibility for all these individuals rests with the board appointed by the municipal council, the chair of which is the Swedish equivalent of mayor.

One may also argue that Swedish local political executives have more (formal and informal) leeway in the allocation of public contracts and employment than in some other developed democracies. For example, municipal politicians collectively decide on their own meeting fees and wages.[1] They also determine the size of their own campaign contributions from tax payers. Politicians are actively involved in the procedures to hire civil servants, especially for top jobs in the bureaucracy, and to allocate public contracts, both inside and outside formal local public procurement.[2] The involvement in hiring and contracting may open the door to nepotistic behavior. In a recent survey, 10 percent of local politicians thought that hiring bureaucrats without regard for the person's qualifications was a "very common occurrence" (Dahlström et al. 2014). Practices of public procurement have been criticized for making too high demands on state capacity in the municipal sector, where processes are often inefficient, disorganized and lacking in adequate oversight (SOU 2013).[3]

Our uniquely detailed data allows us to uncover several interesting and novel findings. We find that the relatives of top ranked politicians in the local government make more than relatives of top ranked politicians in the opposition. Our identification strategy suggests that this is a causal effect, rather than an effect of the relatives being different from the start. When we examine this effect in depth, we uncover further interesting results. First, the effect seems to be concentrated to relatives at the lower end of the income distribution. Second, it is the children of the politicians and not their

[1] Svaleryd and Vlachos (2009) show that politicians receive less generous wages in electorally competitive municipalities than in less competitive ones.

[2] Public expenditures at the municipal level account for about one fourth of Sweden's total GDP, and public procurement accounted for roughly 10-15 percent of municipalities' public expenditures in the last decade (SKL).

[3] Municipalities have also been known to bypass the law on public procurement and allocate contracts to private businesses owned by, for example, politicians' relatives. In a recent journalistic documentary by Sweden's state television, a mayor describes how he had allocated a building contract to a small business owned by his husband-in-law, despite the legal requirement to engage in a public bidding process for this contact. The large contract was not, the mayor argued, nepotistic, because the husband-in-law had had many previous contracts and handled them well (available on youtube: https://www.youtube.com/watch?v=FmlRUQsEQRw).

siblings that experience an increase in earnings. Furthermore the children of the highest-ranked politician make the largest gains, conditional on living in the same municipality as their parent.

Looking for the mechanisms behind the additional earnings of the children, we find no evidence that they run through the probability of holding a job in the municipality's public sector. We also analyze children's behavior, in terms of study vs. work and municipality of residence. Specifically, we find that children to powerful politicians are more likely to live in the municipality where their parent has become more influential, but less likely to be students. These findings suggest that the higher earnings found in the baseline estimation likely stem from a composition effect, whereby children choose to replace or delay tertiary education and instead look for a job in their home municipality, rather than from some illegitimate action on behalf of the politician.

Our finding that politicians' victories impact on the behavior and choices of their relatives speaks to the small but growing body of research on dynastic political rents. For example, if family ties are inferred from shared last names between politicians and residents within the same geographical unit, sorting of relatives across these units will bias the results. Shifts in average wages or the occupation distribution may, as in our case, stem from mobility responses among relatives, rather from illegitimate favors extended to pre-existing relatives in the same region.

Our research contributes not only to the small literature on dynastic political rents, but also to the wider literature on the roots and economic consequences of dynastic links. As for the consequences, a sizeable literature following Fisman (2001) investigates the value to firms of having political connections, often exploiting an event-study approach to investigate effects on stock-market prices. A smaller number of papers examine if dynastic links between politicians generate differences in economic and social outcomes (Labonne et al. 2015, Braganca et al. 2015), and a growing body of work debates the contexts in which relatives to politicians gain a lower entry barrier into political office (Dal Bó et al. 2009, Querubin 2013, Van Coppenolle 2015, Rossi 2015, Fiva and Smith 2015).

A rapidly growing body of research, which we also contribute to, examines the monetary returns from holding political office. A standard finding in this literature is that such returns exist for political offices at the national and state levels (see for example Eggers and Hainmueller 2009 and Kotakorpi et al. 2013, Fisman et al. 2014), while evidence is mixed at the local level (Amore et al. 2015, Lundquist 2013 and Kotakorpi et al. 2013). We contribute to this literature by examining if monetary payoffs could also extend to the immediate relatives of the politicians.

The paper is organized as follows. Section 2 presents some basic institutional information about Swedish municipalities. Section 3 presents our micro data, sample restrictions, outcome

variables, as well as some summary statistics. Section 4 explains the estimation strategy. Section 5 presents the baseline results. Some robustness checks appear in Section 6. Section 7 concludes.

2. Municipal Assemblies and Politicians in Sweden

Sweden has 290 municipal assemblies that vary in size between 31 and 101 seats, depending on the municipality's population (the median municipality has about 15 000 inhabitants). Municipal assemblies have substantial political and economic powers. Their right to local self-government is granted by the Swedish Instrument of Government, and under the 1991 Local Government Act 2.1, local authorities are themselves responsible for matters of public interests, which relate to the municipal council and its inhabitants and are not the exclusive responsibility of the state. These responsibilities cover broad areas of public spending like child and elderly care, schools, and local infrastructure.

Electoral institutions across all municipalities have list-based PR elections for the council every four years. Almost all municipalities have some non-zero representation of all parliamentary parties. On average, unaffiliated local parties hold 2 percent of the seats. After the election, a governing coalition is formed and the largest party in this coalition appoints the mayor (head of the council board). Sweden has two stable political blocs: the left, which consists of the Social Democrats, the Left party and the Green party, and the center-right, which consists of the Conservatives, the Center party, the Liberal party and the Christian Democrats.[4] Both blocks strongly prefer within-bloc coalitions. Using data from 1982-2010, we can verify that when either bloc obtained more than 50% of the seats, the largest party in that bloc had a 90 percent probability of appointing the mayor.

Once a governing coalition has been formed, it appoints the most important executive positions, usually among the top persons in the largest coalition party. The top executive positions include the chair of the council-board chair, the chair of the council, and the chairs of different subcommittees that handle executive affairs in different domains. The most powerful position in the municipality is the council-board chair: since this is the Swedish correspondence to Mayor, we will use this label throughout the paper. The political opposition usually appoints the vice chairs, with the most influential position usually going to the top-ranked person in the largest opposition party (see

[4] There was also a short spree of representation for the populist center-right party New Democracy in the early 90s, and a very recent increase in seats (in particular at the national level) for an anti-immigration party, the Sweden Democrats. In this paper, we categorize both these parties as local.

the descriptive statistics in Section 3). Figure 1 sketches the municipal bodies and their executive positions.

Top politicians have disproportionate political influence compared to rank-and-file members of the municipal council. Since the establishment of the mayor's office in the 1960s, power has been increasingly concentrated in these offices and individuals (Nilsson 2001). Across municipalities, the mayor has highly similar powers and obligations, most importantly to formulate and implement the agenda of the mayor's party and/or political coalition (Jonsson 2003). The person is also the external representative of the municipality in regional and national contexts. The second-most important positions are the subcommittee chairs, who handle the implementation of policies in their respective areas. The chairperson of the council board also has some influence, but less than other executives.

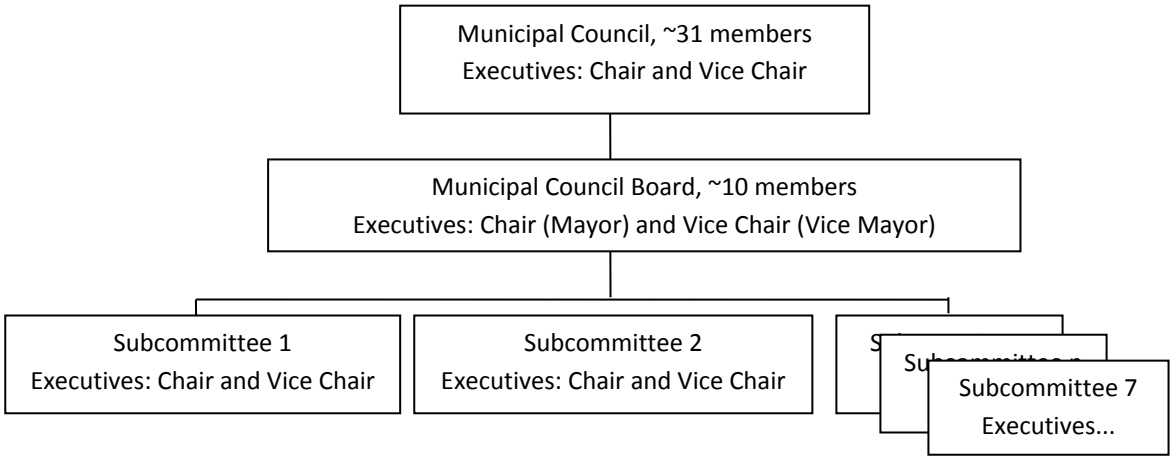

Figure 1. Types of executive positions in Swedish Municipalities

3. Data, Sample Restrictions, and Descriptive Statistics

Data Our dataset covers the relatives of all municipal politicians, who were elected to a council in the six elections between 1991 and 2010. The politicians on every electoral ballot are linked to balanced panel data for their close relatives using personal ID codes. These codes are available for every politician, since parties are legally obliged to report to them to the electoral agency for every individual who appears on the ballot. At birth, Swedish residents are given a personal identification number, which is used for all government record keeping. For our purposes, we requested data from the generational and sibling register to link every elected politician to his/her siblings and children. In a second step, we requested balanced panel data, for each of the 21 years 1991-2011, on the earnings, employment, municipality of residence and other relevant variables for every relative.

None of the data used in this paper is thus self-reported. Parenthood is registered at birth by Swedish public hospitals. Earnings are reported to the tax authorities directly by the workplace. Administrative data also records the municipality of employment and the municipality of residence of all individuals.

In the main analysis, we use three outcome variables, which measure some version of the each individual's relative earnings over the election period, excluding election years (more on this below). The first earnings variable, which we label "all earnings", is the combined sum of wages, business income, and labor-related social insurance benefits such as parental leave or unemployment. The second variable is a sub-category of the first, namely the sum of the yearly earnings from employment. The third is another sub-category, the yearly earnings from one's own business. All earnings variables are deflated by the CPI. When using their log transformation, we take the log of (1+earnings) to avoid missing values.[5] In the extended analysis, we add three more outcome variables. These are dummies for (i) holding employment in the public sector, (ii) being a student, and (iii) living in the municipality where one's relative holds political office.

Sample restrictions Our estimation sample consists of the children and siblings of working age – i.e., between 18 and 64 years old. The relatively high age of the top politicians precludes us from looking at the labor market outcomes of their (mostly retired) parents. Politicians' spouses are excluded for two reasons. First, electoral victory causes non-random divorces. As we show elsewhere (Folke and Rickne, 2015), younger female politicians are more likely to get a divorce when they win political power, while the divorce probability for male politicians goes the other way. Comparing the wages earned by spouses of winning and losing politicians is hence confounded with sorting in and out of marriage which alters average wages of partners, because relatively high earners (spouses of the female winners) drop out of the winner sample. Second, there may be income and substitution effects on the spouse's labor supply from a politician's electoral victory.[6] Higher wages of top political executives than second-rank executives (see Table 1 below) make spouses of winning politicians reduce their earnings relative to the spouses of the losing politicians, whose family does not get a positive income chock.[7]

Our sample includes only siblings and children of the top three politicians on the electoral ballots of the largest party in the left bloc and the largest party in the right bloc. We use the top

[5] The results are not sensitive to adding smaller amounts.
[6] This concern is due to basic labor-economics reasoning, see e.g., Blau and Kahn 2007.
[7] Indeed, running our analysis on politicians' spouses result in a negative estimate on the "political rents" of having a spouse that wins political power. But because we cannot disentangle the potentially positive political rents from the negative effects of (1) sorting out of the sample by divorce and the (2) cross-price effect on labor supply, we do not include these results.

three because these politicians have the most political clout to potentially affect labor-market outcomes of their relatives. Rank-and-file politicians have less influence and, indeed, running our analysis on the relatives of the rank-and-file members of the municipal council does not yield any significant findings (results are available from the authors on request).

Another sample restriction is to drop observations of relatives' outcomes in election years. In these years, politicians' (potential) rent extraction could be curtailed by heightened scrutiny from voters, other political parties and the media[8]. These years are therefore excluded from the sample.

Descriptive Statistics The total dataset consists of 23,895 individual election-period observations of the earnings for children and siblings of top politicians. Table 1 shows summary statistics for this sample, divided by the governing status (majority or opposition) of the relative in political office, as

Table 1. Summary statistics for the children and siblings of elected politicians by electoral status, 1991-2011.

	Electoral status of parent			
	In power		In opposition	
Pane A: Children	Top name	Top 2 and 3	Top name	Top 2 and 3
Age	27.07	27.28	27.50	27.57
All earnings*	149.05	149.66	151.73	150.26
Employed (1/0)**	0.91	0.90	0.91	0.90
Employment earnings	138.06	139.09	141.55	139.20
Business owner (1/0)	0.03	0.03	0.03	0.04
Business income	2.96	2.33	2.29	3.11
Capital income	-14.46	-6.99	17.75	-46.93
Student (1/0)	0.31	0.29	0.30	0.28
Lives in same municipality (1/0)	0.54	0.53	0.50	0.51
Years of education	13.31	13.19	13.32	13.08
Woman (1/0)	0.49	0.49	0.47	0.48
	Electoral status of sibling			
Pane B: Siblings	In power		In opposition	
	Top name	Top 2 and 3	Top name	Top 2 and 3
Age	49.51	48.17	49.95	48.29
All earnings	236.83	221.21	230.17	208.96
Employed (1/0)	0.89	0.88	0.87	0.85
Employment earnings	222.22	205.05	217.15	192.75
Has business (1/0)	0.09	0.09	0.08	0.09
Business income	6.47	7.97	6.14	6.60
Capital income	162.39	10.36	23.24	26.03
Student	0.02	0.03	0.02	0.03
Lives in same municipality	0.33	0.36	0.30	0.31
Years of education	12.74	12.46	12.53	12.48
Woman (1/0)	0.49	0.49	0.49	0.49

[8] See e.g., Persson and Tabellini (2000, ch.4)

* All earnings and income variables are reported in absolute numbers of 100 SEK per year (10 SEK = 0.8 USD). ** Employment is defined as having a nonzero annual wage income.

well as by the rank in his or her party (top name or top three). As expected, siblings are older than children, have higher earnings, and shorter education. About half of children and a third of siblings live in the municipality where their relative holds office. Interestingly, we see few differences in average earnings of relatives to majority and opposition politicians. There are also few noticeable differences between the relatives of the top names and relatives of the second and third politician in rank. In Table 2, we turn our attention to the politicians themselves. The average politician has 1.6 children (above 18 years of age) and 1.5 siblings. Comparing the characteristics of majority and opposition politicians, differences in average age and education are small. The only stark difference concerns gender: women are considerably less likely than men to be top ranked, but almost equally likely to occupy the second or third rank on their ballot.

Table 2. Summary statistics for politicians by electoral status, 1991-2011.

	Majority politicians		Opposition politicians	
	Top name	Top 2 and 3	Top name	Top 2 and 3
# of children	1.68	1.61	1.66	1.61
# of children in home municipality	0.90	0.87	0.82	0.82
# of siblings	1.63	1.50	1.47	1.48
# of siblings in home municipality	0.55	0.54	0.44	0.46
Age	52.44	51.31	52.52	51.20
Years of education	13.30	13.15	13.26	13.15
Woman (1/0)	0.26	0.48	0.28	0.47
# of observations	2,979	5,742	3,004	5,847

In the next descriptive table, we verify a key assumption underlying our empirical analysis. We compare the earnings of relatives to top politicians in the party that appointed the Mayor to the largest party in the opposition bloc. For example, if the Social Democrats (a left-bloc party) appoints the Mayor, we call the center-right bloc party with the most seats the "opposition party". For our design to capture dynastic political rents to political power, ruling party status should assign top executive posts to the top politicians this party's ballot. Even if such appointments follow the standard procedure in the parliamentary system, as described above, they should be substantiated by actual appointment data.

Table 3 relies on two waves of mandatory surveys to municipalities, following the 2006 and 2010 elections, conducted by Statistics Sweden to record the personal identification number of every individual appointed to an executive position. In our sample, we can thus compute the shares of the top-three politicians on the electoral ballot of the ruling party and in the opposition party, who were indeed appointed to specific top positions (recall Figure 1). In addition, the table lists the average

earnings by executive position. When reading the table, one should note that politicians can hold several positions simultaneously, even though this is the exception rather than the rule.

The summary statistics in Table 3 show several things. First, when a party appoints the Mayor, the probability is 86% that the Mayor is the individual with the top position on the ballot. Candidates listed as numbers 2 and 3 on the ballot rarely became mayors (4%), but are more commonly appointed subcommittee chair (35%) or council chair (14%). For the largest party in opposition bloc, the top ranked person was appointed Vice Mayor in 57 cases out of 100. Looking at the average earnings in the table's rightmost column, we can see the political hierarchy reflected in average

Table 3. Percentage of top ranked and 2nd or 3rd rank politicians that hold executive positions, and the average yearly earnings among these office holders.

	Top politician		2nd and 3rd rank politicians		Average yearly earnings (1000s SEK)
	Ruling party	Opposition party	Ruling party	Opposition party	
Mayor (%)	86	0	4	0	539.2
Council Chair (%)	5	2	14	0	346.1
Subcommittee Chair (%)	27	1	35	3	429.7
Vice Mayor (%)	0	57	10	5	443.9
Council Vice Chair (%)	0	4	6	12	310.4
Subcommittee Vice Chair (%)	3	18	10	27	368.3

Note: This table is based on pooled data for appointments in 2007 and 2011, collected by Statistics Sweden in a mandatory survey to municipalities. 1000 SEK ≈ 120 USD.

earnings. As expected, the Mayor has the highest average earnings, followed by the Vice Mayor. Of the municipality executives, the Mayor is usually the only persons in the municipality who is given a full-time political wage. (The Mayor's annual wage ranks in the top two percentiles of the Swedish income distribution; authors' own calculations). Lower executive posts, such as subcommittee chairs, usually receive piece-rate compensation for their chair appointments, in addition to the piece-rate meeting compensation given to all committee members. Vice Mayor are usually given a part-time wage for their appointment. Most of the time, these office holders simultaneously keep their regular job as a part time occupation.

4. Empirical Strategy

Our empirical analysis compares earnings by relatives of top ranked politicians in the largest majority party to earnings by relatives of top-ranked politicians in the largest opposition party. This comparison can be expressed in the basic regression specification

$$Y_{i,t} = \beta P_{p,m,t} + \tau_t + \rho_m + \varepsilon_{i,t}\ , \qquad (1)$$

where subindex i,t denotes individual relative *i* observed in election period *t*. The outcome variable *Y* is, for example, annual income from the relative's own business. The parameter of interest β captures the difference between relatives of politicians in the majority-bloc party compared to relatives of politicians in the largest opposition-bloc party. The key treatment variable, $P_{p,m,t}$, is a binary indicator that takes the value one for relatives of politicians in party *p* that appointed the council board chair in municipality *m* in election period *t*. Instead, it takes a value of zero for relatives to the largest opposition-bloc party. The specification also includes election-period fixed effects, τ_t, and municipality fixed effects ρ_m. Because the treatment is decided at the level of the municipality and election period, standard errors are clustered at this level when we estimate equation (1).

A potential concern when estimating specification (1) is that politicians in the ruling party might differ systematically from those in the largest opposition party, such that we would expect different outcomes for the relatives, irrespective of who holds political power. For example, Folke and Rickne (2015) cite literature and survey data to argue that the position as Mayor requires a great deal more work than that of opposition leader. Perhaps then some politicians might postpone seeking the position of Mayor until their children have left home. Likewise, as the pay and prestige of Mayors exceed those of Vice mayors, competition could very well be fiercer for the former position. This, in turn, might attract politicians whose children have similar personality traits that carry over to their labor market performance.

Such concerns apply to situations where politicians can plan ahead in time to seek the position as Mayor or opposition leader. A natural way to address the concerns could therefore be to use a Regression Discontinuity Design (RDD) to exogenously assign the mayor position by exploiting narrow elections. As already mentioned in Section 2, Swedish political parties indeed form two stable blocs that compete for power. An electoral victory (50 percent of the seats or more) for the left bloc might hence allow the largest party in the left bloc to appoint the Mayor, and vice-versa for the right bloc. Previous studies, such as Pettersson-Lidbom (2008), use left-wing seat majority as the treatment variable in a sharp RDD. It turns out, however, that this treatment variable does not deterministically assign majority-party status to the largest party in the left bloc. In about 10-15 percent of close elections, small parties form coalitions across bloc lines, leaving the largest party in the opposition. To amend this problem, one would need to exploit a fuzzy RDD.

Furthermore, not only the threshold for a left-bloc seat majority but also the threshold for a right-bloc majority influences who is in power. Each of these two thresholds changes the probability

of the largest party in the bloc appointing the mayor by about 40% (see Folke and Rickne 2015). In principle, one could thus implement a fuzzy RDD around the two thresholds. In this particular setting, however, we would be left with too few observations to estimate the treatment effect of political power with reasonable statistical precision (more detailed information and estimation results are available from the authors).

Instead, we use an alternative empirical design, which builds on the same intuition as an RDD, but buys us more statistical precision at the cost of stronger identifying assumptions. Specifically, we use information on all electoral results to select elections where the right bloc and the left bloc both received close to 50 percent of the seats. In these elections we assume that the outcome was uncertain, such that the key political players in the largest parties perceived a comparable chance of winning the election. By restricting our sample to such close elections, we can therefore circumvent the concerns about systematic selection discussed above. We can thus strengthen our claims that our estimates of the treatment effect in equation (1) indeed uncover a true causal effect. To explain the intuition for this approach in a different way, we can make the analogy with estimating a treatment effect on a matched sample. When the propensity scores for treatment – i.e., for winning the election and appointing the mayor – are comparable for the largest parties in the two blocs, we avoid some or all of the selection problems that would plague a regular OLS estimate.

Defining which elections are close is not as straightforward in a proportional election system with many parties is not as straightforward as in a system with two parties. We use a technique developed by Folke and Rickne (2015), which relies on simulation to obtain a measure of the proportion of votes needed by each bloc to win, or lose, the majority of the seats in the municipal assembly. The details of this technique are explained in the Online Appendix (section A1), and we only give a brief graphical explanation here.

Although Sweden is known for a stable political environment with Social Democratic dominance in the post-war period, this image is a bit misleading when it comes to the six elections during our sample period, 1991-2011. Elections were competitive in terms of winning and losing margins: in two thirds of our municipality-election observations, either, or both, of the two blocs are within 10 percentage points of the vote share required to either win or lose the seat majority, and 44 percent of our observations are within a margin of 5 percentage points.[9]

To illustrate, Figure 2 plots binned averages of the dummy variable that the largest party in a bloc appoints the council board chair against the simulated variable of how close – in terms of vote share – the same bloc was to gain (or lose) the seat majority. Clearly, the electoral outcome becomes

[9] At the national level, the center-right coalition has held power in three of the eight most recent elections, and in five of the ten most recent.

much more difficult to predict close to the vertical zero line, where the scatters converge. Thus, more competitive elections indeed have more uncertain outcomes. Nevertheless, the event that a bloc receives more than half the votes (and seats) discontinuously shifts up the probability that the largest party in that bloc appoints the Mayor. For both blocs, this upward shift is of similar size, namely about 40 percentage points.

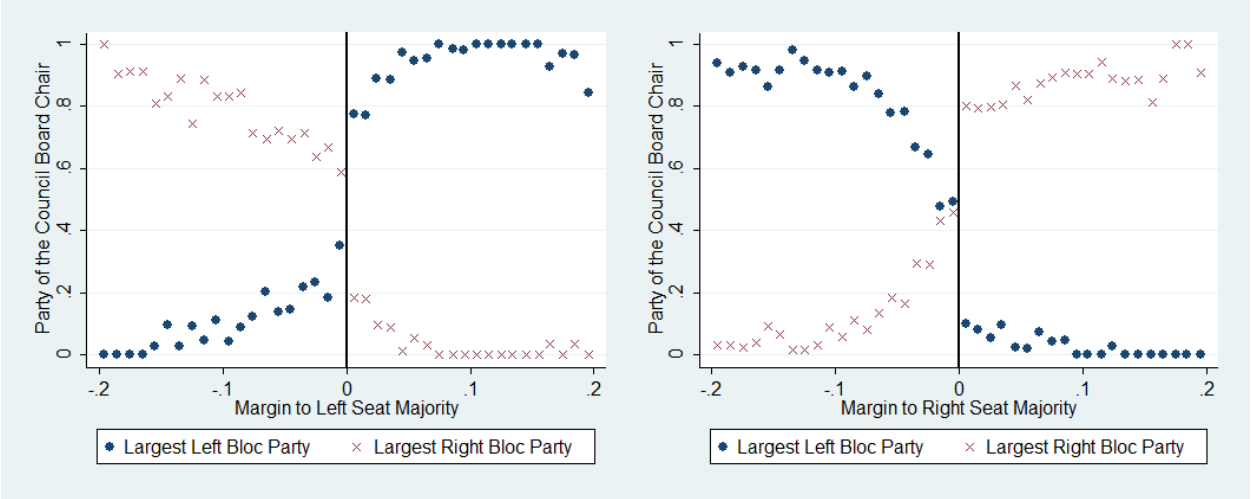

Figure 2. Probability of the largest party in a political bloc appointing the Mayor, as a function of the margin to a seat majority for the left bloc (left hand graph) and the right bloc (right hand graph).

5. Results

Baseline estimates We present a sequence of estimation results that starts with the widest sample and outcome and then consecutively zooms in on samples and outcomes where we find clear evidence that political power has a clear positive effects on the earnings of relatives. The first set of estimates appear in Table 4.

These estimates pool the two types of relatives, siblings and children. The top pane shows the effects on all earnings of these relatives from obtaining a politician relative with large executive power. The two lower panes in Table 4 separate out two types of earnings. Results for employment earnings are presented in Pane B, and results for business income in Pane C. For every earnings type and estimation we use both the log of the outcome variable (the upper row of estimates) and the absolute sum (the lower row). To help interpret the economic significance of the results, we also report mean earnings in the sample at hand underneath the number of observations.

In all three panes, the estimation sample is divided in two ways, by the identity of the powerful politician (top ranked or top three on the ballot), and by residence of the relative (anywhere in Sweden or in the same municipality as the politician).

Finally, for every outcome and sample, we report results for the full sample of elections and parties (columns marked "All") and for political parties where the vote share of their bloc was within 5 percentage points from winning or losing the governing majority (columns marked "5%").

Table 4. Effects on relatives earnings of having a parent or sibling in the top tier of the largest governing party.

	Living in any municipality				Living in the same municipality as the politician			
	Relatives to the top three politicians		Relatives to the top ranked politician		Relatives to the top three politicians		Relatives to the top ranked politician	
	All	5%	All	5%	All	5%	All	5%
Pane A: All earnings								
Log:								
Treatment	0.07***	0.05	0.07*	0.05	0.10***	0.10*	0.15**	0.14
	(0.02)	(0.04)	(0.04)	(0.06)	(0.04)	(0.06)	(0.06)	(0.10)
Sum:								
Treatment	5.45***	1.90	5.50	5.60	5.31**	5.13	8.18*	9.82
	(2.08)	(3.45)	(4.01)	(7.56)	(2.60)	(4.14)	(4.46)	(7.42)
Obs.	23,895	10,505	8,336	3,657	10,324	4,600	3,549	1,599
Mean	182.57	186.00	188.28	190.71	153.28	156.25	156.14	153.90
Pane B: Labor income								
Log:								
Treatment	0.08***	0.06	0.06	0.04	0.12***	0.12*	0.13*	0.15
	(0.03)	(0.04)	(0.04)	(0.06)	(0.04)	(0.06)	(0.07)	(0.11)
Sum:								
Treatment	5.57***	1.95	4.78	4.55	5.95**	5.71	6.71	8.09
	(2.08)	(3.45)	(4.05)	(7.60)	(2.59)	(4.11)	(4.47)	(7.50)
Obs.	23,895	10,505	8,336	3,657	10,324	4,600	3,549	1,599
Mean	169.91	173.46	176.35	178.52	141.08	143.54	143.82	140.54
Pane C: Business income								
Log:								
Treatment	-0.02*	-0.01	0.01	0.01	-0.04*	-0.04	-0.01	-0.05
	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.04)	(0.04)	(0.06)
Sum:								
Treatment	0.34	-0.20	0.48	0.50	-0.92	-0.16	0.16	-0.36
	(0.68)	(0.76)	(0.79)	(1.22)	(0.86)	(1.42)	(1.25)	(1.78)

Obs.	23,678	10,421	8,267	3,627	10,177	4,553	3,494	1,576
Mean	4.60	4.68	4.42	4.66	5.26	5.75	5.67	6.92

Note: Robust standard errors clustered at the level of municipality and election period in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

The estimates for the full sample of relatives (pane A) suggest large dynastic political rents in Swedish local politics. The full sample specification shows that the relatives of the top-ranked politicians in the ruling party earn on average 7 percent, or 5000 SEK, more per year than the relatives of the opposition politicians. As we narrow the sample to the narrow, uncertain elections the estimates are slightly smaller and no longer statistically different from zero.

Turning to the relatives, who live in the same municipality as their related politician, most estimates become larger. On balance, the estimates now suggest large economic gains for close relatives of politicians with powerful political positions. For those related to the top-ranked politician, the estimates indicate 15 percent, or 8 000 SEK, higher earnings. It is striking that these estimated economic payoffs are quite large in relative terms, but quite small in absolute terms. Although 8 000 SEK corresponds to an estimated increase of 15 percent, it is only 3 percent of the median income of full-time workers in Sweden in the year 2000 (234 000 SEK). This indicates that the economic gains are mainly distributed to relatives at the lower end of the income distribution.

Examining separately, the two different types of incomes in panes B and C, we see clearly that labor income, rather than business income, drives our results. Thus the economic gains are unlikely to stem from corporate contracts or other benefits that could befall business-owning relatives. This is perhaps not surprising since the economic gains accrue mainly to those at the bottom of the income distribution.

Different types of relatives Next, we split the sample by kinship relations. The results are shown in Table 5, but – given the results in Table 4 – only for those relatives who live in the same municipality as the powerful politician. We also restrict the analysis to the measure of all earnings. The results for the children are presented in the left part of the table and the results for siblings in the right part.

The results in Table 5 convey a clear message. Children of top-ranked politicians obtain a higher income when their parent's party wins power in the election. On average, a child's earnings go up by about 20 percent (16 000 SEK), relative to a child of the opposition leader – a result that is holds up in the full sample as well as the sample of narrow, uncertain elections. To the extent that the child is still part of the leading politician's household, this estimate may be a lower bound on the pure earnings effect – if we treat the household as one unit, we would expect the labor supply of the

child to fall as the winning politicians income goes up, due to an income effect as well as a substitution effect.[10]

The estimated treatment effect corresponds to about ten percent of the average child's wage. The estimates are less consistent when we include children of politicians in the top three of the political hierarchy. We also find no clear effect for the politicians' siblings.

Table 5. Effects on all earnings of a parent or sibling in the top tier of the largest governing party.

	Children of politician living in the same municipality				Siblings of politician living in the same municipality			
	Relatives to the top three politicians		Relatives to the top ranked politician		Relatives to the top three politicians		Relatives to the top ranked politician	
	All	5%	All	5%	All	5%	All	5%
Log								
Treatment	0.08*	0.05	0.21***	0.23*	0.09	0.15*	0.03	-0.03
	(0.05)	(0.08)	(0.08)	(0.14)	(0.06)	(0.09)	(0.11)	(0.14)
Absolute								
Treatment	2.94	1.03	14.87***	18.02**	6.13	7.29	-3.03	-6.49
	(2.94)	(4.94)	(5.07)	(8.54)	(4.67)	(7.64)	(8.46)	(14.16)
Obs.	6,590	2,945	2,284	1,035	3,734	1,655	1,265	564
Mean	114.70	108.47	141.80	145.85	215.13	216.28	225.06	220.89

Note: Robust standard errors clustered at the level of municipality and election period in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Winning versus losing the position as mayor Our baseline analysis jointly estimates two treatment effects, positive impacts on the earnings of the children of electoral winners, and negative earnings effects on the children of electoral losers. Some of the politicians in our sample have previously been mayors while other have not, which means that some of the politicians in the "opposition" category are persons who actually lose the top executive post. Because we are interested in estimating the payoffs from a relative who *wins* office, we follow Fafchamps and Labonne (2015) in an attempt to separate out this particular effect.

We thus divide the relatives to top-ranked politicians into two subsamples, relatives of politicians who were never Mayors (top ranked in the largest party in the governing majority in any election period since 1982), and those who previously held this post. In the first subsample we estimate the effect of the relative becoming the Mayor instead of becoming, or remaining,

[10] Cf. the discussion about spouses in Section 3.

opposition leader. In the second sample, we estimate the effect of the relative remaining the Mayor compared to losing the position.

Table 6 presents these results. They show that it is the children of first-time Mayors that benefit from their parents gaining more power, while children of incumbent Mayors do not seem to get nearly the same benefits. Thus the baseline findings appear to be driven by boors in earnings when the parent becomes Mayor for the first time, rather than when the parent remains in that post.

Table 6. Effects on all earnings from having a parent who is Mayor, sample divided by the parent's "incumbency" status

	Children of politician				Siblings of politician			
	Relatives to politicians that were never chairs		Relatives of incumbent chairs		Relatives to politicians that were never chairs		Relatives of incumbent chairs	
	All	5%	All	5%	All	5%	All	5%
Log								
Treatment	0.26***	0.43***	0.22	0.19	0.14	0.15	-0.01	-0.05
	(0.10)	(0.17)	(0.24)	(0.30)	(0.13)	(0.19)	(0.22)	(0.28)
Absolute								
Treatment	15.41***	23.08**	7.53	17.01	4.07	11.23	-15.84	-33.81
	(5.89)	(9.58)	(18.33)	(25.48)	(10.16)	(20.37)	(15.90)	(27.39)
Obs.	1,674	739	610	296	912	395	353	169
Mean	123.48	125.18	121.94	119.16	205.89	211.54	217.90	217.66

Note: Robust standard errors clustered at the level of municipality and election period in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

The baseline results are also unlikely to stem from negative impacts on the earnings of children of politicians who lose the chair position. For the siblings, the point estimates have opposite sings for the two groups but neither of the estimates are close to statistically significant.

Mechanisms To further explore the economic benefits for the children of top powerful politicians, we extend the analysis to three additional outcome variables. The goal is to tease out the roots of the higher earnings. One reason could be that municipalities are more likely to hire the children of politically powerful parents. We capture this with a dummy for the child having been employed by the municipality during the year. Another possibility is that children's benefits arise from changes in their own behavior. We capture such changes in two ways. One is a dummy for the being a student, the idea being that the child might choose to work rather than study depending on a higher expected

relative return from working.[11] The other is a dummy for living in the same municipality, the idea being that the political power of the parent could expand the labor-market opportunities from living in the same municipality. For the two first outcomes we only include the children living in the same municipality, while the third naturally includes all children.

The results are presented in Table 7, which shows the results for being a municipal employee in the upper pane, those for being a student in the middle pane, and those for living in the same municipality as the powerful politician in the lower pane.

Table 7. Effect on children's occupational and residence status of having a parent in the largest governing party.

	Relatives to the top three politicians		Relatives to the top ranked politician	
	All	5%	All	5%
Pane A: Municipal employee				
Treatment	0.02*	0.01	0.01	-0.03
	(0.01)	(0.02)	(0.02)	(0.03)
Obs.	6,317	2,821	2,180	981
Mean	0.26	0.24	0.27	0.26
Pane B: Student				
Treatment	-0.00	0.02	-0.04**	-0.04
	(0.01)	(0.02)	(0.02)	(0.03)
Obs.	6,317	2,821	2,180	981
Mean	0.33	0.34	0.34	0.35
Pane C: Living in the same municipality				
Treatment	0.02***	0.02**	0.03**	0.04**
	(0.01)	(0.01)	(0.01)	(0.02)
Obs.	12,894	5,764	4,498	1,997
Mean	0.53	0.53	0.52	0.53

Note: Robust standard errors clustered at the level of municipality and election period in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

The results in Table 7 suggest that children of the Mayor are not more likely than the children of the opposition leader to get a job in the municipality's public sector. Thus, the economic payoffs we find are unlikely to reflect (1) better information to politicians' children about the availability of

[11] Sweden has a system of higher education with a universal qualifying exam and where the vast majority of schools use only high school grades to guide admissions. It is thus implausible, if not impossible, that an influential local politician would be able to lower their children's entry threshold to an institute of higher learning.

public jobs, (2) opportunistic hires of the Mayor's children by local government actors, or (3) children of Mayors getting government jobs through illegitimate channels.

The estimates in the two lower panes point to some interesting behavioral changes by the children. Children of the Mayor are thus 4 percentage points less likely to be students than the children of the opposition leader. This difference is also statistically significant when we look at the full sample, suggesting that the children of the Mayor are more likely to choose to work instead of studying.[12] They are also 4 percentage points more likely to live in the same municipality as their parent, compared to the children of the opposition leader. Either, children remain in the municipality to work, rather than going to school, when their parents' political career takes a successful turn, or children of opposition leaders become more likely to move away for school.

These apparent changes in the behavior of the children are important to interpret our overall findings so far. They suggests that the behavior of the children themselves is a key mechanism behind the pattern of higher average earnings among the children of Mayors compared to opposition leaders. The baseline impact on earnings – i.e. on dynastic political rents – is thus unlikely to reflect illegitimate transfers from the public sector to the relatives of top politicians.

6. Sensitivity and Robustness

Sensitivity to control variables One concern with our estimates is that they may be confounded by pre-determined differences between Mayors and opposition leaders, and a fortiori between their children. In this section, we will handle this concern in two ways. First, we will check the sensitivity of our result to adding a number of control variables to equation (1). Importantly, we include a binary indicator for whether a party was the ruling party in the previous election. Robustness to this control is central for our identifying assumptions. If close elections are indeed uncertain, our effects should not be driven by which party appointed the Mayor after the previous election. The other controls we include are related to the timing of the parent seeking the political office. For example, politicians who seek the top executive position could wait until they themselves, or their children, are older, since being the Mayor entails more work than being the opposition leader. It is also possible that politicians who seek the top post are themselves more educated, and so are their children. To check for this possibility, we add binary indicators for age and education categories of the children.[13]

[12] Related to this finding, Geys (2015) finds that dynastic links lower the entry barrier to politics for individuals with lower educational attainment.

[13] We control for age for a dummy for each ten year interval of age, i.e., under 20, 20-29, 30 to 39, etc. For education we include dummies for seven different level of education

Table 8 show estimation results when we gradually add controls to the specification in equation (1). The first two columns show the baseline results for the children of the top ranked politician who live in the same municipality. The following two columns show the results when including the lag of being the party of the council board chair. Subsequently, we add the controls for children's education and age. In the final two columns we include all of the controls together.

The results in Table 8 are easily summarized. Once we zoom in on the sample of close, uncertain elections, the results are not sensitive to the addition of controls. This is true whether we use the log

Table 8. Effect of having a parent who is Mayor, including control variables.

	Children of the top ranked politicians							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	5%	All	5%	All	5%	All	5%
All earnings								
Log:								
Treatment	0.21***	0.23*	0.16*	0.21	0.17**	0.21*	0.11	0.21*
	(0.08)	(0.14)	(0.09)	(0.14)	(0.07)	(0.12)	(0.07)	(0.12)
Sum:								
Treatment	14.87***	18.02**	13.65**	18.17**	10.60***	13.95*	9.05**	14.85**
	(5.07)	(8.54)	(5.57)	(8.67)	(4.09)	(7.14)	(4.51)	(7.20)
Obs.	2,284	1,035	2,246	1,024	2,284	1,035	2,246	1,024
mean	121.94	119.16	122.16	119.49	121.94	119.16	122.16	119.49
Lag ruling. party			X	X			X	X
Age, educ controls					X	X	X	X

Note: Robust standard errors clustered at the level of municipality and election period in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Control variables include the lag of the binary indicator for being the ruling party, dummy variables for ten-year age intervals (-20, 20-29, 30 to 39, etc.), and dummy variables for seven levels of educational attainment.

or the absolute value of the outcome variable. This suggests that we indeed capture a causal effect of political power on income, rather than a spurious correlation. The estimates also show the importance of limiting the estimates to the case of close elections. The full-sample results are much more sensitive to including the controls, which is exactly what we would expect if politicians are able to select into top positions by planning ahead in predictable electoral environments.

Balance of given characteristics As a second robustness check, we test for the balance of pre-determined characteristics. Specifically, we estimate the treatment effect on the lag of the key outcome variable, as well as on the years of education and age of the relatives. The results appear in

Table 9. They are presented in the same way as in Table 5. In the Appendix (see Table A1), we show the same test for the pooled sample of relatives (corresponding to the set up in Table 4).

The results show that the pre-determined characteristics are indeed balanced across relatives of top-ranked politicians in the ruling and the opposition parties. In the sample of close, uncertain elections there are no statistically significant differences in any pre-determined characteristic for any of the estimation samples. In fact, the differences are quite small even when we use the full sample

of elections. These results further strengthen our assertion that our baseline estimates capture a treatment effect of political power, rather than a systematic difference in pre-determined characteristics between the relatives of politicians in and out of power.

Table 9. Earnings effects of having a relative in the ruling party on pre-determined characteristics.

	Children of politician				Siblings of politician			
	Relatives to the top three politicians		Relatives to the top ranked politician		Relatives to the top three politicians		Relatives to the top ranked politician	
	All	5%	All	5%	All	5%	All	5%
Pane A: Lag of all earnings								
Log:								
Treatment	0.02	-0.03	0.24*	0.27	0.17**	0.15	0.01	-0.12
	(0.07)	(0.11)	(0.14)	(0.23)	(0.07)	(0.11)	(0.14)	(0.22)
Sum:								
Treatment	-0.45	-2.13	9.32	8.24	4.60	1.99	-2.98	-3.84
	(3.84)	(6.56)	(7.59)	(14.15)	(5.53)	(9.70)	(11.51)	(20.10)
Obs.	2,912	1,307	1,011	453	2,297	1,030	804	358
Mean	121.14	123.65	121.58	122.99	194.28	202.37	210.40	216.46
Pane B: Years of education								
Treatment	0.08	0.02	-0.01	-0.10	0.02	0.03	0.20	0.42
	(0.06)	(0.09)	(0.11)	(0.17)	(0.09)	(0.15)	(0.17)	(0.29)
Obs.	6,317	2,821	2,180	981	3,703	1,644	1,251	558
Mean	12.46	12.50	12.57	12.56	11.91	11.97	12.12	12.13
Pane C: Age								
Treatment	0.11	-0.22	0.53*	0.49	0.43	0.93	0.50	0.12
	(0.18)	(0.27)	(0.30)	(0.48)	(0.38)	(0.60)	(0.63)	(1.02)
Obs.	6,317	2,821	2,180	981	3,703	1,644	1,251	558
Mean	25.95	25.95	25.91	25.75	47.41	47.19	48.88	48.76

Note: Robust standard errors clustered at the level of municipality and election period in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

7. Conclusions

This paper has analyzed dynastic political rents in a developed and stable democracy. Drawing on uniquely comprehensive register data for the siblings and children of politicians, we have uncovered a positive and large effect on the earnings of children from their parent's ascension to the top position of local political power. We do not find any corresponding impact on earnings for the siblings of top political executives. The hike in dynastic political rents for children is quite robust, passing sensitivity checks for balance of pre-determined characteristics of parents that win and lose political power, and the addition of a number of control variables to the baseline specification.

Our extended analysis uncovers changes in how the children of Mayors behave, which are crucial for the interpretation of our baseline findings. An effect on earnings are only found for children who reside in the municipality where their parent ascends to power. This result might appear intuitive, in that the clout of municipal politicians is regionally concentrated to their administrative unit. But when we use the residence of children as an *outcome* variable, we find that children sort geographically according to the electoral success of their parents. As indicated by the positive treatment effect on co-residence and the negative treatment effect on being a student, electoral victories appear to encourage children to remain at home for work rather than to leave for tertiary education. As indicated by the null effect on employment of children in the municipality's public sector, it appears that remaining in the municipality does not reflect better work opportunities in the sector under the parent's direct political control. Private employers are thus more likely to hire the politician's son or daughter – possibly at better conditions – a finding consistent with those by Gagliarducci and Manacorda (2015).

That children are attracted to live in the municipality of their electorally successful parent could be viewed as a personal gain from holding a top office (assuming you enjoy the company of your children). By revealed preference, the children's behavior also indicate a benefit on their behalf, quite possibly drawing on a higher status in local society thanks to their parent executive. Nevertheless, these rents do not reach very far. The findings do not extend to children of politicians who belong to the party elite but do not occupy the unique position as Mayor.

All in all, our study suggests that dynastic political rents are quite a marginal phenomenon in Sweden. This contrasts sharply to Gagliarducci and Manacorda's (2015) findings for Italy, which suggest that jobs to the relatives of politicians are responsible for 0.65 percent of all private sector employment. Our results also contrast to previous findings for the findings for the Phillipines by Fafchamps and Labonne (2014), who argue that politicians staff bureaucracies with their own relatives.

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Appendix

A1: Measuring the closeness of elections in a PR system

Measuring close elections in a proportional election systems is a challenge as the vote share of a single party, or a bloc of parties, is not deterministic of the seat share. Instead, the distribution of seats to a party or a bloc will be jointly determined by the allocation of votes to the party itself and the allocation of vote to the other parties. Thus, neither the vote share nor the seat share of a party or a bloc of parties will capture how close an election actually is.

To measure electoral closeness, we rely on a simulation based approach developed in Folke and Rickne (2015). This approach constructs a forcing variable that is continuous (not discrete, as the seat share) and which does not give sorting or a low density of observations close to the threshold of winning more than 50% of the seats. This simulated forcing variable takes account of two important features of the electoral system. First, that there are multiple electoral districts of different size within the same municipality, and second, that shifting a vote to (or from) one bloc to the remaining parties will have a different impact on the seat share of the bloc that wins (or loses) the vote depending on which specific party within the winning and losing bloc that won or lost it.

Our simulation departs from data on electoral outcomes. We want to measure how close the election is by capturing which size of a shift in votes to (or from) a political bloc that would have resulted in 1) a winning bloc losing its seat majority, or 2) a losing bloc gaining a seat majority. In each election we will thus have two forcing variable values, one for each bloc. When we measure this "closeness" for each bloc, the "other bloc" always includes the local parties.[14] The unit of measurement of the closeness variable is in percentage terms, answering the question of "which percentage of votes was needed, in a specific election, to give (or take) the seat majority from each of the two political blocs?".

For a bloc that won a seat majority, we depart from the electoral result in each election and move in the negative direction in increments of removing 0.01 percentage points of the bloc's votes, starting from 0.01, 0.02, etc. For a losing bloc we do the opposite, adding small increments of votes. The goal is to find out, for each bloc at the time, how much of the votes we need to shift in order to also shift the seat majority either to or from that bloc.

[14] In the Swedish case, local parties - defined as not having representation in the parliament - hold on average 2% of the municipal assembly seats.

How does our simulated shift in votes affect the distribution of seats? This impact will of course differ between countries depending on the electoral system. In the Swedish case, seats are distributed based on the Highest Averages Method using the modified St. Lagué formula. After shifting a small proportion of votes either to or from a bloc, we use this formula to compute the new seat distribution. For each shift of votes, we randomly simulate 1 000 alternatives to how the votes shifted in terms of winning and losing parties and districts. Each time, we also compute the new allocation of seats. In this computation we assume that large parties have a greater variance in their vote shares than small parties, but that the variance is not 100% proportional. The simulations also abstract from the fact that votes can shift between parties within a bloc.[15] Having computed the new seat allocation in each of the 1 000 ways to shift the vote distribution, we tally the number of times out of the 1 000 that the bloc either lost (for winning blocs) or won (for losing blocs) the seat majority under the new distribution. Out of all the simulations for each shift in the vote share, we then set the value of the forcing variable to the size of the smallest vote shift that caused a shift in the blocs majority status in at least 50% of the 1 000 ways of shifting those votes.

Figure A1 illustrates the process of creating the forcing variable for a specific municipality and in a specific election, the municipality of Upplands Väsby in 2006. In this municipality, the center-right bloc won the governing majority by receiving 52.7 percent of the votes and 54.9 percent of the seats. The left bloc won 42.9 percent of the votes which translated into 43.1 percent of the seats. Suppose that we want the value of the forcing variable for the left bloc, i.e. the minimum proportion of votes that the bloc would need to win to gain the seat majority. The x-axis in the figure shows the proportion of votes shifted and the y-axis shows the proportion of times, out of our 1 000 ways to simulate this vote shift, that it caused the left bloc to win 50% of the seats or more. The upward slope of the line indicates that, of course, the larger proportion of votes that is shifted to the bloc, the greater the probability of this event. We can also see that the bloc gained the seat majority in about half of the simulations when we gave it an additional 5.0 percentage points of the votes (illustrated by the vertical solid line). This assigns the value of the forcing variable to 5.0 percent for the left bloc in this election.

[15] In detail, the simulations are carried out as follows. First, we take a random number between 0 and 1 for each party in the giving and receiving blocks. We then multiply this random proportion with the party's vote share plus a constant of 0.1. For a party with a random chock of 0.4 and a 20% vote share we get a number of 0.4+(0.2+0.1). We can call this variable q. Within each block, we then normalize each party's q value so that they sum to 1, calculating $q_w = \frac{q_p}{\sum_1^p q_p}$ where q_p are the initially computed shocks and q_w are the normalized shocks. The final stage is then to subtract fractions of the vote shift, for example 0.01 percentage points of the total votes, from one block and reward it in fractions to the other in a way that corresponds to the randomly drawn shocks. The new vote allocation is then used to calculate the seat allocation, using the Swedish election formula.

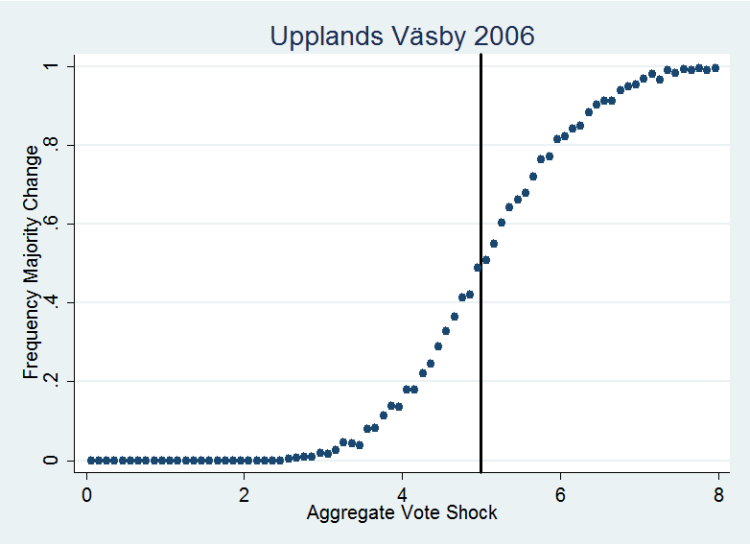

Figure A1. Proportion of seat majority shifts to the left bloc in Upplands Väsby municipality in the 2006 election (y-axis) depending on 1,000 simulations of shifting a certain proportion of votes (x-axis) from the center-right to the left bloc.

A2: Robustness tests

Table A1. Effect of having a relative in the ruling party on pre-determined characteristics.

	Relatives in all municipalities				Relatives in the same municipality as the politician			
	Relatives to the top three politicians		Relatives to the top ranked politician		Relatives to the top three politicians		Relatives to the top ranked politician	
	All	5%	All	5%	All	5%	All	5%
Pane A: Lag of labor related earnings								
Treatment	0.07**	0.05	0.05	0.05	0.07	0.07	0.07	-0.02
	(0.03)	(0.04)	(0.05)	(0.07)	(0.05)	(0.07)	(0.09)	(0.14)
Sum: Treatment	5.55**	0.13	3.04	1.38	2.00	3.05	-2.80	-4.18
	(2.47)	(4.30)	(4.74)	(8.49)	(3.32)	(5.61)	(6.43)	(11.05)
Obs.	13,431	5,966	4,814	2,117	5,209	2,337	1,815	811
Mean	170.84	173.10	176.72	179.77	153.39	158.35	160.92	164.25
Pane B: Years of Education								
Treatment	0.06*	0.01	0.04	-0.00	0.03	0.01	-0.01	0.00
	(0.04)	(0.06)	(0.06)	(0.10)	(0.05)	(0.08)	(0.09)	(0.14)
Obs.	23,448	10,313	8,171	3,578	10,020	4,465	3,431	1,539
Mean	12.90	12.94	13.02	13.06	12.25	12.30	12.41	12.40
Pane C: Age								
Treatment	-0.06	-0.19	0.17	0.11	0.31	0.25	0.77	0.33
	(0.18)	(0.25)	(0.30)	(0.45)	(0.27)	(0.40)	(0.48)	(0.75)
Obs.	23,448	10,313	8,171	3,578	10,020	4,465	3,431	1,539
Mean	37.64	37.44	38.08	37.82	33.88	33.77	34.28	34.10

Note: Robust standard errors clustered at the level of the municipality and election period in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

References

Folke, Olle and Johanna Rickne. 2015. The price of political promotions: Political careers and marriage stability. Mimeo Uppsala University.