Returns to office in a proportional system*

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September 4, 2012

Abstract

We study the returns to political office using data from Finnish parliamentary elections in 1970-2007. We use a regression discontinuity design and exploit the discontinuity of electoral outcomes in candidate votes to estimate the causal effect of being elected on subsequent earnings. Our preliminary results suggest that getting elected into parliament increased subsequent earnings substantially, but the effect appears to be most pronounced in the short run. In the first electoral period after election, getting elected into parliament increased earnings by over 50\%, but we find no significant long-run impact on earnings.

Keywords: returns to office, proportional elections, regression discontinuity

\textbf{JEL: D72}

\textsuperscript{*}We thank Jari Hännikäinen and Leo Kang for excellent research assistance. Kotakorpi thanks the Academy of Finland for financial support. Terviö thanks the European Research Council for financial support.
1 Introduction

The purpose of this paper is to study how much politicians benefit financially from getting elected. Financial rewards—obtained both during a political career and afterwards—are likely to be a major component of the incentives for entering politics. Understanding politicians' incentives, on the other hand, is crucial for a well-functioning democracy.


Our empirical strategy for identifying the causal impact of getting elected on subsequent earnings is based on the discontinuity of electoral outcomes in electoral results. Winners are likely to differ from losers in many unobservable ways, but the differences between close winners and close losers—if “close” is appropriately defined—should be essentially random. Within the returns to office literature, a similar strategy has been utilized by Eggers and Heinmueller (2009) and Querubin and Snyder (2011).1

In this draft, we estimate the causal effect of being elected into office on earned income for candidates in the 1970-2007 parliamentary elections in Finland. We provide new evidence on the returns to political office using a large data set covering 11 parliamentary elections (1970 - 2007) and our dataset is large compared to most of the earlier studies.2 We are able to examine the effect of being elected on earnings both in the short and the long run, up to 40 years after the election.

On the methodological side, we develop a new method for identifying close winners and losers under arbitrary electoral rules. In many multi-party electoral systems a simple vote share is not sufficient to identify close winners and losers, because each electoral district has multiple parties and multiple seats. In Finland, where the D'Hondt system is used, every

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1Starting with Lee et al. (2004), there have been several articles examining the effects of election outcomes in majoritarian systems that exploit the random variation in election outcomes close to the 50-50 threshold in vote shares. The survey by Lee and Lemieux (2010) includes a list of eight articles that have used electoral outcomes as the discontinuity for causal inference. The literature examining the causal effects of election outcomes in proportional systems, on the other hand, is only just starting to emerge. Folke (2011), Liang (2011) and Freier and Odendahl (2012) examine the effects of party representation in proportional systems. Pettersson-Lidbom (2008) uses data from a proportional system (Sweden), but his analysis corresponds more closely to those carried out in the context of majoritarian systems, as he studies the effects of left-wing vs. right-wing ruling coalitions.

2We also have data on four municipal elections (1996-2004) and in later versions of the paper we will analyze the returns to office in both municipal and parliamentary elections. We are thus able to analyze the returns to holding political office at different levels of government and at different stages of a politician’s career. This will give us a sense of whether and how much more valuable political experience at the national level is compared to local politics.
candidate faces multiple margins of competition both within and between parties. Even though the intuition behind estimating causal effects of election outcomes using random variation around the threshold of getting elected is similar in any deterministic electoral system, the relatively simple regression discontinuity designs that use the two-party vote share in a one seat district are not applicable in Finland. Furthermore, there is no predetermined threshold in vote shares that would determine the winner of the election. We develop a simple "bootstrap" approach for identifying close winners and losers based on resampling votes from actual vote tally data.

Our preliminary findings indicate that in the first electoral period after election, getting elected into parliament increased earnings by over 50%. A smaller effect persists into the second electoral period after getting elected, and the effect fades out by the third electoral period. For the elections held in 1995 and 1999, the effect in the first two electoral periods is as high as above 80%.

The paper is organized as follows: Section 2 provides a review of related literature. In Section 3 we present key institutional facts about the Finnish political system and in Section 4 an overview of our data. In Section 5 we describe the methodology for identifying close elections. The empirical analysis is presented in Section 6, Section 7 provides a discussion of possible mechanisms behind our results, and Section 8 concludes.

2 Related literature

There is a large theoretical literature on the effects of pay for politicians on candidate quality (Besley 2004; Caselli and Morelli 2004; Messner and Polborn 2004; Poutvaara and Takalo 2007; Mattozzi and Merlo 2008). Recent empirical work has examined this issue, using either differences in compensation across municipalities (Ferraz and Finan 2009; Gagliarducci and Nannicini, forthcoming) or quasi-experimental evidence stemming from a large salary increase for members of parliament (Kotakorpi and Poutvaara 2011). Yet, a considerable part of the returns to a political career may arise after leaving office, or from indirect effects during holding office. Politicians may learn skills that are valuable also in the private sector that they may utilize either already during their political career or afterwards, or form connections that are valuable in subsequent rent-seeking.

Diermeier et al. (2005) conclude that congressional experience increases subsequent wages both in the private and in the public sector. The effect of wage while in office turns out to have only a small effect on retirement and other decisions. They also find evidence of politicians having a comparative advantage in politics, as skilled politicians do not appear to enjoy higher incomes after leaving office. An important caveat here is that Diermeier et al. analyze only decisions by incumbent politicians. Their analysis does not tell how the set of political candidates reacts to wages. Several contributions have also shown that politicians’ retirement decisions respond strongly to monetary incentives (Groseclose and Krehbiel 1994: Hall and
van Houweling 1995; Clarke et al. 1999; Keane and Merlo 2010). There is also a small emerging literature on the outside earnings of politicians (Becker et al. 2009; Gagliarducci et al. 2010).

A major challenge in estimating returns to holding political office is that politicians are not a random draw of citizens. Even when controlling for education, age and previous occupation, it is likely that a decision to enter politics is heavily influenced by a number of unobservable characteristics that may also be correlated with earnings ability. Therefore, studying only elected politicians is unlikely to tell which part of their income is due to having been elected, and which part is due to unobservable characteristics. To overcome this challenge, Eggers and Heinmueller (2009) estimate the returns to having held a political office for British MPs, using wealth data from the estates of deceased MPs and parliamentary candidates who had narrowly lost. They conclude that serving in the Parliament almost doubled the wealth for Conservatives, but had only a marginal effect for Labour politicians. Querubin and Snyder (2011) employ a regression discontinuity design based on close elections to the U.S. House of Representatives in the 19th century. They use Census data on wealth from 1850 to 1880 to compare wealth accumulation among politicians who had lost or won their first congressional race by a small margin. They do not find evidence of faster wealth accumulation among elected politicians, with the exception of politicians who were first elected during the Civil War. Representatives elected during the war time accumulated considerably more wealth than their opponents who narrowly lost.

Lundqvist (2011) analyzes the effect of being elected in local level politics on subsequent income in Sweden. Sweden has a proportional electoral system in which candidates are elected in most cases in an order determined by their party. Voters have a possibility of giving a preferential vote, and candidates who receive a sufficient number of preferential votes are moved up the list. Lundqvist (2011) uses a regression discontinuity design to compare the first candidate who was elected on a party list to the first candidates on the same list who were not elected. She does not find evidence of monetary returns to being elected.

3 Institutional background

Finland is a multi-party democracy with a proportional electoral system and a personal vote. Unlike in some other countries with proportional representation, it is not possible to vote just for a party list without specifying a candidate.

Finland has a one-chamber legislature, and the country is divided into fourteen mainland districts electing in total 199 legislators and the autonomous province of Åland electing one. In each parliamentary district, parties present lists of their candidates, typically in alphabetical order but sometimes with incumbents listed first, and each voter chooses one candidate on one list. The legislature seats of a given district are allocated based on party vote shares to the candidates in accordance with “competitive indices” as set by the d’Hondt
method. The competitive index for a given candidate is given by the total number of votes won by her party, divided by her personal rank in the within-party ranking by votes. Seats are then allocated to candidates based on the ranking of competitive indices.

Parties are also allowed to form (election- and district-specific) alliances. In an electoral alliance, two or more parties present candidates on a joint list. For the purposes of seat allocation, an electoral alliance is treated as one party.

Elections are held every four years. The number of MPs elected from the 14 mainland districts varied in 2003 between 6 and 33. The number of candidates that a party can present equals the number of representatives elected from the district, if this is 14 or more. In small districts with less than 14 seats, parties can present 14 candidates.

Altogether eight different parties had seats in the parliament elected in 2007. The five largest parties were the Centre Party (51), the National Coalition Party (50 seats; a center-right party), the Social Democratic Party (45), the Left Alliance (17) and the Green League (15).

4 Data

The data has been obtained from several sources. The election data, including information on each candidate’s party, election district, number of votes and whether he or she was elected, was obtained from the Ministry of Justice (for post-1995 elections) or scanned from printed sources (official statistics published by Statistics Finland, for pre-1995 elections). This data covers all candidates in the 11 parliamentary elections that we study.

The candidates’ dates of birth were then collected. For candidates in post-1995 elections, the dates of birth were also obtained from the Ministry of Justice databases, whereas the dates of birth for candidates in earlier elections were collected by hand from various different sources. The dates of birth of all previous members of parliament are listed on the web site of the parliament. The dates of birth for those candidates who did not get elected were collected from archives of the major parties as well as from archives of the election councils of some election districts.

Information on names and birth dates were then used to match candidates with earnings data from the tax authorities. We have information on the candidates’ earnings for the years 1993 and 1995-2010. Some summary statistics of the earnings data as well as some background characteristics of the candidates are presented in tables 1a and 1b.

[Tables 1a&b here]

Table 1a presents the summary statistics for all candidates in the parliamentary elections 1970-2007, whereas Table 1b does the same separately for elected and defeated candidates.4

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3The 1970s are an exception to this rule in our data, as elections were held in 1970, 1972, 1975 and 1979. Thereafter, elections have been held every four years.
4The unit of observation is candidate-election year.
Over 33% of candidates were female, and the average age at election was 45 years. The variable "Income data found" gives the percentage of candidate-years whom we were able to match with the tax register data. That is, 87% of the candidate-years in the data were successfully matched with income data. Income data was found for nearly all (99.5%) winning candidates, whereas the success rate was 85% for defeated candidates. However, we show below that the success rate was much higher for those candidates who lost narrowly, and it is approximately equal on each side of the margin of getting elected. Therefore missing data does not pose a problem for our analysis.

Table 1b shows that the fraction of men is slightly higher among those candidates who were elected, winning candidates are slightly older and have notably higher earnings than those who were not elected. Elected candidates had higher earnings than defeated candidates not only after the election but also already prior to the election.

Therefore, as expected, those who got elected and those who did not differ along these dimensions that we can observe. Further, it is likely that they differ in numerous unobservable characteristics. In the empirical analysis we focus on candidates who were close to the border of getting elected; among these candidates, any differences in both observable and unobservable background characteristics should be randomized out.

5 Bootstrapping Close Winners and Losers

In this section we present a resampling method to identify close winners and losers under any electoral rule. Our empirical application is based on the D’Hondt method used in Finland, described in Section 3.1, but this method would work under any electoral rule, including those with multidimensional votes. The purpose of the method is to provide a measure of "closeness" that is comparable across elections in different districts and years, where the number of seats and voters, and even electoral rules may differ. The resulting ordering by closeness can then be used to disentangle the causal effects of being elected from unobserved heterogeneity that drives both electoral strength and the dependent variable of interest.

In a First-Past-The-Post (FPTP) election with two major parties measuring closeness is very easy, and a reasonable measure of closeness is provided by the candidate’s share of the two-party vote; indeed the vote share defines a sharp discontinuity at 50%. Under other electoral systems there may be no such obvious variable with a predetermined point of discontinuity. Under the D’Hondt method each candidate can be close to multiple members of her own party and to multiple members of other parties as well, in the sense that a swing of a small number of votes would switch the status of a candidate from winner to loser or vice versa. There are many counterfactual combinations of changes in vote shares that can cause a close candidate to switch status, and they don’t have to involve any change in the vote shares of the candidates that switch. A method based on resampling is a natural way of investigating closeness in a situation where tractable analytical methods seem beyond reach.
5.1 Basic idea

Consider an election where \( n \) candidates from \( k \) parties compete for \( s \) seats. There are \( M \) voters who each vote for one candidate. The election rule \( \mathcal{H} \) selects \( s \) winners by aggregating the votes. The votes are anonymous, and the rule may utilize the party membership status of individual candidates, and randomization to break ties.

The basic idea is to resample with replacement \( m \) votes from the empirical distribution of votes, then recalculate the winners according to the actual electoral rule \( \mathcal{H} \). This "bootstrap election" is repeated many times, with the purpose of measuring for each candidate \( i \) the fraction \( p_i \) of bootstrap elections where they got elected. We call the resulting values \( p_i \) the bootstrap win shares.\(^5\) In special cases it would be feasible to compute the exact value of the expected vector \( p = P(m, \theta|\mathcal{H}) \), which is a function of the empirical vote shares \( \theta \), resample size \( m \), and of the electoral rule.\(^6\) More generally, the number of repetitions should be set high enough so that \( p \) is stable to adding more repetitions.

The point of \( p \) is to order the candidates by how close they were to being elected or not, in a way that allows this "closeness" to be comparable between parties and between elections. Candidates with high \( p_i \) who were not in fact elected are close losers, and candidates with low \( p_i \) who were elected are close winners, while candidates with \( p_i \approx 1 \) are can be called "safe" and those with \( p_i \approx 0 \) "no-hopers." However, \( p_i \) is not a cardinal measure. In particular, it is not "a probability of being elected" in any ex ante sense, just the probability of being a winner in the bootstrap election.

It should be noted that there is no ex ante obvious sharp discontinuity in an election with more than one party. Consider an election where three candidates are roughly tied for one seat, while all other candidates are far from the margin. In this case all marginal candidates will have \( p_i \approx 1/3 \), and one of them was actually elected. In another district where three candidates are roughly tied for two seats each marginal candidate will have \( p_i \approx 2/3 \), with two of them actually elected. Furthermore, under the D'Hondt system, there can be situations where, for example, 10 candidates from 4 different parties are roughly tied for a seat, and situations where 5 candidates are roughly tied for 4 seats. For this reason there is no special value for \( p_i \) that would lead to a discontinuity in the probability of getting elected, even though electoral rules are deterministic (save for the rare tie break).

In the empirical application, it is useful to normalize the measure of closeness in such a way that all losers are below a given threshold (say 0) and all winners are above this threshold. This normalized variable can then be used as the assignment variable in sharp RD designs. To achieve this, for each year-district-alliance, we define the "pivotal \( p \)" as the mean of highest unelected \( p_i \) and lowest elected \( p_i \). For lists where no one is elected the pivotal \( p \) is defined as 100. The variable \( pmargin \) is then calculated as the candidate’s level

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\(^{5}\)To do: find a catchier term for \( p \).

\(^{6}\)For notational convenience, we take the electoral rule to include the number of seats and the data about candidates’ party membership status.
of $p_i$ minus the pivotal $p$. This way all winners have positive $pmargin_i$, and all losers have negative $pmargin_i$.\footnote{This is subject to sampling variance in the bootstrap definition of $p_i$. In the bootstrap, for the 18563 candidate years, there were two within-alliance pairs of winner-losers for whom the bootstrap reversed their ordering by $p_i$. For these cases we set $pmargin$ equal to zero.}

The results of the bootstrap procedure for the 1970-2007 election are presented in Figure 1, which shows the distribution of $pmargin_i$. A large fraction of candidates are "no-hopers" with $p_i \approx 0$, which causes a large peak at low levels of $pmargin$. In order to get a clearer picture of the more relevant parts of the histogram, we have cut out the left-most bin, which consists of no-hopers from year-district-alliances where no one was elected ($pmargin = -100$). This cuts away 5569 observations from the figure. Most importantly for our purposes there appears to be no jump in the density of the assignment variable at zero.

[Figure 1 here]

5.2 Resample size and a probabilistic voting interpretation

Our motivation for this method is purely heuristic. Yet the bootstrap procedure also has a structural interpretation, which is instructive, when considering the role of the resample size $m$. To simplify the discussion, suppose that the number of voters $M = km$ in an election is an integer multiple of the resample size; the case $k = 1$ is the special case of a full resample. If the electorate consisted of $m$ "blocks" of $k$ voters who vote identically then the resample with $m$ blocks is equivalent with a full-size resample of the underlying block-correlated votes.

Our method for choosing the bootstrap sample size $m$ is also heuristic. In an election with many voters, a relatively small $m$ is needed for there to be significant uncertainty, or else the law of large numbers will make almost all candidate win probabilities zero or one in all but the smallest elections. A too small $m$ will smooth out the impact of the voting rule; and an election with $m = s$ is almost equivalent to just using the empirical votes shares as $p$.\footnote{The equivalence is not exact, because, due to sampling with replacement, some seats may have to be allocated randomly between candidates who get zero votes.} With high $m$ the win probabilities approach the actual outcomes (0 or 1), and the necessary number of repetitions needed for $p$ to converge increases beyond manageable. A higher $m$ also necessitates a larger number of bootstrap repetitions per election, which compounds the increase in required computational time. The point of the method is to bring out the variation in closeness, and for this purpose there should be a significant fraction of candidates with win probability not too close to either extreme.

It is necessary to check that increasing $m$ does not significantly change the ordering of candidates by the win probability. The large number of elections and finite computational resources together put a practical upper bound on $m$. 
6 Results

We first turn to a graphical analysis of the data. In figures 2-4, the candidates in the 1970-2007 parliamentary elections have been arranged by the forcing variable, $pmargin_i$, and divided into bins of width 1.\(^9\) Zero on the horizontal axis is therefore the threshold between losers and winners. In Figure 2, we plot the bin averages of candidates’ (log) earnings in 2008-2010; this allows us to include all elections in the analysis although we do lose many of the candidates from the earlier elections. We also plot the (log of) average earnings in years $(t+1)$ to $(t+3)$, $(t+5)$ to $(t+7)$ and $(t+9)$ to $(t+11)$ after the election. These correspond roughly to average earnings over the first, second and third electoral term after the election. Elections take place in March, and the new parliamentarians start their term right after the election. We exclude earnings in the election year, as these would involve a mixture of pre- and post-election earnings.\(^10\)

We also fit 4th order polynomial regressions of each of the above income variables on $pmargin_i$, estimated separately for losers and winners. The solid line in each figure is the fitted values from these regressions, and the dashed lines are the associated 95% confidence intervals.

Looking at average earnings in 2008-2010 (the top left-hand panel of Figure 2), there appear to be no significant effects from getting elected into parliament on earnings in these years. This figure, however, combines income observations at very different lags, at up to a 40 years lag for candidates in the 1970 election. It may well be that any effects of getting elected are most pronounced in the short-run, shortly after getting elected. Indeed, a clear jump in earnings between close losers and winners is visible in the top right-hand panel of the figure, which shows earnings in the first electoral term after the election. On the other hand, the effect in the second and third electoral terms (bottom panels) appears much smaller and statistically insignificant.

Next, we report RD estimates of the causal effect of getting elected into parliament on future earnings, using local linear regression and the Imbens-Kalyanamaran (2012) algorithm for choosing the bandwidth.\(^11\) Corresponding to the analysis in Figure 2, we use four different measures of post-election earnings: we estimate the effect on earnings in 2008-2010, as well

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\(^9\)The left and right-most bins where $pmargin_i < -50$ or $pmargin_i > 50$ have been cut out from the figures. As the main purpose of these figures is to check whether the density of each variable has a jump at zero, cutting out extreme values does not lose important information, but makes the figures clearer.

\(^10\)Using three-year averages of earnings starting from year $(t+1)$ after the election also has the benefit that we are able to include one additional election in the sample: the last election took place in 2007 and our income data ends in 2010.

\(^11\)This is an algorithm for optimal bandwidth choice, specifically tailored to an RD setting. Given the somewhat exotic distribution of our assignment variable, with a large peak at the left-hand tail, we have also run the regressions reported in Table 2, leaving out observations within the smallest 1% of the assignment variable. This has no effect on the results. To be done: robustness checks using other bandwidths and specifications.
as on earnings in years (t+1) to (t+3), (t+5) to (t+7) and (t+9) to (t+11) after the election. We use a log specification, and therefore Table 2 gives estimates for the percentage change in earnings due to getting elected.

[Table 2 here]

The first two columns of Table 2 report results on how getting elected into parliament in 1970-2007 affected (log) earnings in 2008-2010. According to these results, getting elected into parliament has increased average earnings by over 30%. Note that this result differs somewhat from what we would conclude based on the top left-hand panel of Figure 2. The difference may be caused by several factors: First, the regressions reported in Table 2 use an optimal bandwidth based on Imbens and Kalyanaraman (2012), whereas the bin width used in Figure 2 is rather ad hoc. Second, the results shown in Figure 2 have been calculated without any controls. In Table 2, we have included election year dummies in column 1 and added individual controls for age, gender, incumbency and party in column 2. Third, the results in Table 2 are based on local linear regressions, whereas figure 2 used a 4th order polynomial.

As was noted above, the regressions in columns (1) and (2) combine income observations at very different lags from the time when the candidate was elected, at up to a 40 years lag for candidates in the 1970 election. In columns (3) - (8), we analyze earnings in the first, second and third electoral period after the candidate was elected into parliament. The results show that getting elected has a very large effect, an increase of over 50%, on earnings in the first electoral period after election. In the second electoral period, the estimated increase is still over 30%, but only marginally significant. By the third electoral period, the effect has vanished.

One feature of the regressions in columns (3) - (8) of Table 2 is that they are each based on a different set of elections - as we increase the lag at which earnings are measured, we need to analyze elections that are further back in time. To obtain results at various lags of income measurement, that are based on the same set of elections, we need to restrict attention to the elections that took place in 1995 and 1999. For candidates in these two elections, we can measure income after one, two and three electoral periods. Concentrating on these elections also has the benefit that we can control for income prior to the election.\footnote{As we have income data for 1993 but not for 1994, we control for income two years before the election.} The results based on these two elections are presented in Table 3.

[Table 3 here]

The first two columns of Table 3 indicate that on average, getting elected into parliament in the 1995 or 1999 election increased earnings by as much as 80 - 90% in the first electoral cycle after the election. The effect persists to the second electoral cycle, and largely disappears
by the third electoral cycle. It should be noted that one drawback of restricting attention to a small set of elections is that we need to take extra care to ensure that there are enough observations close to the threshold of getting elected, for the RD approach to be valid. For the two elections analyzed here, this appears not to be a problem.\footnote{A falsification test, where we conduct an analysis identical to column (2) in Table 3 but take Log (Earnings) (t-2) as the dependent variable, yields a point estimate of -0.137 and is statistically insignificant (standard error 0.295). Further, figures similar to Figure 3 (see below), drawn only for these two elections, show no jumps in the background variables at the threshold of getting elected.}

Finally, figure 3 plots the bin averages (for all candidates in our dataset) and the fits from a similar 4th order polynomial regression as in Figure 2, for average pre-election income, as well as various background variables (the fraction of incumbents, the fraction of females, year of birth, the candidates’ share of votes in the district, election year, the fraction of candidates with missing income data, and the fraction of candidates representing each of the three main parties). These figures are instructive in examining the pre-treatment balance of these background characteristics - for our approach to work well, there should be no shifts in any of these variables at zero in the figures. This is what we find.

[Figure 3 here]

7 Discussion

What might explain the increase in earnings caused by getting elected into parliament? First, parliamentarians receive a salary that exceeds average salaries. More interestingly, there may also be indirect effects: if political connections are a valuable asset outside politics, becoming a parliamentarian may be a stepping stone into profitable secondary assignments, such as memberships in company boards. More than half of current MPs have at least one position of trust in a private or state-owned company board or governing council, and some of these positions pay quite well. On the other hand, entering politics also has a direct opportunity cost of lost earnings outside politics, and for some individuals the return to office may be negative.

Above, we found most pronounced positive effects on earnings in the first electoral period after election - a period during which the winning candidates were all still MPs for sure. Nevertheless, it seems that even though direct wage effects may explain some of the results, they are likely not large enough to explain all of our findings.

We have obtained information on the average salaries of parliamentarians in 1995-2010. The average annual salary of parliamentarians is graphed together with the average earnings of defeated candidates in Figure 4. Figure 4a plots the level of the average salary/earnings, and figure 4a plots the gap between the two (in %). Here, we have used three groups of defeated candidates: (i) all defeated candidates, which is not a good comparison group, as we are mainly interested in candidates who lost by a narrow margin; (ii) defeated candidates with $p_i > 0$ (thus excluding the "no-hopers" with $p_i = 0$); (iii) defeated candidates with $p_i > 5$
(still a rather liberal (and admittedly ad hoc) definition of a narrowly defeated candidate). Note also that to the extent that candidates who narrowly won are less likely to be nominated to the more influential positions within the parliament that imply a higher salary, the average salary of parliamentarians is an over-estimate of the average salary of those who were narrowly elected.

[Figures 4a&b here] Using the defeated candidates with $p_i > 0$ as a comparison group, parliamentarians’ average salary exceeded the earnings in this group by approximately 40-50% in the 1990s and around 89-90% in the 2000s. However, restricting attention to defeated candidates with $p_i > 5$, the gap vanishes in the 1990s and is around 30-40 % in the 2000s. Given these numbers, as well as the fact that we estimated large effects from getting elected already in the 1990s (see Table 3), it is unlikely that direct wage effects would explain all of our findings.

The effect on earnings from becoming an MP in Finland appears to be remarkably high, also from the point of view that before a 35-percent salary increase in the year 2000, the real starting salaries of Finnish MPs were lowest in the European Union. (Kotakorpi and Poutvaara 2011.) This suggests that the gains from being elected into parliament may be even higher in many other European countries. Overall, related to the long-standing question of whether politicians are over- or underpaid, our findings suggest that Finnish politicians are paid rather well.

MORE DISCUSSION TO BE ADDED

8 Conclusion

TO BE ADDED

References


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<td>0</td>
<td>405,116</td>
</tr>
<tr>
<td>Earnings (t+5)-(t+7)</td>
<td>7,546</td>
<td>33,319</td>
<td>27,852</td>
<td>0</td>
<td>405,116</td>
</tr>
<tr>
<td>Earnings (t+9)-(t+11)</td>
<td>6,902</td>
<td>34,781</td>
<td>30,559</td>
<td>0</td>
<td>459,449</td>
</tr>
<tr>
<td>Earnings (t-1)-(t-3)</td>
<td>6,002</td>
<td>28,024</td>
<td>27,407</td>
<td>0</td>
<td>1,087,845</td>
</tr>
</tbody>
</table>

Earnings are measured in euros per annum.
Table 1b. Elected vs. defeated candidates in the 1970-2007 parliamentary elections

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Defeated candidates</th>
<th>Elected candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>N</td>
<td>mean</td>
<td>sd</td>
</tr>
<tr>
<td>Female</td>
<td>16,361</td>
<td>0.338</td>
</tr>
<tr>
<td>Age at election</td>
<td>14,078</td>
<td>44.98</td>
</tr>
<tr>
<td>NCP</td>
<td>16,363</td>
<td>0.117</td>
</tr>
<tr>
<td>Centre</td>
<td>16,363</td>
<td>0.104</td>
</tr>
<tr>
<td>SDP</td>
<td>16,363</td>
<td>0.114</td>
</tr>
<tr>
<td>Other parties</td>
<td>16,363</td>
<td>0.666</td>
</tr>
<tr>
<td>Income data found</td>
<td>16,363</td>
<td>0.850</td>
</tr>
<tr>
<td>Earnings 1993-2010</td>
<td>12,230</td>
<td>28,311</td>
</tr>
<tr>
<td>Earnings 2008-2010</td>
<td>12,494</td>
<td>32,491</td>
</tr>
<tr>
<td>Earnings (t+1)-(t+3)</td>
<td>7,261</td>
<td>27,113</td>
</tr>
<tr>
<td>Earnings (t+5)-(t+7)</td>
<td>6,751</td>
<td>28,819</td>
</tr>
<tr>
<td>Earnings (t+9)-(t+11)</td>
<td>6,109</td>
<td>30,124</td>
</tr>
<tr>
<td>Earnings (t-1)-(t-3)</td>
<td>5,402</td>
<td>24,544</td>
</tr>
</tbody>
</table>

Earnings are measured in euros per annum.
Table 2. Effect on future earnings of getting elected into parliament.\(^1\)

<table>
<thead>
<tr>
<th></th>
<th>Log(Earnings) 2008-2010</th>
<th>Log(Earnings) (t+1)-(t+3)</th>
<th>Log(Earnings) (t+5)-(t+7)</th>
<th>Log(Earnings) (t+9) - (t+11)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Elected</td>
<td>0.325**</td>
<td>0.376***</td>
<td>0.585**</td>
<td>0.527***</td>
</tr>
<tr>
<td></td>
<td>(0.149)</td>
<td>(0.134)</td>
<td>(0.240)</td>
<td>(0.191)</td>
</tr>
<tr>
<td></td>
<td>0.373</td>
<td>0.378*</td>
<td>0.131</td>
<td>0.040</td>
</tr>
<tr>
<td></td>
<td>(0.259)</td>
<td>(0.224)</td>
<td>(0.226)</td>
<td>(0.244)</td>
</tr>
<tr>
<td>Optimal bandwidth</td>
<td>4.048</td>
<td>4.048</td>
<td>3.763</td>
<td>3.763</td>
</tr>
<tr>
<td></td>
<td>4.448</td>
<td>4.448</td>
<td>4.151</td>
<td>4.151</td>
</tr>
<tr>
<td>N</td>
<td>13,225</td>
<td>13,225</td>
<td>7,971</td>
<td>7,971</td>
</tr>
<tr>
<td></td>
<td>7,374</td>
<td>7,374</td>
<td>6,705</td>
<td>6,705</td>
</tr>
<tr>
<td>Individual controls(^3)</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

\(^1\)Columns (1) and (2) use data for all elections 1970-2007. Columns (3)-(4) use data for 1995-2007 elections, columns (5)-(6) for 1991-2003 elections and columns (7) and (8) for 1987-1999 elections. Election year dummies are included as controls in all columns.

\(^2\)The estimates have been obtained using the Imbens-Kalyanamaran (2012) algorithm for optimal bandwidth selection in RD designs.

\(^3\)Individual controls include gender, age, party dummies and an incumbency dummy. Note that in column (2) the incumbency dummy is omitted as our dataset does not currently include incumbency information for the 1970 election.
Table 3. Effect on future earnings of getting elected into parliament: 1995 and 1999 elections.

<table>
<thead>
<tr>
<th></th>
<th>Log(Earnings) (t+1)-(t+3)</th>
<th>Log(Earnings) (t+5)-(t+7)</th>
<th>Log(Earnings) (t+9)-(t+11)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>Elected(^1)</td>
<td>0.767(^*)</td>
<td>0.953(^***)</td>
<td>0.808(^**)</td>
</tr>
<tr>
<td></td>
<td>(0.395)</td>
<td>(0.199)</td>
<td>(0.402)</td>
</tr>
<tr>
<td>Optimal bandwidth</td>
<td>4.249</td>
<td>4.339</td>
<td>5.125</td>
</tr>
<tr>
<td>N</td>
<td>4,028</td>
<td>3,968</td>
<td>3,960</td>
</tr>
<tr>
<td>Individual controls(^2)</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

\(^*\)p<0.1, \(^{*}\)p<0.05, \(^{***}\)p<0.01

\(^1\)The estimates have been obtained using the Imbens-Kalyanamran (2012) algorithm for optimal bandwidth selection in RD designs.

\(^2\)Election year dummies included as controls in all columns. Individual controls include gender, age, party dummies for the three for the three largest parties and Log(Earnings) (t-2).