The Lure of the Private Sector

– Career prospects affect selection out of the Senate

July 31, 2018

Word count: 9.708

Abstract

While it is often conjectured that private sector salaries lure elected politicians out of public service, no quantitative evidence exists on this proposition. If private sector actors compete with the electorate for the labor of high-skilled politicians, it would have important implications for representative democracy. I argue that legislators gauge their private sector career prospects by observing how successful their former colleagues, who now work as lobbyists, are. I document that when career prospects improve, so does the probability that senators take a lobbying job. There is no effect immediately before a senator's pension scheme improves. Senators, who retire from working life after Congress or are elected to a safe seat, are also unaffected. Finally, senators, who have sponsored the least bills and are more absent for floor votes, are affected the most. All of this indicates that senators react to opportunity costs associated with being in office.

Introduction

The average legislator stands to gain almost extravagantly from leaving office for a private sector job (Eggers and Hainmueller 2009; Palmer and Schneer 2016). There are two reasons why, this may be cause for concern. First, a growing strand of the literature on so-called revolving door politics concerns itself with the prospect that public officials trade influence on public policy for lucrative post-elective employment (Adolph 2013, 2018; Egerod 2017; Santos 2006; Shepherd and You 2018). The basic – and untested – assumption is that officials respond to career incentives in the private sector. This is not necessarily so – if voters are successful in selecting intrinsically motivated politicians (Fearon 1999; Przeworski et al. 1999) or officeholders are compensated well enough (Besley 2006; Diermeier et al. 2005; Keane and Merlo 2010; Mattozzi and Merlo 2008) outside career prospects would be unlikely to lure legislators away from public service.

Second, while the extant literature on adverse selection in political representation has focused heavily on how monetary incentives structure the selection *into* office (Besley 2006; Caselli and Morelli 2004; Dal Bó et al. 2013; Fearon 1999; Ferraz and Finan 2009; Messner and Polborn 2004; Przeworski et al. 1999) far less attention has been devoted to how the same structures can motivate the selection *out of* office. If private sector salaries indeed can lure elected officials out of public service, this would establish private sector actors as rivals to the electorate in the demand for the labor of highly skilled politicians – even while those legislators are in office. Since there are few factors as important for the functioning of representative institutions as the selection of officeholders (Besley 2006; Przeworski et al. 1999), this is an extremely important impact that the revolving door might have.[1]

Yet despite what seems like widespread concern among academics, pundits and politicians, we have yet to amass systematic evidence to support the claim that monetary gains in the private sector actually do lure legislators out of public service. In this paper, I focus

[1]This would mirror the development among congressional staffers, where much expertise has effectively been outsourced to lobbying firms through the revolving door (LaPira and Thomas 2017).

on the US Senate, and show that career prospects in the private sector indeed do affect senators' decision to select out of public service.

One reason why this important determinant of political selection is somewhat understudied empirically might be that it is difficult to ascertain, when and how Members of Congress (MCs) receive information about private sector compensation. To remedy this, I present a theory of how wage expectations are formed on the labor market for politicians. I argue that MCs gauge how well they would do, if they were to walk through the revolving door, by observing the success enjoyed by their former colleagues, who currently work in the private sector. To do this, however, a senator has to find former colleagues, who are comparable in some sense, and use their experiences to update expectations regarding her own career prospects. I argue that employment histories prior to serving in the Senate and committee assignments during their tenure provide good points of comparison. Both pre-Senate careers (Carnes 2013; Francis and Bramlett 2017) and in-Senate committee assignments (Hibbing 1982b) are broadly predictive of behavior during Congressional tenure and labor market outcomes afterwards. Thus, I propose that senators will gauge their career prospects by observing senators-turned-lobbyists, who worked in similar jobs before the Senate, or served in a comparable mix of committees during their tenure. When their success increases, the currently serving senator becomes more likely to leave office for a private sector job as well.

To investigate this claim, I have collected data on the pre- and post-Senate career trajectories of senators serving between the 102nd and the 113th Congress. I use hierarchical cluster analysis to group senators together based on how similar a) pre-Senate career trajectories they have followed, and b) the portfolio of committees they have served in. For each of these career groups, I then predict the average size of the lobbying contracts that senators-turned-lobbyists work on. This allows me to capture how successful revolving door senators are in their post-elective careers, and mimics the comparison I expect MCs to make: they gauge their own career prospects by observing their former colleagues. Importantly, this also provides me with a proxy for career prospects, which is plausibly exogenous to the time-varying characteristics of currently serving senators.

My fixed effects results show that when career prospects improve by one standard deviation, the probability that a senator walks through the revolving door increases by approximately 3 percentage points. Compared to the size and turnover in the Senate this is a large effect. It corresponds to three additional senators walking through the revolving door, which is an increase of more than fifty percent over the baseline probability of selecting out in the average Congress, and compares to one-third of the effect of ending a Senate term. These results are robust to a wide range of different specifications. The argument crucially hinges upon senators taking stock of the opportunity costs to holding office. To substantiate this mechanism, I show that senators, who have the most to gain by staying in office (proxied in a variety of ways) are unaffected by private sector career prospects.

This paper is closely related to the literature on voluntary retirement from Congress. Using interview data Hibbing (1982a) presented evidence indicating that foregone private sector salaries were a factor in retirement decisions among his 24 interviewees. Relatedly, financial renumeration from congressional service has been found to be important determinants of voluntary retirement (Diermeier et al. 2005; Groseclose and Krehbiel 1994; Hall and Van Houweling 1995; Hibbing 1982b). Monetary remuneration can be seen as a special case of expected benefits from holding elected office, which more generally have been found to impact retirement decisions (Stone et al. 2010; Theriault 1998; Wolak 2007). I add to this literature by providing quantitative evidence that private sector actors can use the promise of lucrative benefits to attract legislators away from public service.

In investigating this, I also add to the growing literature that describes the people, who walk through the revolving door (Lazarus et al. 2016). To my knowledge, this provides the first quantitative evidence on how private sector monetary rewards can incentivize legislators to walk through the revolving door. Something that – in spite of the lacking evidence – has almost been taken for granted in the public debate.

A Theory of How Legislators Assess Career Prospects

It is hardly a controversial statement that monetary rewards structure selection into elected office (Dal Bó et al. 2013; Ferraz and Finan 2009; Mattozzi and Merlo 2008; Messner and Polborn 2004). Additionally, Keane and Merlo (2010) have formalized the intuition behind how private sector salaries induces politicians to leave office. What remains unclear, however, is how currently serving politicians obtain information about their private sector career prospects. When making career choices, the office holder does not observe the actual distribution of rewards that are available to her in the private sector. Instead she makes her career decisions based on expectations (Levin and Stephan 1991; Oyer 2008; Ryoo and Rosen 2004), which are updated continuously as new information about the actual distribution is revealed (Margolis and Okatenko 2008). Politicians glean this information by observing how well their former colleagues do in the private sector, which makes them update their expectations about how lucrative it would be for themselves to walk through the revolving door. In this way, they use their colleagues' post-elective performance as a (noisy) signal about their own career prospects. Through this signal, legislators are continuously confronted with new information about the opportunity costs associated with holding political office. When the expected reward approaches their reservation price, the probability that they leave office for private sector employment increases.

Importantly, however, opportunity structures vary between senators and over the course of the tenure of each individual, which could impact the attractiveness of outside career options. If legislators indeed choose their career paths by discounting gains from staying in office against potential private sector earnings, as I suggest here, legislators should not be equally responsive to these recurrent signals of career prospects at all points in their careers. This implies two additional observable implications of the theory. First, there are points in a legislator's tenure, when they would give up certain perks by leaving office. In these periods, the private sector earnings, they forego by choosing to remain in office, are not alluring enough, simply because they would give up much more by leaving office. One illuminating example of this is the congressional pension scheme,

which becomes significantly more lucrative at three specific points during a legislator's tenure. When an MC draws close to such a point, it stands to reason that outside options do not matter much for them. Second, some types of officeholders may value legislative achievement so much that they are unresponsive to changes in outside career prospects (Keane and Merlo 2010). For this type of legislator, opportunity costs to holding office are simply always low, because the payoff from legislative work is high.

Finding Points of Comparison

US Senators – despite being a relatively homogeneous group – vary to a significant degree in their abilities, educations, and previous careers. As depicted in Figure 1, this is mirrored in an equally large variation in post-elective outcomes on the labor market for lobbyists. Some former senators work on lobbying contracts whose value average to almost nothing, while the typical contracts of the most successful senators are worth several hundred thousand.

On other non-political labor markets, workers, who are about to enter the labor force, are able to predict their future earnings by comparing their individual characteristics to those of workers, that are already active (Frick and Maihaus 2016). Therefore, I expect senators to look for former colleagues, who have similar individual characteristics, and use their post-Senate success to form expectations as to how well they would do, if they were to walk through the revolving door. This requires them to construct reference groups of senators, who share their individual characteristics. I propose two factors on which senators can construct such reference groups: a) the careers, they followed before entering the Senate, and b) committee assignments during their senatorial tenure.

Adolph (2013) argues that career socialization shapes the decisions public officials make while in office. Specifically concerning MCs, Carnes (2013) has recently shown that the careers legislators followed before being elected to Congress affect their behavior throughout their time in office. Not only do pre-Congress career trajectories impact voting, they also predict the content of the bills MCs propose, how hard they work to see them enacted, and their views of the world, generally speaking (Carnes 2013). This is

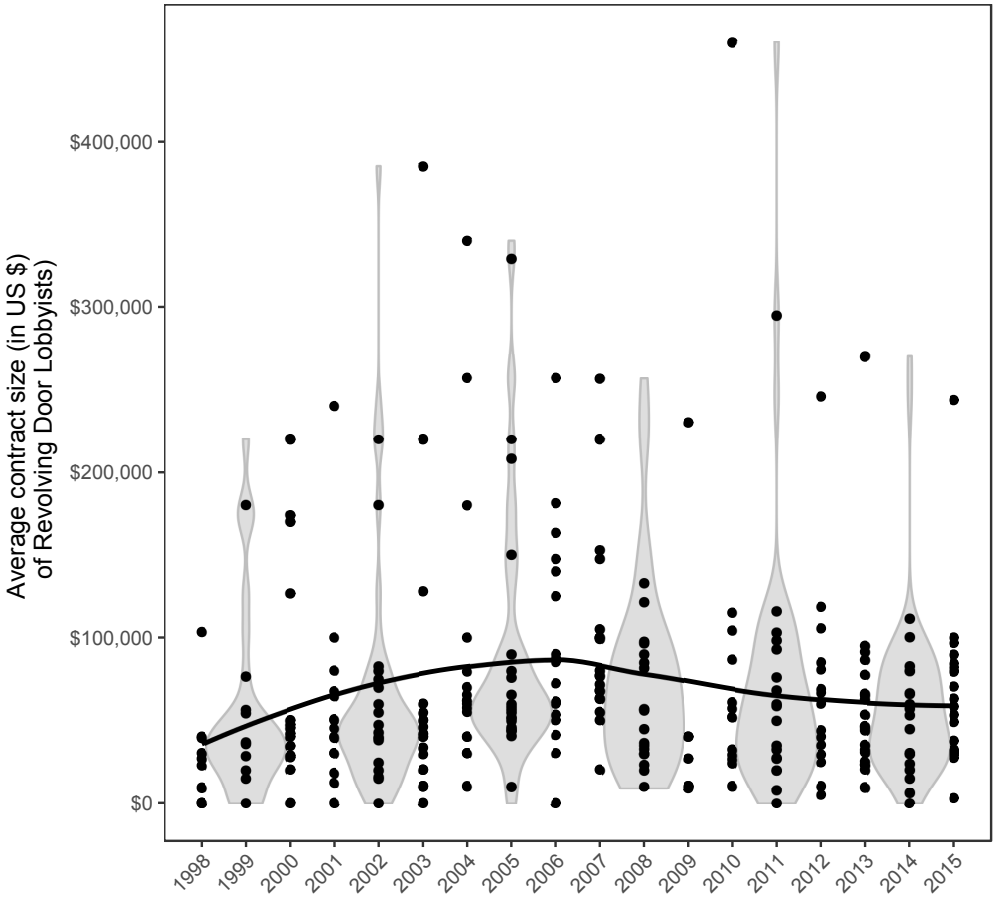

Figure 1: Average Contract Sizes for Senators-Turned-Lobbyists.

Note: For presentational purposes, seven former senators with average Contract Sizes above $1M are excluded. Solid line is a loess smoother. Violin densities on subsets consisting of three years at the time (1998-2000, 2001-2003 etc.).

especially true, when there is congruence between precongressional careers and the focus of the committees MCs are assigned to (Francis and Bramlett 2017).

Similarly, the portfolio of committees that senators have been assigned to during their political careers carry information about their political interests, preferences and post-elective labor market outcomes. A large literature has established the institutional prominence of congressional committees (Shepsle 1978; Shepsle and Weingast 1987). Committee membership affords senators the opportunity to have a political impact, service constituent preferences and attract pork (Berry and Fowler 2016; Endersby and McCurdy 1996; Lazarus 2010; Schiller 1995). Personal interests that predate the political career

also play a role in which committees senators seek to be assigned to (Bullock III 1985; Fenno 1973; Schiller 1995).

Importantly, however, because of the prominence of committees in the legislative process, special interests are generally highly interested in targeting them in their influence-seeking (Bertrand et al. 2014; Fouirnaies and Hall 2018; Hall and Deardorff 2006). This makes connections to committees an extremely valuable asset for revolving door lobbyists (Cain and Drutman 2014). Consequently, the revenues generated by revolvers (Blanes i Vidal et al. 2012; McCrain Forthcoming) as well as their personal earnings (Hibbing 1982a) are strongly impacted by the committee connections they have made during their career in public service. Because of this, committee assignment is not only personally important for senators, who wish to see their agenda enacted, it is also a valuable asset for them in their post-elective careers.

In a nutshell, both pre-Senate careers and committee assignment during tenure in Senate carry broad information about politician type. Senators with comparable pre-Senate careers and portfolios of committee memberships are likely to behave similarly during their tenure and experience equally lucrative labor market outcomes afterwards. This makes it natural for senators to use these factors to construct their reference groups.

A senator can look to former colleagues, who are in her reference group and use their success to form expectations about how well she might do herself. When this makes her expect larger rewards from walking through the revolving door, the probability that she will take private sector employment increases.

Empirical Strategy

The empirical strategy and the expected results are illustrated in Table 1. First, each senator is placed in two distinct reference groups with similar pre-Senate career paths and in-Senate committee assignments, respectively. I then compute the expected dollar size of the lobbying contracts in each of these groups. This serves as my two measures of career prospects. I now elaborate these steps.

Table 1: The empirical strategy & expected results

	Reference Group	**Expected Post-Elective Success**	**Career Decision**
Former lawyers	Former Senator$_{1l}$ Former Senator$_{2l}$ ⋮ Former Senator$_{L}$	\$150,000	Currently serving senator$_1$ selects out
Former military	Former Senator$_{1m}$ Former Senator$_{2m}$ ⋮ Former Senator$_{M}$	\$80,000	Currently serving senator$_2$ does not selects out
⋮	⋮	⋮	⋮
Former Career$_K$	Former Senator$_{1k}$ Former Senator$_{2k}$ ⋮ Former Senator$_{K}$	E(success$_s$)	Currently serving senator$_s$ selects out with P(select out | E(success$_s$))

Note: Senators are matched into reference groups using cluster analysis, illustrated here using pre-Senate careers. The predicted size of lobbying contracts that former senators in reference group K *work on, is used to gauge the career prospects of currently serving senator* s*. E.g. currently serving senator*$_1$ *selects out due to an expectation of highly valuable Contract Sizes in her reference group of former lawyers, while senator*$_2$ *stays in the Senate, because of a relatively low expected payoff in her reference group of former military personnel. More generally, the probability that Senator* s *selects out increases in her expected post-elective success as a lobbyist – E(success*$_s$*).*

Identifying Senator Reference Groups. I started by computing the proportion of each senator's total career that had been spent working in the following careers: lawyer, independent business owner, politician, academia, management of major company, military, public sector employee, private sector employee. I gathered this data from the Congressional Biographical Database. Similarly, for each senator, I calculated the proportion of her career that had been spent in each of the standing committees in the Senate. I used data on committee assignment in the Senate from 103rd to the 113th Congress collected from Stewart III and Woon (2017). I exclude special committees and leadership positions.

I then used Ward (1963) hierarchical clustering to group senators into one of five groups based on their pre-Senate careers, and one of six based on their mix of committee assignments. In a later section, I test the robustness of these baseline choices. The Ward clustering places senators into groups that are most internally coherent, while simultaneously maximizing the differences between groups. This fits the intuition in the theory well. In appendix D, I show diagnostics on the cluster analyses. In appendix A, I describe in more detail the data on careers and committee assignments.

Measuring Post-Senate Career Success. To get an estimate of how successful former senators are in their post-tenure employment, I rely on the average size (in US dollars) of the lobbying contracts they work on. The logic is that the success experienced by senators-turned-lobbyists will be mirrored by value of the lobbying contracts, they work on. Insofar as the most lucrative lobbying contracts represent the most prestigious, interesting and challenging work assignments, and the most highly paid lobbyists are assigned to work on them, this measure of career prospects will capture a mix of salaries and what we can call ego rents more broadly.

Under the Lobbying Disclosure Act (LDA), lobbying companies are obliged to file separate reports for each of their clients, detailing – among other things – the names of the lobbyists who work on the contract as well as its dollar value. This is made easily available by the Center for Responsive Politics (CRP). I match the names of all former senators who have served in the period 1992-2015 to the names reported on the lobbying

contracts. Data under the LDA is available dating back to 1998, and I am able to track the impact of Contract Size on the probability of walking through the revolving door in the period 1998-2015. Since my data on pre-Senate career trajectories includes senators serving since 1992 and on committee assignments since the 103rd Congress, this provides me with data on senators-turned-lobbyists from three Congresses on which to base my initial estimates of Contract Size in 1998. All senators, who have registered as contract lobbyists since then, are included in the measure from 1998 and onwards.

Finally, I predict the average Contract Size in each career and committee group, respectively, for each Congress in the period under investigation. I use linear regressions with an interaction between group and a set of year dummies. This prediction is my final explanatory variable, which I will call *Contract Size* in the remainder of the text. This mimics the comparison I expect senators to make: by looking at the pre-Senate careers or portfolio of committee assignments of senators-turned-lobbyists, they will attempt to predict Contract Size within each year.

In Figure 2, I show that both measures indeed do convey important information about private sector career prospects. First, I plot Contract Sizes predicted using the senator's reference group (Panels A and B show pre-Senate career and committee measures, respectively) against realized Contract Sizes. The correlations are substantial. Second, in Panels C and D, I show that the prediction of Contract Size using a Senator's own reference group outperforms the prediction from some other group. I do this, by first computing the correlation between a senator's realized Contract Size and the Contract Size predicted for some other group chosen at random. I take the difference between this and the predictive power of a Senator's own group. I bootstrap this procedure with 1,000 resamples.

This validation exercise illustrates two points: first, that the predicted Contract Size tracks the value of the actual contracts, which senators can expect to work on, if they were to walk through the revolving door. Second, it also shows that it tracks it better than the prediction from other reference groups would have done. Thus, from her reference group, a senator can extract unique information about her private sector career prospects.

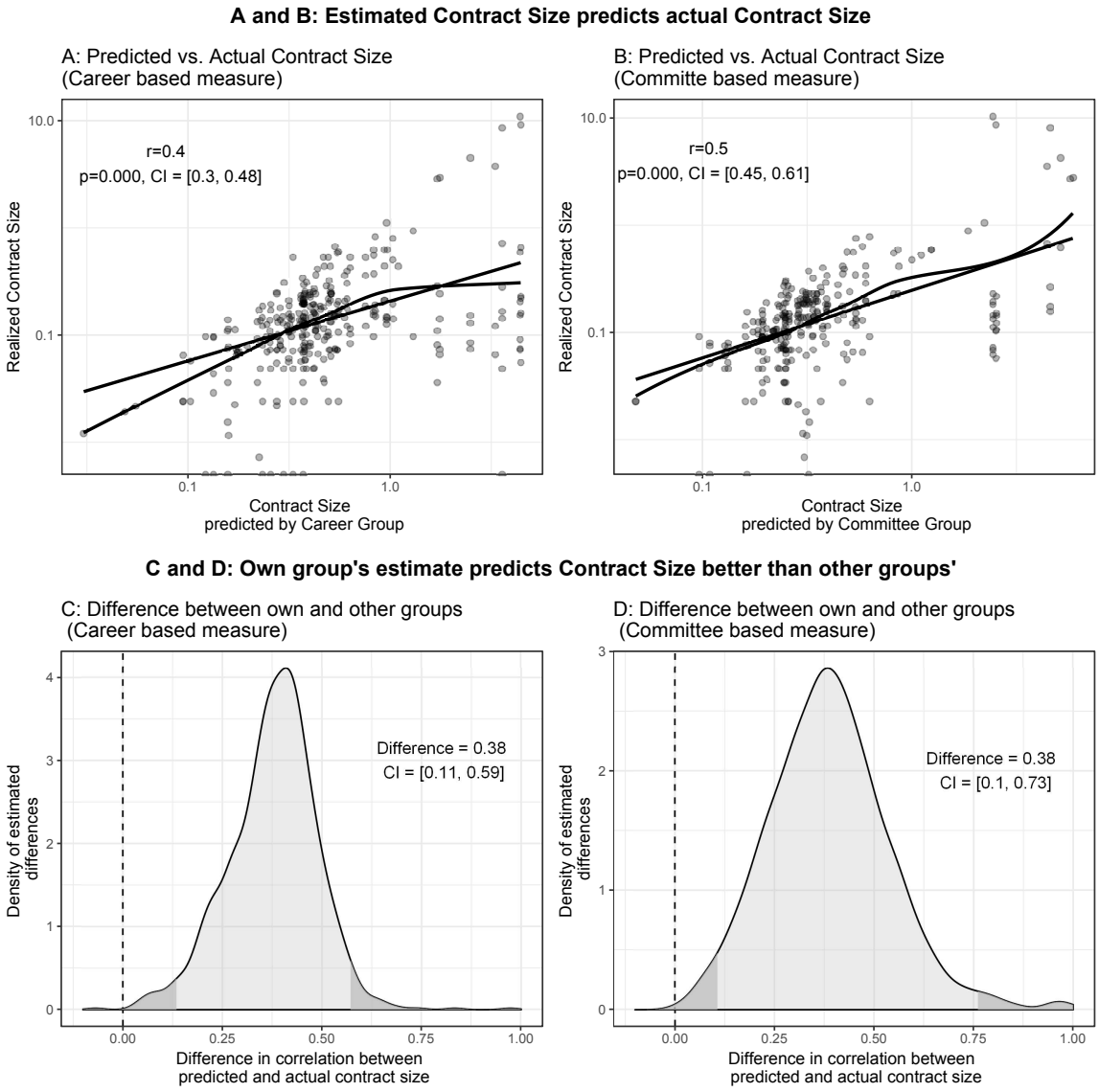

Figure 2: Validating the measure.

Note: Panels A and B show the relationship between Contract Size and realized sizes of lobbying contracts. Panels C and D plot the bootstrapped (1,000 trials) difference in correlation between realized Contract Size and Contract Size predicted using the Senator's own reference group and a random group. The dashed vertical line shows the sharp null of them predicting actual Contract Sizes equally well. Areas below the 2.5th and above the 97.5th percentiles are dark shaded.

Dependent Variable: Walking Through the Door

The dependent variable is a binary indicator, which takes the value one in the last Congress before a senator leaves office for a private sector job. I count jobs in companies (whether

they are lobbying firms or ordinary companies) as well as civil society groups (think tanks, NGOs, universities) as private sector jobs.

For contract lobbyists, the information for this variable was mainly collected from the CRP, which collects its information from the Senate Office of Public Records. For other kinds of revolving door jobs, the CRP records are lacking, however, and I supplement mainly with searches in the Securities and Exchange Committee's EDGAR database and the Relationship Science (RS) database. RS is a private company that tracks the careers of important US executives, including MCs. Additionally, I use news stories and press releases.

In total, 122 senators serving in the 105th to the 113th Congress – of whom 44 leave for a revolving door job in the period of investigation – are included in my models. The full specifications rely on 769 and 722 Senator-Congress observations for the models using pre-Senate careers and in-Senate committee assignment, respectively.

Additional Covariates

I include a number of additional covariates. I proxy political preference by including senator roll call ideal points estimated using the Martin and Quinn (2002) Dynamic Bayesian Item Response Theory (D-IRT) model as its implemented in Armstrong et al. (2014). To measure, whether a senator is in the party's mainstream or on the fringes, I use the absolute difference between the senator's own D-IRT score and her party's median score. I include the first and second order polynomials. I use the Caughey and Warshaw (2015) measure of state policy liberalism to capture the ideological leanings of the senator's home state. Because general vocational behavior has changed markedly throughout my period of investigation, senators with longer tenures could potentially have systematically different professional backgrounds. I use the logged number of years the senator has served in the Senate at time t as a measure of seniority. Conditional on the time fixed effects, this measure is very highly correlated with the senator's age. Thus, it should act as a proxy for both, and I do not include age as a control. My results are robust to doing so, but in many models one of the two variables would drop out due to

perfect collinearity. Finally, I also include a dummy for whether the senator is up for reelection during the current Congress. This also captures whether the current Congress is the last of the senator's six year term.

I describe data sources for additional variables, as they are introduced. Variable definitions, descriptive statistics and data sources can be found in appendix B.

Identification

The allocation of lobbyists to work on specific contracts happens internally in the lobbying companies and is shaped without reference to currently serving senators. Therefore, the dollar size of lobbying contracts is unlikely to be related to time-varying individual characteristics of currently serving senators. Still, two identification problems remain. First, specific types of senators are likely to both select into more successful vocations earlier in their careers, and a mix of committee assignments that improve their post-elective career prospects. Second, shocks to the political system could influence both strategic retirement from office and the general size of lobbying contracts. Especially salient are reforms of the regulatory regime facing lobbyists. For instance, the Honest Leadership and Open Government Act of 2007 dramatically changed the incentive structures facing both lobbyists and legislators, who consider walking through the revolving door. To deal with both threats to identification, I include twoway fixed effects.

In Figure 3, I show that Contract Sizes are balanced across time-varying individual characteristics of the senators in my sample. The figure presents the Wald statistic from permutation tests (Gerber and Green 2012) regressing Contract Size on a host of predictors as well as twoway fixed effects. I do this for both ways of measuring career prospects and for two model specifications (grey distributions are the reduced models, black distributions add interaction effects). In the reduced model, I assume the covariates to be homogeneously related to Contract Size across the senator's tenure. As we can see, the observed Wald statistics is far from being statistically significant, when career prospects are estimated using pre-Senate career trajectories to compare senators on ($p = .4$).

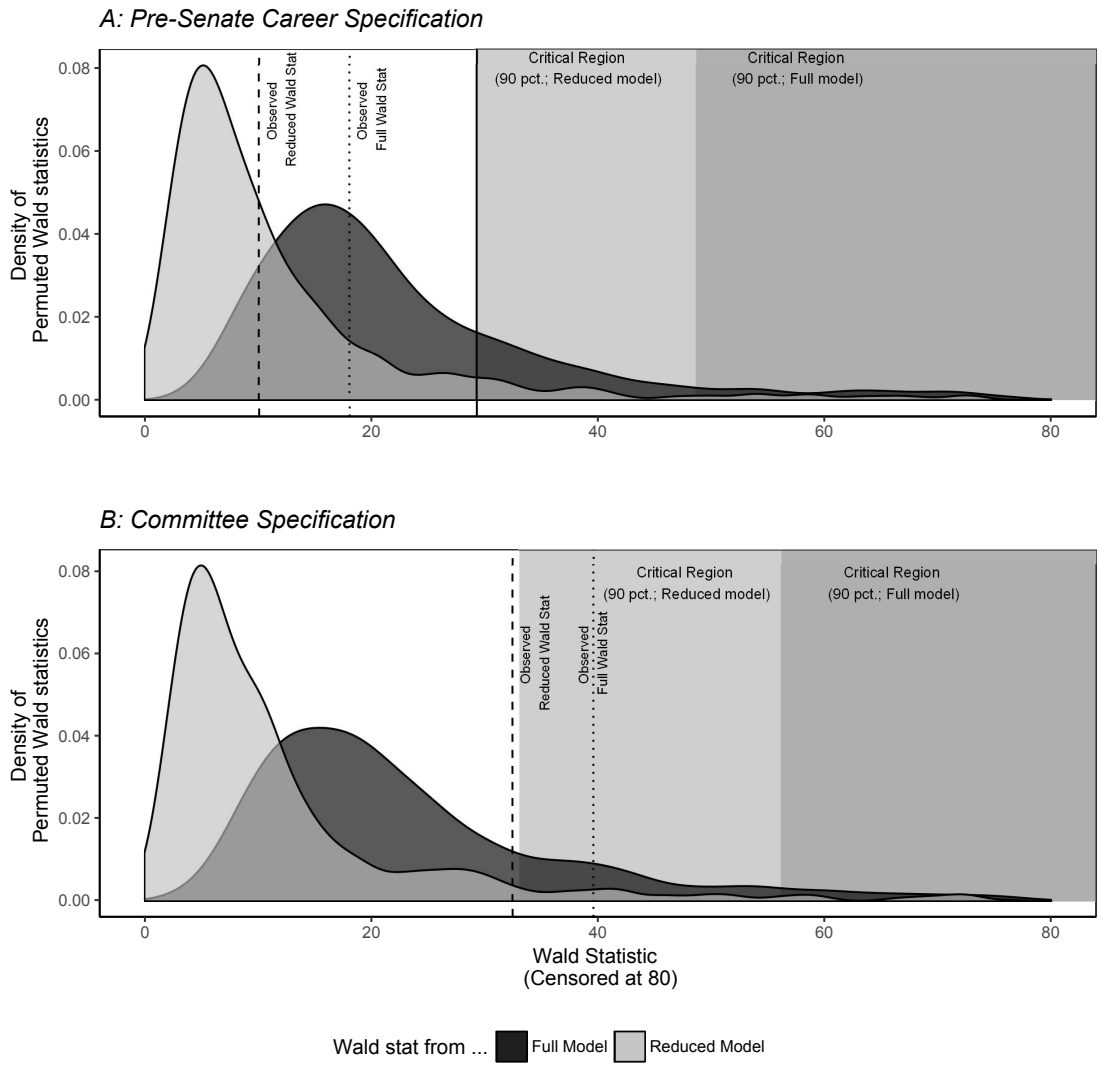

Figure 3: Permutation Test of Covariate Balance.

Note: Two distributions of Wald statistics (1,000 permutations) under the null of no relation between Contract Size and any covariate. Dashed and dotted lines represent the observed Wald statistics in the reduced and full models, respectively. Contract Size is based on pre-Senate Careers in Panel A, and committee assignment in Panel B. x axes censored at 80 for presentational purposes. All models include twoway fixed effects. All covariates included in the reduced model. Full models include interactions between a final-term dummy and each covariate. The critical regions are the light (reduced model) and dark (full model) areas above the 90th percentile of the permuted distributions. P-values for pre-Senate careers specifications: 0.4 (reduced model); 0.55 (full model). P-values for committee assignment specifications: .1 (reduced model); .18 (full model).

It is closer to collective significance (p is just over .1), for the models using committee assignments to compare senators.

If covariates were differently related to Contract Size during the final Congress in which revolving door senators serve, however, this could be masked by a non-existing relationship during the rest of the tenure. To alleviate this concern, the full specifications include interactions between a final-term dummy and all independent variables. I still cannot reject that career prospects are unrelated to the individual characteristics of currently serving senators. The p-values are .55 and .18, respectively, for the specifications using pre-Senate careers and in-Senate committee assignments to measure private sector career prospects. Thus, I cannot reject that Contract Size is unrelated to the individual characteristics included here.

Main Results

Table 2 presents the results from a number of linear probability models. The first three columns uses pre-Senate careers to measure Contract Size. Column one presents the results without including controls. The coefficient is sizable – I estimate that increasing Contract Size by $91,000 (which corresponds approximately to a standard deviation) raises the probability of the average senator walking through the revolving door by 3.4 percentage points. This estimate is more than three times the size of its standard error, and the probability that I have found signal in noise is about .001. The sharp null can, thus, be rejected at a high level of confidence. In column two, I add controls to the model. The coefficient on Contract Size and its standard error are relatively stable.

While the inclusion of Congress dummies soaks up all shocks to the political system, which have homogeneous effects across senators, a major remaining threat to identification is if these shocks have heterogeneous effects. It would be plausible that reforms as the Honest Leadership and Open Government Act could have different effects across senators. As an attempt to deal with this, I interact all controls with the time dummies in column 3. This allows the effect of Congress-specific shocks to differ depending on the individual characteristics captured by the covariates. As a matter of computational efficiency, I

use the Gaure (2013) method to estimate the larger number of interactions between fixed effects and the covariates, and bootstrap point estimates and standard errors. Once again, the results do not change dramatically.

In the next three columns, I present the results from similar specifications, but use in-Senate committee assignment to estimate the private sector career prospects of currently serving senators. In the fourth column, I run the model without controls. The estimated effect of private sector career prospects in this specification is close to – but smaller than – the one using pre-Senate careers to compare senators. In column five, I include my full range of controls. This does not change the coefficient on Contract Size. Finally, in column six, I interact the controls with the Congress dummies. This does not change the substantive conclusions. The bootstrapped standard error is substantially larger, however.

To gauge effect sizes, it is illuminating to compare this estimate to other coefficients in the model. Depending on the exact model specification, I estimate that the probability of walking through the revolving door is 7 or 8.2 percentage points higher in during election years, i.e. when the senator's term is ending. Thus, in both of the full specifications, the effect of changing Contract Size by one standard deviation corresponds to more than one-third of the impact of finishing a term. Additionally, looking across Congresses, the average probability of walking through the revolving door is approximately 4.7 – the effect of Contract Size corresponds more than half of this baseline probability.

The identifying assumption here is parallel trends absent changes in career prospects. While this is fundamentally untestable, violations will often cause differences in pre-treatment trends. In appendix C1, I test this. While the results based on pre-Senate careers show no trends prior to changes in Contract Size, the results based on committee assignment do. To some extent, this is to be expected. It is easier for currently serving senators to make sure they get seats on the committees that will maximize their post-tenure earnings. This would cause the pre-treatment trends observed here. In a sense, this is both the strength and the weakness of this measure – it sacrifices credible identification for better proxying the manner in which senators actually take stock of their post-elective career prospects. Given that the measure based on pre-Senate careers, which is likely to

Table 2: Pay-off from lobbying and timing of resignation

	DV: SIG Career					
	DiD	Controls	Shock X covariates	DiD	Controls	Shock X covariates
	(1)	(2)	(3)	(4)	(5)	(6)
Contract Size (Career)	0.034	0.032	0.031			
	(0.011)	(0.010)	(0.014)			
Contract Size (Committee)				0.021	0.021	0.026
				(0.008)	(0.006)	(0.015)
Ideal Points		−0.013			−0.014	
		(0.005)			(0.006)	
Seniority, Logged		−0.012			0.001	
		(0.023)			(0.023)	
|Difference Party|		0.025			0.026	
		(0.016)			(0.015)	
|Difference Party|^2		−0.004			−0.004	
		(0.001)			(0.001)	
Election Year		0.070			0.082	
		(0.014)			(0.012)	
State Liberalism		−0.090			−0.089	
		(0.025)			(0.029)	
Twoway FE?	Yes	Yes	Yes	Yes	Yes	Yes
Congress X Controls?	No	No	Yes	No	No	Yes
Observations	787	769	769	737	722	722

Note: Dependent variable is SIG Career. Driscoll-Kraay (temporal and cross-sectional) autocorrelation and heteroskedasticity robust standard errors in parentheses in columns 1, 2, 4 and 5. Point estimates in those models are unstandardized OLS coefficients. Bootstrapped estimates (median) and standard errors from 500 resamples at the senator-level in columns 3 and 6. Measures of Contract Size are normalized by their standard deviations.

be exogenous, yields results that are similar to the measure that best proxies behavior, the estimated effect of private sector career prospects should be credible. Additionally, I have tried using the career-based measure as an instrument for the committee-based measure. Since the correlation between them is relatively low, the instrument is somewhat weak, but the results maintain.

One potentially salient concern is that the results could be driven by measurement error induced by the Honest Leadership and Open Government Act in 2007. The reform introduced a two-year cooling off period before senators could lobby after leaving office. This has lead many to simply avoid registration after walking through the revolving door (LaPira 2014), and to some leaving before the new legislation took effect. In appendix C2 I show that congress-by-congress estimates are relatively stable in the periods before and after 2007. This indicates that any bias caused by this data problem is soaked up by the inclusion of time fixed effects.

Robustness and Further Placebo Tests

In Figure 4, I show the robustness of my main findings and present a number of placebo tests of the model. Panels A and B show results based on Contract Size estimated using, respectively, pre-Senate careers and in-Senate committee assignment.

First, I test the robustness of using the average Contract Size to measure career prospects – as in the main specifications. One way of doing so, is to use the median Contract Size, which puts less weight on the few extremely large Contract Sizes. In this way, I deal with the potential problem with outliers, caused by few senators experiencing very large Contract Sizes. This yields remarkably similar results.

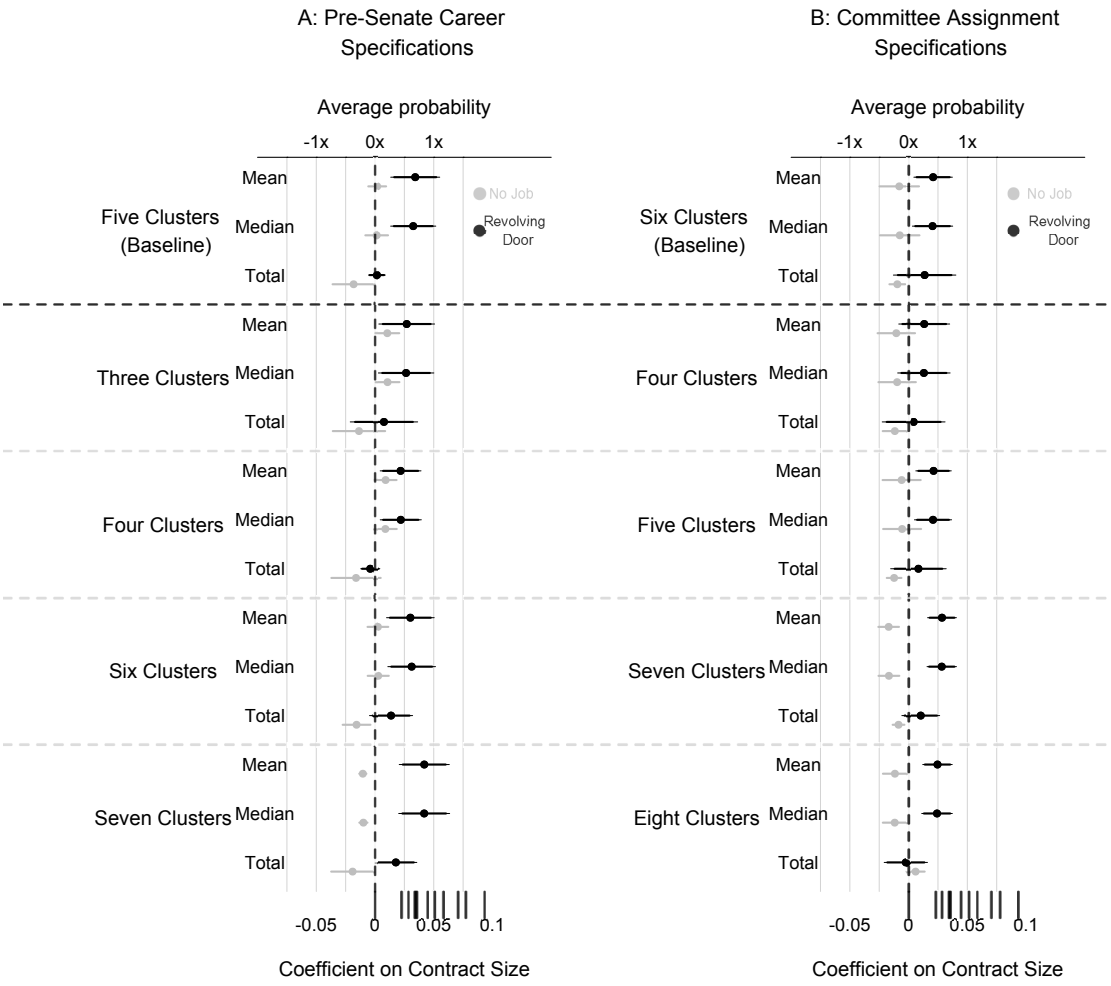

Figure 4: Robustness to Specification Choice and Sanity Checks.

Note: Sensitivity to a) varying the number of career groups, and b) estimating the typical Contract Size using the mean, median and sum total. Black and grey points are from models with SIG Career and retirement as dependent variables, respectively. Top axes show average probability of walking through the revolving door. Bottom axes show coefficient on Contract Size. The rugs show Congress-specific proportion of senators walking through the revolving door. Estimates are from two-way fixed effects LPMs. Confidence intervals are 95 pct. (thin lines) and 90 pct. (thick lines), computed using Driscoll-Kraay robust standard errors.

As a third way of measuring career prospects, I use the predicted total Contract Size. The results are not robust to this, which might indicate that senators respond to the value of the *typical* lobbying contracts, when gauging career prospects, not the sum of all contracts. This is most likely due to the large differences in the number of contracts that senators-turned-lobbyists work on. If a revolving door senator's full number of lobbying contracts sum up to a large amount, but she had to lobby for more than a dusin clients in order to put it together, while another former senator only worked on a few highly lucrative contracts to make the same amount, the sum does not contain all information about their respective career prospects. Instead, the mean or median size of their lobbying contracts will provide the best proxy for how successful they are in their post-elective careers, as it takes into account both the total revenue and the number of contracts worked on to obtain that revenue.

Using cluster analysis to group senators with similar careers or committee portfolios together implies making a somewhat arbitrary decision about the number of clusters to extract. To check the sensitivity of the results towards my baseline choices of five and six clusters, I vary the number of groups to retrieve from the cluster analysis. For the career based measure, I vary the number of clusters from three to seven, and for the committee based measure, I vary it from four to eight. The results are remarkably stable across these different specifications.

Furthermore, for all specifications, I present the results from a placebo model, where I regress a dummy for leaving the labor market after retiring on Contract Size. If potential private sector success had the same effect on the probability of leaving the labor market, as it had on the likelihood of taking a private sector employment, it would indicate a problem with the model. Comparing the results from the models with these two different dependent variables is striking. In all specifications, the results from modeling the probability of leaving the labor market are substantively very small, lining up closely around zero, sometimes entering with a negative sign. Additionally, it is mostly insignificant statistically speaking.

In appendix C3, I conduct a series of additional robustness checks aimed at dealing

with various sources of uncertainty and measurement error. First, and most importantly, because dollar sizes of lobbying contracts vary idiosyncratically, and there is error associated with the cluster analysis, measuring career prospects in this manner inherently induces measurement error, which can pollute my estimated coefficients and standard errors. The relatively low number of senators, who become lobbyists in each group (I show the distributions in appendix A4), exacerbate this concern. To test the sensitivity of my results to this, I implement the Method of Composition (Tanner 1996; Treier and Jackman 2008) technique outlined in Caughey and Warshaw (2017). The results maintain. Additionally, I conduct a number of robustness checks related to assumptions underlying my uncertainty estimates. I include random effects at the level of the reference group, cluster the standard errors at the senator-level and use the non-parametric bootstrap with resampling at the senator-level. The results are robust to all of these modeling choices.

The Mechanism: Opportunity Costs to Holding Office

The turning point in the argument presented here is that elected politicians discount gains from staying in office against potential private sector earnings. If this is correct, the senators, who have the most to gain from staying in office, should not be affected by private sector career prospects.

I test this mechanism in two ways. First, I investigate the timing of retirements – senators should select out, at the points in their tenure, when they give up relatively little by doing so. Second, I look at different types of senators – the ones, who value legislative work the most, should be the least responsive to outside career options.

Senators Are Lured When Costs to Holding Office Are High

First, I run subset analyses based on a number of variables that capture opportunity costs associated with holding office at any given point during a senators tenure. To do so as efficiently as possible, I use the Hainmueller et al. (2016) binning estimator and estimate effects within tertiles of these variables. The results are presented in Figure 5. Panel

A presents results for pre-Senate career based measure of Contract Size, while Panel B shows the ones for the committee assignment based measure.

In the first specification, I exploit the fact that the retirement scheme for MCs becomes significantly more lucrative at specific points in their tenure. After serving five years in Congress, members are eligible to receive full pension, when they reach 62 years of age. When they have served for twenty years, full pension is available at the age of 50, while members serving for more than 25 years can receive a full pension at any age. I compute the number of years until each senator's pension scheme improves, and estimate local effects within each tertile. This separates a) those who will never see another improvement, from those who will see one within b) three c) and ten years, respectively. The results show that the effect of Contract Size is driven by the senators, who are not about to receive a hike in the lucrativeness of their pension scheme. Both for the pre-Senate career and committee assignment specifications, there is no discernible effect of Contract Size, when there are few years until the senator's pension scheme becomes more lucrative. The point estimates are very small (0.01 and -0.003) and statistically insignificant at conventional levels. Among senators, who will never see another improvement, the effect is considerably larger than the average effect, and the p-value for the difference in effects is .05 and .04 for the specification in Panels A and B, respectively. For those with ten years until their pension scheme improvement, the impact of Contract Size is about the average effect. These results hold even after controlling for age and time spent in the Senate.

As a check on these results, the second specification splits the data based on the time since the last pension scheme improvement. For the specification using pre-Senate careers to form reference groups there is no effect of Contract Size for senators, who have just experienced an increase in the lucrativeness of their pension, while the impact of Contract Size is more than twice as large as the average effect for senators, who have served eleven years since their last improvement. The effect disappears again for senators, who have served for a very long time. The evidence using committee assignments to construct reference groups is not as strong in this case.

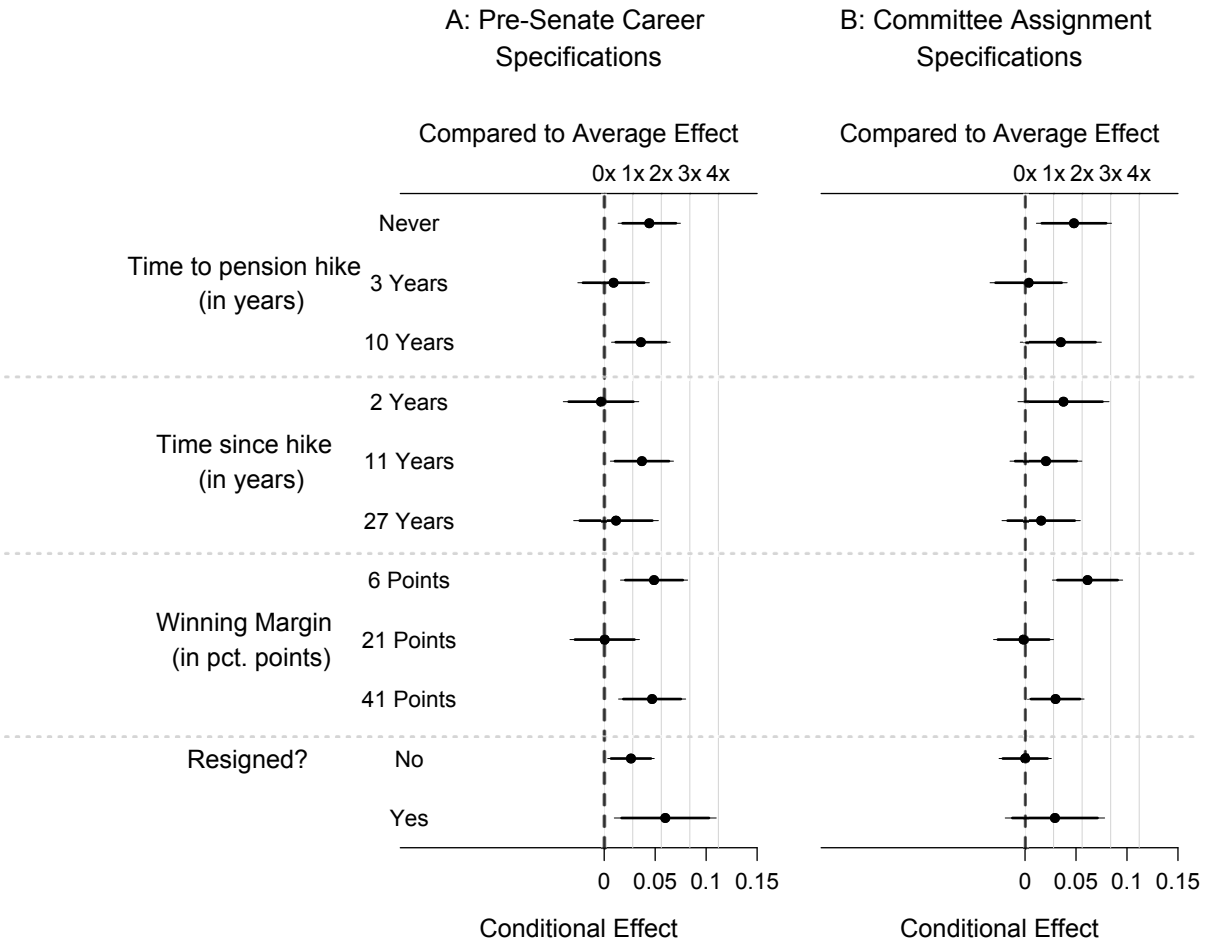

Figure 5: Effects for senators with differing opportunity costs.

Note: Panels A and B show, respectively, results from calculating Contract Size based on pre-Senate Careers and in-Senate committee assignment. In the first three specifications in each panel, the local marginal effects are estimated within tertiles of the variables using the Hainmueller et al. (2016) binning estimator. In the final one, effects are estimated at each level of the binary variables using linear interaction models. Two-way fixed effects are included in all models. Robust confidence intervals are 95 pct. (thin lines) and 90 pct. (thick lines), respectively. Top axes: average effects (columns 3 and 6 in Table 2). Bottom axes: effect of Contract Size.

Uncertainty about a senator's political future is likely to exacerbate opportunity costs to holding office. In the fourth specification, I use the margin with which the senator won her seat in the previous election. This proxies how certain the senator can be that she will hold on to her seat in the next election. If it is unlikely that she will be reelected and can continue her political career, gains from holding office go towards zero, and the prospect of lucrative employment in the private sector should be more alluring. The results show that for senators, who were elected by a margin below six percentage points, the impact of Contract Size is twice the average effect. These results hold no matter, which reference groups is used to calculate Contract Size, and the p-values for the differences in effects between the first and second bin is .03 and .006 in the two specifications.

Since senators, who choose to resign, are in the best possible position to plan their future career trajectories, they are most likely to assess the opportunity costs to remaining in office. Senators, who leave Congress, because they lose an election, on the other hand, are in no such position. This would lead us to expect a larger effect for resigning senators. The figure shows the effect of Contract Size for the subset of senators, who, respectively, did and did not resign of their own volition. The point estimate for senators, who chose to resign, is largest. In the specification using committee assignments, however, it is noisy, and statistically insignificant.

The Revolving Door Attracts The Least Productive

As argued previously, senators, who put great value on producing legislation, should be least affected by the lure of the private sector (Keane and Merlo 2010). I examine this in Figure 6. Panel A and B show, respectively, how effects vary depending on how many bills the senator has sponsored on average (data collected from GovTrack (2017)), and how many floor votes she has been absent for during her average Congress (data collected from Poole and Rosenthal (2015)). Again, I use the Hainmueller et al. (2016) binning estimator.

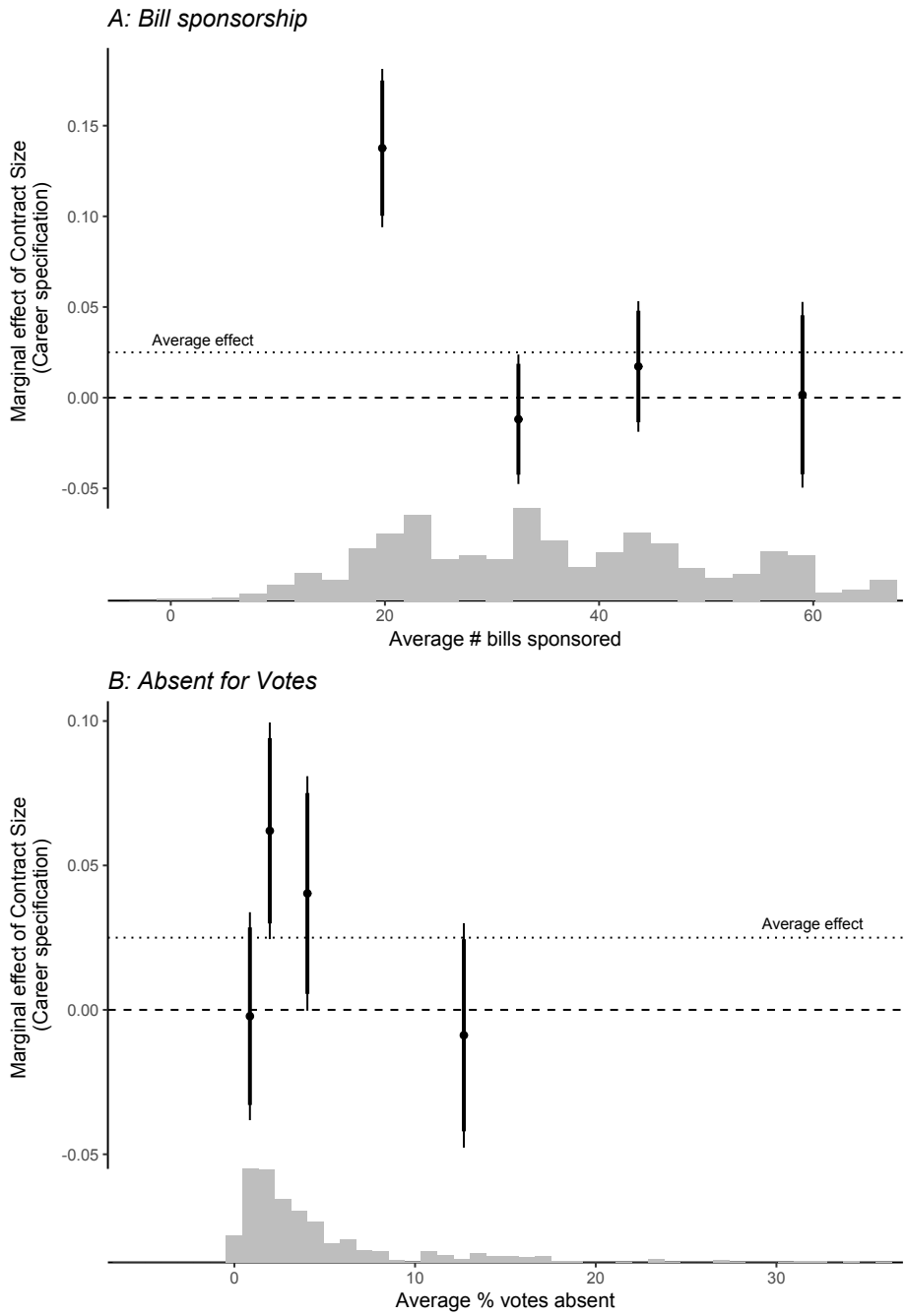

Figure 6: Heterogeneous Effects of Career Prospects.

Note: Local marginal effects are estimated using the Hainmueller et al. (2016) binning estimator. Two-way fixed effects are included in all models. Robust confidence intervals are 95 pct. (thin lines) and 90 pct. (thick lines), respectively. Dotted line shows average effect, dashed line shows sharp null. Histograms show marginal distributions of moderating variables. Results are from specifications using pre-Senate careers – results using committee assignments are similar and can be found in appendix C4.

Looking first at bill sponsorship, it is clear that the senators, who on average have sponsored less than 20 bills per Congress, are affected the most. The average probability of them leaving office for a revolving door job increases by almost 14 percentage points, when career prospects improve by one standard deviation. This is a very strong effect – more than four times the average effect, almost three times the average probability and twice as large as the effect of ending a term in office.

Next, I turn to heterogeneities depending on how many votes a legislator has typically been absent for. Once again, the most diligent senators, who are almost never absent, are close to unaffected by private sector career prospects. The effect spikes for those, who on average have been absent for between two and six percent of votes during their tenure. The effect drops off for senators, who have been absent for more than ten percent of the votes on average. It is difficult what to make of this drop-off, and it might be driven by the fact that few senators have been absent for more than an average of ten percent votes. Otherwise, it could be that senators, who are absent for many floor votes, are of such low quality that they have a difficult time finding a job in the private sector.

Conclusion

Hiring members of the US Senate can be highly lucrative for influence-seeking companies, and if they can lure highly skilled politicians out of public service, this can have adverse effects on political representation. My results strongly indicate that US senators are attracted by the potential for lucrative private sector employment and indeed do leave office to pursue them.

To measure private sector career prospects, I grouped senators, who served between 102nd and the 113th Congress, together based on their pre-Senate careers and the committees they served in. I then computed the expected size of the lobbying contracts for each of these career groups. A desirable by-product of this measurement strategy was that it provided a proxy for career prospects, which was unrelated to the individual characteristics of the senators in my sample.

The results indicate that when the expected Contract Size increased by one standard

deviation, the probability that the average senator left Congress for a lobbying job rose by between 2 and 3 percentage points, depending on the specification. This translates into between two and three additional senators taking private sector employment, which would be an increase of 50 percent over the baseline probability, comparable to one-third of the effect of ending a term in Senate. Importantly, senators, who left the work force after leaving Congress, were unaffected.

I provided suggestive evidence that it is opportunity costs associated with holding elected office, that drives the effect. Specifically, there was no effect of career prospects immediately before and after senators experience improved pension schemes. Instead the effect was localized among senators, who would never see another improvement, or who had to run for reelection before one. Similarly, senators, who only narrowly won their seat in the previous election were affected at an above-average rate. Additionally, I found that the senators, who sponsored the fewest bills and often had been absent for floor votes, were affected at rates far exceeding the average effect. These senators put the least value on legislative work and, thus, had less to gain from staying in office.

These results show that monetary gains do not only structure the selection into public service – as documented in the extant literature. Their effect persists even after entering elective office, shaping the timing of resignation. The results suggest that while legislators are intrinsically motivated to serve their constituents and deliver good policies, they respond to material incentives as well. Senators – despite generally being comparatively wealthy – take stock of the opportunity costs associated with being in politics by gauging the career prospects available to them outside of public service. When the income, they relinquish by holding elected office, becomes large enough, the average senator will leave public service to take private sector employment.

The literature on selection into elected office has predominantly focused on how incentives can be designed to make good types of politicians choose public service. My results suggests that equal attention should be paid to making sure they stay in office, after they are elected. The results show that the class of senators, who are the least productive, are most strongly affected by the lure of the private sector. This should

remind us that we need to worry more about what kind of legislator it is that chooses to leave public service, than the number of MCs, who do so – if the revolving door weeds out low quality legislators, it might not always be desirable to slow its swing. Before taking this point too far, however, it should be noted that a legislator can be low quality in many other dimensions than productivity (e.g. how they respond to the demands of voters, or how corrupt they are etc.), and that the revolving door may have other negative impacts that could vastly outweigh its potentially positive sides (Adolph 2013; Blanes i Vidal et al. 2012; McCrain Forthcoming).

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