

# Congressional Careers, Committee Assignments, and Seniority Randomization in the U.S. House of Representatives\*

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## Abstract

This paper estimates the effects of initial committee seniority on the career outcomes of Democratic members of the House of Representatives from 1949 to 2006. When more than one freshman representative is assigned to a committee, positions in the seniority queue are established by lottery. This ensures that queue positions are uncorrelated in expectation with other legislator characteristics within these groups. This natural experiment allows us to estimate the causal effect of seniority on a variety of outcomes. Lower ranked committee members are less likely to serve as subcommittee chairs on their initial committee, are more likely to transfer to other committees, and have fewer sponsored bills passed in the jurisdiction of their initial committee. On the other hand, there is little evidence that the seniority randomization has a net effect on reelection, terms of service in the House, or the total number of sponsored bills passed.

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## **Aging in institutions**

In this paper we examine the effects of the system of committee seniority in the U.S. House of Representatives on the careers of individual legislators. Congressional seniority is one example of a system in which institutional age (as opposed to chronological age or experience) is relevant to the behavior of individual actors. Seniority systems exist in a number of institutions. In contexts such as labor unions, seniority systems are codified into formal rules. In other cases, seniority systems consist of norms and conventions; examples include age-grading systems in small-scale pastoralist societies (elder, warrior, child) and academic departments (professor, graduate student, undergraduate).

The pervasiveness of seniority-based institutions has prompted theoretical interest attempting to explain the stability of such systems. Several authors have developed formal models of seniority systems, which are characterized as overlapping generations of self-interested individuals (Cremer, 1986; Shepsle and Nalebuff, 1990). These models produce equilibria in which costs and benefits are divided unequally among individuals with different institutional ages, yet are instrumentally rational for all individuals in the institution. As an individual becomes more senior, he or she obtains a greater share of the benefits of the institution; the prospect of greater benefits in the future provides an incentive for less senior members to support the system.

These theoretical models of seniority, combined in some cases with formal rules describing particular seniority systems, often provide clear intuitions about the behavioral consequences of seniority. At the same time, it is difficult to demonstrate empirically that differences in observed behavior are caused by the seniority system and not some other factor. Institutional age is inevitably correlated with chronological age, experience, and other time-varying characteristics. Outcomes that appear to be determined by seniority may in fact be caused by these other characteristics. Identifying the effects of seniority on individual behavior requires some method to eliminate this potential confounding.

The committee assignment process used by the Democratic Caucus in the House of

Representatives provides us with a rare opportunity to identify the effects of institutional age in a seniority system. When members are first assigned to *committees*, seniority ranks are determined by lot within groups of representatives that have equivalent *chamber* seniority. The randomization process ensures that, in expectation, institutional age is uncorrelated with the characteristics of committee members. This natural experiment allows us to estimate the causal effects of differences in seniority on a variety of career outcomes. We find that differences in initial seniority have significant consequences for the legislative careers of House Democrats; members who do well in the seniority lottery tend to focus on their initial committee, while those who do poorly move on to other areas. These effects can not be attributed to differences in experience or other background characteristics. At the same time, we do not find effects on overall legislative production or tenure in the House. For these career outcomes, we can be confident that important consequences of seniority are not being cancelled out by other unobserved factors.<sup>1</sup>

### **The seniority system in Congress**

The seniority system in the U.S. House of Representatives is a collection of formal and informal rules and norms through which long-serving members control more resources than do their more junior colleagues. Some resources assigned on the basis of seniority, such as the choice of space in the House office buildings, are unlikely to have meaningful consequences for the legislative process. Other resources, such as the control of committee chairmanships, carry with them the potential for tremendous influence on legislation.

Two key practices constitute the foundation of the seniority system for House committees (Goodwin, 1959; Polsby, Gallagher and Rundquist, 1969). First, once a member is appointed to a committee, that member will be transferred to another committee only with his or her consent. Exceptions arise when a change in the composition of the chamber requires one of

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<sup>1</sup>That is, the natural experiment allows us to be confident *both* about significant effects and non-effects, each of which is substantively informative.

the parties to reduce the number of its partisans on a committee,<sup>2</sup> or when a committee is abolished. Second, the majority-party member with the longest service on a committee is presumed to have the first claim on the chair of that committee. These and other seniority-based practices are operationalized in the House by assigning ranks to each member of the party caucus on a particular committee. Each member receives a rank at the time of his or her initial assignment to the committee, and then moves up the queue as more senior members leave the committee due to transfer, electoral defeat, retirement, or death. Thus, seniority is committee-specific; the seniority system can be thought of as a set of parallel queues in which members advance at different speeds.

Adherence to these two norms of committee seniority has varied over time (Polsby, Gallagher and Rundquist, 1969; Abram and Cooper, 1968). During the nineteenth century, committee seniority was one factor among many used by speakers in determining committee assignments and chairs. After the revolt against Speaker Cannon in 1910, both party caucuses gave more weight to seniority in determining the composition of committees and the allocation of positions of power on those committees – the Democrats in 1911 and the Republicans in 1919 – and violations of seniority became less frequent. Between the Legislative Reorganization Act of 1947 and the early 1970s, seniority violations were exceedingly rare, and the overall practice conformed most closely to the pattern described above. Reforms approved by the Democratic Caucus in the early 1970s instituted contests for the allocation of committee chairs and a bidding process based on committee seniority for subcommittee chairs. The Republicans strongly de-emphasized seniority as a criterion for committee chairs after they took control of the House in 1995, although some level of committee seniority appeared to remain a necessary, if no longer sufficient, condition for chairs (Deering and Wahlbeck, 2006). Finally, House Speaker Nancy Pelosi (D-California) has thus far followed the seniority norms with only a few exceptions.

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<sup>2</sup>This rarely occurs because party leaders typically negotiate a larger committee size to accommodate compositional changes in the full House.

## Seniority and Legislative Careers

Most existing empirical studies of the congressional seniority system use seniority as an indicator of the relative power of actors within the institution. Polsby (1968) argues that the increasingly inviolate nature of the seniority system after 1911 demonstrates greater institutionalization of the House of Representatives, through which various legislative processes were regularized and taken out of the discretion of party leaders (Polsby, Gallagher and Rundquist, 1969; Epstein et al., 1997). The apparent weakening of seniority within both parties in recent years is viewed by some authors as evidence of a strengthening of partisan control over individual legislators (Crook and Hibbing, 1985; Cox and McCubbins, 1991). The key evidence in these studies is typically some measure of the frequency with which seniority norms are violated in a given congress, either because a member was forced off of a committee without consent or because committee ranks were altered by party leaders.

A closely related line of research considers the degree to which the seniority system produces leadership cadres that are in some way unrepresentative of the parties that they lead (Hinckley, 1969). In the long run, the seniority system should make it more likely that representatives from safe electoral districts will rise to leadership positions on their committees; to the extent that the preferences of legislators from safe districts differ from the rest of the party, one might expect the preferences of committee chairs to diverge from those of the party caucus. This research had a strongly normative undercurrent driven by concerns that the seniority system privileged white southern Democrats.<sup>3</sup>

Fewer studies have looked at the effects of the seniority system from the perspective of individual legislators embedded within it. A position in a committee queue can be thought of as a risky asset that will bring the legislator some stream of payoffs. These payoffs are uncertain because they depend in part on the political fortunes of the legislator, those above her in the queue, the status of her party in the legislative chamber, and the possibility that

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<sup>3</sup>Ironically, Gerber (1996) suggests that the same process may now work to the benefit of African-American members from majority-minority districts, who are much less likely to leave the House due to overwhelmingly safe districts and a lack of electoral opportunity in statewide races.

the seniority system itself will change in a manner that affects the value of her queue position. She will take into account the expected value of her committee ranks when making decisions about her political career: whether to transfer to another committee, to seek higher office, or to ride off into the sunset (possibly with a detour to K Street).

Among the few studies that have considered these issues, Roberts (1990) considers changes in the market value of firms with connections to Senators Henry “Scoop” Jackson and Sam Nunn on the day after Jackson passed away (thus elevating Nunn to the ranking position on the Senate Armed Services Committee), finding that the market value of defense contractors from the state of Washington (e.g. Boeing) decreased and Georgia contractors (e.g. Martin Marietta) increased. Copeland (1987) looks at the rate of committee transfers before and after the changes implemented by the Democratic Caucus in the early 1970s, finding little evidence that the apparent weakening of seniority affected the rate at which members transferred between committees.

While there is little evidence on the effect of seniority systems on legislative careers, the literature suggests several implications that should be observable in legislative behavior. All else equal, holding a higher position in a seniority queue is at least as valuable as a lower position. If seniority norms are followed, all members expect a higher-ranked member to become chair before a lower-ranked member. Likewise, since the Subcommittee Bill of Rights, the higher-ranked member will be advantaged in bidding for subcommittee chairs. Since the queue ordering is preserved over time, members anticipate these differences long before they arrive at the top of the queue. This, in turn, should affect the behavioral choices of representatives and ultimately their realized career outcomes.

In this paper, we estimate the effects of seniority on a number of career outcomes. The seniority system plays a role in determining subcommittee chairs, but the magnitude of the seniority effect on the probability of becoming a subcommittee chair depends as well on the responses of members to their position in the queue. One potential response is for low-ranked members to transfer to new committee assignments (Shepsle, 1978). We estimate the effects of seniority on transfer behavior in both the short and long term. In each case,

theory suggests that seniority affects career outcomes. In contrast, one might not expect the probability of reelection or tenure in the House to be a function of seniority. Several authors suggest that seniority acts as an incumbent protection system (Holcombe, 1989; McKelvey and Riezman, 1992), since reelected incumbents will always be more senior than challengers elected to replace them. Finally, we estimate the effects of seniority on legislative production, measured in terms of the number of sponsored bills passed. This measure of productivity will be affected by the outcomes described above.<sup>4</sup>

### **The assignment process**

Our research strategy takes advantage of the process by which the Democratic Caucus assigns seniority ranks to newly-assigned committee members. Because this procedure is central to our subsequent analysis, we describe it in some detail.

For our purposes, it is useful to divide the committee assignment process into two parts: committee assignment and seniority assignment. The process of assigning representatives to committee has been studied extensively (Shepsle, 1978; Frisch and Kelly, 2006). At the beginning of each congress, the Democratic Committee on Committees is charged with filling the vacancies left on standing committees due to retirements or electoral defeats, as well as net new vacancies as a consequence of adjusting the size of the Democratic contingent on each committee to reflect the new balance in the House. The Committee on Committees considers requests from returning members who want to transfer between committees or add new assignments as well as from freshmen seeking their first assignments. The committee then fills the vacancies through a deliberative process. This process involves strategic behavior on the part of both requesters and the Committee on Committees, driven by differences in the perceived value of committees and the probability of receiving particular assignments.

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<sup>4</sup>In defining outcomes of interest, some care must be taken to ensure that the outcome is defined for all representatives. One potential outcome of interest, the length of time until the first subcommittee chair assignment, raises this problem because we cannot attribute a time to representatives who never serve as a subcommittee chair due to transfer, defeat, retirement, or death.

In other words, the process of committee assignment is strongly non-random, depending on a variety of observable and non-observable characteristics of individual legislators.

The Committee on Committees determines seniority ranks only after all vacancies on a committee are filled.<sup>5</sup> Members returning to the committee retain their position in the queue, moving up to a higher rank if members above them do not return to the committee. Immediately below the returning members are newly appointed members who used to serve on the same committee, but who were bumped when the number of Democratic seats on that committee decreased due to a change in the composition of the House. After these members come representatives who are transferring on to the committee for the first time during their current tenure in the House; within this group, representatives are ranked according to their chamber seniority. Next are freshmen representatives who served in the House in some earlier period; again, these are ranked according to the length of prior service in the House. Finally, any freshmen with no prior service in the House are placed at the bottom of the queue.

It is often the case that, after these rules are applied, ties remain between representatives with equal service records. The Democratic Committee on Committees breaks these ties through a randomization process; literally, drawing names out of a box or flipping a coin.<sup>6</sup> We call these groups of representatives with equivalent records “randomization groups.” Representatives retain the ordering established by this randomization throughout their service on the committee. To illustrate this process, consider the assignments to the Agriculture Committee at the beginning of the 94th Congress in 1975. Thirteen members returned to the Agriculture Committee, taking ranks 1-13. Among the newly assigned members, Rep.

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<sup>5</sup>Technically, some vacancies may remain unfilled. Others are filled provisionally (called “waiver appointments”); these are filled only for the congress in question by granting a member a waiver to serve even if in nominal violation of Caucus rules governing committee service.

<sup>6</sup>One of the authors interviewed a senior advisor to Speaker Pelosi who stated that he personally organized the randomizations by writing the names of newly assigned members on slips of paper, placing them in a box, and having a member of the Committee on Committees draw slips from the box to establish the ordering. E-mail correspondence from an advisor to Speaker Foley and Minority Leader Gephardt confirmed that similar procedures were used during their time in office.

John Breckinridge of Kentucky was a sophomore transferring on to the committee; as the only sophomore, he received rank 14. The remaining 13 members of the committee were all freshmen with no prior service, members of the Watergate class of Democrats elected in 1974. These 13 representatives constituted a very large randomization group. With 13 members, over six billion potential orderings could have been realized.

Once ranks are assigned to a group of freshmen representatives, their ordering is preserved as the group moves up the committee seniority ladder. If representative A is randomized to a position ahead of representative B when both are freshmen, A will be more senior than B in every subsequent term so long as both members remain on the committee. At times, this leads to dramatic differences in outcomes for members of a randomization group. The six freshman representatives assigned to the Banking and Currency Committee in the 84th Congress provide a vivid example. Within this group of six, Henry Reuss of Wisconsin received the most senior rank, followed by Martha Griffiths of Michigan and Thomas Ashley of Ohio. Griffiths transferred from Banking to Ways and Means in the 87th Congress, but Reuss and Ashley remained on Banking throughout their congressional tenure. In the 94th Congress, Reuss became the Banking chair as part of a caucus revolt that led to the removal of several incumbent chairmen.<sup>7</sup> Reuss remained chair through the end of the 96th Congress. Unfortunately for Representative Ashley, he was defeated in the 1980 Reagan landslide and thus never chaired the Banking Committee. That Reuss rather than Ashley chaired the committee in the late 1970s was largely due to the results of the randomization twenty years earlier.<sup>8</sup>

The randomization procedure used to break ties is key to our empirical strategy; existing

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<sup>7</sup>In becoming chair, Reuss vaulted over three members (Patman, Barrett, and Sullivan) ahead of him in the seniority queue; all three were gone by the start of the next congress.

<sup>8</sup>This is not the only example. Goodwin (1970) reports that John Vorys of Ohio lost his draw to Robert Chipperfield when ranks were established for Republican freshmen on the Foreign Affairs committee in 1939; as a result, he never rose above the second rank during his twenty years in Congress, while Chipperfield served as chair or ranking member for 10 years.

studies have not exploited this aspect of the assignment process. Each time the Committee on Committees randomizes the rankings with a group of representatives, it has in effect constructed a natural experiment. This ensures that in expectation any pre-existing attributes of representatives that could influence later career outcomes – their political experience or skill, the competitiveness of their districts, the influence of their state delegation within the caucus – will be uncorrelated with the rank that they receive within the randomization group. This allows for more reliable causal inferences about the effects (or absence thereof) of the seniority system on the careers of newly-assigned members. If we find effects associated with differences in ranks, we can be confident that those effects are attributable to the manipulation of seniority status created by the randomization process and not to other confounding factors.<sup>9</sup> Likewise, if we fail to turn up an effect, we can be confident that seniority (and not some other mitigating factor) is unrelated to the realization.

## Data

Our research strategy requires us to identify groups of two or more Democratic representatives with equal seniority who were assigned to a single committee at the same time. Much of this information is available in the committee assignment datasets collected by Garrison Nelson, Charles Stewart, and their collaborators (Nelson, 2005; Stewart and Woon, 2005). We first identify the assignments of freshmen representatives with no prior service, and then remove observations in which assignments occurred after the initial organization of a committee in any given congress as well as temporary assignments made only for the duration of a single congress. From the observations that remain, we can identify the appropriate randomization groups on each committee.

While these datasets together cover the entire history of Congress, we restrict our at-

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<sup>9</sup>As is always the case, however, the fact that a manipulation produces an effect does not tell us why that effect is produced; this experimentally motivated approach always involves something of a black box with manipulation on one side and outcomes on the other. This highlights the importance of identifying outcome variables that are as close to theory as possible.

attention to initial Democratic committee assignments made after the Legislative Reorganization Act of 1947, a reform that reduced the number of standing committees from 47 to 19. Beginning the analysis with the 80th Congress is motivated by several factors. The “textbook” seniority system was firmly in place by 1947, the reorganization of the committee system in that year constituted a significant structural break in the career paths of representatives, and the committee system has been relatively stable for the subsequent sixty years.<sup>10</sup>

For the 80th-108th Congresses, we exclude committees that are unusual in some way in an effort to make the remaining data more homogeneous. While seniority effects on the exclusive committees (Appropriations, Ways and Means, and Rules) would be of great interest, there are so few cases in which freshmen were assigned to these committees that randomization rarely occurs. We also exclude the Budget, Ethics, and Un-American Activities committees; the time served on these committees is typically limited, and their substantive jurisdictions differ from the more traditional legislative committees. Select committees (including Intelligence and Homeland Security, which was a select committee until the 109th Congress) are also excluded. This leaves the major and minor legislative committees in the dataset.

After imposing these restrictions, we have 1348 observations in 308 randomization groups, summarized in Table 1. Each randomization group contains at least two members who have been assigned to committee  $i$  in congress  $j$  and who are indistinguishable on all criteria for determining seniority ranks. Each committee assignment that falls in a randomization group constitutes an observation; as a result, some members appear in the dataset more than once.

There are several points to take from this summary of the data. Both the number of congresses in which randomization takes place and the total number of representatives

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<sup>10</sup>Between the 80th and 94th Congresses, the Science, Ethics, Small Business and Budget committees were added and the Un-American Activities committee was abolished. The most significant recent changes in the committee system were the elimination of the District of Columbia, Merchant Marine, and Post Office committees when the Republicans took control of the House in the 104th Congress, and the creation of the Homeland Security committee after the events of September 11, 2001.

assigned varies dramatically across committees.<sup>11</sup> In the data, there are no committees for which randomization took place in all 29 congresses.<sup>12</sup> In nearly all cases, freshmen committee members were assigned to ranks far from the top of the committee queue; more than 97% were ranked tenth or lower at the time of their initial assignment. The information in the data about the effects of seniority on a particular committee will increase with more randomization groups and with more representatives in a randomization group.

[Table 1 about here.]

We take advantage of this randomization to look at a variety of career outcomes for legislators included in one or more groups. We derive most of these outcomes from the committee assignment datasets. In addition, we use data collected by Frisch and Kelly (2007) on the committee assignment requests made by members, data on bills introduced in Congress from Adler and Wilkerson (2007), and the ICPSR Congressional Historical Statistics dataset (Swift et al., 2004). Finally, we identified members who served as subcommittee chairs using various editions of the *Congressional Directory*.

## Statistical models

The randomization described above makes it easier to identify the effects of differences in seniority. Randomization ensures that, in expectation, the pre-assignment characteristics of legislators will be uncorrelated with the committee ranks those legislators receive at the time of assignment. Regardless of whether one adopts a frequentist, Bayesian, or randomization-based inferential framework, we can be confident that any effects that we find are due to

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<sup>11</sup>In some cases, there is more than one randomization group on a single committee in a single congress. The first randomization occurs when the committee is first organized at the beginning of a congress, while subsequent randomizations occur if two or more members with equal seniority are added when a committee is expanded after initial assignments are made.

<sup>12</sup>Public Works, Banking, Science, and Agriculture are among the largest in both the number of randomization groups and number of observations. The District of Columbia and House Administration committees, on the other hand, had only 6 randomization groups and 20 or fewer assignments.

the manipulation created by the randomization. Our analysis uses a traditional frequentist approach using generalized linear models (GLM).

It is important to note, however, that any inferences are conditional on the members assigned to each committee by the Committee on Committees. Since members are assigned to committees on the basis of a variety of characteristics, it would be incorrect to assume that the observed effects of seniority would be the same if members were randomly assigned to committees.<sup>13</sup> This counterfactual is not particularly interesting, however, since it is unlikely that the Democratic Caucus will ever choose to make committee assignments without taking political considerations into account. To the extent that the committee assignment process is essentially stationary over time (that is, the characteristics of freshman legislators assigned to particular committees remain consistent across congresses), the available data allows us to make inferences about the effects of seniority on the careers of those representatives who are assigned to particular committees.

Each randomization group constitutes a small experiment on the effects of differences in seniority on career outcomes. Since the process by which those outcomes are generated is quite noisy, we aggregate across these experiments and model the outcomes as a function of the queue position assigned by lot. We use standard GLMs to estimate the effects of seniority ranks using our data. For variables that are dichotomous, we use logistic regression as our statistical model. Likewise, for outcomes that are count variables, we use an overdispersed Poisson model to allow for extra-Poisson variability (McCullagh and Nelder, 1989). Finally, for continuous or approximately continuous outcomes we use simple linear regression.<sup>14</sup>

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<sup>13</sup>As an example, assume that the Committee on Committees only assigns members from coastal districts to the Merchant Marine committee, and all of those members believe that electoral consideration demand that they serve on the committee. In that case, we would never observe transfers off of Merchant Marine and there would be no effect of randomization on the probability of transferring off of the committee. The effect might be much different if members were randomly assigned to Merchant Marine; in that scenario, some non-coastal members might decide to remain on the committee if they are randomized into a more senior queue position, but would attempt to leave the committee if randomized into a less senior position.

<sup>14</sup>All of the analyses presented in this paper were conducted using the R statistical computing environment.

As with any modeling approach, the GLM framework requires us to make certain assumptions about the distributional form of the outcomes, the relationship between the expectation of the outcome and the covariates, and the conditional independence of the outcomes. In particular, we assume linearity and additivity on the scale appropriate to each model. While we would not necessarily expect the effect of seniority to be linear throughout the whole range of possible ranks, we believe that linearity is a reasonable assumption for the subset of ranks that freshmen actually receive.<sup>15</sup> In interpreting the results as causal effects, we also assume that the expected outcome for a legislator assigned to a given rank does not depend on the identity of the legislators assigned to higher or lower ranks. While these modeling assumptions impose a fair amount of structure on the problem, the balance implied by randomization means that our estimates are much less model-dependent than they would be in traditional observational settings (Ho et al., 2007).

Since the randomization groups differ in size, ranging from 2 to 15 members, and differ as well in the number of returning members occupying positions above them in the queue, we normalize the seniority ranks within each randomization group by subtracting the median rank assigned to members in the group. For example, if a three-member randomization group was assigned ranks 19, 20, and 21 on a particular committee, we recenter their ranks to -1, 0, and 1. Negative ranks correspond to more senior queue positions. This normalization ensures that both the median and mean recentered rank within each randomization group is zero. This balances the ranks within each group so that the leverage exerted by observations is a function of the size of the randomization group, not of the nominal queue position. This normalization is necessary because the nominal ranks assigned to the freshmen in a randomization group will be correlated with various contextual factors that could introduce bias.<sup>16</sup> 

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 To check the effectiveness of the randomization in achieving balance, we  
Replication code and data are available from the authors on request.

<sup>15</sup>In other words, while we expect that the difference between ranking first and second is larger than the difference between second and third, it is unlikely that the effect of being ranked 14th vs. 15th is much different from 15th vs. 16th.

<sup>16</sup>For example, the number of Democrats on each committee will increase in tandem with the number of

estimated a model with recentered ranks as the outcome and the pre-assignment covariates as predictors. These covariates (including age, margin of victory, delegation size, and prior political experience) did not predict recentered ranks individually or as a group.

### Seniority and subcommittee chairs

Committee leadership positions are among the most valuable rewards available to Democratic committee members as they climb the seniority ladder. We estimate the effect of differences in initial seniority on the probability that a newly-assigned committee member will serve as a subcommittee chair on that committee at some point during his or her career. This outcome is closely linked to the seniority system; before the reforms of the 1970s, most subcommittee chairs were held by senior members of the full committee, while the bidding system for subcommittee chairs implemented after the reforms gives senior committee members the first opportunity to fill open positions. Since lower recentered seniority ranks imply higher positions in the seniority queue, the relationship between recentered seniority ranks and the probability of serving as a subcommittee chair should be negative.

[Figure 1 about here.]

To estimate the effect of seniority on the data, we fit logistic regression models as shown in Table 2. The coefficient on recentered ranks is negative as expected and significantly different from zero. Figure 1 plots the predicted probabilities implied by the simple logistic model (column 1 in Table 2) with recentered ranks as the only regressor. The estimated odds ratio for members that differ by one unit in seniority is 0.84, implying that members lower in the queue are less likely to serve as subcommittee chairs.<sup>17</sup> A 95% confidence interval for the odds ratio is (0.78, 0.90). Thus, the model implies that in a randomization group of six

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Democrats in the House as a whole. As a result, freshmen members joining the committee receive lower nominal ranks in congresses with large Democratic caucuses.

<sup>17</sup>Since these estimates are generated from a logistic regression model, the odds ratio is calculated by taking the coefficient on centered ranks from column 1 and exponentiating:  $e^{-0.178} \approx 0.84$ .

legislators, the odds that the member receiving the lowest rank will serve as a subcommittee chair would be approximately four tenths of the odds for the member receiving the highest rank.<sup>18</sup> Put another way, when this is translated to the probability scale, a one-unit difference in seniority rank approximately translates to a 3.1% difference in the probability of serving as a subcommittee chair. Given that the overall probability of serving as a subcommittee chair in our data is only 25%, this is a large difference.

While randomization ensures that the seniority ranks assigned to freshmen are uncorrelated with the pre-assignment characteristics of legislators, one might expect there to be correlation in the realized outcomes for members elected in the same year or assigned to the same committee. On relatively small committees, committees with a large number of subcommittees, or committees with high turnover in membership, the probability of obtaining a subcommittee chair will be higher regardless of the seniority rank received. To account for this heterogeneity in the baseline level of outcomes, we include fixed effects for each congress and each committee.<sup>19</sup> We also include a set of pre-treatment covariates that, while uncorrelated with seniority ranks in expectation, may enable us to make more precise inferences. These covariates include age at assignment, vote share in the previous election, delegation size, whether the member served in state office, and whether the member indicated that the assigned committee was his or her first choice when that information is available.<sup>20</sup> Including these variables produces minimal change in the estimated effect of differences in seniority. This illustrates the power of randomization; since pre-treatment characteristics do not affect the ranks received, in expectation they will not bias our estimates of the seniority effect. Among the covariates, while there is some evidence that members assigned to

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<sup>18</sup>The odds ratio for two representatives separated by five ranks can be calculated by multiplying the coefficient on seniority by five and then exponentiating.

<sup>19</sup>As an example of this heterogeneity, members assigned to Foreign Affairs were twice as likely to become a subcommittee chair (23 out of 58 assignments) than were those assigned to Commerce (10 out of 50 assignments). Including fixed effects for committees allows for heterogeneity in the baseline odds of securing a subcommittee chair across committees.

<sup>20</sup>Not all members submit formal requests to the Committee on Committees.

their first-choice committee are more likely to become subcommittee chairs, the only reliable relationship is with vote share; members who won more votes are more likely to become subcommittee chairs, presumably because their initial performance gives some indication of the safety of the district. Comparing this relationship to the estimated effect of seniority provides some context for the magnitude of the seniority effect; the effect a one-unit difference in seniority is approximately equivalent to that of a fifteen percentage point increase in initial vote share.

The results reported above allow us to estimate the effects of seniority averaged across committees and across time. Including committee and congress fixed effects accounts for differences in the overall probability of serving as a subcommittee chair, but does not allow for heterogeneity in the magnitude of the seniority effect. While there does appear to be some variation in the effect of seniority across committees and over time, these estimates have low precision. We investigated this possibility further by dividing committees into major and minor categories based on House Democratic Caucus rules, but found no substantively or statistically significant difference between the two groups.<sup>21</sup>

[Table 2 about here.]

It is not surprising that legislators randomized to more senior queue positions on a committee are more likely to serve as subcommittee chairs on that committee. However, this effect need not be solely a consequence of the direct application of the seniority principle to leadership positions. Since members usually serve some length of time before gaining a subcommittee chair, there are at least two other channels through which the randomization could affect this outcome. Members faced with poor queue positions may transfer more frequently to other committees than those who do well in the lottery. They may also be less likely to remain in the House due to retirement or defeat. As a result, the effect estimated here on the probability of becoming a subcommittee chair captures both the (direct) me-

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<sup>21</sup>We repeated this analysis for all outcomes; in no case was there a significant difference between the major and minor committees.

chanics of the seniority system and the (indirect) behavioral responses of those embedded within it. Having confirmed that the total effect is significant, we now examine the indirect mechanisms in more detail.

### Seniority and transfers

We estimate the effect of seniority on the probability that members will leave the committee to which they have been assigned, either transferring to a different committee or reducing their total number of committee assignments. Members transfer for a variety of reasons. Shepsle (1978, Chapter 5) identifies an opportunity effect, a wealth effect, and an opportunity cost effect. The first suggests that the longer one serves in the House, the more likely attractive transfer opportunities will arise. The second suggests that, opportunities notwithstanding, the more attractive the initial assignment, the less likely a member will take up a transfer opportunity. Finally, the third implies that the better the initial assignment and queue position, the more attractive a transfer opportunity must be for a member to take it; “the rich and the senior will transfer only for the big prizes” (Shepsle 1978, 101).

Transfers off of committees occur quite frequently.<sup>22</sup> Several authors have used transfers to estimate the relative importance of each House committee, in line with the wealth effect described above, without taking the committee seniority of the transferring members into account (Bullock, 1973; Groseclose and Stewart, 1998). If the value of a committee assignment depends on a member’s place in the seniority queue, then we would expect that members randomized to lower queue positions will be more likely to transfer.

It is not clear *a priori* when during a legislator’s career we would expect to see strong seniority effects on the probability of transfer. On the one hand, we might expect representatives who lose the lottery and receive a low initial rank to respond quickly to their *ex*

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<sup>22</sup>Shepsle (1978) presents data on the congresses from 1958–74 showing that half of all freshmen seek transfers or the acquisition of additional assignments in their *first non-freshman term*. By the time a member is in his or her fifth term or higher, 95% have sought to alter their freshman portfolio in some manner, some multiple times.

*post* position in a committee queue in order to start accumulating seniority on a different committee. On the other hand, in almost every case all the freshmen who are randomized are located far down the seniority queue. In that position, members face considerable uncertainty about the prospects of those ahead of them in the queue. Members might wait before transferring in hopes that some of the uncertainty will resolve in their favor.

We explore the probability and timing of transfers by defining both short- and long-term transfer outcomes. The first outcome measures transfers occurring through the organization of committees in the sophomore terms of Democratic representatives who were initially randomized to seniority ranks. A member who transfers by the start of his or her second term is coded as a 1, while all others are coded as 0. A second outcome of interest is whether legislators transferred off of their initial committee at any point during their congressional service. Again, this variable is coded 1 if a member left his or her committee of first assignment while remaining in the House. Members who remain on the committee until they leave the House due to death, defeat, or retirement are coded as zeros. One implication of this coding is that career transfers are a superset of first-term transfers.

[Figure 2 about here.]

Figure 2 plots transfer outcomes in the short and long term as a function of recentered ranks. The left panel in the figure shows that the probability of transfer during the first term is just under 20% and does not vary much with seniority. Career transfer outcomes are plotted in the right panel of Figure 2. By construction, the fitted line has moved higher, indicating a greater probability of transfer. Now, however, the predicted probability of transfer slopes upwards and the relationship is statistically significant. The fitted models used to generate these predicted probabilities are shown in columns 1 and 3 of Table 3.

For short-term transfers, including fixed effects for each congress and committee and all of the pre-treatment covariates does not change the substantive implications of the simple logistic model. The coefficient on seniority for first-term transfers (column 2) remains positive but small and statistically insignificant. Turning to transfers over the course of a career, after

controlling for pre-treatment covariates and congress and committee fixed effects (column 4), the estimated odds ratio pooling across all committees for members that differ by one unit in seniority is 1.09, implying that members lower in the queue are more likely to transfer off of the committee. A 95% confidence interval for the odds ratio is (1.02, 1.16). In a randomization group of six legislators, the odds of transfer at some point during the career for the member receiving the lowest rank would be approximately 1.5 times the odds for the member receiving the highest rank. Put another way, when this is translated to the probability scale, a one-unit difference in seniority rank translates roughly to a 1.75% difference in the probability of transferring off of the committee. This effect is substantively smaller than the effect on the probability of serving as subcommittee chair, both because the implied difference in probability is smaller and because the baseline probability of transfers is higher. Nevertheless, the effects are not trivial. Returning to our example of a six-member randomization group, the probability that the lowest ranked member of the group will transfer is roughly 9 percentage points higher than the probability for the highest ranked member.

[Table 3 about here.]

The results in Table 3 demonstrate that seniority influences the transfer behavior of Democratic members of Congress over the course of their careers. The absence of a statistically significant effect on transfers during the first year could arise in one of two ways. The transfer process may be too noisy to recover an effect after only one term. On the other hand, seniority may influence transfer behavior more strongly after legislators know more about their prospects on their current committees. Resolving this question by estimating separate causal effects for each term (i.e., what is the effect of seniority on transfers during members' second terms?) is problematic because the outcome is not defined for all members. We can obtain suggestive evidence, however, by examining the cumulative proportion of members who have transferred after a given period. To make such an analysis tractable, we divide the dataset based on whether the member was in the upper or lower half of his or

her randomization group.<sup>23</sup> Dividing the data in this way ensures that each randomization group contributes equally to the two subsets, so that differences in transfer behavior are not due to the determinants of the size of the randomization group. As seen in Figure 3, the cumulative proportions of members who have transferred are essentially identical in the two groups until after the organization of committees in their second terms. In the remainder of second and third terms, however, the proportion of members who have transferred in the less senior group increases much faster than the proportion in the more senior group. From the fourth term on, transfers become exceedingly rare and the curves are essentially parallel. This implies that the effects of seniority on transfer behavior are the strongest in the second and third terms.<sup>24</sup>

[Figure 3 about here.]

### Seniority and reelection

The results of seniority lotteries shape congressional careers on committees; losers are more likely to transfer to other committees, while winners are more likely to reach leadership positions on their initial committee. Beyond these outcomes, however, seniority may affect careers more broadly. To the extent that congressmen are, as Mayhew (1974) suggests, “single-minded seekers of reelection,” then reelection (and, more generally, length of tenure) is an obvious outcome to consider.

As we define it, reelection is a function both of the decision of incumbent legislators to contest elections and of the behavior of voters in those elections. Seniority could in principle affect the behavior of legislators or voters in this regard. Drawing a disadvantageous queue position may reduce the chance that a member of Congress will return to office.

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<sup>23</sup>This analysis excludes the 134 members ranked in the middle of randomization group with an odd number of freshmen.

<sup>24</sup>In contrast, when we constructed a similar graph with members divided into groups based on whether they received their first-choice committee, nearly all of the difference in transfer behavior occurred by the time committees were organized during members’ second terms.

To the extent that losing the seniority lottery makes a committee assignment marginally less valuable, one might expect losers to find other opportunities, such as statewide office, relatively more attractive.<sup>25</sup> Moreover, losing the seniority lottery may make it harder for a representative to deliver benefits to her district, thereby harming her electoral prospects. Unfortunately for voters, however, they cannot reverse the effects of the randomization since defeating an incumbent means that their next representative will either have a lower queue position on the same committee or be on a different committee altogether. One of the main effects of a legislative seniority system is to advantage all incumbents relative to their challengers (McKelvey and Riezman, 1992; Holcombe, 1989). This second argument implies that differences in seniority should have no effect on reelection.

As with transfers, we look at reelection outcomes in both the short and long term. We begin by considering whether the randomization affects the probability that a member will be elected to a second term in Congress. Representatives who serve a second term are coded as 1, while those who do not seek reelection or who are defeated at the polls are coded as 0. As shown in Table 4, this effect is not significant regardless of whether we control for pre-assignment characteristics.

[Table 4 about here.]

We also look at reelection outcomes over the course of congressional careers. Our measure for this is length of continuous service in the House from the time that ranks are assigned. It is most intuitive to think of this outcome in terms of the number of terms served, where fractional terms are possible. For this data, we use simple OLS regression to estimate the

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<sup>25</sup>In contrast, representatives who are fairly close to the top of a seniority queue and who place a high value on attaining a committee chair may be tempted to remain until those who were assigned to places higher in the queue have left the scene. On this score Hall and Van Houweling (1995) find some suggestive evidence that representatives who were second in their full committee queues in 1994 were more likely to run for reelection than other members, particularly when they were younger than the committee chair (after controlling for the main effect of age).

seniority effect.<sup>26</sup> The point estimates from the regressions shown in Table 5 suggest that a one-unit difference in seniority produces a difference of less than one-hundredth of a term in length of service. A 95% confidence interval generated from the simplest model suggests that a plausible range for the effect is between -0.10 terms and +0.11 terms; thus, using our running example of a six-person randomization group, a difference of five ranks is consistent with anything from an increase of half of a term to a decrease of half of a term.

[Table 5 about here.]

With a large amount of data and the confidence that comes from randomizing across pre-treatment characteristics, we can demonstrate convincingly that seniority has essentially no effect on members' reelection prospects. These results are consistent with one of two possibilities. The first is that there simply is no effect of the realized seniority ranks on the length of time spent in Congress. This is consistent with theoretical views of seniority as a protection system for the generic incumbent. On the other hand, it is possible that members respond to their draw from the randomization lottery in ways that mitigate its effects on their reelection. We have seen one way that they might do this, namely by transferring away from a committee when they end up near the bottom of the queue.

### **Seniority and legislative production**

Finally, we turn to the legislative production of Democratic members of Congress assigned to committees in randomization groups. Legislative output has many dimensions, all of which are difficult to measure. We use a rough measure: the number of bills sponsored by a member of Congress that are approved by the House of Representatives during his or her

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<sup>26</sup>Given that the distribution of congressional service lengths is skewed right, we also fit an OLS model using the square root of terms served as the outcome, as well as an overdispersed Poisson model in which the outcome was the number of terms in which the member served. In both cases, the substantive result was the same: seniority appears to have no discernible effect on length of tenure.

career.<sup>27</sup> This data is available for the 80th-105th Congresses through the Congressional Bills Project compiled by Adler and Wilkerson (2007). For freshmen assigned in randomization groups, the average number of sponsored bills passed is 7.9. Since bill counts are likely to have extra-Poisson variability, we fit overdispersed Poisson regression models.<sup>28</sup> The results, shown in columns 1 and 2 of Table 6, show that the effect of seniority is both substantively small and statistically insignificant when all bills are considered.

[Table 6 about here.]

We now consider a restricted subset of bills. For each committee assignment in the data, we consider only the bills sponsored by a given member, referred to his or her committee, and eventually passed by the House. Since approximately 80% of bills reported by committees are sponsored by a committee member and such bills are much more likely to be approved by the whole House, we are more likely to see a seniority effect in this subset of bills. Again using an overdispersed Poisson regression, we find that representatives randomized to more senior position have more bills approved by the House within their committee's jurisdiction. The results, shown in columns 3 and 4 of Table 6, imply that moving up the queue by one rank increases the expected number of sponsored bills passed during the career by approximately 10%. To return to our six-member randomization group example, the representative assigned to the most senior position will have roughly 1.2 more committee-referred bills passed by the House than the lowest member. This difference is substantial since members average just 2.5 committee-jurisdiction bills passed during their careers.

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<sup>27</sup>Note that we do not attempt to control for the length of time that members serve in the House because this is determined after treatment is assigned. While the results of the previous section suggest that differences in seniority do not affect tenure in office, controlling for the length of time that members have to introduce bills after initial seniority ranks are determined makes a causal interpretation more difficult.

<sup>28</sup>This uses the quasi-likelihood approach described in McCullagh and Nelder (1989). Essentially, the model returns the MLE point estimates from a standard Poisson regression model and then inflates the standard errors using an estimate of the amount of overdispersion. Another model for dealing with extra-Poisson variability in count data using the negative binomial likelihood produces similar substantive results in this dataset.

Several factors likely contribute to greater legislative production by members assigned to more senior ranks on their initial committees. The results discussed above demonstrate that more senior members are more likely to become subcommittee chairs and thus have legislative responsibilities. Moreover, more senior members are less likely to change committees and shift their interests to other legislative areas. Since initial differences in seniority do not affect total time in the House, this result does not appear to be due to differences in time served.

## **Conclusion**

The natural experiment created by the practice of randomly assigning committee seniority within groups of freshmen representatives provides a unique opportunity to understand how the committee seniority system affects the careers of members of Congress. The evidence presented in this article suggests that initial seniority assignments affect the details of careers in the House but have fewer consequences for the broad features of congressional service. First, as we would expect from the simple mechanics of the seniority system, freshmen who receive positions closer to the top of the queue are more likely to chair subcommittees on the committees to which they were initially assigned. Second, representatives randomized to more junior queue positions are more likely to transfer to a different committee. This appears to be a rational response to a lower present-value assessment of their committee position; they have less to lose by moving to a new committee. The effect of seniority differences on transfers appears to be the strongest in the second and third terms, when members have a better sense of their future prospects in the queue. Finally, we find that being randomized to a more senior position on a committee increases the productivity of a legislator on topics under that committee's jurisdiction, as measured by the number of sponsored bills passed by the House. These results suggest that "winning" the seniority lottery provides incentives for a member of Congress to focus his or her legislative activities on an initial committee assignment.

On the other hand, differences in the seniority ranks assigned to freshmen do not appear

to have much effect on the broad features of congressional careers. Representatives who “lose” the lottery are no less likely to be reelected to a second term in office. Initial queue positions do not appear to affect the total length of time that members serve in the House, nor the total number of their bills that are passed by the House during their career.

One congressional staffer involved in the committee assignment process for many years observed that it is surprising that representatives draw lots to establish ranks, in view of the consequences that those ranks may have later in their careers. While the case of Representatives Reuss and Ashley illustrates such a possibility, our analysis suggests that for things politicians care most about (namely reelection), the initial position in a committee queue is not worth worrying about since it does not appear to make much difference in the long run. We believe this is due to two characteristics of the seniority system. Committee seniority is not a single system but rather a set of parallel queues with regular opportunities for costly transfers. Committee members who start off with a poor position on one committee may be able to move to another committee. The ability to adapt to the system is combined with a great deal of fundamental uncertainty about the rate at which members will move up in queue.

While it may seem that our results suggest that the effect of the seniority system on congressional careers is minimal, we would caution against such an interpretation. Randomization allows us to estimate the effects of initial differences in seniority over the course of a career, but only a subset of positions at the bottom of the queue are subject to randomization. We expect that we would find more striking effects if the entire queue were randomized, thus enabling us to estimate the effects of, for example, serving as a committee chair directly rather than using the increased probability of serving as chair that is induced by randomization in the seniority system as it is implemented. Our results do suggest, however, that directly estimating the effects of differences in seniority higher in the queue would be quite problematic, since the problem of distinguishing between age, experience and seniority returns in full force.

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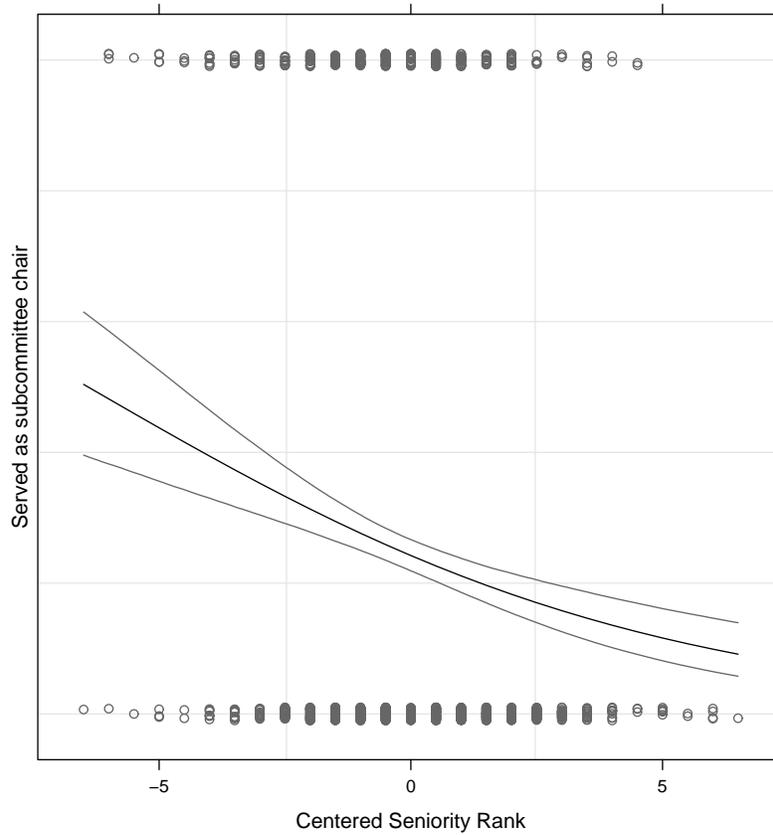


Figure 1: Subcommittee chairs. The lines in each plot represent predicted probabilities and 95% pointwise confidence bands generated from a simple logistic regression fit to the data. Points at the top represent members who served as a subcommittee chair at some point during their time on the committee, while points at the bottom represent those who did not. Points are jittered slightly to avoid overlap. Negative numbers indicate more senior ranks within the randomization group.

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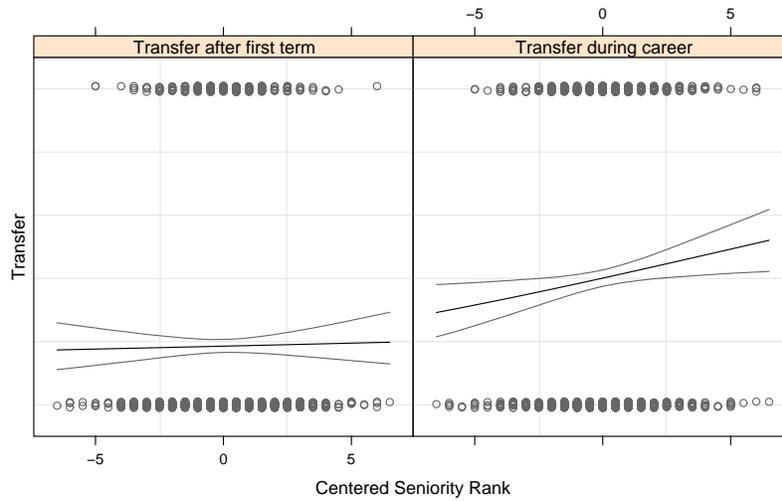


Figure 2: Transfers off of committees, during first term and during career. The lines in each plot represent predicted probabilities and 95% pointwise confidence bands generated from a simple logistic regression fit to the data. Points at the top of each panel represent members who did transfer, while points at the bottom represent those who did not. Points are jittered slightly to avoid overlap. Negative numbers indicate more senior ranks within the randomization group.

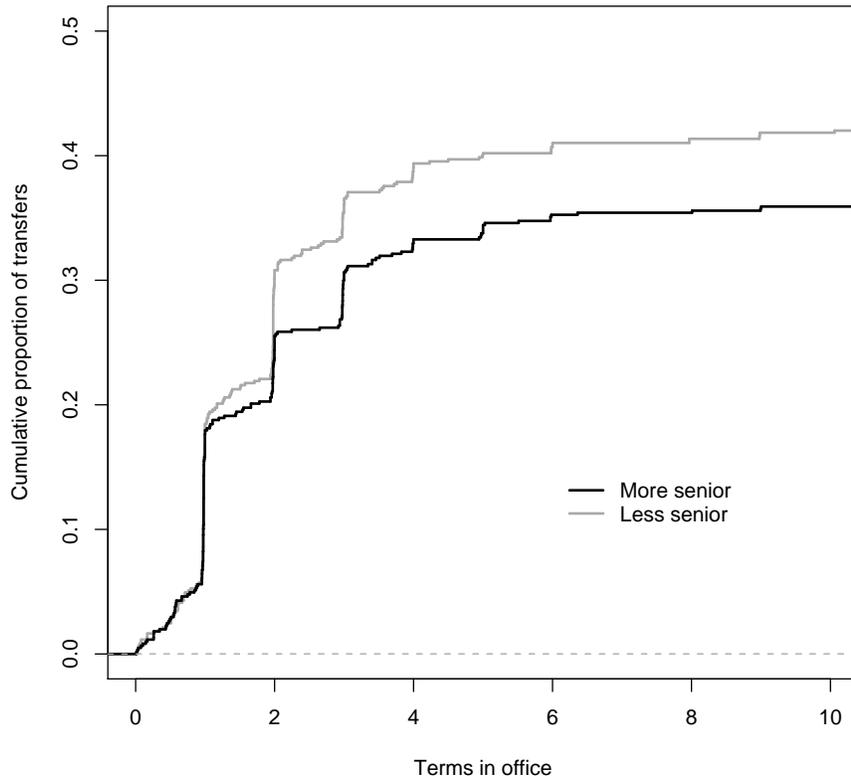


Figure 3: Cumulative proportion of members transferring from initial committee assignment. Members in the more senior group (black) were ranked in the top half of their randomization groups, while members in the less senior group (gray) were ranked in the lower half.

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Committee	Number of freshmen randomized to seniority ranks	Number of randomization groups	Number of reps who served at least 2 terms in Congress	Number of reps who transferred off of committee by start of second term	Number of reps who chaired subcommittees at some point in career	Number of reps who transferred off of committee at some point in career
<b>Major Committees</b>						
Agriculture	110	22	92	11	37	39
Armed Services	80	22	69	7	17	21
Banking	124	24	111	27	27	56
Education	93	22	80	8	26	29
Foreign Affairs	58	16	51	8	23	16
Interstate Commerce	50	13	37	2	10	5
Judiciary	58	19	51	8	18	16
Public Works	127	23	107	14	23	44
<b>Minor Committees</b>						
District of Columbia	16	6	10	7	1	7
Government Ops.	77	20	68	16	22	42
House Administration	20	6	14	7	1	10
Interior	96	24	78	17	21	38
Merchant Marine	75	17	63	8	15	23
Post Office	68	15	52	30	13	38
Science	120	24	101	31	30	58
Small Business	78	15	72	26	23	43
Veterans Affairs	98	20	88	23	26	56

Table 1: Distribution of cases, 80th-108th Congresses

Table 2: Outcome: Did member serve as subcommittee chair?

	1	2
Intercept	-1.14 (0.065)	
Centered Rank	-0.178 (0.036)	-0.187 (0.037)
First-choice Comm.		0.238 (0.187)
Age		-0.009 (0.009)
Vote Share		0.011 (0.005)
State Office		-0.208 (0.141)
Delegation Size		0.004 (0.005)
Congress Fixed Effects	No	Yes
Committee Fixed Effects	No	Yes
-2loglikelihood	1481.4	1342.0
N	1348	1348

Note: Results from logistic regression models with the indicated regressors. Standard errors in parentheses. Higher values of centered rank correspond to lower seniority.

Table 3: Outcome: Transfers away from initial assignments

	Transfer by start 2nd term		Transfer during career	
	1	2	3	4
(Intercept)	-1.480 (0.070)		-0.402 (0.056)	
Centered Rank	0.012 (0.038)	0.012 (0.042)	0.075 (0.031)	0.082 (0.033)
First-choice Comm.		-0.480 (0.245)		-0.340 (0.180)
Age		-0.017 (0.010)		-0.028 (0.008)
Vote Share		0.007 (0.006)		0.016 (0.005)
State Office		0.145 (0.161)		0.211 (0.126)
Delegation Size		0.015 (0.006)		0.013 (0.005)
Congress Fixed Effects	No	Yes	No	Yes
Committee Fixed Effects	No	Yes	No	Yes
-2loglikelihood	1292.8	1114.5	1809.9	1620.6
N	1348	1348	1348	1348

Note: Results from logistic regression models. Standard errors in parentheses. Higher values of centered rank correspond to lower seniority.

Table 4: Outcome: Was member reelected to second term?

	1	2
(Intercept)	1.725 (0.076)	
Centered Rank	0.023 (0.042)	0.045 (0.045)
First-choice Comm		-0.152 (0.235)
Age		-0.051 (0.011)
Vote Share		0.058 (0.010)
State Office		0.032 (0.182)
Delegation Size		0.022 (0.007)
Congress Fixed Effects	No	Yes
Committee Fixed Effects	No	Yes
-2loglikelihood	1145.5	873.9
N	1348	1348

Note: Results from logistic regression models. Standard errors in parentheses. Higher values of centered rank correspond to lower seniority.

Table 5: Outcome: Terms served in Congress

	1	2
(Intercept)	5.174 (0.106)	
Centered Rank	-0.002 (0.058)	0.003 (0.053)
First-choice Comm		-0.135 (0.281)
Age		-0.078 (0.013)
Vote Share		0.034 (0.008)
State Office		0.091 (0.204)
Delegation Size		0.035 (0.007)
Congress Fixed Effects	No	Yes
Committee Fixed Effects	No	Yes
$R^2$	<.001	0.192
N	1348	1348

Note: Results from ordinary least squares regression models. Standard errors in parentheses. Higher values of centered rank correspond to lower seniority.

Table 6: Outcome: Number of Sponsored Bills passed by House, 80th-105th Congress

	All bills		Committee-referred bills	
	1	2	3	4
(Intercept)	2.065 (0.050)		0.846 (0.089)	
Centered Rank	-0.028 (0.027)	-0.029 (0.021)	-0.108 (0.046)	-0.117 (0.036)
First-choice Comm		-0.017 (0.101)		0.267 (0.149)
Age		-0.028 (0.005)		-0.027 (0.008)
Vote Share		0.004 (0.003)		0.004 (0.005)
State Office		0.174 (0.079)		0.140 (0.133)
Delegation Size		0.010 (0.003)		0.008 (0.005)
Congress Fixed Effects	No	Yes	No	Yes
Committee Fixed Effects	No	Yes	No	Yes
Dispersion	25	13	23	11
N	1248	1248	1248	1248

Note: Results from overdispersed Poisson regression models. Standard errors in parentheses. Higher values of centered rank correspond to lower seniority.