TERM LENGTH AND POLITICAL PERFORMANCE

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ABSTRACT

We evaluate the effects of the duration of legislative terms on the performance of legislators. We exploit a natural experiment in the Argentine House of Representatives where term lengths were assigned randomly. Results for various objective measures of legislative output show that longer terms enhance legislative performance. We use a second experiment in the Argentine Senate to determine whether our results are specific to a particular chamber and a particular time. The results from the Senate reinforce the idea that longer terms enhance legislative productivity. Our results highlight limits to classic theories of electoral discipline (Barro 1973, Ferejohn 1986) predicting that shorter terms, by tightening accountability, will incentivize hard work by politicians. We discuss and test possible explanations. Our results suggest that the "accountability logic" is overcome by an "investment logic."

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1   Introduction

A fundamental problem in constitutional design is to decide for how long officials should serve before they can be replaced. In the case of democratically elected representatives the problem boils down to one of frequency of elections. Short term lengths should have at least two advantages. One is to allow for the quick reversal of bad appointments. The other is that more frequent accountability should keep representatives on their toes, leading to better representation of voters' interests. The latter notion is advanced in the classic papers by Barro (1973) and Ferejohn (1986) on electoral discipline. In their models, when office terms are made shorter politicians lose discretion, exert more effort, and extract lower rents from citizens. According to these models, more frequent accountability should always make politicians work harder. But does it? This is a question lying at the root of the process of political representation. Still, there is a striking dearth of empirical work identifying the effects of term length on political performance. In this paper we offer evidence on such effects and examine whether political incentives respond to some other force beyond accountability.

There are reasons why shortening office terms too much may backfire. For starters, elections are costly to organize. Moreover, very frequent elections will distract both politicians and citizens from productive activities. And it is also possible that politicians may need longer time horizons in order to invest in assets specific to their political position. The resulting picture is one where the frequency of elections could affect various incentives at once. As a consequence, it is not obvious whether and how term lengths should matter.

The length of legislative terms varies substantially around the world (see Table 1). One could be tempted to exploit the cross-country variation in legislative term lengths to try to ascertain their effects on legislative performance. However, different nations may select different term lengths because they face different incentive trade-offs. Because the length of terms is endogenous, exploiting the cross-country variation cannot help identify the effects of longer terms. An alternative approach would be to focus on a single legislature with staggered terms, such as the Senate of the United States, and study the effects of the proximity of elections on performance. As we discuss in the following section on related literature, this avenue poses serious identification problems as well.

Our main objective in this paper is to investigate the effects of term lengths in a way that overcomes the various identification difficulties involved. To this end we exploit a natural experiment in the Argentine legislature introducing exogenous variation in legislative term lengths. We find that the length of terms does matter, and that shorter terms worsen legislative performance. A second objective of the paper is to discuss and test possible explanations for the results.

Argentina restored democracy on December 10 of 1983, after seven years of dictatorship.

On that day a newly elected set of legislators took office. House representatives in Argentina face no term limits and their terms are four years long. Also, the Constitution requires the staggered renewal of the House chamber by halves every two years. In order to get the staggered renewal mechanism going, half of the representatives elected in 1983 got two-year terms, and the other half got four-year terms. The allocation of two- and four-year terms in this Congress of 1983 was done through a well documented random assignment. We exploit this exogenous variation to explore the impact of the duration of legislative terms on the performance of individual legislators. We use all six objective measures of legislative performance that we found, namely attendance to floor sessions, participation in floor debates (measured by number of speeches), committee activity (attendance to committee sessions and participation in the production of committee bills), the number of bills each member introduced, and how many of these became law.

We compare the levels of legislative performance of the two-year-term legislators to those of their four-year counterparts. We do this for the first two years of legislative activity, while both groups worked side by side. The effect of term duration is consistent in its direction across all six metrics of performance, and we found strongly significant results for metrics related to attendance, committee work, and the production of legislation.

Overall, the picture indicates that legislators facing shorter terms display significantly lower measures of legislative performance. The immediate question is why. We first consider a possibility pertinent to any natural experiment relying on a lottery. Namely, the lottery outcome could have a direct impact on performance through a "frustration" effect on those drawing a short term, or an "encouragement" effect on those drawing a long term. We find no evidence of such effects, strengthening the idea that the lottery did trigger a genuine treatment effect. The following question is: what explains the positive effects of longer terms on performance?

There are two main candidate explanations we consider. The first is simply that the two-year legislators must spend a good part of their term campaigning for reelection. This is a rather mechanical effect occurring simply because campaigns are distractive. A second explanation is that the time horizon facing a legislator affects her choice of involvement because of an investment logic. If all legislative activity were instantaneous in the sense that every effort leads to an immediate reward, time horizons should not matter. But in reality legislators may need to sink certain costs if they want to reap benefits in terms of future political payoffs. The type of costs may range from staying late at night in order to absorb information that will prove useful during a series of debates, to buying an apartment near the legislature. Thus, longer terms may encourage higher performance because they make more investments appear worthwhile. This explanation is plausible in the Argentine context where the mean time lag between the introduction and the approval of a legislative bill is

327 days (without counting the time spent preparing the project) and where reelection rates are low (the reelection rate for the legislators in our sample turned out to be 25%).

We took the campaigning hypothesis to our data. Under this hypothesis, the performance differentials should widen closer to the end of the two years we observe. Moreover, and as advised by the legislators we interviewed, the performance differential should be wider for legislators whose constituencies are farther away from Buenos Aires, the seat of Congress. We tested these two predictions and found no clear pattern of support for either of them. We then turned to the time-horizon cum investment hypothesis. If the time horizon matters, one would expect the effects of being dealt a longer term to be less marked for legislators who are electorally safer. After all, safe legislators have a guaranteed long time horizon regardless of their term length. This prediction meets with substantial support from the data. We conclude that the reason why legislators with longer terms perform better is connected to incentives being affected by the time horizon. In other words, the accountability logic appears to be overcome by an investment logic.

Natural experiments illustrate the trade-off between internal and external validity. They sometimes allow for credible inference of causal effects, but each experiment is necessarily limited to a specific instance in time and space. Here we take a step towards addressing the external validity issue by identifying a second natural experiment, seventeen years later, in the Argentine Senate. This experiment is analogous to the first, but it entailed the random assignment of 71 senators to two-, four-, and six-year terms.

This second experiment yields evidence in three directions. First, it broadly corroborates the notion that longer terms enhance legislative performance, even when we focus on a different chamber and on a different year. Second, it allows us to contrast again the campaigning versus the time horizon hypothesis by comparing four- and six-year term senators during their first two years in office. At that stage, no senators are active in campaigning. Yet we find significant differences in performance in favor of the six-year term legislators. This further strengthens the idea that it is the time horizon, and not campaigning distractions, that drives performance differentials. Third, the experiment in the Senate allows us to examine the time horizon effects in more detail. If time horizons matter because they affect investment, a relevant question is what is the nature of such investments. Are these generic and cumulative, so that term lengths will no longer matter once legislators have had a long tenure in office? This would be the case with investments in general legislative knowledge brought by learning by doing. A general expertise can be re-deployed to different uses in the future and hence have a low rate of obsolescence. However, we found no evidence that longer terms have less of an effect on legislators with previous experience. Thus, if investments affect expertise, some form of expertise depreciation could take place, presumably

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because issues change and new investments become neecessary over time.[1]

As the Barro and Ferejohn models show, longer terms may entail costs in terms of relaxed accountability. But our empirical study shows that, at least while terms are fairly short, extending terms entails benefits in terms of measured performance that outweigh the costs. Those benefits do not appear to stem from a simple campaign distraction problem riddling short terms, but from a pure time horizon effect. The importance of the time horizon highlights an investment logic: legislators are more likely to incur costs tied to legislative activity when guaranteed a longer term in office. This explanation was rated as highly plausible by the legislators we interviewed. Lastly, the investment logic does not appear to work in connection with the accumulation of a generic stock of expertise that once put together renders legislators indifferent to the time horizon.

The structure of the paper is as follows. In Section 2 we discuss related literature. In Section 3 we describe the natural experiment and present the data. In Section 4 we lay out the econometric model and report the results. We discuss and test possible explanations in Section 5. Section 6 reports results from a second natural experiment in the Argentine Senate. Section 7 contains our conclusions.

2   Related literature

To the best of our knowledge there is a dearth of empirical studies focusing specifically on the effects of term lengths. Apart from our own work, an exception is the research by Titiunik (2008), who studies the effects of randomly assigned term lengths on abstention rates and bills introduced by state senators in Arkansas and Texas. The direction of her results corroborates those we found. A small literature has attempted to identify whether US legislators behave differently when approaching reelection, mostly in terms of their voting (but see Lott 1987 who focuses on vote participation). Amacher and Boyes (1978) exploit the staggered composition of the US Senate and compare–for the 93rd Congress–the voting records of US senators who differ in the proximity of their reelection. They find that senators closer to reelection vote more in line with representatives (who presumably proxy for constituency interests). Thomas (1985) tracks the voting pattern of senators in their third versus their sixth year, finding a moderating tendency of election proximity. Kalt and Zupan (1990) also report that senators seem to alter their voting pattern when approaching reelection.

Lott and Davis (1992) provide further references in this area. Their discussion emphasizes that most of the papers attempting to identify the effects of electoral proximity focused

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[1]The same conclusion obtains when using our House data. However, in 1983 there were very few legislators with previous experience due to the preceding dictatorship, so the test is not very powerful.

on voting patterns and suffered from measurement and specification problems.[2] It is worth noting that most studies tracking legislators as they approach reelection will tend to confound the pure effect of the time horizon with those of changing political circumstances. The alternative approach of exploiting the staggered structure of the Senate to observe contemporaneous behavior by legislators elected at different times will tend to confound the effects of the proximity of elections with those of tenure. Tenure effects may involve sorting effects and changes in legislators' political capital. Even if one can control for tenure, focusing on legislators elected at different points in time introduces unobserved heterogeneity. For example, the electoral promises made in separate years could differ, and so may the extent to which legislators feel they can depart from the implicit electoral contract. Ideally, one would want to observe legislators appointed at the exact same time, who differ only in the term length they are assigned. This is what our design provides, therefore avoiding the aforementioned identification problems.

Crain and Tollison (1977) consider governorships as investment projects for politicians and compare campaign expenditures across races for two- versus four-year positions. They find that expenditures are larger when campaigning for a four-year governorship than along two consecutive campaigns for two-year governorships. These results are consistent with the direction and logic behind ours, although one cannot rule out the possibility that their results may reflect selection forces: better candidates may run in states that happen to have four-year governorships. It is then conceivable that those candidates would attract more campaign contributions due to their higher quality, and then spend more because of a stronger campaign chest.

A much larger literature has analyzed the effects of term limits.[3] Term-limit restrictions are interesting per se, but they pose a different problem to that of term lengths. To be sure, holding constant term lengths, the imposition of term limits should tend to reduce the time horizon in office. But term limits also introduce a lame duck period and associated effects stemming from the anticipation of that last period.[4] Term lengths, in contrast, affect the

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[2]Lott and Davis reexamine data for US senators and find that the proximity of elections does not significantly affect voting behavior in the US Senate. The general consensus in the profession since then has converged on the idea that voting patterns in the Congress of the United States are largely independent from electoral pressure (see Poole and Rosenthal 1997 and Lee, Moretti, and Butler 2004).

[3]The work in that area has focused intensely on consequences for turnover (see the papers in the edited volume by Grofman 1996, and also Carey, Niemi, and Powell 2000) and the level of expertise in the legislature. For the effect of term limits on the quality of the legislature see Petracca (1995) and Mondak (1995a, 1995b). Diermeier, Keane, and Merlo (2005) investigate the impact that the imposition of term limits would have on the value of congressional careers in the United States Congress.

[4]See Besley and Case (1995) for a study of the effects of term limits on fiscal variables across states in the Unites States and Johnson and Crain (2004) for related evidence from democratic nations.

time horizon without introducing last period problems.

Our work is more broadly related to the study of legislative performance. Schiller (1995) uses the number of bills sponsored by a legislator to measure performance and finds that senior senators sponsor more bills than junior members. She also reports a higher performance for senators that hold committee chairs or are chairs of a large number of subcommittees. Similar results are reported in Hamm, Harmel, and Thompson (1983) for a few state legislatures in the United States. Weissert (1991) and Haynie (2002) report some evidence that legislative performance is higher for senior members, for members that hold committee chairs, for members holding chamber leadership positions, and for members of the majority party. As we will show below, the picture in the Argentine legislature is more nuanced. Although legislators in positions of leadership are more visible (they give more speeches), they do not appear to introduce more bills or to have a better attendance record. However, they are significantly more likely to see their bills passed.

Padró i Miquel and Snyder (2004) use subjective measures of legislative performance in the House of representatives of North Carolina to explore the effects of legislative tenure. They find that the performance of legislators increases with tenure, and they consider learning by doing as a possible explanation.

A small number of theoretical contributions highlight different implications of extending terms. As mentioned earlier, the classic work by Barro (1973) and Ferejohn (1986) yields a picture where more frequent elections always yield stronger incentives. Contrary to this view, our results suggest that over some temporal range it is possible to space out elections, thus saving on electoral costs, while at the same time enhancing incentives for legislative performance. This of course does not imply that indefinitely lengthening terms will continue to have the same effect. Maskin and Tirole (2004) study the relative convenience of subjecting a politician to reelection or insulating her from that pressure–thus turning her into a "judge." The optimal choice depends on how eager the politician is to be reelected as this determines the likelihood that reelection concerns may distort policy choices. Schultz (2008) considers a model where representatives have private information and must make policy decisions with an eye towards getting reelected. In his model the degree of partisan polarization and the severity of uncertainty interact to make both short and long terms potentially optimal depending on the prevailing parameter configuration.

3 Natural experiment and data

3.1 The natural experiment

Argentina is a federal republic consisting of twenty four legislative districts: twenty three provinces and an autonomous federal district. The National Congress has two chambers, the Chamber of Deputies (i.e., the House) and the Senate.[5] At the time of the return to democracy in December 1983, all 254 deputies were elected at the same time, starting their terms on December 10, 1983. In Argentina deputies have four-year terms and the Constitution requires the renewal of half the chamber every two years. In order to get the staggered renewal mechanism going it was necessary to allocate half of the representatives elected in 1983 to two-year terms. The allocation of two- and four-year terms in this foundational Congress was done through random assignment.

In order to assign terms, the 254 representatives were first divided into two groups of 127 representatives each. As shown in Table 2, the allocation into groups 1 and 2 was done in such a way that all province districts and political parties were, whenever possible, proportionally represented in each group. The procedure for the random allocation of terms, set by the *Comisión de Labor Parlamentaria* (the equivalent of the Rules committee in the US) involved dividing the representatives in two groups of equal size, Group 1 and Group 2. Each party-province delegation had to apportion an equal number of its members to each group.[6] In the case that a party had an odd number of representatives from one province the imbalance was corrected with the analogous surplus from another province where the party also had an odd number of representatives. During a public legislative session on January 20 of 1984, the *Secretario Parlamentario* jointly with a representative from each party performed the lottery draw, which gave legislators in Group 1 a four year term and legislators in Group 2 a two year term.

As just mentioned, legislators were assigned to the groups by the party-province delegations. At the point when legislators were assigned to groups 1 and 2 the party-province delegations did not know which group would get assigned the long term. Thus, behind a veil of ignorance regarding which group would be assigned the long term, delegations that are not risk loving should have no incentive to induce imbalances in their assignment of individuals to groups. As we show below, all observable characteristics are balanced between the two groups.

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[5] For a description of Argentine Congress see Molinelli, Palanza, and Sin (1999) and Jones et al. (2007).

[6] The two representatives the district of Tierra del Fuego (the smallest district) were allocated into the same group

3.2 Data and measures of performance

Our dataset contains yearly information on individual performance and legislator characteristics for the two-year period starting in December 1983 and ending on December 1985. Our period of interest in terms of studying the effects of the assignment of term lengths is from the time of the assignment in late January of 1984 until December of 1985. From the 254 legislators that started their term in December 1983, three resigned and five died before December 1985. Thus the sample includes 492 observations corresponding to 246 legislators for two years.

The database includes six objective measures of legislative performance by each legislator: floor attendance (as the percentage of legislative floor sessions), committee attendance (as percentage of committee sessions), number of committee bills in which the legislator participated (as reflected on the committee bills bearing the legislator's signature), number of times the legislator spoke on the floor (non-legislative topics are not included), the number of bills introduced by the legislator, and the number of those bills that were approved.

Table 3 shows the correlation matrix of the six measures we use. The two measures that are most highly correlated are committee attendance and the number of committee bills signed (correlation coefficient equal to 0.49). Attendance to floor sessions and committee sessions, which one would expect to be very strongly correlated, display a correlation of 0.39. But most correlations are much weaker and in some cases negative. Overall, we concluded that these measures hold separate interest as proxies of legislative performance.

It is difficult to rank these measures in terms of which ones do the best job at capturing legislative activity. The legislators we interviewed held the view that the various metrics capture different aspects of a legislator's performance, and that this is useful given that different legislators cultivate different profiles. Some legislators may be very active at introducing bills and seeking to capture the attention of constituents, while others are more active at pushing the party agenda through committee work, bipartisan negotiations, or by voicing party positions. The latter tasks may in turn attract different types of legislators. Those with an ability for drafting legislation will tend to get involved in more painstaking work within committee, while those with a talent for rhetorics will be more active as floor speakers. An illustrative example is that of the brothers Adolfo and Marcelo Stubrin, who belonged to the Unión Cívica Radical. Marcelo was the higher profile legislator, with oratory skills. He averaged almost 14 speeches a year, against only 8 of his brother. But his brother attended 71% of his committee meetings, against Marcelo's meagre 17%. Adolfo signed over 46 committee bills a year, against only 20 by Marcelo.

There is also a potential contrast between styles geared towards position-taking as opposed to enacting effective legislation. Of the 123 bills introduced by Domingo Purita (Pero-

nist Party, Province of Buenos Aires), only one passed, suggesting that the legislative activity of this representative was mainly oriented to signaling certain concerns to constituents. As an example of a contrasting profile consider the case of Jesús Rodriguez (UCR, City of Buenos Aires), who would go on to play an important role in the Budget committee. Such a comparatively "policy oriented" legislator attained an identical number of passed bills (one), having introduced exactly that one bill. One can make the argument that introducing bills that do not pass may be politically relevant, so the measure of bills introduced is indeed relevant. It is possible that unsuccessful bills could create, off-equilibrium, options that end up affecting the final content of the bills that do pass. Unsuccessful bills may also generate valuable debate. But we may also want to have an independent measure of "bill effectiveness" that captures the contrast in profiles just illustrated. Our measure of bills actually passed provides such measure, and a look at the data suggests that there are indeed different profiles in terms of volume of bills introduced and the share of them that pass. (The correlation coefficient between bills introduced and bills passed is just 0.13.)

Is attendance relevant? One might argue that even a relatively unproductive legislator may display high attendance. However, attendance may reflect general involvement with the daily legislative business, which is important for affecting the drafting of legislation in committee, and also for building consensus and unlocking negotiations. While the latter role may not correlate well with the number of bills individually introduced, it may be better captured by floor and committee attendance figures. An illustrative case is that of César Jaroslavsky (UCR, Province of Entre Ríos), who was not involved in specific committee work nor introduced many bills of his own, but who played a major political role as majority leader. His important work may be best captured by the fact that he was present in over 94% of all floor sessions, placing second in the attendance ranking. Although attendance may obey to leadership responsibilities, there is strong variation in attendance conditional on occupying leadership positions (in fact, occupying a leadership position has a positive but insignificant effect on floor attendance). Conditional on the type and status of a legislator, it is conceivable that attendance will reflect variations in the level of effort or legislative involvement.

For the reasons exposed here and the feedback from legislators, we believe the metrics available to us, while noisy, do proxy for different dimensions of legislative performance. The legislators we interviewed thought that floor speaking is perhaps the metric that is least correlated with effort. They conjectured that floor speaking would be mostly associated with being a legislator of a certain "type." In particular, frequent speakers would be those whom the party trusts to do a good rhetorical job, those who happen to occupy positions of leadership, and those belonging to a small block. Given that every party gets at least one speech slot per debate, members of very small blocks would get to speak in every important session.

As we discuss in the results section, these impressions of the legislators are corroborated by the data.

The variable of interest is *Four-year term*, an indicator variable that takes the value of one for those legislators which were randomly assigned to an initial four-year term and zero otherwise. The database also includes a number of legislator characteristics, such as age (as of November 1983), male (a dummy variable that takes the value of one for male legislators), legislative inexperience at the national level (a dummy variable that takes the value of one for freshmen), being a lawyer (a dummy variable that takes the value of one if the legislator is a lawyer), holding a university degree (a dummy variable that takes the value of one for legislators with a university degree but that are not lawyers), leadership (a dummy variable that takes the value of one for legislators that are president of the chamber, chair of a committee, and majority or minority leader), belonging to the majority party (a dummy variable that takes the value of one for members of the majority party), belonging to a small block (a dummy taking the value of one for legislators belonging to a block containing less than four legislators), the distance in kilometers from the capital of the legislator's province to Buenos Aires, and a set of dummy variables for province district.[7]

Representatives in Argentina are elected through a closed party list at the provincial level, and not through a uninominal race at the level of a smaller legislative district, as in the United States. Under the party list system, the degree of electoral safety depends on how high up in the party ticket a legislator finds herself. If the delegation from a given party and province includes n members, that means that those members closer to the nth position in the ticket were more likely to stay out under more adverse electoral scenarios. Those legislators closer to the nth position in the ticket face risk going forward, given that the position in a future party list depends largely on relatively permanent factors, such as the demographics of the area from which legislators come within the province. We develop a dummy variable to capture electoral safety in the following way: we will say a legislator is relatively safe if she entered Congress within the top half of her delegation, and that she is relatively at risk otherwise. In this spirit, we define a dummy variable called *Slackness* that is equal to one whenever the legislator belongs to the upper half of the party-province delegation, and that is equal to zero otherwise.

The probability of receiving a given term length is orthogonal to political party and province district variables by virtue of the random assignment design. Although the duration of terms was randomly assigned across the two groups, it is useful to examine whether, *ex post*, legislators' characteristics are balanced between the two- and the four-year term groups.

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[7]Since the return to democracy in 1983 the two dominant political parties in Argentina have been the Unión Cívica Radical (Radical party) and the Partido Justicialista (Peronist party). In the period under analysis the majority party was the Unión Cívica Radical.

As shown in Table 4, there are no statistically significant differences in observables across the two groups of legislators, suggesting that the randomization was successful in ensuring orthogonality between covariates and term assignment.

4   Econometric model and results

Given random assignment, the impact of serving an initial four-year term relative to serving an initial two-year term can be estimated straightforwardly by using the following regression model:

$$Y_{it} = \alpha + \gamma \text{Four-year Term}_i + \beta X_i + \mu_t + \varepsilon_{it} \tag{1}$$

where Y_{it} is any of the performance measures under study for legislator i in period t, γ is the parameter of interest, X_i is a matrix of legislator characteristics, μ_t is a time effect, and ε_{it} is the error term.

Table 5 reports estimates of the impact of serving a four-year term relative to a two-year term.[8] We present results with and without controls. A typical concern when conducting inference for the estimated parameters of Equation 1 is that the errors for the same legislator might not be independent. To address this concern, aside from usual Huber-White robust standard errors, we report robust standard errors clustered at the legislator level.

Results for the six legislative outputs suggest that legislators serving a four-year term have a better performance than those in a two-year track and that the differences in performance are important in size. The point estimates of the effect of a longer term are always positive. Four out of six metrics display significant results both with and without controls and regardless of whether standard errors are clustered.

As reported in Table 5, getting a longer term appears to significantly increase performance on floor attendance by 3% (relative to the mean of the two-year legislators). The impact also reaches measures of committee performance. Committee attendance is about 12% higher for long term legislators, and the number of committee bills bearing the legislator's signature goes up by 14% in the uncontrolled regression, and by 19% in the controlled one. Floor speaking appears to respond to a longer term –the point estimates indicate an increase of 30% in the uncontrolled regression and a lower 13% in the regression with controls. The latter regression reveals that the opinions of legislators on the determinants of floor speaking were

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[8]The variables committee bills, floor speeches, bills introduced, and bills ratified take discrete values and are strongly skewed to the right with many observations at zero; consequently, ordinary least squares estimation would be inappropriate. In all these models we were able to reject the hypothesis that the dispersion parameter is equal to zero according to a likelihood-ratio test, a result that suggests that the correct specification is a negative binomial model for count data.

on target. In their view, floor speaking is more a reflection of type than of effort. Legislators predicted that floor speaking would be associated first and foremost with belonging to a small block. Indeed, this appears to be the strongest determinant of the frequency of floor speaking. They also indicated that occupying a leadership position or being a good orator would be associated with participating in floor debates. They were right on this count as well. A leadership position is a strong predictor of floor speaking. We do not have a direct measure of oratory skills, but one could imagine that holding a university degree is correlated with debating abilities. Holding a university degree (see the coefficients for *Lawyer* and *University degree*) has a similar impact on floor speaking as holding a leadership position in the internal hierarchy of the chamber. (The legislators we interviewed indicated that representatives from remote districts face more of a challenge at maintaining a presence both in their districts and in the legislature. Table 5 shows that, indeed, performance measures are negatively, and for the most part very significantly, impacted when a legislator represents a district that is far away from Buenos Aires.)

The idea that longer terms increase performance also appears to be backed by the measures of "bill production." The point estimates indicate that number of bills introduced goes up by 14% and 20% respectively in the uncontrolled and controlled models. These estimates, however, are only marginally significant in the unclustered regression.[9] When we switch attention from the "volume" measure of bill production to the "legislative efficacy" measure, namely the number of bills that pass, the estimates become strongly significant. The point estimates indicate that moving from a two- to a four-year term increases the number of passed bills by around a 100%. Overall, the results indicate a strong tendency for longer terms to increase legislative performance.

4.1   Robustness checks

To further validate our results we perform additional estimations under a wide range of alternative specifications and samples. The value and significance of the coefficients of interest remain unchanged when we use ordinary least squares instead of the negative binomial specification or when we use a Tobit specification for the case of committee attendance.[10]

According to the legislators we interviewed the most important legislative committees in the 1980s were those specializing in defense, foreign affairs, general legislation (which involves trade and commerce legislation), and the budget. One question is whether legislators belonging to these important committees display better outcomes, and whether that small

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[9]We later report on results from a posterior natural experiment taking place in the Argentine Senate. In that case, the number of bills introduced appeared to have a strongly significant response to term length.

[10]All regressions mentioned but not shown are available from the authors upon request.

group could be driving results. To address these questions we estimate an alternative model including a dummy variable that takes the value of one for those legislators that belong to an important committee. In most cases the coefficient of this dummy variable is positive but not significant. More importantly, including that control does not appear to have any effect on the magnitude or significance of the term length variable.

We also investigate the robustness of our results to alternative samples. The value and significance of the coefficients of interest remain mostly unchanged when we exclude from the sample those legislators that were leaders of the chamber. We tried different definitions of leaderhip and we found similar results.

To explore if there is heterogeneity in the effect of term lengths according to political party, we run separate regressions for the two main parties at that time. Despite the smaller sample size, we still find positive and significant coefficients for the term length variable for most of the measures of legislative performance.

Together with the number of committee bills signed, our main measures of pure legislative output are the number of bills each member introduced, and how many of these became law. We explore an alternative definition that considers not only the bills a legislator introduced but also those that she endorsed. Under the alternative definition the coefficient for bills introduced is similar to the one obtained previously. The coefficient for bills ratified is smaller, but the magnitude of the effect is still important (moving from a two- to a four-year term increases the number of bills approved by around 45%). The significance levels remain unchanged for both variables.

Finally, the significance of the term length variable is not affected when we cluster standard errors at the district level, or according to party-district combinations.

4.2   Potential concerns

Even when our study relies on a well documented randomization, one can still harbor some potential concerns regarding the exogeneity of the treatment. First, it could be the case that after the random assignment was done, re-optimizations took place that might have affected performance for reasons other than the change in term length. For example, it could be that after terms were allocated legislators given a four-year term obtained better committee assignments or more important positions in the committees they belong to. This was not the case. Committee assignments as well as leadership positions all along the internal hierarchy of the chamber were decided before the assignment of terms. Very few re-allocations are observed after the random assignment, and they are orthogonal to the term length assignment. Only seven legislators left the most important committees after the random allocation of terms (four two-year term and three four-year term legislators).

Of the seven substitutes, three legislators ended their term in 1985 and four in 1987. Of all legislators who are considered leaders, only two left their position before December 1985 (one two-year term and one four-year term legislator). One of the substitutes ended his term in 1985 and the other in 1987. Results remain unchanged when we exclude from the sample those legislators that change status as chamber leaders or moved in or out of the most important committees.

Second, it could be that the outcome of the lottery directly affects the morale of legislators, boosting the spirits of those who got a four-year term, and depressing the rest. In this case, the instrument would not be affecting behavior through its effect on the term length, but directly through its "win or loss" meaning. According to the literature in experimental psychology (see for instance Amsel, 1992), an implication of the frustration hypothesis is that we should observe an immediate drop in the performance of legislators allocated to two-year terms, followed by a graduate increase of performance as frustration gets diluted over time. Figure 1 displays the evolution of the performance differential across groups on a monthly basis. We show this for the four measures for which our data allowed such disaggregation. These plots obviate months where the legislature did not register activity. Although there is no rough and ready definition of exactly how long frustration effects should last, it is understood that if present they should affect only very few months after the randomization. As Figure 1 shows, the higher performance of four-year legislators seems to constitute a fairly general pattern beyond the first few months.

5   Possible explanations

5.1   Campaigning

A first possible explanation for the positive impact of term duration on performance is that legislators with shorter terms may get distracted when campaigning for reelection. Two dimensions, time and space, are relevant to this explanation.

Campaigning for reelection occupies more time as the election gets closer. Therefore, if campaigning gets in the way of legislative work, one should expect the performance differential between four- and two-year legislators to increase during the second year. The other relevant dimension is distance. As indicated by the legislators we interviewed, the performance differential against the two-year legislators should be more pronounced for those representing districts farther away from Buenos Aires, where the legislature is located. The reason is that the legislators representing remote provinces have to travel far in order to campaign, and therefore find it hard to keep up their legislative performance.

We explore the campaigning hypothesis by estimating two specifications including each a

different interaction variable. The "time" specification (reported in odd-numbered columns in Table 6) includes an interaction between the four-year variable and a dummy that takes the value of one for the second year. If the performance differential in favor of the four-year legislators gets larger during the second year, we would expect that interaction to be positive. The other, "distance," specification is reported in the even-numbered columns in Table 6, and it includes an interaction between the four-year variable and the distance from Buenos Aires to the legislator's province (the location of the latter being proxied by its capital city). Under the campaigning hypothesis the distance interaction should be positive as well. As reported in Table 6, in most cases the interaction between the second-year dummy and *Four-year term* is not significant at the usual levels of confidence.[11] The second year interaction displays the wrong sign half of the times. The campaigning hypothesis, as captured by the second year interaction, only pans out in connection with committee attendance and work (the two most highly correlated performance measures), but these same metrics do not sustain the campaigning hypothesis as captured by the distance interaction. Overall, it is not possible to conclude that the data support the campaigning hypothesis. One possibility may be that campaigning only really hurts two-year legislators in the second year that happen at the same time to represent distant districts. We estimated a third specification (unreported) were we simultaneously include the time and distance interactions, as well as a triple interaction between the long term variable, the year two dummy, and the distance variable. That specification fails again to lend support to the campaigning hypothesis. Replacing the distance variable with a dummy for legislators that are not from Buenos Aires does not help the campaigning hypothesis either.

It seems *prima facie* counter-intuitive that campaigning, being a time-demanding activity, would not appear to differentially damage the short-term legislators. But, as was pointed out by the legislators we interviewed, campaigning in Argentina is to a great extent a team effort at the party level. Legislators that are not running for office often campaign alongside those who are.

5.2   Time horizon effects and the investment logic

The second broad explanation for the result that longer terms enhance legislative performance is that the time horizon affects legislators' incentives. In a world where legislative activity is instantaneous in the sense that every unit of effort brings its reward immediately, legislators could have great incentives to exert effort even if their terms were short. But in a world where effort brings non-immediate rewards, time horizons will be relevant. One

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[11]Similar conclusions are obtained when we interact *Four-year term* with the second-year dummy and with a dummy variable for being nominated for reelection.

can see every unit of effort as an investment project triggering a stream of returns, with a maturity structure, and a mean time to payback. It is then easy to see that legislators facing a shorter horizon will more often see some units of effort to have too long a maturity to justify paying the cost.

Three questions are pertinent to the plausibility of this explanation. First, is legislative activity compatible with the idea that some units of effort may yield returns that are relatively distant in time? In our view the answer is yes for two reasons. One is that the mean time lag since the introduction of a bill to its approval was, in our sample period, of 327 days, without counting the time of preparation of the bill, which must allow for obtaining advice and actually drafting the bill. The other reason is that some 'projects' may by their very nature require long periods to pay back. A legislator may buy an apartment close to the legislature in order to lower her future costs of attending meetings, or shut down her private law firm in order not to have a second activity competing for her time and attention. Shorter-term legislators may decide not to incur these costs. Other opportunities to incur costs may appear more continuously. For instance, a legislator may often have to decide whether to spend time absorbing information that will be useful during an upcoming series of legislative debates. For example, in the 1980s legislators in Argentina faced a number of crucial legislative debates including one on a peace treaty with Chile –the first of a series that would resolve a string of border issues stretching into the 1990s. A legislator may decide to learn various details about that topic, which may yield benefits in terms of allowing the legislator to draft her own bill on the matter, introducing amendments, or weighing in on negotiations. These investments may pay back a stream of returns stretching for as long as the topic remains current, which may be a few years.

A second question on the plausibility of the time horizon explanation is whether a change from a two- to a four-year term could significantly affect the effective time horizon facing legislators. The answer is yes because of the low reelection rates in Argentina. This rate was of 25% for our sample of legislators. A third question is whether legislators would have a reason to make any investments, and to vary them according to term lengths. First, a better performance may leave a better legislative legacy. Second, the probability of reelection is positively and significantly related to three out of six performance measures (for the other measures the relationship is not significant).

For these three reasons (time lags between costs and returns to legislative activity, low reelection chances, and some sensitivity of reelection chance to performance) we believe that the time horizon explanation is plausible. We now proceed to test it. The time horizon hypothesis yields an implication we can take to the data: legislators who are relatively safer electorally should care less about the term length they get dealt. In one extreme, term length does not affect the expected time in office for someone whose reelection is guaranteed. In

the other extreme, the term length affects one for one the expected tenure of someone who is certain not to be reelected. As a result, if safer legislators care less about term length, an interaction variable between being safer and getting the four-year term should be negative.

The variable capturing electoral safety is the variable "slackness" introduced in the data section. In Table 7 we report results indicating that the interaction of the *Four-year term* variable and the electoral safety measure has the right sign for five of our six performance meausures (the estimate is not statistically significant in the case where the sign goes in the unexpected direction). In four of the six measures we see statistically significant results, and these results are robust to clustering in the case of three measures: floor attendance, committee attendance, and the number of bills that are approved. For these metrics being electorally safe appears to undo a substantial portion, and sometimes all, of the effect of being dealt a longer term.

Overall, these results tend to corroborate the idea that the effect of term length is to enhance legislative productivity because of its impact on the time horizon facing legislators. In other words, the accountability logic in the Barro-Ferejohn models appears to be overcome by an investment logic.

5.3 Intertemporal cooperation and social norms

There is an alternative investment logic story that is not exclusively focused on individual incentives and incorporates collective considerations. It is possibble that legislators may "invest" by working hard early in their terms in order to be allowed to shirk later, as part of a repeated game equilibrium where shirking early would trigger a collective reversion to shirking. There are two different models one can write that capture this story.[12] First consider a cohort of infinitely lived legislators elected for a single period but who can be reelected for ever.[13] Legislation is seen as a voluntary contribution game. Legislators may contribute low, medium, or high levels of effort. Effort is privately costly but legislative output is collectively beneficial, so each legislator would rather shirk and have others contribute. It is possible to characterize conditions involving the reelection probability (which acts as a discount factor), the costs of effort, and the returns to legislation, such that legislators cannot sustain high levels of cooperation when their terms last for a single period. At the same time, it is possible to characterize conditions such that legislators with two-period terms will be able to sustain an equilibrium where they cooperate at high levels during the first half of

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[12]The two models we describe next are available upon request.

[13]The models described below are related to that by Dickson and Shepsle (2001). They offer an interesting treatment with overlapping generations of finitely lived players. On perfect equilibria of finitely repeated games, see also Benoit and Krishna (1985). We focus on infinitely lived players in order to abstract from the last period issues and better capture the Argentine context, where term limits are not present.

their terms, while allowing themselves to cooperate at medium levels during the second half. This profile is sustained by the threat of reverting to low cooperation if anyone deviates. In this model, extending term lengths from one to two periods allows stronger cooperation and higher performance.

Closer to the case of the Argentine legislature with its staggered renewal structure, consider next a version of the same game with overlapping cohorts of infinitely lived legislators. It is again possible to characterize conditions under which the extension of term lengths will make stronger cooperation possible. As a result, the fact that the empirical effects we identify could be driven by social norms pinning down equilibria in repeated games does not necessarily change the policy implications. In these models longer terms allow for more cooperation with and without overlapping generations of players. The only exception occurs in the case where we assume that the legislature has a *fixed* amount of work to do, and the social norm simply allocates it unevenly, having legislators who are farther from reelection bear a larger share of the burden. This asymmetry could result directly from the staggered structure of the chamber regardless of the length of terms. It is however difficult to imagine why legislators would prefer lopsided effort allocations if overall productivity is fixed and they do not care about time horizons. In such a situation both discounting motives and, under any convexity in the costs of effort, a desire to smooth effort over time would create a strict preference against lopsided allocations. These are hard to justify without a cooperation argument like the one discussed above.

Our data does not allow a conclusive test rejecting an explanation relying on social norms. But we have two reasons to be confident that such mechanisms are not at play in the Argentine context. First, the effects we identify appear sensitive to legislators' *effective* time horizon (i.e., the degree of electoral safety matters). This indicates that a social norm tied to the term length cannot be the whole explanation.[14] Secondly, we consulted legislators for their interpretation of the results. They spontaneously suggested the possibility that the time horizon may affect the calculus of individual legislators, as well as the possibility that campaign distractions might matter. The legislators we talked to considered very implausible that intertemporal cooperation agreements could shape levels of performance in the Argentine context. (This is sensible given the low reelection rates in Argentina, but could be plausible in other contexts.) Their view was that there are many degrees of freedom in the individual choice of involvement by legislators, and that these choices could be affected by the time horizon facing them.

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[14]To be sure, one could still construct a game where players condition on the effective time horizon, rather than on the remainder of one's term. However, given the likely lack of common knowledge on the effective time horizon facing different individuals, such an equilibrium is highly implausible.

6 Additional evidence from the Senate

An important question is to what extent are our results unique to the House of representatives and to a specific instance in time. In order to address such concerns, we looked for a second natural experiment, and found one in the Argentine Senate in 2001. This second instance, taking place seventeen years later, involved very different economic and political circumstances.

As a result of a constitutional reform in 1994, the whole Senate needed to be renewed in 2001, when the body's 71 senators were elected at the same time to start their terms on December 10.[15] The modification of term lengths and renewal rates required that some senators be assigned two-year terms, others four-year terms, and others six-year terms. The allocation was done through a well documented random assignment during a public legislative session on December 12 of 2001. The random assignment was performed at the district level (each district has three senators); so this natural experiment does now allow us to control for district effects.

Our dataset for the Senate contains yearly information on legislative outcomes and legislator characteristics for the two-year period starting in December 2001 and ending in December 2003. The database made available to us includes only three objective measures of legislative performance: floor attendance, the number of bills introduced by each legislator, and the number of bills that, having been introduced by each legislator, were also approved. We have no information on committee activity and on-the-floor activity due to lack of records. Of the 71 legislators that started their term in December 2001, six resigned before December 2003. Thus the sample includes 130 observations corresponding to 65 legislators for two years.[16]

We define the *Long term* dummy as a variable taking the value one if the senator got a four- or six-year term, and the value zero if the legislator got a two-year term. The Panel 1 in Table 8 reports results on specifications like those in Table 5. The point estimate for the effect of longer terms on floor attendance is strikingly close to the estimates we obtained for the House representatives. The implied percentage change in attendance by long-term senators relative to the mean of the short term senators is 2% (the change was 3% in the House experiment). However, a much larger standard error makes this point estimate non-significant. The point estimate for the effect of longer terms on the number of bills passed suggests that the number of bills passed are 27% higher for long-term legislators; the coefficient, however, is again not significant. We find a strongly significant effect of longer

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[15] There were 71 senators (instead of 72) because one of the three seats belonging to the federal district was left vacant until 2003. Like House representatives, senators are eligible for reelection and face no term limits.

[16] One of the legislators resigned before the random allocation. Of the other five legislators two were allocated to a two-year term, two were allocated to a four-year term, and one to a six-year term.

terms on the number of bills introduced; the point estimate indicates that the number of bills introduced is 49% higher for long-term senators. These estimates, stemming from a second natural experiment in the Senate, broadly confirm the picture emerging from the experiment in the Chamber of Deputies presented in Section 4, namely that longer terms enhance legislative productivity.[17]

The experiment in the Senate also allows us to revisit the problem of what explains the effects of longer terms. Panel 2 reports results from specifications analogous to those in Panel 1, but for two modifications. First, we exclude from the sample all senators in the two-year track, keeping only those in the four- and six-year tracks. Then we redefine the *Long term* variable to take the value of one for six-year senators and zero for the four-year ones. In this specification the coefficient for floor attendance is negative but far from significant. The coefficients for bills introduced and bills approved are both positive and statistically significant. The implied increase in bills introduced for legislators in the six-year track relative to the mean of those in the four-year track is of 81%. The increase for bills approved is of 64%. Overall, the results in Panel 2 tend to favor the view that six-year legislators perform better than four-year legislators *during the first two years* of their tenures. At that early stage in their tenures campaigning considerations in Argentine politics are effectively absent from political calculations. The fact that those legislators with the longer term length perform better so far in advance further backs the idea that the time horizon shapes incentives before campaigning becomes an issue. This reinforces the idea that an investment logic overcomes the accountability logic.

Lastly, we inquire about the nature of the potential investments involved in legislative activity. This is useful from the perspective of the optimal design of terms. One possibility is that the investments made by legislators accumulate in a stock of expertise or advantage that can be carried forward, and that once accumulated renders legislators unresponsive to term lengths. This would be the case for instance if term lengths affected performance because they foster learning by doing about generic legislative aspects. Another possibility is that investments reflect continuing and diverse opportunities that legislators never cease to be interested in, provided they can be confident about repayment. If the first possibility were true, the investment logic would be relevant at relatively early stages of a legislator's career. Then it could be optimal to allow inexperienced legislators a long first term in order to incentivize learning and initial investments, but it would be possible to have more senior legislators face shorter terms in order to benefit then from stronger accountability. If the

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[17]Conclusions remain unchanged when standard errors are clustered at the district level. When we consider three treatments (two-, four-, and six-year terms) we find that the point estimate of being assigned to a four-year term is, in most cases, possitive but smaller to the one associated to being assigned to a six-year term. In other words, effects appear to get stronger the longer the term assigned.

second possibility were true, term lengths could be determined without regard to seniority (which is the case in reality).

In order to explore what type of investment predominates, we ask whether the effects of term lengths are stronger for inexperienced legislators. In Panel 3 we estimate specifications including an interaction between the *Long term* variable and *Freshman*. If generic investments are what drive the investment logic, we would expect experienced legislators to care less about what term length they get. In other words, we would expect the interaction between *Freshman* and the *Long term* variable to be positive and significant. We find that in all cases the interaction effect between *Freshman* and tenure is not significant, and in two out of three cases it has the incorrect sign.[18] We conclude that investments either depreciate after a few years, or are related to varied and continuing opportunities that are also valuable for experienced legislators. As a result, nothing indicates that term lengths should be determined with regard to seniority, since the benefits of longer terms appear to accrue to experienced legislators too.

7   Conclusion

Classic theories of electoral discipline (due to Barro 1973 and Ferejohn 1986) generate the prediction that more frequent elections and shorter terms in office will make politicians more accountable. In the case of legislators, the extra accountability pressure should induce better legislative performance. However, our empirical study relying on a natural experiment in Argentina reveals the opposite pattern. We study the impact of randomly assigned term lengths on six measures of legislative output by Argentine House representatives. The results indicate that legislators serving a four-year term have a better performance than those in a two-year track.

The use of a natural experiment allows us to overcome several identification problems that usually affect studies of the determinants of political performance. Despite this advantage, a study relying on a random assignment through lottery has limitations. One limitation is of internal validity. It is possible that the outcome of a lottery may directly affect subjects through a "frustration" (or, alternatively, "boost") effect which would presumably occur right after the randomization and last for a short time. An examination of the data on a monthly basis indicates that such effects are unlikely. Another limitation is of external validity. A natural experiment is typically restricted to a specific instance in time and

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[18]We tested this hypothesis using our data from the House experiment, and found no support for it, just as with the Senate data. The House data, however, is less suitable for the test than the one from the Senate because the House members in our dataset entered Congress in 1983, after a long dictatorship. As a result, only a handful of them had previous legislative experience, and the test is not very powerful.

space, leaving open the important question of the extent to which the results that have been obtained can be generalized. We take a step to address this second limitation by examining data from a second, analogous, natural experiment in the Argentine Senate in 2001. This second experiment shows results that are consistent with the picture emerging from the first.

An additional obstacle is that even if one can identify a causal effect, this is not enough to pin down an interpretation about the mechanisms at play. In this paper we take steps not just to investigate whether term lengths matter and in which direction, but also to gain insight on how they matter. One possibility is that longer terms enhance the incentives facing legislators to make investments that raise their productivity. But another, more "mechanical" explanation is that legislators on a shorter track spend part of their two years in office worrying about their reelection campaign. Our data does not lend support for the idea that campaigning drives results, while largely supporting the idea that time horizons matter to legislators. Overall, our results and interviews with legislators point to the fact that an investment logic seems to outweigh the accountability logic in the Barro-Ferejohn models. Longer terms induce legislators to work harder because longer terms make it worthwhile to incur costs attached to the legislative activity.

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Table 1. Duration of terms in selected legislatures

Term duration (years)	Countries, and states in the United States of America
2	United States House of Representatives US states: Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming
3	Australia, Bhutan, El Salvador, Mexico, Nauru, New Zealand, and Philippines
4	Albania, Andorra, Angola, Armenia, Argentina, Austria, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Chad, Chile, Colombia, Costa Rica, Croatia, Denmark, Dominican Republic, Germany, Ghana, Greece, Guatemala, Haiti, Honduras, Hungary, Iran, Iraq, Japan, Jordan, Kazakhstan, Kiribati, Lebanon, Liechtenstein, Lithuania, Macedonia, Madagascar, Mauritius, Moldova, Mongolia, Montenegro, Netherlands, Nigeria, Poland, Portugal, Romania, Russia, Slovakia, Solomon Islands, South Korea, Spain, Syria, Tuvalu, and Vanuatu US states: Alabama, Louisiana, Maryland, Mississippi, Nebraska, and North Dakota
5	Afghanistan, Antigua and Barbuda, Azerbaijan, Bahamas, Bangladesh, Barbados, Benin, Bolivia, Botswana, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Cape Verde, Central African Republic, China, Comoros, Cuba, Cyprus, Czech Republic, Democratic Republic of the Congo, Djibouti, Dominica, Egypt, Ethiopia, Fiji, France, Gabon, Gambia, Grenada, Guinea, Guyana, India, Ivory Coast, Jamaica, Kyrgyzstan, Laos, Lesotho, Luxembourg, Malawi, Malaysia, Mali, Malta, Mauritania, Monaco, Morocco, Mozambique, Namibia, Nicaragua, Niger, North Korea, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Republic of the Congo, Saint Lucia, Samoa, San Marino, Senegal, Seychelles, Sierra Leone, Singapore, South Africa, Suriname, Tajikistan, Tanzania, Togo, Tunisia, Turkey, United Kingdom, Uruguay, Uzbekistan, Vietnam, Zambia, and Zimbabwe
6	Liberia, Sri Lanka, Sudan, and Yemen

Note: when the legislature consists of a lower and an upper house, we consider the lower house.

Table 2. Distribution of legislators by province and political party for the random allocation of terms

District	Group 1 (later assigned a four-year term)										Group 2 (later assigned a two-year term)									Total
	Total	UCR	PJ	PI	UCD	DC	AUT	MPJ	MPN	PB	Total	UCR	PJ	PI	UCD	LIB	MFP	MPN	PB	Total
Capital	25	7	3	-	1	1	-	-	-	-	12	7	4	1	1	-	-	-	-	13
Buenos Aires	70	18	16	1	-	-	-	-	-	-	35	19	15	1	-	-	-	-	-	35
Catamarca	5	1	1	-	-	-	-	-	-	-	2	1	2	-	-	-	-	-	-	3
Córdoba	18	6	3	-	-	-	-	-	-	-	9	5	4	-	-	-	-	-	-	9
Corrientes	7	2	1	-	-	-	1	-	-	-	4	1	1	-	-	1	-	-	-	3
Chaco	7	1	2	-	-	-	-	-	-	-	3	2	2	-	-	-	-	-	-	4
Chubut	5	2	1	-	-	-	-	-	-	-	3	1	1	-	-	-	-	-	-	2
Entre Ríos	9	2	2	-	-	-	-	-	-	-	4	3	2	-	-	-	-	-	-	5
Formosa	5	1	2	-	-	-	-	-	-	-	3	1	1	-	-	-	-	-	-	2
Jujuy	6	1	1	-	-	-	-	1	-	-	3	1	2	-	-	-	-	-	-	3
La Pampa	5	1	1	-	-	-	-	-	-	-	2	1	1	-	-	-	1	-	-	3
La Rioja	5	1	2	-	-	-	-	-	-	-	3	1	1	-	-	-	-	-	-	2
Mendoza	10	3	2	-	-	-	-	-	-	-	5	3	2	-	-	-	-	-	-	5
Misiones	7	2	2	-	-	-	-	-	-	-	4	2	1	-	-	-	-	-	-	3
Neuquén	5	1	-	-	-	-	-	-	1	-	2	1	1	-	-	-	-	1	-	3
Río Negro	5	2	1	-	-	-	-	-	-	-	3	1	1	-	-	-	-	-	-	2
Salta	7	2	2	-	-	-	-	-	-	-	4	1	2	-	-	-	-	-	-	3
San Juan	6	1	1	-	-	-	-	-	-	1	3	1	1	-	-	-	-	-	1	3
San Luis	5	1	1	-	-	-	-	-	-	-	2	2	1	-	-	-	-	-	-	3
Santa Cruz	5	1	1	-	-	-	-	-	-	-	2	1	2	-	-	-	-	-	-	3
Santa Fe	19	5	5	-	-	-	-	-	-	-	10	5	4	-	-	-	-	-	-	9
S. del Estero	7	2	2	-	-	-	-	-	-	-	4	1	2	-	-	-	-	-	-	3
Tucumán	9	2	3	-	-	-	-	-	-	-	5	2	2	-	-	-	-	-	-	4
T. del Fuego	2	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	2
TOTAL	254	65	55	1	1	1	1	1	1	1	127	64	56	2	1	1	1	1	1	127

Notes: UCR is Unión Cívica Radical; PJ is Partido Justicialista; PI is Partido Intransigente; UCD is Unión del Centro Democrático; DC is Democracia Cristiana; AUT is Partido Autonomista; MPJ is Movimiento Popular Jujeño; MFP is Movimiento Federalista Pampeano; MPN is Movimiento Popular Neuquino; PB is Partido Bloquista de San Juan; LIB is Partido Liberal.

Table 3. Correlations among measures of legislative performance

	Floor attendance	Committee attendance	Committee bills	Floor speeches	Bills introduced	Bills ratified
Floor attendance	1					
Committee attendance	0.39	1				
Committee bills	0.27	0.49	1			
Floor speeches	0.04	-0.09	-0.08	1		
Bills introduced	-0.02	0.05	0.18	0.04	1	
Bills ratified	0.16	0.03	0.07	0.15	0.13	1

Note: correlations computed on raw data observed on yearly basis. Collapsing the data by individual yields similar results.

Table 4. Summary statistics

	Four-year track	Two-year track	Difference of means
Floor attendance (in %)	82.346	79.833	2.513**
	(0.733)	(0.726)	(1.032)
Committee attendance (in %)	56.507	50.872	5.635**
	(1.543)	(1.552)	(2.188)
Number of committee bills	47.336	41.397	5.939*
	(2.366)	(2.224)	(3.247)
Number of floor speeches	5.616	4.339	1.277
	(0.561)	(0.569)	(0.800)
Number of bills introduced	6.224	5.496	0.728
	(0.655)	(0.587)	(0.879)
Number of bills ratified	0.276	0.128	0.148***
	(0.042)	(0.025)	(0.049)
Age	50.168	50.868	-0.700
	(0.959)	(0.926)	(1.333)
Male	0.944	0.967	-0.023
	(0.021)	(0.016)	(0.026)
Freshman	0.944	0.934	0.010
	(0.021)	(0.023)	(0.031)
Lawyer	0.368	0.273	0.095
	(0.043)	(0.041)	(0.059)
University degree	0.184	0.157	0.027
	(0.035)	(0.033)	(0.048)
Leader	0.136	0.083	0.053
	(0.031)	(0.025)	(0.040)
Slackness	0.600	0.521	0.079
	(0.044)	(0.046)	(0.063)
Majority party	0.504	0.488	0.016
	(0.045)	(0.046)	(0.064)
Small block	0.056	0.058	-0.002
	(0.021)	(0.021)	(0.030)
Distance (in hundred of kilometers)	6.598	6.817	-0.220
	(0.515)	(0.572)	(0.769)

Note: *Leader* is a dummy variable that takes the value one when the legislator is the president of the chamber, a majority or minority leader, or a committee chair. *Freshman* is a dummy taking the value one for Representatives without any previous legislative experience at the national level. *Slackness* is a dummy variable that takes the value one when the legislator was elected in the top of the party-province delegation. *Small block* is a dummy variable that takes the value of one when the legislator belongs to a party holding three or fewer seats. *Distance* is the distance (in hundred of kilometers) from the capital of the legislator's district to Buenos Aires (the seat of the national legislature). Standard errors are in parentheses. *Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level, based on a t test on equality of means.

Table 5. The effects of term length on legislative performance

	Floor attendance		Committee attendance		Committee bills		Floor speeches		Bills introduced		Bills ratified	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Four-year term	2.513	2.548	5.635	6.259	0.133	0.175	0.263	0.122	0.133	0.184	0.753	0.669
	(0.903)***	(0.846)***	(2.189)***	(2.040)***	(0.073)*	(0.080)**	(0.158)*	(0.146)	(0.149)	(0.114)*	(0.249)***	(0.251)***
	{1.076}**	{0.956}***	{2.764}**	{2.498}***	{0.999}	{0.108}*	{0.197}	{0.172}	{0.184}	{0.135}	{0.256}***	{0.249}***
Change	3%	3%	11%	12%	14%	19%	30%	13%	14%	20%	112%	95%
Age		0.134		0.224		-0.002		-0.022		-0.004		-0.006
		(0.040)***		(0.115)**		(0.004)		(0.009)***		(0.006)		(0.011)
		{0.043}***		{0.135}*		{0.006}		{0.010}**		{0.007}		{0.012}
Male		6.096		-0.875		0.101		-0.313		-0.218		-0.630
		(2.331)***		(5.266)		(0.185)		(0.333)		(0.187)		(0.526)
		{1.851}***		{6.127}		{0.228}		{0.395}		{0.206}		{0.636}
Freshman		3.174		12.630		0.088		0.144		0.156		-0.281
		(2.171)		(5.271)**		(0.224)		(0.287)		(0.281)		(0.434)
		{2.410}		{6.898}*		{0.307}		{0.329}		{0.370}		{0.461}
Lawyer		0.752		-0.702		0.034		0.732		0.092		0.055
		(0.920)		(2.627)		(0.087)		(0.154)***		(0.144)		(0.237)
		{1.040}		{3.152}		{0.119}		{0.187}***		{0.177}		{0.249}
University degree		2.048		6.574		-0.061		0.981		0.028		0.186
		(1.010)**		(3.023)**		(0.101)		(0.290)***		(0.156)		(0.341)
		{1.085}*		{3.619}*		{0.133}		{0.305}***		{0.175}		{0.335}
Leader		0.370		-2.086		-0.238		1.022		0.260		1.256
		(1.370)		(3.900)		(0.141)*		(0.195)***		(0.183)		(0.303)***
		{1.593}		{4.987}		{0.191}		{0.250}***		{0.224}		{0.299}***
Slackness		-0.842		-6.683		-0.028		0.344		0.124		0.004
		(0.829)		(1.992)***		(0.071)		(0.139)***		(0.116)		(0.233)
		{0.930}		{2.408}***		{0.096}		{0.168}**		{0.138}		{0.238}
Majority party		7.777		15.326		0.416		-0.484		-1.277		-0.270
		(0.850)***		(2.282)***		(0.083)***		(0.147)***		(0.122)***		(0.251)
		{0.929}***		{2.726}***		{0.113}***		{0.180}***		{0.149}***		{0.248}
Small block		4.254		0.293		-0.154		1.474		-0.689		-0.282
		(1.601)***		(4.597)		(0.189)		(0.228)***		(0.209)***		(0.658)
		{1.790}**		{5.953}		{0.260}		{0.280}***		{0.249}***		{0.625}
Distance		-0.387		-1.400		-0.061		-0.072		-0.003		-0.003
		(0.098)***		(0.332)***		(0.018)***		(0.016)***		(0.027)		(0.031)
		{0.078}***		{0.447}***		{0.017}***		{0.019}***		{0.020}		{0.041}
District dummies	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Method	OLS	OLS	OLS	OLS	Negbin	Negbin	Negbin	Negbin	Negbin	Negbin	Negbin	Negbin

Notes: Huber-White robust standard errors are in parentheses. Standard errors clustered at the legislator level are in braces. For OLS and Tobit models, Change is calculated as 100*Estimate/mean of the respective output for legislators in a two-year track. For Negbin (Negative Binomial) models, Change is calculated as exp(Estimate)-1. All models include time dummies. The number of observations is 492. *Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level.

Table 6. Tests for the campaigning hypothesis

	Floor attendance		Committee attendance		Committee bills		Floor speeches		Bills introduced		Bills ratified	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Four-year term	2.488	2.890	2.931	6.201	0.122	0.021	0.231	0.015	0.339	0.447	0.769	1.117
	(1.036)**	(1.279)**	(2.847)	(3.056)**	(0.108)	(0.124)	(0.181)	(0.236)	(0.150)**	(0.184)**	(0.260)***	(0.342)***
	{1.060}**	{1.452}**	{2.887}	{3.800}*	{0.112}	{0.169}	{0.180}	{0.275}	{0.150}**	{0.216}**	{0.259}***	{0.343}***
Four-year term x Time	0.119		6.655		0.107		-0.216		-0.314		-0.372	
	(1.624)		(3.969)*		(0.146)		(0.257)		(0.227)		(0.550)	
	{1.431}		{2.865}**		{0.056}**		{0.189}		{0.179}*		{0.553}	
Four-year term x Distance		-0.053		0.009		0.025		0.018		-0.043		-0.078
		(0.124)		(0.341)		(0.014)*		(0.028)		(0.019)**		(0.041)**
		{0.139}		{0.426}		{0.019}		{0.034}		{0.022}**		{0.041}**
Method	OLS	OLS	OLS	OLS	Negbin	Negbin	Negbin	Negbin	Negbin	Negbin	Negbin	Negbin

Notes: Huber-White robust standard errors are in parentheses. Standard errors clustered at the legislator level are in braces. *Time* is an indicator variable that takes the value one for the second year. Distance is previously defined in Table 4 and in the text. All models include time dummies and legislators' characteristics as additional covariates—not shown to save space. The number of observations is 492. *Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level.

Table 7. Tests for the time-horizon/investment hypothesis

	Floor attendance (1)	Committee attendance (2)	Committee bills (3)	Floor speeches (4)	Bills introduced (5)	Bills ratified (6)
Four-year term	4.766	11.967	0.233	0.399	0.158	1.258
	(1.201)***	(3.013)***	(0.107)**	(0.190)**	(0.162)	(0.357)***
	{1.306}***	{3.700}***	{0.145}*	{0.236}*	{0.186}	{0.388}***
Four-year term x Slackness	-4.032	-10.374	-0.106	-0.512	0.046	-0.987
	(1.724)**	(4.094)***	(0.148)	(0.298)*	(0.234)	(0.516)**
	{1.838}**	{4.962}**	{0.201}	{0.354}	{0.273}	{0.527}*
Method	OLS	OLS	Negbin	Negbin	Negbin	Negbin

Notes: Huber-White robust standard errors are in parentheses. Standard errors clustered at the legislator level are in braces. *Slackness* captures electoral safety and is already defined in Table 4 and in the text. All models include time dummies and legislators' characteristics as additional covariates—not shown to save space. The number of observations is 492. *Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level.

Table 8. Evidence from the Senate

	Panel 1			Panel 2			Panel 3		
	Floor attendance (1)	Bills introduced (2)	Bills ratified (3)	Floor attendance (4)	Bills introduced (5)	Bills ratified (6)	Floor attendance (7)	Bills introduced (8)	Bills ratified (9)
Long term	1.299	0.402	0.241	-0.485	0.595	0.492	0.179	0.574	0.265
	(2.398)	(0.126)***	(0.197)	(2.626)	(0.144)***	(0.220)**	(3.822)	(0.214)***	(0.283)
	{2.822}	{0.166}***	{0.221}	{2.832}	{0.188}***	{0.249}**	{4.435}	{0.288}**	{0.343}
Change	2%	49%	27%	-0.58%	81%	64%			
Freshman x Long term							1.976	-0.297	-0.041
							(5.186)	(0.271)	(0.393)
							{6.162}	{0.363}	{0.442}
Number of observations	130	130	130	88	88	88	130	130	130
Method	OLS	Negbin	Negbin	OLS	Negbin	Negbin	OLS	Negbin	Negbin

Notes: Huber-White robust standard errors are in parentheses. Standard errors clustered at the legislator level are in braces. In Panels 1 and 3 *Long term* is a dummy variable that takes the value of one for legislators in either a four-year or a six-year track and zero for those in the two-year track. In Panel 2 we report regressions excluding two-year Senators, and where *Long term* is a dummy variable that takes the value of one for legislators in a six-year track and zero for those in a four-year track. *Freshman* is a dummy taking the value one for Senators without any previous legislative experience at the national level. Changes implied by coefficient estimates are calculated as in Table 5. All specifications include time dummies and legislators' characteristics as additional covariates—not shown to save space. *Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level.
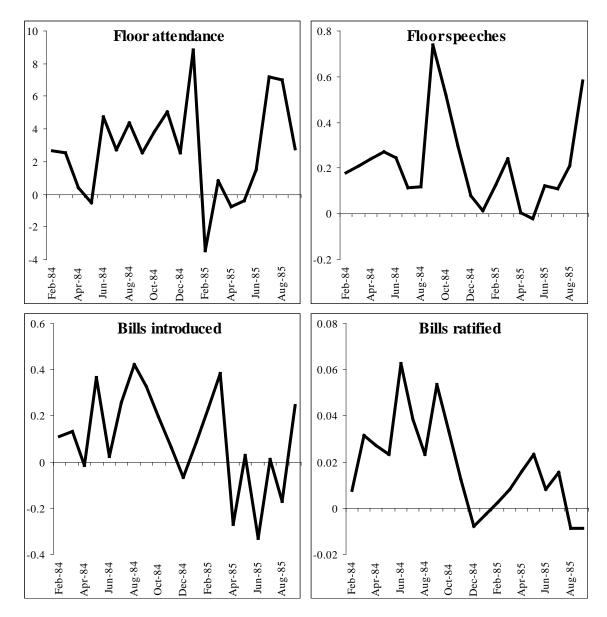
**Figure 1. Monthly evolution of performance differential, by type of legislative outcome
(Difference in means, 4-year vs 2-year tracks)**