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IZA DP No. 10923

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ABSTRACT

Does It Matter How and How Much Politicians Are Paid?

An important question in representative democracies is how to ensure that politicians behave in the best interest of citizens rather than their own private interests. Aside from elections, one of the few institutional devices available to regulate the actions of politicians is their pay structure. In this paper, we provide fresh insights into the impact of politician salaries on their performance using a unique law change implemented in 2012 in Turkey. Specifically, the members of the parliament (MPs) in Turkey who are retired from their pre-political career jobs earn a pension bonus on top of their MP salaries. The law change in 2012 significantly increased the pension bonus by pegging it to 18 percent of the salary of the President of Turkey, while keeping the salaries of non-retired MPs unchanged. By exploiting the variation in total salaries caused by the new law in a difference-in-differences framework, we find that the salary increase had a negative impact on the performance of the retired MPs. In particular, the overall performance of these MPs was lowered by 12.3 percent of a standard deviation as a result of the increase in salary caused by the new law. This finding is robust to numerous specification tests. Furthermore, the results obtained from an auxiliary analysis suggest that one of the mechanisms through which MPs reduce their performance is through absenteeism.

JEL Classification: J22, J26, J33, J45

Keywords: politician, MP, members of the parliament, performance, salary, bonus, Turkey, election

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1. Introduction

Members of the parliament (MPs) play a fundamental role in representative democracies. They are the political actors who hold the powers of sovereignty delegated to them by citizens and are expected to use these powers for the benefit of the citizens whom they represent. However, the tools that are available to ensure that MPs act in the best interest of their constituents rather than pursuing their own private interests are limited. In most democracies, regular elections are the primary and often the only mechanism for citizens to hold MPs accountable for their performance by enabling the removal of those who are under-performing.[1] Of fundamental interest in this context is the understanding of the factors that determine the willingness of MPs to conduct their political activities in a way that is expected of them by their voters. One institutional factor that is likely to affect the performance of MPs is their pay. Theoretically, the question of whether a higher pay would lead MPs to perform better is ambiguous. On the one hand, a higher pay can attract better-skilled MPs, who can also perform better for the benefit of citizens. A higher pay can also compel the existing MPs to run for re-election, which may then induce them to work harder on behalf of their constituents (e.g., Caselli and Morelli 2004; Besley 2004). On the other hand, if high-ability individuals are driven into politics because they are intrinsically motivated to serve the public, then a higher pay could lower the average quality of those who seek office (e.g., Besley 2004; Kotakorpi and Poutvaara 2011; Gagliarducci et al. 2013; Mattozzi and Merlo 2008).

The empirical investigations of the impact of politician pay on performance have equally produced mixed results. For example, Ferraz and Finan (2009) and Gagliarducci and Nannicini (2013) study the impact of wages on the performance of local legislators in Brazil and mayors in

[1] Specifically, retrospective voting is suggested as a tool for disciplining politicians (e.g., Barro 1973; Persson et al. 1997). Several studies test this hypothesis by estimating the impact of past macroeconomic conditions on the votes captured by incumbent politicians. These studies provide varying degrees of support for the idea of retrospective voting as an effective tool to improve performance (for example, see Brender and Drazen 2008 and Fair 1978).

Italy, respectively, by using a regression discontinuity design that exploits sharp changes in wages. Both papers find a positive impact of a wage increase on the quality and the performance of elected officials. Kotakorpi and Poutvaara (2011) examine the impact of an increase in the salaries of MPs in Finland on their quality proxied by their education. This study too employs a difference-in-differences research design, in which the authors use candidates in municipal elections as a control group. The paper finds that higher salary increases the fraction of candidates with higher education, but only among females. In a study of the impact of salary on U.S. state legislators and governors, Hoffman and Lyons (2013) find no evidence that a higher salary influences legislative productivity using a spatial discontinuity design.

Most recently, Braendle (2015), Fisman et al. (2015), and Mocan and Altindag (2013) examine the impact of politician salary on their behavior including work effort, drawing on the same source of identification, i.e., a law change that generated wide variation in the salaries of the Members of the European Parliament (MEPs) from 27 member states. Despite using the same institutional context and the same identification strategy, these studies also appear to differ in their findings. For example, Mocan and Altindag (2013) show that the salary increase led to a rise in absenteeism. However, their evidence on performance was rather mixed with the findings of a negative impact on the number of questions posed by MEPs and no impact on other work effort measures, including the number of speeches delivered, motions filed, and reports written. Braendle (2015) documents that while the salary increase had a positive impact on effort proxied by the number of speeches, written declarations, and reports drafted, it also increased absenteeism. Finally, Fisman et al. (2015) find no discernable impact of the salary increase on a composite performance measure derived from individual measures of questions, motions for resolutions, reports, written declarations, and speeches in plenary. While Fisman et al. (2015) show that

average quality measured by education was reduced as a result of the salary reform, Braendle (2015) finds that it remained unchanged.

In this paper, we provide a fresh contribution to the growing literature on the impact of salary on the productivity and quality of politicians. In particular, we examine the impact of salaries of MPs on their performance in Turkey exploiting an arguably exogenous variation in salaries caused by a new law implemented in 2012. In addition to earning a base salary, Turkish MPs who are retired from the jobs that they held prior to becoming an elected official can collect a bonus, which is equal to their retirement pension.[2] Note that MPs earn their salaries including the bonuses regardless of their performance and participation in the parliamentary sessions. While the main salary portion of compensation for MPs is contingent upon being an MP, the bonus portion tied to retirement represents a permanent income that the retired MPs collect for the rest of their lives. Before January 2012, the retirement pension of an MP was no different from an otherwise similar worker who was not an MP. The retirement pensions, and therefore the bonuses earned by the retired MPs, were about 5,000 TL/month in 2011. In January 2012, the Turkish Parliament enacted *Law No. 6270*, which pegged the pensions of the retired MPs to 18 percent of the salary of the President of Turkey.[3] As a result, the bonus, and therefore the total salaries, earned by the retired MPs have increased significantly, while the salaries of non-retired MPs have remained the same. It is this variation in the total compensation between retired and non-retired MPs generated by the law change that we exploit in a difference-in-differences framework to study

[2] In 2011, this base salary was about 9,200 TL (Turkish Lira) per month, which was equivalent to about $5,500 using the average exchange rate of 1.67 TL/$ in 2011).

[3] The Law No. 6262 introduced on December 23rd, 2011 increased the salaries of retired MP from 42 percent of the President's salary to 60 percent until 2020. However, the President vetoed the law and sent it back to the parliament for re-discussion. After further discussion, on January 17th, 2012, the parliament approved the change to be 45 percent of the 40 percent of the President's salary until a further regulation is proposed, which is equivalent to the 18 percent of the salary of the President of Turkey.

the impact of salary on the performance of MPs.[4] To implement our analysis, we use monthly data on several performance measures of all Turkish MPs who served in the parliament between 2007 and 2015. Note that we do not observe in our data whether an MP who is retirement eligible is actually retired from his/her pre-MP job. Therefore, we obtain reduced form estimates of the impact of salary increase on the performance of retirement eligible MPs, which essentially amounts to estimating intent-to-treat effects. We provide more detail on the implications of this assumption for our analysis in the discussion of our results later. Throughout the paper, we use "retired" and "retirement eligible" interchangeably.

There are several factors that motivate our study. Despite a number of recent investigations relying on credible identification strategies, the lack of an agreement in the literature regarding the impact of politician pay on performance can be regarded as a call for additional research on the subject. But even if there were a consensus in the literature, it is not clear whether the evidence obtained from one particular context can serve as a reliable guide for the implications of salary changes in other settings due to a variety of factors, including institutional, legislative, and economic differences across countries. In fact, one of the questions raised by the aforementioned studies is the extent to which their findings could carry over to other countries and other levels of government.[5] Relatedly, all of the published studies focus on contexts from developed countries such as the U.S., Italy, Finland, and other European Union states. To our knowledge, with the exception of a working paper, i.e., Ferraz and Finan (2009), which focuses on Brazil, there are no investigations focused on developing countries, at least, using a credible identification strategy. It

[4] In our difference-in-differences design, the treatment (control) group consists of retired (non-retired) MPs. Note that we observe within-MP variation in the retirement eligibility over time. This is because some MPs complete the age and work requirements for retirement while they are serving as an MP.

[5] For example, this is explicitly stated as a suggested goal for future research in Fisman et al. (2015) (see page 903).

is also important to emphasize that Ferraz and Finan (2009) consider the behavior of local legislators, while we examine the performance of politicians at the national level in this paper.

There are also other differences that set our analysis apart from the existing studies. For example, we use relatively high-frequency longitudinal data at the monthly level that covers a period of nine years with a large sample size and significant variation in MP measures that capture performance.[6] Importantly, because the law change affected only the bonus portion of the total salaries of retired MPs, the rise in salary in our context is akin to an increase in non-labor income, which is expected to reduce labor supply. Moreover, the additional bonus paid to retired MPs represents a permanent income that they would earn for the rest of their lives as opposed to a typical salary increase, which can only be collected until the individual ceases to serve as an MP. This is a difference between our analysis and the rest of the literature with potentially important implications. For instance, in contrast to previous studies, there is no compelling reason for retired MPs to re-run for office caused by the law change in our setting since the bonus is not tied to being an MP. Therefore, unlike previous studies, the additional pay that MPs earn does not play an efficiency wage role in our context. Accordingly, we are able to control for any change in performance that may be attributable to the MPs' willingness to re-run for office. Finally, in addition to using previously utilized measures of performance including the number of speeches, motions, drafting law proposals, we employ an additional measure defined by the number of words spoken by MPs in speeches on the parliament floor, which is positively correlated with other measures of effort and highly responsive to the law change of 2012. Similar to Dal Bo and Rossi (2011) and Fisman et al. (2015), our main outcome of performance is a composite measure derived by the sum of normalized measures of individual proxies of work effort.

[6] We observe performance of all of the 550 MPs in both (the 23rd term spanning 2007-2011 and the 24th term spanning 2011-2015) parliamentary terms.

We find that the salary increase caused by the law change led to a significant reduction in the overall performance of Turkish MPs. According to our estimates, the composite performance of MPs decreased by 12.3 percent of a standard deviation as a result of the law change. The results on the individual measures of performance also corroborate this finding. In particular, all four estimates are negative and, with the exception of motions, statistically significant, pointing to a negative causal relationship between salary and performance. Our results are robust to a large number of sensitivity checks. Furthermore, the results obtained from an auxiliary analysis show that one of the mechanisms through which MPs reduce their performance is absenteeism. Finally, with the exception of freshman status, the pattern between salary and performance we obtain in our analysis is not influenced by characteristics of MPs including gender, education, rank, voting in favor or against the law change that led to the salary increase, and being a member of the ruling Justice and Development Party, also known as AKP. The retired MPs who are serving their initial term in the parliament do not appear to be responsive to the salary increase, possibly due to lack of experience or being under closer public scrutiny. Our results can be explained within a labor supply framework that models the trade-off between leisure and consumption. In this framework, if MPs allocate their limited time to working (participating in the parliamentary discussions or other legislative activities) and other activities (leisure), then a permanent increase in non-labor income would result in a decrease in parliamentary activities.

The rest of our paper is organized as follows: Section 2 provides a description of the institutional setting. Section 3 introduces the data, and Section 4 describes the empirical strategy. Section 5 presents our results, and Section 6 concludes the paper.

2. Institutional Setting

2.1. Salaries of MPs

MPs in the Turkish Parliament collect a monthly earning equal to the salary of the highest ranked civil servant, i.e., the Undersecretary of the Prime Minister's Office, whose compensation is adjusted upwards periodically.[7] At the beginning of the 23rd parliamentary term in June 2007, MPs earned a base salary of approximately 7,000 Turkish Liras (TL), which is equivalent to $5,400.[8] The MP salaries were increased to 9,250 TL in December 2011 and again to 15,250 TL in April 2015.

An MP who is retired from the workforce earns a retirement pension in addition to his/her base salary. The amount of the pension is determined by the MP's salary at the last job he/she held before retirement, tenure in that job, and his/her age. These pensions were approximately 3,700 TL in June 2007, and were increased to about 5,000 TL in December 2011. A law enacted in January 2012 altered the pensions of the retired MPs. Specifically, starting in January 2012, a retired MP began earning, in addition to their base salary, a bonus equal to 18 percent of the salary of the President of Turkey.[9] The motivation behind the law change was to eliminate the inequalities in retirement benefits among MPs. Since MPs come from a wide variety of professional backgrounds, the retirement benefits associated with these professions also varied widely for those MPs who were retired from their pre-MP jobs. This variation is eliminated with the law enacted in

[7] The MP salary is regulated by Pension Fund Law No. 5434 for the MPs started serving before 10/15/2008 and by the Social Security Law No. 5510 for the MPs serving thereafter.
[8] During our sample period 2007-2015, the exchange rate (TL per dollar) gradually increased from 1.3 (in 2007) and 2.7 (in 2015). The exchange rates in 2007, 2011 and 2015 were 1.3, 1.7 and 2.7, respectively. The average exchange rate in our sample period is 1.8 TL/$.
[9] In 2012, the President's monthly salary was 33,500 TL. As a result, starting in January 2012, retired MPs earned a bonus of 6,030 TL per month in addition to their monthly base salaries. By 2015, the monthly salary of the President increased to 43,750 TL, raising the bonus to about 8,000 TL.

January 2012. While eliminating this inequality, the MPs who participated in the voting also took the opportunity to raise the level of pension bonus significantly (Arici 2013).

The change in the bonuses of the retired MPs is not trivial. Specifically, the difference in monthly earnings between the retired versus non-retired MPs is about 2,500 TL (in real terms) in December 2011. This difference corresponds to approximately 50 percent of the earnings of the non-retired MPs. In January 2012, when the retired MPs' bonus is increased, the difference between retired and non-retired MPs increases to 3,000 TL, 60 percent of the monthly pay of non-retired MPs. Put differently, because of the law change in January 2012, retired MPs experienced a positive shock to their overall salaries. Figure 1 summarizes the sharp increase in the monthly earnings of retired MPs. Specifically, in Figure 1 we depict the difference in monthly pays (in real terms) of retired versus non-retired MPs over our sample period. The vertical line represents January 2012, the month in which bonuses of the retired MPs increase due to the law change. As evident in Figure 1, retired MPs began earning a much greater salary compared to their non-retired counterparts starting with January 2012.

2.2. The Laws that Determine Retirement Eligibility

Currently, the rules and regulations determining eligibility for retirement for Turkish workers are governed by Law No. 5434. According to this law, individuals who reach a certain age and have worked (and paid retirement contributions) for a certain number of years are eligible for retirement. The conditions for age and years of service have changed over the years. More specifically, individuals face different age and years of service requirements depending on whether they started working before September 1999, between September 1999 and April 2008, and after April 2008.

Among those who started working before September 1999, a fe(male) worker can retire when s(he) completes the age of 38 (43) and works for a total of 20 (25) years. There are two exceptions to this rule. First, a fe(male) worker who is over 50 years of age as of May 1999 can retire when s/he completes 60 years of age and a total of 10 years of work. The second exception is due to a change in the law in 2002. According to this change, a fe(male) worker can retire when s(he) completes 20 (25) years of work and reach a certain age ranging between 40 and 58 (44 and 60) depending on the number of years s(he) worked as of May 2002. If a worker started working between September 1999 and April 2008, in order to retire, s(he) must (i) be older than 58 (60) years old, and (ii) have completed 25 years of work. Alternatively, a fe(male) worker who complete 15 years of work can retire if s(he) is 61 years old or older. Alternatively, a worker who complete 15 years of work can retire after reaching age 61. Finally, the workers who start working after April 2008 can retire when they are older than 65 and when they complete 25 years of work, regardless of their gender.

3. Data

Our analysis period covers the parliamentary terms of 23 (2007-2011) and 24 (2011-2015). Our measure of legislative performance or productivity is derived from four parliamentary activities on MPs including (i) *Speeches* (the number of times MPs participated in parliamentary discussions), (ii) *Words* (the number of words spoken in the speeches delivered by MPs)[10], (iii) *Motions* (the number of proposals for inquiry, or assembly to discuss or investigate certain issues in the parliament submitted by MPs), and (iv) *Law drafts* (the number of law drafts sponsored or co-sponsored by MPs). We compile *Speeches* and *Words* from an official publication called the

[10] Regarding the number of words delivered by MPs, all speeches during parliamentary sessions are recorded by the stenographers according to the guidelines outlined in the Manual of Minute Writing.

Journal of Minutes of the Turkish Parliament (JoM). *Motions* and *Law drafts* are obtained from the personal profiles of the MPs in the parliament website. Following Dal Bo and Rossi (2011) and Fisman et al. (2015), we normalize each of these four measures by subtracting the mean and dividing by the standard deviation and create a composite measure of legislative effort defined by the sum of standardized values of the four individual outcomes (*Performance*).

Our variable of interest, *Retired*, is an indicator for whether an MP is eligible for retirement. We construct this variable based on the information on personal characteristics of the MPs derived from their profiles on the Turkish Parliament website and the requirements for retirement eligibility that are determined by law (Law No. 5434).[11] Specifically, an individual must have reached a certain age and met certain years of work in order to be eligible for retirement. There are several changes in the retirement law over the years.[12] One factor determining retirement eligibility is the date at which an individual starts working. Unfortunately, we do not have this information in our data. Instead, we impute work-start date by using the birthday of MPs and their education, and assuming that they start working immediately after obtaining their terminal degree.[13]

We control for several time-varying characteristics of the MPs in our empirical analysis, including age measured in months, a binary indicator for whether the MP is also a member of the cabinet, rank of the MP on their party's ticket, and the share of votes the MP's party obtained in the most recent elections in the election district that MP is representing.[14] In a supplementary

[11] https://www.tbmm.gov.tr/develop/owa/milletvekillerimiz_sd.liste.
[12] See section 2.2 for the details.
[13] As an example, consider an hypothetical MP, who is a male, was born in 1967, and has a college degree. Assume that this MP starts school in 1974 (in the calendar year he turns age seven), and remains in school for 15 years since a typical college degree takes 15 years of schooling. In 1989, he graduates from college, and we assume that he immediately starts working. Because thois MP starts working before 1999, he is eligible for retirement when he completes 25 years of work and be older than 43. That is, this MP can retire in 2014 after which he will earn a salary bonus. We determine the retirement eligibility for each MP in our sample using his age, education and the approprite algorithm.
[14] In Turkish elections, several political parties compete for multiple seats in 81 provinces. Prior to an election, all parties nominate their candidates for each province. For example, if a province is represented by N seats in the

analysis, we examine whether the impact of salary increase on performance is affected by several observable characteristics of the MPs by estimating our models separately by gender, freshman status, education, and rank.

The summary statistics and basic descriptions of the variables used in the analysis are presented in Table 1. On average, an MP submits about 2 motions, co-signs 0.3 law proposals, gives 6.5 speeches in which he/she delivers about 633 words every month.[15] Approximately 72 percent of MPs are retirement-eligible (or retired) over our sample period. The average age of MPs in our sample is 631 months or approximately 53 years. About 12 percent of the MPs in our sample are female, and 35 percent hold a graduate degree.

In Table 2, we present outcome means by retirement status and between pre- and post-2012 periods. As shown in the table, the average performance measures among the retired MPs appear to be lower than those of non-retired MPs. Moreover, this pattern appears to hold for both the pre-2012 and post-2012 periods. What is more interesting in Table 2 is the information revealed by a comparison between columns 3 and 6, which gives us a sense of the differences in the performance measures between retired and non-retired MPs from pre- to post-treatment periods. As shown in column 7, these raw difference-in-differences measures are negative for all four outcome variables and statistically significant for the composite legislative effort (*Performance*), *Speeches*, *Words*, and *Law Drafts*.

Parliament, each party nominates N candidates for that province. We refer to this list of candidates as the party's ticket. Parties additionally announce the ranking of their candidates on their ticket within each province. Candidates are elected in the order of the rank in which they are nominated. For example, a first ranked candidate is elected before their second-ranked party mate. Therefore, the rank of an MP in the ticket within a province is one of the most important determinants of winning the election and therefore becoming a MP. Rank may also capture other characteristics of the MP. For example, MPs who are in the party leadership, MPs who are more influential within the party or those who are more loyal to the party's cause are also more likely to be ranked higher. This information is obtained from the Official Gazette (Resmi Gazete).

[15] In order to guard against the potentially confounding impact of outliers, we exclude the observations where the number of performance measures is above the 99th percentile of the distribution. That being said, our results are not sensitive to the exclusion of these observations.

In addition to the descriptive evidence presented in Table 2, we further motivate our analysis with a set of visual exercises, in which we illustrate the trends in our performance outcomes over time separately for the treatment and control groups. In Figure 2, we display the smoothed monthly averages of MPs' composite legislative effort separately by periods leading up and following January 2012. As shown in the figure, the measure of composite legislative effort between retired and non-retired MPs overlap fairly closely up until around January 2012 and deviate from each other afterwards with a clear decline in the effort of retired MPs relative to their non-retired counterparts. As shown in Figure 3, similar patterns are observed for individual measures of performance, most notably for *Speeches*, *Words*, and *Law drafts* and to a lesser extent for *Motions*. While the statistics in Table 2 along with the patterns presented in Figures 2 and 3 are indicative of a causal relationship between the law change of January 2012 and the MP performance, we next turn to the description of our formal empirical strategy that essentially adjusts the raw difference-in-differences estimates by accounting for any permanent and time-variant differences in a multivariate regression framework.

4. Empirical Strategy

Our approach to obtaining the impact of salary increase caused by the 2012 law change on the performance of MPs is to implement a difference-in-differences estimation method, taking advantage of the fact the law only affected the salaries of retirement eligible MPs. Specifically, the treatment group consists of the MPs who are retirement eligible, and the MPs who are not eligible for retirement form our control group. To operationalize our empirical strategy, we estimate an equation expressed in the following form:

(1) $$Performance_{idmt} = \beta_0 + \beta_1 Retired_{idmt} + \beta_2 (Retired_{idmt} \times Post2012_{mt}) + X_{idmt}\beta_3 + \mu_i + \eta_d + \gamma_m + \kappa_t + \varepsilon_{idmt},$$

where $Performance_{idmt}$ represents our measure of composite performance for MP i who represents legislative district d in a month m and year t. The indicator $Retired_{idmt}$ takes on the value of one if the MP is eligible for retirement, and zero otherwise. Note that this variable switches from zero to one for some MPs as they become eligible for retirement during the analysis period. $Post2012_{mt}$ indicates the post-treatment period. It is equal to zero for all month-year observations prior to January 2012 and one starting with January 2012. [16] The vector X_{idmt} includes several time-varying MP characteristics that are likely to serve as determinants of performance including age in months, rank of the MP on his/her party's ticket as well as the share of votes MP's party acquired in the most recent general election, and an indicator variable for whether the MP is a member of the cabinet. To the extent that these variables are uncorrelated with the law change in 2012, inclusion of them in equation (1) should only serve to reduce the sampling variation in the error term. The μ_i represents MP fixed effects that would account for any permanent differences across MPs. While most MPs are nominated from the same legislative district between elections, there are some MPs who switch jurisdictions. To capture any tendencies on the part of retired MPs to switch to districts that are safer in terms of their chances of getting re-elected in the post 2012 period, we also include district fixed effects in equation (1), which are denoted by η_d.[17] The γ_m and κ_t are month and year fixed effects, respectively, which would capture seasonal effects due to

[16] The law that increased the retirement pensions of the MPs became effective on January 17th, 2012. Our results are robust to coding the month of January 2012 as part of pre-treatment period.

[17] There are 85 election districts, which represent the 81 provinces of Turkey (Istanbul is divided into three electoral districts whereas Ankara and İzmir are divided into two each because of their large populations, and accordingly the large number of parliamentary seats that represent them).

legislative holidays, annual budget discussions, or other idiosyncratic national or international developments that may require MPs to deviate from their usual levels of engagement. Finally, the ε_{idmt} is the random error term. The unit of observation in equation (1) is MP-month-year. The parameter of interest is the coefficient of the interaction between $Retired_{idmt}$ and $Post2012_{mt}$, β_2, which represents the difference-in-differences estimate. The standard errors in equation (1) are clustered at the MP level.

5. Results

Table 3 presents the difference-in-differences estimates for the impact of salary increase on the composite measure of MP performance obtained from the estimation of equation (1) over the period of 2007-2015. Recall that *Retired* indicates whether the MP is retirement eligible (treatment group), and *Post2012* stands for the post-treatment period (January 2012 or later when the *Retired* MPs receive a salary bonus). The interaction term, *Retired*×*Post2012*, presents the difference-in-differences estimate. In other words, the coefficient of the interaction term reveals the differential change in the performance of MPs who are retired vs. those who are not retired before and after January 2012.

In column (1) of Table 3, we present estimates from a specification that includes only the indicator of *Retired*, and its interaction with the *Post2012* dummy along with month and year fixed effects. The point estimate on the interaction term between Retired and Post2012 variables is -0.182, which is statistically significant at the 10 percent level. As shown in column (2), the difference-in-differences estimate is robust to controlling for differences across legislative districts. However, the estimate on the interaction term becomes larger in absolute value and more precisely estimated when we account for permanent differences across MPs by controlling for MP

fixed effects in column (3). Given that the standard deviation of the composite legislative performance is 2.5 in the full sample, the point estimate of -0.338 indicates that the exogenous salary increase triggered by the law change in January 2012 caused the overall legislative performance to decrease by about 13.5 percent of a standard deviation. Finally, column (4) presents estimates from our most comprehensive specification, which, in addition to the fixed effects in the first three columns, includes several time-variant MP characteristics. The point estimate on the interaction term remains robust to controlling for these characteristics. This is not surprising since these characteristics are unlikely to be correlated in any meaningful way with the salary increase associated with the law change in 2012, especially after accounting for permanent differences between MPs. According to the point estimate in column (4), the 2012 law change caused the overall legislative performance to go down by 12.3 percent of a standard deviation. Note that the estimate on the indicator of *Retired* is negative, suggesting that retired MPs exert less effort in general compared to their non-retired counterparts, though the estimate is small in magnitude and statistically insignificant in all four specifications.

With respect to the estimates on other variables, age, rank, and being a cabinet member, all appear to have a positive influence on performance, although only the coefficients on age and cabinet member are estimated with statistical precision. This pattern is not surprising since older MPs are likely to be more experienced, and therefore more likely to hold additional roles in the parliament, such as memberships in legislative committees and specific policy commissions, which might require them to exert additional effort. Similarly, MPs who are members of the cabinet are required to perform various additional duties as top leaders of the executive branch while also serving as sitting legislators.

Note that the causal interpretation of the difference-in-differences estimates presented in Table 3 hinges on the "parallel trends" assumption, i.e., the performances of retired and non-retired MPs would have trended in a parallel fashion in the absence of the law change in January 2012. A simple test for this assumption can be done by performing an event-study analysis (e.g., Cesur et al. 2017a, 2017b; Hoynes 2015). The event-study analysis would allow us to trace out the trends in performance levels separately for retired and non-retired MPs, for the periods leading up to and following the point of the law change that led to an increase in the salaries of retired MPs. Formally, one way to implement this analysis is to augment equation (1) to allow the treatment to have an impact in the years prior to the law change. If these placebo effects are statistically significant, particularly in the year before the law change, then we would worry that the "parallel trends" assumption fails and that the estimates in Table 3 might be spuriously driven by changes in pre-existing differences in performances between retired and non-retired MPs. The results from the event-study analysis are most clearly presented graphically, so we plot the estimates on the interaction variable between year indicators and *Retired* for each period along with their 95 percent confidence intervals in Figure 4. As illustrated in the figure, the estimates representing the periods prior to the law change are all statistically insignificant, suggesting no apparent evidence of any differences in pre-existing trends in performance levels between retired and non-retired MPs. But there is a clear pattern of a statistically significant divergence in performance levels between the two groups in the post-2012 period, which remains fairly constant after 2012. In particular, the performance of retired MPs is lower in all years in the post-2012 period, and the effects become larger in absolute value over time. Furthermore, the estimates are statistically significant in 2013 and afterwards.

One explanation for the gradual pattern in the decline of performance may have to do with the fact that the treatment intensity is not constant, but rather increasing in the post-January 2012 period. In particular, the size of the retirement bonus earned by the retired MPs continues to increase after the law change in January 2012 in parallel with the salary of the President of Turkey. Additionally, it would not be surprising if some MPs may behave cautiously and do not reduce their performance right away to avoid any backlash from their constituents or the party leadership. Alternatively, ongoing commitments at parliamentary committees and commissions might preclude them from changing their behavior immediately following the law change. These explanations may also account for the small and insignificant decrease in performance in 2012 shown in Figure 4. Overall, we interpret the results from the event-study analysis as reassuring in the sense that the estimates shown in Table 3 are likely to represent the causal effects of the 2012 law change on the performance of retired MPs.

5.1. Robustness Checks

The law, which raised the bonus earned by the retired MPs, *Law No. 6270*, was enacted with 217 "yes" votes in the parliament. Of these yes votes, 216 were cast by the members of the AKP. As the governing party, AKP controlled 327 of the 550 seats in the parliament at the time. Only one member from one of the opposition parties voted in favor of this law. The remaining members of the parliament either did not support the law or did not attend the parliamentary session when the voting took place.[18]

Our results in the previous sections show that the performance of MPs during the meetings of the parliament is reduced in response to the increased salary. One potential concern against the

[18] In Turkish Parliament, a law is enacted if the majority of MPs who attend the session votes in favor of it. The quorum for a session is one third of 550, the total number of seats in the Parliament.

reliability of this result could be the way in which those MPs who voted in favor have been selected. For example, the MPs who voted in support of this law in the 24th parliamentary term could be shirkers. Under this scenario, the negative relationship between salaries and performance may be observed simply because those MPs who voted "yes" for the law would have reduced their effort during the parliamentary sessions regardless of the outcome of the vote. To investigate this possibility, we estimated whether the law has a differential impact over the MPs who voted yes versus no. As shown columns (1) and (2) of Table 4, the estimate on the interaction term between *Retired* and *Post2012* are -0.212 among those who voted yes and -0.298 among those who voted no to the law change. If anything, it appears like those who were opposed to the increase in the bonus payment had a larger reduction in performance than those who supported the law, though the difference between the two estimates is not statistically significant. In columns (3) and (4) of Table 4, we present estimates separately between MPs affiliated with AKP and all opposition parties. Again, the two estimates are very similar, suggesting no significant difference in the reaction to the law change between the MPs of the ruling party versus the opposition parties. These patterns are not surprising since any MP specific time-invariant attribute would be captured by MP fixed effects. Taken together, the results obtained from this analysis suggest that the impact of the 2012 law change is similar for members of all parties, regardless of whether the law was supported by their party or not.

Another potential threat to the validity of our results is the possibility that the salary reform in 2012 might have changed the composition of the parliament in a way that is correlated with the performance of MPs. For example, the anticipation of a substantial salary increase in the 24th parliamentary term might have increased the willingness of retired MPs in the 23rd term to run for re-election for another term. After all, the chance of an MP's earning a bonus for the rest of his/her

life hinges upon getting re-elected for the 24th term. Note that this is slightly different from the contexts considered in other studies, most notably, the one in Fisman et al. (2015), who find that higher salaries increase the likelihood that the members of the European Parliament run for re-election. The law change in Turkey entails a permanent increase in part of the overall salaries of retired MPs, i.e., these MPs would continue to earn the bonus without being subject to any reduction and regardless of whether they are re-elected into the parliament or not. Therefore, it could have only created an incentive to serve again among those incumbents who served in the 23rd parliamentary term and who would have become eligible for retirement by the beginning of the 24th term. Otherwise, the law change could not have served as a pecuniary incentive to run for re-election among MPs who are already retired MP in the 24th term. That being said, we have two pieces of evidence to speak against the possibility of an increased motivation for re-election among retired MPs in the Turkish context. First, the elections for the 24th parliamentary term were held in June 2011, whereas the law change that led to an increase in the salaries of retired MPs took place in January 2012. However, the political parties submitted the list of their candidates in April 2011. Therefore, selection of this type would involve a foresight of policies eight months into the future, which is unlikely.

Second, we estimate whether being retired in the 23rd term increased the probability of running for re-election for the 24th term. That is, we limit our analysis to those MPs who served in the 23rd parliamentary term and use as the outcome variable an indicator for whether the MP ran for re-election for the 24th term. In the regression, we include an indicator for whether the MP is retired as of the last month of the 23rd term in addition to the full set of control variables in Table 3 as well as several time-invariant characteristics of MPs including indicators for gender, having

a graduate degree, and party fixed effects.[19] The results presented in column 1 of Table 5 show that retired MPs' probability of running for re-election for the 24th term is statistically no different from that of the non-retired MPs. We also estimate whether retired MPs are more likely to be re-elected to the 24th parliament conditional on running for election. The results of this regression are presented in column 2 of Table 5. These estimates again reveal that retired and non-retired MPs are equally likely to be re-elected once they run for re-election.

Another concern along similar lines is the possibility that the anticipation of an increase in the pension bonus might have attracted some individuals who are retired or near retirement age to enter into the competition to run for office for the 24th term. Such a change in the composition of the MPs between 23rd and 24th terms would likely lower the average performance of MPs in the 24th term, especially if individuals with high ability and non-pecuniary motives self-select themselves into politics, in which case higher salaries would lead to negative selection (Mattozzi and Merlo 2008; Gagliarducci et al. 2010; Fisman et al. 2015). Although we control for MP fixed effects in our models, this type of selection can still explain our results, at least partially, if the 24th parliament has a large fraction of new MPs with low levels of performance. As we describe above, the timing of the law change makes this type of an incentive highly unlikely. We provide two additional pieces of evidence against this possibility. First, we directly compare the observable attributes of the MPs in the 23rd term to those in the 24th term. We find that MPs in the 23rd term are very similar to MPs in the 24th term. For example, we compare the number of months (during the terms) in which MPs were retired in terms 23 and 24. There are no statistically significant difference (p-value>0.10) between the two groups. Furthermore, other personal attributes such as age, rank, membership in the cabinet and education are also similar between MPs in 23rd and 24th

[19] Note that MP fixed effects cannot be included this regression.

terms. The only statistically significant compositional difference between terms 23 and 24 is the number of female MPs which increased from 50 to 79. Later in the paper, we show that the responsiveness of female MPs to the 2012 law is no different from that of the male MPs. Second, we estimate our model in equation (1) over the subsamples of MPs who served in both the 23rd and 24th terms and again to those who served in 24th term but not in the 23rd terms. As shown in Table 6, the estimates on the interaction term between *Retired* and *Post2012* are not only very close to each other between columns (1) and (2), they are also nearly identical to our main estimate of -0.308 in column (4) of Table 3. Based on this exercise, we can rule out the possibility of our results driven by a change in the composition of MPs between the 23rd and 24th terms.

5.2. Extensions

5.2.1. Individual Components of Composite Performance

As described in Section 4, our outcome measure of performance is based on the standardized values of *Speeches*, *Words*, *Motions*, and *Law Drafts* by each MP. The justification behind constructing a composite measure is that while none of these individual measures may capture an MP's overall performance perfectly, each must be a contributor to it. As expected, the pairwise correlations among these four individual measures are all positive (Appendix Table 1). Furthermore, the pairwise correlations between these individual measures and the composite performance measure are also all positive. This finding suggests that each of these different activities are related to each other, presumably because, they all proxy for a different aspect of an MP's performance.[20]

[20] Further scrutiny of the speeches delivered by MPs on the parliament floor reveals that the 2012 law primarily impacted the length and the content of these speeches. This analysis is explained in Appendix A and the results are presented in Appendix Table 2. Briefly, we find that the 2012 law reduced the number of long speeches and the speeches related to the parliamentary agenda.

If our composite performance measure does a good job in capturing the overall performance of an MP, then the four individual components are expected to behave in the same manner in which the law change of 2012 influences overall performance measure. While the preliminary evidence in support of this is already presented graphically in Figure 3, we provide further empirical support by estimating the specification in equation (1) for each of these four individual measures of performance. The results from these estimations are shown in Table 7. The difference-in-differences estimates for the number of *Speeches*, *Words*, *Motions*, and *Law Drafts* are all negative and statistically significant in all cases except for *Motions*. Based on the point estimates, the salary increase caused by the law change led to reductions in the number of speeches, words spoken in speeches, and the number of law proposals sponsored by 5.6 percent, 8.7 percent, and 9 percent of a standard deviation, respectively. Additionally, we also estimate a model using the first principal component of the four individual metrics of performance as the outcome in equation (1). The principal component analysis suggests that factor loadings that contribute to the first principal components are largest for *Speeches* and *Words*. The results in the last column of Table 7 shows that the difference-in-differences estimate in this regression is also negative and statistically significant.

5.2.2. Holding Extra-Parliamentary Jobs

It is important to note that the results presented in Tables 3 and 7 essentially reflect the effect of salary increase on the performance of MPs who are retirement eligible, not necessarily those who are actually retired.[21] To the extent that some retirement-eligible MPs choose not to

[21] That is, we are estimating the "intention-to-treat" effect rather than the average treatment effect. To see this, consider the instrumental variable setting, where retirement eligibility is used as an instrument for whether the MP is actually retired. Because only the retirement eligible MPs can retire, the local average treatment effect in this setting is the average treatment effect (ATE), i.e., $ATE = \frac{E(Performance|E=1)-E(Performance|E=0)}{E(R|E=1)-E(R|E=0)} =$

retire, these results would be a lower bound for the impact of salary increase on the performance of MPs. However, we have several reasons to believe that there is close-to-perfect compliance in our case, i.e., most retirement eligible MPs are actually retired from the jobs they held prior to getting elected. First, an individual who is serving as an MP has a strong incentive to retire when he/she becomes retirement eligible since retirement increases his/her salary. Specifically, an MP typically raises his/her salary by about 50-60 percent by retiring from his/her job. Second, we compared the number of retirement-eligible MPs to the number of retired MPs reported in major media outlets. In particular, we calculated that 415 MPs in October 2014 were retirement eligible. According to a major daily newspaper, the number of MPs who were retired as of October 2014 was 411 out of a total of 550 MPs in the parliament.[22] Finally, MPs who held certain jobs such as school teacher or university professor, judge, or public servant have to step down from these positions once they become elected officials. Since carrying out an extra-parliamentary job is not an option for these MPs, there is no incentive for them to postpone retirement when they meet the necessary requirements. Therefore, the law change could not have possibly encouraged these MPs to retire. It turns out that 40 percent of the MPs served in the 23rd and 24th terms in the parliament come from these occupations. As an additional robustness analysis, we estimate the specification in equation (1), limiting the sample to MPs who are unlikely to carry out the jobs that they held prior to getting elected to the parliament. These include the MPs who declared their job as an attorney, teacher, academician or public servant and those MPs who explicitly stated they were

$\frac{E(Performance|E=1)-E(Performance|E=0)}{E(R|E=1)}$, where R is an indicator for whether an MP is retired, and E is an indicator for whether the MP is retirement eligible. The numerator in this expression is the difference in legislative performance of MPs who are retirement eligible versus those who are not. This is analogous to the "intention-to-treat" estimate. If the numerator, $E(R|E=1)$, is equal to one, then the intention-to-treat effect is same as the treatment effect. In other words, if there is perfect compliance where all retirement eligible MPs choose to retire, then our estimate represents the treatment effect on the treated.

[22] http://www.haberturk.com/ekonomi/is-yasam/haber/1000940-iste-emekli-vekilin-yeni-maasi

retired or out of the labor force.[23] The results of this analysis are presented in Table 8. As shown in the first column, the difference-in-differences estimate for the composite performance model is negative and statistically significant ($p<0.01$). Furthermore, the point estimate is larger in absolute value than the one presented in Table 3, which is consistent with the notion that the estimates shown in Table 3 are intent-to-treat effects and therefore constitute a lower bound. We present estimates for the individual outcome models in columns 2-5 of Table 8. Consistent with Table 7, the estimates are negative for all four outcomes and statistically significant for *Speeches, Words,* and *Law drafts*. Furthermore, these estimates are larger in magnitude than those shown in Table 7, again supporting the argument of the earlier results representing intent-to-treat effects.

Additionally, the members of the parliament in many countries are legally allowed to perform sideline jobs in addition to their political mandate, and Turkey is no exception. Then it is possible that some MPs continue to carry out the jobs that they held prior to getting elected into the parliament and even take up new extra-parliamentary positions in the private sector through paid speaking arrangements, public lectures, and media appearances. It is important to note that the possibility of making outside earnings only influences the external validity of our findings. This issue is similar to the one faced by Gagliarducci and Nannicini (2013) who study the impact of a wage increase on the quality and performance among mayors in Italy. In the cases of their analysis and ours, we are estimating the effect of an increase in salary in a situation where being an elected official is compatible with performing outside work, as opposed to the alternative in which it is not. Also to the extent that some retirement-eligible MPs who perform outside work may cut back from these external business engagements rather than lowering their performance in

[23] By law, MPs are not allowed to work as an attorney or as a public servant. MPs are also not allowed to work in public institutions. Majority of teachers and academicians work in public institutions.

the parliament, our results would again represent a lower bound for a situation where outside work is not allowed.

5.2.3. Labor Supply of Politicians

One potential mechanism through which MP salaries may affect performance could be through their attendance at parliamentary sessions. Specifically, within a labor supply framework that models the trade-off between leisure and consumption, an increase in the non-labor portion of income would lead to an increase in the demand for leisure. Because MPs earn their salaries regardless of whether they attend meetings, an increase in MP salaries in our context is similar to an increase in non-labor income. As a result, the MPs whose salaries increase could also be less likely to attend the parliamentary sessions. Unfortunately, we cannot test this hypothesis directly since we do not have data on actual attendance. Instead, we make use of an alternative measure defined by the MPs presence on the days of parliamentary sessions when MPs cast votes on law proposals. MPs have the options to participate by voting "Yes," "No" or "Abstain." Since we have data on the voting record of MPs, we can construct a measure that captures the number of voting days that an MP attends per month. Note that the average number of voting days in a month is 3.74, and an MP participates in 1.76 of them on average. Note that our measure of *Attendance* is positively correlated with the composite measure of performance. [24]

Results obtained from estimating equation (1) with *Attendance* as the outcome variable are presented in Table 9. The difference-in-differences estimate in column 1 indicates that retired MPs

[24] Note that we have the information on voting record only until October 2013. On voting days, there could be more than one vote on different issues. We used the first vote of the day when constructing the *Attendance* variable. We regressed our composite performance variable on attendance and other control variables as in equation (1). The coefficient of *Attendance* was 0.108 (standard error of 0.07), indicating that MPs exert more effort in a month if they cast a vote on the voting days.

who enjoy higher salaries in the post-2012 period attend fewer parliamentary meetings to vote. According to the point estimate, these MPs attend about 0.39 fewer voting sessions per month compared to others, which translates into an effect size of 22 percent calculated at the sample mean. In column 2, we present estimates from a slightly different specification in which we control for the number of voting days per month. This specification is intended to account for the possibility that some MPs might influence the legislative agenda in a way to ensure that fewer law proposals arrive at the parliament floor for discussion and voting. The estimate on the interaction between *Retired* and *Post2012* is still negative and significant at the one percent level. Holding the number of voting days constant, a retired MP attends about 0.22 fewer (about 13 percent) voting sessions per month than other MPs in the post-2012 period. The results presented in Table 9 indicate that attendance at parliamentary sessions could be an important mechanism through which MPs' work effort decreases in response to an exogenous salary increase.

5.2.4. The Role of MP Characteristics

We next investigate whether the impact of the law change on performance differs by various attributes of MPs. To do so, we estimate equation (1) separately by gender, freshman status, education, and rank of MPs. The results of this analysis are presented in Table 10. Columns 1 and 2 show results obtained over the samples of female and male MPs, respectively. Note that 50 (36 retired) and 79 (66 retired) out of 550 seats are occupied by female MPs in the 23rd and 24th parliamentary terms, respectively. The difference-in-differences estimates are both statistically significant and nearly identical to each other, suggesting that the salary increase has an equally negative impact on the overall performance of female and male MPs.

The freshman MPs are those who are serving as an MP for the first time, while seasoned or experienced MPs have served in the parliament in an earlier parliamentary term. The estimates shown in columns 3 and 4 of Table 10 reveal that it is only the seasoned retired MPs who are responsive to the salary increase. It is possible that MPs who are serving their first term in the parliament may more likely to exercise extra caution as they may be under closer public eye or they may be less resourceful in terms of their ability to reduce their efforts as they are new to the parliament.

In columns 5 and 6 of Table 10, we provide estimates separately between MPs with at least a graduate degree and those with a college degree or less. It is possible that more educated MPs may be more likely to engage in extra-parliamentary businesses as they are likely to have income generating opportunities in addition to their political mandate, such as memberships in the board of directors of firms, paid speaking arrangements, or journalism. If that is the case, then the performance of these MPs in the parliament may be less affected than their less educated counterparts if salary increase also has a negative effect on the likelihood of moonlighting. However, the estimates in Table 10 show no evidence of a discordant effect between MPs with an advanced degree and those with a college degree or less. Both MPs with high (who hold a graduate degree) and relatively low educational attainment (with a college degree or less) reduce their work effort in response to an increase in their salaries. The coefficient estimates are not statistically different from one another between these two groups.

Political parties announce the rankings of their candidates within each district ballot one month before the elections. MPs who are ranked lower (those who have high values on the rank variable) face a lower likelihood of getting elected, as higher ranked candidates are elected before the lower ranked candidates. The rank of an MP is usually a proxy of seniority or status within the

party hierarchy. Since each district has a fixed number of MPs to elect for the parliament, the MPs with a lower rank typically have to spend a lot more resources and campaign more extensively to get elected. Accordingly, these MPs may, in general, have stronger preferences for public service or may be more motivated to perform at a high level in the parliament to secure a better rank in the following election. In that case, they may be influenced by the law change to a lesser degree. To answer this question empirically, we estimate our main specification between the samples of MPs whose ranks are one or two versus 3 or higher over these samples, separately. As shown in columns 7 and 8 of Table 10, these two groups of MPs appear to react very similarly to the law change.

5.3. Elasticity of Performance with Respect to the Salary of MPs

Since we know the size of the increase in salary caused by the 2012 law change, we can obtain an estimate of the elasticity of composite performance with respect to the salary of MPs. In order to do this, we estimate an augmented version of equation (1) in which we replace our difference-in-differences indicator with the logarithm of *Salary*. That is, instead of the interaction of *Retired* and *Post2012* in equation (1), we include Log(Salary) in the regression. Note that there are two sources of variation in salary across MPs over time. The first source of variation stems from changes in the rate of inflation and periodical adjustments, which are gauged by time fixed effects. The second source of variation is due to the law change of 2012. This is also the exogenous source of variation that further sets apart the salaries between retired and non-retired MPs from each other. The estimate of the impact of log(Salary) on the composite measure of performance from this analysis is -3.976 ($p<0.01$), suggesting an elasticity of about 0.04. That is, when MP salaries increase by 10 percent (which is approximately equivalent to the increase in the salaries

of the retired MPs in the 24th term), their effort decreases by 0.4 standard deviation (or 16 percent of one standard deviation).

6. Conclusions

A central tenet in representative democracies is that citizens collectively delegate their power to selected representatives, who then use this power to maximize the welfare of those who elect them. However, it is not straightforward how to ensure that these representatives use their authority to promote the benefits of their voters rather than pursuing their own interests due to a moral hazard problem. One of the few institutional tools that can be tailored to incentivize politicians to act in the interest of voters is their salary. In this paper, we provide a fresh look at the relationship between the salaries of MPs and their performance using a unique law change implemented in 2012 in Turkey. Turkish MPs who are retired from their previous jobs as well as those who became retired during their service as MPs earn a base salary as well as their retirement pensions while the non-retired MPs only earn the base salary. The 2012 law change resulted in a sharp increase in the pension payments of retired MPs while keeping the salaries of non-retired MPs unchanged. By using this exogenous variation in a difference-in-differences framework, we show that the salary increase had a negative impact on the performance of MPs. In particular, the salary increase caused by the law change lowered the composite performance of MPs by 12.3 percent of a standard deviation. We also find that individual components of the composite measure represented by the number of *Speeches*, *Words*, and *Law drafts* are negatively influenced by the law change. These findings are robust to numerous specification tests and hold independent of MP characteristics except for freshman MPs, for whom we find no significant impact. Furthermore, in

an auxiliary analysis, we show that one of the mechanisms through which MPs reduce their performance is absenteeism.

Our findings are consistent with a labor supply model in which an increase in non-labor income is predicted to reduce labor supply. Since MPs earn their salaries regardless of whether or not they participate in the parliamentary discussions, an increase in their salaries in this context is akin to an increase in the non-labor income. If MPs allocate their time between working (participating in the parliamentary discussions or other legislative activities) and other activities (leisure), then a permanent increase in non-labor income would be expected to result in a decrease in parliamentary activities (Mocan and Altindag 2013).

Taken together, our findings indicate that policy changes intended to raise the incomes of politicians can have far reaching ramifications that extend beyond their well-being. Higher pay is often regarded as a motivating factor for better performance. However, policies indented to improve the overall salaries of politicians may actually come at the expense of reduced welfare among citizens if they are not supported with measures that would discourage them from lowering their work effort.

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Appendix A: The Impact of Salary on the Content and the Length of Speeches Delivered on the Parliament Floor

The results that are shown in Table 7 suggest that an increase in the MP salaries reduces the number of words they deliver on the parliament floor. If the MPs reduce the number of speeches unrelated to the parliamentary agenda, then the decrease in the number of words delivered as a response to an increase in salaries need not necessarily reflect a reduction in their work effort. To address this concern, we measured whether the MPs' speeches are really about topics related to the parliamentary agenda. The items on the parliamentary agenda in each day are included in the table of contents in the Journal of Minutes (JoM). We first identified keywords from the table of contents using the term *frequency-inverse document frequency* (TF-IDF) metric. This statistic measures how important a word in a document is compared to the rest of the documents in a collection. Higher values of TF-IDF indicate greater importance. Specifically, TF-IDF of word w that appears in the table of contents in JoM of day d is measured using the equation depicted as:

$$TFIDF_{wd} = TF_{wd} \times \log\left(IDF_w\right)$$

where TF_{wd} stands for the term frequency, and it measures how important the word w in agenda of day d. Basically, more important words appear more often. TF_{wd} is computed by the ratio of the number of times word w appears in the table of contents to the total number of words in the table of contents in day d. IDF_w is the inverse document frequency of word w. It is the inverse of the ratio of the number of days, agenda of which included the word w, to the total number of days. This component increases the weight of more rare words.

Consider the following hypothetical example. Suppose that there is a total of 1,000 days of parliamentary meetings. The words "tax" and "law" appear 5 and 10 times in the table of contents of day 1, respectively. There are 100 words in total in day 1's agenda description. Also suppose

there are 5 and 100 days in which "tax" and "law" are included on the parliamentary agenda, respectively. Then, the TF-IDF value for the word "tax" in day 1 is $TFIDF_{tax,1} = \left(\frac{5}{100}\right) \times log\left(\frac{1000}{5}\right) = 0.115$. The TF-IDF for "law" is $TFIDF_{law,1} = \left(\frac{10}{100}\right) \times log\left(\frac{1000}{100}\right) = 0.1$. These values suggest that the word "tax" is more important than "law" in day 1's agenda, since $TFIDF_{tax,1} > TFIDF_{law,1}$.

We compute TF-IDF statistic for every word in each day's agenda and sort the words according to TF-IDF in descending order within each session. We used the top 100 keywords. We then searched for these keywords in MPs' speeches and identified speeches, in which the MP used at least one keyword versus the speeches in which none of the keywords were used.[25] We call the former and the latter as *Speeches Related to the Agenda* and *Speeches Unrelated to the Agenda*, respectively. We then estimated equation (1) using the number of words MP delivers in these types of speeches separately.

The results are presented in Appendix Table 2. In columns 1 and 3, the outcome variable is the number of words in MP's speeches that are not related to the parliamentary agenda (i.e. none of the identified keywords appeared in the speech). The difference-in-differences estimate is not statistically significant. On the other hand, columns 2 and 4 shows that the salary increase leads to a reduction in the number of words MP delivered in speeches related to the agenda.

Additionally, we perform another test making use of the rules about speaking on the parliament floor. Specifically, according to the internal regulations of the parliament, the Chair of the parliamentary meetings oversees the discussions. S/he invites MPs to give their speech and decides how long the speech is going to last. Speeches related to parliamentary agenda are allowed a longer time, typically five minutes or more. Other speeches are allowed a shorter time, generally

[25] We did not include verbs in our list of keywords.

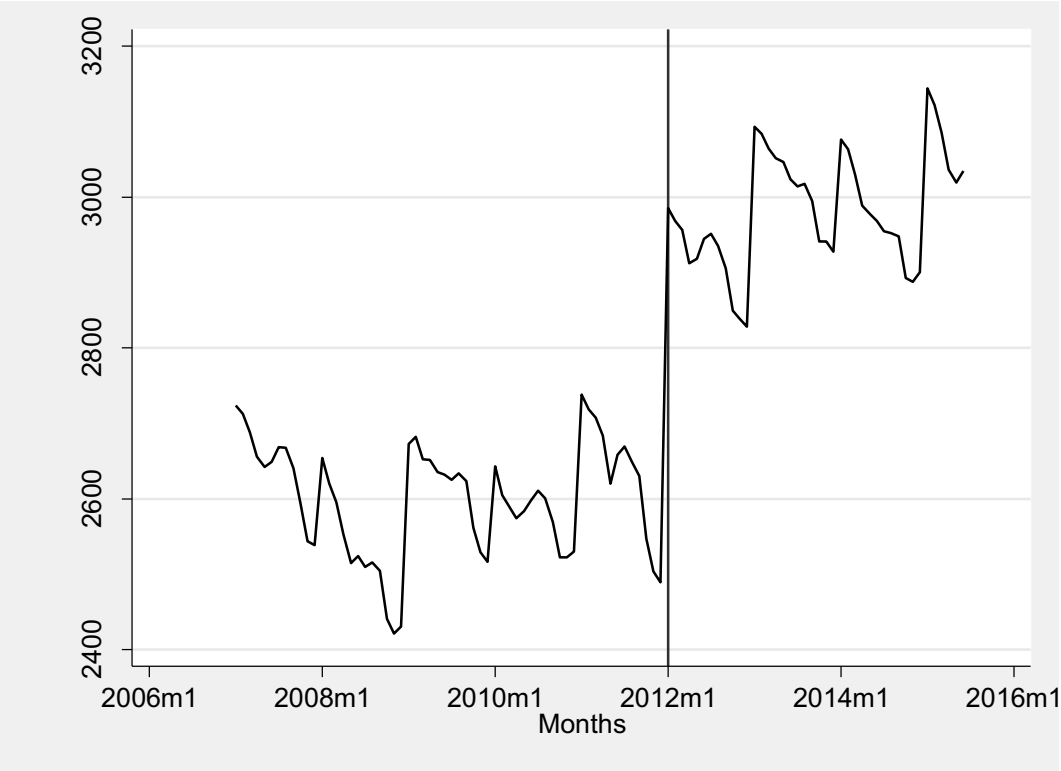
less than five minutes.[26] Because longer speeches are more likely to be related to the parliamentary agenda, the number of words delivered in such speeches could be a better proxy for the work effort of the politicians. Therefore, if the increase in salaries reduces the work effort, then we should see a larger impact of salary on the number of words pitched in longer speeches versus in shorter speeches.

To test this hypothesis, we measured the duration of each speech on the parliament floor. On average, in our sample, a speech consisting of 100 words lasts about one minute.[27] Using this rule, we counted the number of words delivered in speeches that last less than 5 minutes and at least 5 minutes separately. We then used these variables as the outcomes in equation (1). The results are presented in columns 3-6 of Appendix Table 2, respectively. In column 3, the outcome variable is the number of words in speeches that lasted less than 5 minutes. The difference-in-differences estimate in this column is statistically insignificant. In column 4, the outcome is the number of words in speeches duration of which is at least 5 minutes. The difference-in-differences estimate in this specification is -109, and it is statistically significant at the 1 percent level. Finally, in columns 5 and 6, we use the number of speeches that lasted less than and at least 5 minutes as the outcome, respectively. Again results indicate that the salary increase reduced the long speeches while it did not have an impact on the number of short speeches. These two exercises suggest that higher salaries lead to fewer content-related words delivered by the MPs on the parliament floor.

[26] For example, suppose that the agenda of the day includes the discussion of a law proposal by party A. Then the representative of party A is allowed 10 minutes to explain why the law is needed. Then the chair invites the members of other parties and MPs to express their opinions on the proposal, and s/he allocates 5 minutes for their speeches. In some other cases, MPs ask permission to speak about an issue off-topic, unrelated to the agenda. For example, an MP could ask permission to talk about a problem related to his/her constituency, or he/she may want to note the significance of a specific day such as the International Women's Day on March 8th or Worker's Day on May 1st. For those off-topic speeches, MPs are allowed less time.

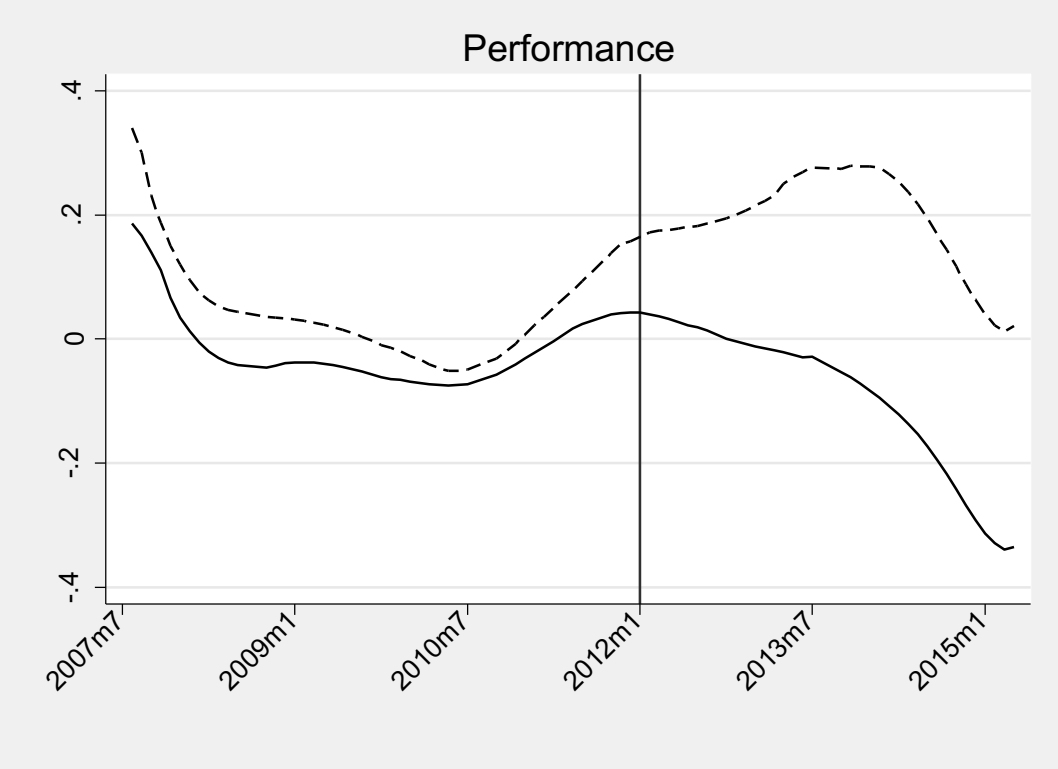
[27] To obtain this number, we first calculated total duration of each session in minutes and the total number of words delivered in each session. We then computed the ratio of total number of words to total duration. The average of this ratio is about 100 words per minute.

Figure 1: Over Time Variation in Bonuses of the Retired MPs



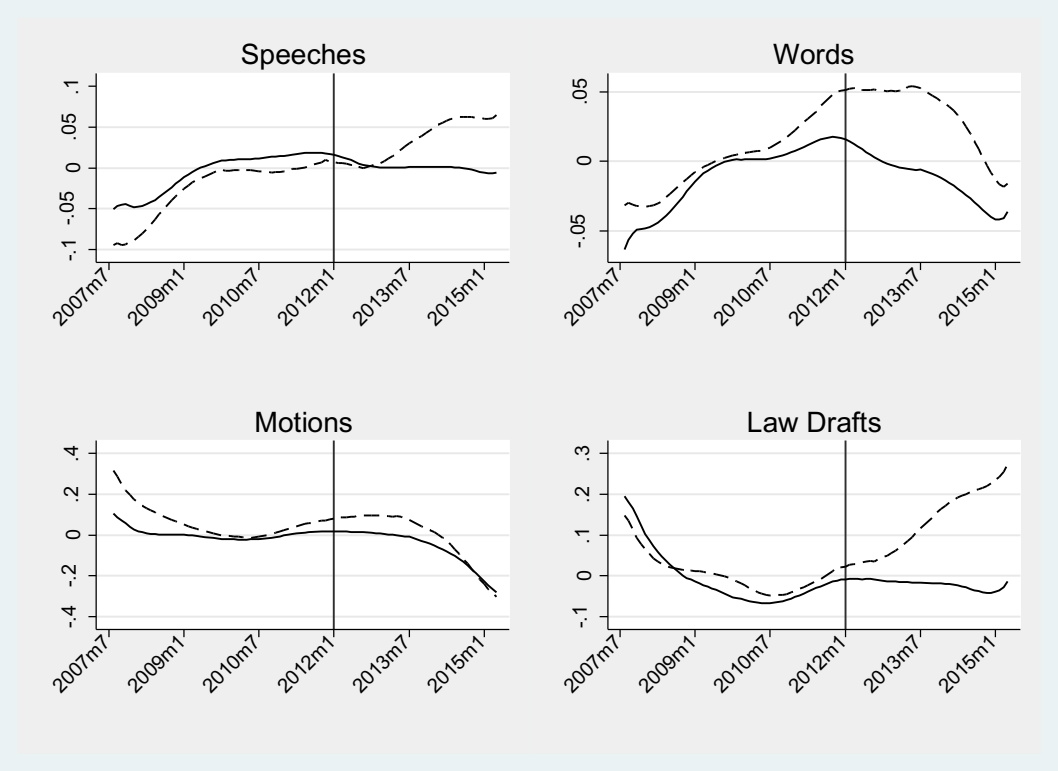
Notes: All MPs in the parliament earn a monthly base salary. Also, MPs who are retired from their previous jobs earn a bonus equivalent to their retirement pensions. The figure presents the bonus earned by the Retired MPs (difference in real monthly earnings between Retired MPs versus non-retired MPs) in our sample period. The vertical line in January 2012 marks the beginning of the post-treatment period.

Figure 2: Composite Performance over Time



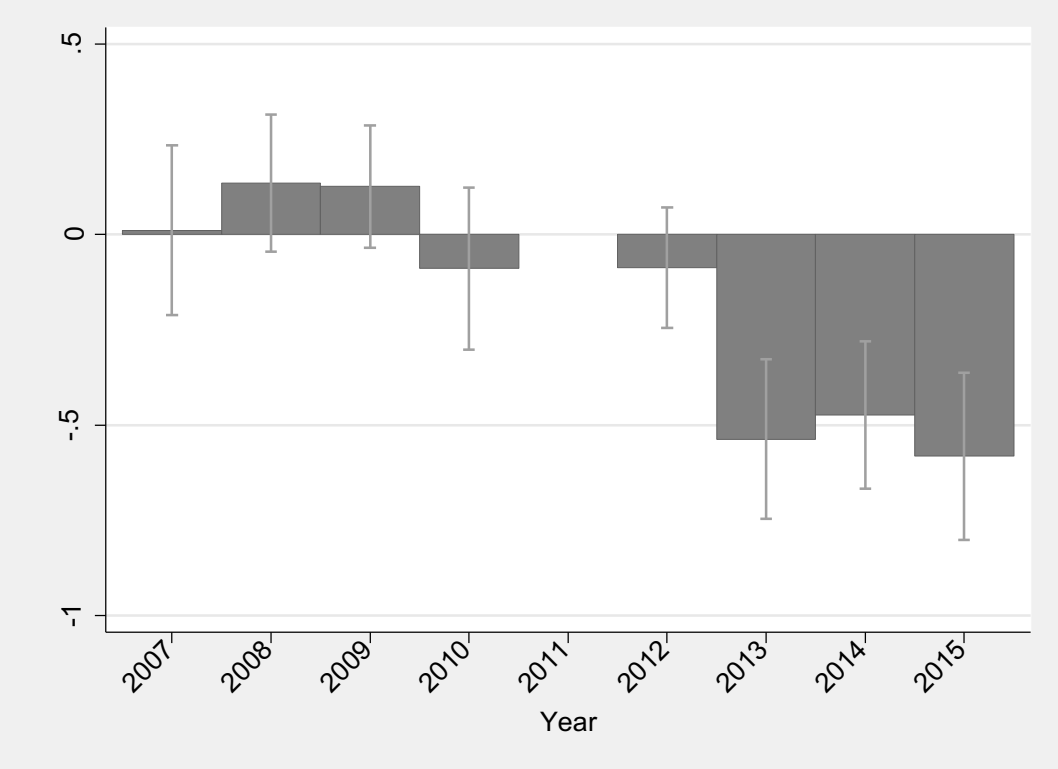
Notes: Figure depicts smoothed monthly averages of MPs' *Performance*. We applied LOWESS smoothing with bandwidth 0.7. Solid and dashed smoothed lines represent retired and non-retired MPs, respectively. The vertical line in January 2012 marks the post-treatment period.

Figure 3: Components of Performance over Time



Notes: Figure depicts smoothed monthly averages of components of MPs' *Performance*. These components are *Speeches* (Number of times MP participated in discussions on the parliament floor), *Words* (Number of words delivered by the MP during their speeches), *Motions* (Number of times MP proposed for inquiry, investigation or assembly on a particular topic), and *Law Drafts* (Number of law drafts MP co-sponsored). We use the standardized values of these variables. We applied LOWESS smoothing with bandwidth 0.7. Solid and dashed smoothed lines represent retired and non-retired MPs, respectively. The vertical line in January 2012 marks the post-treatment period.

Figure 4: Event Study Analysis



Notes: To produce the figure, we estimated the following regression: $Performance_{it} = \sum_{y=2007}^{2015} \beta_y 1(Year_t = y) + \sum_{y=2007}^{2015} \gamma_y Retired_{it} \times 1(Year_t = y) + \delta X_{it} + \mu_i + \tau_t + \varepsilon_{it}$, where $Effort_{it}$ is the Legislative Effort of MP i in month t. $Retired_{it}$ takes on the value of one if the MP is retirement eligible and zero otherwise. $1(Year_t = y)$ are the dummies for years. X_{it} includes the full set of control variables. μ_i and τ_t are MP fixed effects and month dummies. The bars represent the point estimates of the interaction of the year dummies with $Retired_{it}$. The lines are 95 percent confidence intervals. The omitted year is 2011.

Table 1: Summary Statistics and Descriptions of the Variables

Variable	Description	Mean	Std. Dev.
Performance	The sum of standardized values of Speeches, Words, Motions and Law drafts	0.000	2.479
Speeches - Standardized		0.000	1.000
Words - Standardized		0.000	1.000
Motions - Standardized		0.000	1.000
Law Drafts - Standardized		0.000	1.000
Speeches	The number of times MP participated in discussions on the parliament floor.	6.450	25.407
Words	The number of words MP delivered during their speeches.	633.263	1637.854
Motions	The number of proposals for inquiry, investigation or assembly.	2.217	6.094
Law Drafts	The number of law drafts MP co-signed.	0.322	0.962
Retired	=1 if MP is retirement eligible.	0.719	0.449
Post2012	=1 if 2012 or later.	0.457	0.498
Log(Salary)	The natural logarithm of the real monthly salary of the MP.	8.821	0.207
Age	Age of the MP in months	630.730	105.780
Rank	Rank of the MP on their party's ticket in the most recent elections.	3.021	2.655
Cabinet Member	=1 if the MP is also a member of the cabinet.	0.065	0.246
Party's Vote Share	The share of votes obtained by the MP's party in the most recent elections in the district that MP represents.	0.425	0.167
MA/PhD	=1 if the MP has a graduate degree.	0.349	0.477
Female	=1 if MP is female.	0.118	0.323

Notes: Unit of observation is an MP-month. There are 44,550 observations in total.

Table 2: Means in Pre- and Post-Treatment Periods

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Retired MPs			Non-Retired MPs			
Variable	Pre-2012 (N=17,668)	Post-2012 (N=14,371)	Over Time Difference (col. 2-1)	Pre-2012 (N=6,532)	Post-2012 (N=5,979)	Over Time Difference (col. 5-4)	Difference in Differences (col. 3-6)
Performance	-0.042	-0.055	-0.013	0.024	0.231	0.206	-0.219***
Speeches	-0.001	0.001	0.002	-0.022	0.025	0.047	-0.044**
Words	-0.010	-0.007	0.003	0.001	0.045	0.043	-0.040*
Motions	-0.007	-0.033	-0.026	0.051	0.043	-0.009	-0.018
Law Drafts	-0.024	-0.016	0.008	-0.007	0.118	0.125	-0.117***

Notes: *Performance:* The sum of the standardized values of MP's speeches, words, motions and law drafts. *Speeches*: Number of times MP participated in discussions on the parliament floor. *Words*: Number of words delivered by the MP during their speeches. *Motions*: Number of times MP proposed for inquiry, investigation or assembly on a particular topic. *Law Drafts*: Number of law drafts MP co-sponsored. We use the standardized values of these variables. Entries are sample means. Columns 1 and 2 (5 and 6) pertain to the retired MPs (non-retired MPs) before and after 2012, respectively. Column 3 (6) shows the difference in pre-2012 vs. post-2012 means for the retired MPs (non-retired MPs). Column 7 presents the unconditional difference-in-differences estimates. *, **, *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels, respectively

Table 3: Effect of 2012 Salary Increase on MPs' Performance

	(1)	(2)	(3)	(4)
Retired	-0.085	-0.078	-0.001	-0.028
	(0.067)	(0.066)	(0.085)	(0.085)
Retired×Post2012	-0.182*	-0.191*	-0.338***	-0.308***
	(0.103)	(0.101)	(0.079)	(0.080)
Age				0.023***
				(0.008)
Rank				0.035
				(0.026)
Cabinet Member				0.478**
				(0.225)
Party's Vote Share				-1.500
in the district				(1.038)
Month & Year Dummies	Yes	Yes	Yes	Yes
District Fixed Effects		Yes	Yes	Yes
MP Fixed Effects			Yes	Yes
Observations	44,104	44,104	44,104	44,026

Notes: Outcome variable is *Performance* which is the sum of the standardized values of MP's speeches, words, motions and law drafts. Unit of observation is an MP-month-year. Standard errors are clustered at the MP level. *, ** and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels.

Table 4: Robustness Analysis: The Role of MPs who are in favor of and opposed to the Law Change & MPs who are from AKP and Opposition Parties

	(1)	(2)	(3)	(4)
	MPs Who Voted Yes	MPs Who Voted No	AKP MPs	Opposition Party MPs
Retired	0.034	-0.058	-0.014	-0.100
	(0.125)	(0.148)	(0.085)	(0.181)
Retired*Post2012	-0.212*	-0.298**	-0.287***	-0.322*
	(0.108)	(0.122)	(0.089)	(0.167)
Age	0.022	0.039***	0.020***	0.058***
	(0.028)	(0.010)	(0.008)	(0.006)
Rank	0.008	0.039	0.028	0.121
	(0.039)	(0.038)	(0.019)	(0.216)
Cabinet Member	0.537	0.469*	0.446*	
	(0.415)	(0.258)	(0.240)	
Party's Vote Share in the district	-3.821	-1.430	-2.456*	-2.117
	(3.338)	(1.144)	(1.467)	(2.057)
Observations	11,559	19,050	26,743	17,283

Notes: Outcome variable is the *Performance* which is the sum of the standardized values of MP's speeches, words, motions and law drafts. In columns (1) and (2) MPs who voted in support of the 2012 law and those who voted no or did not cast a vote enter into the regressions, respectively. In columns (3) and (4) MPs who are members of the AKP (the governing party in our sample period) and MPs who are members of opposition parties, MHP or CHP, or MPs without a party affiliation enter into the regressions, respectively. Unit of observation is an MP-month-year. All regressions include the whole set of control variables as in column (4) of Table 3 (time-varying MP characteristics, MP fixed effects, month and year dummies, district dummies). Standard errors are clustered at the MP level. *, ** and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels.

Table 5: Robustness Analysis: The Importance of Running and Getting Re-Elected for the 24th Parliamentary Term

	(1)	(2)
	Ran for Re-Election for 24th Term	Re-Elected to the 24th Term
Retired as of the End of the 23rd term	0.055	-0.097
	(0.076)	(0.100)
Age	-0.001***	-0.000
	(0.000)	(0.000)
Rank	-0.035***	-0.025
	(0.013)	(0.015)
Cabinet Member	0.268***	0.075
	(0.094)	(0.073)
Party's Vote Share in the District	0.486*	0.103
	(0.273)	(0.369)
Female	0.009	0.074
	(0.091)	(0.085)
MA/PhD	0.028	0.136**
	(0.053)	(0.060)
Observations	549	257

Notes: Unit of observation is an MP. We include the MPs who served in the 23rd term in the regressions. *Retired as of the End of the 23rd Term* is equal to one if the MP was retirement eligible as of the last month of the 23rd term (April 2011). The outcome variable in column 1 is an indicator for whether the MP ran for re-election to the 24th term. The outcome in column 2 is a dummy that is equal to one if the MP is re-elected to the 24th term. In column 2, only the MPs who ran for re-election for the 24th term are included. Standard errors are clustered at the MP level. *, ** and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels. All regressions include district and party fixed effects.

Table 6: Robustness Analysis: MPs in 23rd and/or 24th Terms

	(1)	(2)
	Both in 23rd and 24th Terms	In 24th Term but not in 23rd
Retired	-0.058	0.219
	(0.133)	(0.142)
Retired×Post2012	-0.316**	-0.314***
	(0.125)	(0.095)
Age	0.026**	0.011**
	(0.013)	(0.005)
Rank	0.021	
	(0.025)	
Cabinet Member	0.455**	
	(0.211)	
Party's Vote Share in the district	-0.725	
	(1.047)	
Observations	16,209	14,400

Notes: Outcome variable is the *Performance* which is the sum of the standardized values of MP's speeches, words, motions and law drafts. Unit of observation is an MP-month. Standard errors are clustered at the MP level. *, ** and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels. All regressions include MP fixed effects, month and year fixed effects and District Fixed Effects. In column 1, we include only the MPs who served in both 23rd and 24th terms. In columns 2 and 3, only the MPs who served in the 23rd and 24th) terms are included in the analysis, respectively.

Table 7: Effect of 2012 Salary Reform and Salary on Individual Components of Performance

	(1)	(2)	(3)	(4)	(5)
	Speeches	Words	Motions	Law Drafts	1st Principal Component
Retired	0.015	0.003	-0.050*	0.016	-0.008
	(0.027)	(0.029)	(0.030)	(0.030)	(0.047)
Retired×Post2012	-0.056*	-0.087***	-0.003	-0.090***	-0.144***
	(0.029)	(0.029)	(0.026)	(0.027)	(0.046)
Age	-0.000	-0.004	0.029***	0.008	0.004
	(0.004)	(0.003)	(0.009)	(0.007)	(0.004)
Rank	0.006	0.017***	-0.005	0.016*	0.019*
	(0.008)	(0.007)	(0.007)	(0.008)	(0.011)
Cabinet Member	0.204***	0.297***	-0.044	-0.126*	0.527***
	(0.073)	(0.088)	(0.031)	(0.066)	(0.136)
Party's Vote Share in the district	-0.222	0.004	0.031	-0.716**	-0.681
	(0.331)	(0.372)	(0.382)	(0.309)	(0.609)
Observations	44,022	44,023	43,863	44,021	43,584

Notes: *Speeches*: Number of times MP participated in discussions on the parliament floor. *Words*: Number of words delivered by the MP during their speeches. *Motions*: Number of times MP proposed for inquiry, investigation or assembly on a particular topic. *Law Drafts*: Number of law drafts MP co-sponsored. We use the standardized values of these variables in the regressions. *1st Principal Component* in column (5) is the first principal component of the four effort measures. Unit of observation is an MP-month-year. All regressions include the whole set of control variables as in column 4 of Table 3 (time-varying MP characteristics, MP fixed effects, month and year dummies, district dummies). Standard errors are clustered at the MP level. *, ** and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels, respectively.

Table 8: Effect of Salary Increase on Performance among *Retired* MPs

	(1)	(2)	(3)	(4)	(5)
	Performance	Speeches	Words	Motions	Law Drafts
Retired	0.012	0.084	-0.014	-0.110*	0.051
	(0.153)	(0.054)	(0.072)	(0.060)	(0.056)
Retired×Post2012	-0.437***	-0.124*	-0.103*	-0.030	-0.180***
	(0.140)	(0.067)	(0.054)	(0.050)	(0.049)
Age	0.016	-0.007	-0.009*	0.037***	-0.006
	(0.013)	(0.008)	(0.005)	(0.003)	(0.004)
Rank	0.056	0.026	0.015	-0.017	0.032*
	(0.084)	(0.052)	(0.022)	(0.020)	(0.020)
Cabinet Member	0.305	-0.028	0.564**	-0.110*	-0.121
	(0.622)	(0.238)	(0.272)	(0.061)	(0.140)
Party's Vote Share	-1.826	-0.244	-0.553	0.225	-1.254*
In the District	(1.763)	(0.580)	(0.691)	(0.527)	(0.642)
Observations	17,706	17,706	17,706	17,706	17,706

Notes: Outcome variable is the *Performance* which is the sum of the standardized values of MP's speeches, words, motions and law drafts. *Speeches*: Number of times MP participated in discussions on the parliament floor. *Words*: Number of words delivered by the MP during their speeches. *Motions*: Number of times MP proposed for inquiry, investigation or assembly on a particular topic. *Law Drafts*: Number of law drafts MP co-sponsored. We use the standardized values of these variables. Unit of observation is an MP-month-year. We include the MPs who declared that their jobs as Attorney, Teacher, Academician or Public Servant, and those MPs who declared they are Retired or Out of Labor Force. All regressions include the whole set of control variables as in Table 3 (time-varying MP characteristics, MP fixed effects, month and year dummies, district dummies). Standard errors are clustered at the MP level. *, ** and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels.

Table 9: Effect of Salary Increase on Attendance

	(1)	(2)
	Attendance	Attendance
Retired	-0.066	-0.005
	(0.083)	(0.074)
Retired×Post2012	-0.389***	-0.216***
	(0.070)	(0.060)
Voting Days		0.448***
		(0.011)
Age	-0.064**	-0.043
	(0.025)	(0.038)
Rank	0.075***	0.031*
	(0.021)	(0.016)
Cabinet Member	-0.264	-0.286
	(0.236)	(0.179)
Party's Vote Share	-2.525**	0.075
in the district	(1.071)	(0.552)
Observations	33,824	33,824

Notes: On certain days of parliamentary meetings, MPs cast votes on law proposals. *Voting Days* measure the number of days of a month in which a vote is held. The average number of *Voting Days* in a month is 3.74. MPs have options to participate by voting "Yes," "No" or "Abstain." The outcome variable in columns 1-2, *Attendance*, is the number of days in which an MP participated in the voting. The mean of this variable is 1.76. The attendance data are available only until October 2013. The outcome variable in column 3 is the ratio of *Attendance* to *Voting Days*. Unit of observation is an MP-month. All regressions include the whole set of control variables as in Table 3 (time-varying MP characteristics, MP fixed effects, month and year dummies, district dummies). Standard errors are clustered at the MP level. *, ** and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels.

Table 10: Effect of 2012 Salary Increase on MPs' Performance: Estimates from Various Sub-samples

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Female MPs	Male MPs	Freshman MPs	Seasoned MPs	MPs with MA/PhD	MPs with BA or Less	1st or 2nd Ranked MPs	MPs with Rank 3+
Retired	0.013	-0.038	-0.108	0.117	0.050	-0.068	-0.104	0.148
	(0.212)	(0.094)	(0.102)	(0.127)	(0.136)	(0.109)	(0.112)	(0.090)
Retired×Post2012	-0.318**	-0.309***	-0.116	-0.289**	-0.362***	-0.299**	-0.296**	-0.328***
	(0.150)	(0.088)	(0.092)	(0.141)	(0.105)	(0.121)	(0.116)	(0.089)
Observations	5256	38770	23440	20586	15346	28680	25470	18556

Notes: Outcome variable is the *Performance* which is the sum of the standardized values of MP's speeches, words, motions and law drafts. Unit of observation is an MP-month-year. All regressions include the whole set of control variables as in column 4 of Table 3 (time-varying MP characteristics, MP fixed effects, month and year dummies, district dummies). Standard errors are clustered at the MP level. *, ** and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels.

Subsamples:

Freshman MPs vs. *Seasoned MPs*: MPs who are serving their first term in the parliament vs. MPs who have served before.

MPs with MA/Ph.D. vs. *MPs with BA or Less*: MPs who hold a graduate degree vs. MPs who have a college degree or less.

1st or 2nd Ranked MPs vs. *MPs with Rank 3+*: MPs who were ranked first or second in their party's ticket in the elections vs. MPs who were ranked 3rd, 4th, and so on.

Appendix Table 1: Correlations among Matrix for the Proxies of Effort

	Performance	Speeches	Words	Motions	Law Proposals
Performance	1				
Speeches	0.7267	1			
Words	0.7313	0.6658	1		
Motions	0.4966	0.0403	0.0662	1	
Law Proposals	0.5251	0.0958	0.0814	0.1248	1

Notes: Sample correlations. *Performance* is the sum of the standardized values of MP's speeches, words, proposals and law drafts. *Speeches*: Number of times MP participated in discussions on the parliament floor. *Words*: Number of words delivered by the MP during their speeches. *Motions*: Number of times MP proposed for inquiry, investigation or assembly on a particular topic. *Law Drafts*: Number of law drafts MP co-sponsored.

Appendix Table 2: Length and Content

	(1)	(2)	(3)	(4)	(5)	(6)
	No. words in speeches that are not related to the parliamentary agenda	No. words in speeches that are related to the parliamentary agenda	No. words in speeches that lasted less than 5 minutes	No. words in speeches that lasted at least 5 minutes	No. Speeches that lasted less than 5 minutes	No. Speeches that lasted at least 5 minutes
Retired	56.728	27.390	94.052*	-4.513	4.424**	0.013
	(34.530)	(56.970)	(56.343)	(37.339)	(1.969)	(0.042)
Retired×Post2012	-21.055	-137.005**	-53.913	-109.229***	-2.766	-0.110**
	(28.697)	(53.096)	(50.443)	(38.771)	(1.713)	(0.043)
Age	-2.917	-4.157	-1.056	-7.655**	-0.159	-0.010***
	(4.074)	(4.027)	(3.758)	(3.051)	(0.179)	(0.003)
Rank	5.627	9.157	10.512	6.595	0.200	0.009
	(6.104)	(11.688)	(11.004)	(7.980)	(0.423)	(0.008)
Cabinet Member	143.392**	270.506**	173.091*	267.912***	3.308	0.191**
	(62.798)	(122.185)	(97.719)	(88.592)	(3.663)	(0.080)
Party's Vote Share in the district	-95.923	-48.619	412.389	-689.907	8.931	-0.404
	(538.036)	(748.514)	(859.266)	(443.743)	(26.153)	(0.556)
Observations	44,100	44,100	44,469	44,469	44,469	44,469

MPs deliver 100 words per minute on average. We computed this by dividing the total number of words delivered in the parliamentary meetings to the duration of the meetings. That is, a 5-minute speech consists of 500 words. The outcome variables in columns 1 and 2 measure the number of words MP delivered in speeches that lasted less than 5 minutes and at least 5 minutes, respectively. Outcomes in columns 3 and 4 are the numbers of speeches that lasted less than and at least 5 minutes, respectively. The outcome variables in columns 5 and 6 are the numbers of words MP delivered in speeches that are unrelated and related to the parliamentary agenda, respectively. Speeches are related to the agenda if the MP mentioned at least one keyword that we identify as important using the procedure in Appendix A. Unit of observation is an MP-month. All regressions include the whole set of control variables as in Table 3 (time-varying MP characteristics, MP fixed effects, month and year dummies, district dummies). Standard errors are clustered at the MP level. *, ** and *** indicate statistical significance at 10 percent, 5 percent and 1 percent levels.