# The impact of senior political representation on government contracting, firm-level investments and stock returns

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**Abstract**

The committee seniority system in U.S. House of Representatives shifts government contracts towards districts of senior politicians. These shifts have profound spillover effects on private-sector investments. I find that 1% increase in government contracts to firms from a given district increases investments of uncontracted firms from the same district by 2.85%. Government contracts also drive higher future profits and positive earnings surprises. An investment strategy that exploits these ramifications generates abnormal stock market returns as large as 5.13% per year. Overall, my findings suggest that government procurement under the aegis of senior politicians stimulates local corporate activity and influences stock market returns.

**JEL classification:** *E62, G12, G18*

**Keywords:** *Government spending, corporate investments, political connections*

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"All politics is local." – Thomas Phillip O'Neill Jr., *Former Speaker of the U.S. House of Representatives*

# 1 Introduction

I investigate the effects of senior political representation through a government contract allocation channel on firm-level investments and stock market returns. According to strategic delegation theory, voters elect political representatives that bring government spending into their home districts (Chari, Jones, and Marimon, 1997). Political representatives therefore work as district lobbyists and shift government investments towards their constituencies (Ferejohn, 1974). These geographic shifts may impact firm-level investments through direct (e.g. through shifts in primary contracting) and indirect (e.g. through subcontracting decisions) economic links. These shifts may additionally influence the cross section of stock market returns through expected firm cash flow and uncertainty channels.

This paper studies how senior political representation systematically influences the government contract allocation process, causes within-district investment spillovers and impacts stock market returns. It primarily contributes to an ongoing debate in financial economics on whether government-level investment activity stimulates or dampens corporate investment activity (Cohen, Coval, and Malloy, 2011; Synder and Welch, Forthcoming). It additionally provides a novel geographic exposure measure to government procurement, and analyzes the channels, through which it affects firm profitability and stock market returns.

For my identification methodology, I use a seniority lottery in committees of U.S. House of Representatives. Democratic Caucus assigns seniority ranks to incoming House committee members based on their prior committee experience. Incoming members to a given House committee with equal experience therefore cause seniority ties and clog the seniority ranking process. In these cases, Democratic Caucus breaks the ties with a seniority lottery (Kellerman and Shepsle, 2009). As a result, some legislators are randomly assigned higher ranked committee seats than their counterparts with equal prior committee experience. Outcomes of this seniority lottery cause exogenous shocks on government contract allocation to districts of lottery-winner legislators (lottery-winner districts) and lottery-loser legislators (lottery-loser districts). I identify shifts in government contract allocation by looking at the difference (between government procurement to lottery-winner and lottery-loser districts) in differences (in the event time). In so doing, I find that the value of government contracts allocated to lottery-winner districts exceeds the value of government contracts allocated to lottery-loser districts by an economically and statistically significant 41%.

Geographic shifts in government contract allocation have profound spillover effects on firm-level investment activity. Given firm-level and district-level endogeneity, however, the econometric analysis of how government contract allocation affects firm-level activity would yield spurious results in the absence of a reliable identification strategy. Government spending decisions may, for example, heavily depend on district-level economic growth, unemployment or industry characteristics. Therefore, to tackle endogeneity and pin down a causal relationship, I use the seniority lottery as a source of exogenous variation in district-level government contracting. By doing so, I find that one percent increase in government procurement increases firm-level investments by 2.85%. This result is robust to controlling for firm-level characteristics, firm fixed effects and yearly trends in firm-level investments.

Outcomes of the seniority lottery also affect the cross section of stock-market returns. I start by showing how stock prices react to seniority lottery outcomes. I find a 3-day cumulative abnormal return (CAR) difference of 1.4% between firms in lottery-winner and lottery-loser districts. Starting from one month after the lottery, firms in lottery-winner districts outperform firms in lottery-loser districts by an economically and statistically significant 5.13% per year. My findings on future firm profitability, earnings surprises and longevity analysis are suggestive of market underreaction.

First, firms in lottery-winner districts exhibit 2% higher future profitability and 2% lower future cash flow volatility than firms in lottery-loser districts. Second, I find a 1.23% difference in 1-year ahead earnings surprises between firms in lottery-winner and lottery-loser districts. Third, 30% of the abnormal returns to the seniority lottery long-short portfolio (i.e. long firms in lottery-winner districts and short firms in lottery-loser districts) derives from the first congressional years, and 70% derives from the second congressional years. Fourth, lottery outcomes do not impact stock returns in districts with no government contract allocation in the previous month. In contrast, lottery-winner districts that receive government contracts in the previous month generate annual abnormal returns of 6.06%. Moreover, these abnormal returns increase monotonically with respect to the size of district-level government contracts. I find, for example, an annual abnormal return spread of 9.61% once I compare lottery-winner and lottery-loser districts with high and low government contract allocation in the previous month. Fifth, I compare CARs of contracted firms and uncontracted firms from lottery-winner districts. I identify drifts for both groups of firms after the allocation of government contracts. These drifts are particularly strong for up to twelve months after contract allocation, and they fully disappear subsequently.

In a placebo test I apply lottery outcomes to previous congressional years, during which neither lottery-winner nor lottery-loser legislators are yet at the House. My results overall are robust to this placebo test. In a different placebo test, I identify lottery-winner and lottery-loser legislators that used to serve other districts before being elected in their current districts. When I compare the previous districts of lottery-winner and lottery-loser legislators, I find no difference in terms of government contract allocation. This result is not in line with the hypothesis that political representatives shift contracts to their districts due to information advantage.

My findings have three main implications. First, consistent with strategic delegation theories, senior political representation drives government contract allocation to home districts. Second, government procurement has profound spillover effects on corporate investments, and these investments prove to be very profitable. Third, the stock market does not fully value the ramifications of government procurement decisions. Screening observable spillover effects of government contracts on local firms may therefore improve investment returns.

This article is organized as follows. Section 2 summarizes the related literature. Section 3 describes the data that I use in my empirical analysis and explains my identification methodology. Section 4 presents my results on government contracts and firm-level investments. Section 5 covers stock market performance analysis. Section 6 looks into firm profitability and earnings surprises. Section 7 concludes. I provide detailed information on construction of my controls in the Appendix, which also includes further findings on district-level subcontracting.

## 2 Related Literature

This paper contributes to three strands of research: the impact of public-sector economic activity on private-sector investments, the impact of political connections on corporate performance, and finally the relationship between government policies and asset prices.

A number of studies including Cohen, Coval, and Malloy (2011) and Snyder and Welch (Forthcoming) provide mixed results on how government investments impact firm-level investments in the U.S.[1] I contribute to this literature by investigating within-district investment spillover effects of government contracting. Seniority lottery provides me with exogenous shifts in government contracting towards districts of lottery-winner legislators. This novel identification strategy enables me to analyze the causal impact of government contracting on firm-level investment activity. Furthermore, in contrast to existing papers, I also examine the channels through which government contracting affects firm profitability and long-run stock market returns.

Academic research in financial economics show that a sample of political representatives and corporations benefit from activities such as political lobbying, revolving door movements of politicians, and campaign donations.[2] In contrast to these papers, I study the ramifications of district representation on stock market returns.[3] Electoral district connection is surprisingly understudied as a political connection measure. Roberts (1990), and Faccio and Parsley (2009) use sudden deaths of politicians as shocks to firms that are located in their districts. They find strong negative announcement returns after these

[1] Interested reader can refer to Cullen and Fishback (2006), Fishback and Kachanovskaya (2015), Serrato and Wingender (2011), Acconcia, Corsetti and Simonelli (2014), Nakamura and Steinsson (2014), and others for further findings on open economy multipliers.

[2] Recent contributions on lobbying include Blanes i Vidal, Draca, and Fons-Rosen (2012), Akey (2015), and Acemoglu, Kermani, Kwak, and Mitton (2015). Additional contributions on revolving doors and political networks include Faccio (2006), Goldman, Rocholl, and So (2009, 2013), Fisman (2001), Fisman, Fisman, Galef, and Khurana (2012), and Schoenherr (2016). Furthermore, see, Cooper, Gulen, and Ovtchinnikov (2010) and Tahoun (2014) on political campaign donations and stock holding decisions of political representatives.

[3] Theoretical and empirical research argue that majoritarian systems as in U.S. House of Representatives are particularly grounded in local (district) interests (Milesi-Ferretti, Perotti, and Rostagno, 2002). There is also ample evidence on how politicians influence government spending in order to increase votes. See, for example, Drazen (2001) for a review of theoretical and empirical literature.

sudden deaths. In addition to analyzing the short term stock price effects of district representation, I also analyze its long term effects. In doing so, I provide government contract allocation as a cash flow channel.

This paper is also related to the literature on the impact of government policies on asset prices.[4] In a recent paper, Belo, Gala and Li (2013) investigate implications of the presidential puzzle (Santa-Clara and Valkanov, 2003) on stock market returns, and they find that firms with high industry-level exposures to government spending experience positive returns during Democratic presidencies and negative returns during Republican presidencies. In contrast to this paper, I analyze the ramifications of government spending across different regions in a given congressional year. Furthermore, my government spending exposure measure is driven by geographic ties rather than industry ties. In another related paper, Kim, Pantzalis and Park (2012) study implications of political alignment with the U.S. president on stock market returns through a government policy uncertainty channel. In contrast to this paper, I define an influence measure using seniority lottery outcomes.

# 3 Data and Methodology

## 3.1 Institutional background and seniority lottery in House committees

Although the U.S. Constitution lists detailed qualifications for House representatives in Article 1, it is rather silent about their roles and duties.[5] In the absence of such rigid formalities, many of the responsibilities that political representatives have assumed over time evolved from the expectations of electoral districts along with personal motives (Petersen, 2012). According to a survey done by Administrative Review Commission[6], political representatives list drafting and introduction of legislation, helping electoral districts solve problems and representing the interests of their districts as their main duties. A public

[4] A list of theoretical work on this subject includes Pastor and Veronesi (2013), Gomes, Michaelides and Polkovnichenko (2010), and Croce, Kung, Nguyen, and Schmid (2012).

[5] House of Representatives rules only require political representatives to be present and vote on each question placed before their chamber. These duties are currently listed under House Rule III, Section 1 of *Rules of the House of Representatives for 114th Congress* and this document can be reached at http://clerk.house.gov/legislative/house-rules.pdf.

[6] For this survey please refer to *Final Report of the Commission on Administrative Review,* 2 Vols., H. Doc. 95-272, 95th Congress, 1st Session (Washington: GPO, 1977).

survey done by the same commission reveals that voters primarily expect from House representatives to represent the district according to the wishes of the majority (by working on improving the economy, lowering prices and creating more jobs in addition to other ways), to solve problems in the district, and to keep contact with the people in the district by regular visits. There is therefore an understanding by both the representatives and voters that representatives must "help" and "protect" their constituencies. The degree to which the political representatives satisfy these expectations determine their success in future elections and therefore how high they can climb up the ladder of politics.[7]

Academic research on congressional committee system use committee seniority as an indicator of relative power (Polsby, Gallagher, and Rundquist, 1969; Crook and Hibbing, 1985; and Cox and McCubbins, 1991). Committee seniority provides advantages in obtaining subcommittee and committee chairmanships in addition to soft power on the legislative and executive branches, which all help political representatives "help" their constituencies. Political science literature provides ample evidence on how senior representatives shift government spending to their home districts (Engstrom and Vanberg, 2010; Lee, 2003; McKelvey and Riezman, 1992; Hibbing, 1991; and Ferejohn, 1974).

In this paper, I follow Kellerman and Shepsle (2009) and use a seniority lottery system, by which the Democratic Caucus breaks committee seniority ties and assigns committee seniority ranks to its legislators in the House of Representatives.[8] Seniority ranking of Democratic Party legislators is done using the same rule for all committees in the House of Representatives. First, reelected non-freshman representatives that return to *Committee X* retain their rank at *Committee X*, moving up in rank only if there are higher ranked members that do not return *Committee X*. Second are the returning non-freshman members, who used to serve at *Committee X*, and they can now serve once again, because they are back after a gap period. Third are the elected non-freshman representatives, who have served in different committees in the House of Representatives, but have no prior experience in *Committee X*. Finally, there are the freshman representatives with no prior

[7] According to 2013 and 2016 surveys by Gallup, U.S. Congress has only 16% approval rate as a whole. However, 60% of U.S. voters approve their political representative individually, and the reelection rate in 2012 was 91%. This is supportive of the notion that the commitment mechanism between voters and representatives is working in real life.

[8] Kellerman and Shepsle only use freshman lotteries, but they acknowledge that the lottery covers legislators from all seniority levels.

experience in the House of Representatives.

As comprehensive as these rules are, they still fail to rank incoming representatives with equal chamber seniority. If, for example, returning members with equal *Committee X* experience return to *Committee X*, these rules cannot determine which one gets to be more senior in *Committee X*. Another trivial case, of course, is when more than one freshman representative enters *Committee X*. Under these circumstances, Democratic Committee on Committees breaks seniority ties by a randomization process that allocates committee seniority using a lottery. This lottery is the key to my identification strategy, as every time a tie-breaking seniority lottery decision is made, an experiment is conducted on the electoral districts of legislators that are randomly ranked. This enables me to rule out any federal-, district-, or firm-level endogeneity when I investigate the implications of government contracts on firm-level investment behaviour and stock market returns.

## 3.2 Data collection

My data come from multiple resources. I obtain data on committee assignments and legislator seniority from Congressional Committee Assignments Dataset maintained by Charles Stewart.[9] To identify seniority randomization groups, I download committee assignments since 2001.[10] As in Kellerman and Shepsle (2009), I identify legislators who (1) received new assignments to a committee on the same day, (2) had equivalent chamber seniority, (3) were assigned consecutive seniority ranks on their new committees. After determining the randomization groups, I identify the representatives that win the seniority lottery. I follow Kellerman and Shepsle (2009) and define "winning the lottery" as being assigned a more senior ranking than the median ranking in the randomization group.[11]

To find the impact of the seniority lottery on firms that are headquartered in legislators'

[9] This is a widely-used dataset in political science. For more information on the data and on that articles that use this data, please refer to: http://web.mit.edu/17.251/www/data page.html

[10] I start with year 2001, because my government contracting data is sparse in the 1990s and before. Nonetheless, since the Senate and the House of Representatives were both under Republican control during most of the 1990s and before, the impact of the seniority lottery was potentially less apparent. That being said, I also separately analyze the implications of Democratic majority years after 2001 in the Robustness section.

[11] If, for example, 3 representatives enter a seniority lottery in *Committee X*, and receive ranks of 4, 5 and 6, then the winner of this lottery would be the representative who is ranked as 4th and the loser would be the representative who is ranked as 5th and 6th. My main results are robust to changing this specification, and in the robustness section I also compare the biggest winners and losers (i.e. 4th and 6th).

electoral districts[12], I match the above data with firm-specific data. To match firms with legislators' electoral districts, I use zip-codes of firm headquarters from COMPUSTAT dataset and map them to electoral districts using Census Bureau relationship files.[13] After matching the above lottery data with firm location data, I investigate the impact of the lottery on the firms in winner and loser congressional districts. I define a congressional district to be a winner (loser) district if it won (lost) at least one lottery and didn't lose (win) any.

To investigate the stock market performance implications of seniority lottery, I obtain data on stock market returns from CRSP.[14] I also download data on firm characteristics from COMPUSTAT and data on analysts' earnings forecasts from Thomson Reuter's I/B/E/S dataset. I additionally look at government contract allocation to each congressional district. My government contract allocation data comes from Bloomberg's BGOV Dataset, which goes back to the beginning of 107th congress. BGOV collects its contract data from the Federal Procurement Data System - Next Generation (FPDS-NG). The FPDS-NG, administered by the US General Services Administration, is the central repository of information on procurement contracts awarded by U.S. government. If contracts are awarded to subsidiaries of large corporations, BGOV identifies the parent corporation and assigns contracts accordingly.

Finally, I use congressional district level data on population, per capita income, income growth and unemployment from American Community Survey (ACS) data files from Census Bureau[15], and I also obtain election results data for each legislator in my dataset using Election Results dataset of Federal Election Commission.[16] I provide detailed explanations of my data collection process along with variable definitions in Appendix subsections A.1 to A.5.

To identify the impact of legislators on the performance of firms in their district, I

[12]In doing so, I follow Coval and Moskowitz (1999, 2001), Loughran and Schultz (2005), Pirinsky and Wang (2006), Hong, Kubik, and Stein (2008), Korniotis and Kumar (2013) and others to use corporate headquarters location to proxy for firm location.

[13]Census Bureau provides linking tables for 109th, 110th, and 113th congress. I update my linking table after 109th congress, and for before 109th congress I use the linking table for 109th congress. Tables can be found at: https://www.census.gov/geo/maps-data/data/

[14]I exclude in my calculations firms with missing end of year market values, and I use ordinary common shares in NYSE, AMEX and NASDAQ.

[15]This data can be downloaded from https://www.census.gov/programs-surveys/acs/data/data-via-ftp.html.

[16]This data can be downloaded from http://www.fec.gov/pubrec/electionresults.shtml.

use lotteries from top ten most powerful committees.[17] To identify top ten most powerful committees, I follow Edwards and Stewart (2006), and Cohen, Coval, and Maloy (2011), and I use in my main specification lotteries from the following House committees: Ways and Means, Appropriations, Energy and Commerce, Rules, International Relations, Armed Services, Intelligence, Judiciary, Homeland Security, and Transportation and Infrastructure.

Lotteries for the above House committees are carried out in the beginning of each congress, i.e. in early January[18], and given their prestige most legislators commit to staying in their committees independent of the seniority lottery outcomes. This translates into 77% of the districts staying as lottery-winner and lottery-loser districts, and 79% of the firms staying in lottery-winner and lottery-loser portfolios in the following years after lottery. Therefore, lottery outcomes have long-lasting implications. Figure 1 reports the electoral districts in the U.S. that are effected by seniority lottery outcomes in 2009. In total, 242 districts are affected by seniority lotteries since 2001.

[Insert Figure 1 here]

### 3.3 Summary statistics

This subsection presents summary statistics of the data used in the empirical analyses of this paper. Panel A of Table 1 reports how much of the government contracting activity and the stock market capitalization in the U.S. is attributable to lottery-winner and lottery-loser districts. It shows that lottery-winner districts receive significantly more government contracts than lottery-loser districts even though they command a smaller share of stock market capitalization in the U.S. More specifically, firms in lottery-loser districts account for 14.04% of U.S. stock market capitalization and firms in lottery-winner districts account for 8.55%. Nonetheless, government contracts allocated to firms in lottery-winner districts correspond to a disproportionate 16.36% of government contracts allocated to all publicly traded corporations, whereas government contracts allocated firms in lottery-loser districts correspond to only 5.09%. Once I also include government procurement

[17] I also present results from using all committees in the robustness section.

[18] The median seniority rank assignment day across all lotteries is 9th of January, which gives enough time to the stock market until the end of the month to include any potential ramifications into the stock prices.

to private and foreign firms, I find that lottery-winner districts and lottery-loser districts receive 5.14% and 1.43% of the entire pie, which represents an economy of $369B per year since 2001.

Parallel to the observations above, I also find that government contracting corresponds to a much larger proportion of firm sales in lottery-winner districts. In lottery-winner districts, government contracts make up 20.13% of firm sales, whereas in lottery-loser districts they only amount to a tiny 3.96% and for the remaining firms they amount to 10.13%. Overall, these numbers summarize the strong influence of senior political representation on the geographic distribution of government contracts.[19]

[Insert Table 1 here]

Panel B presents summary statistics on pre-lottery firm characteristics, and Panel C presents district-level characteristics. Pre-lottery characteristics of firms in lottery-winner and lottery-loser districts are close to each other and to those of the remaining firms. Investment characteristics of firms in lottery-winner districts, firms in lottery-loser districts, and the remaining firms, in particular, are very similar. Similar findings hold on district-level per capita income, income growth, population and unemployment.

In order to understand the impact of senior political representation on government contracting and stock market returns, I first study whether districts that are represented by more senior legislators are systematically allocated more government contracts. To that end, I start with analyzing government contract allocation to lottery-winner and lottery-loser districts. Figure 2 presents yearly differences in total government contract allocation to lottery-winner and lottery-loser districts during my sampling period. Government contract allocation to lottery-winner districts exceeds government contract allocation to lottery-loser districts almost every year. As shown in Figure 3, lottery-winner districts, as a whole, have been allocated $140B more government contracts than lottery-loser districts since 2001.

[Insert Figure 2 and Figure 3 here]

[19] Once I exclude legislators with median seniority ranks from my randomization groups, the market capitalizations of lottery-winner and lottery-loser portfolios become very similar. In this setting the lottery-winner portfolio continues to get more government contracts. Including medians as lottery-losers provides me with a harder test. My results, however, are robust to excluding them.

Figure 4 shows lottery-winner and lottery-loser districts with the highest aggregated value of government contracts since 2001. District 8 of Virginia, a lottery-winner district and one of the most Democratic districts in the south of the U.S., received $98.6B worth of government contracts since 2001. In line with the predictions of strategic delegation theory, James Patrick Moran Jr., a former Democratic member of U.S. House of Representatives from Virginia's district 8, secured an average percentage vote of 63.2% and won every single congressional election since 2001.[20] Virginia's district 8 is followed by another strong Democratic district, district 18 of New York, which received $52.8B worth of government contracts. [21] In comparison, the most contracted lottery-loser district is Massachusetts, district 7 with $20.7B of government contracts.

[Insert Figure 4 here]

I also investigate industry-level ramifications of the seniority lottery. Figure 5 reveals that "business equipment" (i.e. computers, software, electronic equipment etc.), "manufacturing" (i.e. machinery, trucks, planes etc.) , and "wholesale" (i.e. shops, retail etc.) industries receive the most valuable government contracts in lottery-winner and lottery-loser districts. These industries, however, receive significantly more government contracts in lottery-winner districts than they do in lottery-loser districts. "Business equipment" industry group, for example, received $68.7B in lottery-winner districts and $32.9B in lottery-loser districts since 2001, and the "manufacturing" industry group received $60.2B in lottery-winner districts and $6.5B in lottery-loser districts. These findings are in line with the notion that the seniority lottery shifts government contracts across regions, but it has minor influence on industry choice.

[Insert Figure 5 here]

Overall, the evidence in this section is supportive of the influence of senior political representation on government contract allocation. Seniority lottery-winner districts are systematically allocated more valuable government contracts and voters seem to reward

[20] This number is from elections between 2000 and 2012. James Patrick Moran Jr. retired in 2014, and Donald Sternoff Beyer, another Democratic candidate won in Virginia district 8 in 2014 elections.

[21] In my regressions, I exclude two major contracts to these districts, because they are outliers. My results on government contracts and stock market returns are robust including or excluding these districts completely.

those representatives that are able to bring government spending into their districts.[22] Although political seniority seems to influence the geographic distribution of government contracts, it has minor influence on industry choice.

# 4 Government contracts and firm investment

In this section I establish the systematic impact of senior political representation on the allocation of federal government contracts. I start with a baseline difference-in-differences test, in which I compare government contracts to lottery-winner and lottery-loser districts before and after the lottery. After identifying shifts in government contract allocation towards lottery-winner districts, I instrument government contracts with lottery outcomes. This instrument provides me with exogenous variation in government investments and enables me to explain the causal affects of government procurement on firm-level investment activity.

## 4.1 Difference-in-differences test

In this subsection I identify geographic shifts in government contract allocation after seniority lotteries. I run a difference-in-differences model, in which the first difference is between lottery-winner and lottery-loser districts, and the second difference is in the event time. The first difference therefore reflects time invariant differences between lottery-winner and lottery-loser districts in terms of government procurement, and the second difference allows me to capture the changes in government procurement after seniority lotteries. If senior representation influences the distribution of government contracts, we should see an increase in government procurement to districts of lottery-winner legislators after the lottery.

I regress total government contracts allocated to congressional district i in year t using the below specification:

[22] A detailed analysis of how political seniority and district-level government contracting affect election outcomes is presented in the Appendix Section D.

$$Contract_{i,t} = \alpha_0 + \alpha_1 Lottery\ winner_i + \alpha_2 Post\text{-}lottery_{i,t} + \alpha_3 Lottery\ winner_i \times Post\text{-}lottery_{i,t} + \gamma_i + \eta_t + \epsilon_{i,t}, \quad (1)$$

where $Contract_{i,t}$ denotes the log of total government contracts allocated to congressional district i in year t, and $Lottery\ winner_i$ is a dummy that denotes whether congressional district i is a lottery winner or a lottery loser[23]. For a given district i, $Post\text{-}lottery_{i,t}$ is equal to one after the lottery outcome and zero before. $\gamma_i$ and $\eta_t$ are district and year dummies.

[Insert Table 2 here]

I present the results in Table 2, Panel A. I find that winning the lottery causes an economically and statistically significant increase of 75% in district-level government contract allocation. As a result, lottery-winner districts get 41% more government contracts subsequent to the lottery. This is in line with the notion that government contracts shift to districts of senior representatives. Given the exogenous nature of seniority lottery and its influence on government procurement, I use it as an instrument for district-level government contracts.

## 4.2 Government contract allocation to lottery-winner and lottery-loser districts

In this section I run first stage panel regressions on government contract allocation *after the seniority lottery*. To that end, I analyze whether government contract allocation to the lottery-winner districts differed from that of the lottery-loser districts even after controlling for district-level characteristics, district fixed effects and yearly trends in government contracting. I follow the methodology of Cohen et al. (2011) and run Tobit regressions on the below model:

$$Contract_{i,t} = \alpha_0 + \alpha_1 Lottery\ winner_{i,t} + \alpha_2 X_{i,t-1} + \gamma_i + \eta_t + \epsilon_{i,t}, \quad (2)$$

[23] If a district becomes both lottery-winner and lottery-loser over time, I choose the first lottery and drop the second.

where $Contract_{i,t}$ denotes the log of total government contracts allocated to congressional district i in year t, $Lottery\ winner_{i,t}$ denotes whether congressional district i is a lottery-winner district in year t, and $X_{i,t-1}$ contains controls including congressional district level log per capita income over the past six years, along with lagged values of congressional-district level per capita income growth, log of congressional district population and unemployment rate in congressional district i. Lastly, $\gamma_i$ and $\eta_t$ denote congressional district and year dummies.

I present the results in Table 2, Panel B. Column 1 shows that the value of total government contracts allocated to lottery-winner districts exceeds the value of total government contracts allocated to lottery-loser districts by an economically and statistically significant 41%. This result is robust to controlling for district and year fixed effects. Once I also control for district-level characteristics, I find that lottery-winner districts are allocated 33% more government contracts then lottery-loser districts.

Column 3 of Table 2 presents results from a placebo test, in which I apply lottery outcomes to two previous congresses (i.e. four previous years), during which the legislators are not yet at the House. In this test, I do not find a significant relationship between placebo lottery outcomes and district-level total government contracts.[24] The placebo lottery yields a statistically insignificant coefficient of -0.23%. This finding is supportive of the notion that there was not a significant difference prior to the seniority lottery between lottery-winner and lottery-loser districts in terms of total government contract allocation.

Overall, results in this section are in line with earlier observations from summary statistics. Outcomes of the seniority lottery cause significant geographic shifts in government contract allocation even after controlling for district characteristics, district fixed effects and year fixed effects, and these transfers are nonexistent prior to the lottery. I continue by analyzing how these shifts affect firm-level economic activity in the following subsection.

[24] If a district enters the lottery multiple times, I choose the first lottery and drop the following ones for the placebo lottery. I therefore eliminate the possibility of having placebo periods with lottery-winner or lottery-loser legislators. So, placebo period for these cases correspond to the placebo period of the first lottery.

### 4.3 Firm investments and seniority lottery as an instrument

Government contracts under the aegis of senior political representation can cause local spillover effects through subcontracting (Kamien and Li, 1990), economic links (Cohen and Frazzini, 2008; Menzly and Ozbas, 2010), demonstration effects (Wang and Blomstrom, 1991) and movement of labor (Meyer, 2004). Given firm- and district-level endogeneity, however, the econometric analysis of how government contracting affects firm-level activity would yield spurious results in the absence of a reliable instrument. Therefore, to tackle endogeneity and pin down a causal relationship, I instrument district-level government contracts with seniority lottery outcomes. Similar to Cohen et al. (2011), I create my instrument by taking the variation in district-level total government contracts that is explained by random lottery outcomes. Results from the first stage regression are already presented in Column 1 of Table 2, Panel B. Following the same methodology, I also create a placebo instrument using the placebo lottery outcomes, and first stage regression results of my placebo instrument are presented in Column 3 of Table 2, Panel B. I call my instrument $Contracts\ IV_{i,t}$ and my placebo instrument $Placebo\ contracts\ IV_{i,t}$.

To analyze the ramifications of the seniority lottery and subsequent geographic shifts in government contract allocation on firm-level economic activity, I run second stage panel regressions on the below model:

$$Y_{i,t} = \beta_0 + \beta_1 Z_{i,t} + \beta_2 X_{i,t-1} + \zeta_i + \eta_t + \epsilon_{i,t}, \tag{3}$$

where $Y_{i,t}$ is firm-level capital expenditures deflated by book value of assets[25]. $Z_{i,t}$ is either the $Lottery\ winner_{i,t}$ dummy that is equal to one if firm i's congressional district is a seniority lottery winner in year t, or it's one of $Contracts_{i,t}$[26], $Contracts\ IV_{i,t}$ or $Placebo\ contracts\ IV_{i,t}$. $X_{i,t-1}$ contains lagged firm-specific controls including Tobin's Q, cash flows to assets and leverage. $\zeta_i$ and $\eta_t$ are firm and year dummies.

[Insert Table 3 here]

My main results are presented in Panel A of Table 3. Panel B of Table 3 presents

[25] In untabulated results, I also run regressions of firm-level employment, and I find significant spillover effects of government procurement on it.

[26] My results are robust to using total district-level contracts rather than using logged total district-level contracts.

placebo period results, and Panel C presents results from only using firms that are not directly allocated any government contracts. As shown in Column 1 of Panel A, firms in lottery-winner districts invest in significantly higher capital expenditures than firms in lottery-loser districts do. The difference in capital expenditure to assets ratios between these two groups of firms is an economically and statistically significant 0.93%. Column 2 of Panel A presents results from regressing firm-level investments on $Contracts\ IV_{i,t}$, namely the district-level total government contracts, instrumented by lottery outcomes. I find that 1% increase in government procurement to a given district increases investments of firms from that district by 6.80%. To illustrate the endogeneity between government spending and private-sector economic activity and the problems this can cause for identification, I also run firm-level investments on $Contracts_{i,t}$. As presented in Column 3 of Panel A, I find no relationship between district-level government contracting and firm-level investment behaviour due to endogeneity.

Panel B of Table 3 presents results from my placebo test. Column 1 confirms that the investment behaviour of firms in lottery-winner districts were indifferent from the investment behaviour of firms in lottery-loser districts prior to the lottery. Column 2 shows that the variation in government contracting explained by placebo lottery results (i.e. $Placebo\ contracts\ IV_{i,t}$) have no influence on capital expenditures, and Column 3 again finds no relationship between endogenous government contracting (i.e. $Contracts_{i,t}$) and firm-level investments during placebo periods.

Results so far are in line with district-level government contract allocation driving local investment spillovers. However, investments of firms that receive government contracts may mechanically drive the investment spillover results. I therefore separately analyze the investment behaviour of firms that do not receive any government contracts. Panel C of Table 3 presents these results. Similar to my results in Panel A, I find a 1.18% difference in capital expenditures of firms in lottery-winner and lottery-loser districts. As shown in Column 2 of Panel C, I find that one percent increase in district-level total government contracts causes a 2.85% increase in capex-to-assets ratio. Once again, I find no relationship between district-level endogenous government contracting and firm-level investment behaviour.

To summarize, seniority lottery causes significant shifts also in firm-level investment activity. Government contracting has considerable spillover effects even on firms that do not receive any government contracts. These results are robust to controlling for firm characteristics, firm fixed effects, year fixed effects, and a placebo test. Due to endogeneity, I was not able to establish these results in the absence of my instrument.

# 5 Returns after the seniority lottery

Findings in earlier sections confirm that political representation systematically influences government contract allocation process and causes substantial spillover effects on corporate investments. Economic exposures to these outcomes could also drive heterogeneity in stock market returns through various channels. Firms in lottery-winner and lottery-loser districts could, for example, experience considerably different long-run stock market returns due to risk-premia, as these two groups of firms reportedly have very different exposures to government contracting policies. In contrast, they may also experience different stock market returns due to underreaction, in which case the stock market would systematically be surprised by the shifts in government contracts and their positive spillover effects on regional firm-level economic activity.

To delve into these issues, I start by providing direct evidence on how senior representation is priced in the stock market by investigating stock market reactions to seniority lottery announcements. I then analyze the long run stock market returns of firms in lottery-winner and lottery-loser districts. Once I establish the heterogeneity in stock market returns between these two groups, I investigate its drivers.

## 5.1 Stock market reactions to the seniority lottery announcements

Market reactions to seniority lottery results provides me with a tool for examining whether the stock market is able to forecast differences in future profitability between firms in lottery-winner and lottery-loser districts. To that end, I compare the cumulative abnormal returns (CARs) of firms in lottery-winner and lottery-loser districts after lottery announcements. I take all lottery announcements between January 2001 and December 2012, and compute 3-day, 5-day, 9-day and 16-day abnormal returns in excess of the market model. In doing so, I follow Edmans (2011) and estimate abnormal returns over estimates from a 255-day period ending 46 days before the event date (i.e. announcements of lottery outcomes).

[Insert Table 4 here]

Panel A of Table 4 shows CARs of firms in lottery-winner and lottery-loser districts, along with their difference. Each row presents results from different event windows. In all specifications, I find that firms in lottery-winner districts possess economically and statistically significant lottery announcement returns. Announcement returns of firms in lottery-loser districts, however, are consistently insignificant and economically close to zero. Univariate 3-day CAR difference is an economically and statistically significant 1.4%.

Panel B in Table 4 provides results from multivariate regressions of the 3-day CARs, in which I control for firm characteristics, i.e., market value of equity and book-to-market equity ratio. As shown in Column 2, the 3-day CAR difference between firms in lottery-winner and loser-losers districts is an economically and statistically significant 1.1%. Overall, these results provide me with direct evidence on the impact of the seniority lottery on stock prices. They are line with the notion that the market prices senior representation very positively. Next subsections analyze the ramifications on long run stock market returns along with potential economic channels.

## 5.2 Long-run stock market returns after the seniority lottery

In this subsection I show that seniority lottery outcomes predict the cross section of long-run stock market returns in lottery-winner and lottery-loser districts. I examine the impact of the seniority lottery on long-run stock market performance by estimating the following time-series regression:

$$R_{p,t} = \alpha_p + \beta_p' f_t + \epsilon_{p,t}, \tag{4}$$

where $R_{p,t}$ is the monthly portfolio excess return (over the monthly risk-free rate), $f_t$ is a vector of excess returns on benchmark factors, and $\alpha_p$ is the abnormal performance measure of interest.

Since the lottery outcomes are announced in early January, I form portfolios in the beginning of February.[27] I form value-weighted portfolios, and portfolio weights come from each firm's last year-end market value. Since each congress lasts two years, I hold the portfolios for two years and update them after the beginning of each congress. To adjust for risk I use different factor models and risk adjustment techniques. First, I compute abnormal returns to each portfolio using CAPM. Second, I use Fama-French-Carhart four factor model as in Carhart (1997)[28]. In both cases, I also compute portfolio alpha of the corresponding long-short portfolio.

[Insert Table 5 here]

Panel A in Table 5 presents the results on the long-run stock market performance differences of firms in lottery-winner and lottery-loser districts. First two rows show results from unconditional models. In CAPM specification, value-weighted winner minus loser alpha is a significant 4.43% per year. In Fama-French-Carhart four factor model specification, value-weighted winner minus loser alpha amounts to a significant 4.14% per year. The difference in stock returns of firms in lottery-winner and lottery-loser districts, therefore, is economically significant, and it persists even after controlling for conventional risk factors.

If the expected returns and betas of our portfolios change over time (e.g. during economic downturns or political cycles) and they are correlated, then the unconditional model is misspecified and my results may potentially derive from this misspecification. To eliminate this risk I follow Ferson and Schadt (1996) and assume a linear functional form on the conditional beta as follows:

$$\beta_p(Z_t) = b_{0p} + B_p z_t, \tag{5}$$

$z_t$ is a (J x 1) vector of the deviations of predetermined variables, and $B_p$ is a (K x J) matrix where K is the number of risk factors and J is the number of predetermined variables. In each row $B_p$ contains conditional betas for a given risk factor of a given portfolio. $b_{0p}$ is a (K x 1) vector of "unconditional means" for each risk factor's beta in a given portfolio. I follow Ferson and Harvey (1999) and use dividend-price ratio, default

[27] Lottery announcements are in January, so the announcement returns cannot drive results on subsequent excess returns.

[28] I obtain these four factors from Kenneth French's web site.

premium, term spread, and risk-free rate as my predetermined variables[29], because these variables are known to have predictive power over business cycles. As an additional check, I also proxy for political cycles by using dummies for Democratic president years along with Democratic majority years in House of Representatives and Senate. In doing so, I update specification (2) with these modifications and estimate the below specification:

$$\begin{aligned} r_{p,t+1} &= \alpha_p + (\beta_p(z_t))' \ f_{t+1} + \epsilon_{p,t+1} \\ &= \alpha_p + b'_{p0} \ f_{t+1} + (b'_{p1} z_t)' \ f_{t+1} + \epsilon_{p,t+1}, \end{aligned} \tag{6}$$

where $f_t$ is the vector of excess returns on Fama-French-Carhart four factors (namely, market, size, book-to-market, and momentum).

Rows 3 and 4 of Table 5's Panel A present the results from using time-varying betas as in specification (6). I find that the value-weighted winner minus loser portfolio alpha is a statistically and economically significant 5.13% per year. Once I also control for political cycles, I find that the value-weighted winner minus loser alpha increases to 5.24% per year. As a further check, I perform my placebo test, in which the legislators are not yet at the House. Row 5 of Table 5's Panel A presents the results from this placebo test. I find that there is not a significant difference in stock market returns between false winners and false losers.

Results in this section are in line with the view that firms located in lottery-winner districts outperformed firms located in lottery-loser districts. This outperformance is economically and statistically significant, and it is robust to correcting for conventional risk factors, in addition to using time-varying betas with economic and political cycle risks.

### 5.3 Time series of abnormal returns

My findings reveal that portfolio returns associated with the seniority lottery cannot be explained by exposures to standard risk factors and are robust to using various method-

[29] Default premium is Moody's seasoned Baa corporate bond yield minus Moody's seasoned Aaa corporate bond yield. Term spread is the difference between 10-year and 1-year treasury constant maturity rates. Dividend-price ratio measures dividends paid to the market portfolio over the price of market portfolio. I take default premium and term spread data from St. Louis Fed's web page. Dividend-price ratio and risk-free rate are driven from CRSP data.

ologies. A latent political risk factor that is correlated with senior representation could drive the heterogeneity in stock market returns. If the abnormal returns are due to higher risk premium due to this latent risk factor, we should observe large movements in excess stock market returns right after lottery outcomes.[30]

To that end, I investigate how realized excess returns associated with senior political connections vary during the first and second years of each congress. I define excess returns to long-short portfolio ($LS$) in month $t+1$ to be

$$\alpha_{LS,t+1} = r_{LS,t+1} - (\beta_{LS}(z_t))' f_{t+1}, \tag{7}$$

where $r_{LS,t+1}$ is the realized high minus low portfolio return and $\beta_{LS}(z_t)$ is specified in Equation 5. I then run the below model:

$$\alpha_{LS,t+1} = a \; First \; Year_t + b \; Second \; Year_t + v_{i,t+1}, \tag{8}$$

where $First \; Year_t$ and $Second \; Year_t$ are dummy variables coded as one during first and second years of each congress, and $v_{i,t+1}$ is the error term.

Panel B of Table 5 presents the results on time series variation in the long-short portfolio excess returns. In the first years of congress long-short portfolio alpha amounts to an annual 3.08%, where in the second years it reaches to a significant 7.22%. This means, in a two-year period, about 70% of the excess returns can be associated with second years of congress, whereas only about 30% can be associated with first years. Therefore, there is no evidence of excess returns being concentrated earlier on in first years of congress. This, of course, doesn't disprove the alternative hypothesis that the latent risk factor could be apparent in the second congressional years. This is a plausible story given the legislative and budgeting calendars.

[30] This, of course, assumes that the risk premium would not affect the returns more in second congressional years.

### 5.4 Double-sorting portfolios on lottery outcomes and government contracts

To understand the ramifications of district-level government procurement on stock market returns, I now double-sort firms into four portfolios using lottery outcomes and district-level government contracts. I first sort firms according to lottery outcomes, and then within these two groups I sort firms according to district-level government contract allocation in the previous month.

[Insert Table 6 here]

Table 6 presents results from double-sorted portfolios. Panel A compares districts with and without government contract allocation in the previous month. I do not find significant stock market returns to lottery-winner and lottery-loser portfolios in districts with no government contract allocation. In contrast, lottery-winner districts that receive government contracts in the previous month generate annual abnormal returns of 6.06%. This is supportive of the notion that abnormal returns after the lottery outcomes are related to prior government contracting decisions.

Panel B examines only the districts that receive government contracts, and it compares districts with high and low government contract allocation in the previous month. High (low) government contract districts are those that receive more (less) government contracts than the median within lottery-winner or lottery-loser portfolios. By doing so, I find that the lottery-winner abnormal returns are monotonic with respect to government contracts. More specifically, firms in lottery-winner and low government contract districts earn 4.78% annual abnormal returns. Whereas, firms in lottery-winner and high government contract districts earn 6.41%. I also find an annual abnormal return spread of 9.61% once I compare lottery-winner and lottery-loser districts with high and low government contract allocation in the previous month. These findings suggest that the difference in abnormal returns between winner and loser portfolios is indeed closely related to prior district-level government contract allocation.

### 5.5 Longevity of outperformance after the allocation of government contracts

I now analyze the longevity of abnormal returns after government contract allocation to lottery-winner districts. I compare the stock market performance of firms that receive government contracts and the stock market performance of firms that are from the same districts but do not receive any government contracts. To that end, I hold portfolios of contracted and uncontracted firms and cumulate their portfolio abnormal returns. I compute abnormal returns once again by correcting for time-varying betas as in specification (5). I start my analysis after lottery announcements and before government contract allocation. This is because the uncertainty on government contracts starts to get resolved before the allocation actually occurs. The necessary legislation and bid process should have implications for contracted and uncontracted firms even before contract is allocated. Therefore, I start my CAR analysis three years before the contract allocation and end it three years after the contract allocation.

[Insert Table 7 and Figure 6 about here]

Table 7 presents my results. Panel A shows that the CARs for contracted firms start to grow even before the allocation of government contract. The drift continues for about one year after contract allocation, but then flattens out eventually. Interestingly, there is a similar trend for uncontracted neighbour firms. Panel B shows that they exhibit consistent abnormal returns up to 3 months after their neighbours receive procurement contracts. This drift also disappears after about one year. Results in this subsection are suggestive of the notion that the market is slow in pricing the ramifications of government contracts in lottery-winner districts.[31]

## 6 Understanding the impact of senior representation

### 6.1 Firm profitability and the seniority lottery

Previous findings report a robust relationship between seniority lottery outcomes, firm-level economic activity and subsequent stock market returns. Lottery announcement re-

[31] These results, however, do not fully reject the possibility of uncertainty being resolved slowly over time.

turns are supportive of the notion that the stock market anticipates the positive spillover effects of government contracts and positively prices firms in lottery-winner districts. Subsequent excess returns experienced by firms in lottery-winner districts cannot be explained by exposures to conventional risk factors, and they are robust to a battery of specifications. My results are not suggestive of a latent risk factor story, and they show that the excess returns are closely related to district-level government contract allocation.

To better understand the mechanisms driving these results, I delve into analyzing potential economic channels. To that end, I start by investigating firm profitability. In doing so, I horserace two hypotheses: a cash flow hypothesis and a cash flow volatility hypothesis (Belo at al., 2013). According to a cash flow hypothesis, firms in lottery-winner districts would earn higher stock market returns, because their fundamental performances improve after valuable government contracts, subcontracts and positive spillover effects.

A second (non-exclusive) hypothesis is a cash flow volatility hypothesis, in which firms in lottery-winner districts would earn higher stock returns as a compensation for their higher exposure to government contracting uncertainty. If having senior representation does imply a higher exposure to government contracting uncertainty, we should observe higher volatility of profitability in firms from lottery-winner districts.

To test these two hypotheses, I follow Belo et al. (2013) and run Fama-Macbeth regressions on the following specification:

$$\begin{aligned} ROE_{i,t+1} &= \alpha_0 + \alpha_1 Lottery\ winner_{i,t} + \alpha_2 V_{i,t}/A_{i,t} + \alpha_3 DD_{i,t} \\ &+ \ \alpha_{44} D_{i,t}/B_{i,t-1} + \alpha_5 ROE_{i,t} + \epsilon_{i,t+1}, \end{aligned} \tag{9}$$

where $Lottery\ winner_{i,t}$ is a dummy that is equal to one if firm i's congressional district is a seniority lottery winner in year t, ROE denotes return on equity defined as net income to book-equity ratio, $V_{i,t}/A_{i,t}$ is the ratio of market value of assets to book-value of assets, $DD_{i,t}$ is a dummy for nondividend-paying firms, $D_{i,t}/B_{i,t-1}$ is the ratio of dividend payments to book value of equity[32].

[Insert Table 8 here]

Columns 1 to 3 in Panel A of Table 8 shows that a positive relationship exists between

[32] Controls are as in Belo, Gala, and Li (2013), Fama and French (2000), Vuolteenaho (2002), and Hou and Robinson (2006).

future profitability and the lottery winner dummy. In particular, I find a 2% difference in future profitability of firms in lottery-winner districts and lottery-loser districts. This result is robust to controlling for firm characteristics, and in line with the cash flow story.

In the second stage, I take $\epsilon_{i,t+1}$ i.e. the residual from the first stage regression in equation 9 and run Fama-Macbeth regressions on its square using the following specification:

$$\epsilon_{i,t+1}^2 = \beta_0 + \beta_1 Lottery\ winner_{i,t} + v_{i,t+1}. \tag{10}$$

Panel B of Table 8 presents my results on the cash flow volatility hypothesis. It shows that a negative relationship exists between volatility of future profitability and the lottery winner dummy. More specifically, I find that future volatility of profitability of firms in lottery-winner districts are 2% less than those in lottery-loser districts. This suggests that an increased cash flow volatility story doesn't explain my results. On the contrary, this result is supportive of government contracting uncertainty being less for firms in lottery-winner districts than those in lottery-loser districts.

## 6.2 Earnings surprises and seniority lottery

My findings so far are in line with a market underreaction story that is driven by higher cash flows and lower cash flow volatility of firms in lottery-winner districts. To present further evidence on this underreaction story, I examine equity analysts' 1-year and 2-years ahead earnings forecast surprises for firms in lottery-winner and lottery-loser districts. I define earnings surprise as the actual EPS minus the I/B/E/S median analyst forecast 8 (20) months prior to the end of forecast period, scaled by the lagged stock price or standard deviation in analyst forecasts. I follow Edmans (2011) and run panel regressions on the below specification:

$$Surprise_{i,t} = \alpha_0 + \alpha_1 Lottery\ winner_{i,t} + \alpha_2 X_{i,t-1} + \eta_t + \epsilon_{i,t}, \tag{11}$$

where $Lottery\ winner_{i,t}$ is a dummy that is equal to one if firm i's congressional district is a seniority lottery winner in year t, $X_{i,t-1}$ includes log book-to-market and log market equity calculated at the previous year-end, and $\eta_t$ is year dummies.

[Insert Table 9 here]

Table 9 presents my results. Panel A shows results from 1-year ahead earnings forecast surprises. Rows 1 to 3 use lagged stock price as the denominator, and Rows 4 to 6 use standard deviation in earnings forecasts. I find a 1.23% (Panel A, Column 3) difference in 1-year ahead earnings surprises of lottery winner firms and lottery loser firms. 2-year ahead earnings surprise difference is a significant 1.96% (Panel B, Column 3). I find similar results when I deflate the earnings surprises using standard deviations or use mean analyst forecast rather then median[33]. In untabulated results, I also run 1-year ahead earnings forecast surprises in placebo periods and find no earnings surprises to firms in placebo lottery-winner districts.

## 7 Conclusion

I use a novel identification methodology to investigate the impact of government contract allocation on firm-level investment, profitability and the cross-section of stock market returns. Every time a tie-breaking seniority lottery decision is made in the Democratic Caucus, an experiment is conducted on the electoral districts of effected political representatives. First and the foremost, the lottery outcomes cause shocks on the geographic distribution of federal government contract allocation. In line with predictions of strategic delegation theory, lottery-winner districts are awarded 41% more government contracts than lottery-loser districts each year. This result is robust to controlling for district-level characteristics, district fixed effects and yearly trends in government contract allocation.

To analyze the spillover effects of government contracting, I use the seniority lottery as a source of exogenous variation in district-level government contracting. In particular, I instrument district-level government contracts with seniority lottery outcomes. I find that 1% increase in government contracts to firms from a given district increases investments of uncontracted firms from the same district by 2.85%. This result is robust to controlling for firm-level characteristics, firm fixed effects and yearly trends in firm-level investments.

Geographic shifts in government contracting also impact the cross section of stock market returns. I start by showing how stock prices react to seniority lottery outcomes.

[33] Currently untabulated, available upon request.

I find a 3-day cumulative abnormal return (CAR) difference of 1.4% between firms in lottery-winner and lottery-loser districts. Subsequent to the lottery, firms in lottery-winner districts outperform firms in lottery-loser districts by an economically and statistically significant 5.13% per year, and findings on future firm profitability and earnings forecast errors provide evidence for an underreaction story.

First, firms in lottery-winner districts exhibit 2% higher future profitability and 2% lower future cash flow volatility than firms in lottery-loser districts. Second, I find a 1.24% difference in 1-year ahead earnings surprises between firms in lottery-winner and lottery-loser districts. Third, 30% of the abnormal returns to the seniority lottery long-short portfolio (i.e. long firms in lottery-winner districts and short firms in lottery-loser districts) derives from the first congressional years, and 70% derives from the second congressional years. Fourth, lottery outcomes do not impact stock returns in districts with no government contract allocation in the previous month. In contrast, lottery-winner districts that receive government contracts in the previous month generate annual abnormal returns of 6.06%. Moreover, these abnormal returns increase monotonically with respect to the size of district-level government contracts. I find, for example, an annual abnormal return spread of 9.61% once I compare lottery-winner and lottery-loser districts with high and low government contract allocation in the previous month. Fifth, I compare CARs of contracted firms and uncontracted firms from lottery-winner districts. I identify drifts for both groups of firms after the allocation of government contracts. These drifts are particularly strong for up to twelve months after contract allocation, and they fully disappear subsequently.

My findings have three main implications. First, consistent with strategic delegation theories, senior political representation drives government contract allocation to home districts. Second, government procurement has profound spillover effects on corporate investments, and these investments prove to be very profitable. Third, the stock market does not fully value the ramifications of government procurement decisions. Screening observable spillover effects of government contracts on local firms may therefore improve investment returns.

# Appendix

## A Further explanations on data collection

### A.1 General firm characteristics data

I use yearly COMPUSTAT data to compute firm-level controls. Tobin's Q is assets total (at) plus market value of equity (ME) minus book value of equity (BE), all deflated by assets total. ME is end of year stock price times shares outstanding. BE is common/ordinary equity (CEQ) plus deferred taxes (TXDB) plus investment tax credit (ITCB) minus preferred stock (PSTKRV). I use liquidation value of common equity if common equity is missing. Likewise, I use liquidating value of preferred stock (PSTKL) or preferred/preference stock (capital) (PSTK) if preferred stock (PSTKRV) is missing. Market Capitalization is end of calendar year price times shares outstanding. Market to Book is end of year market capitalization over book value of equity (BE). Debt to Book Value of Assets is sum of debt in current liabilities and long term debt divided by book value of assets. R&D Expenses to Book Value of Assets is research and development expenses divided by book value of assets. HHI is Herfindahl-Hirschamnn Index using 2-digit SIC codes and book value of assets. Number of distinct industries is computed using 2 digit SIC codes. Market Capitalization Share is to total market cap of each portfolio from last year-end divided by total market capitalization of all stocks. Government Contracts Share is total government contracts allocated to a portfolio divided by all government contracts allocated to publicly traded corporations. Government Contracts to sales is total value of government contracts allocated to a given firm in a given year, deflated by that firm's lagged sales (SALE). For all firm characteristics I take yearly averages of portfolio medians.

### A.2 Government contract allocation data

I obtain data on government contract allocation from Bloomberg Government (BGOV) database. BGOV provides data on government contracts that firms receive along with a description of the government agencies that awarded these contracts. BGOV gathers its contract data from the Federal Procurement Data System - Next Generation (FPDS-NG). The FPDS-NG, administered by the US General Services Administration, is the central repository of information on procurement contracts awarded by the US government. If contracts are awarded to subsidiaries of a given corporation, BGOV identifies the parent corporation and assigns contracts accordingly. Specifically, for each government contract, BGOV provides information about the contract-allocating government agency, Bloomberg ticker of the firm that received the contract, the total dollar amount of the contract, and the date the contract was allocated. Bloomberg has a linking table between Bloomberg tickers and CUSIP numbers – this enables me to identify the firms by PERMNO after linking CUSIPs and PERMNOs. I match the BGOV data with the CRSP/COMPUSTAT data using PERMNOs. After matching the samples, I compute the total dollar amount of government contracts allocated to each electoral district or firm for every year. If no contracts are allocated, I set the value to zero. During our sample period, 1,221 different publicly traded firms (by PERMNO) obtained at least one government contract (out of a total of 12,044 distinct publicly traded firms).

### A.3 Congressional district-level data

I collect congressional district-level data from US Census webpage[34]. I define district-level population using data item B01003, district-level per capita income (in 2001 inflation-adjusted dollars) using data item B19301, district-level per capita income using data item B19301, district-level unemployment figures using data item S2301. I compute district-level percent unemployment using S2301 and B01003, and I compute income growth using B01003. As in Cohen, Coval, and Malloy (2012) I log the district-level population, take last six year average district-level per capita income. To merge district-level data and firm-level data, I use zip codes of firm headquarters from COMPUSTAT dataset and map them to electoral districts using Census Bureau relationship files[35].

### A.4 Data used in firm-level investment spillovers regressions

I also use COMPUSTAT data in order to compute capital expenditures to total assets, percent change in number of employees, Tobin's Q, cash flow to assets and debt to assets

[34]This data can be reached on http://ftp2.census.gov/ or individually on http://factfinder.census.gov/

[35]Census Bureau provides linking tables for 109th, 110th, and 113th congress. I update my linking table after 109th congress, and for before 109th congress I use the linking table for 109th congress. Tables can be found at: https://www.census.gov/geo/maps-data/data/

ratios. Tobin's Q is assets total (AT) plus market value of equity (ME) minus book value of equity (BE), all deflated by assets total. ME is end of year stock price times shares outstanding. BE is common/ordinary equity (CEQ) plus deferred taxes (TXDB) plus investment tax credit (ITCB) minus preferred stock (PSTKRV). I use liquidation value of common equity if common equity is missing. Likewise, I use liquidating value of preferred stock (PSTKL) or preferred/preference stock (capital) (PSTK) if preferred stock (PSTKRV) is missing. Finally, cash flow to total assets is CAPEX divided by AT, and percent change in number of employees is computed using EMP. I drop firms with significant (i.e. 10% or more) seasonal or part-time employees to concentrate on more permanent effects.

### A.5 Data used in profitability regressions

I follow Belo, Gala, and Li (2013) and Fama and French (1993) to define the book value of equity as the Compustat book value of common equity (CEQ) plus balance sheet deferred taxes (TXDB) and investment tax credits (ITCB), minus book value of preferred stock. Depending on the availability, I use the redemption (PSTKRV), liquidation (PSTKL), or carrying value of preferred stock (PSTK). When CEQ is unavailable, I use the liquidation value of common equity (CEQL). I define profitability (return on equity, ROE) as Compustat net income divided by lagged book value of equity. Following Hou and Robinson (2006), VA is the ratio of market value of assets market equity plus total assets minus book equity, all divided by book assets. DB is the ratio of dividends (DVC) to lagged book equity. DD is a dummy for nondividend-paying firm (i.e. one if DVC is zero, zero otherwise). I follow Fama and French (2008) and drop firms in the bottom 20th percentile of the cross-sectional distribution of market capitalization (micro cap firms). I also winsorize both tails by 2% to reduce the impact of illiquid stocks and outliers.

## B Further robustness tests

My results show that firms located in lottery-winner districts outperform firms located in lottery-loser districts, and this outperformance is related to a cash flow channel that is fueled by shifts in federal government contracts. In this subsection I delve deeper into the asset pricing implications of the seniority lottery.

Table A1 presents results from my robustness tests. First row of Table A1 compares portfolio returns of luckiest and unluckiest districts. Luckiest (unluckiest) districts are districts, the representatives of which are allocated the most (least) senior positions within their randomization group[36]. Fama-French-Carhart four factor alpha difference between luckiest and unluckiest districts is a statistically and economically significant 7.70% per year. This value is noticeably higher than the four factor alpha difference of 4.60% that is presented in Table 5.

Second and third rows of Table A1 presents winner minus loser portfolio returns from comparing districts of senior and junior legislators that take a part in the seniority lottery. Senior (junior) legislators are those with higher (lower) chamber seniority than the median legislator in our sample[37]. I find no abnormal return difference between lottery-winner and lottery-loser portfolios when I compare districts of junior legislators. There is, however, a significant abnormal return difference between lottery-winner and lottery-loser portfolios once I compare districts of senior legislators. The firms that are represented by senior legislators outperform loser firms by an annual four factor alpha of 4.37%. This result shows that seniority plays a huge role in the effectiveness of legislators.

Fourth and fifth rows of Table A1 present results from examining top committees in Democratic majority and minority years in the House of Representatives. As expected, the four factor alpha difference between lottery-winner and lottery-loser portfolios reach 6.18% per annum during Democratic majority years. This finding is in line with the notion that democrats have more influence during majority years. During Democratic minority years in the House (still including the years when Democrats had majority in the Senate) I also find an abnormal return difference between lottery-winner and lottery-loser portfolios. This difference is a statistically and economically significant 4.10% per year.

Last two columns of Table A1 report results from examining all House committees during majority and minority years. I find that the effect of having a lottery-winner representative fades away once I look at all House committees during Democratic minority

[36]If a group of legislators in Committee X were allocated 4th, 5th, 6th, 7th and 8th committee ranks, I would compare the districts of 4th and 8th as those would be the luckiest and the unluckiest districts in this randomization group.

[37]Median chamber seniority is 4 years in my sample.

years in the House. However, during Democratic majority years in the House having a lottery-winner representative from any of the House committees generates abnormal returns. Lottery-winner portfolio outperforms the lottery-loser portfolio by a statistically and economically significant %7.48 per year once I examine all House committees in Democratic majority years.

The results in this subsection are in line with earlier findings. Lottery-winner minus lottery-loser portfolio generates higher abnormal returns if I compare the luckiest and the unluckiest districts. Representative seniority and Democratic majority years also play a role in the stock market performance difference between lottery-winner and lottery-loser districts.

### B.1 Cross-section of returns

Previous analysis provides evidence on the performance difference between firms that are located in lottery-winner districts and firms that are located in lottery-loser districts. However, the outperformance may derive from latent firm- or industry-characteristics that are not captured by Fama-French-Carhart four factors and time-varying betas. I therefore run a Fama-Macbeth regression of:

$$R_{i,t} = \alpha_0 + \alpha_1 \textit{ Lottery winner}_{i,t} + \alpha_2 X_{i,t-1} + \epsilon_{i,t}, \tag{12}$$

where $R_{i,t}$ denotes excess returns for a given firm in month t. Excess returns are calculated in excess of the risk-free rate, industry benchmarks and characteristics benchmarks. *Lottery winner*$_{i,t}$ dummy is equal to one if firm i's congressional district is a seniority lottery winner in year t. $X_{i,t-1}$ includes lagged firm characteristics such as market value, book-to-market ratio, different specifications for momentum, along with the firm beta.

[Insert Table A2 here]

Table A2 presents the cross-sectional regression results. Columns 1 to 3 show that firms located in lottery-winner districts possess 2.40% higher annual excess returns than lottery loser firms. Columns 4 to 6 show results after industry benchmarking. I apply industry benchmarking using value weighted stock market returns within a firm's two-digit

SIC code. The excess return difference between firms in lottery-winner and lottery-loser districts amounts to an annualized 2.13% after industry benchmarking. Finally, I correct for characteristics benchmarks as in Daniel, Grinblatt, Titman, and Wermers (1997). Columns 7 to 9 show results from characteristic benchmarking. The excess return difference between firms in lottery-winner and lottery-loser districts amounts to an annualized 2.08% after characteristic benchmarking. These results confirm that the excess returns in lottery-winner districts are also robust to equal weighting, controlling for firm characteristics, and correcting for industry and characteristics benchmarks.

## C Within district subcontracting

In this subsection I delve deeper into explaining the within district investment spillovers. I start by analyzing how government contracting fuels within district subcontracting activity. I use district-level government subcontract data, which is publicly available on a U.S. Department of the Treasury website under the Freedom of Information Act[38]. The dataset includes subcontracts allocated to private firms in addition to those allocated to publicly traded firms since 2010. Unlike the BGOV data, the firm subsidiary contracts are not linked to parent companies and the contract amounts are not aggregated in yearly or monthly periods[39]. Nonetheless, for the purposes of this subsection these do not cause any first order issues. I aggregate all government subcontracts allocated to a given district in a given year to compute district-level yearly subcontracts. Then, I analyze whether primary government contracts increase within district-level government subcontracts in lottery-winner and lottery-loser districts[40]. I run Tobit regressions on the below model:

$$Subcontract_{i,t} = \alpha_0 + \alpha_1 Z_{i,t} + \alpha_2 X_{i,t-1} + \gamma_i + \eta_t + \epsilon_{i,t}, \tag{13}$$

where $Subcontract_{i,t}$ denotes the log of total government subcontracts allocated to congressional district i in year t, and $X_{i,t-1}$ contains controls including congressional

[38] The data use in this paper is downloaded on May 25th, 2016 directly from https://www.usaspending.gov/DownloadCenter/Pages/DataDownload.aspx

[39] BGOV uses unique firm identifiers and different contract identifiers than Usaspending.gov. I was therefore not able to match these two datasets on the contract-level.

[40] Usaspending.gov subcontracting dataset provides information on the congressional district of each subcontracted firm ($subawardee_congressionaldistrict$, $subawardee_state$), subcontract year ($subcontract_year$) and the subcontract amount ($subaward_amount$).

district level log per capita income over the past six years, along with lagged values of congressional-district level per capita income growth, log of congressional district population and unemployment rate in congressional district i. $Z_{i,t}$ is either $Contracts_{i,t}$ or $Contracts\ IV_{i,t}$. Lastly, $\gamma_i$ and $\eta_t$ denote congressional district and year dummies.

[Insert Table A3 here]

I present the results from my district-level subcontract allocation regressions in Columns 1 and 2 of Table A3. I find that one standard deviation increase in instrumented district-level total government contracts causes a 0.14[41] standard deviations increase in district-level subcontracts. Similarly, a standard deviation increase in the instrumented district-level total government contracts ($Contracts\ IV_{i,t}$) causes a 0.12[42] standard deviations increase in district-level subcontracts. These results are supportive of the notion that at least a part of the cash flow channel can be explained by government subcontracting activity within each district.

# D Government contract allocation to previous districts

Do political representatives shift government contracts to their districts, because they are better informed about these districts? To provide empirical evidence on this question, I identify lottery-winner and lottery-loser legislators that used to serve other districts before being elected in their current districts. I compare the previous districts of these lottery-winner and lottery-loser legislators in terms of government contract allocation. To that end, I run Tobit regressions on the below model:

$$Contract_{i,t} = \alpha_0 + \alpha_1 Placebo\ lottery\text{-}winner\ district_{i,t} + \alpha_2 X_{i,t-1} + \gamma_i + \eta_t + \epsilon_{i,t}, \quad (14)$$

where $Contract_{i,t}$ denotes the log of total government contracts allocated to formerly-represented congressional district i in year t, $Placebo\ lottery\text{-}winner\ district_{i,t}$ is equal to one for previous districts of lottery-winner legislators, and zero for the previous districts of

[41] sd($Contracts_{i,t}$)*coef/sd($Subcontract_{i,t}$) = 7.098119*0.084575 / 4.420319=0.14.

[42] sd($Contracts\ IV_{i,t}$)*coef/sd($Subcontract_{i,t}$) = 27.24649*.1204738 / 4.420319=0.12.

lottery-loser legislators. $X_{i,t-1}$ contains controls including congressional district level log per capita income over the past six years, along with lagged values of congressional-district level per capita income growth, log of congressional district population and unemployment rate in congressional district i. Lastly, $\gamma_i$ and $\eta_t$ denote congressional district and year dummies.

I present the results in Column 3 of Table A3. I find no difference between former districts of lottery-winners and lottery-losers in terms of government contract allocation. This result is not supportive of the hypothesis that political representatives shift contracts to their districts due to information advantage.

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Table 1: **Summary statistics**

This table reports summary statistics for firms that are in lottery-loser, lottery-winner and remaining districts. **Panel A** presents government contracting characteristics after the lottery, whereas **Panel B** and **Panel C** present firm-level and district-level characteristics before the lottery. Total market capitalization share denotes the share of lottery-loser, lottery-winner and remaining districts in the stock market, measured by their total year-end market capitalizations. Total government contract share is government contracts allocated to firms in lottery-loser, lottery-winner and remaining districts as a percentage of total government contracts allocated to all publicly traded firms. Government contracts to sales denotes time series average of the mean government contracts to lagged sales ratios in lottery-loser, lottery-winner and remaining districts. For the remaining variables, I present yearly averages of portfolio medians, where portfolios include all firms in lottery-loser, lottery-winner and remaining districts. Sample period is between 2001m1 and 2012m12. Variable descriptions for **Panels B** and **C** are in Appendix subsections A.1 and A.3.

Panel A: Government contracting characteristics after the lottery

| | *Firms in* Lottery-loser districts | *Firms in* Lottery-winner districts | *Firms in* Remaining districts |
|---|---|---|---|
| Total Market Capitalization Share | 14.04% | 8.55% | 77.41% |
| Total Government Contracts Share | 5.09% | 16.36% | 78.55% |
| Government Contracts to Sales | 3.96% | 20.13% | 10.13% |

Panel B: Firm-level characteristics before the lottery

| | *Firms in* Lottery-loser districts | *Firms in* Lottery-winner districts | *Firms in* Remaining districts |
|---|---|---|---|
| Tobin's Q | 1.49 | 1.47 | 1.41 |
| Market Capitalization (log) | 12.41 | 12.57 | 12.69 |
| Market to Book | 1.92 | 1.98 | 1.86 |
| PPE to Book Value of Assets | 32.94% | 36.75% | 34.52% |
| Debt to Book Value of Assets | 12.57% | 12.60% | 13.87% |
| R&D Expenses to Assets | 5.27% | 4.81% | 4.70% |
| HHI | 0.05 | 0.05 | 0.05 |
| Capex to Assets | 2.28% | 2.77% | 2.68% |

Panel C: District-level characteristics before the lottery

| | Lottery-loser districts | Lottery-winner districts | Remaining districts |
|---|---|---|---|
| Per capita income | 10.10 | 10.17 | 10.14 |
| Income growth | 4.44% | 3.94% | 3.05% |
| Population | 13.40 | 13.39 | 13.43 |
| Unemployment | 6.63% | 7.10% | 7.58% |

Table 2: **Difference-in-differences test and first-stage regressions on government procurement**
**Panel A** presents results from my difference-in-differences test, in which I regress log of total government contracts allocated to congressional district i in year t using the below specification:

$$Contracts_{i,t} = \alpha_0 + \alpha_1 Lottery\ winner_i + \alpha_2 Post\text{-}lottery_{i,t} + \alpha_3 Lottery\ winner_i \times Post\text{-}lottery_{i,t} + \gamma_i + \eta_t + \epsilon_{i,t}.$$

*Lottery winner*$_i$ is a time invariant dummy that denotes whether congressional district i is a lottery-winner or a lottery-loser district. For a given district, *Post-lottery*$_{i,t}$ is equal to one after the lottery outcome and zero before. $\gamma_i$ and $\eta_t$ are district and year dummies. For this panel, the sample period is between 1996 and 2012. **Panel B** contains my first stage panel regressions after the lottery. I regress log of total government contracts allocated to congressional district i in year t using the below specification:

$$Contracts_{i,t} = \alpha_0 + \alpha_1 Lottery\ winner_{i,t} + \alpha_2 X_{i,t-1} + \gamma_i + \eta_t + \epsilon_{i,t}.$$

*Lottery winner*$_{i,t}$ is a dummy that denotes whether congressional district i is a lottery winner in year t or a lottery loser. $X_{i,t-1}$ contains controls including congressional district level log per capita income over the past 6 years, lagged values of congressional-district level per capita income growth, log of congressional district population and unemployment rates for congressional district i in year t. $\gamma_i$ and $\eta_t$ are district and year dummies. In the placebo test (presented in Column 3 of Panel B) I apply lottery outcomes to two previous congresses (i.e. four previous years), during which the legislators are not yet at their corresponding House committees. The standard errors are clustered in congressional district years. For this panel, the sample period is 2001 to 2012. ***, **, and * denote statistical significance at 1%, 5% and 10% levels respectively. Variable descriptions are in Appendix subsections A.3 and A.4.

Panel A: Difference-in-differences test

| | *District-level* Government Contracts |
|---|---|
| Lottery-winner district | -0.34 |
| | (0.13) |
| Post-lottery | 0.73*** |
| | (0.00) |
| Lottery-winner district x Post-lottery | 0.75*** |
| | (0.00) |
| Intercept | -46.12*** |
| | (0.00) |
| District dummies and year dummies | Y |
| Observations | 1,460 |
| R-squared | 0.29 |

Panel B: Instrumenting government contracts with lottery outcomes

| | *District-level* Government Contracts | *District-level* Government Contracts | *District-level* Government Contracts (Placebo Period) |
|---|---|---|---|
| | (1) | (2) | (3) |
| Lottery-winner district | 0.41*** | 0.33** | |
| | (0.00) | (0.02) | |
| Placebo lottery-winner district | | | -0.23 |
| | | | (0.95) |
| Population | | 17.20*** | |
| | | (0.00) | |
| Per-capita income | | 0.66*** | |
| | | (0.00) | |
| Income growth | | 4.36*** | |
| | | (0.00) | |
| Unemployment rate | | -0.39*** | |
| | | (0.00) | |
| Intercept | -39.90*** | -269.26*** | -4.19*** |
| | (0.00) | (0.00) | (0.00) |
| District dummies and year dummies | Y | Y | Y |
| Observations | 1,190 | 734 | 258 |
| R-squared | 0.32 | 0.33 | 0.32 |

Table 3: **Second-stage regressions of firm-level investments**

**Panel A** presents results from regressions of firm-level investments on seniority lottery outcomes and district-level government contracts. **Panel B** reruns **Panel A** regressions in placebo periods, and **Panel C** reruns **Panel A** regressions by using only the firms that are not given any government contracts. All panels present results from the below specification:

$$Y_{i,t} = \beta_0 + \beta_1 Z_{i,t} + \beta_2 X_{i,t-1} + \zeta_i + \eta_t + \epsilon_{i,t},$$

where $Y_{i,t}$ is firm-level capital expenditures deflated by book value of assets for a given firm i in year t. $X_{i,t-1}$ contains firm-specific controls including Tobin's Q, cash flows and leverage. $\zeta_i$ and $\eta_t$ are industry and year dummies. The definition of $Z_{i,t}$ changes in each column. In Column 1, $Z_{i,t}$ is a lottery-winner dummy that is equal to one if firm i's congressional district is a seniority lottery winner in year t. In Column 2, $Z_{i,t}$ is the exogenous variation in district-level government contracts ($Contracts\ IV_{i,t}$), which is computed as:

$$Contracts\ IV_{i,t} = \widehat{Contracts}_{i,t} = \widehat{\alpha_0} + \widehat{\alpha_1} Lottery\ winner_{i,t} + \gamma_i + \eta_t + \epsilon_{i,t}.$$

The first stage results of the instrument is presented in Column 1 of Table 2, Panel B. In Column 3, $Z_{i,t}$ is uninstrumented total government contracts allocated to district i in year t, i.e. $Contracts_{i,t}$. In the placebo test I apply lottery outcomes to two previous congresses (i.e. four previous years), during which the legislators are not yet at their corresponding House committees. The standard errors are clustered in congressional district years. Sample period is 2001m1 to 2012m12. ***, **, and * denote statistical significance at 1%, 5% and 10% levels respectively. Variable descriptions are in Appendix subsections A.3 and A.4.

Panel A: Regressions of Capex to Assets (%)

| | (1) | (2) | (3) |
|---|---|---|---|
| Lottery-winner district | 0.93*** | | |
| | (0.01) | | |
| District-level government contracts (Instrumented) | | 6.80*** | |
| | | (0.01) | |
| District-level government contracts | | | -0.02 |
| | | | (0.57) |
| Tobin's Q | 0.71*** | 0.71*** | 0.72*** |
| | (0.00) | (0.00) | (0.00) |
| Cash flow to assets | 0.65 | 0.65 | 0.66 |
| | (0.12) | (0.12) | (0.11) |
| Debt to assets | -6.85*** | -6.85*** | -6.79*** |
| | (0.00) | (0.00) | (0.00) |
| Intercept | 5.10*** | -69.06** | 6.65*** |
| | (0.00) | (0.01) | (0.00) |
| Firm dummies and year dummies | Y | Y | Y |
| Observations | 5,231 | 5,231 | 5,231 |
| R-squared | 0.76 | 0.76 | 0.76 |

Panel B: Placebo period regressions of Capex to Assets (%)

| | (1) | (2) | (3) |
|---|---|---|---|
| Lottery-winner district | -0.57 | | |
| | (0.64) | | |
| District-level government contracts (Instrumented) | | -0.15 | |
| | | (0.64) | |
| District-level government contracts | | | 0.02 |
| | | | (0.57) |
| Tobin's Q | 0.29 | 0.29 | 0.29 |
| | (0.15) | (0.15) | (0.19) |
| Cash flow to assets | 1.84 | 1.84 | 1.78 |
| | (0.21) | (0.21) | (0.22) |
| Debt to assets | -8.66* | -8.66* | -8.60* |
| | (0.05) | (0.05) | (0.06) |
| Intercept | 7.42*** | 7.63** | 6.40*** |
| | (0.01) | (0.02) | (0.00) |
| Firm dummies and year dummies | Y | Y | Y |
| Observations | 789 | 789 | 789 |
| R-squared | 0.77 | 0.77 | 0.77 |

Panel C: Regressions of Capex to Assets (%) using firms that do not receive any government contracts

| | (1) | (2) | (3) |
|---|---|---|---|
| Lottery-winner district | 1.18*** | | |
| | (0.01) | | |
| District-level government contracts (Instrumented) | | 2.85*** | |
| | | (0.01) | |
| District-level government contracts | | | -0.04 |
| | | | (0.36) |
| Tobin's Q | 0.82*** | 0.82*** | 0.82*** |
| | (0.00) | (0.00) | (0.00) |
| Cash flow to assets | 0.63 | 0.63 | 0.64 |
| | (0.15) | (0.25) | (0.25) |
| Debt to assets | -8.21*** | -8.21*** | -8.06*** |
| | (0.00) | (0.00) | (0.00) |
| Intercept | 6.39*** | -14.42* | 7.23*** |
| | (0.00) | (0.08) | (0.00) |
| Firm dummies and year dummies | Y | Y | Y |
| Observations | 4,157 | 4,157 | 4,157 |
| R-squared | 0.77 | 0.77 | 0.77 |

Table 4: **Seniority lottery announcement returns**

This table shows results on cumulative abnormal returns after seniority lottery announcements. Abnormal returns are calculated above a market model, in which I estimate the coefficients over a 255-day period ending 46 days before the lottery announcement. **Panel A** compares the average announcement returns to firms in lottery-winner and lottery-loser districts. **Panel B** runs multivariate regressions of 3-day cumulative abnormal returns. Lottery winner is a dummy that denotes that a given firm's congressional district is lottery-winner in a given year. Controls include log of book-to-market and log of market equity calculated at the previous year-end. P-values are based on standard errors that are clustered in district years, and they are reported in parentheses. Sample period is 2001m1 to 2012m12. ***, **, and * denote statistical significance at 1%, 5% and 10% levels respectively.

| Panel A : Univariate Comparisons of CARs | | | | Panel B : Multivariate Comparisons of CARs | | |
|---|---|---|---|---|---|---|
| | Lottery losers | Lottery winners | Wi - Lo | | CAR (-1,+1) | CAR (-1,+1) |
| | (1) | (2) | (3) | | (1) | (2) |
| CAR (-1,+1) | 0.002 | 0.016*** | 0.014*** | Lottery winner | 0.011** | 0.011** |
| | (0.52) | (0.00) | (0.00) | | (0.02) | (0.03) |
| CAR (-1,+3) | 0.005 | 0.027*** | 0.022*** | Size | Y | Y |
| | (0.12) | (0.00) | (0.00) | Book-to-market | N | Y |
| CAR (-1,+7) | 0.000 | 0.021*** | 0.021*** | Intercept | 0.010 | 0.006 |
| | (0.99) | (0.00) | (0.00) | | (0.39) | (0.59) |
| CAR (-1,+14) | -0.002 | 0.018*** | 0.020*** | Observations | 865 | 865 |
| | (0.59) | (0.00) | (0.00) | R-squared | 0.02 | 0.03 |

Table 5: **Risk-adjusted portfolio returns**

**Panel A** shows results from monthly regressions of risk-adjusted, value-weighted returns to lottery-winner and lottery-loser portfolios along with their difference, i.e., Wi-Lo. Lottery-winner (lottery-loser) portfolio consists of firms located in congressional districts that are seniority lottery winners (losers). CAPM alpha is computed using the CAPM model as in Sharpe (1964) and Jensen (1968). Fama-French-Carhart four factors alpha denotes portfolio alphas using Fama-French-Carhart model from Carhart (1997). Ferson-Harvey conditional model alpha is computed using time varying betas as in Ferson and Harvey (1999). Political cycle proxies are dummies for Democratic President, Senate and House of Representatives. In the placebo test I apply lottery outcomes to previous congressional years (i.e. two previous years), during which the legislators are not yet at their corresponding House committees. **Panel B** includes time series regressions of abnormal returns to the Wi-Lo, i.e. the long-short, portfolio. Abnormal returns are computed using the Ferson-Harvey conditional model as in Ferson and Harvey (1999). First and second years of congress are dummies that are equal to one during the first and second years of each congress. Returns are annualized and in percentages. P-values are based on standard errors, robust to conditional heteroskedasticity and serial correlation as in Newey and West (1987), and they are reported in parentheses. Sample period is 2001m1 to 2012m12. ***, **, * denotes statistical significance at 1%, 5% and 10% levels respectively.

Panel A: Portfolio returns

| | Lottery losers | Lottery winners | Wi - Lo |
|---|---|---|---|
| | (1) | (2) | (3) |
| CAPM alpha | -3.06*** | 1.37 | 4.43** |
| | (0.01) | (0.36) | (0.01) |
| Fama-French-Carhart four factors alpha | -1.46 | 2.68* | 4.14** |
| | (0.36) | (0.08) | (0.02) |
| Ferson-Harvey conditional model alpha | -1.28 | 3.86** | 5.13** |
| | (0.51) | (0.03) | (0.01) |
| Ferson-Harvey conditional model alpha | -2.05 | 3.19*** | 5.24*** |
| *including political cycles* | (0.14) | (0.01) | (0.00) |
| Placebo period alpha | 1.62 | 1.04 | -0.58 |
| | (0.80) | (0.71) | (0.91) |

Panel B: Wi-Lo portfolio abnormal returns across congressional years

| | Wi - Lo AR |
|---|---|
| | (1) |
| First years of congress | 3.08* |
| | (0.07) |
| Second years of congress | 7.22** |
| | (0.03) |
| Observations | 143 |
| R-squared | 0.05 |

Table 6: **Double-sorted portfolio returns**
This table shows results from monthly regressions of risk-adjusted returns to lottery-winner and lottery-loser portfolios in low and high government contract districts. Lottery-winner (lottery-loser) portfolio consists of firms located in congressional districts that are seniority lottery winners (losers). **Panel A** reports results from comparing districts that receive and do not receive government contracts in the previous month. **Panel B** investigates only the districts that receive government contracts in the previous month. High (low) government contract districts are those that are allocated more (less) government contracts than the median lottery-winner or lottery-loser district during the month before. Risk-adjusted returns are presented in value-weighted form and are computed using time varying betas as in Ferson and Harvey (1999). Returns are annualized and in percentages. P-values are based on standard errors, robust to conditional heteroskedasticity and serial correlation as in Newey and West (1987), and they are reported in parentheses. Sample period is 2001m1 to 2012m12. ***, **, * denotes statistical significance at 1%, 5% and 10% levels respectively.

Panel A: Comparing districts that receive and do not receive government contracts

| | Districts with No Government Contract Allocation | Districts with Government Contract Allocation |
|---|---|---|
| Lottery loser portfolio alpha | 0.56 | -0.82 |
| | (0.82) | (0.65) |
| Lottery winner portfolio alpha | 1.30 | 6.06** |
| | (0.21) | (0.02) |

Panel B: Looking only at districts that receive government contracts

| | Districts with Low Government Contract Allocation | Districts with High Government Contract Allocation |
|---|---|---|
| Lottery loser portfolio alpha | -2.76 | 1.52 |
| | (0.47) | (0.54) |
| Lottery winner portfolio alpha | 4.78** | 6.41*** |
| | (0.03) | (0.01) |
| Spread | 9.61*** | |
| | (0.01) | |

Table 7: **Longevity of abnormal returns in lottery-winner districts**

This table shows cumulative abnormal returns (CARs) of firms that receive government contracts, and CARs of firms that are from the same districts but do not receive any government contracts. It examines firms only in lottery-winner districts. I form portfolios of both groups of firms after lottery announcements and before government contract allocation. **Panel A** shows CARs from three years before the government contract allocation up to three years after. **Panel B** shows monthly abnormal returns during the 12 months before and after. Risk-adjusted returns are presented in value-weighted form and are computed using time varying betas as in Ferson and Harvey (1999). Returns in **Panel B** are presented in monthly form and in percentages. P-values are based on standard errors, robust to conditional heteroskedasticity and serial correlation as in Newey and West (1987), and they are reported in parentheses. Sample period is 2001m1 to 2012m12. ***, **, * denotes statistical significance at 1%, 5% and 10% levels respectively.

Panel A: CARs before and after the allocation of government contracts

| Timeline relative to government contract allocation | Contracted firms from lottery-winner districts | Uncontracted firms from lottery-winner districts | Timeline relative to government contract allocation (continued) | Contracted firms from lottery-winner districts (continued) | Uncontracted firms from lottery-winner districts (continued) |
|---|---|---|---|---|---|
| 36 months before | 1.00 | 1.00 | 0 months after | 1.18 | 1.09 |
| 30 months before | 1.03 | 1.02 | 6 months after | 1.21 | 1.11 |
| 24 months before | 1.01 | 1.03 | 12 months after | 1.25 | 1.14 |
| 18 months before | 1.05 | 1.05 | 18 months after | 1.28 | 1.15 |
| 12 months before | 1.08 | 1.06 | 24 months after | 1.27 | 1.15 |
| 6 months before | 1.13 | 1.08 | 30 months after | 1.30 | 1.16 |
| | | | 36 months after | 1.29 | 1.16 |

Panel B: Monthly abnormal returns before and after the allocation of government contracts

| Timeline relative to government contract allocation | Contracted firms from lottery-winner districts | Uncontracted firms from lottery-winner districts | Timeline relative to government contract allocation (continued) | Contracted firms from lottery-winner districts (continued) | Uncontracted firms from lottery-winner districts (continued) |
|---|---|---|---|---|---|
| 12 months before | 0.87 | 0.28 | 0 months after | 0.94* | 0.39** |
| | (0.19) | (0.15) | | (0.07) | (0.04) |
| 11 months before | 0.55 | 0.21 | 1 months after | 0.63 | 0.60** |
| | (0.40) | (0.27) | | (0.25) | (0.02) |
| 10 months before | 0.99** | 0.42* | 2 months after | 0.41 | 0.50** |
| | (0.05) | (0.09) | | (0.34) | (0.01) |
| 9 months before | 0.94 | 0.20 | 3 months after | 0.52 | 0.44* |
| | (0.13) | (0.38) | | (0.44) | (0.07) |
| 8 months before | 0.95* | 0.24 | 4 months after | 0.37 | 0.26 |
| | (0.06) | (0.16) | | (0.48) | (0.28) |
| 7 months before | 0.69 | 0.28 | 5 months after | 0.35 | 0.29 |
| | (0.20) | (0.16) | | (0.48) | (0.35) |
| 6 months before | 0.62 | 0.07 | 6 months after | 0.92 | 0.45* |
| | (0.26) | (0.72) | | (0.10) | (0.09) |
| 5 months before | 1.08 | 0.33 | 7 months after | 0.65 | 0.29 |
| | (0.17) | (0.16) | | (0.14) | (0.19) |
| 4 months before | 0.32 | 0.21 | 8 months after | 0.41 | 0.42 |
| | (0.46) | (0.18) | | (0.41) | (0.10) |
| 3 months before | 0.09 | 0.17 | 9 months after | 0.24 | 0.17 |
| | (0.85) | (0.38) | | (0.70) | (0.46) |
| 2 months before | 0.88 | 0.17 | 10 months after | 0.52 | 0.13 |
| | (0.12) | (0.45) | | (0.33) | (0.45) |
| 1 months before | 0.77 | -0.02 | 11 months after | -0.21 | 0.38* |
| | (0.26) | (0.92) | | (0.69) | (0.05) |
| | | | 12 months after | 1.21* | 0.05 |
| | | | | (0.09) | (0.79) |

Table 8: **Future firm profitability**

This table explores the relationship between the seniority lottery and cash flows (mean and volatility). In **Panel A**, I run Fama-Macbeth regressions on the following specification:

$$ROE_{i,t+1} = \alpha_0 + \alpha_1 Lottery\ winner_{i,t} + \alpha_2 V_{i,t}/A_{i,t} + \alpha_3 DD_{i,t} + \alpha_{44} D_{i,t}/B_{i,t-1} + \alpha_5 ROE_{i,t} + \epsilon_{i,t+1},$$

where $Lottery\ winner_{i,t}$ is a dummy that is equal to one if firm i's congressional district is a seniority lottery winner in year t, ROE denotes return on equity defined as net income to book-equity ratio, $V_{i,t}/A_{i,t}$ is the ratio of market value of assets to book-value of assets, $DD_{i,t}$ is a dummy for nondividend-paying firms, $D_{i,t}/B_{i,t-1}$ is the ratio of dividend payments to book value of equity. **Panel B** reports results from the Fama-Macbeth regression of $\epsilon^2_{i,t+1}$ , where $\epsilon_{i,t+1}$ is the residual from the first stage regression in Column 3 of Panel A. P-values are based on standard errors, robust to serial correlation as in Newey and West (1987), and they are reported in parentheses. Sample period is 2001m1 to 2012m12. ***, **, * denotes statistical significance at 1%, 5% and 10% levels respectively. Variable descriptions are in Appendix subsection A.5.

Panel A: Regressions on future profitability

| | (1) | (2) | (3) |
|---|---|---|---|
| Lottery winner | 0.03*** | 0.03*** | 0.02* |
| | (0.00) | (0.00) | (0.05) |
| Market-to-book | | -0.31 | 0.32 |
| | | (0.76) | (0.66) |
| Nondividend-paying firm dummy | | -0.09*** | -0.06*** |
| | | (0.00) | (0.00) |
| Dividend payments to book equity | | 1.07*** | 0.35* |
| | | (0.00) | (0.09) |
| Return on equity | | | 0.44*** |
| | | | (0.00) |
| Intercept | 0.01 | 0.05* | 0.02 |
| | (0.70) | (0.09) | (0.27) |
| Observations | 7,498 | 7,001 | 7,000 |
| R-squared | 0.002 | 0.072 | 0.247 |
| Number of groups | 12 | 12 | 12 |

Panel B: Regressions on volatility of future profitability

| | (1) |
|---|---|
| Lottery winner | -0.02** |
| | (0.03) |
| Intercept | 0.11*** |
| | (0.00) |
| Observations | 7,000 |
| R-squared | 0.003 |
| Number of groups | 12 |

Table 9: **Earnings surprises**
This table shows results from regressions of earnings surprises using the below specification:

$$Surprise_{i,t} = \alpha_0 + \alpha_1 Lottery\ winner_{i,t} + \alpha_2 X_{i,t-1} + \eta_t + \epsilon_{i,t},$$

where $Lottery\ winner_{i,t}$ is a dummy that is equal to one if firm i's congressional district is a seniority lottery winner in year t, $X_{i,t-1}$ includes log book-to-market and log market equity calculated at the previous year-end, and $\eta_t$ is year dummies. The 1- (2-) year ahead earnings surprise is defined as the actual EPS minus the I/B/E/S median analyst forecast 8 (20) months prior to the end of forecast period, scaled by the lagged stock price or standard deviation in analyst forecasts. **Panel A** presents results on 1-year ahead earnings surprises, **Panel B** presents results on 2-years ahead earnings surprises. Standard errors are clustered in congressional district years. Sample period is 2001m1 to 2012m12. ***, **, * denotes statistical significance at 1%, 5% and 10% levels respectively.

Panel A: 1-year ahead earnings

| | Earnings surprise deflated by stock price (in %) | | | Earnings surprise deflated by standard deviation of forecasts | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Lottery winner | 1.16* | 1.30** | 1.23** | 0.72** | 0.78** | 0.73** |
| | (0.07) | (0.04) | (0.05) | (0.02) | (0.01) | (0.02) |
| Book-to-market | | -2.30*** | -1.86*** | | -0.68*** | -0.41** |
| | | (0.00) | (0.00) | | (0.00) | (0.04) |
| Size | | | 0.78*** | | | 0.59*** |
| | | | (0.00) | | | (0.00) |
| Intercept, year dummies | Y | Y | Y | Y | Y | Y |
| Observations | 6,143 | 5,894 | 5,894 | 5,301 | 5,089 | 5,089 |
| R-squared | 0.009 | 0.015 | 0.018 | 0.027 | 0.031 | 0.038 |

Panel B: 2-year ahead earnings

| | Earnings surprise deflated by stock price (in %) | | | Earnings surprise deflated by standard deviation of forecasts | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Lottery winner | 2.16** | 2.09** | 1.96* | 1.57** | 1.71** | 1.66** |
| | (0.04) | (0.05) | (0.05) | (0.04) | (0.03) | (0.04) |
| Book-to-market | | -2.86** | -2.17* | | -0.99*** | -0.73** |
| | | (0.03) | (0.07) | | (0.00) | (0.02) |
| Size | | | 1.36*** | | | 0.71*** |
| | | | (0.01) | | | (0.00) |
| Intercept, year dummies | Y | Y | Y | Y | Y | Y |
| Observations | 5,391 | 5,192 | 5,192 | 4,608 | 4,431 | 4,431 |
| R-squared | 0.002 | 0.006 | 0.009 | 0.023 | 0.025 | 0.027 |

Table A1: **Robustness tests**

This table shows results from monthly regressions of Wi-Lo portfolio abnormal returns. Wi-Lo portfolio abnormal returns denote abnormal returns from longing lottery-winner districts and shorting lottery-loser districts. To adjust for risk, I compute four-factor alphas using Fama-French-Carhart model from Carhart (1997). Luckiest and unluckiest districts are districts of highest and lowest ranked representatives in matching randomization groups. Senior (junior) representatives have more (less) chamber seniority than the median representative in the sample. Democratic majority years are the years when Democrats had majority in the House. All committees denote all committees in the House of Representatives. Top committees are as in Cohen et al. (2011). Returns are annualized and presented in percentages. P-values are based on standard errors, robust to conditional heteroscedasticity and serial correlation as in Newey and West (1987), and they are reported in parentheses. Sample period is 2001m1 to 2012m12. ***, **, and * denote statistical significance at 1%, 5% and 10% levels respectively.

| *Seniority lottery results from comparing:* | Wi - Lo abnormal returns (EW) | Wi - Lo abnormal returns (VW) |
|---|---|---|
| Luckiest districts vs. unluckiest districts | 1.20 | 7.70*** |
| | (0.19) | (0.00) |
| Districts of junior political representatives | 0.66 | 2.79 |
| | (0.78) | (0.46) |
| Districts of senior political representatives | 3.46*** | 4.37** |
| | (0.00) | (0.03) |
| Districts of political representatives that are in top House committees | 3.08** | 4.10** |
| *during Democratic minority years in the House* | (0.01) | (0.03) |
| Districts of political representatives that are in top House committees | 1.59 | 6.18* |
| *during Democratic majority years in the House* | (0.22) | (0.05) |
| Districts of political representatives that are in any of the House committees | 1.26 | 1.78 |
| *during Democratic minority years in the House* | (0.31) | (0.30) |
| Districts of political representatives that are in any of the House committees | 1.19 | 7.48** |
| *during Democratic majority years in the House* | (0.31) | (0.03) |

Table A2: **Cross-sectional regressions**

This table shows results from monthly Fama-Macbeth regressions of excess stock returns on lagged firm characteristics. Lottery winner is a dummy that denotes that a given firm's congressional district is a seniority lottery winner. Beta is the firm-level market beta computed from daily returns within the month. Size is the natural log of firm size, Book-to-market is the natural log of firm book-to-market ratio, Momentum is cumulated 12 months returns. Ret 2-3, Ret 4-6, and Ret 7-12 are cumulated returns from prior 2-3, prior 4-6, prior 7-12 months. Industry benchmarking is done in excess of value weighted stock market returns within two-digit SIC code. Characteristic-based benchmarks are as in Daniel, Grinblatt, Titman, and Wermers (1997). Returns are annualized and in percentages. P-values are based on standard errors, robust to conditional heteroskedasticity and serial correlation as in Newey and West (1987), and they are reported in parentheses. Sample period is 2001m1 to 2012m12. ***, **, * denotes statistical significance at 1%, 5% and 10% levels respectively.

| | Firm return in excess of *risk-free rate* | | | Firm return in excess of *industry benchmarks* | | | Firm return in excess of *characteristics-based benchmarks* | | |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| Lottery winner | 2.29** | 1.98** | 2.40*** | 2.04*** | 1.71*** | 2.13*** | 1.78** | 1.73** | 2.08** |
| | (0.01) | (0.03) | (0.00) | (0.00) | (0.01) | (0.00) | (0.04) | (0.04) | (0.01) |
| Beta, Size, Book-to-Market | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Mom | N | Y | N | N | Y | N | N | Y | N |
| Ret 2-3, Ret 4-6, Ret 7-12 | N | N | Y | N | N | Y | N | N | Y |
| Intercept | 9.09* | 15.15** | 5.98 | 2.49 | 8.74* | -0.31 | -1.35 | 6.19 | -2.70 |
| | (0.06) | (0.03) | (0.24) | (0.32) | (0.07) | (0.90) | (0.54) | (0.17) | (0.30) |
| Observations | 116,104 | 110,644 | 110,153 | 104,728 | 104,338 | 104,234 | 104,728 | 104,338 | 104,234 |
| R-squared | 0.041 | 0.053 | 0.066 | 0.033 | 0.042 | 0.054 | 0.034 | 0.042 | 0.054 |
| Number of groups | 141 | 141 | 141 | 141 | 141 | 141 | 141 | 141 | 141 |

Table A3: **Within district subcontracting and government contract allocation to previous districts** This table explores within district subcontracting activity and government contract allocation to previous districts. In Column 1 and Column 2, I run Tobit regressions on the following specification:

$$Subcontract_{i,t} = \alpha_0 + \alpha_1 Z_{i,t} + \alpha_2 X_{i,t-1} + \gamma_i + \eta_t + \epsilon_{i,t},$$

where $Subcontract_{i,t}$ denotes the log of total government subcontracts allocated to congressional district i in year t, and $X_{i,t-1}$ contains controls including congressional district level log per capita income over the past six years, along with lagged values of congressional-district level per capita income growth, log of congressional district population and unemployment rate in congressional district i. $Z_{i,t}$ is $Contracts_{i,t}$ and $Contracts\ IV_{i,t}$ in Columns 1 and 2 respectively. Lastly, $\gamma_i$ and $\eta_t$ denote congressional district and year dummies. Column 3 follows the same models as Table 2, but compares the former districts of lottery-winner and lottery-loser legislators. Therefore, Placebo lottery-winner district dummy is equal to one for previous districts of lottery-winner legislators, and zero for the previous districts of lottery-loser legislators. P-values are based on standard errors that are clustered in district years, and they are reported in parentheses. Sample periods for Column 1 and Column 2 are 2010 to 2012. ***, **, * denotes statistical significance at 1%, 5% and 10% levels respectively.

| | *Within District* Government Subcontracts | *Within District* Government Subcontracts | *District-level* Government contracts to *Previous districts* |
|---|---|---|---|
| | (1) | (2) | (3) |
| District-level government contracts | 0.08** | | |
| | (0.03) | | |
| District-level government contracts (Instrumented) | | 0.02* | |
| | | (0.08) | |
| Placebo lottery-winner district | | | 0.17 |
| | | | (0.29) |
| Controls (Population, Per-capita income, Income growth, Unemployment rate) | Y | Y | Y |
| District and year dummies | Y | Y | Y |
| Intercept | -99.74*** | -106.78*** | -2,016.62*** |
| | (0.00) | (0.00) | (0.00) |
| Observations | 159 | 159 | 100 |
| R-squared | 0.02 | 0.02 | 0.37 |

Figure 1: **Winners and losers of the seniority lottery in 2009**
This figure reports lottery-winner and lottery-loser districts from year 2009. ZIP codes in lottery-winner districts are shown in green circles, and ZIP codes in lottery-winner districts are shown in red circles. Darker gray reflects higher population.

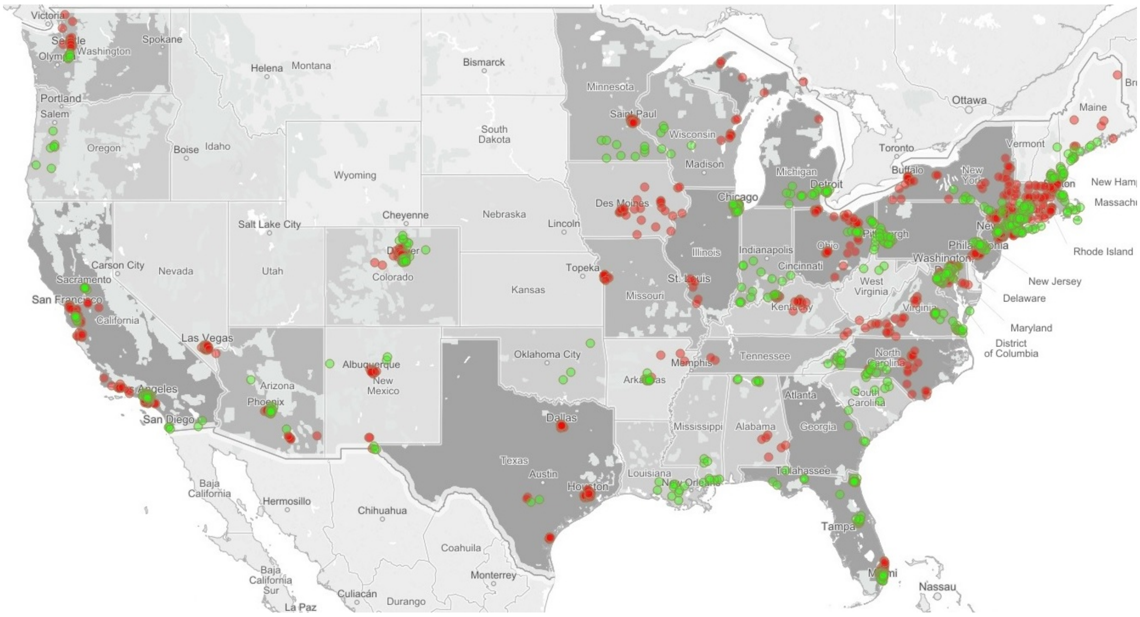

Figure 2: **Government contract allocation to lottery-winner and lottery-loser districts**
This figure reports total government contract allocation to lottery-winner and lottery-loser districts in a given year.

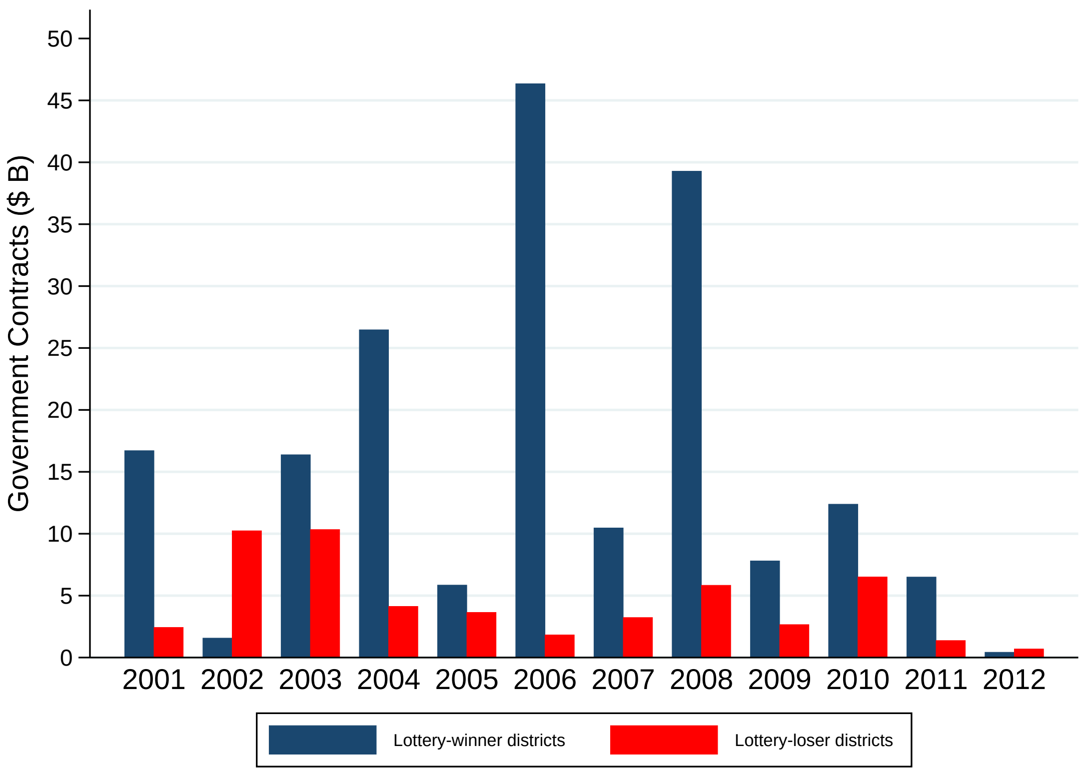

Figure 3: **Cumulated difference between lottery-winner and lottery-loser contracts**
This figure reports the cumulated difference between government contracts to lottery-winner and lottery-loser districts.

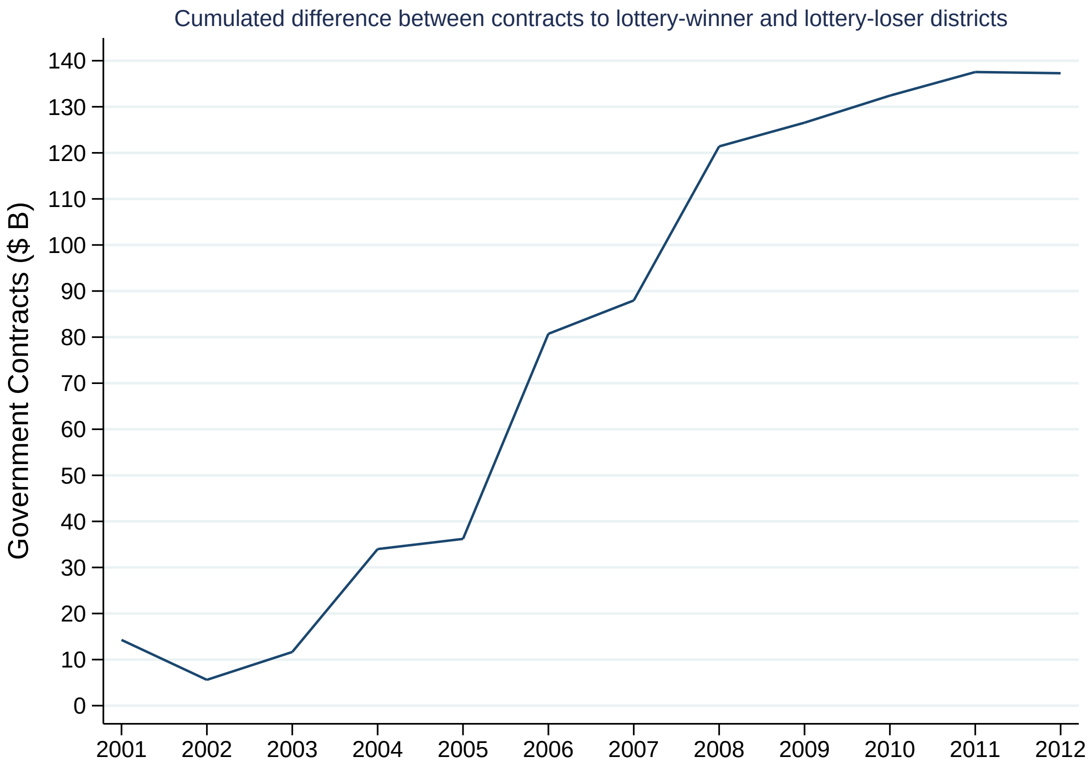

Figure 4: **District-level government contract allocation**
This figure lists districts that were allocated the most government contracts. The first plot reports only lottery-winner districts and the second plot reports only lottery-loser districts.

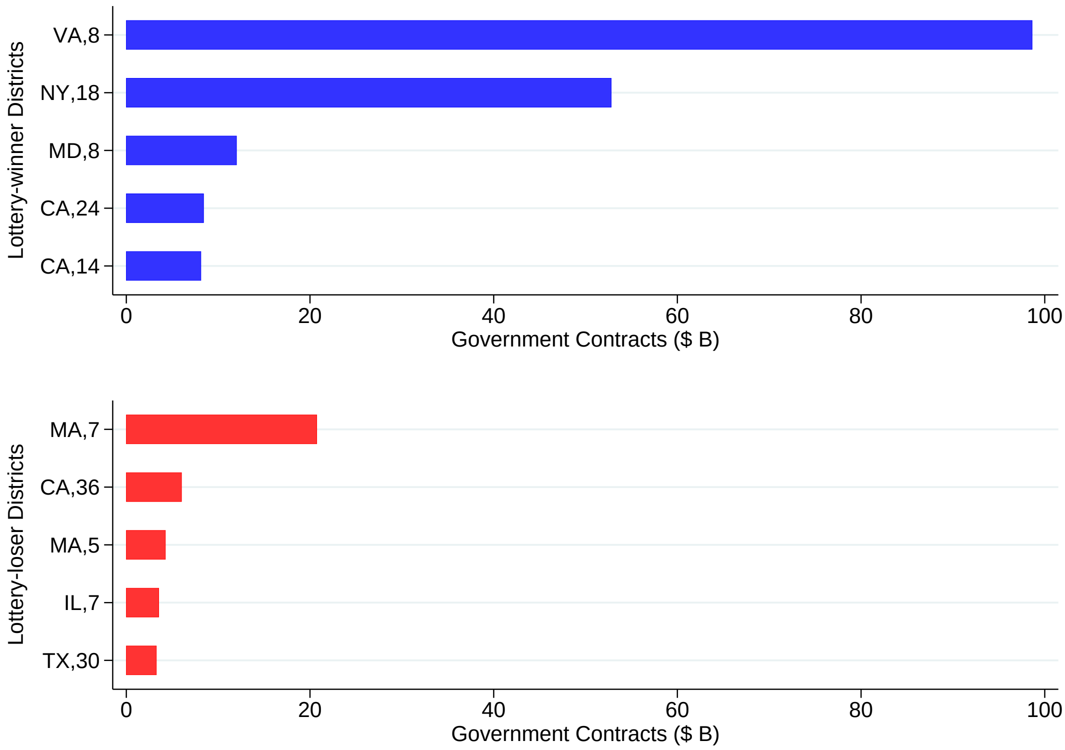

Figure 5: **Industry-level government contract allocation**
This figure reports industries that were allocated the most government contracts. Industries are defined using Fama-French 12 industry definitions. The first plot reports lottery-winner districts and the second plot reports lottery-loser districts.

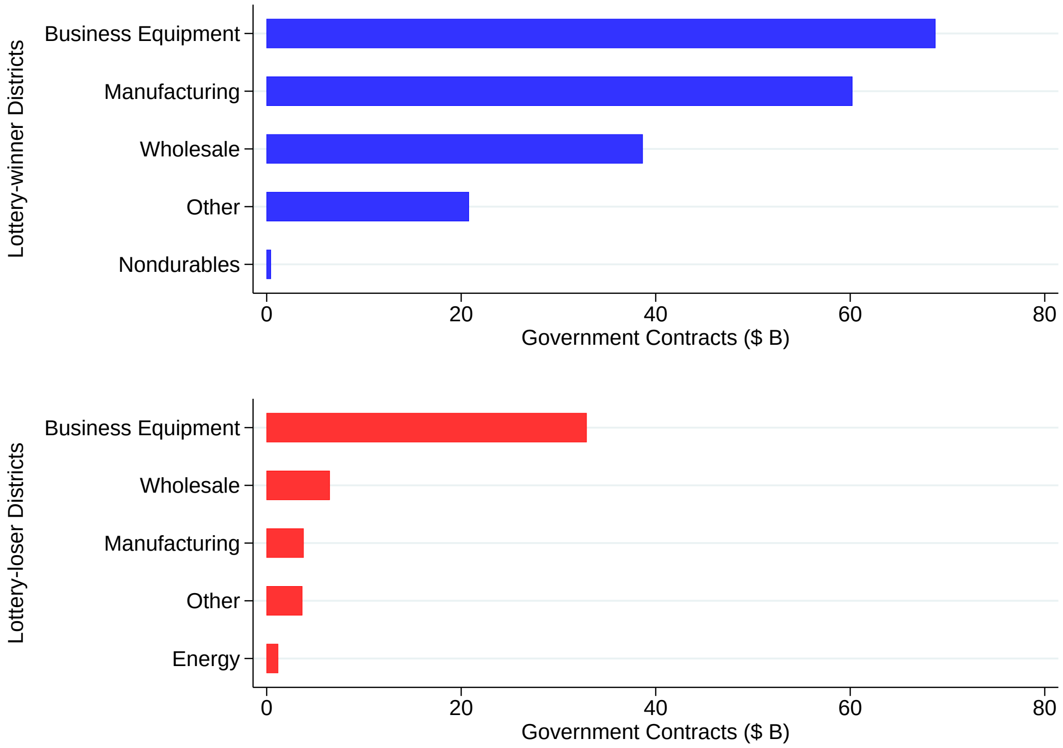

Figure 6: **Longevity of abnormal returns in lottery-winner districts**
This figure shows cumulative abnormal returns (CARs) of firms that receive government contracts, and CARs of firms that are from the same districts but do not receive any government contracts. I form portfolios of both groups of firms after lottery announcements and before government contract allocation. Risk-adjusted returns are computed in value-weighted form and using time varying betas as in Ferson and Harvey (1999). CARs are then computed by cumulating these portfolio alphas. Sample period is 2001m1 to 2012m12.