Do Powerful Politicians Cause Corporate Downsizing?*

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ABSTRACT

This paper employs a new empirical approach for identifying the impact of government spending on the private sector. Our key innovation is to use changes in congressional committee chairmanship as a source of exogenous variation in state-level federal expenditures. In doing so, we show that fiscal spending shocks appear to significantly dampen corporate sector investment and employment activity. These corporate behaviors follow both Senate and House committee chair changes, are partially reversed when the congressman resigns, and are most pronounced among geographically-concentrated firms. The effects are economically meaningful and the mechanism - entirely distinct from the more traditional interest rate and tax channels - suggests new considerations in assessing the impact of government spending on private sector economic activity.

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Governments spend money. Exactly how this spending translates into benefits or costs for the corporations and other constituents served by the government, however, is less clear. Specifically, understanding the impact of government spending on economic activity is a first order policy issue in economics. The crafting of fiscal policy depends critically on how shocks to government spending influence private sector consumption and investment decisions. Keynesian and neoclassical macroeconomic theories offer strong and often conflicting predictions regarding the effectiveness of such policy. However, a major obstacle limiting empirical progress on the topic is the difficulty in identifying changes to government purchases that are truly exogenous. Because government behavior is influenced by developments in the private economy, changes in private sector investment and productivity confound the effects of government spending and the factors that cause that spending to change.

This paper offers a novel empirical approach that allows us to overcome this challenge and shed considerable light on the impact of government spending on the private sector. Our key innovation is to use changes in congressional committee chairmanship as a source of exogenous variation in state-level federal expenditures. Since chairmanship is entirely determined by seniority – to be appointed chair a congressman must simply become the most senior member of the party in power on that committee[1] – this means that chair turnover can only result from a change in the party controlling that branch of congress or the resignation (or defeat) of the incumbent. And because both of these events depend almost entirely on political circumstances in *other* states, ascension to chairmanship is essentially unrelated to events or conditions in the new chairman's home state (e.g., a congressman will often not even be up for election during the year of his or her ascension). We show that becoming a powerful committee chair results in a significant increase in federal funds flowing to the ascending chairman's state. Thus, a congressman's ascension to a powerful committee chair creates a positive shock to his or her state's share of federal funds that is virtually independent of the state's economic

[1] This use of seniority-based chairmanship has been a governing practice in both houses of Congress for over 100 years. James K. Pollock writes "From early years the rule that has been generally followed in the appointment of committees is the so-called seniority rule. It has made no difference whether Republicans or Democrats controlled Congress; the method of selection has been the same.... The practice ... is a universal one. . ." (Galloway (1946)).

conditions.

We focus specifically on the 292 instances over the last 39 years where the senator or representative of a particular state ascends to the chairmanship of a powerful congressional committee. During the year that follows the appointment, the state experiences an increase of 50-60 percent in their share of federal earmark spending, and a 2-3 percent increase in total state-level government transfers. The funding increase persists throughout the chair's tenure and is gradually reversed upon his departure. Because these spending shocks are sufficiently numerous, spread out across time, locations, and are economically consequential, they provide us with significant power to examine the impact of fiscal policy on the private sector.[2]

To better understand our approach, consider the example of the appointment of Richard Shelby (Republican Senator, AL) to the chair of Senate Select Intelligence Committee in 1997. Senator Shelby had been both a congressman in the US House of Representatives and Senate as a Democrat from Alabama. He switched affiliations in 1994, and the combination of his seniority and affiliation with majority party afforded him the opportunity to take the chair of the Committee. Following his appointment to this committee chairmanship, Alabama (a state which had no top committee chairmen[3] appointed in over 20 years) experienced a marked increase in its share of federal earmarks. This is represented in Figure I, which compares Alabama's annual earmarks to those in the rest of the United States. Although earmark spending increased substantially in the US during this period, Alabama experienced roughly twice the average growth of all other states following Shelby's appointment. Specifically, while Alabama averaged 6 million dollars less in annual earmarks than the average of other US states before Shelby's appointment, they averaged over 90 million dollars *more* than other states after his appointment. In addition to simply securing more funds for the state, the appointment gave rise to significant flows to the healthcare and sciences industries in

[2] In describing the impact of his Senate seniority on his home state of Pennsylvania, Arlen Specter recently remarked: "My senior position on appropriations has enabled me to bring a lot of jobs and a lot of federal funding to this state. Pennsylvania has a big interest in my seniority, a big interest."

[3] We use several measures of top committees throughout the paper. Here, we refer to our most broad category. The list of the top 10 most influential committees is from Edwards and Stewart (2006); for the Senate these committees are Finance, Veterans Affairs, Appropriations, Rules, Armed Services, Foreign Relations, Intelligence, Judiciary, Budget, and Commerce.

Alabama in particular.[4]

At this time, HealthSouth Corp was (and remains) a large healthcare service provider headquartered in Birmingham, AL (Senator Shelby's birthplace). It operates mostly by providing rehabilitative and hospital services, through fully owned and operated properties. When Richard Shelby ascended to the chairmanship in 1997 and earmarks to Alabama increased, HealthSouth significantly decreased its capital expenditures and employee base during the ensuing years. A comparison of HealthSouth to the rest of its industry (none of whom was located in Alabama[5]) reveals that while the industry reduced capital expenditures only modestly between the pre- and post-appointment periods, HealthSouth's retrenchment in capital expenditures was much more substantial (-7.4% vs. -1.2% as a percentage of assets). In addition, while the rest of the Health Services industry continued to add employees following 1997, HealthSouth had negative average annual employment growth (-2.2%) during this period. As a tangible example, over 22 million dollars in earmarks went specifically to the University of Alabama at Birmingham (UAB) for medicine and sciences over this time period. At the same time UAB was receiving this large increase in spending, HealthSouth was actually scaling back operations, specifically in Birmingham. This culminated in HealthSouth selling one of its larger Birmingham hospitals directly to UAB in 2005.

We show that the events in this example represent a much more systematic pattern across the universe of U.S. firms. To do so, we investigate the consequences of seniority shocks by studying the behavior of the public corporations headquartered in the congressman's state. Focusing on the investment (capital expenditure), employment, R&D, and payout decisions of these firms, we find strong and widespread evidence of corporate retrenchment in response to government spending shocks. In the year that follows a congressman's ascendency, the median firm in his state cuts back capital expenditures by roughly 15% and reduces employment by 2%. The firms also significantly reduce R&D expenditures and increase payouts to their investors. These changes in firm behavior persist throughout the chairmanship and, importantly, are

[4] It should also be noted that Senator Shelby serves as sub-committee chairman of Commerce, Justice and Science within the Appropriations Committee.

[5] Industry is defined as 2-digit SIC Code, which is 80 for HealthSouth's industry, Health Services. The only other health services firm headquartered in Alabama was bought by HealthSouth in 1995, pre-appointment.

gradually reversed after the congressman relinquishes the chairmanship.

Overall, the response of private sector firms is surprisingly large relative to the size of the spending shocks and the government employment they create. For example, reductions in capex total 80 million dollars per year in the median state, which are roughly comparable to the state's 50-60 million dollar increase in earmark spending. The total reduction in employment among public corporations exceeds 2,000 for the median state and is over 10,000 in a quarter of the states. On the other hand, we demonstrate that spending shocks lead to significant increases in government employment. To explore the robustness of these findings, we verify that the patterns hold up under a wide variety of conditions and specifications. We employ panel regressions using state and time fixed effects and a range of controls. We also conduct state-level regressions, averaging coefficients across states, and other non-parametric tests, verifying that a powerful committee chair has a statistically and economically large impact on the decisions of firms in their state.

We also examine a variety of other predictions of how earmark spending is likely to impact private sector firms. In particular, we find that our results are mainly found in firms with geographically concentrated operations (e.g., domestic only firms) – firms that are likely to have more operations in the headquarter state. The effects are also stronger in smaller states, where the changes in federal funds are proportionately larger. In addition, we find that our results are more pronounced among small firms – firms which are expected to be less capable of insulating (much less benefitting) themselves through lobbying efforts. And finally, consistent with Keynes' view that crowding out should only occur under conditions of full employment, we find a weaker firm response to spending shocks when state-level employment (or measures of capacity utilization) are at or below their long-term historical average.

A unique feature of our approach is that we can rule out the standard interest rate channel as an explanation for how government spending crowds out private sector investment. Since our mechanism entails simply shifting the same government spending from the former chairman's state to the new chairman's state, no new government funds are implied; as a result, no increased taxation or increased borrowing costs are required. In addition, we conduct cross-state comparisons, thus abstracting from all national level

effects. Thus, our approach identifies a distinct and alternative mechanism by which government spending deters corporate investment. In particular, we provide evidence that crowding out occurs through factors of production including the labor market and fixed industrial assets. These findings argue that tax and interest rate channels, while obviously important, may not account for all or even most of the costs imposed by government spending. Even in a setting in which government spending is "free" – that is, does not need to be financed with additional taxes or borrowing – its distortionary consequences may be nontrivial.

The remainder of the paper is organized as follows. Section I provides a brief background and literature review. Section II describes the data we use, while Sections III and IV explore our findings on the effects of seniority on congressional spending, and firms' responses to these seniority shocks in their respective states. Section V provides a more detailed discussion of these findings. Section VI concludes.

I. Background and literature review

There is a large empirical literature investigating the impact of government spending on consumption, investment, and output variables. The standard approach in this literature is to apply a VAR methodology to macroeconomic data in order to identify shocks to government spending.[6] Most of these studies focus on quarterly post-war data in the U.S., which places a heavy burden on the econometrics to uncover the relationship from a limited time series of highly persistent variables. Although some studies consider international panel data, variation in economic size and openness, labor market rigidities, and other considerations limit the amount of additional power these data add.[7] The literature has also pursued some alternative strategies to isolate changes in government spending that are truly exogenous. For instance, several studies focus on periods of significant expansion in US defense spending (the so-called "Ramey-Shapiro episodes") to examine the impact of spending shocks.[8] Because defense spending is viewed to be largely

[6] Rotemberg and Woodford (1992), Blanchard and Perotti (2002), Fatás and Mihov (2001), Mountford and Uhlig (2002), Perotti (2005), Pappa (2005), Caldara and Kamps (2006), and Galí, López-Salido, and Vallés (2007), Ramey (2008).
[7] Giavazzi and Pagano (1990)
[8] Ramey and Shapiro (1998), Edelberg, Eichenbaum, and Fisher (1999), Burnside, Eichenbaum, and Fisher (2004), and Cavallo (2005)).

independent of domestic macroeconomic considerations, major changes therein offer opportunities to examine exogenous spending shocks. Unfortunately, the occurrence of large and unambiguous shocks to government defense spending is somewhat rare, which restricts the power of these tests.[9] An advantage of our approach is that we are able to examine numerous exogenous shocks to state-level federal expenditures over an extended period of time and to quantify their impact on the behavior of US public corporations.

There is also a literature comprised of mostly empirical studies examining how political representation translates to government expenditures. These studies include Atlas et al. (1995), Hoover and Pecorino (2005), Crain and Tollison (1977, 1981), Goss (1972), Greene and Munley (1980), Kiel and McKenzie (1983), Ray (1980, 1981), Ritt (1976), Rundquist (1978), and Rundquist and Griffiths (1976). Atlas et al. (1995) and Hoover and Pecorino (2005) document a positive relationship between per capita representation in the Senate and state-level federal expenditures but find only limited evidence with respect to House representation. Levitt and Poterba (1999) also find somewhat mixed evidence linking congressional seniority to federal spending; they do, however, find that senior Democratic members of the House were able to use their positions to improve their state's economic performance. Lastly, Aghion et al. (2009) show that representation on appropriations committees has an effect on education expenditures to states, finding support for some of these expenditures translating into future growth. Taken as a whole, the literature finds only modest linkages between the nature of congressional representation and the distribution of congressional spending. Using novel data on government discretionary earmark spending, our paper adds new evidence to this literature by showing that changes in congressional committee chairmanship can have a significant influence on government spending outcomes.

II. Data

The data in this study are collected from several sources. We use data on congressional committees from Stewart and Woon (2009) and Nelson (2005),[10] and link

[9] Cullen and Fishback (2006) document significant county-level variation in WWII spending increases and use this to examine the impact of government spending on longer-term private sector economic activity.
[10] This data is available online on Charles Stewart's website:

politicians (by state) to firms using the headquarters of all firms listed on Compustat.[11] Congressional committee data is available for the 80th to 110th Congresses (corresponding to the time period 1947-2009), which allows us to match politicians to firms as far back as accurate Compustat accounting information is available.[12] From Compustat, we extract a host of firm-specific accounting variables, such as capital expenditures, research and development (R&D) expenditures, total payouts (equal to cash dividends plus repurchases), and number of employees.

We obtain congressional earmark data from Citizens Against Government Waste, which collects earmark data by state starting in 1991. An earmark is defined as a line item in an appropriations bill that designates tax dollars for a specific purpose in circumvention of established budgetary procedures. While some of the earmarks are state designated, many are not, and so we read through and hand-matched over 24,000 of the earmarks to the specific designated state. In addition, for earmarks designated to more than one state, we split the amounts equally among the designated states.[13] In addition to the earmark data, we also collect data on broader categories of government expenditure data. We obtain these from the annual survey of state and local government finances conducted by the US Census Bureau and reported on their website,[14] with the data starting in 1992, broken down at the state level. These transfers include highway and parks funding, agricultural funds, and Medicare payments distributed to states. In addition to this transfer data, we collect state-level population and square mileage figures from the Census Bureau, and state-level government employment statistics from the Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW). The

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http://web.mit.edu/17.251/www/data_page.html.

[11] Compustat's firm headquarters variable is backfilled, so that firms that have moved are miscoded historically; however, the incidence of firm headquarters relocation is extremely rare, and we have corrected the obvious errors.

[12] For members of the House of Representatives, note that we are unable to historically match all firms to individual congressional districts, since mappings between zipcodes and congressional districts are only available from the 103rd Congress onwards; thus we map both senators and representatives to their home states.

[13] For instance, one $200,000 earmark had no specific state designation, but was simply listed as designated for the "Sokaogon Chippewa Community," to "investigate impacts of a mine." As this is a band of the Lake Superior Chippewa residing in Wisconsin, we match this earmark back to Wisconsin. In addition, an example of a multi-state designated earmark is a $5,500,000 earmark labeled: "Dalles Powerhouse (Units 1-14), WA & OR (Corps of Engineers - Construction, General)", which we split equally at $2,750,000 to both of the affected states.

[14] http://www.census.gov/govs/www/estimate.html

QCEW provides disaggregated data by state (and county) on government employment, with data beginning in 1990.

We define seniority shocks by assigning a dummy variable equal to 1 if the senator (or representative) of a given state first becomes chairman of an influential congressional committee. The list of the 10 most influential committees is from Edwards and Stewart (2006); for the Senate these committees are Finance, Veterans Affairs, Appropriations, Rules, Armed Services, Foreign Relations, Intelligence, Judiciary, Budget, and Commerce, and for the House these committees are Ways and Means, Appropriations, Energy and Commerce, Rules, International Relations, Armed Services, Intelligence, Judiciary, Homeland Security, and Transportation and Infrastructure. We categorize shocks into various groups based on the committee rankings; for example, Shock Top1ChairOnly means the senator (representative) was appointed chairman of the top-ranked Senate Finance Committee (the House Ways and Means Committee). We also construct an alternative shock definition that includes both the chairman and the ranking minority member (i.e., the most senior committee member who is a member of the party *not* currently in control of that House of congress), so that Shock Top1ChairPlusRank is equal to 1 if a senator becomes either chairman or the ranking minority member of the committee, when he/she was previously not in either position in the prior Congress. In our baseline specification, we code seniority shocks as starting in the year of appointment, and apply them for 6 years, although we vary this timing in a number of robustness checks.

III. Results

A. Congressional Spending and Seniority

Our main sample focuses on the behavior of 15,326 firms over the past 39 years (1968-2006). Summary statistics are reported in Table I. In addition to our main dependent and control variables, Panel A reports the fraction of firm-year observations that occur in a state represented by a congressman who has been appointed chair (or has become the ranking minority member) of a powerful congressional committees within the past six years. We consider separately observations represented by a congressman chairing a Senate committee and chairing a House committee. We use the Edwards and

Stewart (2006) ranking of committees to identify the most powerful committees (outlined in Section II) and report the fraction of firm-year observations from the top 1, 3, 5, and 10 most powerful Senate committees as well as the top 1 and 3 most powerful House committees.

Table I indicates that, depending on how many committees are included, between 2.2% and 16% of the firm-year observations are headquartered in states represented by a senator that has recently become chairman (or ranking minority member). We also report the fraction of firm-year observations in states where the senator stepped down from the chair within the past six years (occurring with roughly the same frequency as their ascension counterparts). The last four rows of Panel A also examine shocks to the most powerful House committees. For the House shocks, we see that a relatively greater fraction of firm-year observations occur in states represented by a House committee chair. This reflects the fact that larger states, which have larger House congressional delegations, are more likely to find one of their representatives chairing a powerful House committee. And since states with larger populations tend to have more firms, House committee chairmen are associated with a higher fraction of firm-year observations than Senate chairs. This also suggests that our House and Senate shocks are occurring in a relatively non-overlapping set of firm-year observations.

In fact, an advantageous aspect of our data and identification is that House and Senate committee chair shocks occur, in large part, in different states (and years). Thus, each chamber's shocks can be seen as independent testing samples for the effect of these government spending shocks on firm behavior. This state-shock difference is seen more clearly in the last two columns of Table II.

We also report state-level variables in Panel B of Table I and in Table II. Since we only have earmark data from 1991 through 2006, the main variables are reported for this 16 year period. Average annual earmarks are $111 million per state, with the median state receiving $89 million. Table II also confirms that most states have, at some point in the past 39 years, had one of its senators or representatives chairing a powerful committee. And while earmark spending lines up somewhat well with population, a number of low-population states appear surprisingly high on the list. To see this more closely, in Figure II we plot earmarks against state population. The expected positive

relationship is confirmed but the figure also reveals a number of significant positive outliers in terms of earmarks, the largest of which are Hawaii, Alaska, Mississippi, West Virginia, and Alabama: All states which had powerful congressional chairmen over our sample period.

In Table III, we report the results of regressions that seek to explain variation in annual state-level earmarks with changes in congressional committee chairmanship. We include state and year fixed effects in each regression, and standard errors are clustered at the yearly level.[15] The analysis reveals a strong relationship between congressional seniority shocks and earmark spending. A state whose senator is appointed chair of one of the three most powerful committees receives roughly a 50-60% increase in earmark spending. For instance, the coefficient on ShockTop1ChairOnly in Column 1 indicates that having a top committee chair increases that state's earmarks over the subsequent six years by 56.8% (t=2.15) per year. From Table I, the average annual earmarks per state are $111 million, so this implies over a $63 million increase in earmarks per year to a state upon having its senator appointed chairman of the Senate Finance Committee (most powerful Senate committee). The effect gets weaker but remains large and statistically significant if we broaden the set of powerful committees (for the Top 10 committees, the increase is 29.8% (t=2.13)), and if we include ranking minority members (e.g. Chair&Rank vs. ChairOnly). To the extent that these senators are less powerful than those chairing one of the very top committees, we might expect a decline in their ability to deliver earmark spending to their state. We also see evidence in Columns 7 and 8 that earmark spending declines upon the departure of a committee chair. States represented by a senator who relinquishes one of the top committees experience a 20-30% decline in their earmarks.

To examine whether our results apply to broader measures of state-level federal spending, Columns 9 and 10 use data from the US Census Bureau's annual survey of state and local government finances. Specifically, we use annual federal transfers to state

[15] We have also run these regressions with state population and physical state size as explanatory variables in place of the state fixed effects (the former not varying by state over time, the latter changing only once in our sample in the 2000 census), and not surprisingly, the results are nearly identical to those reported here in terms of magnitude and significance. Also, we have run all tests in the paper clustering standard errors by state. This actually produces smaller standard errors (and so larger t-stats), for instance with Column 1's t-stat being 3.70 (vs. 2.15 with the currently reported clustering by year), and so we report the more conservative measure allowing for correlated shocks to earmarks across states within a given year.

governments from 1992-2006 on the left-hand side of these regressions in place of annual earmarks. These transfers, which include highway and parks funding, agricultural funds, and Medicare payments, average roughly $300 billion per year. Although the measure is noisier, likely containing significant elements of non-discretionary federal spending, we find similar results to those with earmark spending. In particular, a seniority shock results in a 2.7-3.2% increase in total federal transfers to the state. Since the average state receives $6 billion, this translates to an increase of roughly $165-$180 million per year.

B. Seniority and Corporate Retrenchment

We have shown: i.) that there is considerable variation in earmark spending across states, ii.) that having a powerful congressional committee chairman appointed from one's state has a strong influence on this spending, and iii.) that this senior chairman influence also spreads to other types of government spending. We now turn to the impact of this spending on corporate behavior. Specifically, we investigate whether exogenous government spending shocks – as instrumented by congressional seniority shocks – have a material influence on corporate behavior. We examine a number of corporate investment decisions including capital expenditure, R&D expenditure, payout, and employment decisions. We regress each of these firm-level dependent variables on the state-level seniority shocks as well as a number of firm-level controls. We consider separately positive and negative shocks to seniority as well as shocks to the seniority of Senate and House members.

Our first set of results focus on the capital expenditure decision of firms. The motivation behind this test is that the federal transfer itself may structurally substitute for private capital investment. An often cited example of this is the Tennessee Valley Authority's (TVA) construction of electricity plants along the Tennessee Valley in the 1930's. Private enterprises that had planned expansion and provision of service of this same region were forced to decrease investment and to downsize employees. For instance, the nation's largest electric utility holding company entering into the depression, Commonwealth and Southern Corporation, was unable to compete with the TVA in the Tennessee Valley and as a result was forced to decrease investment there, and to

eventually dispose of properties in the Tennessee Valley, selling them directly to the TVA for $78.6 million in 1939 (Barnard (1966) and Manchester (1974)).

The regressions in Table IV regress capital expenditures, measured as the log of firm capex scaled by firm assets, on Senate seniority shocks and a number of control variables. This represents a reduced form estimation using our instrument of shocks to senior chairmanship. We explore in the next section (and in Table V) a two stage least squares estimation (using earmarks on seniority in the first stage) giving the instrumented value of government transfers, along with falsification tests for the instrument itself. The regressions in Table IV include firm and year fixed effects, and standard errors are clustered at the firm level. From Columns 1-4 of Table IV, seniority shocks result in economically and statistically significant declines in firm capital expenditures. Across all measures of seniority, the declines are large and highly significant. For instance, again looking at ShockTop1ChairOnly, the coefficient implies a 1.3% drop in scaled capital expenditures (t=4.64). Since firms have average capital expenditures of 8 percent of assets, Senate chairmanship causes a roughly 15 percent reduction in the representative firm's capex. Including controls in Columns 5-10 has only a modest effect on the magnitude of shocks, and all are still statistically significant. In line with the earmarks results in Table III is the fact that chairmen of more powerful committees have a larger impact on firm capex as well. Lastly, from Column 11, again consistent with the reduction in earmarks following the relinquishing of chairmanship in Table III, following replacement of the chairman firms in the state partially restore their capex spending, increasing it by 0.6 percent of assets which represents 7 percent of the average firm's capital expenditures.

In Columns 1-5 of Table V, we repeat the capital expenditure analysis with House seniority shocks. The results are statistically strong but slightly smaller in economic magnitude. Depending on the specification, capital expenditures decline between 0.2 - 0.5 %. This corresponds to (again for ShockTop1ChairOnly, now corresponding to the House Ways and Means Committee) a 6 percent reduction the representative firm's capex. The more modest effect might be expected as House members may be more interested in directing funds towards their particular district (as opposed to their state in general). Thus, firms headquartered in other districts within their state may be less impacted by

state-level federal spending increases that result from seniority shocks in the House, as opposed to those from the Senate.

C. Instrument of Committee Chairman Shocks

The fact that government behavior is affected by private sector economic activity makes it difficult to identify the *effects* of government spending from the factors that cause that government spending to change. As disentangling this is the key to gaining insight into the impact of government spending on private sector activity, some kind of exogenous variation in government spending is needed. As noted above, the instrument we propose, and use, is that of appointment to powerful committee chairmanship in the Senate and House. Our choice is motivated by the fact that one's appointment to committee chairmanship is based solely on seniority within the (Polsby et al. (1969)).[16] Thus, the only way for a congressman to be appointed the chairman of a committee is for the current chairman to relinquish the chairmanship: either through that chairman's election defeat, resignation, or through the chairman losing party-control of that chamber of Congress. Since all of these events depend largely on political circumstances and events in *other* states, a congressman's ascension to a powerful committee chair creates a positive shock to his or her state's share of federal funds that is virtually independent of the state's economic conditions. We have shown in Table III that this shock results in economically large and significant government spending transfers to the new chairman's state.

To illustrate the endogeneity between government spending and private sector economic activity, and the problems this can cause for identification, in Column 7 of Table V we simply regress earmarks on scaled capital expenditures. From Column 7, the regression exhibits no relationship, with the coefficient on earmarks being small and statistically zero (t=0.52). However, when we use the instrumented value, which consists solely of the portion of earmarks related to seniority shocks (the first stage is given in Table III), the strong negative relationship returns. Here we use the Top3ChairOnly as

[16] As mentioned in Footnote 1, the seniority system has been the prevailing determinant of committee chairmanships since the early days of Congress in both chambers. For instance, Woodrow Wilson writes in 1884: ". . . by custom, seniority in Congressional service determines the bestowal of the principal chairmanships." (Wilson (1884)).

the measure of powerful committee, so comparing this to the corresponding Column 7 in Table IV, we see that the IV estimate of -1.4% decline (t=3.56) is roughly double the magnitude of even the reduced form estimate (-0.7%). From Columns 7 and 8 of Table V, these results suggest that a significant portion of the variation in earmark spending is, indeed, determined endogenously in the context of corporate investment behavior.

Even though we obtain stronger results in both magnitude and significance when we use the instrumented values for earmark spending (Table V Column 7), we use the reduced form shocks for most of the tests performed in the paper. The reason we prefer these is that we have data on the shocks going back to the late 1940's, as opposed to only 1991 for the earmark data, so we get a richer period of time and events (more changes in committee seniority and chairmanship, more investment decisions by firms, etc.) to examine the relationship between government spending and the behavior of firms.

In Column 9 of Table V, we also perform a falsification test on our instrument. Instead of using the actual shocks to senior powerful committee chairmanship, we create a variable called *Random Shocks*, which takes the entire matrix of state-years, and assigns purely random committee chair "shocks" using a random number generator.[17] We then regress these random state-year shocks on scaled capital expenditures, to make sure we are not identifying random variation. From Column 9, the coefficient is basically zero (0.00% (t=0.29)). This lends credence to the identification being captured by our powerful committee chair shocks not being spurious variation.

Finally, we explore conditions under which we might expect state-level increases in federal spending to have a more pronounced effect on corporate investment. Specifically, we test whether the times when capacity utilization of capital is high (implying a relatively small amount of slack private capital) are those times when the spending shocks have larger effects on corporate investment, as this drives competition from the public sector when facilities and specialized capital are already in high demand. We use a capacity utilization measure collected by the US Federal Reserve for industries in manufacturing, mining, and electric and gas utilities. The measure, which is available on

[17] We keep the same measurement, allowing these shocks to persist for six years following the random "shock to chairmanship." As with the real chair shocks, we have varied this length and it makes no difference to these results. We report the six year length to make these comparable to the true shock variables we report.

their website,[18] captures each industry's seasonally-adjusted output level relative to its maximum sustainable level of output. The latter value, which is measured at the plant level, is the maximum level of output the plant can achieve under a reasonable work schedule and with sufficient availability of inputs to operate the capital in place. We then regress firm-level scaled capital expenditures on the seniority shock as well as an indicator variable that identifies firms operating at a time when their industry's capacity utilization is at or below its long-run average (measured as the average over the trailing 10-year window). The regression confirms the basic negative relation between seniority and capex but the interaction term is positive. This suggests the crowding out of capex is particularly pronounced when the industry is operating at a high level of capacity and competition for additional factors of production including facilities and specialized capital is expected to be strong (and conversely, that when capacity utilization is low, there is a smaller effect of the shocks).

D. Research and Development Investments and Payouts

We next examine other firm behaviors that may be affected by a firm facing a different investment set following a government spending shock. Specifically we look at both R&D spending and payout decisions of firms. These are in Table VI with firm-level R&D in Panel A, and payout decisions in Panel B, with both scaled by lagged assets (as in the capital expenditure tests). Again we include firm level controls, in addition to firm and year fixed effects. Consistent with firm capital expenditure behavior from Sections B and C, seniority shocks result in material reductions in R&D investment in Panel A. Specifically, looking at House and Senate shocks,[19] from Columns 1 and 4, Senate and House seniority shocks results in a reduction in R&D spending of between 0.5-0.6% (t=1.98 and 3.53) per firm. Since the average firm R&D is 7.3 percent of assets, the impact is non-trivial in economic terms (a roughly 7-8 percent scaling back of R&D). We again find corroborating evidence, although somewhat statistically weaker, that upon the

[18] http://www.federalreserve.gov/releases/G17/About.htm

[19] For brevity here, we only report Top1 and Top3 committee shocks for chair plus ranking minority members. The results for other measures, as in Tables IV, are both stronger for ChairOnly, and gradually weaken as we allow in relatively less powerful committees, which is also consistent with the estimated impacts on earmark appropriations from the relative power of the different committee chairmanships.

departure of the committee chair, R&D spending is restored.

Panel B then examines the effect on payout decisions. If public firms are crowding the investment opportunity sets of firms, we might expect firms to respond to this reduced investment opportunity set by (investing less and) paying more out to shareholders. This is precisely what we see in Panel B of Table VI. Following a seniority shock, we see payouts significantly increasing. Again looking at Senate and House shocks in Columns 1 and 4, payouts increase 0.2-0.3% (t=3.04 and 2.48, respectively). For our firms, payout averages 2.3 percent of assets, so this represents a 9-13% increase in payouts. The result again appears to be reversed following the congressman's departure.

IV. Employment, Estimates of Magnitude, and Robustness

A. State and Firm Level Employment

In our next set of tests, we examine the impact of shocks to congressional seniority on state-government and firm-level employment. The same reasoning behind retrenchment in corporate investment behavior applies to the labor decisions of firms. Any downsizing of firms may involve scaling back both investments in labor and capital. Also, as the government may compete for skilled (and perhaps specialized) labor, this may reduce the labor pool for the private sector. However, this also has a prediction that we should see increases in government employment following these shocks. We test both predictions of the impact of seniority shocks on annual state-level government employment (Panel A) as well as firm-level employment (Panel B) in Table VII. From Panel A, regressing annual government employment on committee chair shocks, we see that a following a shock to powerful committee chair (and so funding to the state), we do see a significant increase in government employment in the state. For example, from Column 6, a shock to a Top 3 committee chair leads a state (presumably through the increased funding) to increase government employment by 0.14% (t=2.64).

Turning to corporations in Panel B, we see that earmark spending has the opposite effect. Seniority shocks bring about a decline of between 0.6 – 3.5% in private corporate employment. For instance, again for a Top 3 Senate committee shock (Column 3), corporations respond (much like with capital and R&D expenditures) by scaling down their labor force by 1.6% (t=2.13). The results are yet again strongest for the most

powerful committees.

In a similar vein to investigating the effect of government spending at times when capacity utilization is high or low, we explore the same idea with labor. Specifically, the government's hiring of skilled labor may be especially harmful to private firms when there is scarce employable labor (a notion of full employment), while conversely, with slack in the labor market, government hiring shocks may have an attenuated effect. To investigate whether the crowding out of corporate employment is particularly pronounced when unemployment is low, we split seniority shocks into those that occur when the state's unemployment rate is above its long-run average and those that occur when it is below. As the table reports (in Column 6 of Panel B), the coefficient on firms in states with low unemployment is -0.008. For firms in states with high unemployment, the coefficient is 0.023 larger, which is sufficient to reverse the effect entirely (even considering the main effect of High Unemployment itself). This result can be interpreted as consistent with the view that government stimulus crowds out private sector employment when the economy has little slack in the labor market, but does not when the economy is experiencing significant slack in the labor market.

B. Mechanism, Robustness, and Economic Magnitudes

Our final tests examine the robustness of our results and investigate various perspectives on the results' economic magnitude. Our first robustness test is to examine whether the results hold up when we consider each state separately in our regressions and then evaluate the average coefficients produced. This approach effectively treats all observations in a given state as a single observation. To the extent that our results thus far are driven disproportionately by firms in a few large states, this specification will severely limit their ability to impact our results. Also, to the extent that a large amount of correlation exists within states in the investment, R&D, payout, and employment decisions, this specification will conservatively consider these decisions to be effectively perfectly correlated with one another. Thus we are sacrificing a large amount of power to get an alternate (quite strict and conservative) estimate of our effects.

In Panel A of Table VIII, we report the cross-sectional average of the state regression coefficients and the associated test statistic against a null that the average

coefficient is zero. Overall, the results are remarkably similar to those reported above. Seniority leads to a 0.8 percent of assets decline in capex – from 9.9 percent to 9.1 percent. It causes R&D to decline 1.2 percent in the average state, from 5.3 percent to 4.1 percent. Payout rises by 0.2 percent, increasing from 2.2 percent to 2.4 percent. And finally, employment declines by 2.8 percent, from 9.6 percent to 6.8 percent. Considering that we include any of the top 10 committees in this specification, the economic magnitudes, if anything, appear to be somewhat larger when states are treated as single observations. A non-parametric test that asks whether the fraction of states with coefficients of the predicted sign is significantly different from 0.5 is rejected at the one percent level for three of the four dependent variables and at the ten percent level for total payout.

In Panel B, we also measure the absolute impact of seniority shocks on state-level corporate outcomes. For the median state, we report the total dollar change in capex, R&D, and payout as well as the total change in corporate employment. For the median state, a seniority shock results in roughly a \$50-60 million increase in funding. In turn, we estimate that this causes a \$79 million decline in the state's total corporate capital expenditures, a \$68 million decline in their total R&D spending, a \$23 million increase in their payout to shareholders, and a 2100 decline in their payrolls. The results are, not surprisingly, much larger in more populous states. In particular, the capex and employment changes for the 12^{th} largest state (75^{th} percentile) are three and five times as large as those of the 37^{th} state (25^{th} percentile), with corporations cutting over 10,000 jobs following seniority shocks.

In Panel C, we test one implication of the mechanism of government spending crowding out private sector economic activity. Namely, the effect of government spending shocks on firm behavior should be larger for those firms with concentrated operations; firms that cannot shift investment out of state, and that have more difficulty accessing inter-state capital, land, and labor markets. We use the Compustat Segment Database to identify the various geographic segments of firms. Unfortunately, the segment database only lists segment location data at the country level (as opposed to state), so we proxy for geographic concentration of firms with those that do not (versus those that do) have international operations. We see that our results – especially the

capex and employment reactions – are more pronounced among domestic-only firms.[20] Thus firms with more limited ability to shift their operations to other countries or states are more compelled to reduce their capex and employment in response to government spending shocks.

Panel D reports the timing of corporate responses to seniority shocks. For capex, R&D, and payout, the adjustment is rapid and permanent. The adjustment that occurs during the year following the shock captures most of the long-run effect. On the other hand, the employment adjustment appears more gradual, with less than half of the long-run adjustment occurring during the first year. This suggests that firms can retrench on the investment front more easily than labor. Panels B and D also segregate the results by firm and state size. They reveal that smaller firms and firms in smaller states tend to downsize more aggressively in the wake of seniority shocks – particularly through reductions in capital expenditures.

V. Discussion

> "We have tried spending money. We are spending more than we have ever spent before and it does not work."
>
> -- Henry Morgenthau, US Treasury Secretary, May 1939.

The central finding of this paper is that positive shocks to the seniority of a state's congressional delegation cause large and persistent increases in government allocated funding to the states, *and* significant retrenchment on the part of the corporations headquartered in the state. This retrenchment appears to be a response to the large and persistent increase in federal funding that the state receives following the shock. Following the appointment of a senator to the chair of a powerful committee, we estimate that his state experiences, on average, a 50-60 percent increase in its share of congressional earmark spending, and a 2-3 percent increase in its share of total state-level government transfers. At the same time, firms residing in the state cut their capital expenditures by 5-25 percent, reduce R&D by 3-20 percent, and increase payout by 5-40

[20] We find similar results in panel regressions that include an interaction effect designed to measure the impact of shocks on only those firms with domestic operations, and controlling for firm size, and firm fixed and year fixed effects.

percent. Employment is also impacted, appearing to shift from the private to public sector, as corporations cut payrolls by between 0.6 and 3.5 percent while public employment increases by 0.14 to 0.20 percent.

A key feature of our results is that they show up under a variety of specifications, many of which offer essentially independent tests of the main result. First, firm responses to seniority shocks in the Senate are confirmed when we look at those in the House instead. This test gets its power from the fact that the House and Senate shocks are nearly a non-overlapping set of state-year shocks. Second, we find evidence that this behavior is partially reversed when the congressman relinquishes the chairmanship. Third, our coefficients are essentially identical whether we include state or time fixed-effects or when we include other regressors known to account for variation in firm spending, payout, and employment decisions. Finally, and perhaps most powerfully, our results show up when we simply take cross-state averages of within-state time-series regression coefficients. The coefficients are statistically significant and largely of the same magnitudes as those from the panel regressions. Taken together, these results suggest a link between congressional seniority shocks and corporate behavior that is not confined to particular points in time or driven by observations in a handful of states.

Our findings also include a number of results that corroborate the link between congressional spending and corporate retrenchment. First, the link grows weaker as we broaden our definition of what constitutes a powerful committee. The results are also weaker (in economic terms) in the House than the Senate, which one would predict given the fact that a congressional representative may have less impact on federal spending directed towards other districts within his state. Relatedly, we show that congressional spending has less impact on firms with more geographically diversified operations. Since these firms are more geographically disperse, they are less affected by spending shocks that are confined to the state of their headquarters. Finally, we show that firms cut their capital expenditures and R&D more rapidly in response to congressional spending, whereas reductions in employment, which likely face greater adjustment costs, are more gradual.

These results beg the question of what mechanism causes firms to respond so negatively to state-level federal spending increases. What is essentially a transfer of

funds from the residents one state (i.e., the state of the newly appointed committee chair) to another (i.e., the state of the relinquishing committee chair) causes retrenchment in the corporations that serve and employ the residents of the recipient state. Since our results focus on reallocations of federal spending rather than increases thereof, we can rule out the standard interest rate and tax channels that have occupied the literature to this point. Some of our results point towards the role of competition for state-specific factors of production, including labor and fixed assets such as real estate. Public spending appears to increase demand for state-specific factors of production and thereby compel firms to downsize and invest elsewhere. In particular, our capex and employment results are weaker when industrial capacity utilization and employment rates are at or below their long-term state-specific averages. When slack exists in factories or the labor market, federal dollars do not appear to be as large of a deterrent to corporations in terms of investing or hiring.

A second factor that limits the link between the corporations of a state and its residents is the possibility of "leakage" in federal transfers to state residents. In particular, states can be viewed as small open economies with modest limits on the ability of their residents to purchase from other states. As a result, corporations recover few of the increased costs they face through increased demand for their products. To the extent that we should expect leakage to be more pronounced in smaller states, it is consistent with our finding of appreciably larger capex adjustments in small states.

Finally, while our analysis reveals an important new consideration in the impact of government spending on private sector economic activity, we also provide some evidence on two remaining issues. First, while our focus has been on congressional earmarks and, to some degree, state-level federal transfers more broadly, it does not include defense spending, procurement, and other material components of federal spending. Although our results in Table III (Columns 9-10) suggest that broader measures of state-level federal spending respond to seniority shocks with correspondingly larger economic magnitudes, the extent to which the results presented above extend to all federal dollars that are transferred from one state to another remains of considerable interest.

Second, although the evidence clearly identifies corporate retrenchment in response to federal spending shocks, the valuation consequences of these shocks for public

corporations remains somewhat ambiguous. In particular, it is conceivable that, although firms cut capex, R&D, and employment, the federal spending shocks generate spillovers from which they benefit through sales and profitability increases. Typically, endogeneity concerns compel researchers to study the valuation consequences of such shocks by examining share price responses. Unfortunately, such event-study tests lose power rapidly in settings where the event window is necessarily wide because the precise timing of the event is poorly known. Our setting likely requires a window on the order of several months to a year, because spending shocks are revealed gradually as the probability of a given congressman's ascension evolves with changes in polling data about election outcomes and factors influencing incumbent retirement.

An alternative is to examine sales and profitability measures directly. Because of our reliance on a clean instrument for federal spending shocks, we can directly infer the causal effect of increased government spending on corporate welfare. In Table IX, we present regressions of Sales (Panel A) and Return on Assets (ROA, Panel B) on our seniority shocks. The results suggest that a seniority shock causes firm sales to retract 1.4 to 4.6 percent per year during the subsequent six years relative to non-shocked firms and periods. However, we do not see recovery upon departure. ROA exhibits a similar pattern. Following the shock, earnings drop between 0.4 and 1.9 percent. Unlike the sales figures, they appear to recover following the departure. This suggests that firms initially increase margins when federal spending is reduced. Taken as a whole, the results of Table IX suggest negative valuation consequences for the public firms that operate out of states that are recipients of federal government transfers.

VI. Conclusion

This paper provides a novel empirical approach for identifying the impact of government spending on the private sector. Our key innovation is to use changes in congressional committee chairmanship as a source of exogenous variation in state-level federal expenditures. In doing so, we find that fiscal spending shocks appear to significantly dampen corporate sector investment and employment activity. The effects are economically meaningful and the mechanism is entirely distinct from the more traditional interest rate and tax channels.

We find evidence consistent with government spending directly substituting for private sector economic activity. Specifically, we find statistically and economically significant evidence for firms: i.) reducing investments in new capital, ii.) reducing investments in R&D, iii.) reducing investments in labor, and iv.) paying out more to shareholders in the face of this reduced investment opportunity set. Further, we find that when the spending shocks reverse (through a relinquishing of chairmanship), most all of these behaviors reverse.

Finally, our findings demonstrate that new considerations – quite apart from the standard interest rate and tax channels – may limit the stimulative capabilities of government spending. Whether they are sufficient to lower the multiplier on fiscal stimulus in a large economy such as the US, and perhaps even turn it negative, remains an open but important question.

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Figure I: Earmarks in Alabama vs. Rest of US

This figure shows the annual earmarks (in millions of dollars) for the state of Alabama and for the average state in the United States excluding Alabama (Rest of US), from 1991-2003.

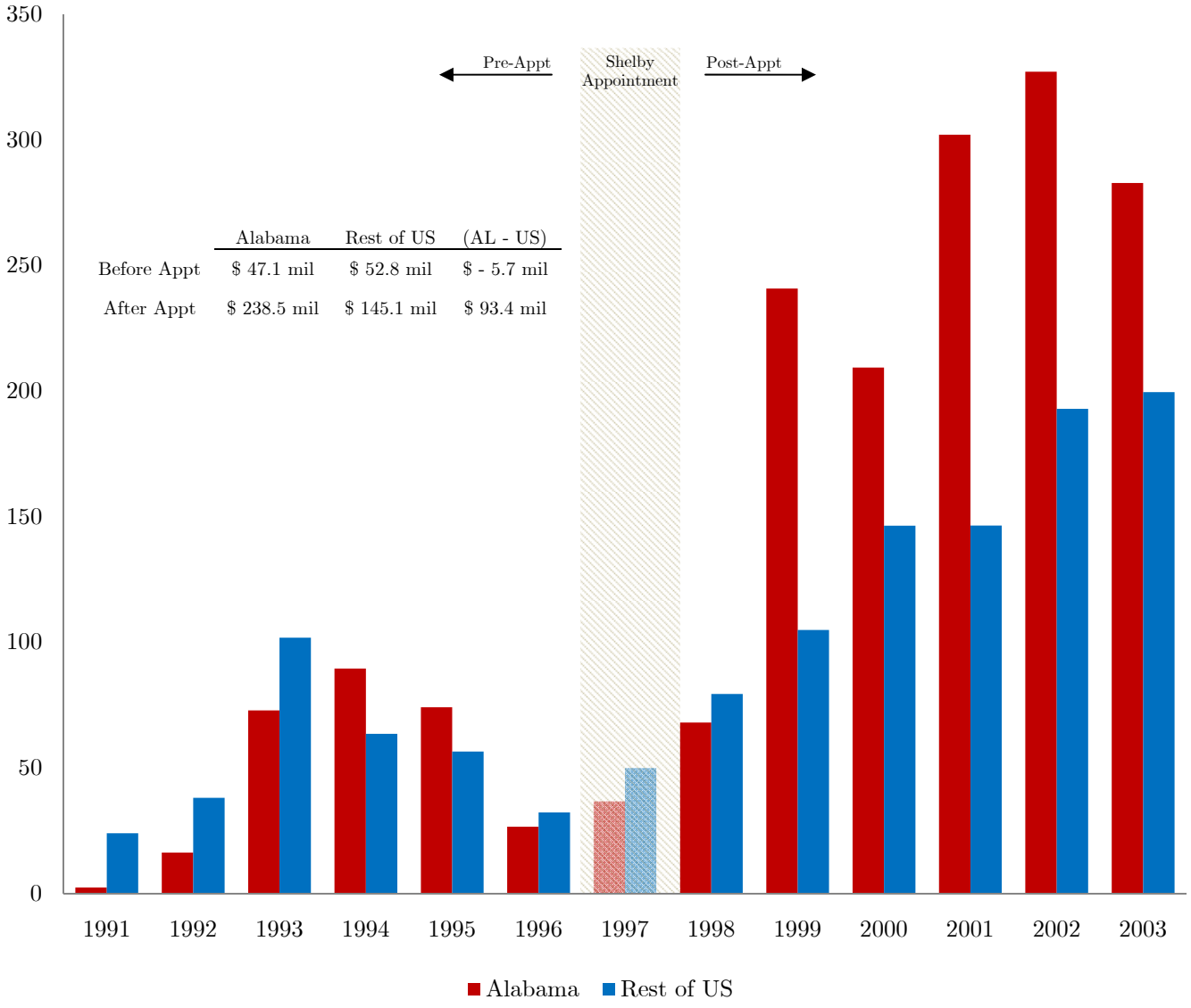

Figure II: State-Level Annual Earmarks Versus Population

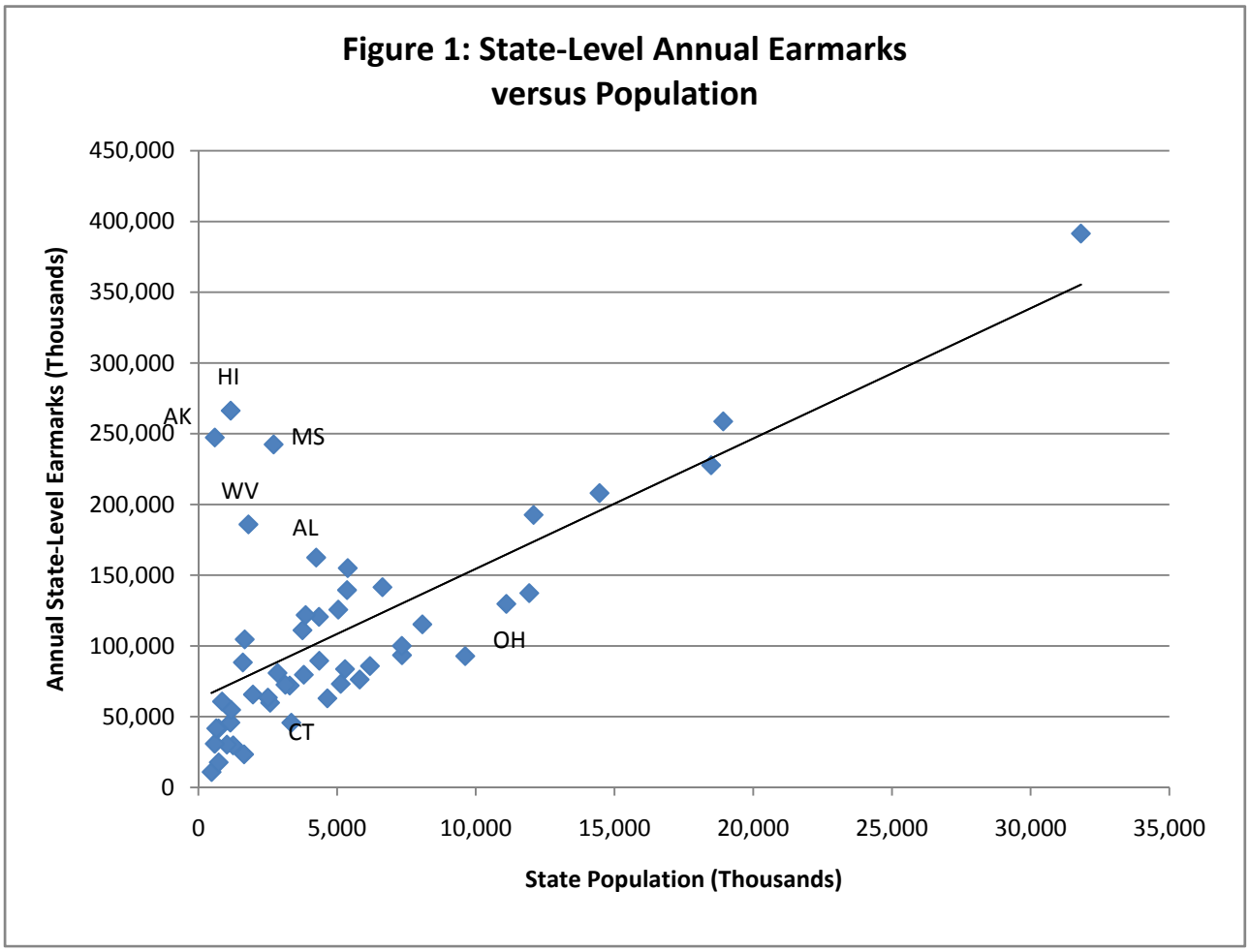

Table I: Summary Statistics

This table reports summary statistics for the sample. Seniority shocks are defined as follows: Shock Top1ChairOnly is a dummy variable equal to 1 if the senator (or representative) of a given state becomes chairman of the Senate Finance Committee (the House Ways and Means Committee); Shock Top1ChairPlusRank is equal to 1 if a senator becomes either chairman or the ranking minority member of the committee. The list of the top 10 most influential committees is from Edwards and Stewart (2006); for the Senate these committees are Finance, Veterans Affairs, Appropriations, Rules, Armed Services, Foreign Relations, Intelligence, Judiciary, Budget, and Commerce, and for the House these committees are Ways and Means, Appropriations, Energy and Commerce, Rules, International Relations, Armed Services, Intelligence, Judiciary, Homeland Security, and Transportation and Infrastructure. Seniority shocks begin in the year on appointment, and are applied for 6 years. All accounting variables are winsorized at the 1st and 99th percentiles of their distributions.

Panel A: Firm-Level Annual Variables	Years 1968-2006, Firms = 15,326			
	Mean	Median	Standard Deviation	Nonmissing Observations
Capital Expenditures/Assets$_{-1}$	0.084	0.052	0.108	138,701
Total Payout/Assets$_{-1}$	0.023	0.007	0.041	127,346
R&D/Assets$_{-1}$	0.073	0.028	0.121	72,688
ChgEmployees	0.095	0.030	0.321	130,026
Cash Flow/Assets$_{-1}$	0.059	0.090	0.200	125,411
Leverage$_{-1}$	0.411	0.391	0.264	135,504
Tobin s Q$_{-1}$	1.847	1.192	2.165	134,903
Assets ($m)	1,851	91	18,655	138,701
SalesGrowth	0.220	0.107	0.654	138,701
Earnings/Assets (ROA)	0.021	0.064	0.181	138,701
Shock_Top1ChairOnly	0.022	0	0.148	138,701
Shock_Top1ChairPlusRank	0.033	0	0.179	138,701
Shock_Top3ChairOnly	0.030	0	0.172	138,701
Shock_Top3ChairPlusRank	0.061	0	0.240	138,701
Shock_Top5ChairOnly	0.038	0	0.190	138,701
Shock_Top5ChairPlusRank	0.099	0	0.299	138,701
Shock_Top10ChairOnly	0.065	0	0.247	138,701
Shock_Top10ChairPlusRank	0.160	0	0.367	138,701
Drop_Top1ChairOnly	0.028	0	0.165	138,701
Drop_Top1ChairPlusRank	0.023	0	0.151	138,701
Drop_Top3ChairOnly	0.061	0	0.239	138,701
Drop_Top3ChairPlusRank	0.057	0	0.233	138,701
Shock_Top1ChairOnly (House)	0.031	0	0.174	138,701
Shock_Top1ChairPlusRank (House)	0.090	0	0.286	138,701
Shock_Top3ChairOnly (House)	0.065	0	0.247	138,701
Shock_Top3ChairPlusRank (House)	0.168	0	0.374	138,701

Panel B: State-Level Annual Variables	Years=1991-2006, States=50			
	Mean	Median	Standard Deviation	Nonmissing Observations
Total Earmarks (in dollars)	111,195,205	88,950,921	77,363,505	743
Log(Total Earmarks)	18.29	18.30	0.74	743
State Population	5,262,999	3,665,228	5,728,022	743
Log(State Population)	15.00	15.11	1.01	743
State Area (in square miles)	72,613	56,145	87,514	743
Avg. Ann. Govt. Employment	238,012	164,375	279,084	935
Log(Avg. Ann. Govt. Employment)	11.81	12.01	1.14	935
Total State Govt. Transfers (in millions)	5,357.6	3,387.2	6,745.4	695

Table II: Average Annual Earmarks By State

This table reports average annual earmarks by state, for the period 1991-2006. Earmark figures are in dollars. Population figures for each state are obtained from the 1990 and 2000 census. Total firms, average number of firms per year, average total capital expenditures per year (in millions of $), and average total corporate employees per year (in thousands), are from Compustat and are yearly averages by state over the full sample period (1968-2006). The shock variables are for the Shock Top3ChairPlusRank specification, and are averages by state over the full sample period (1968-2006).

Earmark Rank	State	Annual Earmarks	Population	Pop. Rank	PerCap. Earmarks	Total Firms	Avg Firms	Capex	Num. Emp.	Senate Shock	House Shock
1	CA	391,528,011	31,815,835	1	11.56	2572	542.9	22,861.3	1,750.1	0	0.15789
2	HI	266,348,053	1,159,883	41	219.84	21	6.4	240.5	13.9	0.02632	0
3	TX	258,731,216	18,919,165	2	12.41	1326	320.6	35,091.5	1,740.0	0.18421	0.21053
4	AK	247,336,041	588,488	48	394.52	7	1.7	49.3	1.9	0.37037	0
5	MS	242,455,706	2,708,937	31	85.23	41	9.3	136.1	14.5	0.10811	0.05405
6	NY	227,777,660	18,483,456	3	12.00	1528	397.3	29,655.5	3,000.3	0.18421	0.39474
7	FL	208,057,394	14,460,152	4	13.02	735	167.1	5,064.8	474.2	0.07895	0.26316
8	PA	192,649,039	12,081,349	5	15.69	538	159.6	7,235.8	891.1	0.28947	0.26316
9	WV	185,940,714	1,800,911	35	102.82	14	4.5	42.9	5.9	0.2973	0
10	AL	162,468,051	4,243,844	23	36.53	70	20.3	763.6	73.7	0.13158	0
11	WA	155,037,241	5,380,407	15	26.30	232	50.3	2,702.4	200.2	0.07895	0
12	VA	141,530,584	6,632,937	12	19.99	320	82.2	7,834.3	531.7	0	0.18421
13	MO	139,503,124	5,356,142	16	24.93	185	58.3	3,867,5	540.5	0	0
14	IL	137,358,752	11,924,948	6	11.06	590	173.7	16,743.3	2130.4	0	0.26316
15	OH	129,762,251	11,100,128	7	11.43	407	138.8	8,153.6	1,203.5	0	0
16	MD	125,658,524	5,038,977	19	23.73	268	65.4	2,064.0	354.7	0	0
17	KY	121,832,695	3,863,533	24	30.14	69	19.5	747.4	111.6	0	0.07895
18	LA	120,592,560	4,344,475	22	26.98	83	24.4	1,908.5	63.7	0.13158	0.26316
19	NJ	115,279,885	8,072,269	9	13.70	739	195.7	15,329.2	1,394.7	0.13158	0
20	SC	111,130,010	3,749,358	26	27.70	76	18.4	550.2	71.7	0	0
21	NM	104,654,500	1,667,058	36	57.53	31	7.4	227.3	8.9	0	0
22	GA	100,075,995	7,332,335	11	12.23	362	88.2	7,731.8	557.4	0.07895	0
23	NC	93,487,901	7,338,975	10	11.61	215	64.6	3,548.6	334.3	0	0.02632
24	MI	92,810,454	9,616,871	8	9.34	266	89.3	14,459.1	1,821.5	0	0.31579
25	AZ	89,525,326	4,354,830	21	17.45	210	44.9	1,307.0	109.1	0	0
26	NV	88,376,517	1,600,045	38	44.23	119	25.4	1,314.8	81.3	0	0
27	MA	85,801,189	6,182,761	13	13.51	747	182.0	3,752.1	550.8	0	0.18421
28	TN	83,666,812	5,283,234	17	14.71	185	50.4	2836.8	396.7	0	0.15789
29	IA	80,885,958	2,851,540	30	27.64	77	23.5	547.2	56.2	0.13158	0
30	CO	79,655,623	3,797,828	25	18.52	523	98.0	3,613.1	132.7	0	0
31	IN	76,279,357	5,812,322	14	12.55	145	42.4	1,326.1	157.8	0	0.13158
32	WI	73,197,096	5,127,722	18	13.65	144	53.3	1,757.0	317.6	0.07895	0.18421
33	OR	72,612,097	3,131,860	29	21.22	128	35.5	1,180.3	83.7	0.13158	0.05263
34	OK	72,047,924	3,289,147	28	20.88	175	33.3	2,711.4	45.1	0	0
35	UT	65,648,154	1,963,000	34	29.40	127	28.4	721.0	104.0	0.18421	0
36	AR	63,492,747	2,502,572	33	23.75	36	14.5	1,814.7	209.1	0.02632	0
37	MN	62,983,095	4,647,289	20	12.80	410	115.4	3,745.2	511.5	0	0
38	MT	60,764,903	850,630	44	67.35	12	2.5	76.7	1.7	0.14706	0
39	KS	59,889,310	2,582,996	32	22.28	96	24.2	456.8	82.3	0.02632	0
40	NH	54,817,300	1,176,241	40	44.36	62	17.2	176.7	34.5	0	0
41	ID	45,831,016	1,150,351	42	35.42	26	8.8	786.6	76.3	0.02632	0
42	CT	45,761,532	3,346,341	27	13.44	398	113.2	9,060.0	987.1	0	0
43	ND	41,765,253	640,500	47	65.04	7	1.2	33.6	1.8	0	0
44	SD	41,696,337	725,424	46	55.24	11	3.9	98.8	15.2	0	0
45	VT	30,903,545	585,793	49	50.76	13	5.4	64.2	3.6	0	0
46	RI	30,320,085	1,024,572	43	28.92	38	11.2	542.2	125.2	0	0
47	ME	29,787,996	1,250,043	39	23.37	21	7.2	276.9	17.2	0	0
48	NE	23,404,595	1,644,824	37	13.68	46	11.9	1,394.7	124.9	0.02703	0
49	DE	17,747,343	728,338	45	22.65	37	11.6	2,692.0	167.8	0.18421	0
50	WY	10,892,751	472,503	50	22.06	14	4.1	8.4	0.4	0.26471	0

Table III: The Impact of Seniority Shocks on Earmarks and State-Level Government Transfers, 1991-2006

This table reports panel regressions of earmarks on seniority shocks (defined as in Table I). Year-fixed and state-fixed effects are included where indicated. All standard errors are adjusted for clustering at the yearly level, and t-stats using these clustered standard errors are included in parentheses below the coefficient estimates. The dependent variable in columns (1)-(8) is log(state-level annual earmarks). The dependent variable in columns (9) and (10) is log(total state-level annual government transfers); transfer data is only available from 1992, so these regressions are run from 1992-2006 . ***Significant at 1%; **significant at 5%; *significant at 10%.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	(Ear)	(Ear)	(Ear)	(Ear)	(Ear)	(Ear)	(Ear)	(Ear)	(Trans)	(Trans)
Shock_Top1ChairOnly	0.568**								0.027**	
	(2.15)								(2.03)	
Shock_Top1Chair&Rank		0.459**								0.032**
		(2.40)								(2.49)
Shock_Top3ChairOnly			0.587***							
			(3.25)							
Shock_Top3Chair&Rank				0.269**						
				(1.98)						
Shock_Top5ChairOnly					0.505***					
					(3.13)					
Shock_Top10ChairOnly						0.298**				
						(2.13)				
Drop_Top1Chair&Rank							-0.294*			
							(1.83)			
Drop_Top10ChairOnly								-0.194**		
								(2.00)		
Fixed Effects	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year
Fixed Effects	State	State	State	State	State	State	State	State	State	State
Adjusted R^2	0.757	0.769	0.756	0.753	0.753	0.752	0.756	0.754	0.994	0.994
No. of Obs.	743	743	743	743	743	743	743	743	695	695

Table IV: The Impact of Seniority Shocks on Corporate Investment, 1968-2006

This table reports panel regressions of capital expenditures on Senate seniority shocks (defined as in Table I). All models contain firm-fixed effects and year-fixed effects. All standard errors are adjusted for clustering at the firm level, and t-stats using these clustered standard errors are included in parentheses below the coefficient estimates. ***Significant at 1%; **significant at 5%; *significant at 10%.

	Dependent Variable: Capital Expenditures$_{i,t}$/A$_{i,t-1}$										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Shock_Top1ChairOnly	-0.013***				-0.010***						
	(4.64)				(3.56)						
Shock_Top1Chair&Rank		-0.009***				-0.007***					
		(3.90)				(3.03)					
Shock_Top3ChairOnly			-0.010***				-0.007***				
			(4.34)				(3.04)				
Shock_Top3Chair&Rank				-0.006***				-0.004***			
				(3.75)				(2.66)			
Shock_Top5ChairOnly									-0.006***		
									(3.21)		
Shock_Top10ChairOnly										-0.004***	
										(3.17)	
Drop_Top1Chair&Rank											0.006**
											(2.43)
$Q_{i,t-1}$					0.010***	0.010***	0.010***	0.010***	0.010***	0.010***	0.010***
					(23.09)	(23.09)	(23.09)	(23.09)	(23.09)	(23.09)	(23.09)
(Cash Flow$_{i,t}$/A$_{i,t-1}$)					0.048***	0.048***	0.048***	0.048***	0.048***	0.048***	0.048***
					(11.27)	(11.27)	(11.27)	(11.27)	(11.27)	(11.27)	(11.27)
Leverage$_{i,t-1}$					-0.116***	-0.116***	-0.116***	-0.116***	-0.116***	-0.116***	-0.116***
					(33.21)	(33.21)	(33.21)	(33.21)	(33.21)	(33.21)	(33.21)
Adjusted R^2	0.444	0.444	0.444	0.444	0.517	0.517	0.517	0.517	0.517	0.517	0.517
No. of Obs.	138701	138701	138701	138701	121949	121949	121949	121949	121949	121949	121949

Table V: Alternative Specifications and Committee Chair Instrument

This table reports panel regressions of capital expenditures on House seniority shocks, earmarks directly, IV predicted values of earmarks, randomly assigned shocks, and interactions with capacity utilization. The IV predicted value comes from a first stage that regresses Shock Top3ChairOnly on log(earmarks), as in Table III. All models contain firm-fixed effects and year-fixed effects, and include controls for lagged Q, cash flow, and lagged leverage as in Table IV. All standard errors are adjusted for clustering at the firm level, and t-stats using these clustered standard errors are included in parentheses below the coefficient estimates. ***Significant at 1%; **significant at 5%; *significant at 10%.

	Dependent Variable: Capital Expenditures$_{i,t}$/A$_{i,t-1}$									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Shock_Top1Chair&Rank (House Shock)	-0.005***									
	(3.94)									
Shock_Top3ChairOnly (House Shock)		-0.003**								
		(2.06)								
Shock_Top3Chair&Rank (House Shock)			-0.004***							
			(4.04)							
Shock_Top5ChairOnly (House Shock)				-0.002*						
				(1.91)						
Shock_Top10ChairOnly (House Shock)					-0.004***					
					(4.49)					
Drop_Top1ChairPlusRank (House Shock)						-0.001				
						(0.41)				
Log(Annual Earmarks) (1991-2006)							-0.000			
							(0.52)			
IV Predicted Value (1991-2006)								-0.014***		
								(3.56)		
Random Shock (1968-2008)									0.000	
									(0.29)	
Shock_Top10ChairOnly (Manufacturing)										-0.007***
										(2.81)
Shock_Top10ChairOnly*LowUtil (Manufacturing)										0.004*
										(1.93)
Low Utilization (Manufacturing)										-0.006***
										(4.80)
Adjusted R^2	0.517	0.517	0.517	0.517	0.517	0.517	0.559	0.559	0.517	0.556
No. of Obs.	121949	121949	121949	121949	121949	121949	55921	55921	121949	28925

Table VI: The Impact of Seniority Shocks on R&D and Payouts, 1968-2006

This table reports panel regressions of firm research and development (R&D) and payouts (cash dividends plus repurchases) on seniority shocks. All models contain firm-fixed effects and year-fixed effects. All standard errors are adjusted for clustering at the firm level, and t-stats using these clustered standard errors are included in parentheses below the coefficient estimates. ***Significant at 1%; **significant at 5%; *significant at 10%.

Panel A: R&D	Dependent Variable: $R\&D_{i,t}/A_{i,t-1}$				
	(1)	(2)	(3)	(4)	(5)
Shock_Top1Chair&Rank	-0.005**				
	(1.98)				
Shock_Top3Chair&Rank		-0.003*			
		(1.90)			
Drop_Top1Chair&Rank			0.005		
			(1.50)		
Shock_Top1Chair&Rank (House Shock)				-0.006***	
				(3.53)	
Shock_Top3Chair&Rank (House Shock)					-0.002**
					(2.12)
$Q_{i,t-1}$	0.011***	0.011***	0.011***	0.011***	0.011***
	(21.29)	(21.29)	(21.28)	(21.23)	(21.24)
$(\text{Cash Flow}_{i,t}/A_{i,t-1})$	-0.140***	-0.140***	-0.140***	-0.140***	-0.140***
	(19.95)	(19.95)	(19.95)	(19.96)	(19.95)
$\text{Leverage}_{i,t-1}$	-0.017***	-0.017***	-0.017***	-0.017***	-0.017***
	(5.47)	(5.47)	(5.47)	(5.52)	(5.49)
Adjusted R^2	0.783	0.783	0.783	0.783	0.783
No. of Obs.	65473	65473	65473	65473	65473

Panel B: Payouts	Dependent Variable: Total Payout$_{i,t}$/A$_{i,t-1}$				
	(1)	(2)	(3)	(4)	(5)
Shock_Top1Chair&Rank	0.003**				
	(2.48)				
Shock_Top3Chair&Rank		0.001*			
		(1.73)			
Drop_Top1Chair&Rank			-0.003**		
			(2.16)		
Shock_Top1Chair&Rank (House Shock)				0.002***	
				(3.04)	
Shock_Top3Chair&Rank (House Shock)					0.001**
					(2.48)
$Q_{i,t-1}$	0.000	0.000	0.000	0.000	0.000
	(1.08)	(1.08)	(1.07)	(1.15)	(1.14)
(Cash Flow$_{i,t}$/A$_{i,t-1}$)	0.019***	0.019***	0.019***	0.019***	0.019***
	(12.10)	(12.10)	(12.08)	(12.12)	(12.11)
Leverage$_{i,t-1}$	-0.035***	-0.035***	-0.035***	-0.035***	-0.035***
	(27.24)	(27.24)	(27.24)	(27.21)	(27.22)
Adjusted R^2	0.408	0.408	0.408	0.408	0.408
No. of Obs.	113619	113619	113619	113619	113619

Table VII: The Impact of Earmarks and Seniority Shocks on Government and Firm Employment, 1991-2006

This table reports panel regressions of seniority shocks on state-level government employment and firm-level private employment. Panel A reports results with average annual state-level government employment as the dependent variable. The coefficients are multiplied by 100 on the shock variables. Year-fixed and state-foxed effects are included where indicated. All standard errors are adjusted for clustering at the yearly level, and t-stats using these clustered standard errors are included in parentheses below the coefficient estimates. Panel B reports results with firm-level changes in employment as the dependent variable. All standard errors are adjusted for clustering at the firm level, and t-stats using these clustered standard errors are included in parentheses below the coefficient estimates. ***Significant at 1%; **significant at 5%; *significant at 10%.

Panel A: State-Level Government Employment	Dependent Variable: Log(Annual Avg. Government Empl. in given State/Labor Force)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Shock_Top1ChairOnly	0.0989				0.1468*			
	(1.25)				(1.79)			
Shock_Top3ChairOnly		0.1076**				0.1398***		
		(2.02)				(2.64)		
Shock_Top5ChairOnly			0.1715***				0.1917***	
			(4.80)				(5.50)	
Shock_Top10ChairOnly				0.0684***				0.0741***
				(3.15)				(3.63)
Log(StatePopulation)					-0.0057***	-0.0062***	-0.0063***	-0.0059***
					(3.72)	(4.27)	(4.23)	(3.80)
Fixed Effect	State	State	State	State	State	State	State	State
Fixed Effect	Year	Year	Year	Year	Year	Year	Year	Year
Adjusted R^2	0.97	0.97	0.97	0.95	0.98	0.98	0.98	0.98
No. of Obs.	743	743	743	743	743	743	743	743

Panel B: Changes in Firm-Level Employment	Dependent Variable: : Ln(Employees$_{i,t}$/Employees$_{i,t-1}$)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Shock_Top1ChairOnly	-0.021**								
	(2.41)								
Shock_Top3ChairOnly		-0.016**							
		(2.13)							
Shock_Top5ChairOnly			-0.011						
			(1.60)						
Shock_Top10ChairOnly				-0.012**					
				(2.15)					
Shock_Top10ChairOnly (1968-2006)					-0.006*	-0.008**			
					(1.82)	(1.96)			
Shock_Top10ChairOnly*HighUnemp (1977-2006)						0.023**			
						(2.36)			
High Unemployment (1977-2006)						-0.010***			
						(2.84)			
Shock_Top1ChairOnly (House Shock)							-0.035***		
							(3.46)		
Shock_Top10ChairOnly (House Shock)								-0.026***	
								(3.92)	
Shock_Top10ChairOnly (House Shock, 1968-2006)									-0.017***
									(6.92)
Fixed Effect	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Fixed Effect	Year	Year	Year	Year	Year	Year	Year	Year	Year
Adjusted R^2	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15
No. of Obs.	66,014	66,014	66,014	66,014	130,026	130,026	66,014	66,014	130,026

Table VIII: Breadth and Timing of Corporate Response to Seniority Shocks, 1968-2006

All results in the table are reported for the Shock Top10ChairPlusRank specification. Panel A reports results for state-level regressions of various corporate response variables on seniority shocks. Regression coefficients are averaged (equally) across the 47 states that have experienced such a shock, and t-stats computed using the standard-deviation of these coefficients across states are reported here. The %States Predicted Sign also shows significance level (in *) of a binomial test whether the state with the predicted sign is greater than a null of 0.5. Panel B presents simple averages of corporate responses by state, broken down by size of state. *Median Diff Amt* is the implied average change (in millions of dollars of capex, r&d, and payout, and raw number of employees) for each corporate response variable for the median state. Panel C provides simple averages of corporate responses by type of firm, broken down by domestic-only firms versus global firms (classified using Compustat segment data, available since 1979). Panel D provides simply averages by firm size, for various response periods (1 year, out to 6 years).

Panel A: State-Level Cross-Sectional Average Regression Coefficients

Dependent Variable::	Coeff:	t-stat	NumStates Predicted Sign	%States Predicted Sign	Individual States with Predicted Sign Coefficient
Capital Expenditures$_{i,t}$/A$_{i,t-1}$	-0.008*	1.88	31	66.0%***	AK,AL,AR,AZ,CO,CT,DE,FL,HI,IA,IN,KS,KY,MI,MO,MS,MT,NC,ND, NH,NJ,NV,NY,OK,PA,RI,TN,TX,UT,VA,VT
R&D$_{i,t}$/A$_{i,t-1}$	-0.012***	2.61	33	70.2%***	AL,AR,CO,FL,GA,IA,ID,IL,KS,KY,MA,MD,ME,MS,MT,ND,NE,NH,NJ, NM,OK,OR,RI,SC,SD,TN,TX,UT,VT,WA,WI,WV,WY
Total Payout$_{i,t}$/A$_{i,t-1}$	0.002	1.49	28	59.6%*	AZ,CT,FL,GA,ID,IL,IN,KY,LA,MD,MO,MS,NE,NH,NM,NV,NY,OK,OR, PA,RI,SC,TX,UT,VA,VT,WA,WV
ChgEmployees	-0.028***	4.13	35	74.5%***	AL,AR,CO,CT,FL,GA,HI,IA,ID,IL,KS,KY,MA,MD,ME,MI,MO,MS,MT, NC,NE,NH,NJ,NV,OK,OR,RI,SC,TN,TX,UT,VA,WA,WI,WY

Panel B: State-Level Cross-Sectional Averages of Corporate Responses

	All States				Big States (Top 25)				Small States (Bottom 25)			
Variable:	Shock	No Shock	Diff.	Median Diff Amt.	Shock	No Shock	Diff	Median Diff Amt.	Shock	No Shock	Diff	Median Diff Amt.
Capital Expenditures$_{i,t}$/A$_{i,t-1}$	0.091	0.099	(0.008)	(79.2)	0.085	0.088	(0.002)	(220.8)	0.097	0.110	(0.013)	(39.6)
R&D$_{i,t}$/A$_{i,t-1}$	0.041	0.053	(0.012)	(67.8)	0.045	0.057	(0.011)	(98.5)	0.036	0.050	(0.013)	(30.6)
Total Payout$_{i,t}$/A$_{i,t-1}$	0.024	0.022	0.002	22.6	0.025	0.023	0.002	121.3	0.023	0.021	0.002	4.5
ChgEmployees	0.068	0.096	(0.028)	(2,087)	0.068	0.099	(0.031)	(10,201)	0.069	0.093	(0.025)	(2,048)

Panel C: Firm Level Averages of Corporate Responses for Domestic-Only and Global Firms

(Classified Using Compustat Segments, Data Available 1979-2006 Only)

	All Firms			Domestic-Only Firms			Global Firms		
Variable:	Shock	No Shock	Diff.	Shock	No Shock	Diff	Shock	No Shock	Diff
Capital Expenditures$_{i,t}$/A$_{i,t-1}$	0.077	0.085	(0.008)	0.079	0.090	(0.011)	0.073	0.076	(0.003)
R&D$_{i,t}$/A$_{i,t-1}$	0.058	0.087	(0.029)	0.057	0.087	(0.030)	0.060	0.087	(0.027)
Total Payout$_{i,t}$/A$_{i,t-1}$	0.025	0.022	0.003	0.024	0.021	0.003	0.028	0.025	0.003
ChgEmployees	0.076	0.108	(0.032)	0.080	0.119	(0.038)	0.068	0.087	(0.019)

Panel D: Timing of Corporate Responses (Firm-Level Averages)

	All Firms					Big Firms (Above Median)					Small Firms (Below Median)				
Variable:	No Shock	Year 1	Year 2	Year 3-6	All Shock	No Shock	Year 1	Year 2	Year 3-6	All Shock	No Shock	Year 1	Year 2	Year 3-6	All Shock
Capital Expenditures$_{i,t}$/A$_{i,t-1}$	0.085	0.082	0.080	0.081	0.080	0.093	0.091	0.091	0.096	0.093	0.078	0.072	0.068	0.063	0.066
R&D$_{i,t}$/A$_{i,t-1}$	0.078	0.058	0.055	0.053	0.055	0.073	0.055	0.051	0.048	0.050	0.082	0.062	0.060	0.057	0.059
Total Payout$_{i,t}$/A$_{i,t-1}$	0.023	0.024	0.024	0.025	0.025	0.031	0.033	0.032	0.034	0.033	0.014	0.015	0.015	0.016	0.016
ChgEmployees	0.101	0.091	0.083	0.068	0.074	0.126	0.113	0.010	0.090	0.094	0.077	0.068	0.062	0.041	0.050

Table IX: Consequences of Seniority Shocks to Firms

This table reports panel regressions of sales growth (Panel A) and return on assets (Panel B) on seniority shocks. All models contain firm-fixed effects and year-fixed effects. All standard errors are adjusted for clustering at the firm level, and t-stats using these clustered standard errors are included in parentheses below the coefficient estimates. ***Significant at 1%; **significant at 5%; *significant at 10%.

Panel A: Sales Growth	Dependent Variable: $Ln(Sales_{i,t}/Sales_{i,t-1})$									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Shock_Top1ChairOnly	-0.021**									
	(2.00)									
Shock_Top3ChairOnly		-0.014*								
		(1.66)								
Shock_Top5ChairOnly			-0.015**							
			(2.05)							
Shock_Top10ChairOnly				-0.017***						
				(3.40)						
Drop_Top1ChairOnly					-0.007					
					(0.75)					
Shock_Top1ChairOnly (House Shock)						-0.046***				
						(4.77)				
Shock_Top3ChairOnly (House Shock)							-0.021***			
							(3.94)			
Shock_Top5ChairOnly (House Shock)								-0.020***		
								(4.67)		
Shock_Top10ChairOnly (House Shock)									-0.022***	
									(6.53)	
Drop_Top1ChairOnly (House Shock)										0.003
										(0.33)
Adjusted R^2	0.241	0.241	0.241	0.241	0.241	0.241	0.241	0.241	0.241	0.241
No. of Obs.	139492	139492	139492	139492	139492	139492	139492	139492	139492	139492

Panel B: ROA	Dependent Variable: $Earnings_{i,t}/Assets_{i,t}$									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Shock_Top1ChairOnly	-0.006*									
	(1.71)									
Shock_Top3ChairOnly		-0.005**								
		(1.97)								
Shock_Top5ChairOnly			-0.005*							
			(1.91)							
Shock_Top10ChairOnly				-0.004***						
				(2.33)						
Drop_Top1ChairOnly					0.011***					
					(3.02)					
Shock_Top1ChairOnly (House Shock)						-0.019***				
						(3.88)				
Shock_Top3ChairOnly (House Shock)							-0.006***			
							(2.58)			
Shock_Top5ChairOnly (House Shock)								-0.008***		
								(3.89)		
Shock_Top10ChairOnly (House Shock)									-0.005***	
									(3.35)	
Drop_Top1ChairOnly (House Shock)										0.011**
										(2.39)
Adjusted R^2	0.559	0.559	0.559	0.559	0.559	0.559	0.559	0.559	0.559	0.559
No. of Obs.	149886	149886	149886	149886	149886	149886	149886	149886	149886	149886