

(When) are Lobbying Expenditures a Good Proxy for Lobbying Activity?

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Abstract

Lobbying expenditures are widely used as a proxy variable for measuring lobbying activity. However, the validity of this approach has rarely been examined and existing justifications do not account for heterogeneity in lobbyist compensation formats. I address the question using unique lobbying disclosure data from Wisconsin, where lobbying organizations report both hours worked and payments received by their lobbyists. Strong overall correlations between changes in expenditures and hours worked within organization-lobbyist dyads indicate that lobbying expenditures can serve as a reasonable proxy. However, caution is warranted due to substantial heterogeneity, with contract lobbyist relationships exhibiting weaker correlations than in-house relationships. I conclude by providing several suggestions to improve empirical analyses using lobbying expenditures.

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Introduction

Across disciplines, social scientists who examine the role of money in politics frequently and increasingly use *lobbying expenditures* to measure the *intensity of lobbying activity*. For example, scholars have used lobbying expenditures to examine the effect of lobbying on firms' effective tax rates (Richter et al. 2009), the likelihood of climate change policy being implemented (Meng and Rode 2019), the number of work visas allocated to specific economic sectors (Facchini et al. 2011), the extent to which philanthropic giving of firms is politically motivated (Bertrand et al. 2020), and the effect of political risk on political engagement by firms (Hassan et al. 2019).¹ However, it is unclear to what extent lobbying expenditures are a good proxy for the intensity of lobbying activity, and consequently, whether inferences drawn from analyses using such proxies are valid.

Studies that use lobbying expenditures by clients – a term for organizations or individuals that hire lobbyists – as a proxy variable generally do so without providing an explicit justification or discussing potential sources of measurement error.² The existing justifications for the approach that focus on the intensive margin link variation in expenditures to variation in the amount or hours of lobbyist work (Drutman 2015, 11; Richter et al. 2009). However, such arguments fail to consider heterogeneity in formats that are used to compensate lobbyists. While lobbyist compensation that is based on hourly rates should pick up variation in lobbying intensity well, the approach may be less successful when compensation takes the form of flat (or fixed) fees or retainers that cover longer time periods, which are likely to be more common for contract lobbyists than in-house lobbyists.

To examine if lobbying expenditures can serve as a valid proxy for the intensity of lobbying activity, and whether this differs across types of lobbyist and levels of temporal aggregation, I use data from unique lobbying disclosure requirements in the U.S. state of Wisconsin that are well suited to address these difficult questions. In particular, clients in Wisconsin report both the hours their lobbyists spent working and the payment received for these services in half-yearly disclosures

¹De Figueiredo and Richter (2014) and Bombardini and Trebbi (2020) provide more extensive overviews of related research.

²Occasionally discussed sources of bias are reporting thresholds and loopholes (e.g., LaPira and Thomas 2014; Leech et al. 2005) and variation in disclosure requirements (De Figueiredo and Richter 2014).

that distinguish between contract and in-house lobbyists. From these disclosures, I assemble a new data set of 40,069 client-lobbyist dyad observations from 2005 to 2018 which includes lobbying expenditures, hours worked, client organization type, and whether lobbyists worked in-house or as contract lobbyists.

I then leverage information on the number of hours worked to examine whether changes in expenditures capture changes in the intensity of lobbying activity. To account for differential rates of compensation and quality as well as quantity of work, I analyze correlations of within-biennium changes in expenditures and hours worked at the level of the client-lobbyist dyad. Since contract lobbyists are likely to differ from in-house lobbyists in the extent to which they are compensated via flat fees, I distinguish between both types of lobbyists, and also conduct analyses at different levels of temporal aggregation.

I find that, within client-lobbyist dyads, deviations in expenditures from biennium means are strongly correlated to such deviations in the amount of hours worked. At the same time, there is substantial heterogeneity by type of lobbyist, with stronger correlations for in-house lobbyists than for contract lobbyists. Further, I find that the differences between in-house and contract lobbyists are reduced in analyses at higher levels of temporal aggregation.

The results suggest that variation in lobbying expenditures can serve as a reasonable proxy for variation in lobbying activity. However, heterogeneity across types of lobbyists warrants caution when using data where contract lobbying predominates, which is often the case for business entities and for federal lobbying in the U.S. (e.g., Drutman 2015, 134; Strickland and Crosson 2023).³ This is especially the case when analyzing data at low levels of temporal aggregation (e.g., quarterly). In such cases, the risk for systematic measurement error and drawing faulty inferences is higher than for analyses using data dominated by in-house lobbying. When substantively appropriate, I recommend that researchers conduct subset analyses distinguishing clients by their reliance on contract and in-house lobbyists, to ensure that results are not exclusively driven by contract lobbyists. When using expenditures as independent variables, researchers should examine differences between

³In Supplemental Appendix A4.5, I provide evidence on the prevalence of contract lobbying across states and the federal level. Moreover, I show that federal contract lobbying is more prevalent among business interests than labor unions or ideological/single issue groups.

the coefficients for contract and in-house expenditures. Further, whenever analyses rely on a high proportion of contract lobbyists, researchers should consider higher levels of temporal aggregation of the data to reduce the severity of measurement error.

Potential Pitfalls in the Use of Lobbying Expenditures as a Proxy

Existing justifications for using lobbying expenditures to proxy for lobbying activity point to the potential to capture variation in the amount of hours of lobbyist work, especially in comparison to registrations of lobbyists (Drutman 2015, 11; Richter et al. 2009).⁴ While such arguments appear apt when lobbying expenditures are closely tied to hourly rates of compensation, many lobbyists are compensated via flat fees or retainers based on contracts in which they agree to a set of activities or to being available to work for the client for a particular time period.⁵ Since such compensation via flat fees relies on an expectation of lobbying activity, error will be introduced when the expectation differs from actual activity. Moreover, to the extent that contracts are made to cover longer periods of time, for example to smooth compensation across and ensure a level of income even during times of lower activity, analyses that use more temporally fine-grained units than the compensation periods will further introduce measurement error (LaPira and Thomas 2020). In addition, since the value of lobbyists' services is often based on connections (Bertrand et al. 2014; Blanes i Vidal et al. 2012), reputation, or prestige (Furnas et al. 2019; Hirsch et al. 2023), a large part of expenditures towards lobbyist compensates for relatively constant characteristics as opposed to variable effort.

Several reasons suggest that flat fees are more common among contract lobbyist than their in-house colleagues.⁶ First, as contract lobbyists rely more strongly on connections, prestige, and

⁴Other justifications for uses of proxy measures in lobbying include correlations between multiple potential proxies (e.g., Leech et al. 2005).

⁵Fixed-fee contracts specify flat fees for services agreed upon in advance. Retainers consist of down payments to secure availability for specific lengths of time or services. Though contracts involving the latter may be more flexible, I will use "flat fee" to refer to flat fees and retainers. Contingency fees for lobbying outcomes do not appear to be common, even where they are legal (Vronsky 2005).

⁶Whereas in-house lobbyists are the employees of a client, contract lobbyists frequently work for multiple clients under contracts that specify both compensation and scope of lobbying activities.

expertise than in-house lobbyists (e.g., Bertrand et al. 2014; Rosenthal 2001), a large part of what contract lobbyists are “selling” can be captured with a flat fee. Second, since obtaining timely access to public officials requires a lot of unproductive activity that is difficult to justify to clients as “billable hours”, contract lobbyists may prefer to charge flat fees that also incorporate the anticipated workload (Ho 2011; Rosenthal 2001, 179). Third, flat fees have been argued to create better incentives for contract lobbyists to solve problems more quickly (Guyer 2018, 107).⁷ Fourth, as contract lobbyists are not subject to an internal organizational hierarchy, conflicting interests of clients and contract lobbyists can prevent adjustments to the amount of effort through follow-up agreements (Williamson 1979, 251). Hence, clients may be better off securing the availability of lobbyists in advance. Further, in Appendix Section A1, I provide direct evidence from lobbying disclosures in Rhode Island and indirect evidence from federal U.S. lobbying disclosures that flat fees are more prevalent among contract than in-house lobbyists. Due to a greater prevalence of flat fees among contract lobbyist compared to in-house lobbyists, lobbying expenditures should be a better proxy for the latter than the former type of lobbyist.

Data

For the analysis, I rely on “Statements of Lobbying Activity and Expenditures” (SLAEs), which are half-yearly disclosures (January to June and July to December) required of lobbying clients in the U.S. state of Wisconsin.⁸ A unique feature of the disclosures is that clients need to report not only lobbying expenditures but also the number of hours their lobbyists spent working for them.⁹ To my knowledge, this combination of requirements does not exist in other U.S. states, at the federal

⁷The need for monitoring can also arise with in-house lobbyists (e.g., Lowery and Marchetti 2012).

⁸See Chapter 13, Subchapter III, Wisconsin Statutes and the Wisconsin Ethics Commission’s Wisconsin Lobbying User’s Guide (<https://ethics.wi.gov/Resources/LobbyingUsersGuide07192022.pdf>).

⁹Fines and jail time for misreporting (Section 13.69, Wisconsin Statutes), reputational incentives to report information truthfully (e.g., Bertrand et al. 2014; Groll and Ellis 2017), and monitoring by clients should make deliberate misreporting rare. In Appendix Section A5, I provide evidence that incorrect reporting is unlikely to drive the results.

level, or in other countries.¹⁰ As explained in the next section, this enables an examination of the extent to which changes in expenditures reflect changes in the intensity of lobbying.¹¹

I collected the available SLAEs and classifications of client types (e.g., business entities, associations, etc.) for all registered clients between 2005 and 2018 from the Wisconsin Ethics Commission’s lobbying disclosure website, lobbying.wi.gov. Next, I assembled information from these disclosures in a new data set indicating for each half-year and client-lobbyist relationship the number of hours worked, the amount of payment that lobbyists received, whether the lobbyist worked in-house or as a contract lobbyist, and client type.¹² The resulting data set includes 40,069 observations of lobbyist-client relationships, of which 25,807 are classified as contract lobbyists and 14,262 as in-house lobbyists. It also includes 1,832 observations based on non-licensed lobbyists which are excluded from the analysis because expenditures and hours are not itemized by individual non-lobbyists.¹³

Empirical Approach

Using lobbying expenditures and hours worked to examine the extent to which lobbying expenditures are a good proxy for lobbying activity requires several assumptions and clarifications. I do not assume that lobbying activity is necessarily better operationalized by the raw number of hours worked than by lobbying expenditures, because a good operationalization of lobbying activity should capture both the quantity and quality of effort. Factors such as connections, reputation, and expertise affect the quality of lobbyists effort and can be assumed to be priced into compensation rates of lobbyists, even if imperfectly. Hence, instead of looking at raw hours worked and expenditures, a better approach is to examine changes in hours worked and expenditures within client-lobbyist dyads, where a relatively constant compensation rate – that is geared to capture the

¹⁰Previously, these data were used to examine effects of lobbying on legislative outcomes (Grasse and Heidbreder 2011; Lewis 2013).

¹¹In Supplemental Appendix A2, I provide additional information about the disclosures.

¹²Please see the Supplemental Appendix Section A3 for details on coding decisions.

¹³Supplemental Appendix A4.1 provides descriptive statistics on overall expenditures and hours worked.

quality of effort – can be assumed, especially over shorter periods.

Therefore, I examine the correlation between changes in lobbying expenditures and hours worked within client-lobbyist dyads and within a given biennium.¹⁴ Here, biennium refers to a two-year period starting in the beginning of an odd calendar year and ending at the end of an even year. To focus on the intensive margin, I exclude observations with zero expenditures.¹⁵ Since some observations have non-zero expenditures but zero hours worked, I transform the hours worked variable to give zero weight to the extensive margin (Chen and Roth 2023).¹⁶ Then, for each client-lobbyist dyad, I estimate the Pearson correlation coefficient for the correlation between the log difference from the biennium mean in expenditures ($\ln(amount_{t \in b}) - \ln(mean(amount_{tb}))$) and hours worked by a lobbyist ($\ln(hours_{t \in b}) - \ln(mean(hours_{tb}))$), where t is a half-year and b is a biennium.

As contract lobbyists are more likely to be compensated via fixed fees or retainers than hourly rates, I further distinguish between different types of lobbyists, “contract” and “in-house” lobbyists. Further, since flat fees may be structured to smooth compensation across longer time periods, I examine differences by level of temporal aggregation. In particular, I estimate the same correlations as for the main analyses, but with expenditures and hours aggregated to the yearly level and with deviations (in log differences) from the overall, instead of biennial, client-lobbyist means.¹⁷ In Supplemental Appendix A4.2, I compare the correlations based on the non-aggregated and aggregated data with weighted correlations, where weights are based on the proportion of expenditures.

Evidence on the Quality of Lobbying Expenditures as a Proxy

Panels 1 through 3 in Figure 1 show scatter plots of deviations of client-lobbyist dyad expenditures and hours worked from client-lobbyist-biennium means, where half-yearly deviations are measured in log differences. They also show correlation coefficients and standard errors highlighting the

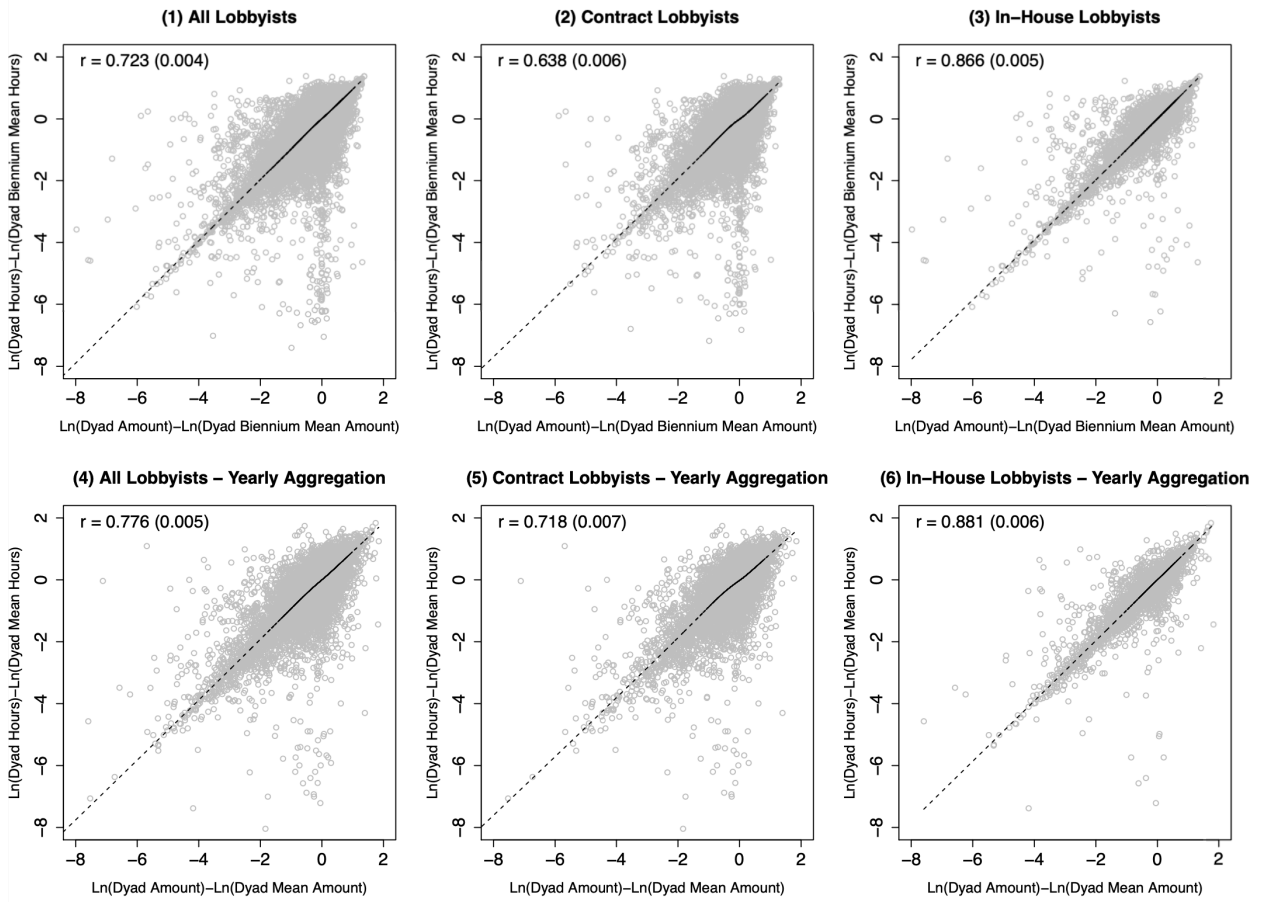
¹⁴All expenditures are inflation-adjusted to January 2020 US Dollars.

¹⁵I also exclude client-lobbyist dyads which have only one half-year of non-zero expenditures.

¹⁶Specifically, all zero-valued observations are attributed the overall minimum value in the respective sample and the values of all observations are divided by the minimum value.

¹⁷This analysis requires the stronger assumption that compensation rates are constant within client-lobbyist dyad across bienniums.

Figure 1: Within Client-Lobbyist Dyad Deviations From Means in Lobbying Expenditures and Hours Worked



Note: Panels 1-3 show scatter plots of half-yearly deviations in client-lobbyist dyad expenditures and hours worked from client-lobbyist biennium (two-year) means, with deviations measured in log differences. Panels 4-6 show scatter plots based on aggregated data: yearly deviations in client-lobbyist dyad expenditures and hours worked from overall client-lobbyist dyad means. Black lines show LOWESS curves which help highlight differences in the scatter plots across panels. Panels 1 and 4 show all lobbyists, Panels 2 and 5 show contract lobbyists, and Panels 3 and 6 show in-house lobbyists. Coefficients from unweighted correlations are shown with standard errors in parentheses.

strength of the association. Focusing first on the relationship for all lobbyist (Panel 1), there is a strong correlation, with an r of 0.723 (0.004). However, and as expected, this strong correlation masks important differences between contract lobbyists (Panel 2) and in-house lobbyists (Panel 3). In particular, with a coefficient of 0.638 (0.006) the correlation for contract lobbyists is weaker than for in-house lobbyists, with a coefficient of 0.866 (0.005). Supplemental Appendix A4.4 shows that

differences between contract and in-house lobbyists persist across organization types, the presence of the other lobbyist type, and whether or not lobbyists work for multiple clients.

Next, I examine results that use deviations of yearly expenditures and hours worked from overall client-lobbyist means (Panels 4-6). As expected, I find that the coefficients are higher when using the temporally more aggregated variables. In particular, the correlation is 0.776 (0.005) for all lobbyists. Interestingly, the comparatively stronger correlations are especially pronounced for contract lobbyists. Specifically, compared to a correlation of 0.638 (0.006) in the non-aggregated data, in the temporally aggregated data the coefficient for contract lobbyists is 0.718 (0.007). For in-house lobbyists, the correlation coefficient for the aggregated data is only slightly higher, 0.881 (0.006), than the coefficient of 0.866 (0.005) for the non-aggregated data. These results suggest that, on average, contract lobbyist expenditures are less sensitive than in-house lobbyists to variation in the intensity of lobbying within a given year. In Supplemental Appendix A4.2, I further show that the difference between contract and in-house lobbyists is accentuated when weighting based on proportions of lobbying expenditures attributable to a dyad.

Discussion

Using unique data from lobbying disclosures in Wisconsin, I find that within client-lobbyist dyads, changes in expenditures are strongly correlated with changes in the number of hours worked. At the same time, I find substantial heterogeneity, with subset analyses showing stronger correlations for in-house lobbyists than for contract lobbyists. Moreover, I find stronger correlations when observations are aggregated to the yearly level, especially for contract lobbyists.

These results show that using lobbying expenditures as a proxy for lobbying activity is a reasonable approach that can lead to valid inferences. However, they also point to sources of systematic measurement error that can result in bias, whether lobbying expenditures are used to proxy lobbying activity as an independent or dependent variable (e.g., Gallop and Weschle 2019). Specifically, to the extent that contract lobbyists are compensated via flat fees, which are more adapted to the type of work they engage in and their non-hierarchical relationships with clients, lobbying expen-

ditures for contract lobbyists are likely to be less accurate than expenditures for in-house lobbyists in proxying for lobbying activity. This is especially the case when contracts cover longer time periods. Since some types of lobbying organizations (e.g., businesses and associations) predominantly engage contract lobbyists, measurement error in analyses that focus on such organizations is going to be a greater concern than for organizations that are more likely to employ in-house lobbyists (e.g., labor unions), who are more likely to be compensated via hourly rates.¹⁸

The analyses in this paper suggest a number of avenues to improve future research when using lobbying expenditures as a proxy for lobbying activity. First, information on whether expenditures are for in-house or contract lobbyists – information which is frequently available, including in federal U.S. lobbying data – can be used for different types of robustness checks. In particular, when the dependent variable is based on lobbying expenditures, I recommend that researchers perform subset analyses that distinguishing clients by their reliance on contract and in-house lobbyists to ensure that results are not exclusively driven by contract lobbyists. When researchers use lobbying expenditures as independent variables, I recommend they examine differences between the coefficients for contract and in-house expenditures. Further, when substantively appropriate, analyses using lobbying expenditures can be supplemented with additional measures, based, for example, on bills lobbied or committee appearances, to capture variation in lobbying activity (e.g., Drutman 2015; Lee and You 2023). Finally, since temporally fine-grained data, for example at the quarterly level, cannot automatically assumed to be best for reducing measurement error, researchers should consider a higher level of temporal aggregation in analyses where contract lobbying predominates, such as federal lobbying in the U.S.

¹⁸In Supplemental Appendix A4.3, I show that the types of lobbying clients that have a high proportion of contract lobbyists have lower correlations than other types of clients.

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Supplemental Appendix

A1 Relationship Between Compensation Formats and Types of Lobbyists

A1.1 Direct Evidence From Rhode Island

As discussed in the introduction, there are many reasons to believe that fixed fees are more common among contract lobbyists compared to in-house lobbyists. Compared to, for example, hourly compensation, flat fees or retainers specified in contracts between clients and lobbyists and their firms are likely to be an imprecise approximation of the amount of lobbying activity these lobbyists engage in. This can lead to a weakening of the measured relationship between lobbying activity and lobbying expenditures.

To examine whether there is evidence that contract lobbyists and lobbying firms are more likely to

Table A1: Type of Compensation by Type of Lobbyist Employment in Rhode Island (2017-2020)

	Contract Lobbyists	In-House Lobbyists	Misc.
Annual	28.1%	15.0%	11.8%
Monthly	60.9%	21.9%	24.4%
Hourly	9.4%	54.5%	22.6%
Pro-Bono	1.7%	8.6%	41.1%
N	1,754	1,530	389

Note: The table shows the percentages for different types of compensation rates for contract and in-house lobbyist in Rhode Island from 2017 and 2020. Lobbyists that cannot be coded clearly into the contract or in-house categories based on readily accessible information are in the category “Misc.”.

be paid by clients with flat fees and less likely to be paid on an hourly basis than in-house lobbyists, I collected data from lobbying client registrations in Rhode Island from 2017 through 2020.¹ While data on the form of lobbyist compensation (e.g., hourly; monthly, semi-annual, annual, or biannual fee; or pro-bono) is not comprehensively available in Wisconsin, such data are readily accessible in

¹I am not aware of previously empirical work examining the format of compensation for different types of lobbyists.

Rhode Island.² These filings require clients to report the amount and frequency of compensation paid to a lobbyist or lobbying firm, and distinguish between hourly, monthly, and annual rates, as well as pro-bono work. I classify lobbyists into contract, in-house, or “Misc.,” based on information in the filings, including lobbyist employer and email address.³ I then examine the frequency of different compensation formats across contract and in-house lobbyists.

The results in Table A1 show that contract lobbyists in Rhode Island are rarely paid by the hour (only 9.4% of cases) whereas this arrangement is the modal form of compensation for in-house lobbyists (54.5%). Instead, contract lobbyists are paid most frequently on a monthly basis (60.9%), with annual payments coming in second (28.1%). While the patterns of lobbying compensation by type of lobbyists in Rhode Island may not carry over exactly to Wisconsin or lobbying at the federal level, they strongly suggest that contract lobbyists are, in general, less likely to receive hourly compensation and more likely to be compensated with a flat fee than in-house lobbyists.

A1.2 Indirect Evidence From Federal Lobbying Disclosures

I examine the persistence of lobbying expenditures at the federal level to determine the extent to which in-house and contract lobbyists may differ in their propensity to be compensated via flat fees. To do so, I collected data on lobbyist compensation contained in LDA reports from 1998 through 2020 provided by the non-profit Open Secrets (<https://www.opensecrets.org/bulk-data>). Here, the data contain an indicator for whether reports were made for in-house or contract lobbyists.

Analyzing federal lobbying disclosures provides another way to highlight the propensity for contract lobbyists to be compensated via flat fees or retainers. In particular, for a given client-lobbying firm (contract lobbying) relationship and a given client reporting in-house compensation,

²To my knowledge, other other state-level or federal disclosures do not currently contain this information. The data are available at <https://www.sos.ri.gov/divisions/open-government-center/lobbying>.

³I coded a lobbyist as “contract” if a lobbying firm is listed as the employer, the lobbyist has an email address of a lobbying firm, or the lobbyist works for multiple client in a given year and does not have an email address from the client. I coded lobbyists as “in-house” if they have an email address from the client or repeatedly work for the same unique client and do not have the email address linked to a lobbying firm. The remaining cases were coded as “Miscellaneous” (“Misc.”).

I examine whether compensation amounts paid are the same across filings within a given year.⁴ For reports of clients for their in-house lobbying, I find that the level of compensation did not change within a year for 24% of client-year observations. On the other hand, for reports based on contract lobbying, I find that the level of compensation was unchanged within a year for 50% of client-lobbying firm-year observations.⁵ Of course, the fact that compensation amounts were the same across reports within a given year or biennium does not clearly demonstrate that compensation was made via a flat fee or retainer, as this can also result from hourly compensation for the same amount of hours.⁶ Nevertheless, these large differences in the persistence of compensation are consistent with differences in the format of compensation across in-house and contract lobbyists and therefore differences in the extent to which lobbying expenditures capture lobbying activity.

A2 Additional Details on Lobbying Disclosures from Wisconsin

Statements of Lobbying Activity and Expenditures include the names of licensed lobbyists who were registered to lobby on behalf of their clients, how many hours they spent working for them, how many of those hours were spent communicating with public officials, and the amount of compensation paid to each in-house lobbyist, individual contract lobbyist or lobbying firm.⁷ Thresholds for disclosure are very low, with organizations or individuals spending more than \$500 per calendar year on lobbying being required to register as a client (or “principal”). Similarly, individuals who lobby public officials must obtain a license if they are compensated for their work beyond covering expenses and lobbying takes place on at least five days during a reporting period.⁸ Further,

⁴I exclude reports with zero expenditures and reports after 2020.

⁵Within a biennium, the respective percentages are 16% for in-house lobbyists and 37% for contract lobbyists.

⁶Moreover, reporting requirements are not the same for clients reporting in-house lobbying and lobbying firms (e.g., LaPira and Thomas 2020; Leech et al. 2005), which makes the comparison less than perfect.

⁷Hours worked are reported for each individual lobbyists, but compensation amounts are sometimes reported by lobbying firm. When multiple lobbyists at a lobbying firm worked for the same client, I attribute expenditures based on hours worked (see Supplemental Appendix A3).

⁸Clients also report aggregated compensation and hours spent on lobbying for “non-lobbyists”; non-licensed employees who spent time lobbying on behalf of the client.

clients separately report lobbying expenditures that do not go towards compensating lobbyists, such as paid advertising, permitting a more direct focus on “inside” lobbying, as opposed to “outside lobbying”, aimed at mobilizing the public to influence public policy (e.g., Kollman 1998).⁹

A3 Details on Coding Decisions

Relying on a combination of auxiliary information from other disclosures filed in Wisconsin, as well as information from the organizations’ current and prior websites, I re-coded names of lobbying clients, lobbying firms, and lobbyist names, whenever the entity or person was the same but had filed under a different name. This includes minor differences in spelling of organization names, renaming of the same organization, and name changes due to marriage. All original names remain as additional variables in the data set. When expenditures are disclosed at the employer level, i.e., a payment for a lobbying firm, or fringe benefits, overhead, and travel and living expenses for in-house employees, expenditures were allocated to lobbyists (and lobbyists categories) according to their proportion of the total number of hours worked. When filings are inconsistent with lobbyist time reports, indicating duplicated entries of in-house lobbyists under the “contract” category, duplicate observations were excluded from the analysis.

⁹Both travel and living expenses for clients’ lobbying employees (licensed or not) are also reported.

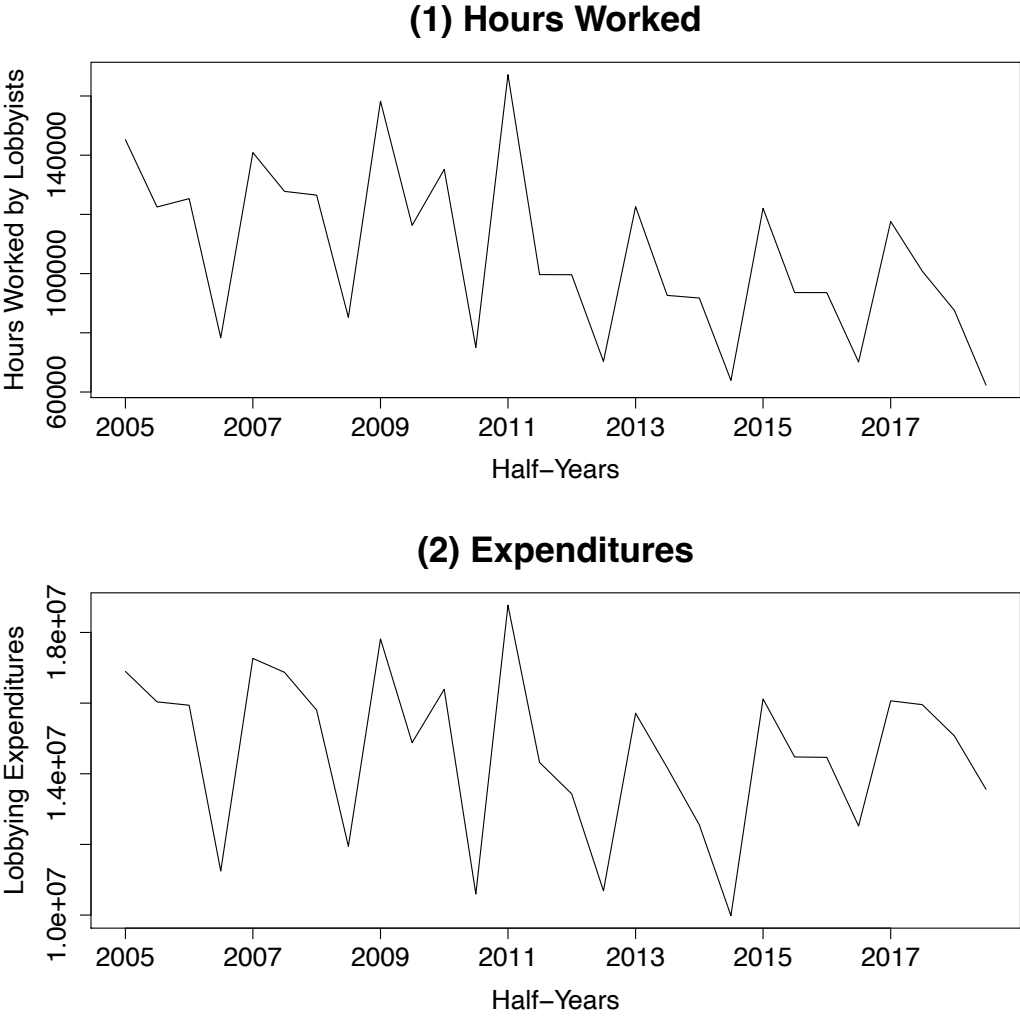
A4 Additional Results

A4.1 Descriptive Statistics

In addition to 40,069 observations of lobbyist-client relationships (25,807 with contract lobbyists and 14,262 with in-house lobbyists) the data set also includes 1,832 observations for non-licensed lobbying expenditures and hours spent lobbying, for a total of 41,901 observations. Across the 28 half-year time periods, the number of observations is relatively stable, with a mean of 1,496 observations, and a standard deviation of 86. There is also substantial over-time variation in hours worked (Mean: 106,857 hours, SD: 28,488) and expenditures (Mean: \$14,627,017 in Jan. 2020 Dollars, SD: \$2,308,135) across time periods. This is driven both by within-biennium changes and, at least in the case of hours worked, a slight recent downward trend compared to the periods before 2012.¹⁰ Figure A1 shows changes in hours worked and lobbying expenditures over time.

¹⁰Here, biennium refers to a two-year period starting in the beginning of an odd calendar year and ending at the end of an even year.

Figure A1: Reported Hours Worked and Lobbying Expenditures, Aggregated by Half-Year



Note: Expenditures and hours include contract lobbyists, in-house lobbyists, and non-licensed lobbyists between 2005 and 2018. Lobbying expenditures are shown in January, 2020 US Dollars.

A4.2 Unweighted vs. Weighted Correlations

Here, I compare results from from unweighted and weighted correlations. For the analysis using half-yearly, non-aggregated, data, weights are based on the percentage of lobbying expenditure in the biennium attributable to the client-lobbyist dyad. For the analysis using yearly, aggregated, data, weights are based on the percentage of overall lobbying expenditures due to the client-lobbyist dyad. In both cases, the coefficients from the overall correlations are lower than for the unweighted correlations. Moreover, the difference between contract and in-house lobbyists becomes larger.

When weighting observations by the percentage of lobbying expenditures due to a client-lobbyist dyad in a given biennium, the overall correlation in the half-yearly, non-aggregated, data is 0.590 (0.005). This is especially driven by contract lobbyists, where the correlation is 0.460 (0.006), compared to in-house lobbyists, at 0.842 (0.005).¹¹ When weighting the aggregated data by the overall percentage of expenditures due to a client-lobbyist dyad, the coefficients are 0.724 (0.005) for all lobbyists, 0.651 (0.007) for contract lobbyists, and 0.875 (0.006) for in-house lobbyists.¹²

¹¹The unweighted correlations were 0.723 (0.004), 0.638 (0.006), and 0.866 (0.005), respectively.

¹²The unweighted correlations were 0.776 (0.005), 0.718 (0.007), and 0.881 (0.006), respectively.

A4.3 Correlations for Different Types of Lobbying Clients

In Table A2, I compare the correlations between within client-lobbyist dyad deviations in lobbying expenditures and hours worked from the respective dyad-biennium means for different types of lobbying clients (business entities; trade and professional associations; governmental entities; charitable, Religious, Civic, or other organizations; and labor unions).¹³ As for the results in Panels 1-3 of Figure 1, deviations are measured in log differences, and I exclude observations with zero expenditures and client-lobbyist dyads with only one half year of non-zero expenditures in a given biennium. Moreover, observations are unweighted. The table shows that organizations that have high proportions of contract lobbyists, such as business entities and associations, have lower correlations than organizations with comparatively low proportions of contract lobbyists, such as government entities, labor unions, or charitable, religious, civic, and other organizations.

Table A2: Correlations Between Within-Dyad Changes in Lobbying Expenditures and Hours by Type of Organization

Type of Organization	Correlation	Percent of obs. are contract lobbyists
Business Entities	0.642 (0.008)	77.2% (out of 9,361 obs.)
Trade & Professional Associations	0.712 (0.006)	63.8 % (out of 12,330 obs.)
Governmental Entities	0.886 (0.010)	54.1% (out of 1,952 obs.)
Charitable/Religious/Civic/Oth	0.802 (0.008)	39.7% (out of 6,012 obs.)
Labor Unions	0.816 (0.017)	27.9% (out of 1,220 obs.)

Note: Column 1 shows the Pearson correlation coefficients for deviations of within-client-lobbyist dyad expenditures and hours worked from within client-lobbyist biennium means, where deviations are measured in log differences. Rows 1 and 2 show estimates and standard errors for the measure, estimated as for Panel 1 in Figure 1. Column 3 shows the percentage of observations that include contract lobbyists.

¹³These classifications are provided by the disclosures from the Wisconsin Ethics Commission.

A4.4 Correlations for Contract and In-House Lobbyists Across Types of Lobbying Clients

Table A3: Correlations Between Within-Dyad Changes in Lobbying Expenditures and Hours for Contract and In-House Lobbyists by Type of Organization

Type of Organization	Contract Lobbyists	In-House Lobbyists
Business Entities	0.592 (0.009)	0.851 (0.011)
Trade & Professional Associations	0.654 (0.009)	0.829 (0.008)
Governmental Entities	0.85 (0.016)	0.952 (0.01)
Charitable/Religious/Civic/Oth	0.647 (0.016)	0.894 (0.007)
Labor Unions	0.691 (0.039)	0.859 (0.017)
Organizations With Only Contract / In-House Lobbyists	0.641 (0.008)	0.881 (0.008)
Organizations With Both Contract & In-House Lobbyists, But Only in Other Sessions	0.66 (0.015)	0.851 (0.011)
Organizations With Contract & In-House Lobbyists in Current Session	0.627 (0.01)	0.862 (0.007)
Lobbyists With 1 Client	0.688 (0.025)	0.865 (0.005)
Lobbyists With up to 4 Clients (Median # of Clients for Contract Lobbyists)	0.629 (0.014)	
Lobbyists More Than 4 Clients (Median # of Clients for Contract Lobbyists)	0.640 (0.006)	

Note: Columns 2 and 3 show correlation coefficients for deviations of within-client-lobbyist dyad expenditures and hours worked from client-lobbyist biennium means, with deviations are measured in log differences. Column 2 shows correlations for contract lobbyists. Column 3 shows correlations for in-house lobbyists. Each row and column shows results for different subsets of client-lobbyist dyads. As for the results in Panels 1-3 of Figure 1, deviations are measured in log differences, and I exclude observations with zero expenditures and client-lobbyist dyads with only one half year of non-zero expenditures in a given biennium. Dyads are not weighted based on percentage of expenditures.

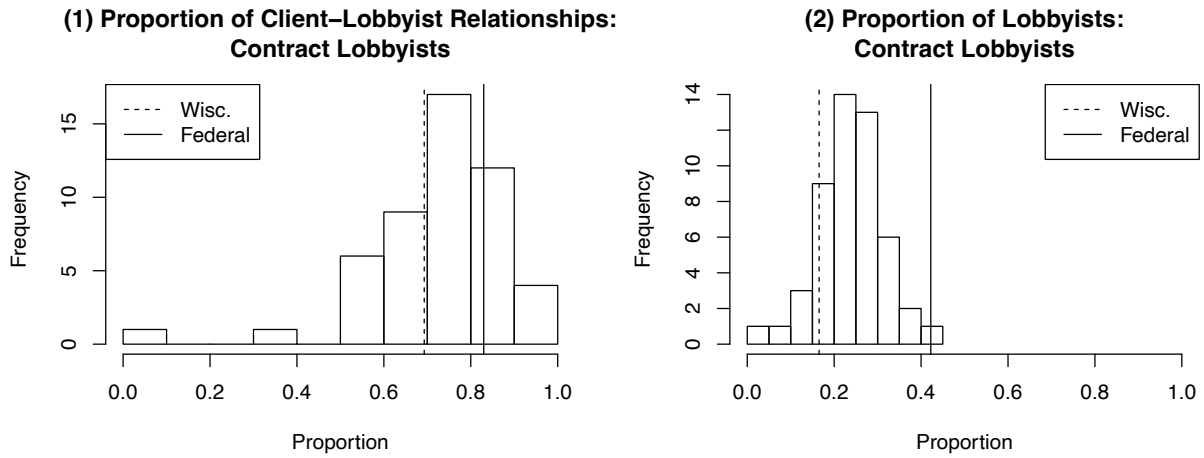
A4.5 Prevalence of Contract Lobbyists in Federal and State Lobbying

Using lobbying disclosures from 2017, collected by [Followthemoney.org](https://www.followthemoney.org), I estimate the proportion of lobbyists in each state that are contract lobbyists. I then calculate the number of client-lobbyist relationships that include a contract lobbyist and the number of unique lobbyists that contract lobbyists. All lobbyists with more than one client are coded as contract lobbyists. Similarly, using federal lobbying disclosure data from [OpenSecrets.org](https://www.opensecrets.org) – which have indicators for contract lobbying disclosures – I calculate the number of client-lobbyist relationships that include a contract lobbyist and the number of unique lobbyists that contract lobbyists. The results are shown in Figure A2.

Panel 1 shows the proportion of client-lobbyist relationships that include a contract lobbyist across states for 2017. Across the 50 states, the median is 69%, which is similar to Wisconsin (73%). At the federal level, the percentage is higher, at 83%.

In Panel 2, the histogram shows the number of estimated unique lobbyists in each state in 2017 that are contract lobbyists. Across the 50 states, the median is 23%, which is similar to Wisconsin (17%). At the federal level, the percentage is higher, at 42%. As these results show, Wisconsin is a typical state regarding the prevalence of contract lobbyists and federal lobbying tends to have more contract lobbying than state-level lobbying. Moreover, in Table A4, I show the proportion of client-lobbyist relationship that include a contract lobbyist by sector and across all disclosures from 1998 through 2020. The table shows that contract lobbyists are especially prevalent among business interests and less prevalent among ideological/single issue clients as well as labor unions.

Figure A2: Prevalence of Contract Lobbyists in Federal and State Lobbying



Note: The histogram in Panel 1 shows estimates of the proportion of client-lobbyist relationships across states in 2017 that include a contract lobbyist. The histogram in Panel 2 shows the proportion of estimated unique lobbyists across states in 2017 that are contract lobbyists. The dashed lines show the estimated proportions for Wisconsin. The solid lines show the proportions at the federal level.

Table A4: Proportion of Client-Contract Lobbyist Relationships by Sector

Sector	Proportion With Contract Lobbyist
Unknown	0.96
Lawyers & Lobbyists	0.91
Other	0.89
Defense	0.87
Communications/Electronics	0.85
Transportation	0.85
Energy & Natural Resources	0.84
Misc Business	0.84
Health	0.83
Finance/Insur/RealEst	0.82
Construction	0.79
Agribusiness	0.77
Ideological/Single-Issue	0.61
Labor	0.46

Note: The table shows the proportion of client-lobbyist relationships from federal lobbying disclosure data that include a contract lobbyist, by sector, and across 1998 through 2020.

A5 Evidence on the Correct Disclosure of Hours Worked

To assess the extent to which hours worked are accurately reported, both overall and across types of lobbyists, I compare data on appearances of licensed lobbyists for registered clients at committee hearings in Wisconsin’s state legislature from 2005 through 2016 with timesheet reports of those lobbyists. Licensed lobbyists are required to submit timesheet reports on which they report, for each day in a given reporting period, the amount of hours they spent working for their client on lobbying-related activities.¹⁴ I collected the timesheet reports from the “Eye on Lobbying Website” (lobbying.wi.gov) and the data on committee hearings from the website of the Wisconsin State Legislature (<https://legis.wisconsin.gov/>). Merging the data on hearings and timesheet reports, I obtain 5,228 observations of lobbyist-client-hearing appearances, of which a large majority, 4266, are from in-house lobbyists. Then, out of the hearings that lobbyists attend for a client on a given day, I calculate the proportion where they also report non-zero lobbying-related hours for that client and that day.¹⁵

I find that in a total of 91.7% of the committee hearing appearances in the sample, the lobbyist reported non-zero hours for the client that the lobbyist appeared at the hearing for. This high overall proportion provides evidence for the relative propensity of lobbyists to accurately report their hours worked. I also find relatively minor differences between contract lobbyists and in-house lobbyists, for whom the proportions are 89.0% and 92.3%, respectively.

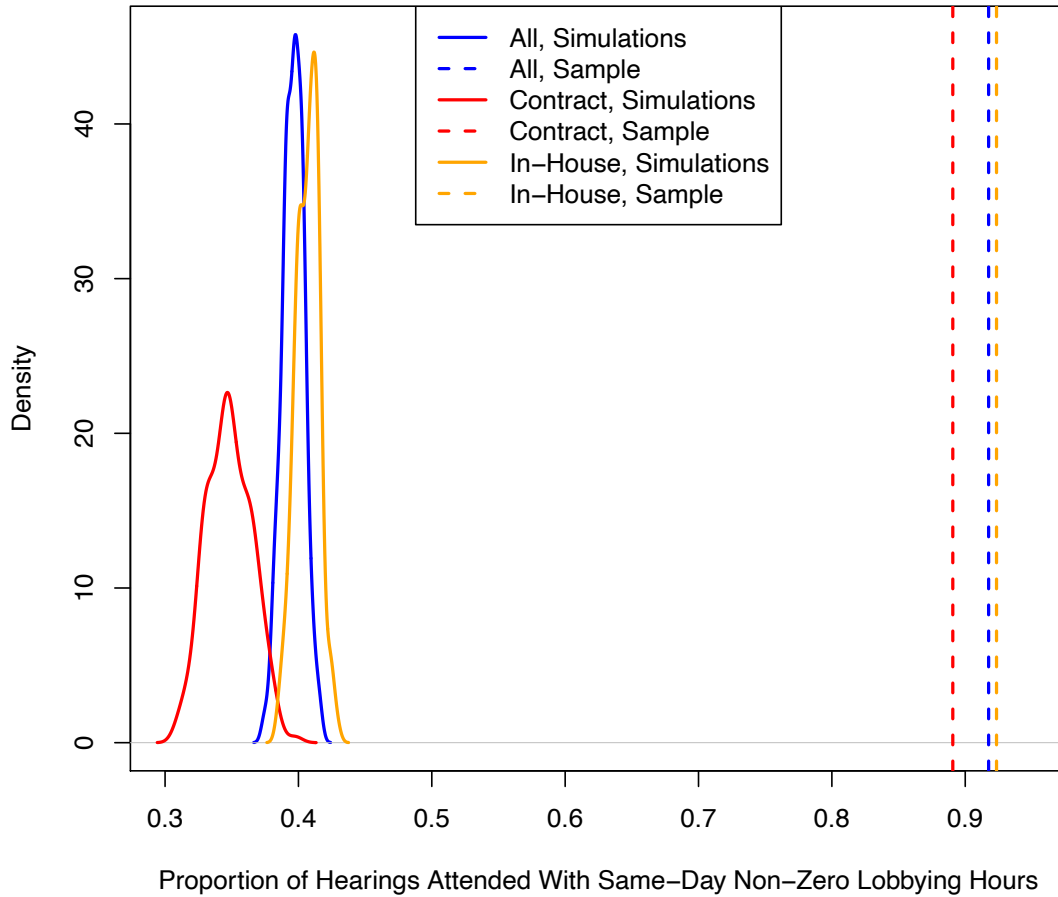
To put these proportions into context, I compared them against a baseline of randomly reporting non-zero hours for a client. To create this baseline, I randomized the days within the six-month period of a lobbyist report, so that the hours worked linked to a committee hearing could come from any of the days within that period. For each of 200 sets of randomizations, I then merge the timesheet reports to the committee hearings and calculate the same proportions as above.

¹⁴See <https://ethics.wi.gov/Pages/Lobbying/ReportActivity.aspx> for additional details on reporting requirements.

¹⁵I use both hours communicated and other hours worked, because lobbyists may not always get to speak at a hearing, or because lobbyists may speak only a short time, and may therefore not classify the time spent working as having communicating a significant amount of time (compared to time spent going to the meeting, taking notes, etc.)

Figure A3 shows the densities of the distributions of the simulated proportions of hearings attended with same-day non-zero lobbying-related hours. The distributions are centered at around 39.7% overall, with contract lobbyists having a lower baseline propensity and in-house lobbyists having a higher baseline propensity (centered at around at 34.8% and 40.1%, respectively). The large difference between the simulated proportions (which assume randomness in reporting) and the sample proportions provide additional evidence for the accuracy of disclosures. Moreover, the lower simulated proportions of contract lobbyists, compared to in-house lobbyists, suggest that the already small difference between the sample proportions of contract and in-house lobbyists should not be overstated. Overall, the results provide evidence that the differences between contract and in-house lobbyists shown in the main analyses of the paper are not driven by differences in the accuracy of disclosure by contract and in-house lobbyists.

Figure A3: Evidence on the Propensity to Disclose Hours Worked



Note: The figure presents the distributions, from 200 simulations, of simulated proportions (solid lines) of the times that a lobbyist's attendance at a legislative committee hearing coincided with reporting non-zero hours during on particular day. Hours reported on a particular day were randomized within the respective half-year period. Dashed lines show the in-sample values.