Does Transparency Lead to Pay Compression?

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Abstract

This paper asks whether pay disclosure in the public sector changes wage setting at the top of the public sector distribution. I examine a 2010 California mandate that required municipal salaries to be posted online. Among top managers, disclosure led to approximately 7 percent average compensation declines, and a 75 percent increase in their quit rate, relative to managers in cities that had already disclosed salaries. The wage cuts were largely nominal. Wage cuts were larger in cities with higher initial compensation, but not in cities where compensation was initially out of line with (measured) fundamentals. The response is more consistent with public aversion to high compensation than the effects of increased accountability.

Pay transparency policies are growing in importance. Recent examples include states and cities that have increasingly disclosed worker salaries as part of sunshine initiatives, a U.S. presidential memorandum that recommends requiring federal contractors to submit summary data on employee compensation by race and sex, and a newly imposed rule that requires publicly traded companies to compare CEO pay with the pay of the median worker.[1] In an extreme example, Norway publishes all of its residents' tax returns online (MacDougall 2009).

While the literature has made progress in understanding how preferences about inequality and redistribution are shaped by available information (e.g. Bartels 2005; Card et al. 2012; Cruces, Perez-Truglia, and Tetaz 2013; Kuziemko et al. 2013; Karadja, Mollerstrom, and Seim 2014), little is known about whether transparency affects pay. Two reasons why salary transparency might change the compensation structure in organizations, particularly at the top of the distribution, are (1) greater accountability and (2) public aversion to salaries perceived as excessive.

Advocates for transparency polices in the public sector have stressed that increased disclosure should lead to increased accountability.[2] Better information might allow the public to hold elected officials more accountable for gaps between pay and productivity.[3] Increased accountability could result in lower manager compensation if capture and managerial power are restrained.[4] Consistent with this hypothesis, using survey data from across 175 countries,

[1] See https://ballotpedia.org/State_government_salary for states with employee salary databases, www.whitehouse.gov/the-press-office/2014/04/08/ presidential-memorandum-advancing-pay-equality-through-compensation-data for the presidential memorandum, and https://www.sec.gov/news/pressrelease/2015-160.html for the SEC rule of CEO pay relative to the median worker.
[2] See, for example, *The Economist*, "Sunshine or colonoscopy?" November 19, 2011. http://www.economist.com/node/21538774
[3] Greenstone, Oyer, and Vissing-Jorgenson (2006) find evidence that mandated disclosure requirements in the 1964 Securities Act led managers to focus more on maximizing shareholder value.
[4] See Di Tella and Fisman (2004), Diamond (2013) and Brueckner and Neumark (2014) for evidence of rent extraction in the public sector.

Djankov et al. (2010) find that public disclosure of politicians' income is associated with lower perceived corruption and better government.

Transparency may also lead to pay compression if there is public sentiment against high levels of compensation, even if compensation is in line with fundamentals. Such a response would be consistent with inequality aversion on the part of the public (Fehr and Schmidt 1999).[5] There has been speculation in the executive compensation literature that this type of "populist" response to seemingly high levels of compensation has contributed to lower executive pay in publicly traded companies where top salaries are disclosed (Jensen and Murphy 1990), though there is little quantitative evidence of this phenomenon.

Understanding the effects of transparency on wage setting, as well as the underlying mechanisms, is important for guiding policy. Estimating this effect is challenging, as it requires finding variation in transparency at an organizational level, as well as data on wages. This paper seeks to overcome these difficulties by examining how a 2010 California mandate that required cities to disclose municipal salaries affected the compensation of the Chief Administrative Officer ("city manager") position—typically the highest paid city employee. The research design exploits the fact that prior to the mandate a subset of cities ("previous disclosure" cities) had already disclosed the salaries of their top managers.[6] Using the Internet *Wayback Machine* and archives of more than three hundred local newspapers, I identify cities where the salaries of city managers were already disclosed to the press or on their websites at the time of the mandate. Prior to the mandate, 63 percent of cities already disclosed the salary of the city manager. I

[5] A related mechanism is morale considerations on the part of workers since transparency can lower job satisfaction (Card et al. 2012) and being paid below expectations can lead to declines in productivity (Greenberg 1990; Krueger and Mas 2004; Mas 2006; Mas 2008; Cohn et al. 2014). Employers might internalize these fairness concerns when setting pay (Frank 1984, Akerlof and Yellen 1990, and Bartling and von Siemens 2010). Transparency might also reduce gender and race wage gaps by making it easier to compare wages of workers in similar jobs; this was, in fact, the stated motivation behind the 2014 presidential memorandum referenced above.

[6] This strategy is similar to the one used by Bo, Slemrod, and Thoresen (2014) who study the effects of disclosure on tax avoidance in Norway.

compare these cities to other cities where the mandate represented the first recorded disclosure of city manager salary ("new disclosure" cities). I also make comparisons to wages in Arizona cities, where there were no changes in disclosure policy.

One difficulty when studying the effects of disclosure policies is that pre-disclosure information is not typically available. In order to examine pre-mandate trends, I made a public records request to all 482 cities in California for 1999-2012 payroll records and contracts of city managers, and to the California Public Employees' Retirement System (CalPERS) for 2001-2012 earnings records of employees who contributed to CalPERS pensions.

The evidence suggests that compensation is sensitive to increased transparency. Comparing the evolution of wages in cities that previously did and did not disclose salaries, I find that salary disclosure reduced compensation of city managers by an average of approximately 7 percent. These cuts occurred both in cities where managers remained in their position, and in cities where managers changed. Interestingly, given the evidence on firms' reluctance to cut nominal wages (Bewley 2012), these cuts were largely nominal. Wage cuts were substantially larger in cities where compensation was initially higher, particularly cities where the city managers were paid more than $200k annually prior to disclosure (the mean salary was $193k in 2009). There was no relative decline in the 50^{th}, 75^{th}, and 90^{th} percentiles of the city wage distributions, on average, implying that reductions at the top of the wage distribution reflect pay compression.

Importantly, this wage effect does not appear to be the result of citywide furloughs or budget cuts following the 2007 recession. I find no evidence of differential changes between new and previous disclosure cities in average earnings of municipal employees excluding the city manager, number of municipal employees, or the average income levels of residents. Additionally, the wage reductions came after furloughs peaked in California.

To assess whether these wage cuts were the result of greater accountability, I use the estimated relationship between wages and city characteristics in cities that voluntarily disclosed wages before the reform to predict wages in cities that did not disclose this information. I then test whether the reduction in salaries in these cities is larger when there is a greater positive residual wage, as would be the case if wages were driven up beyond market levels in secrecy. I find that that this is *not* the case: wages fall as much in positive and negative residual cities on average. This finding suggests that wage cuts were not the result of the discovery of managers who exploited secrecy to inflate their wages, in general.

I also examine the effects of disclosure on manager turnover. I document that the policy was associated with approximately a 75 percent increase in the quit rate. I find suggestive evidence from a review of city manager biographies that, in turn, these cities experienced increased difficulty attracting qualified managers to fill vacancies. Departing managers tended to leave for other positions, either in the public or private sector, or retire and collect pensions. Those who took other city manager positions had pay increases, on average.

Overall, the evidence is more consistent with the "populist" explanation of an aversion to large salaries. Disclosure pressured cities to lower salaries, particularly large salaries, but not salaries that were higher than predicted by fundamentals. The high levels of voluntary separation following disclosure provide further support for this conclusion, since in these cases it was evidently not possible to renegotiate compensation to transfer surplus to taxpayers. Providing additional support for this conclusion, the new disclosure effect was more pronounced in cities where voters had stronger redistributive preferences, as proxied by the Obama vote share in the 2008 election.

In addition to shedding light on the role of information on the wage structure, this paper contributes to the literature on the causes and effects of government transparency (e.g. Djankov et al. 2010) and to the related literature on the relationship between the press and political accountability. The findings in this paper suggest that exposure to media had a significant effect in restraining wages at the top of the wage distribution. This finding is consistent with Snyder and Stromberg (2010) who find a relationship between press coverage and politicians' actions and policies.[7]

Section I. Pay Disclosure in California

In July 2010, an investigative report by the *Los Angeles Times* revealed that the city manager of Bell, California (population 35,000) was being paid close to $800,000 annually (Gottlieb and Vives 2010). While there were no legal limits on city manager compensation in California (though in this case there turned out to be illegally written employment contracts), this compensation was considered by many to be excessive. As a direct consequence of this scandal, in August 2010 the State Controller John Chiang initiated the "Local Government Compensation Reporting Program." This program required salary information for elected officials and other public employees to be clearly stated on city websites, and that the information be transmitted to the State Controller's Office and posted on its website (gcc.sco.ca.gov). The website went online in October 2010 with almost universal compliance. By the end of 2012 the website had almost 6 million online views.[8,9]

[7] On the role of the media and information on electoral outcomes and political accountability, see also Mondak (1995), Besley, Burgess, and, Prat (2002), Arnold (2004), Reinikka and Svensson (2004), Besley and Pratt (2006), Brunetti and Weder (2003), Gentzkow (2006), DellaVigna and Kaplan (2007), Ferraz and Finan (2008), Gentzkow, Shapiro and Sinkinson (2011), and Pande (2011).

[8] See http://www.acwa.com/news/state-legislation/state-controller's-public-pay-website-gets-overhaul.

[9] The Bell scandal led to increased attention and media interest in public sector salaries, and a number of newspapers requested salaries of municipal employees from cities in their markets. As a result, the treatment is broader than the State Controller mandate and includes all post-Bell media exposure.

A review of local newspapers around this time reveals cases where this disclosure led residents to question city councils and management. For example, in the City of Lindsay, there was a reported "outcry of shock and alarm" by the public over the city manager's $214,405 salary, which many considered excessive.[10] Disclosure led to "rumors that city water bills had been raised to pay for abnormally high salaries."[11] Highlighting the opacity of the pay setting process in this instance, a member of the city council stated that she "understood and shared much of the sticker shock" because she knew "what the original contract with [the] city manager had been, but not what his salary and benefits had risen to."[12] In other cases newly disclosed city manager salaries were used as fodder in local political campaigns (Vorderbrueggen 2010) and reported extensively on websites of watchdog groups.[13] Following disclosure there were press reports that city manager salaries were being driven down. A municipal recruiter was quoted saying in 2011 (in the context of both the Bell scandal and the recession) that for "every city manager search I've done since last year, the council is looking to pay the new city manager less than the previous city manager."[14]

With the goal of learning more about the public reaction to disclosure I spoke to city council members at four cities, three new disclosure and one previous disclosure, about the public response to increased transparency.[15] A councilmember in a new disclosure city stated that the topic of the city manager salary was a central topic of public discussion in city council meetings immediately after the release of municipal salary data and while he believed that

[10] Quoted in Kimball, Pam. 2011. "Lindsay Council Member Responds to Editorial," Porterville Recorder, (September 24).
[11] *Ibid*
[12] *Ibid*
[13] Examples include the OC Reporter Watchdog site, many blogs focused on particular cities such as the "Lakewood Accountability Action Group", and the Transparent California website.
[14] Quoted in Marois, Michael and James Nash. 2011. "California's Top 10 Paid City Managers Raked in $4.7 Million" Bloomberg Business (June 13).
[15] All spoke on the condition that they would not be identified in the paper.

compensation was set appropriately, disclosure and the resulting public response factored into setting a low cost of living adjustment for the manager's salary.[16] In a second new disclosure city a councilmember related that the city council was cognizant of public perceptions on compensation when they were hiring a new city manager after disclosure and this made it harder to find a qualified city manager.[17] In a third new disclosure city a council member noted increased media attention after disclosure, but did not believe that the council changed compensation practices as a result of this attention.[18] In the previous disclosure city a councilmember related that there was increased public interest in the city manager's salary after the *Los Angeles Times* Bell report in 2010, but the city manager salary had been displayed on the city website for many years and she felt that it was easy to respond to questions about pay as they were no different than questions that they had received from the press in the past.[19]

Prior to the 2010 mandate there was one notable event relating to transparency. In August 2007 the California Supreme Court issued two rulings requiring disclosure of individual public employee names, salaries and other employment information, but only when requested by the public (Mintz 2007). Before this ruling, cities were not obligated to disclose compensation of city employees by name to the public or to the press. The ruling led to several news outlets obtaining and reporting compensation information, notably a consortium of San Francisco Bay Area newspapers that published an online database in 2009 that included employee compensation for fifty cities and other public entities.[20]

[16] Telephone interview, October 7, 2015
[17] Telephone interview, September 14, 2015.
[18] Telephone interview, August 21, 2015.
[19] Telephone interview, September 16, 2015.
[20] As discussed in the Data Appendix, I will drop from the analysis cities for which first wage disclosure occurred in 2009, as there is some ambiguity about whether they are treated. The estimates are robust to inclusion of these cities (see Online Appendix Table A1).

In principle, it would also be interesting to study the effects of the 2007 ruling; however, I focus on the 2010 mandate because it does not appear that the 2007 ruling led to significant new disclosure, and certainly not close to universal disclosure.[21] Even the 2009 database mentioned above led to *new* disclosure of city manager compensation for only ten cities. Figure 1 plots mentions of "city manager" and "salary" in California by year as a share of all articles published by California newspapers in NewsLibrary.com, an online newspaper archive.[22] There is little visual evidence of increased coverage of city manager salaries following the 2007 Supreme Court ruling. There is a small increase in mentions in 2009, and a larger increase in 2010.[23] Thus, the distinction between passive disclosure (no obligation to post salaries) versus active disclosure (obligation to post salaries) appears to be important.

One reason why the 2007 ruling engendered a limited response is likely that cities found ways to delay fulfilling requests. For example, one of the *Los Angeles Times* reporters who broke the Pulitzer Prize winning story on compensation in Bell, California describes the process by which they obtained the information: "Literally every day, I'm calling the city clerk…I'm telling her, `Listen, are we getting the documents? I really don't want to sue you, but we will, and when we go to court, and we win, because we will, we'll ask the judge to make you pay our legal bills, because that's what the [public records] statute says.' The city manager, Robert Rizzo, finally relented, but they had to meet him at a conference room near a city park for kids. That was weird

[21] Using the data collection procedure described below, I find that 38 percent of cities had not disclosed city manager salaries before 2010.

[22] Specifically, for every year I search for keywords ("City Manager" OR "City Administrator" OR "Town Manager") in the first paragraph of the article and "Salary" anywhere else in the text. I divide the resulting number of search results by the total number of articles in that year for the California press in the archive and then divide this ratio by its value in 2000. Restricting the first set of key words to appear in the first paragraph reduces noise. Taking a random sample of 40 search results in 2006 I found that the restricted search had 27 relevant search results while the unrestricted search that allows the terms ("City Manager" OR "City Administrator" OR "Town Manager") to appear anywhere in the text had only 10 relevant results.

[23] It is also possible that the disclosure of Bell salaries had an additional effect in turning the public's attention towards city compensation.

enough — but nine city officials and lawyers showed up."[24] Given these obstacles, the typical resident (or even reporter without access to a legal department) would likely have had a difficult time obtaining compensation information if city officials were inclined to prevent disclosure.

Section II. Municipal Governance and Compensation

Most California cities have a "Council-Manager" form of governance. Under this arrangement, the city council, which is elected by voters, is responsible for setting broad policies. The city council appoints a professional manager who is the head of administration. City managers are typically in charge of day-to-day operations in the city, as well as developing a budget, promoting economic development, collective bargaining, managing staff, and hiring.[25] City managers also play an important role in generating tax revenues and providing public services efficiently. In California, cities are constrained in their ability to raise revenues through property tax increases due to California Proposition 13. Commercial development and resulting sales tax revenue is one of the few ways that cities can raise revenues to make new investments, and a city manager that can attract developers can be valuable (Lewis and Barbour 1999). Mistakes by city management can have persistent negative consequences for cities, as seen in a number of cases including Stockton, Vallejo and San Bernardino where financial mismanagement resulted in costly bankruptcies (Winegarden 2014).

City managers are usually the highest paid municipal employees. Their compensation is negotiated with the city council, often in closed session. Contract terms vary from setting pay annually, to contracts that specify compensation over two or three year terms. Based on a

[24] Quoted in Folkenflick, David. 2010. "How the L.A. Times Broke the Bell Corruption Story," NPR.org (September 24); available at http://www.npr.org/templates/story/story.php?storyId=130108851.

[25] An alternative form of governance is Mayor-Council where an elected mayor serves as the city's chief administrative officer. These cities often have professional city managers that report directly to the mayor. See Levin and Tadelis (2010) and Enikolopov (2012) for additional background on forms of city governance and the role of the city manager.

random draw of ten contracts obtained through public records requests, the average term over which compensation is pre-specified is two years. Pay raises can be left to the discretion of the city council or can be linked to cost of living indices, compensation of other city employees (e.g., at least 10 percent above the next highest paid employee) or city managers in other cities. City managers are at-will employees and can be fired at any time, though contracts may specify severance payment depending on the term and circumstances of separation.

There is no legal limit to how much city managers in California can earn. City manager compensation is driven at least in part by competitive forces, as shown by Enikolopov (2012) who provides evidence that city manager compensation in the United States is sensitive to manager performance. There may also exist institutional factors that decouple compensation from market forces. Even when the city council has discretion to set a salary, their incentives may not align with voters, particularly if salaries are not public. In the most extreme cases, the city council and city managers may collude to boost each others' compensation.[26]

Section III. Data

The data for this project comes from multiple sources, including public records act requests and newly digitized archival documents. I describe them briefly here. Additional details on data and sample selection are available in the Data Appendix.[27]

Compensation

City manager compensation for 2000-2012 was obtained from public records act requests for payroll records and contracts of all 482 California cities.[28] Since there was not universal

[26] California has two types of cities: general law and charter cities. In general law the compensation of city council is regulated while in charter cities council compensation is unregulated. City type is determined by referenda.
[27] All data collection relied heavily from the help of the research assistants acknowledged above. Implicit in the discussion below, research assistants did a lot of the arduous data collection work.

compliance to these requests, these records are supplemented with data obtained through a public records act request to CalPERS for earnings histories of all municipal employees who were employed during 2001-2012 and contributed to CalPERS pensions.[29] Whenever possible I construct longitudinal histories of city manager compensation using these sources. When there are gaps, I use publicly available data in the State Controller website for years 2009-2012, salaries found from *Wayback Machine* historical snapshots of city websites that reported city manager salary, as well as salaries found in newspaper archives. This data collection effort resulted in compensation histories for the city manager position for 76, 92 and 98 percent of cities for 2001-2012, 2005-2012, and 2009-2012 respectively.[30] I use Medicare earnings for 68 percent of cities for which I have data and base salaries for the remainder. The Arizona League of Cities provided hardcopies of city manager salary histories for years 2004-2012 that I digitized for this study. In what follows, city manager compensation will refer to the salary compensation for the city manager position for a given city. For example, if there are different managers in consecutive years, the change in compensation is the difference in their earnings. In Section IV, I discuss whether and how changes to non-salary compensation may affect the interpretation of my findings.

I construct measures of compensation for other municipal employees using CalPERS data for years 2001-2012 and public data from the Local Government Compensation Reporting Program for years 2009-2012. I compute average earnings (excluding the city manager), 50th,

[28] This public records request is only possible because of the Supreme Court ruling that city employee wages are in the public domain.

[29] CalPERS has earnings records for employees who contribute to pension benefits through this system. Enrollment in CalPERS depends on city and occupation. In my data, in 2009 38 percent of California municipal employees were enrolled in CalPERS and 90 percent of cities had at least one employee enrolled.

[30] The reasons given for cities not providing complete information include record retention policy, old IT systems, lack of staff, as well as non-response to my inquiry. For all requests I compensated the cities when necessary for the costs of retrieving the records. Cities varied from not charging anything to charging upwards of $500 for the information.

75th, and 90th percentile earnings of CalPERS enrolled employees over years 2001-2012. Because CalPERS enrollees are only approximately 38 percent of all municipal employees, to assess robustness I also construct these measures using the universe of municipal employees for 2009-2012 using the State Controller data, which includes one complete year of pre-mandate data.

City Characteristics

Point-in-time city characteristics are five-year averages from the 2009 American Community Survey and the 2007 Census of Governments. The controls utilized in the main analysis are log population, log median housing values, log average household income, percent of residents who are Hispanic, percent of residents who are black, percent of homes that are renter occupied, percent of population (25+) with at most a high school degree, percent of employed working in construction, and number of full-time equivalent city government workers.[31]

I derive average resident income by year for the period 2004-2012 using annual zip-code level data on resident income from the Statistics of Income program of the Internal Revenue Service (SOI/IRS) that are then aggregated to the city level using zip code population weights.

Separation, City Council and Election Data

Data on manager turnover was obtained by digitizing the *California Roster*, a directory of municipal elected officials and high-level managers published by the California Secretary of State supplemented with online searches of city manager biographies since the roster is not always up to date. These data span the years 2005-2013. To identify quits versus other reasons for separation, for each record of separation I conducted an online search for press reports giving background information on the reasons for the change. I code a separation as a quit if the

[31] For all variables that are logged, I take the log of the five year average of the variable.

manager is reported to be leaving for another position, or if he or she is reported to be voluntarily retiring (there is no mandatory retirement age).[32] I read the articles to verify whether the manager was voluntarily resigning versus being forced out, but it remains possible that some of the coded resignations were actually involuntary.

I coded managers' gender by comparing their first names to common female and male names in the Social Security Administration names database. Where there was ambiguity, I conducted an online search of the managers to identify their gender.

Data on City Council membership comes from digitized copies of the *California Roster* for the years 2003-2012. Data on Obama vote share in the 2008 presidential election by city is from the California Secretary of State website.

Disclosure Data

A key variable in this study is whether city salaries were in the public domain prior to the 2010 mandate. To obtain this information I searched for the city manager salary in pre-mandate historical snapshots of each city's website found on the *Wayback Machine*.[33] If no salary was found in the Human Resources, Administration or Finance directories of the website I recorded the city as not posting the city manager salary online.

I also searched California newspapers over the period 2003-2009 for city manager salary disclosure. The primary archive used is NewsLibrary.com, which at the time of search had articles and transcripts for 338 California newspapers and TV stations. For every city in California I searched for articles referencing the name of the city and city manager salary over

[32] Retirement was determined by checking if the manager subsequently collected pension in the California Public Employees' Retirement System, which is in the public record.
[33] The *Wayback Machine* is a digital archive of websites (web.archive.org/). Specifically, I searched the last snapshot of 2008.

January 1, 2003 to December 31, 2009.[34] I coded a city as having prior city manager pay disclosure if either it posted the city manager salary on its website or if the press reported city manager salary sometime in the 2003-2009 period. I dropped the City of Bell from all of the analyses so as to not confound the effect of disclosure with the *Los Angeles Times* report and subsequent investigation into this city. I also excluded cities for which first disclosure was in 2009. Additional details on this data collection and sample selection criteria can be found in the Online Data Appendix. These criteria result in 172 new disclosure cities and 296 previous disclosure cities. A map of the location of these cities can be found in Figure 2.

Three appealing aspects of this definition are that a resident who wished to find city manager salary could do so if the city had disclosed this information to the press at some point in the recent past, it reflects the dichotomous nature of disclosure, and past disclosure to the press likely signals that the city has a stance towards transparency. To the extent that I missed posted salary information or if the information was disclosed by other means (not on websites or newspapers), the operating assumption is that in such cases the information would have been relatively more difficult to access than in cities coded as disclosing. My measure of disclosure is therefore best thought of as an index that is related to previous transparency. If cities are misclassified as not disclosing, this should lead to attenuation bias in the estimates. While the focus of the analysis is on new disclosure based on this definition, I will show that there are also wage effects, though smaller in magnitude, when the criterion for new disclosure is that the city had not previously posted wages on their website.

Figure 3 shows the relationship between new disclosure and media coverage. As a measure of media coverage I use the log of the total number of articles that mention the city between

[34] This window was chosen to balance capturing news coverage over a recent period and feasibility, as reviewing newspaper articles for mentions of city manager salaries is a time intensive process.

2003-2008. Note that any relationship found between new disclosure and this measure will not be mechanical since the latter includes coverage on any topic (e.g. high school sports team scores) and city manager/salary mentions are a miniscule share of all articles that refer to the city (averaging 0.14 percent of all articles). The figure, which plots the probability of new disclosure within bins separated by vingtiles of the media coverage measure, shows a strong negative relationship between these two variables; new disclosure is much more likely in areas that had little media coverage of any kind.[35]

Table 1 reports estimates from a linear probability model that predicts new disclosure using media coverage and other city characteristics. In column (1) the explanatory variables are media coverage, the percent of residents with no more than a high school degree, and log city population. I include the latter two variables since exploratory analyses revealed that they are highly predictive of whether there is new disclosure. The coefficient on the log total number of articles is negative and significant. The coefficient implies that a 10 percent increase in prior coverage is associated with a 0.76 percentage point decrease in the probability of new disclosure, or a 2 percent decrease from a base of 37 percent. This estimate suggests that the disclosure variable is partially related to media coverage in the city since cities with previous disclosure have more press coverage on any topic, even conditional on population and other city characteristics. The estimates on the other characteristics in column (1) imply that smaller cities and cities with less educated residents are more likely to have new disclosure. While these estimates should not be interpreted causally, the signs of the relationships are sensible. A larger city will have more resources available to make information available as well as more interest groups who demand it. Likewise, there might be more demand for salary information in places

[35] This relationship is also observed when defining new disclosure only as the absence of information reported on the city website (Appendix Figure A1).

where residents are more educated. In columns (2) and (3) I add additional characteristics but conditional on the first three variables, these do not significantly predict new disclosure and their inclusion does not change the relationships on the three variables in model (1).

Appendix Table A2 reports additional summary statistics organized by whether cities had new disclosure. As already seen in Table 1, there are clear differences between these sets of cities. These comparisons suggest that it is important to ensure robustness by controlling for a rich set of city characteristics to verify whether the estimates pick up differential trends in characteristics rather than the effects of disclosure. Table A2 also presents means of city compensation. City managers in new disclosure cities earned 21 percent less in 2009 than managers in previous disclosure cities, on average. This gap is largely accounted for by differences in population and average income between these sets of cities.[36] Both sets of California cities have higher manager earnings than Arizona. Between 2009 and 2012 real city manager compensation fell by 11.8 percent in new disclosure cities as compared to 4.9 percent in previous disclosure California cities and 5.1 percent in Arizona cities. In the next section I will estimate these changes more systematically, accounting for trends, city characteristics, and regional shocks.

In column (1) of Table 2 I probe how disclosure affected news reports in these two sets of cities. The column presents estimates of search results for mentions of city manager and salary by new and previous disclosure cities, before and after the mandate period. For this search I used a web scraper to count the number of search results with the above criteria, and I did not manually verify whether the salary was actually reported.[37] Therefore, there are some false

[36] Controlling for log population and log mean household income alone reduces this gap to 3.7 percent.
[37] The underlying data are city by year observations of search counts for ("YYY" AND (("City Manager" OR "City Administrator" OR "Town Manager" OR "Town Administrator") AND ("Salary")), where "YYY" is the city name and the first two search terms are restricted to appear in the first paragraph of the article.

positives in the data using the search terms. I estimate a negative binomial model due to the low counts and many zeros (particularly for new disclosure cities). I control for the log of the total number of articles written about the city by year to ensure that any changes in counts are not driven by a change in overall reporting. The estimates confirm that prior to 2010 new disclosure cities have substantially fewer search results, with 64 percent (=(exp(-1.02)-1)*100) fewer results in new disclosure cities relative to previous disclosure cities. This gap in the pre-mandate period is mechanical based on how I constructed the new disclosure variable. The gap in search results closes considerably, however, after the mandate in 2010, with the new disclosure gap declining to 8.6 percent (=(exp(-1.02+0.93)-1)*100) fewer search results. This change, which is not mechanical, is significant at conventional levels.

Figure 4 plots the estimated coefficients on the interactions of year dummies and a new disclosure dummy from a negative binomial model. The figure shows a slight downward trend in city manager/salary mentions prior to 2010 and then a discrete upward relative increase in city manager/salary mentions in 2010 in new disclosure cities that persists through 2012. These estimates confirm that the mandate led to considerably more press coverage on compensation for cities that had previously not been mentioned in the press. However, they offer only a partial view of how the mandate affected the diffusion of information as they do not account for the people who accessed the salaries directly online.

Section IV. Disclosure and City Manager Outcomes

Earnings

Figure 5a presents visual evidence on the evolution of city manager salaries. The figure presents *nominal* compensation of city managers in new disclosure and previous disclosure cities for years 2001-2012. Specifically, for both sets of cities I regress log nominal city manager

compensation on year dummies and city fixed-effects.[38] The figure plots the estimated coefficients on the year dummies for new and previous disclosure cities normalizing 2009 to 0. I also estimate and plot the coefficients from the fitted model for new disclosure cities where the sample has been weighted to match a set of city characteristics (those listed in Section III) of the previous disclosure sample. I use DiNardo, Fortin, and Lemieux (1996) (DFL) weights.

Prior to the mandate the growth rates of city manager compensation in previous and new disclosure cities were close, with a slightly higher growth rate of compensation in new disclosure cities in the mid-2000s. In 2010 nominal wage growth plateaued for both sets of cities, but in 2011-2012 nominal compensation declined sharply in new disclosure cities while for previous disclosure cities wage growth remained stable in 2011, and then rose slightly in 2012. By 2012 the difference in compensation relative to 2009 was close to 7 percent. Reweighting the new disclosure sample yields an almost identical pattern. Figure 5b plots the difference in the (weighted) series with 95 percent confidence intervals. The difference in compensation relative to 2009 in years prior to 2011 is never significant, but there are significant declines in compensation in new disclosure relative to previous disclosure cities in 2011.[39]

The observed patterns in these figures are consistent with the mandate lowering salaries in 2011 and 2012. With respect to timing of the estimated effect, as previously discussed, city manager contracts typically pre-specify compensation for a period of one or two years. We would therefore expect to see the effect develop over the first two years following the mandate in new disclosure cities as new contracts are negotiated. It is unclear whether we should expect to see a divergence in compensation as early as 2010. While some cities may have reacted quickly,

[38] City fixed-effects are necessary since the panel of cities is unbalanced.
[39] A joint test of whether the coefficients on the New Disclosure terms are zero in all pre-mandate years yields a p-value of 0.57.

it is likely that for most cities the changes would have taken more than a few months to affect manager compensation.

Figure 6 plots both of the raw series against Arizona. One benefit of this comparison is that Arizona was completely unaffected by the mandate, whereas previous disclosure cities in California may still have been affected by the mandate and news coverage of Bell. Figure 6 shows that the growth rates of city manager compensation in Arizona and previous disclosure cities in California line up well, both in the pre- and post- mandate periods.

I now turn towards estimating the average effect of disclosure in 2010, 2011, and 2012 relative to the pre-disclosure period. Table 3 reports estimates from variants of the following base specification:

$$(1) \quad \ln(y_{it}) = \alpha_i + \delta_t + \beta_t * X_i + \theta_{2010} 1(t = 2010) * \text{NewDisclosure}_i$$
$$+\theta_{2011} 1(t = 2011) * \text{New Disclosure}_i + \theta_{2012} 1(t = 2012) * \text{NewDisclosure}_i + \varepsilon_{it,}$$

where i denotes city, t denotes year, y_{it} is manager compensation in 2012 dollars, α_i are city fixed-effects, δ_t are year dummies, X_i are time-invariant city characteristics that are allowed to have a different effect in a different year, and New Disclosure$_i$ is an indicator that is equal to 1 if the city previously did not have the city manager salary on its website and not reported in the press. The city characteristic controls are the same as those used in the reweighting in Figure 5. I also consider specifications with the interaction of year and county dummies, linear trends interacted with city, and manager fixed-effects. Standard errors are clustered on city.

The parameters of interest are the interactions of the 2010-2012 dummies with the New Disclosure dummy. Column (1) includes city and year fixed-effects and the sample is limited to California. The estimated effect of new disclosure on log city manager income is −0.057 (s.e.=0.017) and −0.067 (s.e.=0.018) in 2011 and 2012 respectively. The estimates and significance levels are largely invariant to the addition of city characteristics interacted by year

(column 2), counties interacted by year (column 3), city*linear trends (column 4), and limiting the sample to the 2009-2012 period for which there are almost no missing observations (column 5). The estimated disclosure effect in the specification with city-specific trends is a 7.6 percent decline in manager wages by 2012. In column (6) I compare California new disclosure cities to all cities in Arizona, which were not treated. The point estimates are -0.083 log points (s.e.=0.035) in 2011 and -0.089 log points in 2012 (s.e.=0.037). In column (7) I include manager*city fixed-effects. In this specification new disclosure is associated with a 7.4 percent reduction in compensation in 2012 within manager, implying that changes in compensation occur even without manager turnover.[40,41]

The primary disclosure variable used in this analysis is whether the city had not previously posted salary information online or reported it to the press. In Table 4 I consider alternative definitions of new disclosure. To conserve space I estimate equation (1) but interact the new disclosure variables with a post disclosure dummy, which is 1 in year 2011 and 2012 and 0 in other years.[42] In column (1) I define the new disclosure variable to be that the city did not post the information online only (that is, ignoring news reports). I find a similar and significant pattern of estimates, but with smaller magnitudes. In column (2) I include separate interactions for year and whether the city previously did not disclose online or in the news, disclosed in the news but not online, and disclosed online but not in the news. The omitted category is cities that disclosed online and in the news. The model shows that the negative new disclosure effects are concentrated in cities that did not previously disclose online or in the news.

[40] When estimating benchmark model (2) using the same sample as (7) the estimated interaction between new disclosure and 2011 and 2012 is -0.075 and -0.083 respectively.
[41] I also estimated models examining the heterogeneity in the disclosure by whether the city manager is male or female. I find that disclosure led to pay cuts for male managers in new disclosure cities, but not female managers. These estimates are reported and discussed in Online Appendix Table A3.
[42] Estimates of equation (1) for these alternative definitions of new disclosure are available in Online Appendix Table A4.

That we see no new disclosure effects among cities that did not report salaries online but did report salaries to the press suggests that news coverage was already putting downward pressure on manager wages in previous disclosure cities prior to the mandate.

To examine whether the changes at the top of the city distribution represent compression, columns (2)-(4) of Table 2 report estimates using as outcome the log of the 50th, 75th, and 90th percentiles of the city wage distributions of CalPERS enrolled employees. There is no discernable relative decline in these percentiles. For 2012, the point estimate on the disclosure effect is -0.008 for the log of the 50th percentile of the CalPERS city distribution (s.e.=0.016), -0.003 for the log of the 75th percentile (s.e.=0.011), and 0.002 for the log the 90th percentile (s.e.=0.014). Figures 7a-7c show the evolution of these percentiles by year for new and previous disclosure cities. These figures provide visual confirmation that the time path of these percentiles of the CalPERS distribution is similar between these two groups of cities.[43]

Relation between Cuts and Initial Compensation

Figure 8a shows the relationship between compensation in 2009 and the change in compensation from 2009-2012 for new disclosure cities using local linear regression. The figure reveals that the cities that experience cuts are those with larger initial levels of compensation. There is no statistically significant decline in compensation below $200k, but there are marked declines in compensation for initial compensation levels greater than $200k.[44] Figure 8b shows the same relationship for previous disclosure cities where we do not observe this pattern. These figures provide evidence that large salaries in particular are sensitive to transparency. Another

[43] One drawback with this analysis is that CalPERS enrolled employees are only a subset of all municipal employees. I address this issue by estimating the same models for 2009-2012 using compensation measures derived from the universe of employees from the Local Government Compensation Reporting Program. The estimates, which are presented in Appendix Table A5, also show no relative declines in the lower percentiles of the wage distribution.

[44] The sample becomes sparse above earnings levels of $250k, resulting in large standard errors. However, the general pattern of declining wages remains.

way to assess the magnitude of this relationship is to note that among new disclosure cities that paid their city managers more than $200k per year in 2009, 40 percent paid their city managers less than $200k in 2012. By contrast, among previous disclosure cities where 2009 compensation was at least $200k, only 7 percent paid their city managers less than $200k in 2012. The difference between these two proportions (40 percent vs. 7 percent) is significant (p-value = 0.00).

Changes in Non-Salary Compensation

It is possible that cities offset salary cuts with increases in benefits that are not included in taxable compensation, or increases in non-salary compensation not captured by the base salary measure used for the 32 percent of cities for which I do not use Medicare earnings histories. To evaluate this possibility, I reviewed employment contracts, when available, of new disclosure cities that cut city manager pay between 2009 and 2012, and where initial compensation was at least $200k prior to disclosure. Of these 44 cities, I was able to obtain employment contracts for both the pre- and post-disclosure periods with sufficient detail for 23 cities. I reviewed the contracts based on the following criteria: generosity of employer contribution to health care benefits, defined benefit pension formula, auto allowances, employer contribution to deferred compensation account, and employer contribution to defined contribution retirement accounts. Of these cities, 10 had worse terms (from 2009 to 2012) in that at least one benefit was less generous and no benefit improved, 11 had identical terms in all benefits, and 2 had ambiguous changes in that there were benefits with better terms and benefits with worse terms. There was no city with strictly better terms. The review suggests that the pay cuts we see were not offset by improvements in benefits.

Budget Cuts and Furloughs

A possible concern in interpreting the estimates is that rather than estimating the effect of new information, perhaps we are seeing a residual effect of the 2007 recession that differentially affected the finances of new disclosure cities relative to other cities in California and Arizona. This is unlikely to be the explanation for several reasons.

First, the point estimates barely change when we control for rich city characteristics interacted by year; if anything the new disclosure effect is larger. If the wage effect was the result of the recession we would expect to see the estimates become smaller when controlling for characteristics that are correlated with financial stress, such as average household income and the percent of employment in the construction sector.

Second, if the negative compensation effects are due to financial stress or furloughs, we would expect to see relative declines in average municipal earnings in new disclosure cities. I find no evidence of this. Column (5) of Table 2 present the baseline model with log average municipal earnings excluding the city manager over 2001-2012, constructed with the CalPERS data. The point estimate of new disclosure relative to previous disclosure cities in 2012 is close to zero and insignificant. Column (6) shows that there is also no significant differential change in the number of CalPERS enrolled workers over the period. Figures 9a and 9b show these outcomes by year and there is no visual evidence of divergence in 2011 or 2012. Appendix Table A5 presents estimates for the same models for years 2009-2012 using the universe of municipal employees. We reach the same conclusion that there is no evidence that cities were differentially trending in these dimensions. I also find no evidence of differential changes in the average income of residents from the IRS/SOI data between these sets of cities. The point estimate for

new disclosure relative to previous disclosure in 2012 for the dependent variable of log average income is 0.005 (s.e.=0.009) in Column (7) of Table 2.

Third, we can look at the timing of furloughs in California relative to the timing of the estimated mandate effects. Appendix Figure A2 plots press mentions of furloughs for cities in California newspapers from NewsLibrary.com, normalized by the total number of articles in California by year. References to furloughs spike in 2009 and 2010. While there are elevated levels in 2011 and 2012 relative to the pre-recession years, they are only half as large as the mentions in 2009-2010. This pattern is consistent with furlough actions at the state level; California state employees were furloughed starting in July 2009, and University of California employees beginning September 2009, ending a year later in September 2010. If the wage cuts were due to furloughs, we would expect to see cuts in city manager salaries in 2009 and 2010, which we do not.

Section V. Evidence on possible mechanisms

Test of the Accountability Mechanism

Cities with higher initial compensation accounted for most of the cuts after disclosure. However, high compensation need not reflect "excess" compensation, since cities vary in many dimensions. For example, city manager performance matters more in larger cities, and larger cities are more difficult to manage. To test whether city manager salaries decreased due to an improved accountability mechanism, I ask whether city managers whose salaries exceed that predicted by city characteristics, like population and income, see their wages reduced closer to predicted levels. Positive wage residuals in the pre-disclosure period might reflect omitted city and manager characteristics, but they would also represent cases where managers who have captured the pay process used secrecy to elevate their pay. For example, in a regression of log

city manager wage on city characteristics (described below), the manager of the City of Bell, where wrongdoing was uncovered, had the largest wage residual of all California cities prior to disclosure. If disclosure has the effect of revealing managers who have captured the pay process, or unwinding managerial power, we would expect to see wage declines for managers who were paid more than what is predicted given the characteristics of where they work.

To implement this test, using only cities that voluntarily disclosed pay pre-reform, I regress log city manager salary in each year from 2007-2009 on log population, log average household income, and the number of city employees. These three variables alone have significant explanatory power (R-squared = 0.54). I use the estimated regression models to extract a residual for each city-year from 2007-2009, and I calculate each city's average residual over this period.[45] I then estimate a regression model that interacts a dummy for whether the city's residual is positive with the interaction of the new disclosure and 2010-2012 dummies. Column (1) of Table 5 reports estimates of the key interactions from this regression.[46] The interaction is close to zero and insignificant. Wages declined as much in cities with negative residuals as positive residuals, on average. This finding holds for residuals calculated from models with more characteristics, including percent of residents with no post-secondary schooling, log median housing values, city housing density and percent of city homes that are renter occupied (Appendix Table A7). The estimates in column (1) of Table 5 imply that instead of uncovering and correcting wages of managers who were paid more than predicted by city characteristics, transparency led cities to

[45] Specifically, I estimate a separate regression using data from 2007, 2008 and 2009 and for each city. Then for each city I compute the average of the residuals over these three years. Estimates from the 2009 regression are reported in Appendix Table A5. Estimates for 2007 and 2008 are similar to those reported.
[46] The complete set of estimates, including main-effects, can be found in Appendix Table A6.

lower wages whether or not the wages were out of line with fundamentals. This analysis suggests that the mechanism behind the wage effect is not greater accountability.[47]

In column (3) of Table 5 I present a model that runs "horserace" between residuals and initial salary levels as determinants of the effect of new disclosure on salaries. I estimate the following model:

$$(2) \qquad \ln(y_{it}) = \alpha_i + \delta_t + \beta_t * X_i + \sum_{2010}^{2012} \theta_t 1(t = t) * \text{New Disclosure}_i$$
$$+ \sum_{2010}^{2012} \mu_t \ln(2009\ \text{Salary}_i/200\text{k} \geq 1) * 1(t = t) * \text{New Disclosure}_i$$
$$+ \sum_{2010}^{2012} \rho_t 1(\text{Res}_i > 0) * 1(t = t) * \text{New Disclosure}_i \ + \sum_{2010}^{2012} \Lambda_t \text{W}_i \ + \varepsilon_{it}.$$

This model is motivated by the visual evidence in Figure 8 which shows that starting at around initial salaries of \$200k the new disclosure effect increases in magnitude. Here $\ln(2009\ \text{Salary}/200k \geq 1)$ is the log ratio of the 2009 city manager salary and 200k for values of this ratio greater than 1 and 0 otherwise, and Res_i is the city manager's residual from the models discussed above. The vector W_i contains lower-order interactions: interactions of years 2010-2012 with $\ln(2009\ \text{Salary}_i/200\text{k}) *$ New Disclosure, $\ln(2009\ \text{Salary}_i/200\text{k})$, and $1(\text{Res}_i > 0)$. Parameter μ_t gives the relative new disclosure effect for salaries in excess of \$200k. Column (3) of Table 5 reports estimates of μ_t, ρ_t, and θ_t. Inclusion of the relative salary level variables does not change the conclusion that new disclosure has a similar effect on both

[47] Disclosure may also reduce city manager dispersion of wages across all cities, as would be the case if transparency allowed cities to arbitrage, along the lines of Jensen (2007). This is unlikely to be the case since more than half of California cities already disclosed wages providing ample public data on the distribution of wages. Supporting this, I find that both the standard deviation and the residual standard deviation (using the characteristics in Table 5) of city manager log wages across all California cities were unchanged between 2009 and 2012.

high and low residual cities. However, consistent with the pattern in Figure 8, the disclosure effect becomes increasingly larger the larger was the 2009 salary relative to 200k.[48]

I have also examined whether post-disclosure wage cuts were larger in cities where members of the city council had longer tenures. I found no significant relationship between the magnitudes of cuts in new disclosure cities and the fraction of the city council that was in office 4 years prior, as well as the average tenure of the council. These estimates are available in Appendix Table A8. There is also no significant relationship between new disclosure and electoral outcomes as measured by the share of the city council of 2009 that was in office in 2012 (Appendix Table A9).

Relation between Salary Cuts and Political Leanings

One interpretation of the findings is that segments of the public are inequality averse and demand lower wages at the top of the distribution. As an additional test of this hypothesis, drawing from the documented relationship between Democratic political affiliation and redistributive preferences (e.g. Ashok, Kuziemko and Washington 2015), I examine whether the new disclosure effect is stronger in cities with a higher Obama vote share in the 2008 Presidential election. Appendix Table A10 shows that in models that include city-specific time trends the new disclosure effect is stronger in cities where the Obama vote share was greater than 50 percent; cities with an Obama share less than 50 percent did not respond to new disclosure, on average.

Separations

Next I investigate how downward wage adjustment resulting from increased transparency affected manager separations. If managers accrued surplus in their job, we should find that

[48] Column (2) of Table 5 presents estimates of this model without the residual variable interactions.

manager separations are relatively insensitive to wage cuts. By contrast, if there are limited rents, we should see that voluntary separation is sensitive with respect to wage.

Figure 10 shows the separation and quit rates for new relative to previous disclosure cities by year. It is clear that both city manager separations and quits rose in new disclosure cities after mandated disclosure relative to previous disclosure cities. To quantify these effects I first divide the sample into two periods, 2007-2009 and 2010-2012, and code a city as having a separation over these periods if there is at least one city manager separation in the interval.[49] Collapsing the data to these two periods I then estimate a linear probability model for separations and quits with indicators for new disclosure, the 2010-2012 ("post") period, and their interaction.

Table 6 reports the estimates from this analysis. Column (1) shows that in the pre-disclosure period overall separations were 21.7 percentage points lower in new than previous disclosure cities. The separation rate over the next three-year period increased by 15.3 percentage points in new disclosure cities while it decreased by 6.2 percentage points in previous disclosure cities. The difference between these changes is statistically significant at conventional levels. Columns (2) and (3) show that the positive post-mandate*new disclosure interaction is robust to inclusion of city characteristics and county dummies interacted by the post disclosure period.

If managers were separating as a result of wage cuts we should see this effect in the quit margin. Columns (5)-(8) use as the dependent variable whether the manager voluntarily separated either by quitting or retiring. The new disclosure by post interaction is estimated as 0.18 (s.e.=0.06) without controls, and 0.17 (s.e.=0.07) and 0.15 (s.e.=0.07) with inclusion of city characteristics*post and county dummies*post respectively. The mean quit rate for the new

[49] This approach was taken because when a manager departs, I observe in the data that there are a number of new managers over a short period of time, likely reflecting the employment of interim managers.

disclosure group over the three year period 2007-2009 is 0.25, so new disclosure is associated with approximately a 75 percent increase in the quit rate relative to the counterfactual.[50] The separation estimates imply a high sensitivity of quits with respect to wage. The estimated wage effect of new disclosure of 7 percent implies an elasticity of quits with respect to wage of approximately 11. This magnitude is substantially higher than previous estimates in the literature (Manning 2011).

Columns (4) and (8) of Table 6 interact post*New Disclosure with an indicator for whether the city manager was paid at least $200k in 2009. The estimated interaction shows a link between the wage cuts and separations. For both separations and quits new disclosure cities with salaries greater than $200k had a significantly larger response to disclosure than cities below this level, as would be expected from the patterns of wage cuts found for managers initially earning more than $200k observed in Figure 8.

I examined where departing managers in new disclosure cities went after 2009 using LinkedIn, trade press and other online sources. Thirteen percent went to the private sector, 41 percent retired (that is, are of retirement age and collecting pensions and no longer working full-time), 33 percent moved to another city or to a public authority (e.g. director of an airport), and 13 percent are unaccounted for either because they are unemployed, did not have bios or did not update their bios. Among the city managers who found new city manager positions in California I was able to compare their old and new salaries. In this group the average salary was 14 percent higher in the new position than the old position on average.

[50] Since the baseline quit rate is relatively low, even with a large increase in quits there are inframarginal cases where wage cuts were accepted. Inclusion of manager*city fixed-effects in equation (1) shows similar magnitudes as the estimates, as reported in Table 3.

Vacancies and Manager Quality

I find suggestive evidence that the mandate coincided with increased difficulty in replacing departing senior managers in new disclosure cities through a review of city manager online biographies. Focusing on 77 cities where 2009 city manager salaries were at least $200k, vacancy duration for city manager positions increased by an average of 53 days for separations occurring after the mandate relative to the last separation occurring before the mandate in new disclosure cities (from 100 to 153 days). By contrast, in previous disclosure cities average vacancy duration fell by 13 days (from 122 to 109 days). The share of new hires who were previously city or county managers—one measure of prior experience—fell in new disclosure cities by almost half for managers hired before versus after the mandate, from 42 percent to 22 percent. In previous disclosure cities this rate went from 44 percent to 40 percent. The share of internal promotions to city manager—an indicator that the city could not find a suitable external candidate to fill the vacancy—increased by 17 percentage points in new disclosure cities (from 37.5 percent to 54 percent) as compared to previous disclosure cities where the share increased by 4 percentage points (from 42 to 46 percent).[51] While the analysis is only suggestive, it points towards the conclusion that the pay cuts and accompanying increase in quits following disclosure made it harder for new disclosure cities to hire qualified managers.

Section VI. Discussion and Conclusion

This paper has presented evidence that making wages public compresses the top of the public sector wage distribution. The evidence assembled is more in line with a "populist" response to visibility of top salaries than the effect of making public officials more accountable: salaries are cut because they appear excessive, regardless of whether or not they actually are.

[51] I find no changes in the share of city managers with at least a master's degree (stable at approximately 78 percent) or total public sector experience at time of hire (stable at an average of 22 years).

This conclusion is consistent with the existence of inequality aversion in society that constrains wage setting for highly visible positions.

The evidence suggests that $200k was a reference point for many cities. This salary level may have been viewed as a large and salient number by members of the public, but it is also possible that the reference point was influenced by contemporaneous changes in the salary of state level officials. In 2009 the California Citizens Compensation Commission voted to reduce the salaries of the governor by 18 percent, from $212,179 to $173,987. This change may have set the reference point for the salary of other public officials, particularly those who had newly disclosed compensation.

The sensitivity of quits to wage cuts imply either that a significant share of managers have wages close to the margin of their next best option or are unhappy at having received a nominal pay cut (Bewley 1999). Based on previous studies on the relationship between applicant skill and offered wages in the public sector, such as Krueger (1988) and Dal Bó, Finan and Rossi (2013), we might expect that the wage cuts lead to a less qualified set of applicants for vacant manager positions. The review of vacancies and manager biographies provides support for this conclusion and the policy was likely costly for at least a subset of affected cities.

The difference between a skilled and unskilled city manager can mean the difference of millions of tax dollars for a city. Revealing compensation lowers ignorance about the compensation of senior management, which has potential accountability benefits, but if transparency does not educate the public on the returns to skills of senior management this can lead to a populist backlash that results in less skilled management. Whether the costs from skill downgrading outweigh accountability benefits more generally will likely depend on factors that include the degree of rent seeking in the public sector and social preferences over inequality.

A question for further research is whether this tradeoff exists in the private sector, as has been suggested by Jensen and Murphy (1990) and Kaplan (2012). More work could also be done to investigate other effects of pay disclosure, including compression in other parts of the wage distribution, gender and race wage gaps, and whether transparency changes the relative bargaining of workers and employers in wage setting.

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Table 1. Determinants of New Disclosure

	New Disclosure		
	(1)	(2)	(3)
log(Number of articles 2003-2008)	-0.076	-0.074	-0.075
	(0.020)	(0.020)	(0.021)
% of residents with at most a HS degree	0.006	0.006	0.006
	(0.001)	(0.002)	(0.003)
log(population)	-0.077	-0.081	-0.079
	(0.017)	(0.019)	(0.020)
log(average HH income)		0.006	0.014
		(0.090)	(0.093)
% of residents who are black		0.003	0.003
		(0.004)	(0.005)
% of residents who are Hispanic			-0.000
			(0.002)
R-squared	0.177	0.176	0.177
Observations	452	451	451

Notes: This table reports linear probability model estimates for the dependent variable of New Disclosure which is 1 if the city did not have city manager salary reported in the press between 2003-2008 or on its website in 2008. log(Number of articles 2003-2008) is the log of the number of articles in the NewsLibrary.com database on any topic for years 2003-2008 for the city. Columns (2) and (3) have one fewer observation than column (1) because log(average HH income) is missing for one city. The unit of analysis is city. Robust standard errors in parentheses.

Table 2. Relation between New Disclosure and Time Varying City Characteristics

	Negative Binomial Model	OLS					
	City manager mentions	ln(50th percentile)	ln(75th percentile)	ln(90th percentile)	ln(Average municipal compensation)	ln(Num. municipal workers)	ln(Average resident income)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
New Disclosure * 2010	0.933	0.002	0.003	0.004	0.001	-0.002	-0.002
	(0.258)	(0.013)	(0.012)	(0.013)	(0.012)	(0.019)	(0.013)
New Disclosure * 2011	0.520	-0.005	0.002	0.002	0.002	-0.005	0.008
	(0.198)	(0.015)	(0.011)	(0.012)	(0.013)	(0.020)	(0.006)
New Disclosure * 2012	0.522	-0.008	-0.003	0.002	-0.014	0.013	0.005
	(0.246)	(0.016)	(0.011)	(0.014)	(0.017)	(0.022)	(0.009)
New Disclosure	-1.019						
	(0.138)						
log(Annual number of articles mentioning city)	0.553						
	(0.040)						
City fixed-effects		X	X	X	X	X	X
City characteristics * year		X	X	X	X	X	X
R-squared		0.892	0.912	0.890	0.873	0.991	0.990
Observations	5436	4833	4833	4833	4833	4833	4043

Notes: Column (1) is a negative binomial model for years 2000-2012 where the dependent variable is the number of articles in NewsLibrary.com that contain terms "City manager" and "Salary" by year and city. All dollar measures are nominal. 50^{th}, 75^{th}, 90^{th} percentiles, average municipal compensation, and number of municipal workers are derived from CalPERS earnings records for years 2001-2012 for 424 cities. Average resident income is derived from IRS/SOI zip code records for years 2004-2012 for 445 cities. City characteristics are log population, log median housing values, log average household income, percent of residents who are Hispanic, percent of residents who are black, percent of homes that are renter occupied, percent of population (25+) with at most a high school degree, percent of employed working in construction, and number of full-time equivalent city government workers. All main effects are included in the model, including year dummies. Standard errors clustered on city are in parentheses.

Table 3. Disclosure and City Manager Salaries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
New Disclosure * 2010	-0.003	-0.007	-0.006	-0.011	-0.011	-0.010	-0.020
	(0.014)	(0.015)	(0.015)	(0.014)	(0.012)	(0.030)	(0.016)
New Disclosure * 2011	-0.057	-0.064	-0.062	-0.068	-0.067	-0.083	-0.070
	(0.017)	(0.018)	(0.019)	(0.021)	(0.019)	(0.035)	(0.021)
New Disclosure * 2012	-0.067	-0.070	-0.069	-0.076	-0.074	-0.089	-0.074
	(0.018)	(0.017)	(0.019)	(0.024)	(0.018)	(0.037)	(0.022)
City fixed-effects	X	X	X	X	X	X	X
City characteristics * year		X	X	X	X	X	X
County * year			X				
City * linear trend				X			
2009-2012 sample					X		
Arizona Comparison						X	
Manager fixed-effects							X
R-squared	0.892	0.899	0.916	0.942	0.952	0.949	0.947
Observations	5108	5044	5044	5044	1783	2087	3351

Notes: All models estimated by OLS for years 2001-2012. The dependent variable in all models is log city manager salary in 2012 dollars by city and year. Column (6) includes all Arizona cities and only new disclosure cities in California. New disclosure is a city that did not previously have city manager salary online or reported in the press (see text for details). City characteristics are log population, log median housing values, log average household income, percent of residents who are Hispanic, percent of residents who are black, percent of homes that are renter occupied, percent of population (25+) with at most a high school degree, percent of employed working in construction, and number of full-time equivalent city government workers. Manager fixed-effects are a unique fixed-effect for a manager in a city. All main effects are included in the model, including year dummies. Standard errors clustered on city are in parentheses.

Table 4. Disclosure Effect by Type of Disclosure

	(1)	(2)
New online disclosure* 2011-12	-0.040	
	(0.016)	
Not online or in the news * 2011-12		-0.066
		(0.017)
In the news but not online*2011-12		-0.006
		(0.015)
Online but not in the news *2011-12		0.044
		(0.045)
R-squared	0.898	0.899
Observations	5044	5044

Notes: Models estimated by OLS for years 2001-2012. The dependent variable is log city manager salary in 2012 dollars by city and year. In column (1) new disclosure is 1 if the city did not report the city manager salary on its website. In column (2) new disclosure is further broken down into three categories: "Not online or in the news" are cities that previously did not have salary reports on their website or in the news, "In the news but not online" are cities that had salary reports in newspapers but not online, "Online but not in the news" are cities that had salary reports online but not in newspapers, and the omitted group are cities that had salary reports both online and in newspapers. "2011-12" is a dummy that is 1 for years 2011 and 2012. All specifications include city fixed effects and city characteristics interacted by year dummies. See Table 3 notes for the list of city characteristics. All main effects are included in the model, including year dummies. Standard errors clustered on city are in parentheses.

Table 5. Heterogeneity by Pre-reform Wage Residual

	(1)	(2)	(3)
1(Residual>0)*New Disclosure*1(2010)	0.025		-0.024
	(0.028)		(0.036)
1(Residual>0)*New Disclosure*1(2011)	0.006		0.005
	(0.035)		(0.042)
1(Residual>0)*New Disclosure*1(2012)	0.018		-0.016
	(0.037)		(0.048)
ln(2009 salary/200k≥1)* New Disclosure*1(2010)		-0.198	-0.198
		(0.181)	(0.182)
ln(2009 salary/200k≥1)* New Disclosure*1(2011)		-0.664	-0.671
		(0.207)	(0.204)
ln(2009 salary/200k≥1)* New Disclosure*1(2012)		-0.657	-0.650
		(0.244)	(0.237)
New Disclosure*1(2010)	-0.015	0.041	0.054
	(0.020)	(0.021)	(0.031)
New Disclosure*1(2011)	-0.061	0.018	0.014
	(0.026)	(0.025)	(0.041)
New Disclosure*1(2012)	-0.077	0.014	0.023
	(0.029)	(0.033)	(0.053)
R-squared	0.89	0.89	0.89
Observations	5083	5105	5083

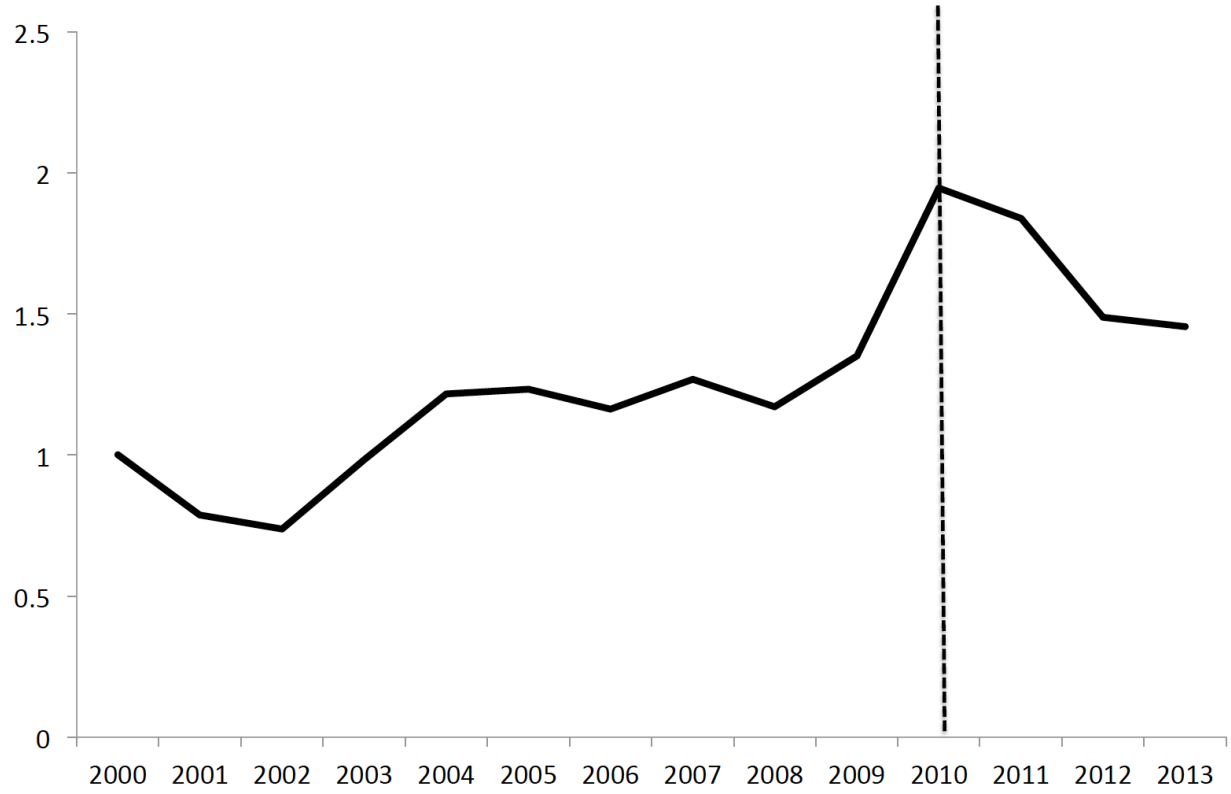
Notes: Dependent variable is ln(city manager salary in 2012 dollars) by city and year for 2001-2012. "Residual" is the average residual computed using estimates from a regression of log city manager salary on log city population, log average household income, and log number of full-time municipal employee for each year in 2007-2009 in the previous disclosure sample. The underlying regression used to estimate the residuals for 2009 is shown in Appendix Table A6. ln(2009 salary/200k≥1) is ln(2009 salary/200k) if 2009 salary/200k≥1 and 0 otherwise. The models also include city fixed effects, interactions of 1(Residual>0) and year 2010-2012 indicators, interactions of ln(2009 salary), New Disclosure and year 2010-2012 indicators, interactions of ln(2009 salary) and year 2010-2012 indicators, and year dummies. All estimates are reported in Appendix Table A7. Standard errors clustered on city are in parentheses.

Table 6. Disclosure and City Manager Turnover

	(1) Sep.	(2) Sep.	(3) Sep.	(4) Sep.	(5) Quit	(6) Quit	(7) Quit	(8) Quit
New Disclosure*Post	0.215	0.231	0.231	0.138	0.178	0.172	0.152	0.076
	(0.065)	(0.071)	(0.080)	(0.082)	(0.059)	(0.065)	(0.074)	(0.075)
New Disclosure	-0.217	-0.259	-0.244	-0.257	-0.126	-0.121	-0.100	-0.119
	(0.044)	(0.049)	(0.054)	(0.049)	(0.040)	(0.045)	(0.052)	(0.045)
Post	-0.062				-0.086			
	(0.041)				(0.036)			
New Disclosure*Post *1(`09 Sal ≥ $200k)				0.209				0.215
				(0.100)				(0.093)
Post * 1(`09 Sal ≥ $200k)				-0.095				-0.107
				(0.064)				(0.056)
City chars*Post		X	X	X		X	X	X
County*Post			X				X	
Mean Dependent Var.	0.37	0.37	0.37	0.37	0.25	0.25	0.25	0.25
Observations	906	892	892	890	906	892	892	890

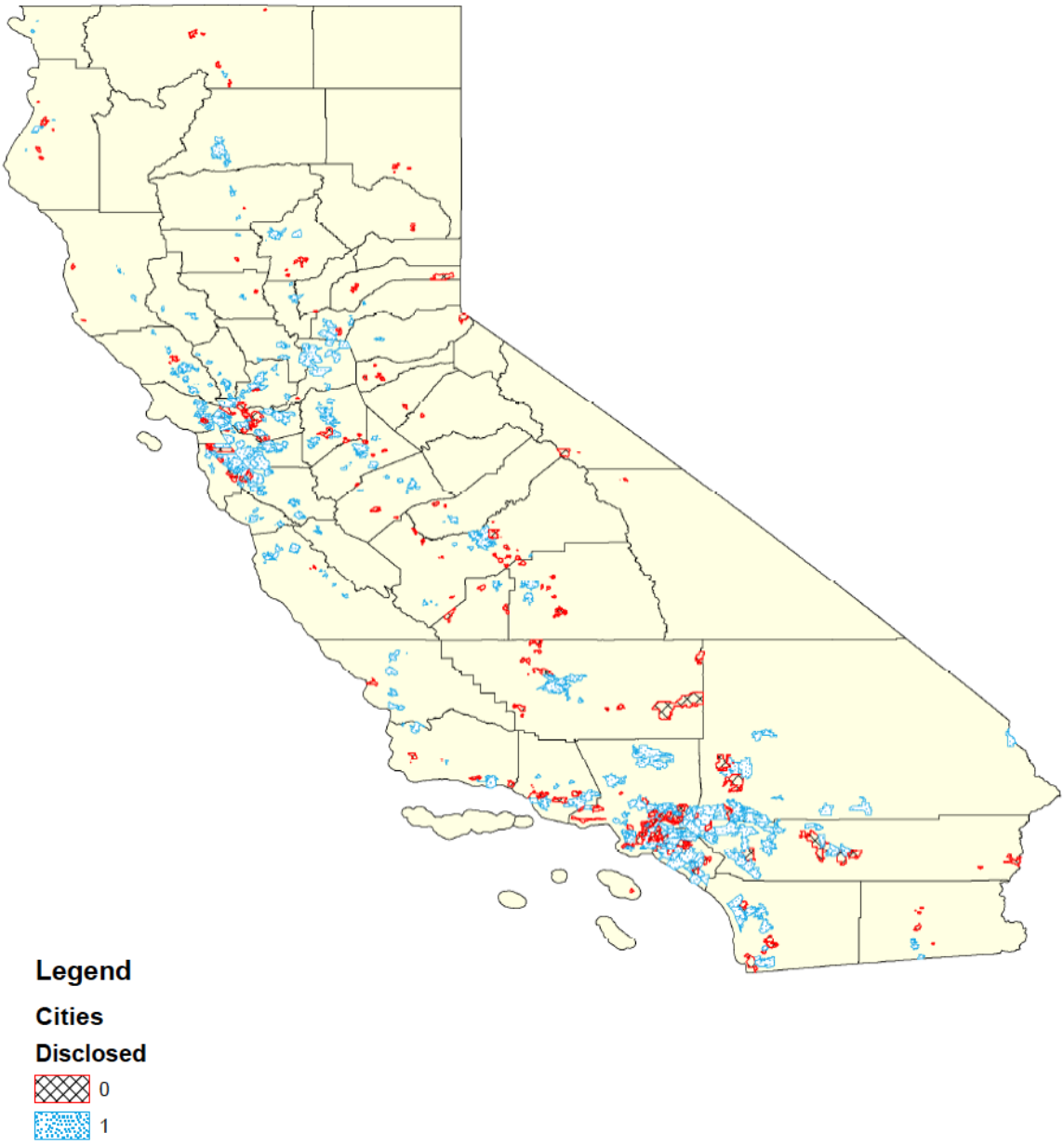
Notes: Linear probability estimates. Sample is split into two periods: 2007-2009 and 2010-2012. The Post period is the 2010-2012 period. An observation is city-period. The dependent variable is 1 if there was at least one separation or quit in the interval. See notes to Table 3 for list of city characteristics.

Figure 1. Share of all articles in the California Press referring to "City Manager" and "Salary" (2000=1)



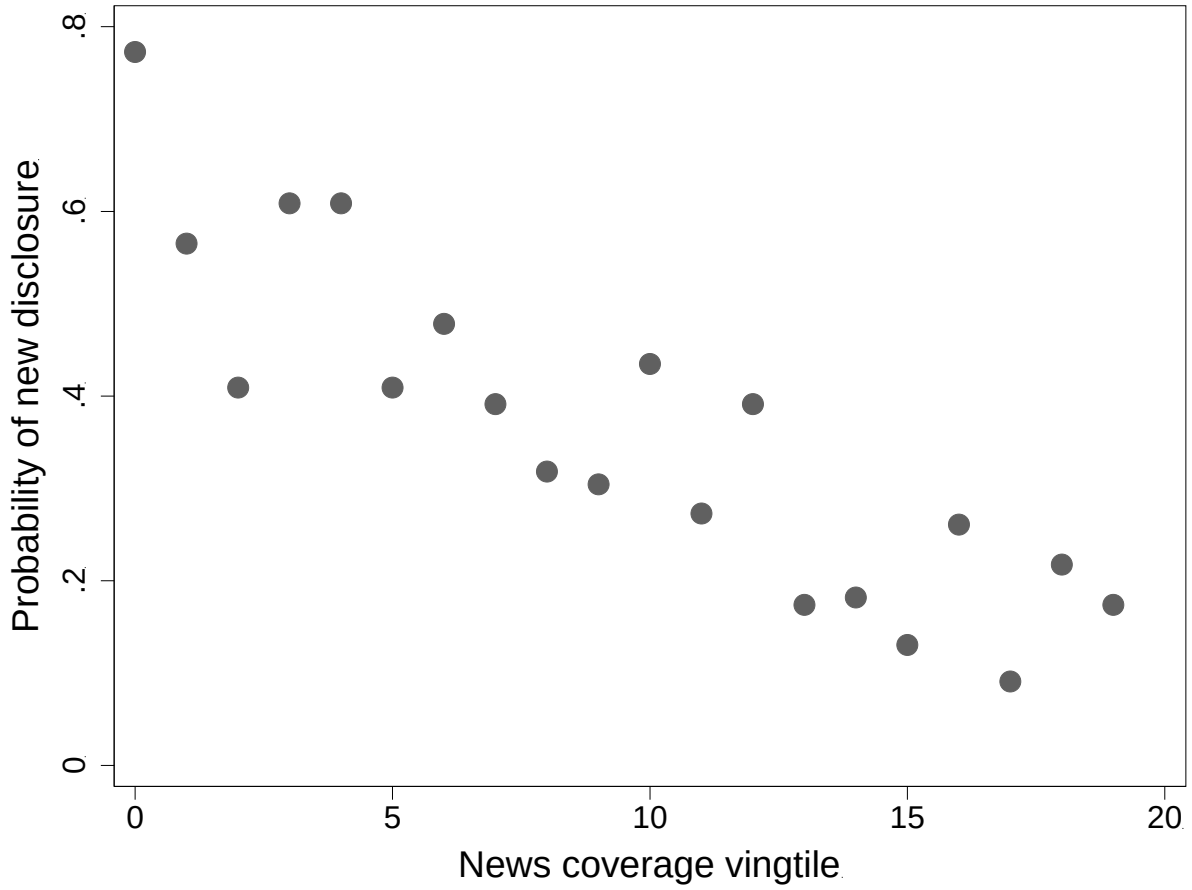
Notes: The data are from searches of California newspapers in NewsLibrary.com. The numerator of the share is the annual number of articles referring to ("City Manager" OR "City Administrator" OR "Town Manager" OR "Town Administrator") in the lead/first paragraph of the article and "Salary" anywhere in the text. The denominator of the share is the total number of articles in California for that year. The figure plots this ratio as a multiple of the ratio in 2000. The dashed vertical line is the year that the mandate went into effect.

Figure 2. Salary Disclosure in California



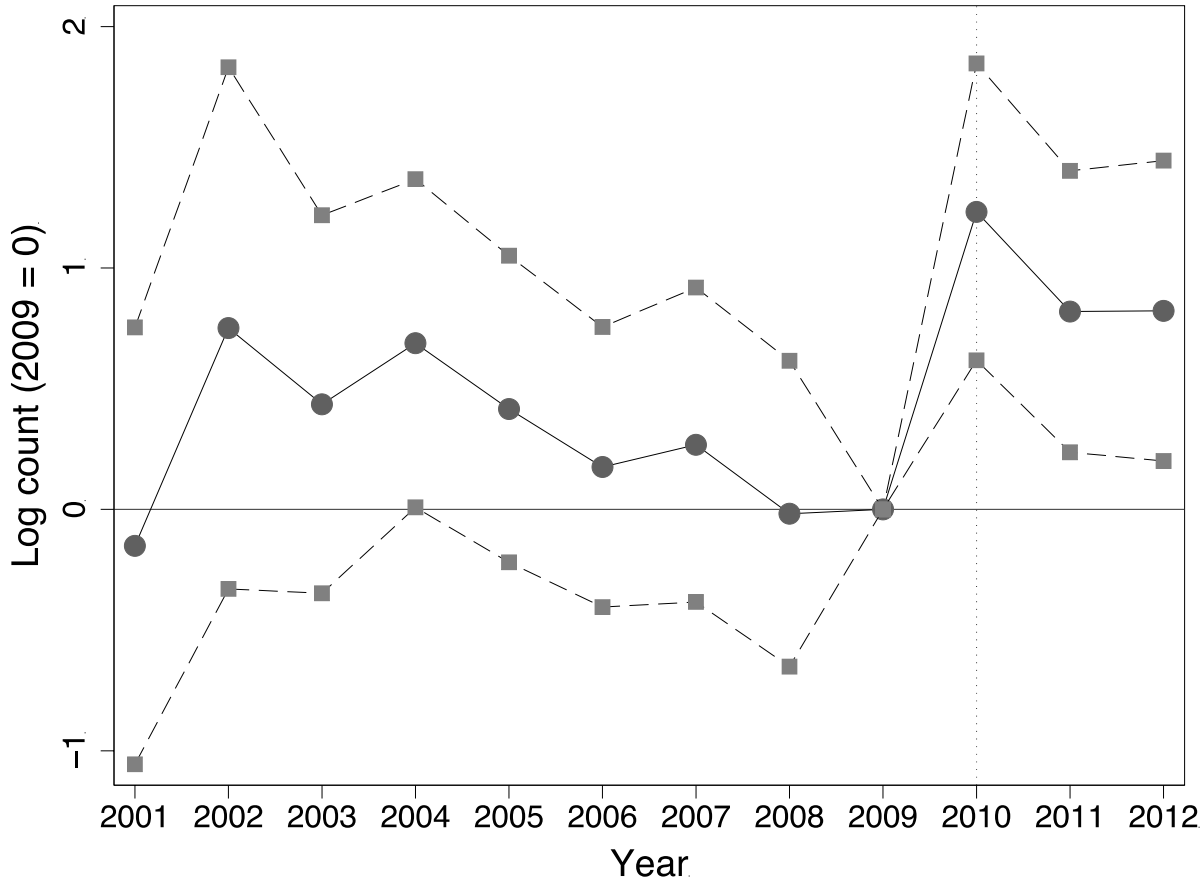
Notes: This map shows the location of new and previous disclosure cities in California. Disclosed value of 1 indicates the city was a previous disclosure city and 0 indicates a new disclosure city.

Figure 3. Relationship between Media Coverage and Probability of New Disclosure



Notes: This figure plots the probability of new disclosure within twenty bins of the news coverage measure. The bin cut points are the vingtiles of the news coverage measure. The news coverage measure is the log of the total number of articles mentioning a city on any topic from 2003-2008.

Figure 4. Log Count of Newspaper Articles Mentioning “City Manager” and “Salary” in New Disclosure Cities Relative to Previous Disclosure Cities



Notes: This figure plots the interaction of year and a new disclosure indicator from a negative binomial model for years 2001-2012 where the dependent variable is the number of articles in NewsLibrary.com that contain terms "City manager" and "Salary" by year and city. The interaction of 1(2009) and new disclosure is normalized to 0. The dashed line is the 95% confidence interval. The dotted vertical line is the year that the mandate went into effect.

Figure 5a. City Manager Nominal Compensation Growth by Disclosure Status

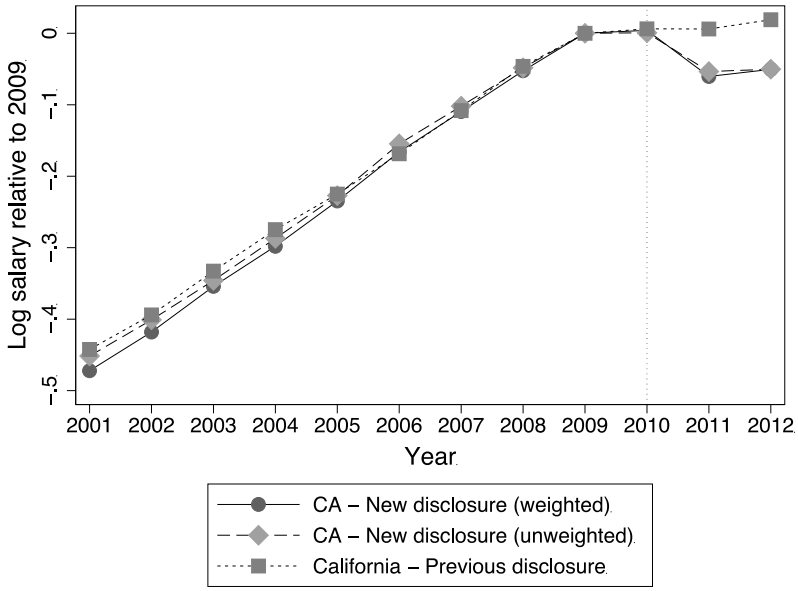
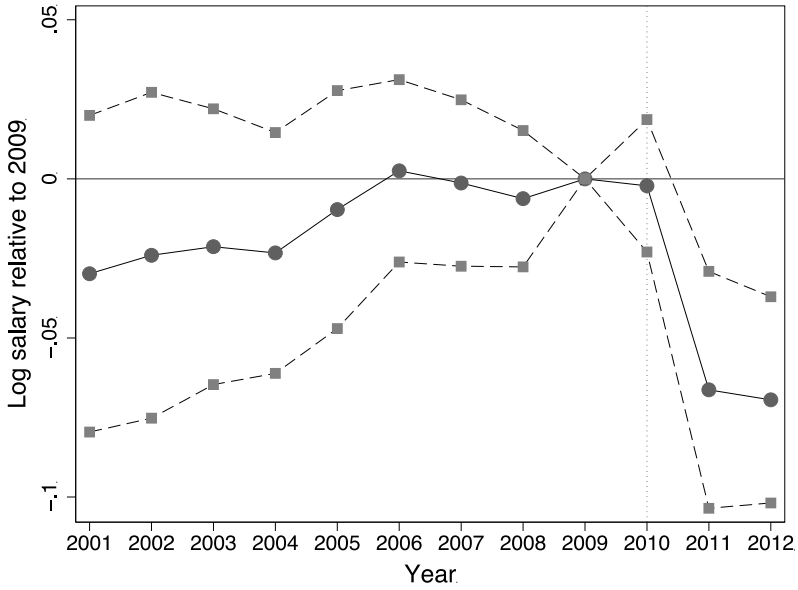
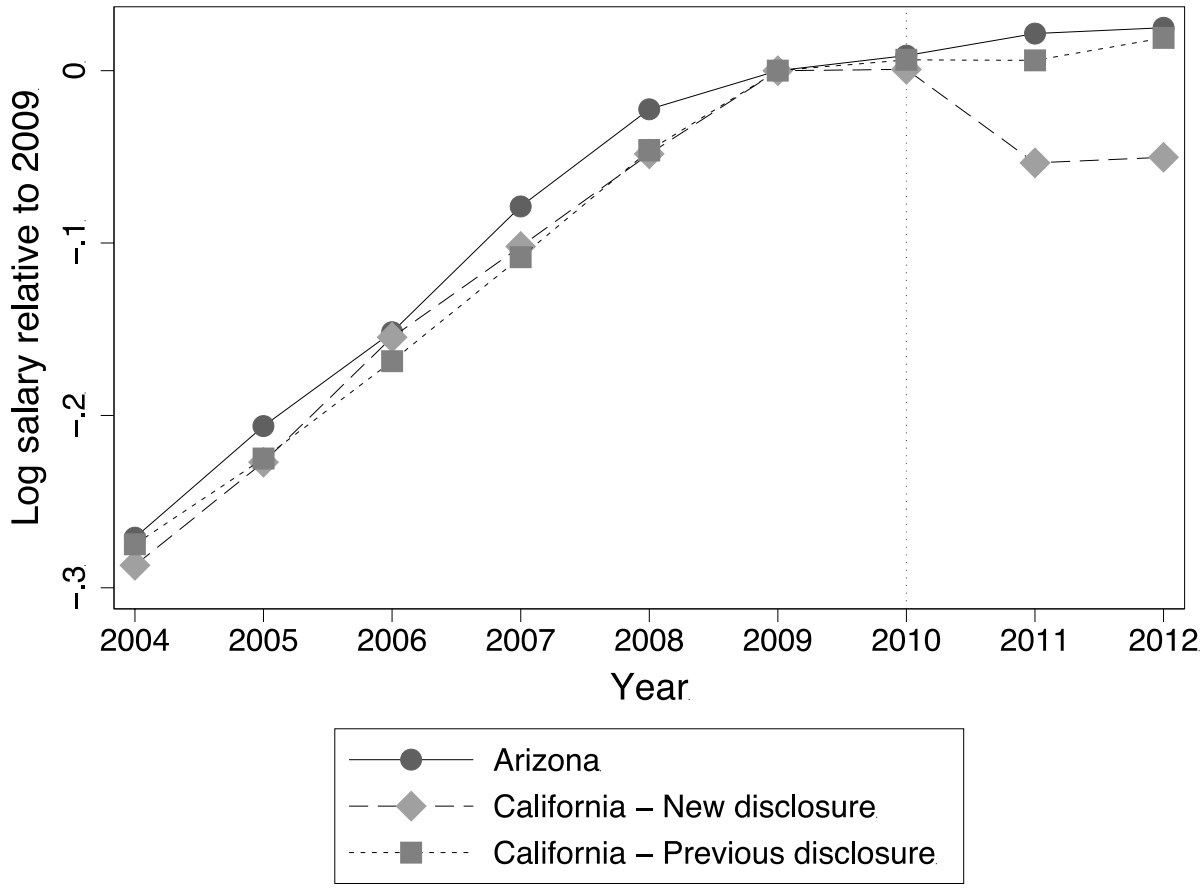


Figure 5b. City Manager Earnings Growth; New Disclosure relative to Previous Disclosure Cities (2009=0)



Notes: Figure 5A plots demeaned log nominal compensation of city manager relative to 2009 for the new and previous disclosure cities in California. The weighted series reweights the new disclosure sample to match characteristics in the previous disclosure sample. The characteristics used are log population, log median housing values, log average household income, percent of residents who are Hispanic, percent of residents who are black, percent of homes that are renter occupied, percent of population (25+) with at most a high school degree, percent of employed working in construction, and number of full-time equivalent workers in the city government. The dotted vertical line is the year that the mandate went into effect. Figure 5B plots the difference between the previous disclosure series and the weighted new disclosure series with 95% confidence intervals.

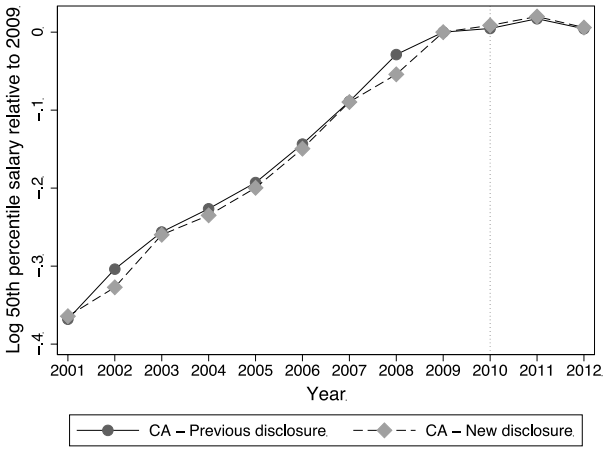
Figure 6. City Manager Earnings Growth; New and Previous Disclosure California Cities relative to Arizona (2009=0)



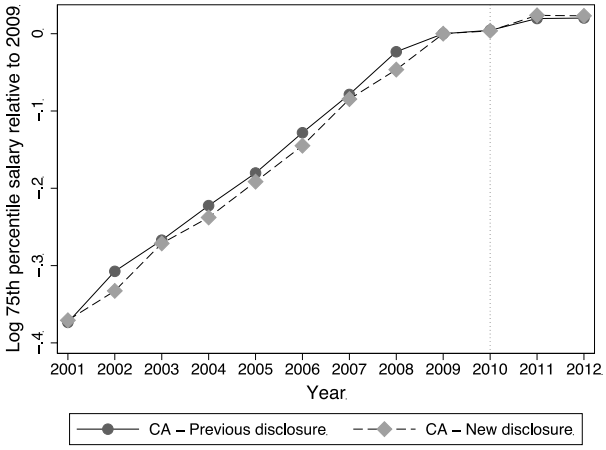
Notes: This figure plots demeaned log nominal compensation of city manager compensation relative to 2009 for Arizona, new disclosure, and previous disclosure cities. The dotted vertical line is the year that the mandate went into effect. The Arizona data are only available beginning in 2004.

Figure 7. Percentiles of annual earnings of CalPERS enrolled municipal workers

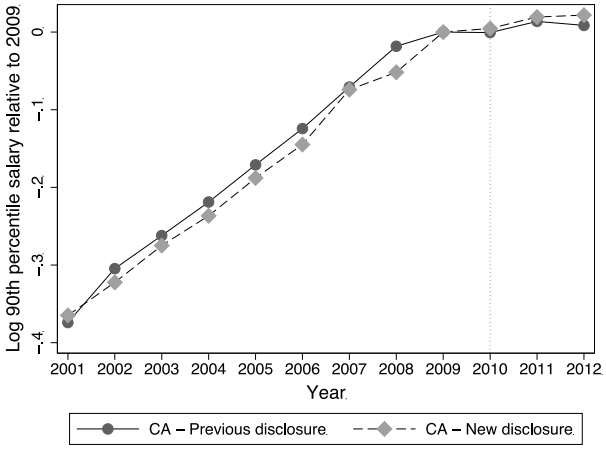
Panel A. Log 50th percentile (2009=0)



Panel B. Log 75th Percentile (2009=0)



Panel C. Log 90th Percentile (2009=0)



Notes: Figures 7a-c plot the demeaned log 50th, log 75th, and log 90th percentiles, respectively, of municipal compensation for workers who contribute to CalPERS pensions relative to 2009. The dotted vertical line is the year that the mandate went into effect.

Figure 8a. Relationship between the 2009-2012 Change in City Manager Compensation and Initial 2009 Compensation; New Disclosure Cities

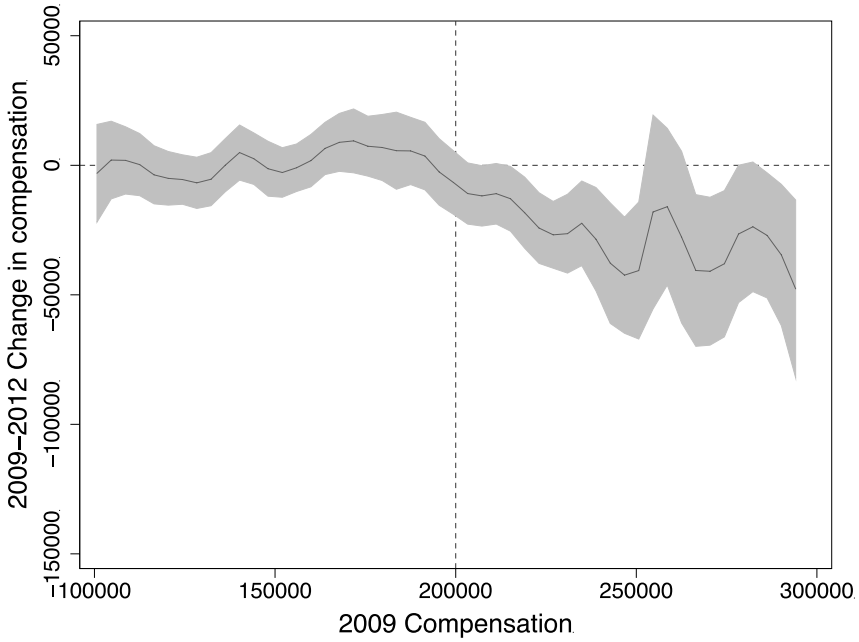
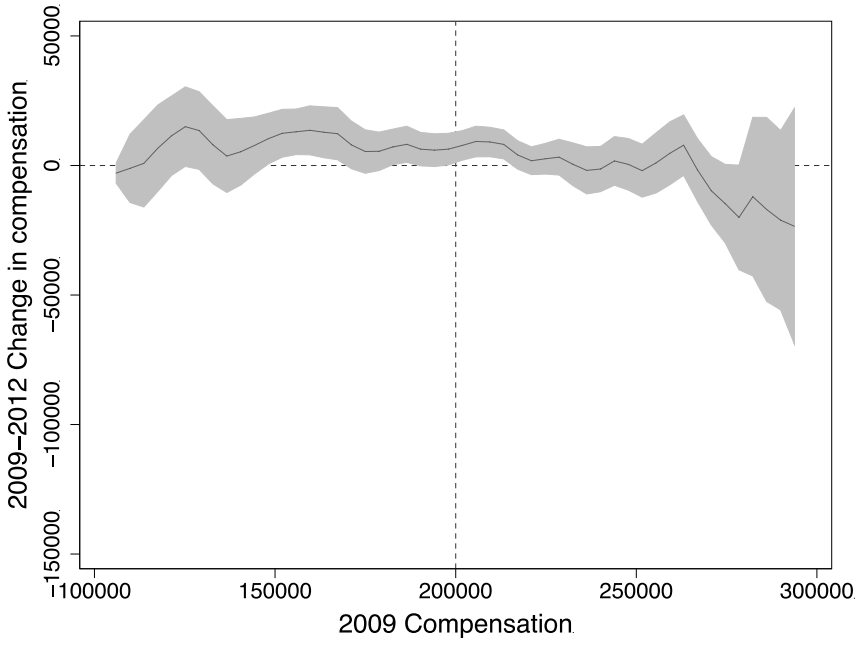


Figure 8b. Relationship between the 2009-2012 Change in City Manager Compensation and Initial 2009 Compensation; Previous Disclosure Cities



Notes: Figure 8 plots local linear regression estimates of the relationship between the 2009-2012 change in city manager compensation and initial 2009 compensation. The bandwidth is $4000. Shaded areas represent the 95 percent confidence interval.

Figure 9a. Log average earnings of municipal workers enrolled in CalPERS excluding the city manager (2009=0)

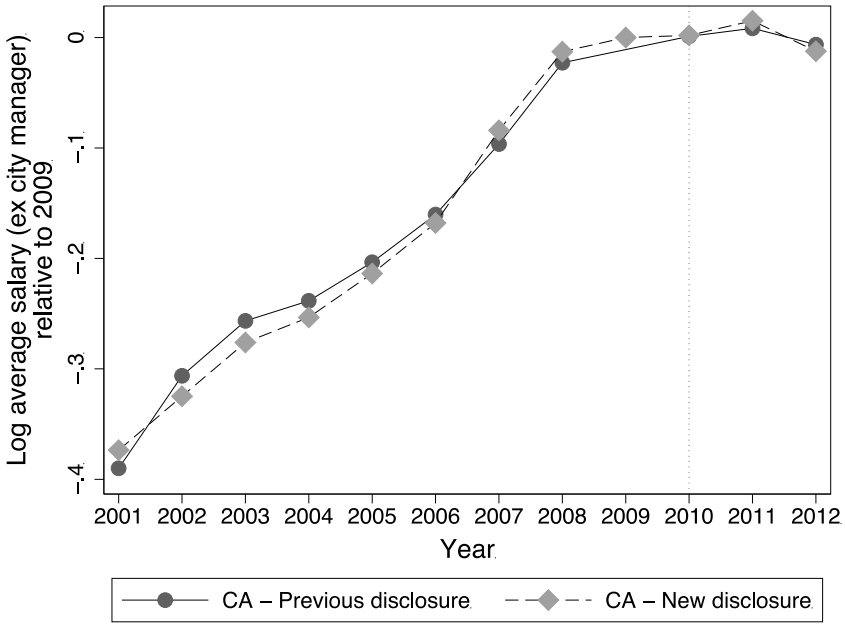
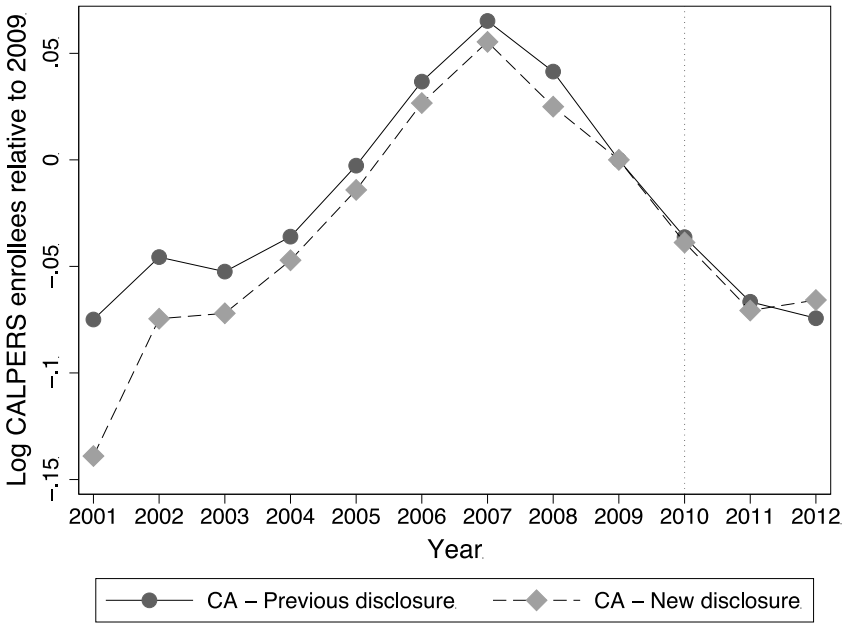


Figure 9b. Log number of municipal workers enrolled in CalPERS excluding the city manager (2009=0)



Notes: Figure 9a plots the demeaned log average annual earnings of municipal workers excluding the city manager who contributed to CalPERS pensions relative to 2009. Figure 9b plots the demeaned log number of municipal workers excluding the city manager who contributed to CalPERS pensions relative to 2009. The dotted vertical line is the year that the mandate went into effect.

Figure 10a. Separations by disclosure status and year

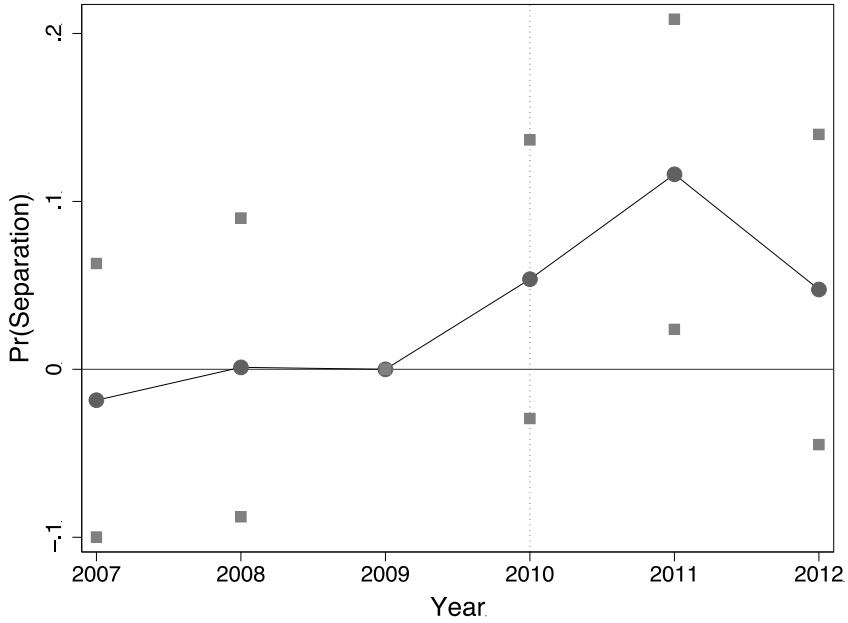
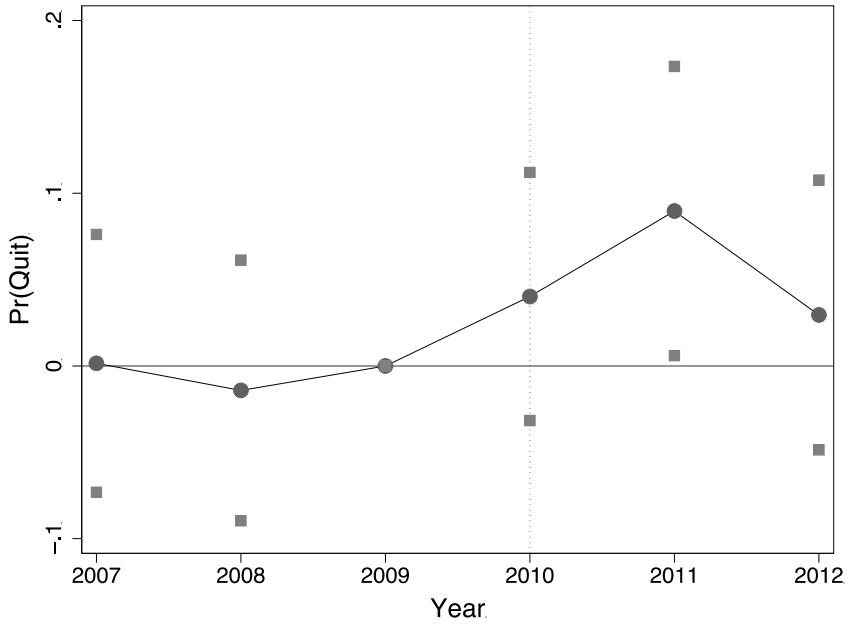


Figure 10b. Quits by disclosure status and year



Notes: Panels a and b plot the probability of city manager separations and quits by year for new relative to previous disclosure cities. All estimates are relative to 2009. Square points represent 95% confidence interval. Standard errors are clustered on city.

Online Appendix

Data Appendix

City Manager Compensation Data

The compensation data for California come from five sources: a public records request to all 482 California cities, earnings records from CalPERS, the State Controller public salary database, salaries recorded in the *Wayback Machine*, and news reports. I prioritize the data sent directly from cities and CalPERS, and when those are unavailable I supplement data from the other sources. Whenever possible, I use city manager Medicare earnings (W-2 Box 5) for city manager compensation, which is one of the variables requested by the State Controller for the public website and a record I requested in the public records request of cities. The reason for using Medicare earnings is that it captures additional compensation beyond salary such as bonuses and car allowances. Some cities were unable to provide this information, in which case I used the manager's base pay (which includes CalPERS). For a given city, I consistently use either the Medicare earnings or base pay so that any differences across cities are absorbed by city fixed-effects. When managers depart cities, often their Medicare earnings are inflated in their last year due to severance payments. I do not use these records and I instead impute these observations using straight-line interpolation with the old city manager's salary in the year before separation and the new city manager's salary in the year after separation. I also use straight-line interpolation to impute compensation missing for other reasons where the salary is available before and after the missing observation. Where there are no records before or after the observation the value remains missing. The estimates are robust to dropping imputed values (Appendix Table B1) and limiting the sample to the 2009-2012 period (as reported in the paper) where there is almost universal reporting on compensation. When there is more than one city

manager in the position, I sum their compensation excluding any large lump-sum payments that are likely to be separation payments. When a manager has a partial year of service I compute the full-year equivalent of the partial year salary when the date of hire is available.

Arizona City and Local Government Employee Payroll Data

Data on local government employee pay in Arizona come from the League of Arizona Cities and Towns. Each year, the League of Arizona Cities and Towns produces a Local Government Salary and Benefit Survey that contains the salary for each city manager in a given year. I obtained archives of the documents directly from the League of Arizona Cities and Towns, which I then digitized.[1]

City Characteristics Data

The city demographic and characteristics data come from the 2009 American Community Survey (ACS) 5-year estimates. I accessed this survey via the United State Census Bureau's American FactFinder search tool.[2]

The ACS 5-year estimates are multiple year estimates. The 2009 5-year estimates are the estimate for a city over the period from 2005-2009. I chose to use the ACS 5-year estimates because they provide full information on every city and town. The ACS three and one year estimates only provide information on cities and towns with populations larger than 20,000 and 65,000, respectively.[3]

[1] http://www.azleague.org/
[2] http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml
[3] http://www.census.gov/acs/www/guidance_for_data_users/estimates/

To accurately identify the estimates for cities and towns in California and Arizona in the ACS, I used the geographic data for places. Place data includes data for cities, towns, and census designated places.

The demographic data come from the Selected Social Characteristics, Selected Economic Characteristics, Selected Housing Characteristics, and the ACS Demographic and Housing Characteristics files. Information on household types and educational attainment come from the Selected Social Characteristics file. Information on employment status, industry, income, and poverty level come from the Selected Economic Characteristics file. Information on housing occupancy, value, and rent came from the Selected Housing Characteristics file. Information on population, age, race, and ethnicity come from the ACS Demographic and Housing Characteristics file.

Population and Housing Density Data

The population and housing density data come from the 2010 Decennial Census accessed from the United State Census Bureau's American FactFinder search tool, specifically CT-PH1 Population, Housing Unites, and Density: 2010 –State – Places. The dataset includes information on population, housing units, area in square miles, and housing and population density per square mile for every city and town in the United States.

Separation Data

Data on manager turnover was obtained by digitizing the *California Roster*, a directory of municipal elected officials and high-level managers published by the California Secretary of State, for years 2005-2012 supplemented with online searches of city manager biographies. The online searches were necessary because the roster is not always up to date. To identify quits

versus other reasons for separation, for each record of separation I conducted an online search for press reports giving background information on the reasons for the change. I code a separation as a quit if the manager is reported to be leaving for another position, or if he or she is reported to be voluntarily retiring.

I also use the city manager names to code manager gender for 2005-2012. I coded gender based on a comparison of first name with common female and male names in the Social Security Administration names database. Where there was ambiguity, I conducted an online search of the managers to identify their gender.

Disclosure Data

To determine whether salaries were posted online I consulted historical snapshots of each city's website on the *Wayback Machine* (https://archive.org/web/) and investigated whether the city manager's salary was posted on the city's website as of the end of 2008. Specifically, for every California city, I searched the last available snapshot in 2008 in the Human Resources Department, Finance Department, and the Administration directories of the city website searching for the city manager salary. When available, this information is usually posted in the Human Resources department directory. When no salary was found in any of these directories, I recorded the city as not posting the city manager salary online.

I searched NewsLibrary.com for references to city manager salaries by city over the period Jan 1, 2001 – December 31, 2009. Specifically, I searched for the name of the city in the lead paragraph or title of the article and ((“City Manager” OR “City Administrator” OR “Town Manager” OR “Town Administrator”) AND (“Salary”)) anywhere in the text. NewsLibrary.com displays an excerpt of the first paragraph in the search results. I first verified whether the salary was available there. If not, I assessed whether the article appeared relevant to the question and, if

so, I read the entire article to look for this information. The *Los Angeles Times* is not archived in NewsLibrary.com and I did a separate search through their search engine using the same methodology.

Dropped Cases

Starting with 482 cities in California, the following exclusions are made:

--14 cities where there is no record of a Chief Administrative Officer.

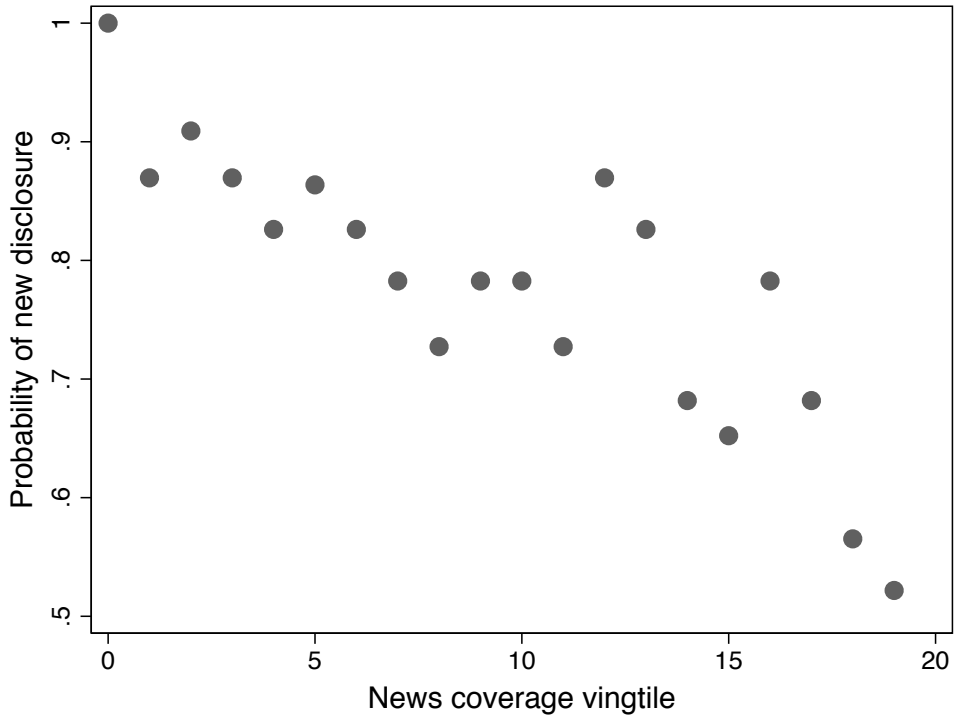
--The City of Bell because it was an investigation of this city that prompted disclosure, so as to not confound an investigation with disclosure.

--14 cities where first disclosure occurred in 2009. This selection is imposed because these cities are treated in that they first disclosed after the Supreme Court ruling, mostly through the Bay Area online database, but the timing relative to the broader mandate is shifted by a year. The estimates are unaffected by their inclusion as untreated or treated cities (Appendix Table A1).

--In specifications with controls, 8 cities with missing city characteristics

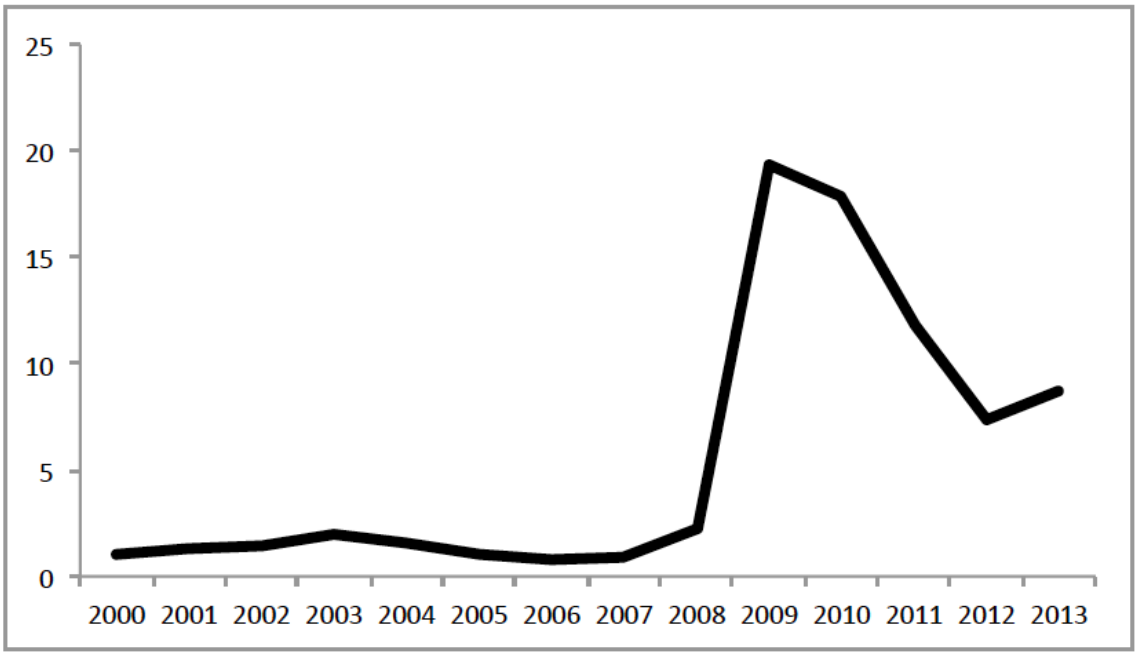
The main analysis utilizes 453 California cities without controls, 445 cities with all controls, and 85 Arizona cities.

Appendix Figure A1: Relationship between Media Coverage and Probability of New Disclosure; New Disclosure Defined as Absence of Salary Information on City Website



Notes: This figure plots the probability of new disclosure within twenty bins of the news coverage measure. The bin cut points are the vingtiles of the news coverage measure. The news coverage measure is the log of the total number of articles mentioning a city on any topic from 2003-2008.

Appendix Figure A2. Share of all articles in the California Press referring to "Furloughs" (2000=1)



Notes: The data are from searches of California newspapers in NewsLibrary.com. The numerator is the number of articles referring to "Furloughs" in a given year and the denominator is the total number of articles in California. The share is expressed relative to 2000.

Appendix Table A1. Disclosure and City Manager Salaries; Including Cities for which First Disclosure was in 2009

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: 2009 Disclosure Coded as Previous Disclosure							
New Disclosure * 2010	-0.003	-0.004	-0.003	-0.011	-0.011	-0.010	-0.017
	(0.014)	(0.015)	(0.015)	(0.014)	(0.012)	(0.030)	(0.016)
New Disclosure * 2011	-0.056	-0.059	-0.059	-0.069	-0.067	-0.083	-0.067
	(0.017)	(0.018)	(0.019)	(0.020)	(0.019)	(0.035)	(0.021)
New Disclosure * 2012	-0.065	-0.066	-0.065	-0.078	-0.074	-0.089	-0.070
	(0.018)	(0.017)	(0.019)	(0.023)	(0.018)	(0.037)	(0.022)
R-squared	0.892	0.899	0.916	0.943	0.953	0.950	0.947
Observations	5245	5164	5164	5164	1831	2087	3433
Panel B: 2009 Disclosure Coded as New Disclosure							
New Disclosure * 2010	-0.003	-0.013	-0.011	-0.011	-0.011	-0.013	-0.023
	(0.014)	(0.015)	(0.014)	(0.013)	(0.011)	(0.030)	(0.015)
New Disclosure * 2011	-0.054	-0.067	-0.065	-0.065	-0.065	-0.084	-0.071
	(0.017)	(0.017)	(0.018)	(0.020)	(0.018)	(0.034)	(0.020)
New Disclosure * 2012	-0.064	-0.074	-0.072	-0.072	-0.072	-0.089	-0.076
	(0.018)	(0.016)	(0.018)	(0.023)	(0.017)	(0.036)	(0.021)
R-squared	0.892	0.899	0.917	0.943	0.953	0.950	0.947
Observations	5245	5164	5164	5164	1831	2185	3433
City fixed-effects	X	X	X	X	X	X	X
City characteristics * year		X	X	X	X	X	X
County * year			X				
City*linear trend				X			
2009-2012 sample					X		
Arizona Comparison						X	
Manager fixed-effects							X

Notes: All models estimated by OLS for years 2001-2012. This table is identical to Table 3 in the main text but includes cities for which first disclosure was in 2009. The dependent variable in all models is log city manager salary in 2012 dollars by city and year. Column (6) includes all Arizona cities and only new disclosure cities in California. New disclosure is a city that did not previously have city manager salary online or reported in the press (see text for details). City characteristics are log population, log median housing values, log average household income, percent of residents who are Hispanic, percent of residents who are black, percent of homes that are renter occupied, percent of population (25+) with at most a high school degree, percent of employed working in construction, and number of full-time equivalent city government workers. Manager fixed-effects are a unique fixed-effect for a manager in a city. All main effects are included in the model, including year dummies. Standard errors clustered on city are in parentheses.

Appendix Table A2. Summary Statistics

	(1) California New Disclosure	(2) California Previous Disclosure	(3) Arizona	(5) p-value (1)-(2)	(6) p-value (1)-(3)
ln(population)	9.62	10.42	9.32	0.00	0.14
ln(Housing value)	12.81	13.10	11.98	0.00	0.00
ln(Mean Household Income)	10.90	11.09	10.71	0.00	0.00
ln(Government FTEs)	4.36	5.22	4.78	0.00	0.03
% Hispanic	39.89	30.24	31.03	0.00	0.01
% Black	3.588	3.798	2.07	0.70	0.01
% at most HS Degree	48.03	37.70	46.67	0.00	0.56
% Housing that is Renter Occupied	38.94	38.23	29.41	0.63	0.00
% Employed in Construction	7.348	7.124	9.60	0.63	0.00
% Employed in Retail	11.02	11.17	11.91	0.64	0.07
Female Manager (Yes = 1)	0.141	0.128		0.69	
ln(2009 city manager compensation)	12.05	12.26	11.67	0.00	0.00
ln(2012 city manager comp.)-ln(2009 city manager comp.)	-0.118	-0.049	-0.051	0.00	0.01
ln(2012 Wage Bill)-ln(2009 Wage Bill)	-0.209	-0.202		0.75	
Number of Cities	172	296	90		

Notes: Compensation and wage bill are in 2012 dollars. See Section III for data sources and definition of disclosure cities.

Appendix Table A3. Heterogeneity by City Manager Gender

	(1)	(2)	(3)	(4)	(5)	(6)
Female* New Disclosure*1(2010)	0.027	0.026	0.036	0.028	0.029	0.024
	(0.027)	(0.028)	(0.032)	(0.032)	(0.028)	(0.032)
Female* New Disclosure*1(2011)	0.086	0.087	0.088	0.101	0.081	0.082
	(0.031)	(0.031)	(0.037)	(0.038)	(0.033)	(0.038)
Female* New Disclosure*1(2012)	0.097	0.079	0.080	0.107	0.063	0.080
	(0.036)	(0.035)	(0.035)	(0.051)	(0.036)	(0.048)
New Disclosure*1(2010)	-0.011	-0.017	-0.022	-0.012		
	(0.013)	(0.014)	(0.014)	(0.016)		
New Disclosure*1(2011)	-0.076	-0.085	-0.088	-0.080		
	(0.018)	(0.020)	(0.020)	(0.023)		
New Disclosure*1(2012)	-0.088	-0.091	-0.094	-0.088		
	(0.019)	(0.019)	(0.020)	(0.027)		
Female*1(2010)	-0.018	-0.021	-0.023	-0.029	-0.022	-0.029
	(0.017)	(0.017)	(0.019)	(0.022)	(0.017)	(0.021)
Female*1(2011)	-0.028	-0.036	-0.035	-0.046	-0.035	-0.043
	(0.018)	(0.017)	(0.018)	(0.024)	(0.018)	(0.023)
Female*1(2012)	-0.014	-0.021	-0.014	-0.030	-0.017	-0.027
	(0.020)	(0.020)	(0.021)	(0.036)	(0.020)	(0.035)
Female * New Disclosure	-0.011	-0.003	-0.004	-0.030	0.002	-0.012
	(0.024)	(0.025)	(0.028)	(0.029)	(0.025)	(0.028)
Female	0.007	0.002	0.007	0.019	0.002	0.017
	(0.014)	(0.015)	(0.016)	(0.018)	(0.015)	(0.018)
City fixed-effects	X	X	X	X	X	X
City characteristics*year		X	X	X	X	X
County*year			X			
City*linear trend				X		X
City characteristics*year *New Disclosure					X	X
R-squared	0.93	0.92	0.94	0.96	0.93	0.96
Observations	3525	3475	3475	3475	3475	3475

Notes: Dependent variable is ln(city manager salary in 2012 dollars) by year and city for 2001-2012. The variable Female is an indicator for a female city manager. City characteristics are those used in Table 3 as well as an indicator for whether the city manager earned at least $200k in 2009. All main effects are included in the models.

Appendix Table A4. Disclosure Effect by Type of Disclosure

	(1)	(2)
New online disclosure* 2010	-0.019	
	(0.016)	
New online disclosure* 2011	-0.043	
	(0.018)	
New online disclosure* 2012	-0.041	
	(0.020)	
Not online or in the news * 2010		-0.018
		(0.019)
Not online or in the news * 2011		-0.065
		(0.021)
Not online or in the news * 2012		-0.070
		(0.021)
In the news but not online*2010		-0.017
		(0.017)
In the news but not online*2011		-0.010
		(0.017)
In the news but not online*2012		-0.006
		(0.019)
Online but not in the news * 2010		0.009
		(0.041)
Online but not in the news * 2011		0.047
		(0.049)
Online but not in the news * 2012		0.042
		(0.053)
R-squared	0.898	0.899
Observations	5044	5044

Notes: Models estimated by OLS for years 2001-2012. The dependent variable is log city manager salary in 2012 dollars by city and year. In column (1) new disclosure is 1 if the city did not report the city manager salary on its website. In column (2) new disclosure is further broken down into three categories: "Not online or in the news" are cities that previously did not have salary reports on their website or in the news, "In the news but not online" are cities that had salary reports in newspapers but not online, "Online but not in the news" are cities that had salary reports online but not in newspapers, and the omitted group are cities that had salary reports both online and in newspapers. All specifications include city fixed effects and city characteristics interacted by year dummies. See Table 3 notes for the list of city characteristics. All main effects are included in the model, including year dummies. Standard errors clustered on city are in parentheses.

Appendix Table A5. Relation between New Disclosure and Time Varying City Characteristics from Local Government Compensation Reporting Program Data

	ln(50th percentile city salary)	ln(75th percentile city salary)	ln(90th percentile city salary)	ln(Average municipal compensation)	ln(Number of municipal workers)
	(2)	(3)	(3)	(4)	(5)
New Disclosure * 2010	0.040	-0.012	0.006	-0.011	-0.007
	(0.064)	(0.035)	(0.012)	(0.015)	(0.014)
New Disclosure * 2011	0.064	0.046	0.017	-0.001	0.001
	(0.070)	(0.032)	(0.016)	(0.007)	(0.020)
New Disclosure * 2012	0.056	0.047	0.008	-0.004	0.012
	(0.073)	(0.035)	(0.016)	(0.011)	(0.021)
City fixed-effects	X	X	X	X	X
City characteristics*year	X	X	X	X	X
R-squared	0.885	0.880	0.951	0.992	0.996
Observations	1775	1783	1783	1760	1695

Notes: 50th and 75th percentile city salaries, average municipal compensation, and number of municipal workers are derived from public data for the Local Government Compensation Reporting Program for 2009-2012. City characteristics are log population, log median housing values, log average household income, percent of residents who are Hispanic, percent of residents who are black, percent of homes that are renter occupied, percent of population (25+) with at most a high school degree, percent of employed working in construction, and number of full-time equivalent city government workers. All main effects are included in the model, including year dummies. Standard errors clustered on city are in parentheses.

Appendix Table A6. Estimates Underlying the Residual Calculation Used in Table 5 and Appendix Table A7

	(1)	(2)	(3)
ln(population)	0.085	0.093	0.102
	(0.015)	(0.015)	(0.016)
ln(Average Household Income)	0.209	0.254	0.409
	(0.029)	(0.061)	(0.098)
ln(Number of municipal workers)	0.078	0.065	0.062
	(0.014)	(0.016)	(0.016)
Percent of population (25+) with at most a HS degree		-0.000	-0.001
		(0.001)	(0.001)
Percent of homes that are renter occupied		0.002	0.006
		(0.001)	(0.002)
ln(Housing Values)			-0.055
			(0.061)
ln(density)			-0.054
			(0.022)
Percent of employment in construction			0.011
			(0.004)
Observations	289	289	289
R-squared	0.54	0.54	0.57

Notes: This table shows the underlying estimates used to construct the residuals in Table 5 for year 2009 (the same models were estimated in 2007 and 2008. Dependent variable is log city manager salary. Sample is limited to previous disclosure cities in 2009.

Appendix Table A7. Additional Residual Heterogeneity Estimates and Models

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1(Residual>0)*	0.025		-0.024	0.039	-0.003	0.029	-0.019
New Disclosure*1(2010)	(0.028)		(0.036)	(0.028)	(0.037)	(0.029)	(0.035)
1(Residual>0)*	0.006		0.005	0.019	0.017	0.004	-0.007
New Disclosure*1(2011)	(0.035)		(0.042)	(0.036)	(0.044)	(0.036)	(0.043)
1(Residual>0)*	0.018		-0.016	0.021	-0.018	0.021	-0.024
New Disclosure*1(2012)	(0.037)		(0.048)	(0.037)	(0.050)	(0.038)	(0.051)
ln(2009 salary/200k≥1)*		-0.198	-0.198		-0.203		-0.199
New Disclosure*1(2010)		(0.181)	(0.182)		(0.182)		(0.182)
ln(2009 salary/200k≥1)*		-0.664	-0.671		-0.669		-0.666
New Disclosure*1(2011)		(0.207)	(0.204)		(0.206)		(0.208)
ln(2009 salary/200k≥1)*							
NewDisclosure*1(2012)		-0.657	-0.650		-0.653		-0.655
		(0.244)	(0.237)		(0.240)		(0.244)
New Disclosure*1(2010)	-0.015	0.041	0.054	-0.025	-0.003	-0.020	0.048
	(0.020)	(0.021)	(0.031)	(0.021)	(0.037)	(0.022)	(0.036)
New Disclosure*1(2011)	-0.061	0.018	0.014	-0.069	0.017	-0.062	0.018
	(0.026)	(0.025)	(0.041)	(0.028)	(0.044)	(0.029)	(0.047)
New Disclosure*1(2012)	-0.077	0.014	0.023	-0.080	-0.018	-0.080	0.028
	(0.029)	(0.033)	(0.053)	(0.030)	(0.050)	(0.032)	(0.060)
1(Residual>0)*1(2010)	0.034		0.021	0.035	0.223	0.046	0.037
	(0.016)		(0.016)	(0.016)	(0.017)	(0.016)	(0.016)
1(Residual>0)*1(2011)	0.013		0.007	0.010	0.002	0.029	0.026
	(0.017)		(0.019)	(0.017)	(0.020)	(0.017)	(0.018)
1(Residual>0)*1(2012)	-0.002		-0.001	0.004	0.007	0.007	0.010
	(0.018)		(0.019)	(0.018)	(0.019)	(0.018)	(0.018)
ln(2009 salary/200k)*		0.069	0.050		0.048		0.039
1(2010)		(0.034)	(0.036)		(0.036)		(0.035)
ln(2009 salary/200k)*		0.032	0.026		0.030		0.011
1(2011)		(0.036)	(0.041)		(0.042)		(0.039)
ln(2009 salary/200k)*		-0.004	-0.003		-0.010		-0.012
1(2012)		(0.037)	(0.040)		(0.040)		(0.038)
ln(2009 salary/200k)*		0.096	0.118		0.103		0.112
New Disclosure*1(2010)		(0.065)	(0.075)		(0.079)		(0.078)
ln(2009 salary/200k)*		0.146	0.147		0.136		0.154
New Disclosure*1(2011)		(0.086)	(0.102)		(0.105)		(0.106)
ln(2009 salary/200k)*		0.204	0.219		0.221		0.225
New Disclosure*1(2012)		(0.116)	(0.136)		(0.141)		(0.143)

(continued next page)

City fixed-effects	X	X	X	X	X	X	X
City Characteristics[a]	X		X				
City Characteristics[b]				X	X		
City Characteristics[c]						X	X
R-squared	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Observations	5083	5105	5083	5083	5083	5083	5083

Notes: The table shows the full set of coefficients for the models reported in Table 5. See Table 5 notes for additional detail. This table also shows additional specifications using different characteristics to calculate residuals.

[a] Characteristics 1 are log city population, log average household income, and log number of full-time municipal employee.

[b] Characteristics 2 consists of Characteristics 1 plus percent of homes that are renter occupied and percent of population (25+) with at most a high school degree.

[c] Characteristics 3 consists of Characteristics 2 plus log median housing values, percent of employed residents working in construction, and log housing density.

Appendix Table A8. Relation between Magnitude of City Manager Wage Cuts and City Council Composition

	(1)	(2)
Variable	0.014	0.003
*New Disclosure*1(2010)	(0.028)	(0.006)
Variable	-0.008	0.005
*New Disclosure*1(2011)	(0.034)	(0.008)
Variable	0.012	-0.001
*New Disclosure*1(2012)	(0.033)	(0.007)
New Disclosure*1(2010)	-0.012	-0.026
	(0.024)	(0.048)
New Disclosure*1(2011)	-0.060	-0.102
	(0.026)	(0.066)
New Disclosure*1(2012)	-0.076	-0.063
	(0.026)	(0.054)
Variable	0.016	-0.003
*1(2010)	(0.018)	(0.004)
Variable	-0.005	0.000
*1(2011)	(0.018)	(0.004)
Variable	0.006	-0.001
*1(2012)	(0.019)	(0.004)
City fixed-effects	X	X
City characteristics * year	X	X
Variable= Share of 2009 city council in office in 2005	X	
Variable =Average tenure of city council in 2009		X
R-squared	0.90	0.90
Observations	5030	5030

Notes: This table shows OLS estimates of the relationship between new disclosure, and interactions of new disclosure with measures of city council tenure, and log city manager compensation in 2012 dollars. The average tenure of the city council is based on truncated city council tenure for years 2003-2009 and a member of a city council who is observed in their position for all years 2003-2009 is assigned a tenure of six years. City characteristics are reported in Table 3.

Appendix Table A9. Relation between New Disclosure and Future City Council Composition

	Share of city council in t-4 present in t	
	(1)	(2)
New Disclosure * Post	-0.009	-0.016
	(0.046)	(0.049)
Post	0.341	
	(0.027)	
City fixed-effects	X	X
City characteristics*year		X
R-squared	0.627	0.638
Observations	901	888

Notes: This table shows OLS estimates of the effect of new disclosure on city council composition. The sample is California cities in 2008 and 2012. The post period refers to 2012. The dependent variable is the share of the city council in t (where t is either 2008 or 2012) that was present in t-4. City characteristics are those from Table 3. Robust standard errors in parentheses.

Appendix Table A10. Heterogeneity by 2008 Obama Vote Share

	(1)	(2)	(3)
More than 50% Obama * New Disclosure *1(2010)	0.059 (0.030)	-0.016 (0.027)	0.002 (0.032)
More than 50% Obama * New Disclosure *1(2011)	0.006 (0.037)	-0.086 (0.039)	-0.046 (0.045)
More than 50% Obama * New Disclosure *1(2012)	0.009 (0.036)	-0.100 (0.046)	-0.099 (0.050)
New Disclosure*1(2010)	-0.047 (0.025)	-0.003 (0.021)	
New Disclosure*1(2011)	-0.070 (0.032)	-0.015 (0.031)	
New Disclosure*1(2012)	-0.079 (0.030)	-0.014 (0.036)	
City fixed-effects	X	X	X
City characteristics*year	X	X	X
City*linear trend		X	X
City characteristics*year *New Disclosure			X
R-squared	0.90	0.94	0.95
Observations	5041	5041	5041

Notes: Dependent variable is ln(city manager salary in 2012 dollars) by year and city for 2001-2012. More than 50% Obama is an indicator for whether Barack Obama had more than 50% of the vote share in the city on the 2008 presidential election. City characteristics are those used in Table 3 and an indicator for whether the city manager earned more than $200k in 2009. All main effects are included in the models, including year dummies and the interactions of more than 50% Obama vote share with 1(2010)-1(2012).

Appendix Table B1. Disclosure and City Manager Salaries; No Imputed Observations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
New Disclosure * 2010	0.007	-0.001	-0.002	-0.009	-0.011	-0.020	-0.019
	(0.014)	(0.016)	(0.016)	(0.015)	(0.013)	(0.029)	(0.016)
New Disclosure * 2011	-0.043	-0.055	-0.056	-0.070	-0.067	-0.099	-0.067
	(0.016)	(0.019)	(0.019)	(0.022)	(0.020)	(0.035)	(0.022)
New Disclosure * 2012	-0.055	-0.066	-0.065	-0.079	-0.075	-0.094	-0.076
	(0.016)	(0.018)	(0.019)	(0.025)	(0.019)	(0.037)	(0.023)
City fixed-effects	X	X	X	X	X	X	X
City characteristics * year		X	X	X	X	X	X
County * year			X				
City*linear trend				X			
2009-2012 sample					X		
Arizona Comparison						X	
Manager fixed-effects							X
R-squared	0.893	0.894	0.918	0.937	0.952	0.950	0.946
Observations	4172	4122	4122	4122	1715	1842	2799

Notes: All models estimated by OLS for years 2001-2012. This table is identical to Table 3 in the main text but drops imputed values. The dependent variable in all models is log city manager salary in 2012 dollars by city and year. Column (6) includes all Arizona cities and only new disclosure cities in California. New disclosure is a city that did not previously have city manager salary online or reported in the press (see text for details). City characteristics are log population, log median housing values, log average household income, percent of residents who are Hispanic, percent of residents who are black, percent of homes that are renter occupied, percent of population (25+) with at most a high school degree, percent of employed working in construction, and number of full-time equivalent city government workers. Manager fixed-effects are a unique fixed-effect for a manager in a city. All main effects are included in the model, including year dummies. Standard errors clustered on city are in parentheses.