The Political Economy of Subsidy-Giving

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October 16, 2024

Abstract

Politicians regularly offer large discretionary subsidies to attract firms to their jurisdictions. In this paper I quantify the political benefit of this subsidy-giving by combining hand-collected subsidy data, county level election returns, and an original survey of voters. Subsidy-giving generates a 2ppt increase in vote share for incumbent governors in the winning county. I use the survey estimates to inform bounds on a state-level effect, and I find that observed subsidy-giving is pivotal for 12% of the elections in the sample. I show that this effect is not due to realized job creation. Instead, the salience of firm attraction drives electoral rewards.

JEL Classifications: H25, H71, D72, R58
Keywords: Business Taxes and Subsidies, Local Government Finance, Elections, Political Cycles

*E-mail: cailin.slattery@berkeley.edu. I have greatly benefited from discussions with Charles Angelucci, Matilde Bombardini, Stephen Coate, Ernesto Dal Bó, Emiliano Huet-Vaughn, Andrea Prat, Ken Shotts, Dustin Swonder, Francesco Trebbi, Clemence Tricaud, Guo Xu, and comments from participants at Berkeley's Conference on Political Economy and Governance, Brown, Georgetown, MIT, UC Irvine, UCL, University of Oslo, Warwick, the Online Public Finance Seminar, and the NBER Business Taxation, NBER Public Economics, National Tax Association, and ASSA 2021 meetings. This research received funding from Columbia's Milstein Center for Real Estate and Richman Center for Business, Law, and Public Policy. Thanks to Spencer Boyum, Andrea Ciccarone, Saikun Shi and Kerry Nielsen for excellent research assistance. All errors are my own.

1 Introduction

Incumbent politicians have many advantages over their challengers, including the ability to affect policy in order to get re-elected. Generally, elections should discipline incumbents into enacting policies that promote the interest of voters (Barro, 1973). Given imperfect information about policy, electoral accountability can also lead to distortions—politicians will favor policies that are more salient, or more popular with voters, instead of the policy that is necessarily in the best interest of the electorate (Canes-Wrone, Herron and Shotts, 2001; Coate and Morris, 1995). I provide empirical evidence of this distortion using detailed data on a specific policy: subsidy-giving to firms.

Subsidy-giving is the dominant economic development strategy in the U.S.; over 75% of state and local development spending goes to tax credits, tax breaks and subsidies to attract or retain businesses (Bartik, 2019). A principal rationale for these subsidies is to correct for market failures—a government can offer a tax break to compensate the firm for the positive externality it will have in the local labor market. However, the size of these subsidies is often debated. The cost per job created is high, the size of the externality is uncertain, and there are concerns that subsidies are allocated, in part, for political reasons.[1] In fact, the data show that governors who can run for re-election spend 20% more on subsidies than their term-limited counterparts.

In theory, the existence of a political cycle for subsidy-giving is not an immediate cause for concern. If subsidy-giving is an effective job creation policy, re-election should give governors an incentive to act in the interest of voters and put in more effort to create jobs by offering more, or larger, subsidies to attract firms. Alternatively, subsidy-giving may be popular with voters, but not necessarily the most effective policy to improve the local economy and create jobs. In this case, politicians will use subsidies to pander to voters. In order to disentangle these two theories we need to know (1) whether politicians are electorally rewarded for giving subsidies, (2) whether the electoral benefit is driven by job creation, and (3) whether subsidy-giving crowds out other, more cost-effective, job creation policies.

In this paper I estimate the effect of subsidy-giving on incumbent vote share in the subsidized locality, and explore the mechanisms by which subsidy-giving confers political benefits. I find that it is the salience of attracting a firm, not realized job creation, that drives electoral rewards. The effect of attracting a firm with a subsidy is largest for deals that are announced late in the term, and for deals that have positive news coverage, instead of for the deals that end up creating the most jobs. I then show that, although incumbent governors

[1] See, for example, the New York Times "A $2 Billion Question: Did New York and Virginia Overpay for Amazon" in 2018, and "As Companies Seek Tax Deals, Governments Pay High Price" in 2012 (found at `https://www.nytimes.com/2018/11/13/business/economy/amazon-hq2-va-long-island-city-incentives.html` and `https://www.nytimes.com/2012/12/02/us/how-local-taxpayers-bankroll-corporations.html` respectively). Even corporate executives have argued that subsidy-giving is "motivated by politicians who want to claim they have brought new jobs into their state" (Donald J. Hall Jr. of Hallmark quoted in Story (2012)).

are more likely to increase subsidy spending when they face re-election, they are no more likely to increase spending on other economic development programs. These other programs are significantly less salient.

Estimating the electoral benefit to subsidy-giving is difficult due to two empirical challenges. First, a lack of detailed data on subsidy-giving has prevented researchers from quantifying the role of politics and the efficiency of the policy. Second, estimating the returns to subsidy-giving requires an identification strategy that addresses the fact that subsidies are not randomly allocated. To overcome the data limitations, I assembled a data set of large discretionary subsidy deals from 2002 to 2017. For each deal, I have details on the firm receiving the subsidy, its location, the size of the incentive, and the alternative site considered. For example, in 2002 Hyundai received a subsidy worth over $200 million to build their automobile assembly plant in Montgomery County, Alabama. Hyundai promised to create 2,000 jobs at the plant, and had also been considering a site in Kentucky. I pair this subsidy deal data with county-level election returns from Leip (2018) to compare the change in support for incumbent governors in subsidy-winning counties with similar counties in the *same state*, in a differences-in-differences analysis.

I find that support for the incumbent governor increases by 2.1 percentage points in subsidy-winning counties relative to runner-up counties in the same state (1.7 percentage points at the commuting zone level). This effect translates to an increase of up to 7,000 votes for the incumbent, which can be an economically significant effect in a tight election. In fact, 2002 was an election year in Alabama, and despite the subsidy for Hyundai, Governor Siegelman lost the election by 3,000 votes.

The difference-in-differences empirical strategy allows me to compare subsidy-winning counties to similar counties in the same election, while controlling for the governor's unobserved type. The identifying assumption is that support for the incumbent governor would have continued to move in parallel in treatment and control counties in the absence of a subsidy deal win. This assumption would be violated if the location choice of the subsidized firm is endogenous—if governors subsidize firms to locate in counties with the most marginal voters. However, anecdotal evidence suggests that the governor has very little influence on where these firms locate within the state. Also, counties with differential voter turn-out or party affiliation are not more likely to be the locations for subsidy deals.

The second identification challenge is the choice of an appropriate control group. I use the runner-up locations for similar subsidy competitions in the *same state*. As an example, take the Hyundai subsidy deal in Montgomery County, Alabama. In 2000, during the same term, Governor Siegelman competed to attract a Nissan plant to a site in Lee County, Alabama. In the end, Nissan decided to build the plant in Mississippi. Therefore, Lee County would be a control county for Montgomery County—both in Alabama. Both counties were in subsidy competitions, but for different firms; Montgomery County competed for and won Hyundai, Lee County competed for but did not win Nissan. Runner-up counties are attractive because they were chosen

by firms as viable plant location, the governor put in effort to compete for a firm in this location, and the locations are similar to winning counties on observables. The results are robust to using alternative control groups, where counties are matched on observable characteristics.

While using a within-state identification strategy has important advantages, it faces at least two challenges. First, it may be that the runner-up counties are more or less likely to support the incumbent due to this failed effort to attract a firm. Second, the subsidy effect may spillover across the state. I design an original survey to test voter knowledge of subsidy deals, and the survey results allow me to bound the state-level effect. I survey voters in five states with recent subsidy deals. The voters are given a quiz about the recent subsidy deal which asks about the identity of the firm, the size of the incentive, and the number of jobs promised at the new subsidized establishment. The survey evidence that shows that voters generally know very little about the runner-up "status" of their location. I also show that runner-up counties are no more or less likely to support the incumbent than matched control counties in the same state. Lastly, I find that outside of the subsidized commuting zone only 20% of voters know about the impending arrival of a firm, compared to 50% in the subsidized location..

Relying on the survey evidence, I calculate the aggregate effect under two assumptions. As a lower bound, I assume there is no effect of the subsidy outside of the commuting zone where the subsidized firm is located. For the upper bound, I assume the whole state is treated, and the treatment outside of the subsidized commuting zone is 40% of the winning treatment effect. This results in state-level vote gains ranging from 11,000 to 57,000 on average, depending on the state, election, and location of the subsidy deals. The state-level effect is pivotal in 12% of the elections in the sample. Because governors who run for re-election are willing to pay more for firms than their term-limited counterparts, a back-of-the-envelope calculation implies a cost per vote of about $600. This cost per vote calculation uses the *additional* subsidy spending of career concerned governors, not the total subsidy cost. This is at least twice as large as estimates in the literature (Bombardini and Trebbi, 2011; Levitt, 1994).

Why are voters in subsidy-winning counties more likely to support the incumbent? It may be that the subsidy, by attracting a new firm, creates jobs and improves local economic outcomes for residents, thereby generating votes for the incumbent. I will call this the "direct effect" of subsidy-giving. Voters may also anticipate the job creation and economic growth from the subsidy deal and recognize that the governor is making an effort to improve economic outcomes in the local area. In this case, voters do not need to have been hired or experienced any economic benefit from the arrival of the firm, but they learn of that impending arrival through local news coverage (77% of survey respondents report learning about the subsidy via local news or social media). I will call this the "salience effect."

I use variation in the timing of subsidy deals within the governor's term to test these two hypotheses. The

"direct effect" suggests the effect should be larger for subsidy-giving earlier in the term, because this gives time for the firm to arrive and start hiring, improving local economic outcomes. The "salience effect" suggests the vote share effect should be largest for more recent announcements of subsidy deals, which are the most salient to voters, due to their recent memory of media coverage. I find that subsidy deals announced in the start of the term have about one half of the effect of a subsidy announced in the election year, at 1.8 and 3.6 percentage points respectively. Due to the lag between a subsidy announcement and a firm's arrival, the large effect in the election year means that the governor can accrue political benefit before any jobs are actually created. These results suggest that the mechanism by which subsidy-giving increases incumbent vote share is the anticipated economic effect rather than any realized improvement in economic outcomes.[2,3] Then, I use estimates on deal-specific employment effects from Slattery and Zidar (2020) to test whether the deals with the largest vote share effects also create the most jobs in the long run. The vote share effect does not correlate with ex-post performance, as measured by industry employment five years after the subsidy deal announcement.

In order to understand how subsidy-giving could increase the support for the incumbent before the firm even arrives in the state, it is important to understand how local newspapers cover these subsidy deals. Take the case of Caterpillar, a machinery and equipment manufacturer that, in 2012, received a subsidy of about $70 million to build tractors in Oconee, Georgia. The *Atlanta Journal-Constitution* headline on the subsidy read: "Landing Caterpillar plant a major economic victory for Georgia," citing the job creation, revenue, and spillover estimates given by the firm and the state economic development agency. In the same year, the *Charleston Daily Mail* highlights the benefit of winning a Shell plant with the story: "Construction of Shell plant in Marcellus Shale will bring hundreds of direct, indirect jobs." These articles tend to focus on the expected benefit of the firm arrival, the job creation, instead of the potential costs. This is consistent with the survey, which finds that voters are twice as likely to know the jobs promised than the size of the fiscal incentive.

The extensive media coverage of the benefits, but not the costs, of these deals can cause them to be more politically beneficial than other types of economic development strategies. In fact, using data on the news coverage of each subsidy deal, I find that deals with very little news coverage also have no effect on incumbent vote share. Moreover, a sentiment analysis of news article text shows that deals with more positive coverage have larger vote share effects—going from "neutral" coverage to one of the most positively covered deals in

[2] I am not claiming that subsidy deals announced earlier in the term are less salient—I find the same amount of news coverage for late and early term deals. However, due to memory decay and/or voters using "end-heuristics" to judge cumulative performance (Healy and Lenz, 2014), the most recent deals should have the largest effect on the election, all else equal. Angelucci and Prat (2020) measure voters' knowledge of recent news and find that each months passing decreases the probability of knowing a news story by 3-4 percentage points.

[3] One explanation for the large effect of the election year subsidy deals is that these firms and deals are different from subsidies announced in non-election years. However, I find that subsidy deals announced in election years are indistinguishable from non-election year subsidies in terms of jobs promised, investment planned, and subsidy size. In fact, estimates on industry-level employment effects from Slattery and Zidar (2020) suggest that election-year subsidies have slightly smaller spillovers than deals announced earlier in the term. See Appendix Figure E.1.

the sample is associated with an additional 0.43 percentage point (15%) increase in vote share. The sentiment analysis and a comparison of the words mentioning costs and benefits in each article aligns with the survey results; voters learn about subsidy deals from the local news, which is generally positive about the deal, and is more likely to mention the benefit of attracting the firm than the cost. Subsidy-giving is a prime instrument for opportunistic incumbents; the potential benefits to voters are clear but the costs are not.

Lastly, I discuss the implications of my results on other policy decisions of the governor. I compare subsidy-giving with a set of other economic development policies. While incumbent governors are more likely to increase subsidy spending before elections, they are no more likely to increase spending on other job creation policies. I then compare the salience of subsidy-giving with the other economic development policies, by collecting data on the local news coverage of tax credit and job training programs. I find that subsidy-giving receives much more media attention: a $60 million subsidy deal has 12 unique local news articles, while a $60 million tax credit program for job creation has only 2. Moreover, the sentiment of the non-subsidy coverage is slightly less positive than the subsidy coverage. This is further suggestive evidence that the political benefit of subsidy-giving, which can occur in the absence of any direct economic benefits, may distort the policy choice of governors with career concerns. The positive coverage of large subsidy deals can create an incentive for the governor to prefer subsidy-giving to less salient job creation efforts.

Related Literature. I find that the electoral reward from subsidy-giving creates an incentive for career-concerned politicians to offer larger subsidies to attract firms. This is consistent with a long literature on political budget cycles (for a review, see Alesina, Roubini and Cohen, 1997; Eslava, 2006). The models of Rogoff and Sibert (1988) and Rogoff (1990) produce opportunistic budget cycles in a setting with rational voters. When the voter has imperfect information on the competence of a politician, they learn about it from policy choices. Therefore, if voters view government expenditures (or subsidy-giving) as a signal of competence, incumbents have an incentive to spend more in the lead up to an election.[4]

There are a few reasons that subsidy-giving may be a particularly attractive instrument for incumbents. First, the benefits are very concentrated, while the costs are diffuse. Second, most of the spending comes in the form of *future* forgone tax revenue. Therefore, even informed voters will not observe budget deficits before the election. If voters are less informed about costs, as I show is the case, they will also not predict future deficits. The structure of the subsidy deal, and the targeted, relatively small scale nature of it, make this cycle almost impossible to observe at the aggregate (state) level budget data.[5] This explains why political budget cycles in

[4]Multiple studies exploiting term limits show that incumbents are more likely to implement electorally rewarding policies, such as cutting wasteful spending or lowering taxes, in the run up to elections (Besley and Case, 1995; Poterba, 1994; Foremny and Riedel, 2014; Alesina and Paradisi, 2017).

[5]Drazen and Eslava (2010) also find evidence of electoral manipulation via targeted spending in Colombia, where local officials change the *composition* of total expenditures.

the U.S. context were not found in prior work.

Not only does subsidy-giving exhibit a political cycle; theoretical and qualitative research has also shown that politicians may have an incentive to pander with subsidy policy. Biglaiser and Mezzetti (1997) develop a model to show that politicians' willingness to pay for a firm will be greater than voters' willingness to pay if there is an electoral benefit. Jensen and Malesky (2018) provide survey evidence that voters in the United States would be more likely to vote for a governor who uses incentives to attract investment, even if the governor was not successful at attracting the investment. Cingano, Palomba, Pinotti and Rettore (Forthcoming) estimate that the cost per job of a large subsidy program in Italy would be 11% lower in the absence of political discretion in subsidy allocation. This paper contributes to this literature by *quantifying* the electoral benefit of subsidy-giving, and providing evidence for the mechanism by which subsidy-giving confers these benefits.[6]

On that note, I find that it is the salience of subsidy-giving that generates political benefits for incumbents. This is consistent with recent work on the electoral benefit of public spending, albeit in two very different settings (Huet-Vaughn, 2019; Marx, 2018). In this paper, subsidy-giving is salient because of the local media coverage. Much of the literature on media and politics suggests that media play an important role in keeping politicians accountable (Besley and Burgess, 2002; Strömberg, 2004; Ferraz and Finan, 2008; Snyder and Strömberg, 2010). However, all of the evidence on the mechanism in this setting suggests that what matters most for voters is the media coverage, not the actual economic impact of the subsidy deal. The news coverage of subsidy-giving is almost uniformly positive, and articles repeat the projected indirect job creation and revenue projections from the governor's press release. This uncritical analysis of local economic policy may be due to the cost of producing local news and the trend towards less local news provision, and deserves further investigation (Angelucci, Cagé and Sinkinson, 2023; Djourelova, Durante and Martin, 2021).[7]

The *relative* salience of subsidy-giving will also be important. Voters have imperfect information about policies, and therefore policies that garner more (positive) media attention may be more popular with politicians. I find that subsidy-giving receives 5 times more news coverage than other job creation policies, conditional on size. This difference in media attention can help explain that no other job creation strategies exhibit the same political cycle as subsidy-giving. Therefore, not only do politicians pander with subsidy policy, but political incentives can distort policy away from higher benefit efforts. This is consistent with the theoretical results in models of political competition with imperfect information (Canes-Wrone, Herron and Shotts, 2001;

[6] Kim (2020) studies the political payoffs from subsidy competition in the context of the Kansas City border war, using a bounding strategy to quantify the dollar amount of the potential payoff. Aobdia, Koester and Petacchi (2021) study the link between subsidized firms and campaign contributions, and find that subsidized firms are more likely to contribute to state politicians. I find no evidence of a link between campaign contributions and subsidy-giving (Appendix D). However, the difference in subsidy samples may be important here. Given recent findings on the non-contribution tools firms have to exert influence (Bertrand, Bombardini, Fisman and Trebbi, 2020), this is a rich area for further work.

[7] Alternatively, local newspapers may collude with incumbents and produce favorable news for that reason. Past work has not found much evidence to support this hypothesis (Gentzkow, Shapiro and Sinkinson, 2011; Gentzkow, Shapiro, Petek and Sinkinson, 2015).

Coate and Morris, 1995). Further, Judd (2017) shows that politicians have very strong incentives to choose *visible* policies that are associated with themselves.

Lastly, this paper relates to a growing literature that measures the costs and benefits to subsidy competition. While this paper focuses on one potential cost (due to political incentives), there is much more work to be done to understand the benefits to subsidy-giving. There are jobs created at the new establishment, but the indirect job creation, which is a focus of much of the positive press, is highly variable (Slattery and Zidar, 2020). There are potentially positive wage effects for local workers and productivity benefits to incumbent plants; currently the evidence is mixed and the positive effects may be concentrated in certain types of firms and projects (Greenstone, Hornbeck and Moretti, 2010; Setzler and Tintelnot, 2021; Patrick, 2016; Garin and Rothbaum, 2022). The benefit from offering subsidies to retain plants may also be sizable, given the literature on the effects of plant closings on economic and social outcomes (Autor, Dorn and Hanson, 2013, 2019).

2 Background on Subsidy-Giving in the U.S.

In this section I will provide institutional details on subsidy competition in the United States through the lens of one subsidy deal in my data. This will illustrate the subsidy competition process and highlight the potential political considerations and mechanisms at play.

2.1 Alabama wins Hyundai (2002)

> *I'm trying to teach people it's pronounced 'Hyundai' like 'Sunday,' but however you say it, it means thousands and thousands of new jobs.* Governor Don Siegelman (Niesse, 2002)

On the evening of April 1st, 2002, Governor Don Siegelman announced that Hyundai had chosen a site in Montgomery County, Alabama for its new automobile assembly plant. The company planned to invest $1 billion in the plant, hire 2,000 workers, and pay the workers an average annual salary of about $40,000.

The Competition and the Deal. The subsidy deal was the result of months-long negotiations between Alabama and the car manufacturer. Hyundai had started with a longer list of potential locations, and after further research assembled a shortlist with the site in Alabama and competing sites in Kentucky, Mississippi, and Ohio. The states on the shortlist started to put together incentive offers, but in February, Mississippi and Ohio were dropped from consideration, and competition intensified between Alabama and Kentucky. The negotiations over the incentive packages continued for months, and when the deal was finalized Alabama had put together an incentive package worth about $230 million over 10 years (Lyne, 2002).

Alabama's final subsidy offer for Hyundai was a function of state and local tax credits on corporate income, property, and sales taxes, improvements to the site, and worker training. Kentucky offered at least $123 million in state tax incentives and $30 million in site improvements, but the proposed local incentives were not released to the public. Alabama's team reportedly considered not only the 2,000 jobs promised at the plant when determining how much the state would be willing to offer the manufacturer, but other benefits such as increased property values and indirect jobs at suppliers.[8]

The Media Coverage. The morning after the announcement the front page of the local newspaper read: "HYUNDAI PICKS MONTGOMERY." This paper, the *Montgomery Advertiser*, ran a multi-page special report about the firm's decision (Figure 1 and Appendix Figure I.1). The stories about Hyundai included details about Hyundai's plans, details about the incentive package, coverage on the competition between Alabama and Kentucky, and a discussion of the involvement of state, city, and county officials. The *Advertiser* also high-

Figure 1: Local News Coverage of the Hyundai Deal


Three's a crowd in Montgomery County sheriff's race 1B

Montgomery Advertiser

TUESDAY
April 2, 2002
Final Edition
50 cents

SPORTS
Maryland wins NCAA

LIFESTYLE
Bar offers breath of fresh air 1D

Israel pushes onward

By Laura King
The Associated Press

SETTING IT STRAIGHT

Correction: In a story on Page 1A Sunday, Montgomery's 10th homicide victim of 2002 was misidentified. His correct name is Ernest Smith.

FORECAST
80° / 56°
Sunny to partly cloudy today; more clouds, showers tonight. Weather 6A.

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SPECIAL REPORT

HYUNDAI PICKS MONTGOMERY

Coup for city: Montgomery wins $1 billion plant over Glendale, Ky.

2,000 jobs: Hyundai expects plant to begin production in 2005

State's 4th: Hyundai will join Mercedes, Honda and Toyota

Hyundai's Santa Fe

Plans dazzle family

Jim Henry and his relatives own 900 acres near the plant site

By Todd Kleffman
Montgomery Advertiser

Choice ends long fight

The Korean automaker chose Hope Hull site over rural Kentucky location

By Mike Cason, Dave Hendrick and Kelli Dugan
Montgomery Advertiser

Todd Van Emst Advertiser

Montgomery Mayor Bobby Bright talks on the phone at Lagoon Park as his wife, Lynn, looks on after they were notified that Montgomery was chosen as the site for the new Hyundai plant.

INSIDE

COMING WEDNESDAY

ALABAMA AUTO INDUSTRY TIMELINE

on the Web

NEW PLANT

Residents applaud Alabama's Hyundai pitch

By Dave Hendrick
Montgomery Advertiser

Plant Page 6A

Notes: This figure is the front page of the *Montgomery Advertiser* on April 2, 2002 (Montgomery, Alabama, 2002). The *Montgomery Advertiser* is a daily newspaper founded in 1829 and headquartered in Montgomery, Alabama. It has the 5th highest circulation of daily newspapers in Alabama (Cision Media Research, 2016). *Image Source:* `Newspapers.com`.

[8]Governor Siegelman predicted that Hyundai would have a major economic impact throughout the region, saying: "I think we'll see a cluster of suppliers locating in counties inside that 100-mile radius. ... This gives the families of Alabama a real hope for a better quality of life" (Johnson, 2002).

lighted benefits beyond the promised jobs, including an expected increase in property values for local residents and a windfall for farmers with land at the proposed site.

The coverage continued the next day (Appendix Figure I.1), with another front page story: "Alabama hustles for Hyundai," followed by multiple pages with more details on the incentives, the types of jobs Hyundai planned to create, and predictions about the entry of suppliers to the automobile plant. Headlines read: "Work: Facility will begin production in 2005," "Jobs: Rural counties in particular need economic boost," "Parts suppliers expected to change rural economy," and, on the political ramifications of the deal: "Teamwork deserves the credit." This last article lists almost 30 groups that were said to have played critical roles in landing the car plant, ranging from the governor, Don Siegelman, and the state senators, congressmen and legislators, to the state power and gas authorities, and the presidents of the University of Alabama and Auburn University.

The Role of the Governor. The question of who gets "credit" for attracting a firm and creating jobs is central to this paper. In this case, as is typical with the majority of the large incentive deals in the U.S., it is the governor who is attributed with attracting Hyundai to Alabama. This is clear from yet another special report on the Hyundai deal in the *Montgomery Advertiser*, covering the groundbreaking ceremony two and a half weeks after the announcement (Appendix Figure I.2). Governor Siegelman is pictured multiple times and is the only Alabama representative on the stage with the President and Chairman of Hyundai.

When there are discretionary incentives involved, i.e. tax credits or other funds that a typical firm in the state would not expect to receive because it is not part of the tax code or the economic development regime, the governor has the ability to determine how much effort he or she wants to make, and is able to approve or deny additional funds. If the governor has their own discretionary fund for business attraction—a pool of money that they can use to sweeten the deal for firms—then they can do this without any approval from the state legislature.[9] However, if the funds are not already available in the budget, or the tax credit legislation has to be changed for the specific firm, the governor will need to call the legislature into special session and get the incentive bill approved. This was the case with Hyundai. The governor is also usually the face of the state negotiating team, and can hold meetings with the executives and even visit them at their headquarters.

2.2 Subsidy Competition and the Election

This section started with a description of how Hyundai contacted Alabama, but also Kentucky, Mississippi, and Ohio, to let the governors know that the car manufacturer was interested in locating at a specific site in their state. This spurred a competition for the new assembly plant, with the states as the bidders.

Hyundai's problem is simple, it will locate in the state that gives the highest payoff, which is a function of

[9]These type of funds are usually called "Deal Closing Funds," but the name and structure can vary across states.

how profitable the manufacturer will be in that state and the subsidy offer. This competition approximates an English Auction: states will bid, with subsidies, up to their willingness to pay for the plant. The winner then will pay the subsidy that makes Hyundai indifferent between locating in the winning and runner-up location, as the runner-up will drop out when they reach their willingness to pay.[10]

Therefore, the governor's problem is to determine their willingness to pay for winning Hyundai to the proposed site. Suppose the net benefit to the state is B. Then, I simply define the willingness to pay of the state as: $WTP_{state} = B$.

However, the willingness to pay of the governor may diverge from that of the state. If the governor is career-concerned, as was Don Siegelman in Alabama, they might also care about the electoral effect of winning the firm. Call the electoral effect E. I will define the willingness to pay of the career-concerned governor as: $WTP_{gov} = B + E$.

If subsidy-giving is a popular policy, i.e. $E > 0$, then the willingness to pay of the governor will be greater than the willingness to pay of the state.[11] If the state with the career concerned governor wins the subsidy competition, the size of the subsidy may be larger than B, the net benefit to the state.

If voters were perfectly knowledgeable about both B and the size of the subsidy it would be difficult to believe that the electoral effect would be positive—why would voters reward the governor for paying more than the state would benefit? This is similar to the conflict in the early literature on opportunistic political cycles, which was resolved when Rogoff and Sibert (1988) and Rogoff (1990) developed models with rational voters with imperfect information. Similarly, evidence from the survey will show that while voters are aware of potential benefits, they know very little about the subsidy costs. Furthermore, the benefits are concentrated in one location and costs, borne in the future, will be spread across the state.[12] Both of these factors would allow for governors to offer incentives larger than expected benefits and still garner electoral support. Here, it is likely that the politician and the voter agree on the benefits of the policy, but have differing information on the cost (Ashworth, 2012; Canes-Wrone, Herron and Shotts, 2001). This results in the politican overpaying for a policy that is popular, against the interest of the voters.[13]

I will take the rest of the paper to estimate this electoral effect, E. I first introduce my estimation strategy using the Hyundai example.

[10] See Slattery (2024) for more details on using the English Auction to approximate a subsidy competition.

[11] Biglaiser and Mezzetti (1997) provide a model of politicians' policy decisions under re-election concerns. Their main result is that the politician's willingness-to-pay for a project is different from voters' willingness-to-pay. They apply this analysis to bidding wars for firms.

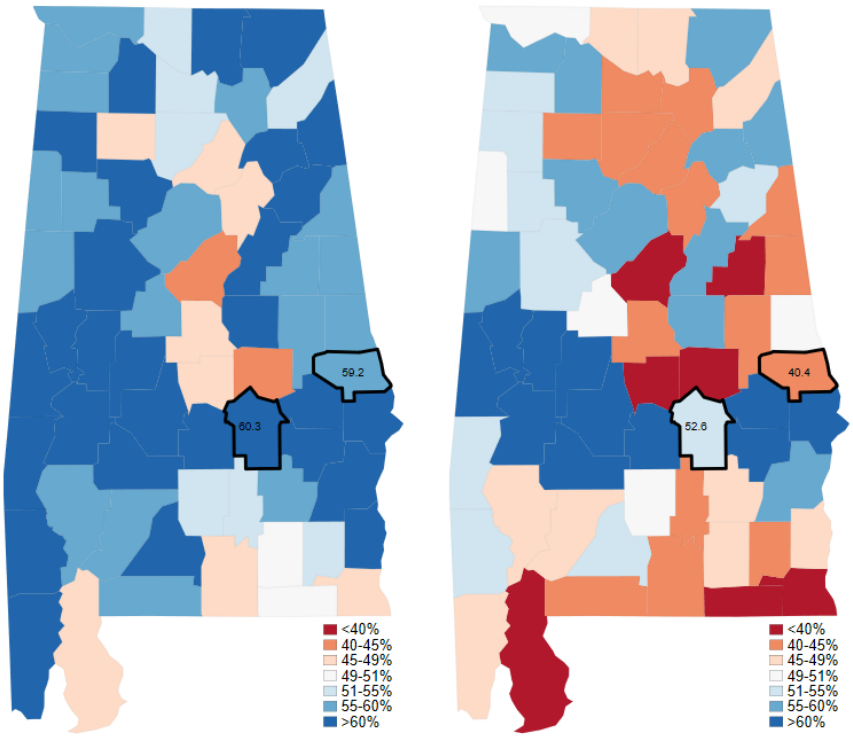
[12] Therein, subsidy-giving resembles the collective action problem—the benefits are concentrated but the costs diffuse (Olson, 1965).

[13] This setting is also consistent with the model in Judd (2017), which shows that politicians have a strong incentive to enact *visible* policies in order to demonstrate skill to voters, even when these policies are worse than the default policy.

Hyundai and the 2002 Election. As it happens, 2002 was an election year in Alabama. Understanding whether and why attracting a firm will help a governor win re-election is the goal of this paper, widening the pool to not only include Hyundai and Siegelman but all of the subsidy deals and state governor elections from 2002 to 2018.

My analysis will compare the vote shares for the incumbent in subsidy-winning counties and non-subsidy winning counties in the state, before and after the subsidy deal. Therefore, the governor is held constant in both the pre and post periods, but faces two different competitors. Figure 2 shows the election results for Don Siegelman in Alabama. In 1998 Siegelman faced the incumbent governor, Republican Fob James, and won handily, with 57.9% of the total vote (Panel (a)). In 2002 (Panel (b)) Siegelman faced off with U.S. Rep Bob Riley, whose district bordered Montgomery County. This was a very tight, and controversial, race, with Bob Riley winning by only 3,000 votes (0.23% of the votes cast).[14]

Figure 2: Two Elections for Don Siegelman



(a) Siegelman vs. James (1998) (b) Siegelman vs. Riley (2002)

Notes: These maps of Alabama show the vote share won by Don Siegelman in his two elections for governor, in 1998 (Panel (a)) and 2002 (Panel (b)). The two outlined counties are Montgomery and Lee, where Hyundai and Nissan, respectively, were offered subsidies to locate. Hyundai chose Montgomery, while Nissan did not locate in Alabama, and instead put their plant in Mississippi. My empirical strategy is to compare the change in vote share for a single governor (e.g. Siegelman), in treated counties (Montgomery), with the change in vote share in control counties (Lee). Election data is from the Election Atlas (Leip, 2018).

[14]Siegelman was initially declared the winner, but the call was overturned after a recount in a single county that reassigned thousands of votes to Riley (Sharp, 2020). This event happened in Magnolia Springs, in Baldwin County, 3 hours southwest of Montgomery.

Figure 2 also provides an introduction to my empirical strategy. The two outlined counties are Montgomery and Lee County. *Hyundai* received a subsidy to locate in Montgomery, while Lee County, to the west of the state, was in a competition to win a *Nissan* plant in 2000, but was beat out to a site in Canton, Mississippi.[15] The labels show the vote shares for Siegelman in these counties. I will compare the change in vote share for a single governor (e.g. Siegelman), in treated counties (Montgomery), with the change in vote share in control counties (Lee).[16]

Governor Siegelman lost 7.6 percentage points in Montgomery between 1998 and 2002. Meanwhile, in Lee County, Siegelman lost 18.8 percentage points in vote share. A concern may be that the runner-up location is less likely to support the governor because the subsidy was lost. This would lead me to overestimate the effect on vote share. However, there is very little news coverage of losing subsidy locations, suggesting that voters in runner-up counties do not know their "runner-up status".[17] I confirm this with the survey.[18] In Section 4 I will take this analysis to all the subsidy deals in the data. First, I introduce the subsidy data.

3 Data and Survey Evidence

3.1 Data on Subsidy Deals

I have detailed data on just under 400 subsidy deals, from 2002 to 2017. The data include the name of the subsidized firm, the type of establishment, the winning and runner-up location in the subsidy competition, the size of the incentive promised by the winning location, and the number of jobs and investment planned by the subsidized establishment. The average subsidy deal is valued at about $164 million over 10 years, for a firm promising 1,500 jobs and an investment of $840 million. Appendix A describes the data collection process and presents descriptive statistics for the firm-level subsidy data, by sector.

The Hyundai deal in 2002 was actually quite standard for the industry; Hyundai received $234 million for a promise of 2,000 jobs and $1 billion in investment, while the average auto manufacturer in the sample receives $243 million for a promise of 2,600 jobs and $980 million in investment. Although manufacturing and utilities make up almost 60% of all deals and 75% of the total subsidy spending, trade and services firms also receive subsidies over this period. This includes headquarters and offices for finance and insurance firms, labs for scientific research firms, and warehouses and distribution centers for companies like Amazon and Fedex.

[15] Nissan planned to create 4,000 jobs and invest $950 million at the plant in Mississippi. The automobile manufacturer received a reported $295 million in incentives from the state, but later accounts report a larger subsidy size.

[16] This example is to illustrate the identification strategy. The analysis uses any runner-up county that is in the same sector and same election cycle, I do not hand pick runner-ups.

[17] In this case, a search of ProQuest for newspaper articles with the words "Montgomery" and "Hyundai Plant" lead to 1,114 results, 272 in the local newspaper (the Advertiser). Meanwhile, the same search for Nissan in the runner-up location ("Opelika" and "Nissan Plant") lead to 13 results, 1 in the local newspaper.

[18] I will also note that the entire region north of Lee county was more likely to support Bob Riley. This is because Lee and the counties above were part of Riley's congressional district.

Table 1: Term Limits and Subsidy Giving

	log(subsidy ($M))				𝟙(subsidy in state s, year t)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Jobs promised (1,000)	0.20***	0.19***	0.19***	0.21***			
	(0.04)	(0.03)	(0.04)	(0.04)			
Investment planned ($B)		0.05**	0.05***	0.05***			
		(0.02)	(0.02)	(0.01)			
Unemployment rate (%)			0.06**	0.03	0.04*	0.04*	0.03
			(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Governor can run for re-election			0.24*	0.23*		0.06	0.08*
			(0.11)	(0.11)		(0.04)	(0.04)
Observations	387	387	387	387	768	768	768
R-squared	0.09	0.18	0.20	0.29	0.33	0.33	0.34
Additional Controls				×			×

Notes: This table shows the correlation between subsidy-giving and the governor's career concerns. Columns (1) - (4) present analysis at the subsidy deal level, where the dependent variable is the log subsidy value. The correlate of interest is whether or nor the governor is eligible to run in the next election. Deal characteristics include the number of jobs promised and investment planned by the firm. Column (4) also includes the number of bidders in the subsidy competition, the party of the governor, and county level controls (average wages, personal income per capita, population, % urban, % with college degree). Columns (5) - (7) present analysis at the state-year level, where the dependent variable is 1 if there was any subsidy in state s and year t. These regressions include state and year FE. Column (7) also includes state level controls (GDP, corporate tax, income tax, sales tax, right-to-work, manufacturing employment and population, income per capita, housing prices, and an indicator for whether the governor and state legislature share the same party). Sources listed in the data appendix. The data on 387 subsidy deals is the same as Slattery (2024), though in some specifications in Slattery (2024) I restrict to subsidies less than $1 billion, for a sample of 380 deals.

Governors who can run for re-election spend more on subsidies, all else equal. In fact, Table 1 shows that being able to run for re-election is correlated with a 20% increase in subsidy size—the same increase one would expect from 1,000 additional jobs at the subsidized establishment. Governors who can run for re-election are also 7.5 percentage points more likely to give a subsidy in a given year, or 24% more likely to give subsidies than their term-limited counterparts.

3.2 Data on Elections of Incumbent Governors

I link the subsidy-giving behavior of governors to election outcomes from the "Election Atlas" (Leip, 2018). This includes county level votes for each candidate in gubernatorial elections from 1998 to 2018.[19]

Over the sample period, 122 incumbent governors run for re-election. Table 2 presents descriptive statistics for these incumbent elections, broken out by subsidy-giving behavior. The distinction here is that subsidy deal winner governors have won at least one subsidy deal during their term, while runner-up governors have competed for firms with subsidy offers during their term, but have not been successful winning a firm. Lastly, the group of "neither" governor elections include all incumbents running for re-election that have not been

[19] I also use data on state legislature elections in Appendix C.4 (Klarner, 2018).

observed winning or as the runner-up in any subsidy competition.[20] The table shows that incumbent governors win re-election by a wide margin. On average, incumbents win with a vote share of about 56.3% (the "Current Vote Share" column), compared with a vote share of 54.6% in the last election. Over my sample period, only 16 incumbents (13%) lose their re-election bids.

Table 2 also highlights some differences between subsidy winning incumbents and their peers. Subsidy deal winners face higher unemployment and declines of manufacturing when they are up for re-election, and they also run more campaign ads that focus on job creation.[21] This is consistent with what we know from Table 1—governors are more likely to give subsidies when the unemployment rate is higher. The subsidy winner elections are also characterized by higher spending, as measured by advertising spending per vote, suggesting more competitive elections. Runner-up governor elections also have higher unemployment and spending than the "neither" category.

These summary statistics highlight the difficulty in estimating the effect of subsidy-giving on the election of incumbent governors: subsidy-winning governors are not similar on observables to the potential control group governors. There are many unobservable factors to governor type that would confound a strategy that compares subsidy-winners to the rest of the sample.[22] In Appendix C.3 I compare state level vote shares across incumbent races and find a weakly positive correlation between subsidy-giving and support for the incumbent.[23] However, by taking the analysis to the county level, I can more confidently estimate the causal effect of subsidy-giving on incumbent support.

Table 2: Incumbent Elections and Subsidy-Giving

		Vote Share (%)		Economic Vars (%)		Election Advertising	
Incumbent	N	Last	Current	Unemp	Δ Manuf Emp	% Jobs	$ per Vote
Subsidy Deal Winner	66	54.1	56.2	6.05	-0.89	46.1	8.98
Runner-up	23	56.5	57.4	4.91	-1.48	34.9	6.94
Neither	34	54.3	55.8	4.33	2.57	28.7	4.53

Notes: This table presents descriptive statistics for incumbent governor elections in subsidy-winning states, runner-up states, and all other states. Subsidy deal winner governors have won at least one subsidy deal during their term, runner-up governors have competed for firms with subsidy offers during their term, but have not been successful winning a firm, and "neither" governor elections include all other incumbents running for re-election that have not been observed winning or as the runner-up in any subsidy competition. The table lists the number of observations, the vote share for the incumbent in their previous ("last"), and current election (when they run as an incumbent).

[20] That is not to say necessarily that they did not compete, but they were not in the final two competitors for the firm.

[21] See Figure I.3 for the distribution of "job creation" advertising across subsidy-giving and non-subsidy-giving incumbents.

[22] For example, if subsidy winning governors are more aggressive in subsidy competitions because they are more worried about the election and in more competitive elections, this would bias the results downward. Alternatively, if subsidy winning governors are governing in more attractive states to business, making it easier to attract firms and win subsidy competitions, voters may be happy with the governor because the state is attractive in general, not because of the subsidy, biasing the results upward.

[23] My state level results suggest a 1.4 percentage point increase in votes share. This translates to roughly 27,000 votes for the mean state in the sample, which is within the range of the state-level effect that I calculate in Section 5.

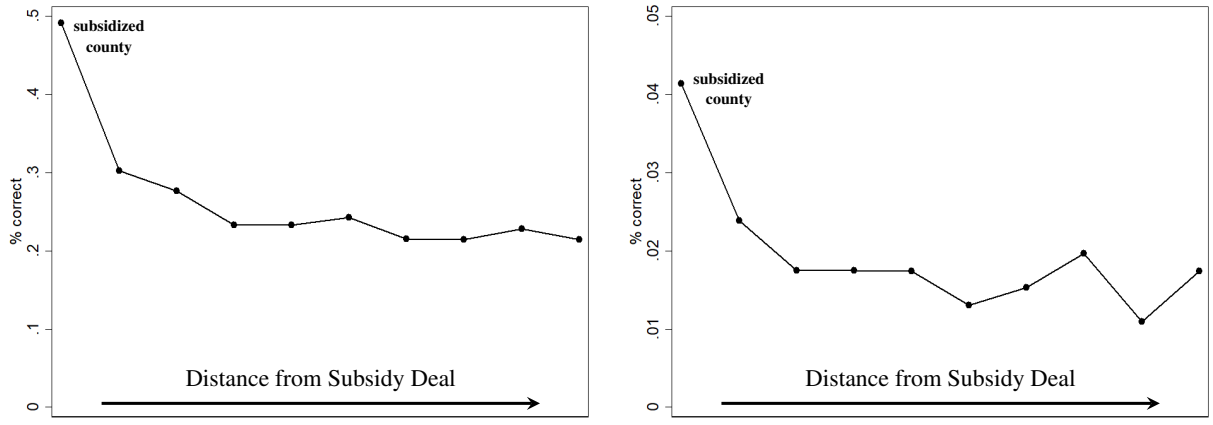
3.3 Survey Data on Voters

I supplement data on subsidy-giving and elections with a survey of voters across 5 states. The goal of the survey is to collect information about what voters know about subsidy-giving in their state. I am able to elicit this information with an incentivized quiz about a recent subsidy deal in the state. The survey also asks voters about how they learned about the subsidy deal, what they think about the subsidy deal, and what they know about other state economic development policies. The survey partner, YouGov, provides demographic information on each participant, therefore I also have data on the age, income, employment status, and education of each respondent, as well as their zip code.

The five states in the survey sample are Georgia, Kentucky, New York, Texas and Wisconsin. The subsidy deals in the survey sample are all for manufacturing firms. The subsidized establishments receive an average subsidy of $206 million, promise 1,680 jobs, and plan to invest $1.1 billion at the new plant. Therefore, the deals are comparable to the manufacturing subsidy deals in my data set. Appendix B provides more information on the survey and Table B.1 presents the details of each deal in the survey sample.

The survey sheds light on what voters know about subsidy-giving in their state. I will highlight a few stylized facts from the survey that motivate the econometric approach and provide evidence for the mechanism:

Figure 3: Voter Knowledge of Subsidy by Distance from Deal



(a) Voter correctly identifies subsidized firm

(b) Voter correctly identifies subsidy size

Notes: This figure shows how voter knowledge of the details of a recent subsidy deal decays with geographic distance from the deal. Distance is measured in deciles, in order to normalize across state geographies. The two survey questions are multiple choice questions. The question about the identity of the firm (panel a) asks: "To the best of your knowledge, which of the following companies is building a [type of plant] in [location]?", and gives 4 choices of firm names, along with the choice "I am not sure." The question about subsidy size (panel b) asks: "To the best of your knowledge, what was the value of the incentive offered to [firm name]?", and gives 5 choices with bins of a subsidy size, as well as "I am not sure." The question about the subsidy size is only asked to respondents who correctly identify the firm and correctly respond that the firm received any incentive. However, the figure shows the unconditional share of respondents that correctly answer the subsidy size question. For more information on the survey see Appendix B.

1. Voters only know basic details about the subsidy deal if they live in the subsidized or neighboring counties. Figure 3(a) shows that about 50% of survey respondents in the subsidized county can correctly identify the name of the firm that is opening a plant in their location. This falls to just over 20% when the respondent lives outside of the subsidized location.[24]

2. Very few voters know the size of the incentive offered to the firm. Figure 3(b) shows that less than 5% of survey respondents in the subsidized county can correctly identify the name of the firm and the size of the incentive. This drops to 2% outside of the subsidized county. Voter knowledge of the number of jobs promised is much higher, at over 10% in the subsidized county and neighboring counties, and about 5% in the general population (Appendix Figure B.1).

3. Voters learn about subsidy deals from the local news. For the roughly 25% of the sample that correctly identified the name of the subsidized firm, 60% heard about the plans for the firm's arrival from the local news and 17% read about it on social media (Table B.4).

4. Voter sentiment about subsidy-giving is uniformly positive across the state. Almost 60% of respondents, regardless of location, answered the question "Do you think offering an incentive for [firm name] to locate a [plant type] plant in [location] makes local residents better off?" affirmatively. Only 17% responded, "No, this does not make residents better off", while the remaining 26% were undecided.[25]

In order for subsidy-giving to have an effect on voter behavior, voters should know about projects that are creating new jobs in the state. The survey confirms that this is the case, at least in the subsidized locale. The voter knowledge about the subsidized project across the state suggests that the other counties in the state are less likely to be treated, and will inform bounds when I aggregate the local vote share effect to the state level. The fact that voters are much more knowledgeable about job creation than incentive size is consistent with the framework discussed in Section 2.2—voters recognize the benefit to subsidy-giving but not the cost. This finding, paired with the result that voters learn about subsidy deals from the local news, motivates further investigation into the role of salience and news coverage of subsidy-giving as a potential mechanism.

4 Empirical Strategy and Results

In order to estimate the effect of subsidy-giving on voter support for the incumbent governor I use a difference-in-differences estimation strategy and compare counties that receive subsidy deals with similar counties within

[24]The question about the firm name gives 4 choices of names and the option to respond "I am not sure." The respondents receive an incentive (in YouGov points), for responding correctly to the basic questions about the subsidy deal. One interpretation is that a 20% correct response rate reflects respondents guessing between the 4 options, in order to try to receive the incentive. Another interpretation is that 20% of the voters outside of the subsidized county know about the deal. I will this to create bounds on a state-level effect.

[25]Appendix Table G.2 shows correlates between respondent and location characteristics with support for subsidy-giving.

the same state. Comparing counties within the same state allows me to examine how support changes for a single governor, while controlling for unobservables about the governor's type.

There are two specifications. The first, Equation 1, estimates the effect of a subsidy win on changes in vote share. For incumbent governor (g), county (c), state (s), and election year (t):

$$\Delta\% \text{ vote}_{gcst} = \alpha + \beta \text{win}_{gcs[t-1,t]} + \gamma X_{gcst} + \eta_{st} + \varepsilon_{gcst}, \tag{1}$$

where $\text{win}_{gcs[t-1,t]} = 1$ if governor g won a subsidy deal for county c since last election $(t-1)$. This specification compares within county changes in vote share, while holding the state and election fixed with a state by year fixed effect, η_{st}. The economic and demographic controls from Table 3 are included, as X_{gcst}. The coefficient of interest is β, the effect of winning a subsidy deal on the within county change in vote share.

The second specification, Equation 2 compares levels in the pre and post elections instead of collapsing to changes. Here the outcome is the county level vote share for a governor, g, who will be the incumbent in the post period. Again, $\text{win}_{gcs[t-1,t]} = 1$ if the county wins a subsidy between the two elections:

$$\% \text{ vote}_{gcst} = \alpha + \beta \text{win}_{gcs[t-1,t]} \times \text{Post}_t + \phi \text{Post}_t + \gamma X_{gcst} + \eta_{gcs} + \xi_{st} + \varepsilon_{gcst}, \tag{2}$$

where there are two election periods, $\{t-1, t\}$, and $\text{Post}_t = 1$ if it is the governor's second election. I include county-governor fixed effects, η, and state-election year fixed effects, ξ.

The runner-up control group. I use runner-up locations for similar subsidy competitions as the control group. Appendix Table C.1 shows the characteristics of subsidy deals that were awarded to firms in winning counties, and the characteristics of deals that were awarded to firms that the runner-ups competed for (the control group). The control group consists of any runner-up county that was competing for a firm during the same election cycle as the winning county. Runner-up deals have similar sized incentive amounts, job promises, and investment planned to the winners.[26]

I use the runner-up locations for two reasons. First, just like the treated locations, runner-up locations are selected on being profitable. So, to the extent that there are some common unobservables in what makes a location attractive to the firms getting subsidy deals in my sample, this is shared by both the runner-up and treatment counties. Table 3 confirms that the runner-up and treatment counties are very similar on observables. They are both larger, more urban, and wealthier than the average county in a state.[27] Second, I know the governor put in an effort to compete for a firm for the runner-up location. A subsidy package was assembled

[26] I had to drop 14 subsidy deals (9%) for which there is not an appropriate runner-up in the same state and election cycle.

[27] In fact, Table 3 shows that winning counties are very different than the average county in a state on almost every variable.

Table 3: Descriptive Statistics

	Winning Counties	Runner-up Counties		All Counties	
		Mean	Difference	Mean	Difference
Economic and Demographic Variables:					
log(Population)	12.47	12.49	0.02	10.25	-2.22***
	(1.38)	(1.38)	(0.15)	(1.45)	(-19.10)
log(Personal Income Per Capita)	10.62	10.66	0.05	10.41	-0.21***
	(0.30)	(0.31)	(1.30)	(0.29)	(-8.40)
log(Average Housing Price)	5.05	5.15	0.10	4.73	-0.32***
	(0.52)	(0.58)	(1.52)	(0.53)	(-7.36)
Unemployment (%)	6.29	5.94	-0.35	5.91	-0.39
	(2.31)	(1.92)	(-1.43)	(2.34)	(-1.98)
% Urban	80.56	75.82	-4.74	23.48	-57.08***
	(39.72)	(42.96)	(-0.99)	(42.38)	(-17.05)
% Black	16.39	14.92	-1.47	8.77	-7.63***
	(13.59)	(14.22)	(-0.91)	(13.37)	(-6.67)
% Hispanic	12.02	12.03	0.01	9.23	-2.78
	(13.01)	(11.38)	(0.01)	(13.79)	(-2.54)
% with HS degree	68.05	68.39	0.34	66.31	-1.74***
	(4.91)	(5.16)	(0.58)	(6.69)	(-4.17)
% with BA	20.60	20.97	0.37	14.60	-6.00***
	(8.07)	(8.66)	(0.38)	(5.69)	(-8.87)
Election Variables:					
% Vote in Previous Election	53.92	54.18	0.27	54.92	1.01
	(11.82)	(14.28)	(0.18)	(13.99)	(1.01)
% Turnout in Previous Election	0.30	0.29	-0.02	0.33	0.03***
	(0.08)	(0.07)	(-1.64)	(0.10)	(3.81)
Change in % Vote for Incumbent	2.73	0.42	-2.31	1.31	-1.41
	(9.83)	(9.59)	(-2.05)	(11.41)	(-1.70)
Observations	144	153		7,181	

Notes: This table compares the characteristics of subsidy-winning counties with other counties in the state. The "runner-up" counties are the counties that were reported to be in close competition for winning a firm, but did not win the subsidy competition. For means, standard deviations are reported in parentheses. For differences, t-stats are reported in parentheses. Sources listed in the data appendix.

and was attractive enough so that the location was almost chosen as the winning site. So, to the extent that there are some common location unobservables in what makes a governor want to exert effort and win a firm to a location, this is shared by both the control and treatment counties.

I am interested in changes of support for a single governor, which means that I do not have multiple pre or post periods—there are two observations for each governor-county pair. The identifying assumption is that support for the incumbent governor would have continued to move in parallel in treatment and control counties in the absence of a subsidy deal win. Although I am unable to compare pre-trends for the outcome of interest, I can compare presidential vote share by party. Appendix Figure C.1 shows the presidential vote share for subsidy-winning and runner-up counties, throughout the sample period. This shows that the subsidy winning and subsidy runner-up counties have very similar trends while the non-winning and non-runner-up counties, that I do not use as a control, diverge post 2012. I return to the discussion of identification following the results.

4.1 Voting Results

Table 4 shows the results for both specifications. The top panel shows the results from Equation 1, where the dependent variable is the change in county vote share for the incumbent governor. The bottom panel presents the result from Equation 2, the more traditional difference-in-differences specification. The results from the two approaches are very similar, with the difference-in-differences approach allowing for slightly higher precision when controlling for time varying local demographics.

Table 4 also shows how the results change with the level of aggregation and the specification of the control group. Columns (1) - (4) report the results at the county level and Columns (5) - (8) report the results at the commuting zone level. Columns (1) and (2) (for the county) and (5) and (6) (for the CZ) use all other counties (CZs) in the state as a control. Columns (3), (4), (7), and (8) only use the runner-up counties or CZs. Lastly, Columns (4) and (8) further restrict the runner-up to have been competing in the same sector (i.e. the runner-up locality needed to be in competition for a manufacturing plant if the subsidy deal was for a manufacturing plant). This slightly reduces the sample size. The table also reports the number of subsidy winning localities in each sample.[28,29] Appendix Table A.3 lists the subsidy winning and runner-up counties for each state-election cycle in the sample.

The results show that subsidy-giving increases support for the incumbent. The preferred specification uses the runner-up control group, However, the vote share effect is also present when all the counties are CZs in the state are used as controls. At the county level, the increase in incumbent vote share is 2.1-2.8 percentage points higher in subsidy-winning counties than in the runner-ups. A 2.1 percentage point vote share in one or two counties may not seem like a large enough increase to sway an election, and in most cases it is not. However, as noted in Table 3, most subsidized firms locate in large counties. The mean turnout for gubernatorial elections in the sample of subsidy-winning and runner-up counties is about 160,000 (413,000 for commuting zones). This means that the 2.1 percentage point increase in vote share translates to about 3,400 votes at the mean county, while 1.7 percentage point increase in vote share translates to about 7,000 votes in the mean commuting zone.[30]

In Section 5 I take this analysis to the state level. Under two different assumptions on the vote share effect in the non-subsidized counties, which are informed by the survey, I can create bounds on the state level vote

[28]The analysis at the commuting zone level uses fewer subsidy winners because sometimes two subsidy winning counties are in the same commuting zone, and sometimes the winning and runner-up county are in the same commuting zone.

[29]The number of observations in the runner-up control group analysis is not always twice the number of subsidy winners. In other words, there is not a runner-up that is paired to each subsidy winner, it is just all the counties that were also in the running for large firm locations in that state. Therefore, there may be one subsidy winning location and two runner-up locations, or two subsidy winning locations and one runner-up location. Appendix Table A.3 lists the subsidy winning and runner-up counties for each state-election cycle in the sample.

[30]I can also estimate the spillover effect by comparing the neighboring counties of the subsidy winner with the neighboring counties of the control—the spillover is about one third of the effect in the winning location (Appendix Table C.5). This motivates the use of the commuting zone level results when calculating the aggregate effect.

share effect. I find that the observed pattern of subsidy giving reasonably could have affected the election outcome in 12% of the elections in my sample. Also, in Appendix C.4 I show that there is a vote share effect for state legislature elections, but only when the candidate shares the party of the governor.

Table 4: Subsidy-Giving and Incumbent Vote Share

	County				Commuting Zone			
Control Group:	All Counties		Runner-ups		All CZs		Runner-ups	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Change in Vote Share:								
Subsidy Deal Winner	0.90	0.93*	2.26**	2.82**	0.67	0.84*	1.54*	1.12
	(0.49)	(0.44)	(0.76)	(0.92)	(0.35)	(0.39)	(0.63)	(0.76)
Adj. R-squared	0.78	0.79	0.76	0.79	0.80	0.80	0.85	0.89
Sector FE				×				×
Observations	4,111	3,604	244	211	762	670	191	164
# Subsidy Winners	143	126	126	98	125	111	111	89
Diff-in-Diff Estimate:								
Subsidy Deal Winner × Post	0.87	0.93	2.07**	2.40**	0.69*	0.81*	1.73***	1.52*
	(0.49)	(0.55)	(0.77)	(0.78)	(0.28)	(0.29)	(0.44)	(0.61)
Adj. R-squared	0.93	0.93	0.94	0.95	0.92	0.92	0.92	0.94
Sector FE				×				×
Observations	8,084	7,070	484	422	1,524	1,340	376	328
# Subsidy Winners	143	126	126	98	125	111	111	89

Notes: This table reports the estimates of the effect of subsidy-giving on incumbent vote share. In Columns (1) - (4) the county is the unit of observation, while Columns (5) - (8) do the same analysis at the commuting zone level. Columns (1), (2), (5), and (6) use all counties (or all CZs) in the state as the control group, while Columns (3), (4), (7), and (8) use only the runner-up counties/CZs within the same state, as described in the text. Columns (4) and (8) restrict the control runner-ups to be runner-ups for plant locations in the same sector. Columns (2) and (6) restrict the set of subsidy winning locations to be the same as the analysis with valid runner-up controls (i.e. the winner sample in Columns (3) and (7)). Each specification in the top panel (corresponding to Equation 1) include State × Year FE. The bottom panel corresponds to Equation 2. These specifications include both county/CZ-governor and State × Year fixed effects. The dependent variable is the county level vote share for the governor. The governor is the incumbent, by definition, in the post election but not the incumbent in the previous election. For both specifications, controls for the economic and demographic variables in Table 3 are included and standard errors are clustered at the state level and presented under the coefficient estimates, in parentheses.

4.2 Identification

Subsidy location. Governors may be willing to pay more for subsidies in counties where they need more votes. In Appendix Table A.2 I look for patterns between the political characteristics of counties and the location of subsidy-giving within a state. Subsidies are not more likely to go to counties with higher turnout in the last election, to counties with legislators who share the party of the governor, or to counties where the support for the governor was higher in the first election. Therefore, at least within this sample of large firms receiving subsidies, it does not seem that governors are able to manipulate where the firm locates within the state.

This is consistent with the institutional details of the site selection process for large firms. In most cases, like Alabama with Hyundai, states are not recruiting firms. The firms have a multi-step site selection process, which typically involves hiring a consulting team to put together a list of potential sites. The consultants will do the research to narrow the list to a few of the most appropriate or attractive locations for the firm, and once the team has this shortlist, the firm will contact the chosen states about the sites. Only then will the governor and local officials within the state be aware that they are a possible location for the firm, and decide how much they are willing to offer the firm. The state's team can go back and forth with the firm, updating the incentive package when they are made aware of competing offers.[31,32] To the extent that there is still the worry that a state can affect a firm's shortlist, through advocacy to site selection consultants and promotion, the runner-up locations in the state are a good control, because these locations also would be affected.

The identification strategy assumes that the county specific approval of the governor is not increasing in treatment counties, independent of subsidy-giving. This exclusion restriction would be violated if there is an effort by the governor, such as public works projects, happening in the subsidized counties and not in the control counties. This effort would increase support for the governor, and any increase in goodwill from this project would be attributed to the subsidy, biasing the results upward. This would also be surprising, given that we now know that the locations that win subsidy deals are not necessarily the places where the governor is trying to win more votes, according to the previous election outcomes. I also show that governors are not advertising more in the subsidized areas (Appendix Table C.3). However, this is a reason that the runner-up counties, where the governor also put in effort to attract a firm, are an appropriate control group.

Placebo Test and Robustness. One identification concern is that voters in counties that lost out on subsidy deals are more or less likely to support the governor. Voters may be more likely to support the governor if they perceive the governor's effort to attract a firm to their location as a positive signal, even though the governor was not successful. Alternatively, voters may be less likely to support the governor if they are upset that they lost the subsidy competition, and believe the governor could have worked harder to create jobs in their area. Either one of these concerns require that voters in the runner-up locations are aware that the county was in the running for a new firm. Ultimately, survey evidence suggests that voters know very little about the runner-up status. When asked about past subsidy competitions in their area, almost 40% of respondents replied "I am not sure," and about 12% responded that the government had tried but failed to attract a firm to their area. The share of respondents that thought the government had tried but failed to attract a firm to their area did not differ by the actual runner-up status of their location.

[31] To read more about site selection see the discussion in Slattery (2024), or trade publications such as `siteselection.com`.

[32] Governors may be more likely to intervene in location decisions for smaller firms receiving subsidies, as these firms are making location choices within a single state. Those types of smaller deals are not included in the sample.

Table 5: Coarsened Exact Matching: Robustness and Placebo Test

	Change in Vote Share						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Subsidy Deal Winner	2.26**	1.88***		2.26***		2.24***	
	(0.73)	(0.53)		(0.51)		(0.51)	
Runner-up			1.00		0.37		0.58
			(0.68)		(0.82)		(0.83)
Adj. R-squared	0.76	0.80	0.81	0.83	0.83	0.83	0.83
CEM Control		Income		+ Population		+ % Urban	
Observations	244	3,252	3,112	1,561	1,437	1,265	1,142
# Subsidy Winners	126	140	0	124	0	122	0
# Runner-ups	118	93	93	59	59	52	52

Notes: This table estimates Equation 1 with a matched control group, at the county level. The control counties are selected using a coarsened exact matching technique. The characteristics used to match the controls are per-capita income (Columns 2, 3), income and population (Columns 4, 5), and income, population, and percent urban population (Columns 6, 7). Column (1) shows the baseline results that use only the runner-ups as a control (Table 4). This table reports the estimates of the effect of being a subsidy winner county (Columns 2, 4, 6) and of being a runner-up (3, 5, 7). In the estimates of the effect of being a runner-up, the winning county is excluded, and the control counties are the same matched counties selected by the CEM approach. The number of winning and runner-up locations included in each specification is also reported.

It is still possible to test whether runner-up locations have differential support for incumbents, given a suitable control group for the runner-ups. Here, I implement a coarsened exact matching (CEM) technique (Iacus, King and Porro, 2012). I use the characteristics of winning counties in order to match on within-state and year county characteristics. This approach allows me to construct comparable counterfactuals in terms of the joint distribution of observable baseline characteristics. I match counties based on per capita income, population, and percent urban population. In order to find sufficient matches and not lose too many subsidy winning counties, I match coarsely, using 7 bins for per-capita income, 6 bins for population, and 4 bins for percent urban.[33] I then use these predicted control counties to both test the robustness of the main results and to test if there is differential vote share in the runner-ups.

Table 5 presents the results. First, columns (2), (4), and (6) use the CEM control groups to estimate the effect of winning a subsidy on county level support for the incumbent. Estimates range from 1.88 to 2.26ppt, similar to the results using the runner-ups as controls (Table 4 and also reproduced here in Column (1)).[34] The rows below the results show the characteristics used for the CEM control group, the number of winning counties that were able to be matched, and the number of runner-up counties that were still included as controls. Then I use the same control counties to test the effect of being a runner-up county on support for the incumbent (Columns (3), (5) and (7)). Here, no winning counties are included, and runner-ups are compared with the other

[33]This is a standard approach, see also Aneja and Xu (2021), for example.

[34]The characteristics used to match the controls are per-capita income (2), income and population (4), and income, population, and percent urban population (6). Table 3 shows that winning and runner-up counties are very similar on these characteristics, while the average county is smaller, poorer, and more rural. I trade-off between finding more accurate matches (more controls), and finding matches for a greater share of the sample.

matched controls. There is no vote share effect in the runner-up counties.

5 The Aggregate Effect

Does subsidy-giving help incumbent governors win elections? An increase in support in the subsidized county may not translate to an increase in support in the aggregate, if voters in the rest of the state are less likely to support the governor. This would be the case if the costs of discretionary subsidy are realized by all voters, in the form of increased taxes or reduced public goods. However, the bulk of the costs of subsidy-giving are borne in the future. The largest share of most subsidy deals is a tax abatement for the firm, i.e. the state is agreeing to forgo future tax revenue instead of increasing costs for voters in the short run. Alternatively, it may be that voters in non-subsidized counties know about the subsidy deal and think they are being harmed because the governor did not successfully attract a firm to their locale.[35] However, the survey shows that voters in non-subsidized counties know extremely little about the costs of the subsidy deal.[36]

Instead, it may be that subsidy-giving helps the incumbents' campaign statewide, and by only estimating the change in vote share in the subsidized locale I am underestimating the aggregate effect.[37,38] First, we know neighboring counties are also affected by the treatment. Residents could easily commute to a job at the new plant, or just be more likely to know about the subsidy deal because of local news coverage. In Section 3, Governor Siegelman predicts that suppliers to Hyundai would locate all over the region, creating jobs within a 100 mile radius of the automobile plant. Therefore, in order to calculate the aggregate effect at the state level, I will use the estimates from the commuting zone level analysis. Next, it is possible other counties, outside of the subsidized commuting zone, are affected. In fact, the survey shows that 20% of voters located outside of the subsidized locale can correctly identify the firm that is coming to the state (Figure 3). Therefore, I can use the survey results to create bounds on the total vote share effect. I bound the aggregate vote share effect using the following two assumptions:

1. There is no effect outside of the subsidized CZ. The β estimate from Table 4 is the true vote share effect

[35] On the contrary, Jensen and Malesky (2018) find that voters in runner-up counties may be more likely to support the governor, with a survey experiment that asks about a hypothetical subsidy deal.

[36] Conditional on correctly identifying the subsidized firm (<25% of sample), 62% believe there is an incentive (15% unconditional), and only 7% select the correct incentive size (2% unconditional).

[37] I cannot causally identify a 'state level' effect, but I do find a positive effect between subsidy-giving and state-level vote share in Appendix C.3. If there is an effect outside of the subsidized county, this should bias my results downward.

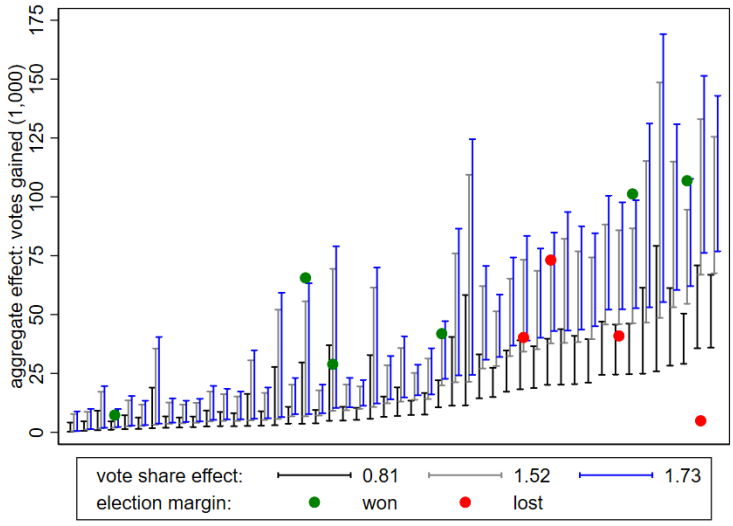
[38] A vast literature on quid-pro-quo in politics suggests that governors might be willing to pay more for firms that are supportive of their party, given that those firms would be likely support their re-election campaign. In Slattery, Tazhitdinova and Robinson (2022), we exploit exogenous variation created by the 2010 *Citizens United* Supreme Court case to identify the relationship between subsidy-giving and campaign spending. We find that the ability of corporations to spend more in state elections has no effect on subsidy-giving. In Appendix D, I test whether local stakeholders who expect to benefit from firm arrival (i.e. related businesses, property owners, unions) are more likely to support the incumbent's campaign. I do not find evidence of differential financial support for the incumbent in the subsidized county.

of winning a firm, which only applies to the winning location.

2. There is an effect outside of the subsidized CZ and the β estimate from Table 4 is the *additional* vote share effect in the winning location. Therefore, we can recover the true effect in the winning location, β^{win}, once we account for the effect in the rest of the state. The survey shows that 50% of voters in the winning locale can identify the firm, compared to 20% of the voters in the rest of the state. Therefore, I assume the effect in the non-winning locations is 2/5 of the effect in the winning location.

Figure 4 shows the estimated aggregate vote share effect for each state-election event in the sample, sorted by the size of the effect. The aggregate vote share effect is bounded below by using β from Table 4, multiplied by the total votes in the subsidized CZ(s). This uses any subsidy winning CZ in that state-election cycle, but does not allow any effect outside of the subsidized CZ(s). The effect is bounded above by assuming that each CZ in the state is treated, but the treatment in the non-winning CZ is $\frac{2}{5}\beta^{\text{win}}$ and the treatment in the winning CZ is β^{win}, where $\beta = \beta^{\text{win}} - \frac{2}{5}\beta^{\text{win}}$. The figure shows the bounds, using three different β estimates from Table 4. Lastly, the figure shows the election margin when it is within the bounds of the vote share effect. There are 10 elections which fall within these bounds, 6 where the incumbent won and 4 where the incumbent lost. This suggests subsidy-giving was pivotal in these 6 elections, or 12% of the sample of 49 incumbent governor elections.

Figure 4: The Aggregate Election Effect



Notes: This figure shows the estimated aggregate vote share effect for each incumbent election event in the sample, sorted by the size of the effect. The aggregate vote share effect is bounded below by using β from Table 4, multiplied by the total votes in the subsidized CZ(s). This uses any subsidy winning CZ in that state-election cycle, but does not allow any effect outside of the subsidized CZ(s). The effect is bounded above by assuming that each CZ in the state is treated, but the treatment in the non-winning CZ is $\frac{2}{5}\beta^{\text{win}}$ and the treatment in the winning CZ is β^{win}, where $\beta = \beta^{\text{win}} - \frac{2}{5}\beta^{\text{win}}$. The figure shows these bounds for three different β estimates from the difference-in-differences analysis in Table 4. Lastly the figure shows the election margin when it is within the bounds of the vote share effect. There are 10 elections which fall within these bounds, 6 where the incumbent won and 4 when the incumbent lost.

Cost per vote. I use the estimates from Figure 4 to also calculate a cost-per-vote of subsidy giving. Table 1 suggests that incumbent governors are willing to pay about $37 million more for subsidy deals when they are eligible to run for re-election.[39] However, as discussed earlier in the section, subsidy deals are not necessarily lump-sum payments from the governor. The majority of the subsidy package comes in the form of tax abatements for the individual firm—the state agrees to forgo future tax revenue. Therefore, only a portion of the subsidy has budget consequences in the year the subsidy is announced. Furthermore, the subsidy data are normalized to a 10 year time horizon. Due to the time horizon of the subsidy package, I will assume that a conservative 10% of the subsidy size is incurred in the year the subsidy is announced. Then, for each incumbent election cycle in the sample, the additional cost is just the number of subsidies offered multiplied the additional $3.7 million in cost (10% of the $37M). This is divided by the midpoint of the range of total votes gained (Figure 4).

The additional subsidy spending translates to $640 per additional vote at the mean ($540 at the median). This is larger, but of a similar magnitude, of estimates of the cost per vote of campaign spending in the literature; Bombardini and Trebbi (2011) estimate that an additional vote costs $145, while Levitt (1994) estimates a cost per vote between $130 and $390. Note that, unlike campaign spending, the governor is spending from the state budget, not their own funds. Furthermore, they are promising future funds. If the full 10 years of the additional subsidy spending is included, the cost per vote increases to over $6,000 per vote.

One could argue that this calculation does not account for the extensive margin effect of subsidy-giving—these governors may be able to win more subsidy competitions by offering larger subsidies. Table 1 shows that incumbents are 7.5ppt more likely to give a subsidy in a given year. Suppose that the inflated subsidy size offered by career concerned governors is necessary to attract 1 out of every 3 firms (i.e. one third of the firms would not have located in the state but for this larger subsidy size). Then the cost per vote would only use an excess spending for two thirds of the realized subsidies in the numerator, with the same number of votes in the denominator. This results in a cost per vote of $426 at the mean ($360 at the median), which is still significantly larger than the cost per vote estimates in the literature.

6 Mechanisms

Why do local voters like subsidies? I investigate two hypotheses. The first is that the subsidy, by attracting a new firm, creates jobs and improves local economic outcomes for residents, thereby generating incumbent votes. I will call this the "direct effect" of subsidy-giving. The second hypothesis is that voters are aware of the subsidy deal because of the local news coverage. Then, even if these voters have not been hired or experienced

[39] This is based on the average subsidy size in the sample ($164 million). It is also consistent with estimates from Slattery (2024).

any economic benefit from the firm's arrival, they might anticipate jobs and economic growth when they learn about the subsidy deal and recognize the governor is making an effort to improve economic outcomes in the local area. I will call this the "salience effect."

Timing. I can first test these two hypotheses by using the timing of subsidy deals within the term. Hypothesis (1), the "direct effect", suggests the effect should be larger for subsidy-giving earlier in the term, because this gives time for the firm to arrive and start hiring, improving local economic outcomes. Hypothesis (2), the "salience effect," suggests the effect should be largest for more recent announcements of subsidy deals, which are the most salient to voters, due to more recent media coverage.

Table 6 shows the results by the date the subsidy deal was announced. The baseline result, or "All Years," corresponds to Specification (3) in Table 4. The table shows that subsidy deals announced in the start of the term have about one half of the effect of a subsidy announced in the election year. Further, the election year effect is the only one that is significantly different than the baseline. Due to the lag between a subsidy announcement and a firm's arrival, the large effect in the election year means that the governor can accrue political benefit before any jobs are actually created. This suggests that the salience and anticipated economic effect of the firm's pending arrival is more important than the realized outcomes.[40] This is not driven by differences in the types of firms or projects that get subsidies (Appendix Section E). Subsidy deals that were announced in earlier years are equally as salient to voters at the time of the announcement, but voters put more weight on the most recent events (Huber, Hill and Lenz, 2012; Healy and Lenz, 2014; Garz and Martin, 2021), leading the most recent subsidy deals to have the largest effect.[41]

Table 6: Vote Change Results by Date of Subsidy Deal

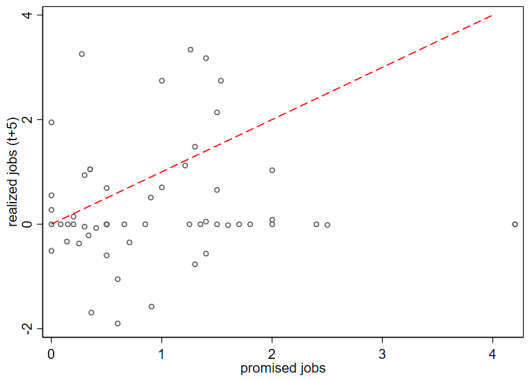
	All Years	1st Year	2nd Year	3rd Year	Election Year
Subsidy Winner × Post	2.07**	2.17	1.83*	1.78	3.62*
	(0.77)	(1.22)	(0.83)	(0.95)	(1.65)
Adj. R-squared	0.92	0.92	0.95	0.92	0.85
Observations	484	124	194	222	192
# Subsidy Winners	126	20	32	38	34
Difference from "All Years" baseline:					
χ^2		0.04	0.18	0.30	5.16*
Prob $> \chi^2$		0.85	0.67	0.58	0.02

Notes: This table presents results for the effect of subsidy-giving on vote share (Equation 2), by the year of the subsidy deal announcement. The baseline results ("All Years", Column 1) correspond to Specification (3) in Table 4, which is the county-level difference-in-differences specification that uses runner-up counties as a control. For each year the sample of winners is restricted to counties that do not win subsidies at some other year in the term. Standard errors are clustered at the state level.

[40] This is consistent with recent work by Huet-Vaughn (2019), who finds that an increase in support for Democrats following ARRA infrastructure spending was due to the salience, and not because the spending stimulated economic growth in the local area.

[41] The deals announced in the last year of the term also have the same amount of news coverage, as measured by number of articles in local newspapers, as deals announced throughout the sample.

Figure 5: Promised and Realized Job Creation



(a) Job Promises v Estimates

	(1)	(2)	(3)
Subsidy Deal Winner ×			
Jobs Promised (1,000)	1.05*		
	(0.46)		
Jobs Created$_{t+5}$ (1,000)		-0.01	
		(0.12)	
(Jobs Created$_{t+5}$ - Jobs Promised)			-0.12
			(0.08)
Adj. R-squared	0.88	0.87	0.87
Observations	116	116	116

(b) Job Creation and Vote Share

Notes: The regressions interact the "Subsidy Deal Winner" indicator with the employment effect of the subsidy deal, as measured in Slattery and Zidar (2020). Here, the number of observations is smaller because the sample is censored in order to be able to measure outcomes in $t+5$. Column (1) interacts the "Subsidy Deal Winner" indicator with the number of jobs promised, for this smaller sample. Column (2) uses the realized job creation, in the industry of the subsidy deal, and Column (3) uses the difference between realized and promised jobs. This analysis uses 61 subsidy winning counties. The figure on the left shows the relationship between promised and realized jobs, where the red line is the 45-degree line.

Promised and Realized Job Creation. While the timing results suggest that the vote share effect is not due to *realized* job creation or change in economic outcomes *at the time of the election*, firms that promise more jobs are associated with larger vote share effects.[42] This is shown in Table 7, Column (1), which interacts the "Subsidy Deal Winner" dummy with the number of jobs promised by the subsidized firm. However, the effect is relatively small, a 10% increase in the number of jobs promised correlates with a .04 increase in vote share for the incumbent.

It may be that voters are able to predict which firms will have the largest positive economic effect, and reward incumbents for attracting those firms specifically. For example, voters may consider both the number of jobs promised at the new plant and the indirect job creation that is predicted to occur in the local economy. In Slattery and Zidar (2020) we estimate the employment effects of each subsidy deal in the data at the 3-digit NAICS level, in order to account for spillovers in the sector of the subsidy deal. We estimate this with a difference-in-differences strategy that compares industry employment in winning and runner-up counties within a subsidy deal. We measure employment 5 years after the subsidy deal announcement, to allow time for the firm to build a plant and hire workers. On average, we find that employment increases by the number of jobs promised by the firm, but there are also many cases where we do not measure any job creation in the subsidized industry. Figure 5(a) shows the relationship between the number of promised jobs and the number of realized jobs that we estimate.

I interact the deal-level employment estimates with the subsidy winner dummy in Equation 1. Figure 5(b)

[42] Appendix Table F.1 shows that there is no discernible employment effect in subsidy-winning places by the time of the election.

shows that there is no correlation between the realized employment effect and the vote share effect of the subsidy deal. In other words, it is not the case that the largest vote share effects are for the deals that eventually create the most jobs. This is true even when I restrict the analysis to only manufacturing firms, which drives the baseline vote share effect (Table 7 Column (2)).

News Coverage. There are many reasons to believe that news coverage is the main way that voters learn about subsidy deals. The firms in the sample are selected on receiving large subsidy deals and spurring competition between localities, two features that could lead a subsidy deal to be covered by the media. Also, 60% of the voters in the survey report learning about the subsidy from local news, while an additional 27% of respondents report learning about the subsidy from social media or friends and family (Appendix Table B.4).[43]

I collect data on news coverage on each subsidy deal from ProQuest (ProQuest, 2021). At the time of data collection, ProQuest allowed users to search for past newspaper articles in over 700 newspapers across the United States.[44] For each subsidy deal I collect data on the number of newspaper articles mentioning the deal, the titles of the articles, and the source of each article. Appendix Figure G.1 shows that the data are highly skewed; half of the sample of subsidy deals have 15 or fewer articles in the database, but there are 13 deals with over 100 relevant hits. I use this data on news coverage as a continuous treatment effect. Instead of a dummy variable for whether the county won a subsidy deal, the treatment is the number of newspaper articles covering that deal. The third column of Table 7 shows the result.

The vote share effect is increasing in the number of articles about the subsidy deal. Appendix Figure G.2 shows that the relationship between news coverage and the vote share effect of the subsidy deal has an inverted-U shape—both deals with no news coverage and a large amount of news coverage have no effect on incumbent vote share. I hypothesize that the deals with the most news coverage are more likely to have some controversy or negative publicity. For example, the subsidy deal with the highest number of news articles in the database is Foxconn, which was a highly controversial deal that was discussed regularly in the news.

It may also be that the firms that are the most well-known have the largest vote share effect, independent of the local news coverage of the subsidy deal. That is, all else equal, attracting Ford Motor may have a larger effect than attracting GD Copper. I measure the salience of the *firm* by counting the number of newspaper articles, local and otherwise, that mention the firm in that year. Column (4) shows the result using only the number of articles about the firm, and Column (5) shows the results when I include both the news coverage of the subsidy deal and the firm. Here, it seems that the vote share effect is larger for the more salient firms.

[43] Learning about news events from social media and friends is consistent with the two-step flow theory of communication (Lazarsfeld, Berelson and Gaudet, 1944).

[44] See Appendix G.1 for more on the data source and coverage, and a comparison with NewsBank (2023).

Table 7: News Coverage, Sentiment, and Heterogeneous Effects

	Change in Vote Share						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Subsidy Deal Winner							
× log(Jobs Promised)	0.39**						0.11
	(0.13)						(0.33)
× Trade/Services		1.73					
		(1.37)					
× Manufacturing		3.09**					
		(0.98)					
× log(Articles about Deal)			0.60*		-0.10		-1.17
			(0.29)		(0.47)		(0.58)
× log(Articles about Firm)				0.30**	0.33		0.02
				(0.11)	(0.17)		(0.19)
× Sentiment of Deal News Coverage						2.73**	5.24*
						(0.90)	(2.48)
Adjusted R-squared	0.79	0.79	0.78	0.78	0.78	0.79	0.79
Observations	211	211	211	211	211	211	211

Notes: This table shows the heterogeneous effects of winning a firm. The specification corresponds to Equation 1, the outcome variable is the change in vote share for the incumbent, and the equation is estimated at the county level. Sector FE are included, so the baseline effect is Table 4 Col (4). Number of jobs promised and industry of the subsidized firm is collected by the author. When there are multiple subsidized firms within one county-election cycle the job promises are aggregated. Number of news articles about the subsidy deal are restricted to be in local newspapers in the year of the deal. Number of news articles about the firm are in any newspaper in the year of the deal. These are collected from ProQuest (2021) and NewsBank (2023). Sentiment is calculated from the text of the news articles about the deal, as described in Appendix G. Appendix Table C.6 shows heterogeneity by location characteristic, and Appendix Table C.7 replicates this Table with the slightly larger sample of winning locations, without sector FE.

Lastly, I calculate the sentiment of each article in the data set and take the average at the subsidy deal level. A subsidy deal with neutral news coverage receives a sentiment score of 1, while the control counties or winning counties with no news coverage receive a 0. Appendix Figure G.3 shows a negative relationship between the sentiment score and the number of articles written—the deals with more coverage have, on average, less positive news coverage. I confirm this with a simple exercise that counts the number of words mentioning subsidy "costs" in each news article. This is also positively correlated with the number of articles. Sentiment and number of articles are not correlated with other location characteristics that might be related to the media environment, such as population, income, and education (Appendix Table G.2).

Table 7 shows that there is a positive relationship between news sentiment and vote share. A subsidy deal with neutral news coverage is associated with a 2.73 percentage point increase in vote share. The subsidy deals with the most positive news coverage in the sample have scores of 1.16. This is associated with a 0.43 percentage point increase in vote share, a 15% increase from the baseline effect of 2.8. Further, when I include all of the news coverage and job promise variables with the sentiment score, only the sentiment score persists

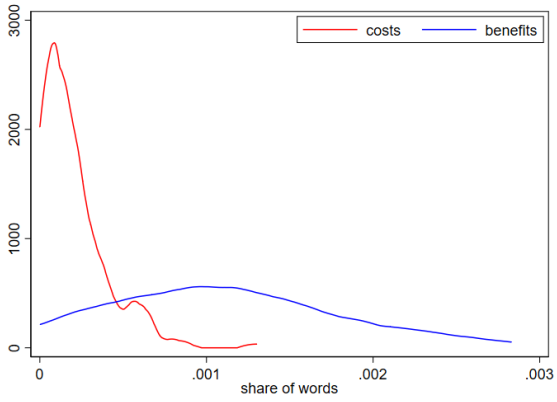
with a strong positive relationship with vote share.[45]

The sentiment analysis and a comparison of the words mentioning costs and benefits in each article aligns with the survey results—voters learn about subsidy deals from the local news, which is generally positive about the deal, and is much more likely to mention the benefit of attracting the firm than the cost (Figure 6). Therefore subsidy-giving is an useful instrument for career-concerned incumbents, as the benefits are clear to voters but the costs are not.

Figure 6: News Coverage of Subsidy Costs and Benefits

Cost Words	Benefit Words
congestion	benefit
corporate welfare	employment
cost	indirect
environmental	investment
fiscal	jobs
giveaway	payroll
incentive	property value
subsidy	revenue
tax break	spillover
tax increase	supplier
	wages

(a) Cost and Benefit Dictionaries



(b) Distribution

Notes: The table on the left shows the words I use to categorize costs and benefits. The figure on the right shows, at the subsidy deal level, the distribution of how often a cost or benefit word is mentioned, as calculated by share of total words. The benefit words are 7 times more likely to be mentioned than cost words. In fact, over 10% of subsidy deals in the sample have no mention of cost words in their news coverage.

7 Discussion of Policy Choice

If subsidy-giving is an effective job creation policy, re-election should give governors an incentive to act in the voters' interest and put in more effort to create jobs by offering more, or larger, subsidies to attract firms. However, if subsidy-giving is just one of many effective job creation policies in the governor's toolkit, re-election should give the governor an incentive to put in more effort to create jobs using a variety of policies.

I compare subsidy-giving with a set of other economic development policies: total economic development budget, job creation tax credits, research and development tax credits, job training subsidies, and small business subsidies (Appendix A provides details on the data collection). I estimate the correlation between the governors' career concerns and changes in spending for each policy instrument. This replicates the exercise in Table 1, which looks at the correlation between state economic and political characteristics and subsidy-giving.

[45] Appendix Table C.6 shows there are no differences in vote share effect by the location characteristics: housing prices, housing supply, unemployment rate, and party of the governor do not correlate with the vote share effect. Appendix Figure G.4 shows that there is no strong relationship between the number of jobs promised or number of jobs created and the news coverage or sentiment of the deal.

Table 8: Elections and Policy Choice

	Gives	Increases Spending				
	Subsidy	Econ. Dev.	Small Biz.	Job Train	Job Credit	R&D Credit
Can run for re-election	0.08*	0.02	-0.03	-0.03	0.04	-0.01
	(0.04)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)
Mean Dependent Var.	0.33	0.12	0.08	0.12	0.16	0.16
Adj. R-squared	0.27	0.14	0.24	0.25	0.18	0.12
Observations	768	768	768	768	768	768

Notes: This table shows the correlation between whether a governor can run for re-election and his or her policy choices throughout the term. The observation is at the state and year level, so the "can run" dummy is 1 for all four years of an election cycle if the governor is not term limited. The regression includes state and year fixed effects, and the sample period is 2002-2017. I measure increases in spending in the total economic development budget, job creation tax credits, research and development tax credits, job training subsidies, and small business subsidies. This replicates the exercise in Table 1, which looks at the correlation between state economic and political characteristics and subsidy-giving. The dependent variable equals one when there is a large change in spending. I use the 75th percentile of changes in each of the instruments, which, on average, is about a 5-15% increase in spending, depending on the policy. I control for the unemployment rate, GDP, corporate tax rate, income tax rate, sales tax rate, manufacturing employment, personal income per capita, average housing prices, political gridlock, and state population.

The dependent variable equals one when there is a large change in spending. I use the 75th percentile of changes in each of the instruments, which, on average, is about a 5-15% increase in total spending, depending on the policy.

The results are shown in Table 8. Strikingly, there is a political cycle for subsidy-giving but not for other policies. A governor who can run for re-election is 8 percentage points more likely to give subsidies than their term-limited counterparts (and also offer larger subsidies, Table 1). There is no correlation between career concerns and changes in spending for these alternative job creation policies.

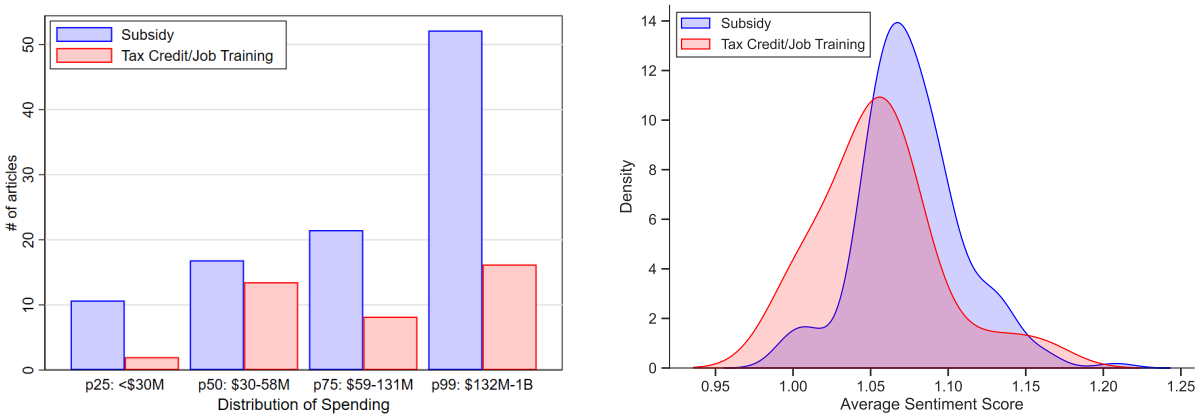
Subsidy-giving is also more salient than these alternative policies. I collect news articles on the introduction of new job creation and investment tax credits, research and development tax credits, and job training subsidy programs. The dates of program introductions are assembled from changes in the incentive sizes from Bartik (2023) and the online appendix of Wilson (2009) and Chirinko and Wilson (Forthcoming), and then verified with each states' legislation. I also collect data on the size of the programs (in dollars) from state budget and tax expenditure reports, in order to facilitate an apples to apples comparison with the subsidy deals.[46] The resulting data set has 31 enactments or major changes in job creation economic development programs, from 2000-2015, across 18 states.[47]

Figure 7 shows the comparison in news coverage and sentiment. The left panel shows that, even conditional on the size of the program, local newspapers write more articles about the subsidy deals. In fact, the average size of these programs is very similar to the subsidies—the median subsidy deal in the sample is $59 million and the median tax credit/job training program enacted is $56 million. Despite the similar size, the tax credit

[46] See Appendix G for more details on data construction.

[47] Fifteen of these states also have subsidy winning events in the main data set.

Figure 7: News Coverage of Subsidy-Giving and Tax Credit Programs



Notes: The figure on the left shows the average number of articles written about subsidy deals and tax credit enactments, over the distribution of program size. The distribution of spending is taken with the spending for both types of programs. The figure on the right shows the distribution of sentiment of the articles written for each event. A sentiment score of 1 can be interpreted as neutral. The distribution is taken at the "event" level, so each subsidy or tax credit event has an average score over the number of articles written about it in the local news. The data on tax credit and subsidy size is collected by the author, data on number of articles about each event is from ProQuest (2021) and NewsBank (2023).

and training programs receive a fraction of the news coverage. Subsidy deals in the sample have 21 articles per $100M in spending at the median (36 at the mean), while tax credit programs have 3 articles per $100M in spending (16 at the mean). This is driven by many zeros for the tax credit programs: 38% of the programs are not mentioned in any articles in local newspapers. On the right, Figure 7 shows that the distribution of sentiment for subsidy-giving events is slightly higher. Therefore, not only are there more articles written about subsidy deals, the articles are more positive.

These results, though purely descriptive, highlight an important trade-off in policy choice. The salience of subsidy-giving can lead politicians to favor subsidy-giving over less "newsworthy" job creation strategies. Electoral accountability can lead politicians to work harder to create jobs, but the politicians prefer to focus on job creation strategies that voters will learn about.

8 Conclusion

There is a political cycle to subsidy-giving—governors who can run for re-election spend 20% more on subsidies than their term-limited counterparts. This is rational; there is a political benefit to subsidy-giving. In this paper I show that support for the incumbent governor increases by 2.1-2.8 percentage points in subsidy-winning counties. Then, under assumptions informed by the original survey on subsidy-giving, I calculate the estimated vote share effect at the state level. This effect ranges from 11,000 to 57,000 votes on average, which is pivotal in 12% of the elections in the sample.

The effect of subsidy-giving on vote share is largest when the subsidy is announced during the election year, which means that the governor can accrue political benefit before any jobs are created. The timing result suggests that the mechanism by which subsidy-giving increases incumbent vote share is the salience of the subsidy deal and the anticipated economic effect, rather than any realized improvement in economic outcomes. Subsidy deals announced in election years do not promise more jobs and do not have larger spillovers. Moreover,the vote share effect is not correlated with subsidy deals that create more jobs in the future.

The disconnect between job creation and political benefit motivates further investigation into the mechanism. I aggregate the news coverage of each subsidy deal and analyze the text in order to understand the role of the media in encouraging subsidy-giving. The coverage is almost uniformly positive, and the potential benefits of the subsidy deal are much more likely to be mentioned than the costs. Deals with no news coverage do not experience any vote share effect, and the vote share effect is highly correlated with sentiment, increasing in the positive sentiment of the news coverage.

I then provide suggestive evidence that career concerned governors prefer subsidy-giving to other job creation policies that have less news coverage. Subsidy deals receive 20% more coverage than policies like job creation tax credits or job training grants. Although electoral accountability can discipline politicians, distortions arise in settings with imperfect information—voters are more likely to learn about a subsidy deal than another job creation policy. This makes subsidy-giving a very attractive policy for politicians, even if it might not be the most cost effective way to create jobs.

References

Alesina, Alberto, and Matteo Paradisi. 2017. "Political budget cycles: Evidence from Italian cities." *Economics & Politics*, 29.

Alesina, Alberto, Nouriel Roubini, and Gerald D. Cohen. 1997. *Political Cycles and the Macroeconomy.* The MIT Press.

Aneja, Abhay, and Guo Xu. 2021. "The Costs of Employment Segregation: Evidence from the Federal Government Under Woodrow Wilson*." *The Quarterly Journal of Economics*, 137(2): 911–958.

Angelucci, Charles, and Andrea Prat. 2020. "Measuring Voters' Knowledge of Political News." MIT Sloan Working Paper 6132-20.

Angelucci, Charles, Julia Cagé, and Mike Sinkinson. 2023. "Media Competition and News Diets." *American Economic Journal: Microeconomics*.

Aobdia, Daniel, Allison Koester, and Keining Petacchi. 2021. "The politics of government resource allocation: Evidence from U.S. state government awarded economic incentives." Available at SSRN: `https://ssrn.com/abstract=3127038`.

Ashworth, Scott. 2012. "Electoral Accountability: Recent Theoretical and Empirical Work." *Annual Review of Political Science*, 15(1): 183–201.

Autor, David, David Dorn, and Gordon Hanson. 2019. "When Work Disappears: Manufacturing Decline and the Falling Marriage Market Value of Young Men." *American Economic Review: Insights*, 1(2): 161–78.

Autor, David H., David Dorn, and Gordon H. Hanson. 2013. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States." *American Economic Review*, 103(6): 2121–68.

Barro, Robert. 1973. "The Control of Politicians: An Economic Model." *Public Choice*, Spring.

Bartik, Timothy J. 2019. *Making Sense of Incentives: Taming Business Incentives to Promote Prosperity.* W.E. Upjohn Institute for Employment Research.

Bartik, Timothy J. 2023. "Bartik Benefit-Cost Model of Business Incentives: A User's Guide." The Pew Charitable Trusts.

Bertrand, Marianne, Matilde Bombardini, Raymond Fisman, and Francesco Trebbi. 2020. "Tax-Exempt Lobbying: Corporate Philanthropy as a Tool for Political Influence." *American Economic Review*, 110(7): 2065–2102.

Besley, Timothy, and Anne Case. 1995. "Does Electoral Accountability Affect Economic Policy Choices? Evidence from Gubernatorial Term Limits." *The Quarterly Journal of Economics*, 110(3): 769–798.

Besley, Timothy, and Robin Burgess. 2002. "The Political Economy of Government Responsiveness: Theory and Evidence from India." *The Quarterly Journal of Economics*, 117(4): 1415–1451.

Beyle, Thad, Richard G. Niemi, and Lee Sigelman. 2002. "Gubernatorial, Senatorial, and State-Level Presidential Job Approval: The U.S. Officials Job Approval Ratings (JAR) Collection [Now hosted at `https://jmj313.web.lehigh.edu/node/6` by Jennifer Jensen]." *State Politics & Policy Quarterly*, 2(3): 215–229.

Biglaiser, Gary, and Claudio Mezzetti. 1997. "Politicians' decision making with re-election concerns." *Journal of Public Economics*, 66(3): 425–447.

Bombardini, Matilde, and Francesco Trebbi. 2011. "Votes or money? Theory and evidence from the US Congress." *Journal of Public Economics*, 95(7-8): 587–611.

Bonica, Adam. 2016. "Database on Ideology, Money in Politics, and Elections: Public version 2.0 [Computer file]." `https://data.stanford.edu/dime`.

Bureau of Labor Statistics. 1990-2017. "Local Area Unemployment Statistics." `https://www.bls.gov/lau/data.htm`.

Canes-Wrone, Brandice, Michael C. Herron, and Kenneth W. Shotts. 2001. "Leadership and Pandering: A Theory of Executive Policymaking." *American Journal of Political Science*, 45(3): 532–550.

Chirinko, Robert S., and Daniel J. Wilson. Forthcoming. "Job Creation Tax Credits, Fiscal Foresight, and Job Growth: Evidence from US States." *National Tax Journal*, 0(0): 000–000.

Cingano, Federico, Filippo Palomba, Paolo Pinotti, and Enrico Rettore. Forthcoming. "Making Subsidies Work: Rules vs. Discretion." *Econometrica*.

Cision Media Research. 2016. "Top 10 Alabama Daily Newspapers." Accessed January 19, 2021 at `https://www.cision.com/2016/09/top-10-alabama-daily-newspapers/`.

Coate, Stephen, and Stephen Morris. 1995. "On the Form of Transfers to Special Interests." *Journal of Political Economy*, 103(6): 1210–1235.

County Business Patterns. 1997-2017. "CBP Datasets." U.S. Census Bureau, `https://www.census.gov/programs-surveys/cbp/data.html`.

CSG Book of the States. 1950-2018. *Book of the States.* Council of State Governments.

DellaVigna, Stefano, and Ethan Kaplan. 2007. "The Fox News Effect: Media Bias and Voting*." *The Quarterly Journal of Economics*, 122(3): 1187–1234.

Djourelova, Milena, Ruben Durante, and Gregory Martin. 2021. "The Impact of Online Competition on Local Newspapers: Evidence from the Introduction of Craigslist." Working Paper.

Drazen, Allan, and Marcela Eslava. 2010. "Electoral manipulation via voter-friendly spending: Theory and evidence." *Journal of Development Economics*, 92(1): 39–52.

Eslava, Marcela. 2006. "The Political Economy of Fiscal Policy: Survey." Inter-American Development Bank, Research Department Research Department Publications 4487.

Ferraz, Claudio, and Frederico Finan. 2008. "Exposing Corrupt Politicians: The Effects of Brazil's Publicly Released Audits on Electoral Outcomes." *The Quarterly Journal of Economics*, 123(2): 703–745.

Foremny, Dirk, and Nadine Riedel. 2014. "Business taxes and the electoral cycle." *Journal of Public Economics*, 115(C): 48–61.

Fowler, Erika, Michael Franz, and Travis N. Ridout. 2017. "Political Advertising in 2006, 2010, 2012, 2014, 2016." Middletown, Conn.: Wesleyan Media Project.

Garin, Andrew, and Jonathan Rothbaum. 2022. "The Long-Run Impacts of Public Industrial Investment on Regional Development and Economic Mobility: Evidence from World War II." Working Paper.

Garz, Marcel, and Gregory J. Martin. 2021. "Media Influence on Vote Choices: Unemployment News and Incumbents' Electoral Prospects." *American Journal of Political Science*, 65(2): 278–293.

Gentzkow, Matthew, Jesse M. Shapiro, and Michael Sinkinson. 2011. "The Effect of Newspaper Entry and Exit on Electoral Politics." *American Economic Review*, 101(7): 2980–3018.

Gentzkow, Matthew, Jesse M. Shapiro, Nathan Petek, and Michael Sinkinson. 2015. "Do Newspapers Serve the State? Incumbent Party Influence on the US Press, 1869–1928." *Journal of the European Economic Association*, 13(1): 29–61.

Goldstein, Kenneth, and Joel Rivlin. 2005. "Political Advertising in 2002-2004." Madison, WI: The Wisconsin Advertising Project.

Goldstein, Kenneth, Sarah Niebler, Jacob Neiheisel, and Matthew Holleque. 2011. "Presidential, Congressional, and Gubernatorial Advertising, 2008." Madison, WI: The Wisconsin Advertising Project.

Greenstone, Michael, Richard Hornbeck, and Enrico Moretti. 2010. "Identifying agglomeration spillovers: Evidence from winners and losers of large plant openings." *Journal of Political Economy*, 118(3): 536–598.

Healy, Andrew, and Gabriel S. Lenz. 2014. "Substituting the End for the Whole: Why Voters Respond Primarily to the Election-Year Economy." *American Journal of Political Science*, 58(1): 31–47.

Huber, Gregory A., Seth J. Hill, and Gabriel S. Lenz. 2012. "Sources of Bias in Retrospective Decision Making: Experimental Evidence on Voters' Limitations in Controlling Incumbents." *American Political Science Review*, 106(4): 720–741.

Huet-Vaughn, Emiliano. 2019. "Stimulating the Vote: ARRA Road Spending and Vote Share." *American Economic Journal: Economic Policy*, 11(1): 292–316.

Hu, Minquing, and Bing Liu. 2004. "Mining and summarizing customer reviews." *SIGKDD KDM-04*.

Iacus, Stefano M., Gary King, and Giuseppe Porro. 2012. "Causal Inference Without Balance Checking: Coarsened Exact Matching." *Political Analysis*, 20(1): 1–24.

Jensen, Nathan M, and Edmund J Malesky. 2018. *Incentives to pander: How politicians use corporate welfare for political gain.* Cambridge University Press.

Johnson, Bob. 2002. "Hyundai plant expected to bring jobs to Black Belt." *The Associated Press State & Local Wire*.

Judd, Gleason. 2017. "Showing Off: Promise and Peril in Unilateral Policymaking." *Quarterly Journal of Political Science*, 12(2): 241–268.

Kim, Donghyuk. 2020. "Economic Spillovers and Political Payoffs in Government Competition for Firms: Evidence from the Kansas City Border War." Iowa State University Working Paper.

Klarner, Carl. 2018. "State Legislative Election Returns, 1967-2016: Restructured For Use." Harvard Dataverse, `https://doi.org/10.7910/DVN/DRSACA`.

Lazarsfeld, Paul, Bernard Berelson, and Hazel Gaudet. 1944. *The People's Choice.* Duell, Sloan and Pearce.

Leip, David. 2018. "Dave Leip's Atlas of U.S. Presidential Election." Accessed January 29, 2021 `http://uselectionatlas.org`.

Levitt, Steven D. 1994. "Using Repeat Challengers to Estimate the Effect of Campaign Spending on Election Outcomes in the U.S. House." *Journal of Political Economy*, 102(4): 777–798.

Loughran, Tim, and Bill McDonald. 2011. "When Is a Liability Not a Liability? Textual Analysis, Dictionaries, and 10-Ks." *The Journal of Finance*, 66(1): 35–65.

Lyne, Jack. 2002. "Hyundai's $1B Plant Alabama Bound After 11th-Hour Bargaining." *Site Selection*.

Marx, Benjamin. 2018. "Elections as Incentives: Project Completion and Visibility in African Politics." Working Paper.

Mattera, Phillip, and Kasia Tarczynska. 2019. "Good Jobs First Subsidy Tracker." `https://www.goodjobsfirst.org/subsidy-tracker`.

Montgomery, Alabama. 2002. "Front Page, April 2nd 2002." *Montgomery Advertiser*, Retrieved from `newspapers.com`. Accessed January 10, 2021.

National Conference of State Legislatures. 2019. "Right-to-Work Resources." `https://www.ncsl.org/research/labor-and-employment/right-to-work-laws-and-bills.aspx`.

National Institute on Money in Politics. 2000-2018. "Follow the Money." `https://www.followthemoney.org/`.

National Science Foundation. 2000-2017. "Science and Engineering Indicators: State Indicators." `https://ncses.nsf.gov/indicators/states/` Accessed March 30, 2021.

NewsBank. 2023. "Advanced Search: Newspapers." Access Provided by UC Berkeley Libraries, https://infoweb.newsbank.com/apps/news/advanced-search?p=AWNB&f=advancedd.

Niesse, Mark. 2002. "Board Grants Authority to Close Hyundai Deal." *The Associated Press State & Local Wire*.

Olson, Mancur. 1965. *The logic of collective action.* Harvard University Press.

Patrick, Carlianne. 2016. "Identifying the local economic development effects of million dollar facilities." *Economic Inquiry*, 54(4): 1737–1762.

Poterba, James M. 1994. "State Responses to Fiscal Crises: The Effects of Budgetary Institutions and Politics." *Journal of Political Economy*, 102(4): 799–821.

ProQuest. 2021. "Advanced Search: Newspapers." Access Provided by Columbia University Libraries, https://www.proquest.com/advanced.

Rogoff, Kenneth. 1990. "Equilibrium Political Budget Cycles." *The American Economic Review*, 80(1): 21–36.

Rogoff, Kenneth, and Anne Sibert. 1988. "Elections and Macroeconomic Policy Cycles." *Review of Economic Studies*, 55(1): 1–16.

Ruggles, Steven, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Joe Pacas, and Matthew Sobek. 2019. "IPUMS USA, version 9.0 [dataset]."

Setzler, Bradley, and Felix Tintelnot. 2021. "The Effects of Foreign Multinationals on Workers and Firms in the United States*." *The Quarterly Journal of Economics*, 136(3): 1943–1991.

Shapiro, Adam, Moritz Sudhof, and Daniel Wilson. 2020. "Measuring news sentiment." *Journal of Econometrics*, 228.

Sharp, John. 2020. "'Stop the Steal': Election fraud claims revive memories of Alabama's 2002 governor's race." *AL.com*. https://www.al.com/news/mobile/2020/12/stop-the-steal-election-fraud-claims-revive-memories-of-alabamas-2002-governors-race.html.

Slattery, Cailin. 2024. "Bidding for Firms: Subsidy Competition in the U.S." Working Paper.

Slattery, Cailin, Alisa Tazhitdinova, and Sarah Robinson. 2022. "Corporate Political Spending and State Tax Policy: Evidence from *Citizens United*." Working Paper.

Slattery, Cailin, and Owen Zidar. 2020. "Evaluating State and Local Business Incentives." *Journal of Economic Perspectives*, 34(2): 90–118.

Snyder, James M., and David Strömberg. 2010. "Press Coverage and Political Accountability." *Journal of Political Economy*, 118(2): 355–408.

Story, Louise. 2012. "As Companies Seek Tax Deals, Governments Pay High Price." *The New York Times*.

Strömberg, David. 2004. "Radio's Impact on Public Spending." *The Quarterly Journal of Economics*, 119(1): 189–221.

U.S. Bureau of Economic Analysis. 1967-2017. "Regional Economic Accounts." https://www.bea.gov/regional/downloadzip.cfm.

Wilson, Daniel J. 2009. "Beggar thy Neighbor? The In-State, Out-of-State, and Aggregate Effects of R&D Tax Credits." *The Review of Economics and Statistics*, 91(2): 431–436.

Zillow. 1996-2020. "Zillow Home Value Index." `https://www.zillow.com/research/data/`.

Appendix for Online Publication

A Subsidy Data

In order to study the political ramifications of subsidy-giving I need detailed data on subsidy deals. States vary widely in the structure of their corporate and individual income taxes and payroll, and the absence of comprehensive data on state taxes, incentives, and subsidies has been a difficulty for empirical research in this field. In response, I have created two new data sets on state incentive spending and subsidy-giving behavior. The first data set tracks state spending on tax credits and economic development incentives from 2002-2017. I collect this by reading state level legislation, budget documents, and annual revenue reports.

The second data set contains details on firm-specific subsidy deals. To create this data set of firm-level subsidies I start with the publicly available *Good Jobs First* Subsidy Tracker (Mattera and Tarczynska, 2019). I restrict the sample to subsidies worth over $5 million, and remove any entry that does not mention expansion, relocation, or a discretionary incentive. Finally, I add any firm locations reported by *Site Selection* Magazine's "Incentives Deal of the Month" columns and annual "Top Deals" reports. This gives a sample of over 500 firms and locations that reportedly made subsidy deals. I then search local news reports and press releases to fill in details on each deal, including the runner-up location in the subsidy competition, and the number of jobs promised. I use the state level data set to identify any non discretionary tax credits the firm would qualify for, such as an R&D tax credit or a universal jobs training grant.[48]

Table A.1: Terms of Subsidy Deals

	# of	Mean #	Subsidy ($M)		Jobs Promised		Invest ($M)		Cost/Job ($K)	
Industry (NAICS)	Deals	Bidders	Mean	Med.	Mean	Med.	Mean	Med.	Mean	Med.
Mining, Utilities (21-22)	3	4.0	753.7	314.2	215	225	3,215	2,277	3,506	1,397
Manufacturing (31-33)	204	5.8	203.9	89.3	1,388	900	1,768	472	147	99
Wholesale, Retail Trade (42-45)	15	6.4	68.7	41.1	1,302	820	288	160	53	50
Transport/Warehousing (48-49)	13	3.0	82.2	69.3	1,887	1,050	232	228	44	66
Information Svc. (51)	27	6.6	85.1	74.4	730	450	612	171	117	165
Finance, Insurance, RE (52-53)	44	3.0	50.4	33.3	1,794	1,495	160	75	28	22
Prof., Scientific, Tech Svc. (54)	43	5.3	119.7	56.3	1,431	700	262	53	84	80
Management, Other Svc. (55-81)	38	3.7	59.3	37.5	1,404	972	182	89	42	39
Full sample	387	5.2	149.5	59.5	1,399	907	1,084	214	107	66

Notes: This table displays sector level descriptive statistics on subsidy deals. For each industry group, the mean and median subsidy size, number of direct jobs promised, and planned investment is displayed. I also list the number of subsidy deals in each category. The data were collected by the author, and is the same sample used in Slattery (2024). The sample period is 2002-2017.

[48] I describe the data collection process in detail, and provide descriptive statistics for both the state-level and firm-level data sets in Slattery (2024) and Slattery and Zidar (2020).

Table A.2: The Location of Subsidy-Giving within a State

	All Counties		Top Profit		Top Industry	
	(1)	(2)	(3)	(4)	(5)	(6)
County Economic and Demographic Vars:						
Unemployment Rate	0.001	0.001	0.026	0.026	-0.004	-0.004
	(0.001)	(0.001)	(0.015)	(0.015)	(0.010)	(0.010)
Share Black	0.101***	0.100***	0.402	0.416	0.481	0.484
	(0.024)	(0.024)	(0.256)	(0.257)	(0.265)	(0.266)
Share Hispanic	0.040***	0.040***	0.062	0.078	0.405*	0.404*
	(0.008)	(0.008)	(0.200)	(0.204)	(0.197)	(0.199)
Share With College Degree	0.104**	0.106**	-1.233***	-1.219***	-1.027*	-1.027*
	(0.033)	(0.033)	(0.300)	(0.305)	(0.419)	(0.420)
log(Industry Wage)	0.029***	0.029***	0.452***	0.451***	0.117*	0.116*
	(0.004)	(0.004)	(0.057)	(0.057)	(0.058)	(0.059)
log(Average Housing Price)	-0.005**	-0.005**	-0.287***	-0.285***	0.094	0.094
	(0.002)	(0.002)	(0.080)	(0.080)	(0.053)	(0.053)
log(Personal Income Per Capita)	0.027***	0.027***	0.117	0.113	0.320**	0.319**
	(0.008)	(0.008)	(0.105)	(0.106)	(0.108)	(0.109)
log(Population)	0.013***	0.013***	0.168***	0.169***	0.180***	0.180***
	(0.002)	(0.002)	(0.019)	(0.019)	(0.018)	(0.018)
County Political Vars:						
% Turnout in Last Election	0.022	-0.014	0.123	0.069	0.296	0.461
	(0.022)	(0.036)	(0.390)	(0.507)	(0.372)	(0.645)
× Gov Can Run		0.047		0.082		-0.209
		(0.040)		(0.608)		(0.715)
Same Party Legislator	-0.001	-0.001	-0.018	-0.031	-0.016	-0.008
	(0.002)	(0.004)	(0.042)	(0.082)	(0.043)	(0.087)
× Gov Can Run		0.000		0.020		-0.010
		(0.005)		(0.094)		(0.096)
% Same Party Vote in Last Election	-0.007	-0.009	0.009	-0.111	-0.256	-0.360
	(0.012)	(0.030)	(0.171)	(0.321)	(0.183)	(0.433)
× Gov Can Run		0.002		0.160		0.136
		(0.032)		(0.368)		(0.470)
R-squared	0.06	0.06	0.39	0.39	0.41	0.41
Subsidy Deal FE	×	×	×	×	×	×
Observations	17,494	17,494	848	848	848	848

Notes: This table shows the correlation between subsidy-giving and location characteristics. The first two columns compare the subsidized county with all other counties in the state. The second two columns compare the subsidized county with counties that are predicted to have the highest profit for the firm, as calculated in Slattery (2024). The last two columns compare the subsidized county with the counties with the highest industry concentration in the subsidized firm's industry. In each specification the dependent variable is one if the subsidy deal is for that county, and the fixed effects are at the subsidy deal level. Economic and demographic variables are described in Table 3, turnout and vote share are from Leip (2018), and information on local legislators is from Klarner (2018).

Table A.2 shows the correlation between subsidy-giving and location characteristics. Subsidy-winning counties are larger and wealthier than the average county in the state, with higher wages. When compared with other counties that are predicted to have high profits or places that have a large industry presence the subsidy winning places are still larger, but have less educated populations. None of the political variables are statistically significant – subsidy winning places are no more likely to have higher turn-out, have a legislator in the same party as the governor, or have differentially supported the incumbent.

Table A.3 shows the full sample of winning and runner-up locations which I use in the main analysis. The identity of the winning and runner-up location is from the hand-collected subsidy data.

Table A.3: Analysis Sample

State	Election	Winning Counties	Runner-up Counties
AL	2006	Madison, Mobile	Autauga, Elmore
AL	2014	Limestone, Mobile, Madison, Wilcox	Tuscaloosa, Morgan
AR	2010	Sebastian, Pulaski	Crittenden, Miller, Craighead, Mississippi
AR	2018	Clark, Ouachita, Benton	Pulaski
AZ	2006	Yavapai	Maricopa
AZ	2018	Pima, Pinal	Maricopa
CA	2006	Solano	San Diego, San Mateo
CA	2014	Santa Clara, Los Angeles	Contra Costa, San Diego, San Francisco, Orange
FL	2014	Lee, Brevard	Palm Beach, Orange, Broward, Hillsborough, Sarasota
GA	2006	Troup, Bartow, Muscogee	Clarke, Fulton
GA	2014	Richmond, Whitfield, Oconee, Newton	Clarke, Troup, Fulton, Bartow, Gordon, Gwinnett, Jackson
IA	2010	Dubuque, Dallas	Muscatine
IA	2014	Dallas, Lee, Woodbury	Story
IL	2014	Lake, Cook, Winnebago	Lasalle, Peoria
IN	2008	Decatur, Kosciusko, Madison, Marion	Tippecanoe
KS	2006	Wyandotte, Sedgwick	Johnson
KY	2007	Jefferson, Kenton, Hancock, Hopkins, Boyd	Mccracken
KY	2011	Hardin, Jefferson, Clay	Christian, Todd
LA	2011	Jefferson, Calcasieu, St James, Cameron	Orleans, East Baton Rouge, Caddo
MA	2010	Suffolk	Middlesex
MI	2006	Montcalm, Wayne	Kalamazoo
MI	2014	Ottawa, Branch	Wayne, Muskegon
MO	2012	Clay, Boone, St Charles, Jackson	Cass
MS	2003	Madison	Panola
MS	2007	Lowndes, Pontotoc	Hancock
MS	2015	Clay	Madison, Desoto, Lowndes
NC	2004	Wake, Durham, New Hanover, Mecklenburg, Forsyth	Lenoir
NC	2016	Mecklenburg, Wake, Pitt, Rockingham, Johnston	Gaston, Cleveland
NJ	2009	Hudson, Somerset	Bergen
NJ	2013	Morris, Hudson, Mercer	Somerset
NY	2002	Albany	New York City
NY	2014	Bronx, Erie	Rockland, Westchester, Chenango, New York City
NY	2018	New York City	Westchester, Rockland
OH	2010	Butler, Franklin, Summit, Hamilton, Trumbull, Cuyahoga	Clermont, Van Wert, Montgomery, Hancock, Lucas
OH	2014	Hamilton, Stark, Cuyahoga, Franklin, Hancock	Erie, Williams, Richland, Belmont, Miami
OR	2014	Multnomah	Washington, Umatilla, Columbia, Crook
PA	2014	Beaver	Delaware, Adams, York, Philadelphia, Lancaster, Berks, Montgomery, Erie, Franklin
SC	2006	Charleston	Greenville, Richland
SC	2014	Aiken, Lancaster, Chester, Lexington, Charleston, Sumter, Spartanburg	Greenville, Richland, Florence, York
TN	2006	Williamson	Davidson, Loudon
TN	2014	Montgomery, Shelby, Davidson	Bradley, Hamilton
TX	2006	Dallas, Jefferson, Bexar, Travis	Harris, Tarrant, Ellis, Brazoria
TX	2010	Guadalupe, Nueces, Bexar, Tarrant	Travis, Dallas, Harris, Andrews
TX	2018	Dallas, San Patricio	Austin, Harris, Jefferson, Travis, Orange, Collin
UT	2008	Box Elder, Salt Lake	Utah
UT	2016	Salt Lake, Utah	Washington
WA	2016	Snohomish	Grant
WI	2014	Dane	Rock
WV	2012	Kanawha	Marshall, Hancock

Notes: This table lists the treatment and control counties in each state-election cycle for the main analysis (Table 4 Column (3)).

B Survey

I surveyed 4,300 voters across 5 states in late June 2021, with the help of the survey contract firm YouGov. Each state's survey asks the respondents questions about one recently announced subsidy deal. The five states, sample size in each state, and the characteristics of the recent subsidy deal in each state are described in Table B.1. The survey questions are listed in Section B.2. The questions are listed for the survey that was administered in the state of Georgia, each state's survey was tailored to be specific to the details of the subsidy deal in that state. I choose these 5 subsidy deals by searching `GoodJobsFirst.com` Subsidy Tracker for recently announced subsidies, because the time period of the survey is outside the time period of my subsidy data collection. I arrive at a list of about 20 deals, and then I subset to manufacturing deals where I can find reliable information on the size of the investment, jobs promised, and subsidy promised. I also restrict to deals that are new firm entry, instead of retention.

YouGov has a panel of 1.8 million U.S. residents that agree to participate in YouGov web surveys. The sample selected for this survey are representative of the U.S. population by age, race, gender, and education. Along with the responses to the questions asked in the survey, YouGov provides the following demographic variables about respondents: Gender, Age, Education, Income, Employment, Marital Status, Zip Code, Party Affiliation, Voting Registration, and Past Voting (Presidential). Table B.2 shows the demographics by state and Table B.3 shows the correlation between survey responses and some other respondent characteristics. Table B.4 shows how survey respondents report learning about the subsidized firm's arrival.

Table B.1: Survey Sample

Firm	Project	State	Announced (Complete)	Sub ($M)	Jobs	Invest ($B)	Sample Size
SK Innovation	Battery manufacturing plant	GA	2019 (2021)	299.5	2,000	1.6	1000
Nucor	Steel plant	KY	2019 (2022)	40.0	400	1.4	650
Cree	Semiconductor plant	NY	2019 (2022)	541.1	600	1.0	1000
Tesla	Cybertruck plant	TX	2020 (2021)	68.0	5,000	1.1	1000
Komatsu Mining	HQ/Manufacturing Campus	WI	2018 (2022)	84.5	400	0.3	650

Notes: This table presents the details of the subsidy deals in the survey sample. Each state's survey asks the respondents questions about one recently announced subsidy deal. The table includes details about the deal: the firm name, type of project, when the project was announced, the size of the subsidy, the number of jobs promised at the new establishment, and the size of the investment planned. The sample size in each state is also included. Section B.2 lists the survey questions.

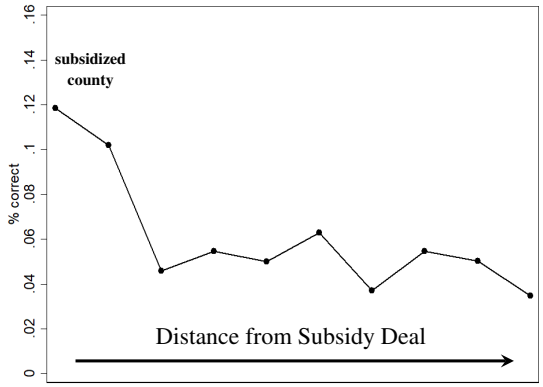
B.1 Survey Descriptives

Table B.2: Survey Respondent Demographics

State	Georgia	Kentucky	New York	Texas	Wisconsin
Age	47.71	49.08	48.43	46.70	49.97
High school	0.30	0.36	0.31	0.32	0.33
College (BA)	0.30	0.24	0.37	0.30	0.32
Female	0.53	0.52	0.53	0.52	0.52
White	0.59	0.90	0.63	0.51	0.87
Black	0.32	0.06	0.14	0.13	0.06
Hispanic	0.04	0.02	0.14	0.30	0.04
Married	0.43	0.49	0.40	0.44	0.48
Family Income ($1,000)	64.05	56.24	71.45	64.36	60.68
Full-Time Employed	0.36	0.34	0.34	0.35	0.37
Retired	0.19	0.23	0.22	0.19	0.24
Voted for Trump in 2020	0.39	0.50	0.32	0.40	0.44
Voted for Biden in 2020	0.42	0.30	0.54	0.36	0.44
Didn't Vote in 2020	0.18	0.19	0.14	0.23	0.11

Notes: This table presents the demographics of the survey respondents, by state. Income is reported in buckets and has the highest non-response rate (11%). I use the midpoint of those buckets. The sample is nationally representative by age, race, gender, and education, for U.S. adult residents.

Figure B.1: Voter Knowledge of Jobs Promised by Distance from Deal



Notes: This figure shows how voter knowledge of the details of a recent subsidy deal changes with the voter distance from the deal. Distance is measured in deciles, in order to normalize across state geographies. The survey asks: "To the best of your knowledge, when it was announced in [year] that [firm name] would build a plant in [location], how many jobs did [firm name] plan to hire at the new plant?", and gives 4 choices with bins of jobs promised as well as "I am not sure." The question about the jobs promised is only asked to respondents who correctly identify the firm. The figure shows the unconditional share of correct responses.

Table B.3: Correlation between Survey Responses and Respondent Characteristics

	Q3: Identify Subsidized Firm		Q8: Positive about Subsidy	
	(1)	(2)	(3)	(4)
Subsidized County	0.24***	0.26***		
	(0.04)	(0.05)		
Within 25 Miles of Subsidy	0.16**	0.16**		
	(0.06)	(0.06)		
Within 50 Miles of Subsidy	0.06*	0.04		
	(0.03)	(0.03)		
Within 100 Miles of Subsidy	0.01	-0.01		
	(0.02)	(0.02)		
Respondent has BA	0.05**	0.02	0.08***	0.05*
	(0.02)	(0.02)	(0.02)	(0.02)
Well-informed about State and Local Issues	0.06***	0.06**	0.13***	0.10***
	(0.02)	(0.02)	(0.02)	(0.02)
County Unemployment Rate	0.00	0.01	0.01	0.02
	(0.01)	(0.01)	(0.01)	(0.01)
Job Creation is Top Issue	-0.01	-0.00	0.12***	0.13***
	(0.02)	(0.02)	(0.02)	(0.02)
Correctly Identified Subsidized Firm			0.16***	0.13***
			(0.03)	(0.03)
Observations	4,300	3,786	4,300	3,786
R-squared	0.25	0.26	0.06	0.08
Income and Age Brackets		×		×
Dependent Variable Mean	0.25	0.25	0.57	0.58

Notes: This table shows the correlation between responses to two survey questions and the respondent characteristics. In Columns (1) and (2) the dependent variable is a dummy variable equal to 1 if the respondent correctly identifies the name of the subsidized firm (Question 3). Columns (3) and (4) the dependent variable is a dummy variable equal to 1 if the respondent answers Question 8 affirmatively: "Yes, but only the residents that get jobs at [firm name] are better off" or "Yes, on net, residents are better off." Regressions include state fixed effects and survey weights. Columns (2) and (4) include controls for respondent age and income.

Table B.4: How did you learn about [firm name]'s plans to locate in [state]?

	% of respondents
I heard about it on the local news or read about it in the newspaper.	60.29
I heard about it on social media.	17.14
I heard about it from a friend or family member.	10.14
I heard about it in a political campaign.	1.88
Other.	10.55
N = 1,074	

Notes: This table reports results on how voters learn about subsidy deals in their state. The survey question is: "How did you learn about [firm name]'s plans to locate in [state]?" Only respondents that correctly identified the subsidized firm are asked this question, which is why the sample size is 1,074 instead of 4,300. For more information on the survey see Appendix B.

B.2 Survey Questions

Background:

1. On a scale of 1-5, how informed are you about state and local economic growth policies?

   1 Not at all informed. I do not follow state and local news.
   2
   3 Somewhat informed. I occasionally listen to local news and read the local paper.
   4
   5 Extremely well-informed. I listen to local news and read local paper every day.

2. What are the three most important issues to you in deciding how to vote for governor: taxes, job creation, government corruption, the environment, the state budget, education, infrastructure, or health care? Please rank from (1) most important, to (3) third most important.

Specific Subsidy Deal:

3. To the best of your knowledge, which of the following companies is building an electric car battery plant in Commerce, Georgia?

   (a) Panasonic
   (b) SK Innovation
   (c) Samsung
   (d) A123 Systems
   (e) I am not sure.

4. To the best of your knowledge, did the state or local government offer SK Innovation any specialized incentives to locate its plant in Georgia? This could be a tax credit that lowers the tax bill for the company, a direct grant given to the company, or land, buildings, and equipment given to the company free of cost.

   (a) Yes.
   (b) No.
   (c) I am not sure.

5. To the best of your knowledge, what was the value of the incentive offered to SK Innovation?

   (a) Less than $50 million.
   (b) $50-$99 million.
   (c) $100-$249 million.

(d) $250-$499 million.
(e) $500 million or more
(f) I am not sure.

6. To the best of your knowledge, when it was announced in 2019 that SK Innovation would build a plant in Georgia how many jobs did the battery manufacturer plan to hire at the new plant?

(a) 0-499.
(b) 500-999.
(c) 1,000-1,999.
(d) 2,000 or more.
(e) I am not sure.

7. How did you learn about SK Innovation's plans to locate in Georgia?

(a) I heard about it on the local news or read about it in the newspaper.
(b) I heard about it from a friend or family member.
(c) I heard about it on social media.
(d) I heard about it in a political campaign.
(e) Other.
(f) I don't recall hearing about it.

8. Do you think that offering an incentive for SK Innovation to locate a battery plant in Commerce, Georgia makes local residents better off?

(a) Yes, but only the residents that get jobs at SK Innovation are better off.
(b) Yes, on net, residents are better off.
(c) No, this does not make residents better off.
(d) I am not sure.

Knowledge of other state policies, past voting behavior:

9. In the past 10 years, how many specialized tax incentives or subsidies worth over $100 million has your state offered to private companies?

(a) 1 to 2.
(b) 3 to 5.
(c) 6 to 10.
(d) More than 10.
(e) I am not sure.

10. Besides offering large specialized tax incentives to specific firms, which economic development policies does the state government use to attract firms and create jobs? Select all that apply.

    (a) A low corporate tax rate relative to other states.
    (b) A job creation tax credit for new jobs created in Georgia.
    (c) A research and development tax credit for research and development activities conducted in Georgia.
    (d) Grants to reimburse firms for job training expenses.
    (e) None of the above.

11. In the past 5 years, has the state or local government used specialized incentives to try to attract private companies to the city or county where you live?

    (a) Yes, and the government was successful in attracting new companies.
    (b) Yes, but the government was not successful in attracting any companies.
    (c) No, the government did not try to attract companies to my area.
    (d) I am not sure.

12. To the best of your knowledge, which education policies does your state government use to increase educational attainment and/or prepare students for the workforce? Select all that apply.

    (a) Universal Pre-Kindergarten: Free pre-K for 3 and 4 year old children.
    (b) Investments in broadband infrastructure to increase internet connectivity for public schools and students across the state.
    (c) Scholarship program and/or tuition assistance for low-income college students attending state universities.
    (d) Free community college for all in-state students.
    (e) None of the above.

13. Did you vote in the last gubernatorial election?

    (a) Yes, I voted for Brian Kemp.
    (b) Yes, I voted for Stacey Abrams.
    (c) No, I did not vote.

C Extended Voting Analysis

In this appendix I provide robustness checks for the main analysis in the text. I also show results on the relationship between subsidy-giving and incumbent support using cross state variation, and then at the district level in state legislature races. Then, I calculate the persuasion rate implied by the baseline vote share results.

First, I show some additional descriptive statistics about the control group. Table C.1 shows the characteristics of subsidy deals that were awarded to firms in winning counties, and the characteristics of deals that were awarded to firms that the runner-ups competed for (the control group).

Table C.1: Control Group: Subsidy Characteristics

	Control		Treated	
	Mean	Med.	Mean	Med.
Subsidy ($M)	157.4	65.7	151.2	59.4
Jobs Promise	851.3	500.0	877.7	600.0
Investment ($M)	883.0	313.6	1567.9	227.7
Manufacturing	0.6	1.0	0.6	1.0

Notes: This table displays the characteristics of subsidy deals that were awarded to firms in winning counties, and the characteristics of deals that were awarded to firms that the runner-up counties competed for, but ultimately did not win. The characteristics include the size of the subsidy, the number of jobs promised by the firm, the size of the investment planned by the firm, and whether or not the firm is in the manufacturing sector. Data collected by the author.

C.1 Robustness

Table C.2 repeats the main analysis, but drops the runner-up locations from which firms *relocated*. The argument that runner-ups are not treated because the voters in the location do not know they are runner-ups in a subsidy competition is no longer valid if the subsidy competition is for an existing plant that then shuts down or moves employment. There are only 20 such events in the sample, but in this table I drop those runner-ups, which slightly decreases the sample size. However, the results are almost identical to the results in the main text when I make this restriction (Columns (1), (2) and (3) should be compared with Columns (2), (3) and (4) in Table 4). Further, Column (4) shows the effect of being a location that experiences a firm choosing to relocate or move a significant amount of employment to another locality. Here, I drop winning counties. The effect of losing existing plant, is negative but the standard errors are very large.

Table C.3 shows that there is not more advertising in subsidy deal winning counties, and Table C.4 shows that the voting results are not driven by turnout. Table C.5 shows the spillover effect: the effect in the counties that neighbor the treated county. Table C.6 shows heterogeneous effects by location characteristic. There are no differential effects by governor party, or the economic characteristic of the location, as measured by unemployment, housing price, or housing supply. Table C.7 replicates Table 7 in the main text, but without sector FE, to allow for a slightly larger sample of treated counties.

Table C.2: Subsidy-Giving and Incumbent Vote Share, Dropping Relocations

Control Group:	All Counties	Runner-ups		All Counties
	(1)	(2)	(3)	(4)
Subsidy Deal Winner	1.04*	2.39**	2.83**	
	(0.45)	(0.78)	(0.99)	
Relocation				-1.44
				(1.46)
Adjusted R-squared	0.79	0.77	0.78	0.87
Observations	3,587	224	195	1,150
# Subsidy Wins	121	120	95	
# Relocations				20

Notes: This table reports the estimates of the effect of subsidy-giving on incumbent vote share, repeating the analysis in Columns (2)-(4) in Table 4. However, in this table the runner-up counties that feasibly lost employment by nature of being runner-up (i.e. the plant existed in the runner-up and moved employment to another locality) are dropped. The results from the main text persist.

Table C.3: Advertising in Subsidized Counties

	Outcome: log(Ad Spending)				Outcome: log(Number of Ads)			
Control:	All DMAs		Runner-ups		All DMAs		Runner-ups	
Subsidy Deal Winner	0.62**	-0.23	-0.11	0.05	0.49***	-0.16	0.13	-0.02
	(0.24)	(0.13)	(0.39)	(0.19)	(0.14)	(0.10)	(0.17)	(0.11)
R-squared	0.59	0.90	0.68	0.96	0.57	0.83	0.75	0.93
Observations	135	135	43	43	213	213	78	78
State × Year FE	×	×	×	×	×	×	×	×
Demographic Controls		×		×		×		×

Notes: This table shows the ad frequency and spending in subsidized counties. The specification includes state and year fixed effects, and the demographic and economic variables listed in Table 3. Data on state election advertising from Goldstein and Rivlin (2005); Goldstein, Niebler, Neiheisel and Holleque (2011); Fowler and Ridout (2017).

Table C.4: Turnout Results

	County				Commuting Zone			
Control Group:	All Counties		Runner-ups		All CZs		Runner-ups	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Subsidy Deal Winner × Post	0.03	0.02	0.00	0.18	0.01	-0.09	-0.27	-0.26
	(0.17)	(0.18)	(0.29)	(0.29)	(0.11)	(0.11)	(0.17)	(0.19)
Adjusted R-squared	0.97	0.97	0.96	0.96	0.92	0.92	0.92	0.94
Sector FE				×				×
Observations	8,084	7,070	484	422	1,524	1,340	376	328

Notes: This table reports the estimates of the effect of subsidy-winning on changes in turnout (corresponding to Equation 2). Columns (1)-(4) are the county-level estimates, and Columns (5)- (8) are the commuting zone. These specifications include both county/CZ-governor and State × Year fixed effects. The governor is the incumbent, by definition, in the post election but not the incumbent in the previous election. Standard errors are clustered at the state level and included under the coefficient estimates, in parentheses. Mean turnout in this sample of gubernatorial elections is just under 30%.

Table C.5: Spillover Analysis: Effect on Neighboring counties

	(1)	(2)	(3)
Winner × Post	0.62	0.71*	0.69*
	(0.32)	(0.32)	(0.32)
Adj. R-squared	0.95	0.95	0.95
County, State-Year FE	×	×	×
Unemployment		×	
All Demographic Controls			×
Observations	2,184	2,184	2,142

Notes: This table replicates the difference-in-differences analysis in Table 4, but takes the neighboring counties to be treated, excluding the winning and runner-up counties. Analysis is at the county level. Therefore, it compares the neighbors to the treated county with the neighbors of the runner-up county, in order to measure the "spillover" of the treatment effect. The results show that the spillover is about 1/3 of the treatment effect in the winning county.

Table C.6: Heterogeneity by Location Characteristic

	Change in Vote Share			
	(1)	(2)	(3)	(4)
Subsidy Deal Winner	5.16**	4.96*	12.28*	2.71*
	(1.79)	(2.02)	(4.71)	(1.05)
× Republican	-3.44			
	(1.99)			
× Unemployment Rate		-0.29		
		(0.22)		
× Housing Prices			-1.89*	
			(0.85)	
× Housing Supply				-0.24
				(0.85)
Observations	211	211	211	143
Adjusted R-squared	0.79	0.80	0.79	0.84

Notes: This table shows the heterogeneous effects of the subsidy win by the characteristics of the winning location. The specification corresponds to Equation 1, the outcome variable is the change in vote share for the incumbent, and the equation is estimated at the county level, with Sector FE (Table 4, Col (4)). Standard errors are clustered at the state level.

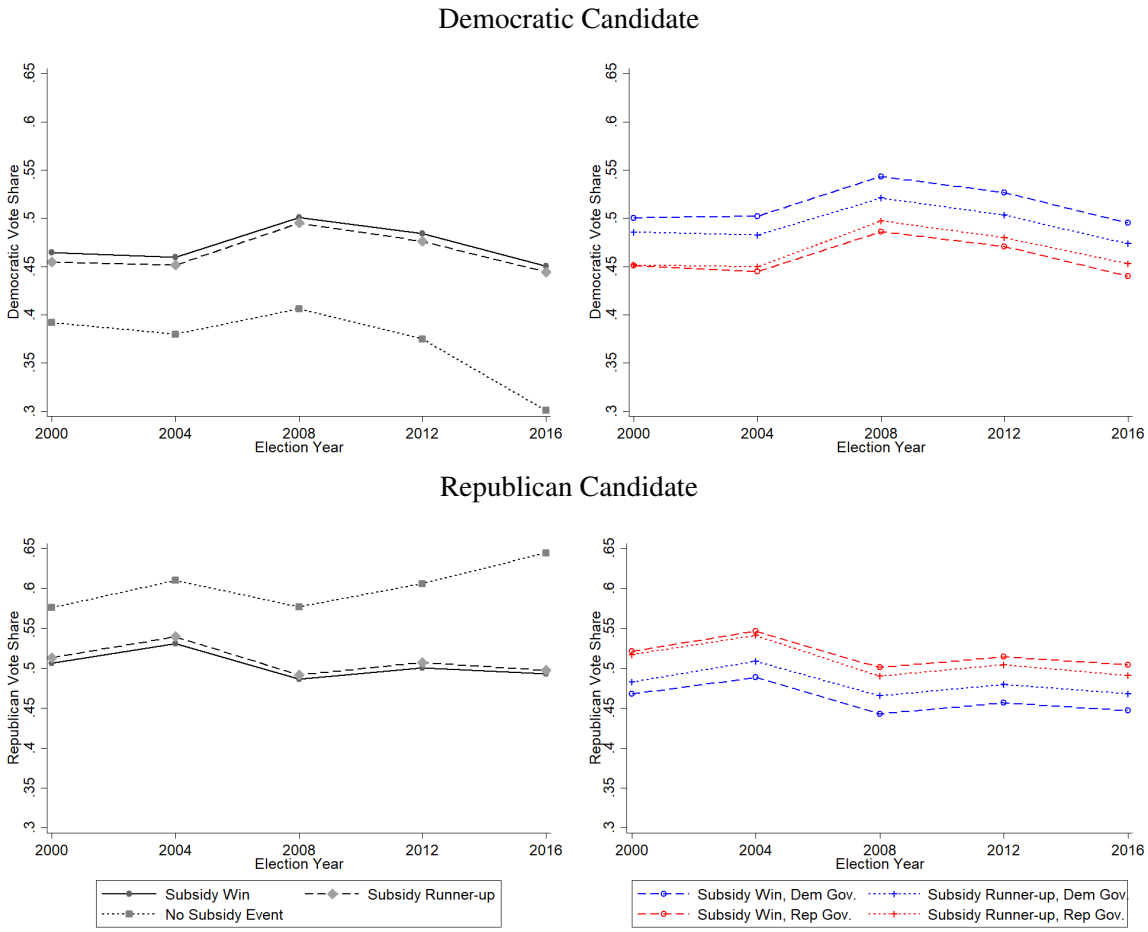
Table C.7: News Coverage, Sentiment, and Heterogeneous Effects: Larger Sample

	Change in Vote Share					
	(1)	(2)	(3)	(4)	(5)	(6)
Subsidy Deal Winner						
× log(Jobs Promised)	0.36**					0.06
	(0.13)					(0.19)
× Trade/Services		1.89				
		(1.26)				
× Manufacturing		2.97**				
		(1.01)				
× log(Articles about Firm)			0.31**			0.16
			(0.10)			(0.16)
× log(Articles about Deal)				0.57		-1.08*
				(0.28)		(0.49)
× Sentiment of Deal News Coverage					2.63**	4.26*
					(0.89)	(1.87)
Observations	246	246	246	246	246	246
Adjusted R-squared	0.79	0.79	0.79	0.78	0.79	0.79

Notes: This table replicates Table 7 without the sector FE, which slightly increases the number of subsidy deals that can be included in the analysis. The results are consistent with the results under the more restrictive sample selection in the main text.

C.2 Presidential Pre-trends

Figure C.1: Presidential Vote Share "Pre-Trends"



Notes: These 4 figures show the presidential vote share for winning and runner-up counties. The top two figures show the vote share for the Democratic candidate, while the bottom two figures show the vote share for the Republican candidate. The figures on the right separate out the vote share by the party of the governor at the time of the subsidy event. In each figure the solid line tracks runner-up counties and the dashed line tracks winning counties. The dotted line, in the figures on the left, are the counties that are neither a winner or a runner-up during the sample period.

C.3 State Level Governor Results

Table C.8 shows the result of estimating Equation 3, which is the state-level equivalent of Equation 1. The change in percent vote for the incumbent, g, in state s, and election year e, is the dependent variable:

$$\Delta\%\ \text{vote}_{gse} = \alpha + \beta \text{win}_{gs[e-1,e]} + \gamma X_{gse} + \eta_e + \varepsilon_{gse}, \tag{3}$$

and the coefficient of interest is β, the correlation between winning a subsidy during the term (between the last election the governor won, in $e-1$, and the current election, in e). These results cannot be interpreted as

causal, as the control group is elections of incumbent governors in other states, so there is no way to control for unobservables about the governor's type. However, we can see here that subsidy wins are correlated with larger increases in incumbent support, although the results are imprecise.

Election-level advertising spending is an additional control in the state level analysis. The Wesleyan Media Project and Wisconsin Advertising Project host political advertising data sets for Gubernatorial, Senate, House, and Presidential elections (Fowler and Ridout, 2017; Goldstein and Rivlin, 2005; Goldstein, Niebler, Neiheisel and Holleque, 2011). This data include not only the air date, sponsor, location, and cost of each ad as well as the content of the ads.

Table C.8: Subsidy-Giving and State-Level Vote Share

	All Incumbent Elections		
	(1)	(2)	(3)
Subsidy Deal Winner	2.19	1.06	1.41
	(2.06)	(2.16)	(2.32)
State Characteristics:			
State Unemployment (%)	-0.53	-0.60	0.41
	(0.86)	(0.89)	(1.03)
% Vote in Previous Election			
Corporate Tax Rate (%)		-0.41	-0.47
		(0.44)	(0.52)
Top Personal Income Tax Rate (%)		-0.04	-0.02
		(0.33)	(0.32)
% Revenue Collected from Prop. Tax		-0.16	-0.07
		(0.12)	(0.14)
Change in State Manuf. Employment (%)		0.08	0.03
		(0.09)	(0.11)
Election Characteristics:			
log(# TV Ads in Race)			-1.77*
			(0.73)
# of Challengers in Race			-0.55
			(0.70)
R-squared	0.14	0.20	0.27
Observations	122	122	101

Notes: Here are the within state changes in support for the incumbent governors who win subsidies during their terms ("Subsidy Deal Winners"), compared to the within state changes in support for the incumbents who do not win any subsidies during the term. Election year fixed effects are included in each specification. Data on state characteristics are from U.S. Bureau of Economic Analysis (1967-2017); County Business Patterns (1997-2017); CSG Book of the States (1950-2018). Data on state election advertising from Goldstein and Rivlin (2005); Goldstein, Niebler, Neiheisel and Holleque (2011); Fowler and Ridout (2017). Data on subsidy deals collected by the author.

A vote share effect of 1.41 translates to 27,000 votes in the mean state. Note that this is consistent with the aggregate analysis in the paper (Section 5).

C.4 State Legislature Results

I repeat the analysis for elections for incumbent state legislators. Here the specification is at the district level, which is the level of analysis for which I have data for state legislature elections.[49] Much like in the state level gubernatorial races, because the data is at the district level, I cannot compare voting results within a single legislator. Instead, I compare across incumbent state senators (or state house representatives) that have won subsidies in their district with state senators in the same state and year running for re-election in districts without subsidies.

Table C.9: State Legislature Vote Share Results

	State Senate			State House		
	(1)	(2)	(3)	(4)	(5)	(6)
Change in Vote Share:						
District Subsidy Win	1.65	-0.16		0.50	0.30	
	(0.94)	(1.29)		(0.60)	(0.74)	
District Subsidy Win × Same Party		3.14*			0.72	
		(1.53)			(0.76)	
State Subsidy Win × Same Party			2.30**			-0.04
			(0.72)			(0.30)
Observations	694	694	3,041	2,419	2,419	14,308
R-squared	0.29	0.29	0.15	0.15	0.16	0.08
Diff-in-Diff Estimate:						
District Subsidy Win × Post	0.83	-0.79		0.53	-0.34	
	(0.65)	(1.14)		(0.36)	(0.61)	
District Subsidy × Same Party × Post		3.07*			1.38	
		(1.45)			(0.77)	
State Subsidy × Same Party × Post			0.53			-0.10
			(0.67)			(0.28)
R-squared	0.92	0.92	0.91	0.96	0.96	0.96
Vote Share Mean	65.42		61.07	57.10		51.13
	(14.89)		(14.76)	(22.20)		(21.28)
Runner-up Control Group	×	×		×	×	
State Legislator, Year FE	×	×	×	×	×	×
Observations	1,484	1,484	6,848	4,906	4,906	34,452

Notes: This table reports the estimates of the effect of subsidy-winning on within district changes in state legislator's vote share, and the difference-in-differences estimates of the effect of subsidy-winning on vote share, equation. The results are split for the upper and lower houses of the state legislature, labeled "Senate" and "House", respectively. State legislators in districts that overlap with subsidy-winning counties are attributed a "District Subsidy Win." Columns (2) and (4) allow for an interaction of the district subsidy win with a dummy for whether or not the legislator is in the same party as the governor. In Columns (1), (2), (4) and (5) the control group is the set of districts that overlap with counties that were runner-ups in subsidy competitions. In Columns (3) and (6) the sample is restricted to all districts in the state that did not win subsidy competitions, to measure the correlation between election outcomes for same-party legislators and a subsidy win elsewhere in the state. Columns (1) - (6) on the top panel include state times year FE and the demographic controls from Table 3. The bottom panel is the difference-in-differences result estimates which include state legislator and year fixed effects. Data on state legislative election returns from Klarner (2018).

[49]The sample for state legislative elction returns ends in 2016, and is from Klarner (2018).

Table C.9 presents the results. Here I have pared down the specifications, because I am also interested in the affiliation of state legislators with the incumbent governor. Therefore, the first three specifications are for the state senate and the second three are only for the state house (for which there are many more members). The control group is the legislators in the runner-up counties, which is mapped to a district. So, a subsidy winning district is any district that overlaps with a subsidy winning county, and a runner-up district is any district that overlaps with a runner-up county.

There is a very small positive effect of subsidy-winning for state senators, but Specification (2) shows that this result is driven entirely by state senators who share the party of the governor. State senators in the opposing party do not receive any vote share bump for subsidy-winning. These results do not hold as strongly for the lower house of the legislature, which might be because there are many more state house members.

C.5 Persuasion Rate

Following DellaVigna and Kaplan (2007), I calculate the persuasion rate: the percent of receivers (voters) that change their behavior, among those that receive a message and are not already persuaded. The formula follows:

$$f = 100 \times \frac{y_T - y_C}{e_T - e_C} \frac{1}{1 - y_0},$$

where $y_T - y_C$ is the treatment effect (the difference in vote share between the treatment and control group), $e_T - e_C$ is the exposure (the voters who receive the message), and y_0 is the voters that would vote for the incumbent if there were no subsidy. The treatment effect is the 1.7 percentage point increase in vote share in the commuting zone (Table 4). The exposure effect is the difference between the voters who know about the subsidy in the treated area ($e_T = 49.1\%$)) and the voters who know about the subsidy in the control area ($e_C = 20.6\%$)), which I know from the survey (Figure 3(a)). Lastly, I take the 54.5% vote share in the control group as y_0.[50]

$$f = 100 \times \frac{0.017}{0.285} \frac{1}{0.455} = 13.1\%$$

This persuasion rate is similar to the effect of news media on vote share in DellaVigna and Kaplan (2007) (11.6%).

[50] Alternatively, one could use the 53.9% vote share of subsidy winning counties in the *previous* election (Table 3):

D Alternative Mechanism: Campaign Finance and Subsidy-Giving

I test two related hypotheses relating to a campaign finance channel, and I find no evidence of either. First, in Slattery, Tazhitdinova and Robinson (2022) we exploit exogenous variation in corporations' abilities to spend in elections created by the 2010 *Citizens United v. Federal Election Commission* Supreme Court ruling to identify the effect of corporate campaign spending in state elections on state level incentive spending for firms. We find no effect of increased corporate spending on any subsidy outcomes.

Here, I test whether local stakeholders who expect to benefit from firm arrival (i.e. related businesses, property owners, unions) are more likely to support the incumbent's campaign. It may be that local stakeholders are more likely to support the campaign of the incumbent, due to the subsidy deal. This increase in campaign funds from individuals and businesses in the subsidized locality would translate to an increase in total campaign funds, which could be used for advertising or voter outreach in any part of the state.

Table D.1 present the results of the difference-in-differences specification (Equation 2), with campaign contributions to the incumbent as the dependent variable instead of vote share. Columns (1) - (3) use individual campaign contributions as the dependent variable, while Columns (4) - (6) use corporate campaign contributions, both in $1,000s. Individual campaign contributions to the incumbent are potentially slightly larger in the subsidized county, but a zero effect is within the 95 percent confidence interval.

Table D.1: Campaign Contributions from Individuals and Corporations in the Subsidized County

	Individual			Corporate		
	(1)	(2)	(3)	(4)	(5)	(6)
Subsidy Deal Winner × Post	10.57	11.24	9.31	1.97	2.44	1.74
	(15.46)	(15.24)	(16.20)	(11.83)	(11.67)	(12.23)
County Unemp. Control		×			×	
All Demographic Controls			×			×
Observations	536	536	524	536	536	524
R-squared	0.93	0.93	0.94	0.94	0.95	0.95

Notes: This table present the results of the difference-in-differences specification (Equation 2), with campaign contributions to the incumbent as the dependent variable instead of vote share.Columns (1) - (3) use individual campaign contributions as the dependent variable, while Columns (4) - (6) use corporate campaign contributions, both in $1,000s. Data on county-level campaign contributions is sourced from Bonica (2016) and National Institute on Money in Politics (2000-2018). The average amount of campaign contributions to governors, at the county level, is $226,200 for individual contributions, and $144,600 for corporate.

E Are Election Year Subsidy Deals Different?

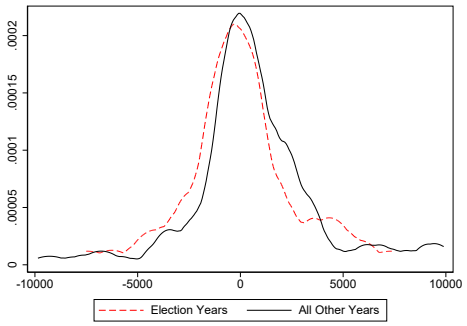
One explanation for the larger effect of election year subsidy deals is that they are different from non-election year subsidy deals. The firms subsidized in election years may be promising more jobs, planning a larger investment, or is predicted to have a greater employment effect in the industry as a whole. The governor just tries harder to attract higher quality firms in the election year.

Table E.1(a) shows the characteristics of subsidy deals, split out by election year and whether the governor is eligible run for re-election. For incumbent governors running for re-election, the bottom two rows, subsidies announced in election years are slightly larger in size than other years, at $151 million compared to $141 million, and slight larger in jobs promised, with about 100 more jobs promised at the mean. However, at the median, the non-election year subsidies promise slightly more jobs. Investment promises look the same across the two groups as well. The figure on the right shows the distribution of pairwise employment estimates for each subsidy deal. This is from Slattery and Zidar (2020), where we estimated the difference in employment in the three digit NAICS industry of the subsidized firm, between the winning and runner-up location before and after the subsidy deal. There is no noticeable difference in estimated employment, if anything the non-election year subsidies have more industry employment in the local area.

Figure E.1: Are Election Year Deals Different?

Can Run	Election Year	N	Subsidy ($M) Mean	Subsidy ($M) Med.	Jobs Promised Mean	Jobs Promised Med.	Investment ($M) Mean	Investment ($M) Med.
		104	136	72	1,457	893	629	295
	×	31	97	57	1,579	886	424	165
×		213	141	49	1,422	1,000	1,193	157
×	×	62	151	67	1,519	950	1,034	220

(a) Subsidy Deals by Year



(b) Diff-in-Diff Employment Estimates

Notes: The table on the left shows the characteristics of subsidy deals that are announced under term-limited governors ("Can Run = 0"), and governors who can run in the next election ("Can Run = 1"), in election years and all other years. Data on subsidy deals collected by the author, data on term limits from National Conference of State Legislatures (2019). The figure on the right shows the distribution of pairwise employment estimates for each subsidy deal. This is from Slattery and Zidar (2020), where we estimated the difference in employment in the three digit NAICS industry of the subsidized firm, between the winning and runner-up location before and after the subsidy deal. This is limited to subsidy deals announced in 2012 or earlier, so that we had sufficient number of post years for estimation.

F Job Creation

Table F.1 shows the effect of winning a subsidy on job creation, at the time of the incumbent's election. There is no employment effect. This is likely due to timing—the firm has not had sufficient time to build the plant and hire all of the workers. This corroborates the results on the mechanism. It is the salience of the subsidy deal, not the direct effect of job creation, that is driving the vote share effect.

Table F.1: Subsidy-Giving and Job Creation

	County			Commuting Zone		
	(1)	(2)	(3)	(4)	(5)	(6)
Employment (Logs):						
Subsidy Deal Winner × Post	-0.01	-0.01	-0.00	0.00	0.00	0.00
	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)
Employment (Levels):						
Subsidy Deal Winner × Post	-3,280.47	-3,415.46	-3,189.57	4,800.10	4,857.26	1,567.04
	(3,914.60)	(3,916.94)	(9,562.94)	(9,944.44)	(9,666.07)	(9,139.85)
Adj. R^2	1.00	1.00	1.00	1.00	1.00	1.00
Area, State-Year FE	×	×	×	×	×	×
Unemployment		×			×	
All Demographic Controls			×			×
Observations	542	542	540	404	404	404

Notes: This table reports the difference-in-differences estimates of the effect of subsidy-winning on job creation (Equation 2, but using employment as the outcome variable). I use both log(employment), in the top panel, and total employment, in the bottom panel. Columns (1) - (3) present the results from county level regressions while Columns (4) - (6) show the commuting zone level results.

G News Data and Sentiment Analysis

G.1 ProQuest and NewsBank

I use two sources to collect data on local news coverage: ProQuest (2021) and NewsBank (2023). At the time of the data collection the ProQuest (2021) title list included 726 newspapers in the United States, in 484 unique cities. In the subsidy-giving period of interest (2000-2018) this is 591 newspapers in 387 unique cities (spanning 49 states and DC).[51] The analysis of tax credit and job training programs was completed 2 years after the subsidy news analysis. At this point, I had access to NewsBank (2023), which has more newspapers in the sample. At the time of the search, the NewsBank (2023) title list included 974 newspapers in the United States. This is a larger sample than ProQuest (2021), and therefore should bias against me finding more news coverage of subsidy deals. On the contrary, even given the larger sample of newspapers, I find that tax credit and job training programs receive significantly less news coverage.

G.2 Tax Credit and Job Training Program "Events"

I use the Bartik (2023) incentive database and the data on R&D and Job Creation tax credit enactments from Wilson (2009) and Chirinko and Wilson (Forthcoming) to assemble a list of "events" for non-subsidy economic development programs. This includes the enactment and major expansion of job training programs, job creation tax credits, investment tax credits, and research and development tax credits, over the period of interest (2000-2018). The resulting list has 35 enactment events that I can verify with state legislation. I also collect data on the size of these programs, over a 5 year span (subsidy deal amounts are normalized over a 10 year period, but the tax credit programs can have a shorter horizon). A few of these events happen in the same state and same year (i.e. New York enacts the "Excelsior Jobs Program" in 2010, which includes an R&D tax credit, job creation tax credit, and investment tax credit). I will treat this as one event, for the purpose of collecting news coverage.

Table G.1 below shows the name of each program, state, the year of enactment, the type of program, and the budget, to my best estimate. For the news article search, I search the name of the program, in newspapers located in the state of the program enactment, in the window of one year before and one year after the year of enactment. I then read the articles in the list to make sure they are actually discussing the program in interest. A common false positive is that articles about a federal R&D tax credit or federal jobs training program are included.

[51] There are no newspapers in ProQuest (2021) from Alaska during the sample period, but also there are no subsidy deals in Alaska.

Table G.1: Tax Credit and Job Training Programs

Name	State	Year	Type	Budget ($M)
Economic Development for A Growing Economy	IL	2000	Job Creation Tax Credit	149.6
R&D Tax Credit	MD	2000	R&D Tax Credit	30.0
Investment Tax Credit	MI	2000	Investment Tax Credit	514.9
Technology Jobs and R&D Tax Credit	NM	2000	R&D and Jobs Tax Credit	17.3
Job Training Program	AZ	2001	Job Training Subsidy	75.0
Job Training Grants	IN	2001	Job Training Subsidy	60.0
Invest Nebraska Act	NE	2001	Job Creation Tax Credit	100.0
Expand Empire Zones	NY	2001	Job Creation Tax Credit	514.0
Research Expenses Credit	SC	2001	R&D Tax Credit	39.0
R&D Activities Credit	TX	2001	R&D Tax Credit	.
Hoosier Business Investment Tax Credit	IN	2003	Investment Tax Credit	275.0
R&D Tax Credit	LA	2003	R&D Tax Credit	91.5
Creating New Jobs Tax Credit	NC	2003	Job Creation Tax Credit	37.6
High Wage Jobs Tax Credit	NM	2004	Job Creation Tax Credit	33.3
Credit for Qualified Research Expenses	OH	2004	R&D Tax Credit	57.7
Job Creation Tax Credit	CT	2006	Job Creation Tax Credit	50.0
Quality Jobs Act	MO	2006	Job Creation Tax Credit	244.9
Nebraska Advantage R&D Act	NE	2006	R&D Tax Credit	10.8
FastStart	LA	2008	Job Training Subsidy	31.9
R&D Tax Credit	MI	2008	R&D Tax Credit	157.9
Job Growth Incentive Tax Credit	CO	2009	Job Creation Tax Credit	30.0
Economic Development Credit	WI	2009	Investment Tax Credit	121.3
Jobs Tax Credit	WI	2009	Job Creation Tax Credit	33.8
Excelsior Jobs Program	NY	2010	R&D, Jobs, and Investment Tax Credit	548.0
Quality Jobs Tax Credit	AZ	2011	Job Creation Tax Credit	19.7
R&D Tax Credit	MN	2011	R&D Tax Credit	40.0
R&D Tax Credit	FL	2012	R&D Tax Credit	45.0
Qualified Facility Tax Credit	AZ	2013	Investment Tax Credit	350.0
Fast Forward	WI	2013	Job Training Subsidy	15
Job Creation Fund	MN	2014	Investment and Jobs Tax Credit	54.0
R&D Sales/Use Tax Exemption	TX	2014	R&D Tax Credit	658.0

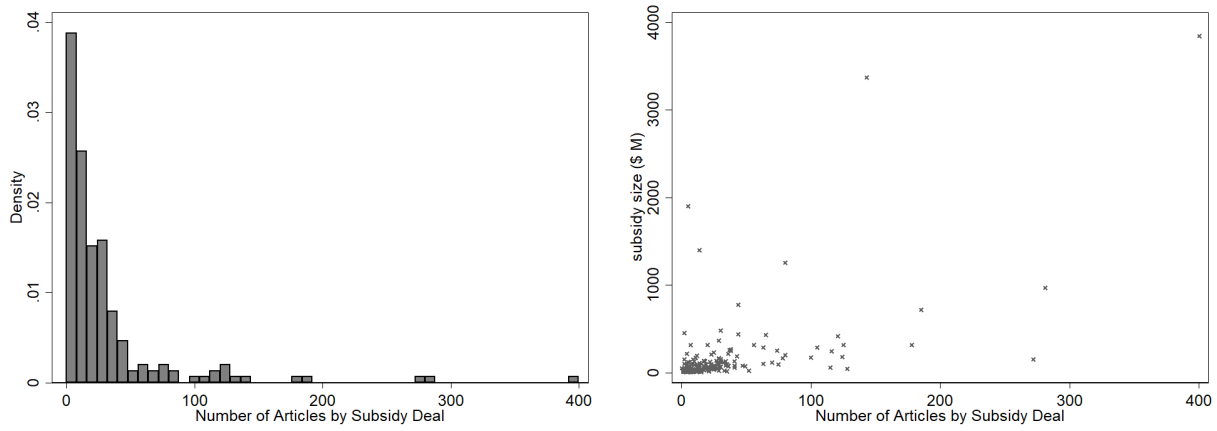
Notes: This is the list of economic development program events that I use to compare to the subsidy deal events. Sources include Bartik (2023); Wilson (2009); Chirinko and Wilson (Forthcoming) and each state's budget and tax expenditure reports. Data construction described in Appendix Section G.2.

G.3 Measuring Sentiment

I follow the methodology of Shapiro, Sudhof and Wilson (2020) to calculate the sentiment of each article. The authors compare the accuracy of many sentiment analysis models using a sample that was evaluated by humans, and find the best results combine existing lexicons. I use the lexicons suggested by their work (Loughran and McDonald, 2011; Hu and Liu, 2004), and their own sentiment-scoring model, which is particularly relevant because it is built to analyze the sentiment of economic news articles. The procedure gives each word or phrase in an article a sentiment score (after accounting for negation), and then takes the average over the article. The average over the set of articles for each deal also controls for word count of the article.

G.4 Descriptive Statistics

Figure G.1: News Coverage by Subsidy Deal

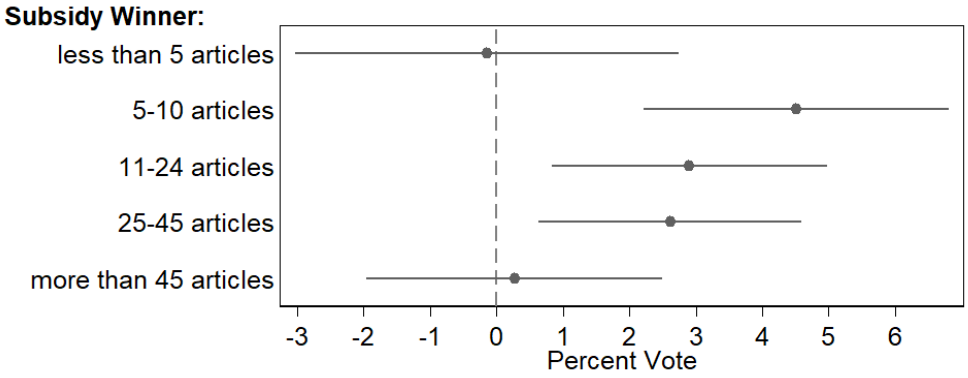


(a) Distribution of Coverage

(b) Coverage vs. Subsidy Size

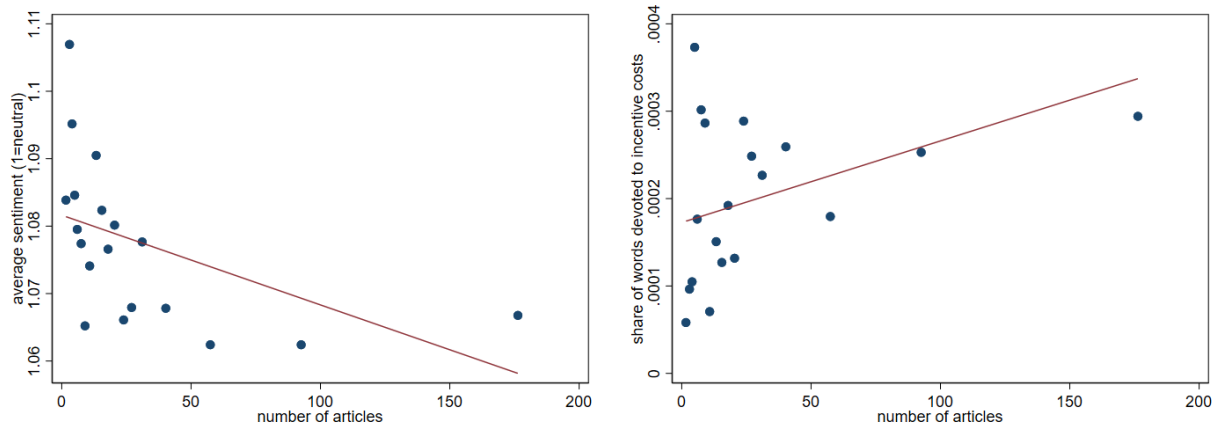
Notes: The figure on the left shows the distribution of the number of articles found about each subsidy deal. The figure on the right shows the relationship between the number of articles on the subsidy size and the size of the subsidy deal, in $M. Data on news coverage collected by the author using ProQuest (2021).

Figure G.2: Vote Change Results by News Coverage



Notes: This figure shows the point estimates and confidence intervals for the effect of subsidy-giving on vote share, by the number of news articles about the subsidy deal. The specification follows Equation 1, with treatment bins based on the amount of news coverage instead of the one subsidy win dummy. Data on news coverage collected by the author using ProQuest (2021).

Figure G.3: Sentiment and News Coverage



(a) Average Sentiment Score

(b) Share of Words Devoted to Costs

Notes: These two figures are binned scatter plots showing the relationship between the number of articles written about a subsidy deal and the "sentiment" of those articles, on average. The figure on the left uses the average sentiment score for each deal, which is calculated using the dictionary from Shapiro, Sudhof and Wilson (2020) . The figure on the right uses the the number of times the costs of the deal were mentioned, as a share of total words, as the "sentiment" measure. Data on news coverage collected by the author using ProQuest (2021).

Table G.2: News Coverage and Location, Deal Characteristics

	Number of Articles		Average Sentiment	
	(1)	(2)	(3)	(4)
log(Population)	-4.47	-1.85	-0.09	-0.26
	(2.86)	(1.91)	(0.21)	(0.20)
log(Per Capita Income)	19.45	7.45	0.72	1.18
	(18.31)	(9.85)	(1.11)	(1.07)
% of Population with BA	-0.46	0.57	0.03	-0.00
	(0.61)	(0.31)	(0.05)	(0.05)
log(Subsidy Size ($M))		14.10***		-0.99***
		(2.57)		(0.20)
Jobs Promised (1,000)		19.82***		0.07
		(4.37)		(0.10)
Observations	190	190	185	185
R-squared	0.02	0.57	0.02	0.13

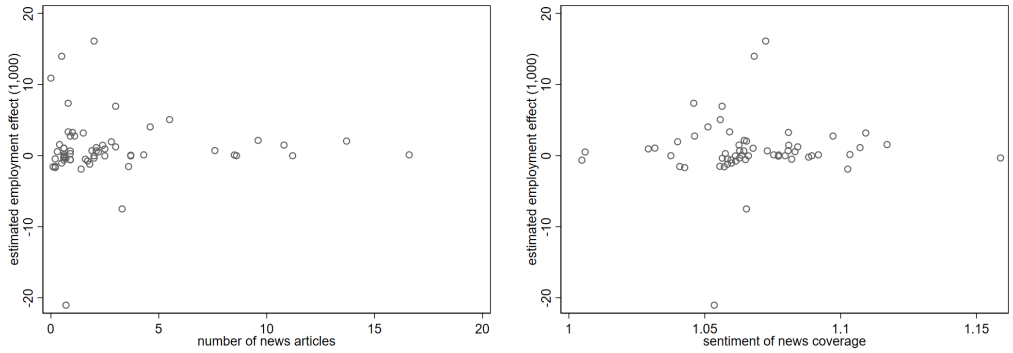
Notes: This table shows the correlations between the number of articles and sentiment of a subsidy deal with the location characteristics of the subsidized county and the deal characteristics. The number of articles is a count of articles, collected by the author from ProQuest (2021). The average sentiment is the sentiment score of those articles, calculated using the sentiment dictionary from Shapiro, Sudhof and Wilson (2020). The average sentiment is rescaled so that 100 is neutral. Data on the subsidy characteristics is collected by the author, data on population, per-capita income, and the share with a college degree are from Ruggles, Flood, Goeken, Grover, Meyer, Pacas and Sobek (2019) and U.S. Bureau of Economic Analysis (1967-2017).

G.5 News Coverage and Job Creation

I can compare the estimated and promised employment effect with the news coverage of the deal, to learn whether deals that end up creating more jobs in the local economy, as measured by future industry employment, receive more, and more positive, news coverage. Figure G.4 shows the scatter plots, which compare the news coverage variables with the realized and promised employment. Panels (a) and (b) use the difference-in-differences estimates from Slattery and Zidar (2020), which measures the industry employment 5 years after the subsidy deal announcement. Panels (c) and (d) use the number of jobs promised at the time of the deal. There is no strong relationship between employment and news coverage, with either definition.

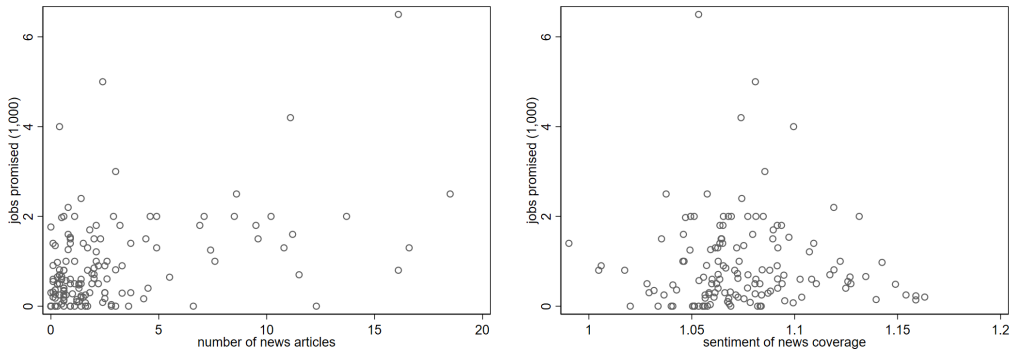
Figure G.4: Realized Jobs, Jobs Promised, and News Coverage

I. Diff-in-Diff Employment Estimates



(a) Number of Articles (b) Sentiment

II. Promised Jobs



(c) Number of Articles (d) Sentiment

Notes: This set of figures compare the news coverage variables with the realized and promised employment. Panels (a) and (b) use the difference-in-differences estimates from Slattery and Zidar (2020), which measures the industry employment 5 years after the subsidy deal announcement. Panels (c) and (d) use the number of jobs promised at the time of the deal.

G.6 Examples

In this section I list example text that is classified as positive or negative in the sentiment analysis. The text is from news articles about the 2002 Hyundai subsidy deal.

Negative articles about Hyundai:

- "Montgomery City Council discusses possible temporary sales tax increase to meet city needs such as Hyundai bond issue"
- "Committee members also questioned a $7 million contract for Gresham Smith and Partners of Birmingham for architectural and engineering services on a training facility for the Hyundai plant in Montgomery. Dixon questioned why the money should come from the Public School and College Authority, which funds education capital projects. Mabry said the Hyundai training facility is a proper use of that money because it is related to education. Mabry also said the contract does not have to go before the review committee and was sent there by mistake. He said the Public School and College Authority, made up of the governor, the finance director and the superintendent of education, has not yet approved the contract."
- "Federal environmental officials overruled objections filed by the state of Michigan and approved Alabama's air permit for the $1-billion Hyundai plant being built near Montgomery. Michigan officials opposed the permit last week, arguing that Alabama's lax environmental regulations were unfairly luring automakers to the state. An official with the Environmental Protection Agency said comments about Alabama's plan were "not significant." Jesse Baskerville, deputy director of EPA's air division in Atlanta, said EPA estimates show emissions from the Hyundai plant would not push air pollution in Montgomery County above current legal limits. Patricia Spitzley, a spokeswoman for the Michigan Department of Environmental Quality, said Michigan and other states are frustrated when automakers say they could save money by locating elsewhere. Under the Clean Air Act, companies are required to use the "best available control technology" to prevent air pollution. Regulators are supposed to document how they determined what technology was required. Alabama's proposed permit for the Hyundai plant does not show that work, Spitzley said."

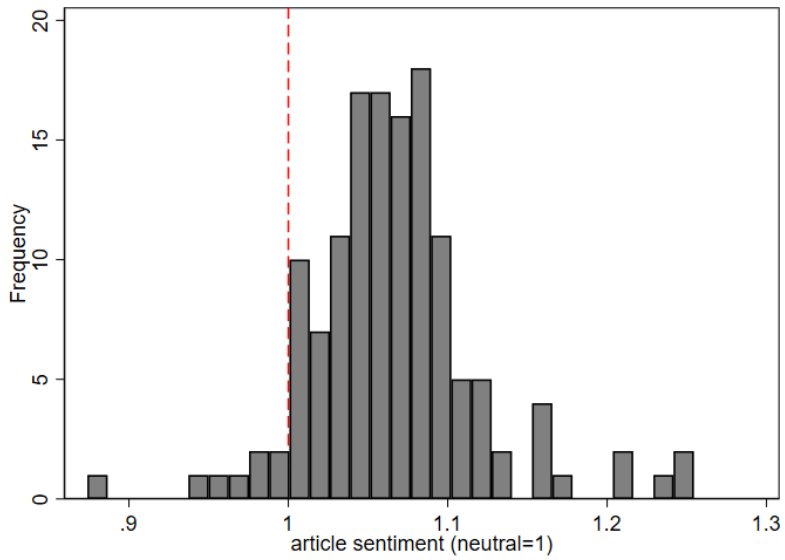
Positive articles about Hyundai:

- "Wadsworth said the Hyundai plant would create an economic boom for central Alabama because it will attract diverse industries to the area."

- "Hyundai supplier will boost economy RAVE: For the choice of Montgomery as a site by Mobis Alabama, the first major supplier for the Hyundai plant to locate here. That's another 430 jobs, which is certainly good news for the local economy."

- "We have a stable supply of land, and Montgomery is especially blessed to have a stable economy. Not only do we have our strong local businesses, but we have our state government and the military base that take out a lot of the peaks and valleys of employment. And the announcement of Hyundai just creates additional stability employment wise and job growth wise to an already strong local economy, and that bodes well for people who want to invest in property for years to come. What impact is the influx of Korean families to the tri-county area having on the area housing market since the announcement of the $1 billion Hyundai plant in south Montgomery? With the opportunity we've had to work with some of the Korean families coming in, we've seen that—at least initially—most of them are planning to rent, probably until they get the plant built and things stabilize a little bit. Then we'll probably see a shift to buying and long-term investment in the community. Does the tri-county area have the population base to support the volume of new home construction that is currently going on? Absolutely. We've seen new home absorption pick up the pace over the last few years, and if anything, we're probably approaching a shortage of new homes, subdivisions and lots as we look to 2003. There just aren't as many new developments coming on line as there were three or four years ago, and there's a lot of existing developments that have either reached the saturation point and have either sold out or are close to selling out."

Figure G.5: Within Subsidy Deal Sentiment: Hyundai (2002)



Notes: This figure shows the distribution of sentiment score for the Hyundai subsidy deal in Alabama (2002). Each article mentioning the subsidy deal receives a sentiment score, given the words used in the article. There are 137 articles in the sample. The articles are collected from ProQuest (2021) and the dictionary used to calculate sentiment is from Shapiro, Sudhof and Wilson (2020). Examples of negative and positive sentiment text are given in Appendix Section G.6.

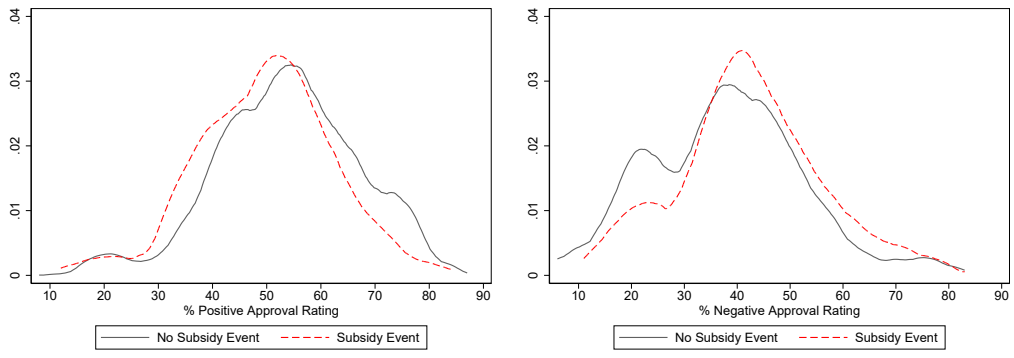
H Subsidy Timing

The voting results highlighted the importance of subsidy timing, as subsidies announced in election years had the largest effect on incumbent support in the subsidized locale. However, Table E.1 shows that governors are not more likely to give subsidies in election years than in any other year during the term. Table 1 showed that the probability of subsidy-giving increases when the unemployment rate is higher, and in this section I show that the probability of subsidy-giving also increases when governor approval ratings fall.

Data on approval ratings are from the U.S. Official's Job Approval (JARs) Database Beyle, Niemi and Sigelman (2002). This database has all approval ratings at the state level for state governors, U.S. senators, and U.S. presidents from the mid-1900s to 2010. It has the dates each survey went out into the field, the dates the survey returned, the sample size and type, and the percent positive and negative response.

The "U.S. Officials Job Approval Ratings" is available through 2010, so I can only do this analysis for the first half of the sample (Beyle, Niemi and Sigelman, 2002). By governor and poll, I aggregate the results to the month level, as I have data on the month of the subsidy announcement for each firm. First, in Figure H.1, the raw data shows subsidy events are more common in lower positive approval or higher negative approval rating periods. Then, Table H.1 shows the correlations in regression form, with governor and month fixed effects. A one standard deviation increase in the positive approval rating is correlated with an almost 14 percent decrease in the probability of subsidy-giving in that month. Again, because governors have little control over when firms arrive interested in locating in the state, I interpret these results as suggestive evidence that governors put in more effort and are more aggressive in subsidy competitions when they have lower approval ratings.

Figure H.1: Approval Ratings and Subsidy-Giving



Notes: This figure shows the distribution of positive and negative approval ratings for governors in subsidy-giving and non subsidy-giving months. Months with a subsidy event are more likely to have a higher negative approval rating, and, relatedly, less likely to have a higher positive approval rating. Data on the job approval rating is from Beyle, Niemi and Sigelman (2002).

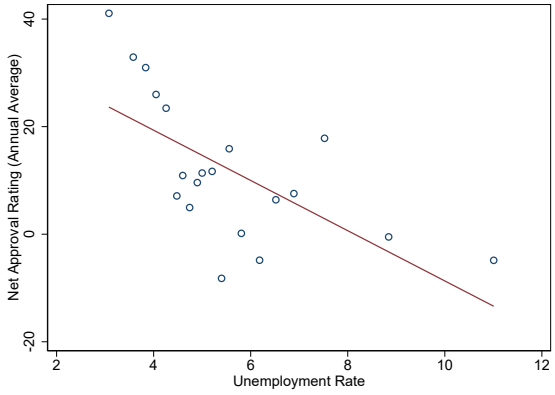
Table H.1: Subsidy-Giving and Approval Ratings

	Dep. Var: Subsidy-Giving Dummy		
	(1)	(2)	(3)
Positive Approval Rating (%)	-0.0025*	-0.0019**	-0.0018**
	(0.0012)	(0.0007)	(0.0007)
% Δ Pr(Sub-Giving) with 1 SD ⇑ in Rating:	-10.8	-14.6	-13.9
Negative Approval Rating (%)	0.0019	0.0015**	0.0013*
	(0.0010)	(0.0005)	(0.0005)
% Δ Pr(Sub-Giving) with 1 SD ⇑ in Rating:	8.5	12.2	10.5
Net Approval Rating (%)	-0.0011	-0.0009**	-0.0008**
	(0.0006)	(0.0003)	(0.0003)
% Δ Pr(Sub-Giving) with 1 SD ⇑ in Rating:	-9.7	-13.7	-12.2
Observations	1,226	2,120	2,120
Dep. Var. Mean	0.130	0.074	0.074
Governor FE	×	×	×
Balanced Sample		×	×
Month FE			×

Notes: This table shows the correlation between subsidy-giving and governor approval ratings. Data is at the month-governor level, and the dependent variable equals 1 if the governor announced a subsidy deal in that month. The top panel shows the correlation between subsidy-giving and positive approval ratings, the middle panel uses negative approval ratings, and the bottom panel uses the net approval rating. Each specification has governor fixed effects, Columns (2) and (3) fill in missing months approval data with the previous, non-missing, month, and Column (3) adds month fixed effects. Data on the job approval rating is from Beyle, Niemi and Sigelman (2002) and data on subsidy timing was collected by the author.

Figure H.2 shows that approval ratings are highly correlated with unemployment rates. Governors have higher approval ratings when the economy is doing better (and unemployment is low). Therefore, the fact that subsidy-giving and approval ratings are correlated is consistent with the result in Section 3, showing the correlation between unemployment rates and subsidy-giving. I cannot say whether it is the fact that governors want to create more jobs and get the economy back on track, or want to improve their approval rating, that leads them to put more effort into subsidy competitions in these periods, as the two forces go hand in hand.

Figure H.2: State Unemployment Rate and Governor Approval Ratings



Notes: This figure shows the correlation between the state unemployment rate and the governor's approval rating with a binned scatter plot. The y-axis is the net approval rating for the governor, which is the average over the 12 months. The x-axis is the annual unemployment rate in the state. Data on the job approval rating is from Beyle, Niemi and Sigelman (2002) and unemployment rates are from Bureau of Labor Statistics (1990-2017).

I Additional Figures

Figure I.1: Local News Coverage of the Hyundai Deal: First Week of April, 2002

(a) April 2, 2002 (b) April 3, 2002

Notes: This figure shows some of the news coverage the *Montgomery Advertiser* published about the subsidy deal for Hyundai. These articles were published the week the deal was announced *Image Source:* `Newspapers.com`.

Figure I.2: Local News Coverage of the Hyundai Deal: April 17, 2002

SPECIAL REPORT: Hyundai unveils facility details

Officials foresee deal's benefits

Hyundai Motor Co. Chairman Mong Koo Chung, left, and Gov. Don Siegelman, right, greet each other Tuesday during the groundbreaking ceremony for the Hyundai plant near Montgomery.

Gov. Don Siegelman, left, and Hyundai Motor Co. President Dong Jin Kim, right, speak with the media after the groundbreaking ceremony Tuesday.

Media representative from across the state were on hand for Tuesday's groundbreaking ceremony just outside of Montgomery.

Outlying counties, cities seek some connection to Hyundai

A sign off of Interstate 65, sponsored by the city of Greenville, welcomes Hyundai to Alabama.

SPECIAL REPORT: Hyundai unveils facility details

Details: Governor says business leaders have taken notice

Members of the Korean Society of Montgomery wave flags and welcome dignitaries Tuesday to the groundbreaking ceremony of the Hyundai plant near Montgomery. The itinerary of speakers ranged from state and local officials to Korean dignitaries.

Many of those who attended Tuesday's groundbreaking ceremony got a look at a display of several new Hyundai automobiles.

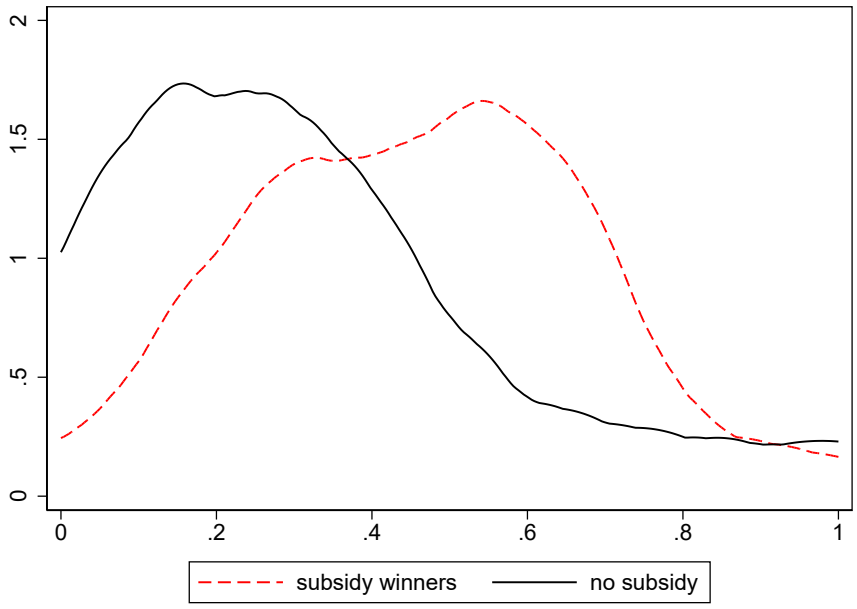
Montgomery Mayor Bobby Bright, left, chats with U.S. Rep. Earl Hilliard, right, during Tuesday's groundbreaking ceremony near Montgomery.

Residents welcome area's changes

Build: Construction set to end in 2004

Notes: This figure shows some of the news coverage the *Montgomery Advertiser* published about the subsidy deal for Hyundai. These articles were published two weeks after the deal was announced. *Image Source:* `Newspapers.com`.

Figure I.3: Advertising Data: Incumbent Subsidy-Winners



Notes: This figure shows the difference in the content of incumbent governors advertisement, by whether or not they won a subsidy deal during their term. The x-axis shows the percent of ads that the incumbent governor runs that mention job creation. The data on political advertisements are from the Wisconsin Advertising Project and the Wesleyan Media Project (Fowler and Ridout, 2017; Goldstein and Rivlin, 2005; Goldstein, Niebler, Neiheisel and Holleque, 2011).

J Data Sources: State and Local Characteristics

State Level:

- Unemployment rate: Bureau of Labor Statistics (Bureau of Labor Statistics, 1990-2017)
- Manufacturing employment: County Business Patterns (County Business Patterns, 1997-2017).
- Campaign Advertisements: Wisconsin and Wesleyan Media Projects (Fowler and Ridout, 2017; Goldstein and Rivlin, 2005; Goldstein, Niebler, Neiheisel and Holleque, 2011)
- GDP, Income per capita: Bureau of Economic Activity (U.S. Bureau of Economic Analysis, 1967-2017)
- Tax rates (Corporate, Income, Sales): Book of States (CSG Book of the States, 1950-2018)
- Right-to-work: National Council of State Legislatures (National Conference of State Legislatures, 2019)

County Level:

- Unemployment rate: Bureau of Labor Statistics (Bureau of Labor Statistics, 1990-2017)
- Population, % Black, % Hispanic, % Urban, % BA, % high school: Census American Community Survey (Ruggles, Flood, Goeken, Grover, Meyer, Pacas and Sobek, 2019)
- Income per capita: Bureau of Economic Activity (U.S. Bureau of Economic Analysis, 1967-2017)
- Housing Prices: Zillow (Zillow, 1996-2020)