Accountability for the Economy at All Levels of Government in United States Elections*

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Abstract

A large literature on economic voting in the United States finds that the president's party is rewarded in presidential elections for strong economic performance and punished for weak performance. In contrast, there is no clear consensus about whether the local economy matters in elections at other levels of governments. In this study, we compile the largest dataset to-date on the link between the local economy and elections in the United States. We use administrative data on county-level economic conditions from 1969-2016 to examine the effect of the local economy on elections for city, county, state, and national government. We find clear evidence that the president's party is held accountable for economic performance across nearly all levels of government. In contrast, there is much weaker evidence that the party that controls other levels of government is held accountable for the economy. We also examine whether the media moderates accountability, and find tentative evidence that counties that receive more media coverage are more likely to hold the president's party accountable in federal (but not state and local) elections. Overall, our findings show that politicians from the president's party have strong electoral incentives to grow the local economy, while politicians in the opposition party have clear incentives to stymie economic growth.

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1 Introduction

How does retrospective voting for the local economy operate across all levels of government in the United States? There is a huge literature in political science on economic voting. But the vast majority of this literature has looked at the correlation between the national economy and the performance of the president's party in presidential and congressional elections. In general, it finds that the incumbent president's party's vote share in presidential and Congressional elections is correlated with national economic conditions (Kramer, 1971; Tufte, 1978; Markus, 1988; Erikson, 1989). Until recently, however, there was a consensus in the literature that state and local economic conditions had little or no effect on accountability for the incumbent party in either presidential (Eisenberg and Ketcham, 2004) or gubernatorial elections (Peltzman, 1987; Ebeid and Rodden, 2006; Wright, 2012). Several recent articles have provided evidence of accountability for the local economy in presidential elections (Hill, Herron, and Lewis, 2010; Healy and Lenz, 2017; Cottrell, Herron, and Westwood, 2018).[1]

If voters hold candidates accountable for the local economy, it is unclear *which* candidates they might blame for poor performance and reward for good performance. A president-centric view holds that voters reward candidates from the president's party for strong performance, and blame them for weak economic growth. Alternatively, a state-centric view predicts that voters hold gubernatorial candidates from the current governor's party accountable for economic performance. A more local-centric view might predict that voters punish and reward candidates from their local leaders' party for economic performance. Candidates at the national, state, and local levels of government all claim credit for economic performance. So there is reason to expect that voters might make electoral choices based on economic conditions at each of these levels as well.[2] Yet there has been no prior study of the effect of the local economy on elections across multiple levels of government.

[1]But see Hall, Yoder, and Karandikar (2017) for contrary evidence that the local economy did not have large effects on voting behavior during the Great Recession of 2008-2009.

[2]This is separate from the question of whether or not voters *should* blame or credit politicians at any of these levels for the performance of the economy.

In this study, we conduct the first holistic evaluation of retrospective voting across all levels of government in the United States. We examine economic voting based on the local economy in presidential, senate, house, gubernatorial, downballot state offices, state legislative, and local elections. Our analysis is built upon administrative data on the national, state, and local economy that is not susceptible to sampling error. We combine these data with election results at the federal, state, county and city levels. With this rich dataset in hand, we utilize multiple identification strategies, including difference-in-differences and dynamic panel models (Angrist and Pischke, 2009), to estimate the causal effects of economic voting.

First, we examine economic accountability for the president's party in federal, state, and local elections. We find strong evidence that the president's party is held accountable in both federal and state elections. However, the size of this effect is relatively modest. A one standard deviation increase in local wages leads to about a half a percentage point boost for the president's party. This effect is very consistent across presidential, House, Senate, gubernatorial, and state house elections. We find no clear evidence that the president's party is held accountable in local elections for county and city office.

Next, we examine whether the party that controls the office being voted on is held accountable. For instance, is the governor's party held accountable for the economy in gubernatorial elections? We find that the governor's party is held accountable in gubernatorial elections. However, we find more mixed evidence for other offices. For instance, we find little evidence that the mayor's party is held accountable in mayoral elections. This suggests that local elected officials have limited electoral incentives to grow the local economy.

Finally, we examine whether the media influences accountability for local economic conditions. There are a variety of theoretical reasons to believe that media coverage of the local economy facilitates accountability. We find tentative evidence that counties that receive more media coverage are more likely to hold the president's party accountable in federal elections (especially in presidential ones). But we find no evidence that the local media increases retrospective voting in elections at the state and local levels.

Overall, our findings show that the local economy matters in subnational elections. Moreover, economic voting in state and local elections is more similar to economic voting in presidential elections than scholars have previously thought. In our nationalized era, accountability for the president's party matters in elections at multiple levels of governments and is not limited to national politicians. Lastly, our findings suggest that there are electoral incentives for state and local politicians from the president's party to pursue policies that grow the economy, while politicians in the opposition party (across all levels of government) have clear incentives to stymie economic growth. This has implications for literatures on distributive politics and legislative politics (e.g., Kriner and Reeves, 2015; Dynes and Huber, 2015).

The paper proceeds as follows. First, we briefly review the background literature on economic voting, and particularly on local economic voting. Second, we discuss our theoretical expectations. Next, we discuss our data and research design, and then our results. Finally, we briefly conclude and discuss next steps in this research agenda.

2 Economic Voting in Multilevel Elections

Theories of retrospective voting predict that voters should hold both incumbents and candidates from the incumbent party accountable for economic performance (e.g., Fiorina, 1981). Thus, even when the incumbent doesn't run for re-election, the incumbent's party is likely to be assigned responsibility for economic conditions during the incumbent's term. This expectation is defined by Fiorina (1978) as "whether responsible or not, does the administration prosper in good times and suffer in bad times" (430). A large empirical literature in line with these expectations has shown that the incumbent party's vote share in Congresssional and presidential elections is correlated with macro-level economic conditions (e.g., Kramer, 1971; Erikson, 1989; Fair, 1978; Markus, 1988). These studies find that "citizen[s] vote for the government if the economy is doing all right; otherwise the vote is against" (Lewis-Beck and Stegmaier, 2000).

Much of this research ignores the fact that multilevel elections in the U.S. make for complex representation and therefore complex accountability. While the incumbent president's party might be an easy target for credit or blame, voters are also represented by politicians in Congress, governors, state legislators, and a host of local elected officials. Though parties may form coalitions and coordinate across levels of government (Aldrich, 1995), voters might be represented by a different party at the national level than at the state or local level — or perhaps by no party at all in many local nonpartisan elected offices. This makes it less clear *which* incumbent's party would be associated with the performance of the economy. If politics at the state and local levels is more nationalized, then the incumbent president's party's performance might matter for subnational election outcomes, but otherwise might not (Hopkins, 2018; Morgenstern, Smith, and Trelles, 2017).

Moreover, the performance of the economy is not uniform across geography. While the economy might be booming at the national level, certain regions or industries might be declining. This can lead to vast differences in the meaning of economic performance for people who live in different areas. This presents measurement problems in a theory of economic voting. First, it is unclear which geographic aggregation of economic performance *should* affect people's judgments of incumbents. Economic performance could be measured at a national level, state level, county level, or personal household level — or even as relative performance based on the difference between any two of these levels. Research on economic voting has advanced both sociotropic (e.g. Fair, 1978; Kinder and Kiewiet, 1979) and egotropic (e.g. Fiorina, 1978; Tufte, 1978) theories. Second, it is unclear which geographic level of economic performance does actually form people's perceptions of the economy. While the national economy might be an easy cue to pick up from national news media, people might also make judgements about economic performance based on cues that are closer to home, such as county- or state-level economic performance, or their own personal finances over time.[3]

For a number of decades, there was a debate in political science and economic research about whether voters held presidential candidates accountable for local economic conditions (Gosnell and Colman, 1940; Wright, 2012; Eisenberg and Ketcham, 2004; Hill, Herron, and Lewis, 2010). However, Healy and Lenz (2017) show that the mixed results in previous studies on the effect of the local economy were largely caused by a reliance on sample based-measures of economic performance. For instance, many studies rely on estimates of county-level unemployment from the Bureau of Labor Statistics (e.g., Wright, 2012), which is largely based upon the Current Population Survey. Healy and Lenz (2017) point out that sampling error in these unemployment estimates "can cause a county-level unemployment change to deviate from the truth by several percentage points." The large measurement error in these estimates of unemployment can attenuate estimates of accountability. Healy and Lenz examine the effect of the mortgage crisis in 2008 in California, as well as the effect of changes in wages and employment at the county-level from 1990-2016 using population-based datasets that are not susceptible to sampling error. They find strong evidence that voters hold the president's party accountable for local economic conditions in presidential voting.

Despite the consensus about the importance of economic voting in the literature on presidential elections at the national-level, there has been no clear consensus about whether voters hold subnational politicians accountable for economic conditions (see Table 1). Some cross-sectional studies based on surveys find that strong evaluations of the state economy (Stein, 1990; Howell and Vanderleeuw, 1990; Atkeson and Partin, 1995; Carsey and Wright, 1998) or state-level personal income growth (Niemi, Stanley, and Vogel, 1995) help the party of the incumbent governor. Others find contingent effects. For instance, Brown (2010) finds that "voters divide responsibility for economic conditions in a partisan manner, preferring to blame officials from the opposing party when problems arise." But the findings in all of

[3] These judgements may in turn be subject to a variety of differences across different types of people — sophisticated voters may perceive the economy based on different cues than unsophisticated voters, for instance.

these studies could be confounded by the endogeneity between vote choice and economic evaluations, as well as omitted variable bias.

In contrast to the survey-based studies, most studies that use state-level electoral data find either no relationship between state-level economic performance and gubernatorial election results (e.g., Peltzman, 1987) or very modest evidence of accountability (Chubb, 1988). However, these studies also often lack credible identification strategies to separate the effects of the state and national economy, and thus their results could be confounded by any number of omitted variables. Recent studies, with more credible identification strategies, generally find little evidence of accountability in gubernatorial election for economic performance at either the state (Ebeid and Rodden, 2006) or local levels (Wright, 2012, 695). Ebeid and Rodden (2006) examine elections from 1950-98, and finds that voters only hold governors accountable in states with more industrialized and diversified economies. Wright (2012, 695) examines elections from 1996-2008, and finds that higher county-level unemployment improves Democratic vote share. But he finds no evidence that voters reward (or punish) candidates from the incumbent's party. It is important to note, however, that both of these studies largely rely upon sample-based measures of unemployment. Findings based on these measures could be attenuated due to measurement error (Healy and Lenz, 2017).[4] In addition, Wright (2012) focuses on a very short time frame (1996-2008). So, overall, it remains unclear whether gubernatorial candidates are held accountable for economic performance.

Even less research has been conducted to examine whether economic voting occurs for substate politicians, most likely because of the paucity of data on local elections needed to assess accountability (Trounstine, 2010). This has restricted the focus of many studies of local voting to small samples of cities. For example, research using survey data from either a single city or a handful of cities by Arnold and Carnes (2012), Howell and McLean (2001), Howell and Perry (2004), and Kaufmann (2004) has yielded inconsistent evidence about the

[4]Another limitation of previous work is that the studies that use population-based measures generally rely on growth in personal income. But personal income includes transfers from the federal government, dividends, interest, and many other components that have little to do with the state economy.

Table 1: Previous Studies on Economic Accountability in Subnational Elections

Author	Time Period	Economic Indicator	State or Local Econ.	Office	Research Design	Accountability for Incumbent President's Party	Accountability for Incumbent Local's Party
Based on Surveys							
Stein (1990)	1982	Self-Evals	State	Governor	XS	Yes	No
Howell and Vanderleeuw (1990)	1988[1]	Self-evals	State	Governor	XS	–	Yes
Svoboda (1995)	1982, 86	Self-Evals	State	Governor	XS	–	Yes
Partin (1995)	1990	Self-Evals & PCI	National & State	Governor	XS	No	Yes
Atkeson and Partin (1995)	1986, 90	Self-Evals	State	Governor	XS	Yes	Yes (suggestive)
Niemi, Stanley, and Vogel (1995)	1986	PCI	State	Governor	XS	Yes	Yes
Carsey and Wright (1998)	1986, 90	Self-Evals	State	Governor	XS	Yes	Yes
Hansen (1999)	1967-1997[2]	Unemp./PCI	State	Governor	Panel	–	Yes
Cohen and King (2004)	1980-2001	Unemployment	State-National	Governor	Panel	–	Yes
Brown (2010)	2006	Self-Evals	State-National	Governor	XS	–	Contingent
Rogers (2013)	2008, 10, 12	Self-Evals	National	State Leg	XS	Yes	Yes
Howell and McLean (2001)	1996, 98[3]	Self-Evals	Local	Mayor	XS	–	No
Kaufmann (2004)	1997[4]	Self-Evals	Local	Mayor	XS	–	Yes
Howell and Perry (2004)	2000[5]	Self-Evals	Local	Mayor	XS	–	Mixed
Oliver and Ha (2007)	2004-2005	Self-Evals	Local	City Council	XS	–	No
Arnold and Carnes (2012)	1984-2009[6]	Δ Unemp. + Δ inflation	Local	Mayor	TS	–	Yes
Based on Election Results							
Kenney (1983)	1946-80[7]	Unemploy./Inflation/PCI	State	Governor	TS	–	No
Peltzman (1987)	1949-84	Δ PCI	State	State	Panel	Yes	No
Holbrook-Provow (1987)	1950-1982	Δ GNP	National	Governor	TS	Yes	–
Chubb (1988)	1940-82	Δ PCI	State	Gov & State Leg	Panel	Yes	Small(Gov)/No(Leg)
Leyden and Borrelli (1995)	1972-91	Δ Unemployment	State	Governor	TS	Yes	Contingent
Lowry, Alt, and Ferree (1998)	1968-1992	Δ PCI	National-State	Gov & State Leg	Panel	–	Yes(Gov)/No(Leg)
Ebeid and Rodden (2006)	1950-98	Δ PCI/Unemploy.	State	Governor	Panel	No	Contingent
Wright (2012)	1996-08	Unemployment	Local	Governor	Panel	No	No
Rogers (2013)	1972-2010	PCI/Unemploy./GDP	National & State	State Leg	Panel	Yes	No
Holbrook and Weinschenk (2014)	1996-2011[8]	Unemployment	National-Local	Mayor	XS	–	Mixed
Hopkins and Pettingill (2018)	1990-2011	Unemployment	National-Local	Mayor	Panel	–	Contingent

Notes:
[1] Howell and Vanderleeuw (1990) use survey data from Louisiana voters only.
[2] Hansen (1999) uses survey data from CA 1967-1997 and seven other states 1980-1997.
[3] Howell and McLean (2001) use two survey samples from New Orleans.
[4] Kaufmann (2004) uses exit poll data from New York City.
[5] Howell and Perry (2004) use survey samples from four cities.
[6] Arnold and Carnes (2012) use a series of surveys from New York City.
[7] Kenney (1983) uses a panel of 14 states.
[8] Holbrook and Weinschenk (2014) use data from 441 elections in 139 large cities.

presence of economic voting at the local level. For instance, Arnold and Carnes (2012) use non-survey measures of economic conditions combined with mayoral approval polling data to demonstrate that voters reflect on the objective performance of the local economy when judging New York City mayors. Yet this study along with other single-city or small-sample studies are hampered by concerns about generalizability to other time periods and local electoral environments.

Recent research built on larger samples has given a more positive diagnosis of economic voting at the local level. This research has often indicated a limited or conditional relationship between economic conditions and evaluations of incumbents in local elections. Using election returns from 139 large cities, Holbrook and Weinschenk (2014) show that the condition of the local economy relative to the national economy positively predicts incumbent mayors' success. However, when accounting for other conditions of the electoral environment such as campaign dynamics, they find no such economic effect. Using a survey of suburban voters, Oliver and Ha (2007) show that people who rated the local economy better were less likely to report voting for challengers in their suburb's city council races. But these results were not robust to the inclusion of other predictors of vote choice, such as shared partisanship. Turning to electoral data from 1990-2011 in 115 large cities, Hopkins and Pettingill (2018) tell a more complex story: the incumbent mayor's voteshare is associated with relative local economic performance — the difference between national and local economic conditions — but only when a large newspaper or television station is present. These positive findings are in line with the urban politics literature that highlights economic development as a critical feature of performance upon which local leaders are held accountable (Logan and Molotch, 1987; Stone, 1946). However, the inconsistency and conditionality of this relationship based on sample, time period, and methodology questions whether economic voting exists at the local level. Moreover, none of these studies assess whether candidates of the president's or governor's party are held accountable for economic performance, but instead focus exclusively on accountability for the local incumbent.

3 Theoretical Expectations

Much of the research in this literature presents clear expectations for economic voting, though with one distinction that we focus on here. There are two major views on accountability in subnational elections. A "president-centric" or nationalized view would predict that voters will hold the president's party accountable in these elections. In other words, state and local candidates from the president's party may be rewarded for strong performance, and punished for weak performance. Recently, there has been important work showing that state elections are increasingly nationalized (Hopkins, 2018). For instance, national and state election results are increasingly correlated with each other, potentially because of an increase in straight-ticket voting (Abramowitz and Webster, 2016). This perspective, aside from supporting a nationalized theory of local politics, would also support a model of partisan accountability that sees strong partisan ties across levels of government and divisions between parties along national lines. This could be due to the fact that subnational partisan candidates have views that are divided much as those of national politicians (Einstein and Glick, 2018) or because of the nationalization of local news media (Martin and McCrain, 2018). This line of work suggests that voters may reward and blame the party of national officials in more local elections. There is also abundant anecdotal evidence for this view. For instance, Democratic governors were much more likely to lose re-election during Obama's first midterm in 2010 than their Republican counterparts.[5]

Alternatively, a "state-centric" or local view would expect that voters are likely to hold the current incumbent in an office accountable for economic policies and outcomes. Moreover, voters will associate policies not merely with the current incumbent but with their party as well (Ebeid and Rodden, 2006), perhaps because of the differences in policy that result from these elections even in sometimes nonpartisan subnational elections (e.g., Caughey, Warshaw, and Xu, 2017; de Benedictis-Kessner and Warshaw, 2016, 2018; Einstein and Kogan, 2016).

[5] Of course, it is difficult to separate a midterm slump from economic voting using anecdotal evidence. Indeed, the Democratic losses in 2010 could have been due to the nationwide Republican wave or due to state-specific economic performance.

Put simply, gubernatorial candidates from the governor's party would be rewarded for strong economic performance and punished for weak performance. Similarly, local candidates from the current local incumbent's party would be rewarded or punished for economic conditions.

4 Data and Research Design

In order to evaluate economic voting in presidential, gubernatorial, and local elections, we built a panel dataset of election returns and economic conditions at the state and county-levels. We estimate models of the form:

$$\Delta DemVotePct_{it} = DemInc + DemInc * \Delta Wages + \gamma_i + \tau_t, \tag{1}$$

The dependent variable is the change in the Democratic candidate's share of the two-party vote for each office in every county between the current election and the most recent election for that office ($\Delta DemVotePct_{it}$).[6] We assembled national, state, city, and county election results from 1968-2016 using a variety of sources (see Table 2). For elections between 1970 and 1990, we use the General Election Data for the United States, 1950-1990 hosted by the ICPSR (ICPSR, 2006, 2013). For presidential, senate, and gubernatorial elections between 1990 and 2014, we use data from CQ's Voting and Elections Collection. For House elections during this period, we use data from Dave Leip (Leip, 2016). For downballot state offices (e.g., attorney general), we use crowd-sourced data on OurCampaigns.com. For state legislative elections from 1991-2016, we matched state legislative district results to counties using GIS software (Klarner, 2018).[7] We use data that Stephen Pettigrew assembled for

[6] As Hall, Yoder, and Karandikar (2017) points out in the context of their study of accountability for foreclosures in the Great Recession, "given that we want to study how [the local economy] affects incumbent performance, it might seem more logical to use incumbent party vote share, rather than Democratic party vote share, as our dependent variable. This would allow us to forego the interaction term between [the local economy] and Democratic incumbency. However, it seems unlikely that counties trend in terms of their general support for incumbents, and far more likely that they might trend in terms of their partisanship. As such, it makes more sense to use the interactive specification with Democratic vote share as the dependent variable, so that we can account for these trends directly. The main quantity of interest is therefore the interaction between [the local economy] and the incumbent party variable."

[7] Specifically, we assign state legislative votes for the Democratic and Republican candidates in each district

presidential, senate, house, and gubernatorial elections in 2016 (Pettigrew, 2017). For local elections, we use data from de Benedictis-Kessner and Warshaw (2018) on county legislative elections from 1990-2014, and data from de Benedictis-Kessner and Warshaw (2016) on mayoral elections from 1950-2014. We also use data on the incumbent governor in each state/year from 1970-2014 which we obtained from Klarner (2015) and updated through 2016, as well as data on the county legislative majority from de Benedictis-Kessner and Warshaw (2018).

Table 2: Data Sources

Office	Temporal Coverage	Data Source
President	1968-2016	ICPSR, CQ, Pettigrew
Senate	1968-2016	ICPSR, CQ, Pettigrew
House	1968-2016	ICPSR, Leip, Pettigrew
Governor	1968-2016	ICPSR, CQ, Pettigrew
Other State Offices	1974-2016	ICPSR, OurCampaigns.com
State House	1968-2016	Various ICPSR Datasets + GIS
Mayor	1990-2014	de Benedictis-Kessner and Warshaw (2016)
County Legislature	1990-2014	de Benedictis-Kessner and Warshaw (2018)

The main independent variable is the change in economic conditions in each county between year$_t$ and year$_{t-1}$ ($\Delta Wages$). Following recent work by Healy and Lenz (2017), we measure changes in the local economy using a dataset with annual measures of county-level economic conditions from 1969-2016 based on the population of business establishments in the United States: the Bureau of Economic Advisors' (BEA) Local Area Personal Income and Employment data.[8] We interact this variable with a binary indicator for whether the incumbent is a Democrat. However, the results are robust to other coding decisions.

In order to estimate the causal effect of changes in state and local economic conditions,

to counties that overlap with each district, based on the percentage of the population (measured using the previous decennial Census) in districts that is within the county. For each county we total the weighted number of votes from all districts that overlapped with the county to create the measure of Democratic vote share county-wide.

[8]This dataset is largely based upon the Quarterly Census of Employment and Wages (QCEW), which is produced by the Bureau of Labor Statistics using administrative data on employers' Unemployment Insurance filings. It also incorporates a number of other administrative datasets from state and federal sources.

we estimate a series of difference-in-difference panel models. Our main models use county fixed effects, to account for time-invariant confounders in each county, and state-year fixed effects, to control for time-varying confounders at the state and national levels (Fowler and Hall, 2018). The state-year fixed effects mean that our analysis is comparing the changes over time in counties with greater wage growth to the changes over time in counties with lower wage growth in the same state (Hall, Yoder, and Karandikar, 2017). However, we obtain substantively similar results using a variety of other specifications (See Supplementary Appendix).

In order to examine partisan accountability in these models, we interact the measure of economic performance with the party of the incumbent president, as well as the party of the incumbent governor/mayor/county legislative majority. We hypothesize that Democratic candidates should be rewarded for growth when there is a Democratic incumbent, whether that is at the presidential level or the level at which they cast their vote for governor/mayor/county legislator, and Republican candidates should be rewarded when there is a Republican incumbent.

Finally, our main models focus on counties with more than 20,000 people.[9] This approach reduces the sensitivity of our results to small counties, which often have volatile economic statistics and therefore might introduce measurement error. It also captures the political reality that politicians generally care more about counties with large populations than ones with small numbers of voters. However, we obtain substantively similar results in models that include all counties, but weight by population (see Supplementary Appendix).

5 Results

In this section, we discuss our main results. First, we examine accountability for the president's party in federal, state, and local elections. Next, we examine accountability for the

[9]We found that smaller counties had much more volatile changes in the local economy than medium and large ones.

party that controls other offices. Finally, we examine whether the media moderates retrospective voting.

5.1 Accountability for President's Party

We first examine accountability for the president's party in federal, state, and local elections. Each model uses the specification described above and in equation (1).

Table 3: Accountability for President's Party in Federal Elections

	Dependent variable: Change in Vote Share			
	President	Senate	House	Federal Average
	(1)	(2)	(3)	(4)
Change in logged wages x Democratic president	0.135***	0.078**	0.159**	0.110**
	(0.030)	(0.037)	(0.075)	(0.044)
Change in logged wages	−0.099***	−0.076***	−0.078	−0.064**
	(0.023)	(0.024)	(0.049)	(0.030)
FE for State-Year	X	X	X	X
FE for County	X	X	X	X
Observations	21,035	27,760	40,039	41,990
R^2	0.885	0.877	0.302	0.522
Adjusted R^2	0.871	0.865	0.248	0.486
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 3 shows these results for federal elections. Column (1) shows that a one percentage point change in local wages leads to a 0.135 percentage point greater change in Democrats' vote shares in presidential elections when there is a Democratic president compared to when there is a Republican president. Columns (2) and (3) show that the president's party is also held accountable in Senate and House elections. In Senate elections, a one percentage point change in local wages leads to a 0.078 percentage point greater change in Democratic candidates vote shares when there is a Democratic president than when there is a Republican president. In House elections, a one percentage point change in local wages leads to a

0.159 percentage point greater change in Democratic candidates vote shares when there is a Democratic president than when there is a Republican president.

Averaging across all these federal elections, a one percentage point change in local wages leads to a 0.11 percentage point greater change in Democratic candidates vote shares when there is a Democratic president compared to when there is a Republican president. A one standard deviation change in wages is about 2.73%. This implies that a one standard deviation increase in local wages leads to about a 0.3 percentage point boost for Democratic candidates when there is a Democratic president compared to when there is a Republican one.

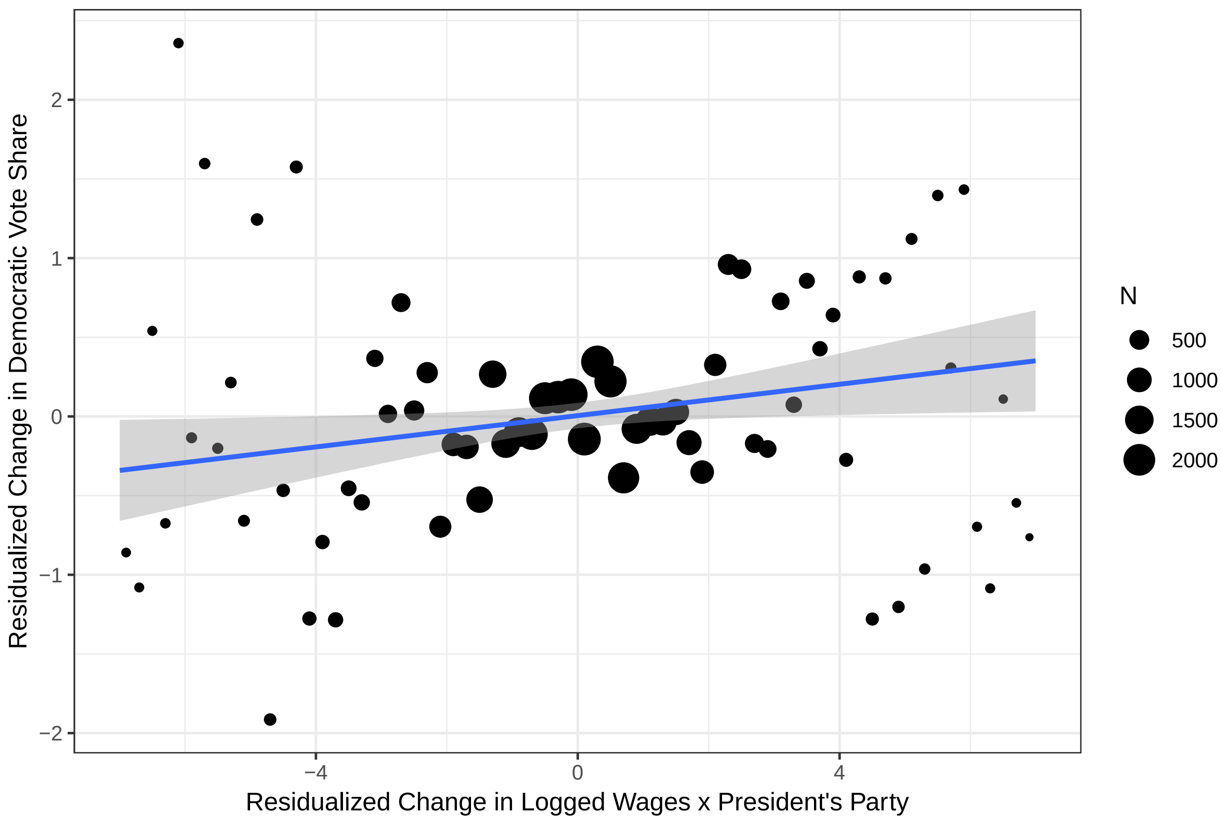

Figure 1: Accountability for President's Party in Federal Elections

We show these results graphically in Figure 1. This plot shows the relationship between changes in wages and changes in vote share for the president's party averaged across all federal elections based on the residuals from the model that we report in column (4) of

Table 3. It indicates that a 10 percentage point (3 SD) increase in local wages corresponds with a 1 point increase in the incumbent's party vote share.

Next, we examine accountability for the president's party in state-level elections (Table 4). Column (1) shows that a one percentage point change in local wages leads to a 0.163 percentage point greater change for Democratic candidates vote shares in gubernatorial elections when there is a Democratic president than when there is a Republican president. However, Columns (2) and (3) provide more mixed evidence for accountability in other state-level and state house elections. Column (2) suggests that the local economy has no effect on downballot state offices. The point estimate in Column (3) for state house elections is similar to the one in column (1), but it is not statistically significant.

Table 4: Accountability for President's Party in State Elections

	Dependent variable - Change in Democratic Vote Share for:			
	Governor	Downballot Offices	State House	State Average
	(1)	(2)	(3)	(4)
Change in logged wages	0.163***	−0.059	0.142	0.146**
x Democratic president	(0.047)	(0.045)	(0.122)	(0.064)
Change in logged wages	−0.080***	0.007	−0.057	−0.060
	(0.029)	(0.031)	(0.093)	(0.037)
FE for State-Year	X	X	X	X
FE for County	X	X	X	X
Observations	21,428	14,890	30,314	37,620
R^2	0.831	0.862	0.130	0.396
Adjusted R^2	0.811	0.841	0.052	0.347
Note:				*p<0.1; **p<0.05; ***p<0.01

Averaging across all these state elections, a one percentage point change in local wages leads to a 0.146 percentage point greater change in Democratic candidates vote shares compared to when there is a Democratic president than when there is a Republican president. This implies that a one standard deviation increase in local wages leads to about a 0.4 percentage point boost for Democratic candidates for state government when there is a Democratic president compared to when there is a Republican one. We show these results on the change in Democratic voteshare averaged across all state offices graphically in Figure 2.

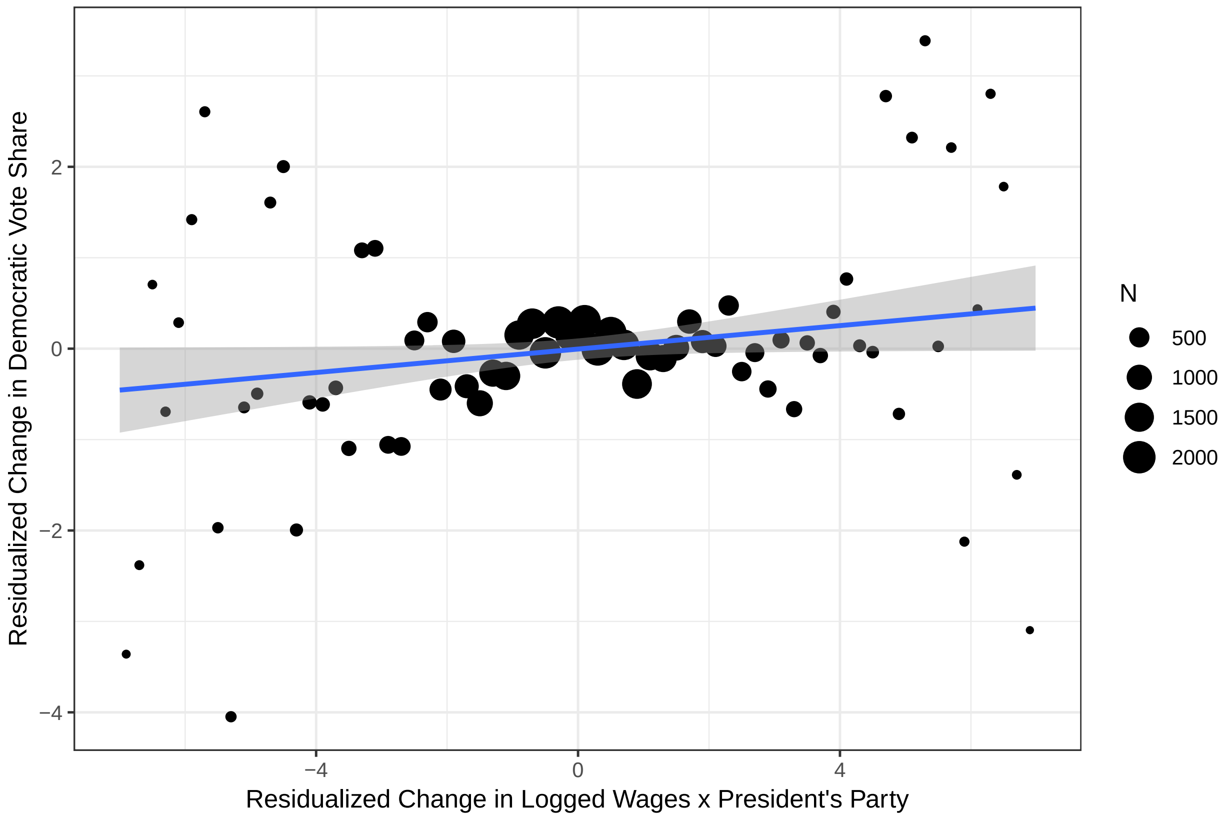

Figure 2: Accountability for President's Party in State Elections

Next, we examine accountability for the president's party in local government elections (Table 5). The point estimates here are consistent with the results for federal and state elections. However, the results are not statistically significant. So there is not clear evidence that the president's party is rewarded or punished in local elections for the state of the economy.

Table 5: Accountability for President's Party in Local Elections

	Dep. variable - Change in Dem. Vote Share for:		
	Mayor	County Legislature	Average Local
	(1)	(2)	(3)
Change in logged wages x Democratic president	1.056	0.622	0.568
	(2.777)	(0.834)	(0.805)
Change in logged wages	−1.076	−0.653	−0.604
	(1.621)	(0.557)	(0.536)
FE for State-Year	X	X	X
FE for County	X	X	X
Observations	454	2,629	3,044
R^2	0.824	0.313	0.330
Adjusted R^2	0.225	−0.008	−0.047
Note:			*p<0.1; **p<0.05; ***p<0.01

5.2 Accountability for Party that Controls Other Offices

In this section, we examine whether the party that controls offices other than the president influences retrospective voting. For instance, are House candidates from the House majority party rewarded for a strong economy? Table 6 shows the results for federal elections. Overall, the results continue to show that the president's party is held accountable, particularly in presidential elections. We find no evidence that it matters which party controls the House of Representatives for any office. However, we find tentative evidence that voters hold accountable the party that controls the Senate, particularly when we average across elections for all three federal offices (column (4)).[10]

Next, we examine whether voters hold the governor's party accountable in state government elections (Table 6). Column (1) provides clear evidence that the governor's party is held accountable in gubernatorial elections. Indeed, the effect of holding the governorship is

[10]It is worth noting, of course, that the party that controls Congress is extremely collinear with the party that controls the presidency. This increases the uncertainty in these results.

Table 6: Accountability for Partisan Control in Federal Elections

	Dependent variable: Change in Vote Share			
	President	Senate	House	Federal Average
	(1)	(2)	(3)	(4)
Change in logged wages x Democratic president	0.106*** (0.041)	0.060 (0.043)	0.133 (0.087)	0.075 (0.052)
Change in logged wages x Democratic House	−0.059 (0.045)	−0.044 (0.047)	−0.054 (0.103)	−0.078 (0.066)
Change in logged wages x Democratic Senate	0.034 (0.035)	0.011 (0.043)	0.105 (0.089)	0.119** (0.054)
Change in logged wages	−0.069 (0.060)	−0.071* (0.037)	−0.045 (0.038)	−0.094 (0.094)
FE for State-Year	X	X	X	X
FE for County	X	X	X	X
Observations	21,035	27,760	40,039	41,990
R^2	0.885	0.877	0.302	0.522
Adjusted R^2	0.871	0.865	0.248	0.486

Note: *p<0.1; **p<0.05; ***p<0.01

roughly 2/3 of the effect of the president's party. Column (2) indicates that the governor's party is not held accountable in other state-level elections for attorney general, treasurer, and secretary of state. The point estimate in Column (3) for state house elections is similar to the one in column (1) for gubernatorial elections, but it is not statistically significant.

Finally, column (4) shows the results when we average across all three state government offices. Again, the results show that the party of the president is clearly held accountable for the economy. The result for the party of the governor is suggestive, but does not rise to the level of statistical significance. Overall, these results further reinforce that the president's party is held accountable in state government elections. But there is only clear evidence that the governor's party matters in gubernatorial elections.

Lastly, we examine whether voters hold the party that controls state and local government

Table 7: Accountability for Partisan Control in State Elections

	Dependent variable - Change in Democratic Vote Share for:			
	Governor	Downballot Offices	State House	State Average
	(1)	(2)	(3)	(4)
Change in logged wages	0.157***	−0.063	0.140	0.148**
x Democratic president	(0.047)	(0.045)	(0.121)	(0.064)
Change in logged wages	0.089*	0.031	0.140	0.092
x Democratic governor	(0.047)	(0.048)	(0.116)	(0.061)
Change in logged wages	−0.123***	−0.006	−0.119	−0.107**
	(0.032)	(0.038)	(0.117)	(0.047)
FE for State-Year	X	X	X	X
FE for County	X	X	X	X
Observations	21,428	14,890	30,314	37,620
R^2	0.831	0.863	0.131	0.396
Adjusted R^2	0.811	0.841	0.052	0.347
Note:				*p<0.1; **p<0.05; ***p<0.01

accountable in local government elections (Table 8). Overall, we find no evidence that the party that controls state and local governments is held accountable in local elections (contra, Arnold and Carnes, 2012; Hopkins and Pettingill, 2018). It is worth noting that it is possible that these null results stem from a lack of statistical power. Indeed, we have about a tenth as much data on local elections as on state and national ones. However, our study has an order of magnitude more data than previous studies on retrospective voting in local elections.

Table 8: Accountability for Partisan Control in Local Elections

	Dependent variable - Change in Dem. Vote Share for:		
	Mayor	County Legislature	Local Average
	(1)	(2)	(3)
Change in logged wages x Democratic president	1.662 (2.458)	0.692 (0.883)	0.546 (0.810)
Change in logged wages x Democratic mayor	0.697 (1.876)		
Change in logged wages x Democratic Leg.		0.044 (0.708)	
Change in logged wages x Democratic Governor	0.312 (1.714)	−0.782 (0.784)	−0.170 (0.701)
Change in logged wages	−1.739 (2.056)	−0.193 (0.658)	−0.522 (0.661)
Democratic mayor	−6.962* (3.589)		
Democratic county leg.		−1.745 (2.493)	
FE for State-Year	X	X	X
FE for County	X	X	X
Observations	436	2,313	3,044
R^2	0.824	0.327	0.330
Adjusted R^2	0.217	−0.007	−0.047
Note:			*p<0.1; **p<0.05; ***p<0.01

5.3 Local Media and Accountability

In the previous sections, we have found strong evidence that the president's party is held accountable in state and federal elections. An important question is whether the media influences retrospective voting in elections. There are a variety of theoretical reasons to believe that media coverage of the local economy facilitates accountability. Past research has shown that media coverage has important effects on people's knowledge about politics (Snyder and Strömberg, 2010; Hayes and Lawless, 2015). This work suggests that counties that constitute a larger portion of their media market are likely to have more media coverage of the local economy (Hopkins and Pettingill, 2018). Yet there is little evidence about the link between the media and local economic voting.

Table 9

	Dependent variable - Change in Dem. Vote Share for:		
	Federal Elections	State Elections	Local Elections
	(1)	(2)	(3)
Change in logged wages x Democratic president x newspaper	0.243^{*} (0.125)	-0.041 (0.167)	0.599 (1.763)
Change in logged wages x Democratic president	0.086^{*} (0.049)	0.156^{**} (0.072)	0.023 (1.243)
Change in logged wages	-0.066^{**} (0.033)	-0.052 (0.042)	-0.549 (0.946)
Change in logged wages x newspaper	-0.028 (0.080)	-0.062 (0.096)	0.159 (1.244)
FE for State-Year-Newspaper	X	X	X
FE for County	X	X	X
Observations	41,990	37,620	3,044
R^2	0.534	0.409	0.414
Adjusted R^2	0.486	0.344	-0.059
Note:			*p<0.1; **p<0.05; ***p<0.01

To answer this question, we focus on three models – one that averages across federal elections, one that averages across state elections, and one that averages across local models. In each model, we create an interaction between the local economy, the party of the president, and a variable that captures whether counties form the plurality of their dominant newspaper's circulation area based on circulation data from 2011.[11] We find tentative evidence that

[11] We obtained the newspaper circulation data from the Audit Bureau of Circulations.

newspapers increase accountability for the president's party in federal elections. But we find no evidence that newspapers influence retrospective voting in state or local elections.

It is worth noting though several limitations of our research design on the role of the media as a moderator for accountability. First, our variable on newspaper circulation is only measured cross-sectionally in a single year (2011). Of course, there have been changes in the newspaper industry in recent years, and many smaller newspapers have closed, leading to an overall decline in coverage of politics — especially local politics (Darr, Hitt, and Dunaway, 2018; Peterson, 2018). Second, our analysis here lacks a causal identification strategy. There could be any number of differences between counties with newspapers and those that lack them that might confound a causal interpretation of our findings on the media. For instance, counties with newspapers tend to be larger and more dense. Nonetheless, our tentative findings on the limited role of the media suggest that much of what people know about their local economies may come via personal experiences and social networks rather than via the media.

6 Conclusion

In this paper, we provide the first comprehensive evidence about retrospective voting for the economy at all levels of government in the United States. There are strong theoretical and empirical reasons to believe that economic voting exists in subnational elections. However, previous work on whether politicians are held accountable for the local economy has focused almost entirely on presidential elections.

In contrast to past work, we find evidence that the president's party is held accountable at multiple levels of government in the United States. The president's party is rewarded and punished for the economy in presidential, senate, house, and gubernatorial elections. One percentage point of wage and employment growth at the county-level leads to a 0.1-0.15 percentage point increase in the vote share of candidates from the incumbent president's party. In contrast, we find little evidence that state and local officials are held accountable for the economy. Only in gubernatorial elections is the party that controls that level of government held accountable.

Our findings reinforce previous work on retrospective voting based on the national economy. They indicate that the economy has an influence on elections across both state and federal government. In particular, they indicate that the president, and members of his party, have a strong incentive to grow the economy. Moreover, they have incentives to target distributive spending and other policies to grow the economy in geographic areas likely to have close elections. For instance, the president's party has strong incentives to grow the economy in battleground states that are likely to be pivotal in presidential elections. Indeed, our findings are consistent with past work showing that voters reward incumbent presidents (or their party's nominee) for increased federal spending in their communities (Kriner and Reeves, 2012). The president's party also has strong incentives to grow the economy in areas that are likely to have close senate, house, or gubernatorial elections. Thus, our work provides an electoral rationale for previous research showing that members of the majority party in Congress tend to get more distributive spending in their districts (Dynes and Huber, 2015; Kriner and Reeves, 2015). In contrast, the opposition party has clear incentives to stymie economic growth, particularly in political pivotal regions.

Our work leaves a number of paths for future research. First, future work should continue to explore the role of the media and other institutions in facilitating accountability. For instance, are voters more likely to hold politicians accountable in places where those politicians hold more institutional power? The enormous variation in the institutional configurations of state and local governments provide fertile ground for testing these questions. Second, future work should examine heterogeneity in accountability over time. As elections and the media have become more nationalized, there are reasons to believe that voters are less willing and able to hold state candidates accountable (Rogers, 2013). These directions can lead to a better understanding of economic voting across time and context.

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Accountability for the Economy at All Levels of Government In United States Elections: Supplementary Appendix

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1 Robustness Checks

This appendix examines the robustness of our results to differences in model specifications. For each of the models below, we use the average Democratic vote share in federal and state elections as our main outcome variable. Then, we examine eight slightly different model specifications:

- In column (1), we examine the model that we use in the main text, which uses the change in Democratic vote share as the dependent variable. This specification includes fixed effects for county and state-year. Finally, it uses counties with more than 20,000 people.
- In column (2), we examine a model that is identical to column (1), except that we substitute year fixed effects for state-year ones.
- In column (3), we examine a model that similar to column (1), except that it includes all counties and weights the results by population.
- In column (4), we examine a model that similar to column (3), except that we substitute year fixed effects for state-year ones.
- Columns (5)-(8) replicate models (1)-(4), but they use levels of Democratic vote share as the outcome rather than changes in Democratic vote share.

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Overall, the results for federal elections look very similar across model specifications. The point estimates are significant in each model and the substantive size of the results are almost always very similar. The results for state elections are somewhat less robust to alternative model specifications. They are only statistically significant in 3 of the 8 model specifications. But the point estimates are in the right direction in each model.

Table 1: Accountability for President's Party in Federal Elections

	Dependent variable:							
	Δ in Democratic Vote Share				Democratic Vote Share			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Change in logged wages x Democratic president	0.110**	0.139***	0.117**	0.198***	0.157***	0.217***	0.242***	0.426***
	(0.044)	(0.052)	(0.058)	(0.062)	(0.052)	(0.061)	(0.072)	(0.097)
Change in logged wages	−0.064**	−0.050	−0.087**	−0.095***	−0.072**	−0.060*	−0.149***	−0.227***
	(0.030)	(0.034)	(0.037)	(0.037)	(0.031)	(0.037)	(0.038)	(0.047)
FE for State-Year	X		X		X		X	
FE for County		X		X		X		X
FE for County	X	X	X	X	X	X	X	X
Unweighted, Population >20,000	X	X			X	X		
Weighted by Pop; All counties			X	X			X	X
Observations	41,990	41,990	71,675	71,675	42,166	42,166	71,976	71,976
R^2	0.522	0.189	0.503	0.185	0.739	0.516	0.766	0.604
Adjusted R^2	0.486	0.152	0.473	0.148	0.720	0.495	0.752	0.586
Note:								*p<0.1; **p<0.05; ***p<0.01

Table 2: Accountability for President's Party in State Elections

	Dependent variable:							
	Δ in Democratic Vote Share				Democratic Vote Share			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Change in logged wages x Democratic president	0.146**	0.023	0.038	0.006	0.115	0.081	0.260***	0.178*
	(0.064)	(0.071)	(0.058)	(0.076)	(0.073)	(0.076)	(0.082)	(0.103)
Change in logged wages	−0.060	−0.082*	−0.077*	−0.136***	−0.122***	−0.063	−0.227***	−0.125**
	(0.037)	(0.045)	(0.040)	(0.047)	(0.037)	(0.043)	(0.042)	(0.052)
FE for State-Year	X		X		X		X	
FE for County		X		X		X		X
FE for County	X	X	X	X	X	X	X	X
Unweighted, Population >20,000	X	X			X	X		
Weighted by Pop; All counties			X	X			X	X
Observations	37,620	37,620	63,653	63,653	38,962	38,962	66,236	66,236
R^2	0.396	0.096	0.450	0.134	0.670	0.517	0.714	0.570
Adjusted R^2	0.347	0.050	0.412	0.090	0.643	0.493	0.695	0.549
Note:								*p<0.1; **p<0.05; ***p<0.01