

Do Democrats benefit from high unemployment even as voters punish and reward sitting presidents for growth?

Abstract: A series of papers show that past income and GDP growth have a significant positive effect on the share of the vote to the incumbent party in presidential elections. Surprisingly, this same line of research shows that unemployment rates have no effect on vote shares. However, Wright (2012) shows that Democrats benefit from higher unemployment rates regardless of whether there is a Democratic incumbent. Consequently, this paper examines the influence of unemployment rates on electoral outcomes, while accounting for elections featuring Democrat incumbents. We use a state panel for presidential elections from 1980 – 2012 and examine the impact of state unemployment rates on the Democratic share of the presidential vote, while controlling for gross state product growth. We find that an increased unemployment rate benefits Democratic candidates regardless of which party is currently in office. Growth benefits whichever party is in office, but appears to benefit Republicans more.

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1. Introduction

Presidential elections are important and infrequent events that draw extensive coverage from a growing field of media organizations. Much of this coverage focuses on each candidate's economic policies and their effect on the economy. Of course, the members of the media do not focus only on economic performance. They also scrutinize the candidates' positions on social issues (e.g., religion, labor, energy, and entitlements), foreign policy, and a wide variety of campaign-related skills. Nevertheless, the media generally believe that economic conditions and economic policy are the primary determinants of a candidate's success. However, these beliefs are typically supported by anecdotes.

For instance, the last presidential race was plagued by what *The Washington Post* eventually called "the most overrated stat of the 2012 election," (Blake 2012). Reporters at both reputable and disreputable organizations employed some version of this statistic: No president since FDR had been reelected with an unemployment rate above 7.2 percent. In response to this type of coverage, news outlets featuring more deliberate, statistical analyses of elections have emerged. The most prominent among them is Nate Silver's *Five Thirty Eight* blog (named for the total number of electoral votes available in the presidential election).

Despite the sober statistical analysis peddled at some media outlets, much of the media coverage surrounding elections is just noise from pundits that does not seem to be based on reliable evidence. John Sides, a political scientist and influential blogger with a data-based understanding of politics argues that much of the popular analytic logic is circular, "whereby commentators suggest that the winner's superior campaign caused him to win, but the only evidence for the superior campaign is that he won" (Sides & Vavrek 2013).

The media tend to rely on weak evidence because elections are complex and voter

behavior can be difficult to measure. There have only been 57 presidential elections in U.S. history and most of them would not serve as useful data points because the country's elections, parties, media organizations and data collection have changed over time.

Unlike other campaign issues, however, economic performance can be broken out and measured in a statistically consistent way across elections thus reducing ambiguity. While common media representations of economic voting have remained largely unscientific, most rigorous academic treatments of the topic employ some version of the so-called reward-punishment model. The model treats economic performance as a valence or consensus issue, measuring the extent to which voters reward incumbent candidates and parties for positive results and punish them for negative ones. This vein of research has frequently determined growth in per capita GDP or income to be more significant in determining voter decisions than unemployment (Lewis-Beck & Nadeau 2011).

The mass of research around reward-punishment theory may suffer from a blind spot regarding unemployment, however, because of a framing flaw. Wright (2012) argues the differing economic priorities of the parties show that unemployment may have an altogether different impact on voting decisions than other economic forces. Building on Kiewiet (1981), Wright suggests that reframing economic performance under the partisan model will reveal the effects of unemployment on voter behavior, in a way that the reward-punishment model does not. Wright brings a new dimension into economic voting by applying Kiewiet's partisan concept to a broader macro model. He shows that unemployment has an effect on elections, but that this effect does not fit into the standard reward-punishment model and has consequently been uncouncted. Wright leaves work undone, however, as he does not test his predictions against the predictions of the reward-punishment model. Consequently, this paper will test the partisan

theory of unemployment in the context of the robust reward-punishment finding that growth is a significant factor in economic voting.

To accomplish this, we examine the impact of macroeconomic performance on the Democratic share of the two-party vote. We analyze the Democratic share of the two-party vote because each model produces opposing predictions for the Democratic share of the vote (Wright 2012; Fair 2009; Berry & Bickers 2012). If partisan theory holds, unemployment should be positively correlated with Democratic vote share (and/or a negative correlation between economic growth and Democratic vote share) regardless of whether there is a Democratic incumbent in the President's office. By contrast, the reward-punishment theory suggests that the effect of economic growth or unemployment on the Democratic vote share depends on whether there is a Democratic incumbent.

Economic voting research has long held that GDP or income growth have a significant impact on voting behavior through a reward-punishment model. Wright has produced results that show unemployment has a significant effect (supporting the partisan model). By measuring Democratic vote share against variables representing both growth and unemployment, while also accounting for Democratic incumbency, we seek to answer the question: Does the reward-punishment model or the partisan model better explain U.S. Presidential election outcomes?

2. Literature Review

The body of work on economic voting developed from a trickle of disorganized research and untested theories in the first half of the twentieth century to a catalog of study today that analyzes the effects of different parts of the economy on different elections over time. Research

on all levels of U.S. elections is complemented by studies on different representative governments around the world.

There are two obvious, non-symbolic ways that presidents affect the economy. They are a part of the legislative process and are typically involved in the creation of bills that define spending and taxation policies. They also are responsible for planning executive actions and appointing the administrators who will actually carry out policies. The magnitude of these effects is unclear and to some extent immeasurable. On top of this, there are a series of determinants of economic performance, both in and out of the government, over which the president has little control: the actions of Congress, the Supreme Court, and the Federal Reserve.

The narrative of presidential elections does not, however, tend to account for these determinants. Candidates and the media that cover them make emphatic, though often vague, statements about how they will improve economic performance more than their opponents (Becker 2016). Researchers have sought to determine the economy's effect on elections in a, usually, more nuanced fashion. A research field has developed that attempts to explain how the economy affects voting behavior, forecast how it will affect future elections or some combination of both.

The number, type, and origin of economic indicators analyzed vary, but over time the research repeatedly returns to one main theory: voters use the state of the economy to either reward or punish the incumbent party. Work on the reward-punishment theory tends to conclude that per-capita growth in GDP or net income is more significant than changes in unemployment in collecting votes (Kramer 1971; Fair 2009) or just ignores unemployment in favor of GDP (Abramowitz 2004). A partisan theory (Kiewiet 1981; Wright 2012) has begun to gain traction, however. Partisan theory focuses on the fairly static positions of political parties on economic

issues. This suggests that people make economic voting decisions based on what economic policy objectives they want the next president to focus on, not simply based on how the last president performed. Voters can judge a candidate for their likelihood of promoting programs to reduce unemployment and alleviate the pain that comes with it separately from their assessment of the past president's economic performance.

While partisan theory has begun to raise questions about the completeness of reward-punishment studies, it seems likely that each theory offers at least a partial explanation of electoral outcomes. Melding together features of the reward-punishment model and the less-tested partisan theory, with data that breaks out by state over a longer period of time, could show a more complete picture of how the state of the economy affects voting choices. Though partisan theory will guide the construction of the model used in this paper, it will also be influenced by the reward-punishment research that has dominated the economic voting literature.

Tests of both reward-punishment and partisan theories use a series of measures to measure both the state of the economy and voter attitudes. Some studies use survey data to measure individual perceptions (Grafstein 2005; Kiewiet 1981), while others use macro data to ascertain the link between economic performance and voting trends over longer periods (Wright 2012; Fair 2009). Finally, studies often include variables designed to capture the normal voting tendency of a given region (Ebeid 2006; Kramer 1971) and account for incumbency effects (Wright 2012; Berry & Bickers 2012; Fair 2009).

A review of the reward-punishment and the emerging partisan theory work suggests that the framing of the issue under reward and punishment is at least partially responsible for the strength of growth as an indicator of voters' perceptions of economic performance relative to unemployment. That Wright (2012) found unemployment to be significant from a partisan

perspective does not necessarily contradict the established findings of the reward-punishment perspective; it only reveals that the established findings are not complete.

Reward-Punishment Theory

As it emerged over the last 45 years, economic voting research quickly coalesced around variations of the reward-punishment theory. Essentially, this measurement is an outgrowth of the media narrative that links incumbent performance, in this case economic, to voting decisions. This theory takes a consensus view of the economy as an issue. The core assumption underlying reward-punishment theory is that voters all share a desire for improved economic performance and that this desire is simple.

Modern analyses of voting behavior may be traced back to the 1960 publication of *The American Voter* which introduced the concept of economic voting and laid the groundwork for the reward-punishment theory (Campbell et al., 1960). From there, Kramer (1971) took what seems to have been a scattered field of research and crafted a model to begin to test economic voting on Congressional races. Here, Kramer developed key elements of the reward-punishment modeling that followed with a standard method for approaching economic voting, including a clear rationale for incorporating other important variables such as incumbency. Kramer, like many who followed him, found that changes in income had a significant effect, but that unemployment did not.

Among his followers is Fair (1978; 1996; 2009), who began developing presidential forecasting models in 1978 and has continually updated his model as more elections have provided more data. His model includes determinants of GDP growth that he works through an expected utility function to determine how economic change will affect changes in voting. While

he has often been fairly accurate, he has not been able to perfect his model to accommodate certain random fluctuations as more elections have been entered into it. Thus, an unemployment effect under partisan theory could improve the model's accuracy.

Fair's basic OLS reward-punishment model is derived from his concept of voters comparing past economic performance of both Democratic and Republican administrations to some standard for expected performance. The model also accounts for personal and party incumbency and at some level underlying party preference (2009) in the following manner:

$$V_t = \alpha_0 + \alpha_1 M_{1t} I_t + \alpha_2 M_{2t} I_t + \alpha_3 M_{3t} I_t + \alpha_4 DPER_t + \alpha_5 DUR_t + \alpha_6 I_t + \varepsilon_t$$

where the Democratic share of the two-party vote, V_t , is the dependent variable. Each M_t represents an economic indicator (measured as actual as compared to expected performance). $DPER_t$ measures whether an incumbent is running for reelection and DUR_t measures an incumbent party's length of time in control. I_t is a general party dummy variable that is 1 if the Democrats are in power and -1 if Republicans are.

Fair's model is meaningful in that it has evolved along with the field over the past forty years and the above equation represents key elements of reward-punishment models. His concept of interacting incumbency with economic indicators inspires a similar process in this paper's model. Fair's model is also relevant in establishing validity for results working with a long-range data set (23 presidential elections) for a macro model. This paper will stretch nine presidential elections, which is less than Fair's, but more than many others. Fair (1996) also presents a justification for using the two-party vote and excluding minor party vote share based on proof that minor party votes, had they gone to the main candidates, would have done so at roughly equal proportions to the share of each party's two-party vote.

Berry and Bickers (2012) develop a useful departure from much of the data-based reward-punishment research by using state-level data to forecast the general election. They fit a model for eight presidential elections from 1980-2008 using state-data on unemployment and income. Unfortunately, their model predicts that the Democratic incumbent in 2012 would lose. Their approach is interesting in localizing the results to the states, but the inaccuracy of their results may be due to their approach of including unemployment in a reward-punishment framework.

In looking to marry presidential models to state-level data, it is useful to consider gubernatorial research. Ebeid and Rodden (2006) challenged a series of findings that governors were not discernably punished or rewarded for their state's economic performance. They modify the typical reward-punishment model to account for state reliance on commodities and agriculture. Following these modifications and controlling for fixed-effects, they found that the economy had an effect on gubernatorial races in heavily industrial states. This suggests that disaggregation of the states to allow for the distribution of employment across industries may improve predictions in models of presidential voting. In another gubernatorial reward-punishment model, Levernier (1993) links state economic performance and gubernatorial results, using the difference between state and national economic performance.

Perhaps no presidential election poses as big of an issue for reward-punishment theory as 2000. Coming off of a term that featured clearly positive numbers in both growth and employment economic indicators, the incumbent Democrats lost ground in the two-party vote and, despite eking out a .5-percentage point victory in the popular vote, lost the electoral vote. Sidman, Mak and Lebo (2008) place some blame on the fact that the party was not running its incumbent, President Bill Clinton. This fact does not, however, relieve the problem that this

election poses to the reward-punishment model. However, incorporating elements of the partisan model may correct this deficiency.

Partisan Theory

Nearly all early economic voting studies rely on some form of the reward-punishment theory. As Lewis-Beck and Nadeau (2011) point out, this is largely due to researchers' success in linking certain types of economic performance to voter behavior in reward-punishment models. "The fact that the voters all seek economic prosperity has blinded analysts to the notion that they do not all seek the same economic policies," (p. 293). As Lewis-Beck and Nadeau assess the reward-punishment theory's legacy, they concede that the literature has important weaknesses. They argue that some voters have other types of economic motivations, which they characterize as positional (ideological) or patrimonial (class-based). Their analysis of individual survey data in the 2008 election indicated that Barack Obama, the Democratic candidate, picked up votes because voters: 1) punished the incumbent Republican Party; and 2) disagreed with Republican economic policies.

Kiewiet (1981) is a notable early exception to the dominant trend of reward-punishment theory in economic voting research. Kiewiet suggests that the focus on reward-punishment "implies some serious limitations in our knowledge of how economic concerns influence voting decisions," (p. 448). Using survey data that assessed individual views of both sociotropic and personal economic circumstances, he tested partisan theory by assigning one major economic issue to each party: unemployment for Democrats and inflation for Republicans. Supposing that the parties have developed reputations, deserved or not, for their competence in different areas of economic policy, Kiewiet argues the incumbency-dependent reward-punishment theory cannot

fully account for election outcomes. Voters do not need to have a sophisticated understanding of fiscal and monetary policy for unemployment to exert an important effect on voting behavior. The model makes two basic assumptions: that a voter sees unemployment or inflation as a serious issue and that the same voter sees differences in the parties' abilities to deal with the problem. While Kiewiet found only small, scattered support for inflation concerns pushing voters to support Republican candidates, he found that unemployment had a significant effect on Democratic support both based on personal and sociotropic perceptions.

Wright (2012) builds on Lewis-Beck and Nadeau's criticism of reward-punishment theory, but pivots toward Kiewiet's suggestions from 30 years earlier. On the assumption that people who are directly affected by unemployment or consider it an important issue are much more likely to vote Democratic, Wright tests unemployment as a partisan issue rather than a consensus issue. Even if every voter wants lower unemployment all other things equal, only some would support policies that ostensibly seek to reduce it or prioritize these policies over others.

Wright (2012) contends that even a cursory review of the past 50 years of unemployment and presidential elections shows that the reward-punishment has important weaknesses. First and foremost, the unemployment rate estimates do not align with the predictions of reward-punishment theory for Democratic incumbents. But if you look at unemployment as a partisan issue, where more people vote for the party of the New Deal when they are worried about their jobs, the partisan theory fills in this hole in research. His research, which examines both presidential and gubernatorial races, shows that Democrats benefit from higher unemployment rates regardless of who is in office, though the effect is greater when Republicans are in power.

As for the 2000 election that stumped many political forecasters at the time, partisan theory offers a partial explanation: after a prosperous run, voters were less likely to be concerned with unemployment, but more likely to be concerned with their perceived tax burden.

Incumbency & Campaigning

To the extent that voter information about candidates matters, incumbency and campaign activity are two variables that may significantly affect outcomes. Incumbency poses the biggest hurdle to explaining voting behavior. Reward-punishment theory is a natural reaction to this problem, because it is based on an assessment of the incumbent. However, there are flaws in this view.

When voters in presidential elections assess the economy, they do not have perfect information. This is both because a president's ability to affect the economy is unclear and a voter's ability to assess the economy versus the counterfactual of what the economy would look like if the president had acted differently is dubious. Even if the voter was informed and rational about the performance of the previous president, it does not seem that they will hold his party's successive nominee as responsible for the good or bad judgment as they will a sitting president (Sidman, Mak & Lebo 2008). This suggests that an effective model only needs to account for the effects of the electorate's judgment of the current party in power and not its previous judgment of the other party when it was in power.

In an attempt to understand the source of these incumbency effects, Fair (1996) introduced a long-term party incumbency variable as well as a personal incumbency variable. This is meant to account for findings suggesting that voters credit sitting presidents, but punish parties more the longer they are in power. This party incumbency variable is set to 0 when the incumbent party has held the presidency for just one term, climbs to 1 after the second term and

then increases by 0.25 for each successive term. These variables worked in his reward-punishment model, but the underlying test of the partisan model is to determine whether unemployment is affecting voter decisions without regard to incumbent party. This makes it unnecessary to include a variable that indicates whether the incumbent is a candidate.

Sidman, Mak and Lebo (2008) try to discern the effects of incumbency using data from the 2000 presidential election. The state of the economy, with growth rate of 5.5-6 percent and an unemployment rate under 4 percent (both historically and comparatively positive), suggested that voters would reward the Democratic Party. Yet the party only squeezed out a .5 percent edge in the popular vote (not enough to secure the electoral vote). The authors attempt to account for candidates of the incumbent party who are not sitting presidents by multiplying the economic indicators in their model by .5, effectively decreasing the weight of economic performance in explaining voter behavior when there is not sitting president running for office. This produces better predictions for 2000, but reduces the accuracy of predictions elsewhere, suggesting that this is not a helpful way of adjusting models for incumbency. The partisan model should negate some of these contradictory effects.

The effect of campaigning, the main feature of most media coverage, on the presidential race is sometimes explicitly characterized as negligible and almost always ignored in research models. Abramowitz (1988) suggests that this is because it actually has a marginal effect. These effects may be marginal because campaigns tend to cancel each other out (Sides and Vavrek 2013). Studies seeking to forecast presidential elections often combine some type of presidential popularity measure with an economic variable. For a non-forecasting study, popularity measures do not really explain anything, so Sides and Vavrek's approach of assuming that the campaigns cancel each other seems like the most practical way to move forward.

However, there may be a real benefit to a campaign's ability to turn voters out (The Economist 2008). If this is the case, campaign performance may explain electoral outcomes. The use of fixed effects in the model to account for differences across states and years reduces the likelihood that a superior campaign either in a given state or year will skew the results.

3. Data and Methods

This study analyzes a state-level panel of economic and voting data for each of nine presidential elections between 1980 and 2012. Each year includes data for all 50 states and the District of Columbia. Following a series of papers (Wright 2012; Fair 2009; Berry & Bickers 2012), the dependent variable is the Democratic Party's share of the two-party vote. We used Democratic vote share as the dependent variable to determine, among other things, the conditions under which higher unemployment or faster growth raise the share of the vote to the Democratic candidate. Minor party vote shares are ignored, as is standard practice in this research field, and should not be an issue in the 1980-2012 time period (Fair 1996; Abramowitz 2004). The vote share data was acquired from Dave Leip's Atlas of U.S. Presidential Elections, a service that aggregates vote tallies by requesting data from each of the local authorities that have this information.

Like Wright (2012), we analyze the effect of unemployment on the Democratic vote share. However, we alter the Wright model to include state-level GSP growth. The unemployment measure is each state's U3 unemployment rate (from the Bureau of Labor Statistics (BLS)) in October of the election year. Because U6 data for each state is not available in this time frame, we include a labor force participation rate generated with data from the BLS and Census Bureau. In principle, this rate should account for fluctuations in discouraged workers

not included in the U3 data. To account for the effects of state-level growth, we use GSP data acquired from the Bureau of Economic Analysis. The nominal data is then deflated and divided by mid-year population estimates acquired from the Census Bureau to produce per capita data. We then took one-year changes in this measure, consistent with much of the reward-punishment work in the field (Fair 2009) and an empirical finding that voters react to recent changes in the economy (Healy & Lenz 2014), to produce the growth rates for each state heading into presidential elections. (There is a hitch in the GSP data in that they changed calculation methods in 1997, but since we use one-year changes and do not actually need to interact anything across this data divide, it should not be an issue.)

To account for variance based on incumbent party, we created a dummy variable for Democratic incumbency. The dummy takes a value of 1 for each election in which a Democrat held the presidency and a value of 0 otherwise. We subsequently interact this term with a series of economic indicators to assess the manner in which voters reward or punish the political parties for economic performance.

Breaking down the model on a state level allows us to look at a disaggregated set of data that shows a more specific story of how fluctuations in employment and growth affect voting behavior, while also examining the results on the scale that matters for the electoral college. State-level data is also available on a wider range of variables going back further in time than county or municipal-level data. Using a fixed effects estimator we are able to account for the differing characteristics of each state's political system and economy.

$$\text{Democratic Share} = \alpha_0 + \alpha_1 \text{Unemployment Rate} + \alpha_2 \text{LF participation} + \alpha_3 \Delta \text{GSPpc} + \alpha_4 \text{Democratic Incumbent} + [\text{Incumbency interactions}] + [\text{State Fixed Effects}] + \varepsilon$$

4. Results

The means, standard deviations and ranges for the dependent and independent variables are reported in Table 1. The unemployment rate and GSP growth measures both show significant variability across the data set with an average annual growth rate of 2.2% in election years with a standard deviation of 3.9% and an average unemployment rate of 5.9% with a standard deviation of 1.8%. The mean Democratic share of the two-party vote comes in at 48.06% with a standard deviation of 10.75% and a range of 22-93%, representing significant variability in the vote share both across states and over time.

To test for the determinants of the Democratic Party vote share, we run a series of fixed effects regressions on our panel data. The results of our five different model specifications are displayed in Table 2. Our first specification regresses Democratic vote share on state GSP growth, the unemployment rate, the labor force participation rate, and a variable that interacts the presence of a Democratic incumbent with the unemployment rate. However, tests for autocorrelation and heteroscedasticity indicate the presence of autocorrelation ($F = 288.5$, $p < 0.001$) and heteroscedasticity ($\chi^2 = 290.14$, $p < 0.001$). Consequently, our second specification includes the same independent variables as the first specification but corrects for heteroscedasticity and autocorrelation by clustering the standard errors on the cross section (state). The third specification repeats the second specification and adds a dummy for a Democratic incumbent. The fourth specification repeats the third and adds an interaction term for labor force participation and a Democratic incumbent. The final specification repeats the fourth specification and adds an interaction term for GSP growth and a Democratic incumbent.

As displayed in Table 2, the estimates for state GSP growth are significant and negative across all specifications. In the first four specifications, a one percentage-point increase in state GSP growth decreases the Democratic share of the vote by 0.31 to 0.33 percentage points. However, if we control for Democratic incumbency with the interaction term, the results change. From the results reported in column 5 of Table 2, we see that without a Democratic incumbent a one percentage-point increase in state GSP growth decreases the Democratic share of the vote by 0.74 percentage points. With a Democratic incumbent, a one percentage-point increase in state GSP growth increases the Democratic share of the vote by 0.17 percentage points ($0.91 - 0.74 = 0.17$). This suggests that Republican incumbents are helped a bit more by faster growth than Democratic incumbents.

The estimates for the unemployment rate are significant and positive across all specifications. From the first two columns of Table 2 we see that a one percentage-point increase in the unemployment rate increases the Democratic share of the vote by 0.56 percentage points. Controlling for Democratic incumbency in column 3 increases the effect of a one percentage-point increase in the unemployment rate on the Democratic share of the vote to 0.73 percentage points. Column 4 shows that controlling for the interaction between labor force participation and Democratic incumbency further increases the effect of a one percentage-point increase in the unemployment rate on vote share to 0.82 percentage points. This effect falls back down to 0.59 percentage points, however, when we control for the interaction between state GSP growth and Democratic incumbency. Given the persistence of the unemployment effect when controlling for Democratic incumbency, it appears that the Democratic vote share benefits from higher unemployment rates.

However, incumbency itself appears to offer little additional advantage (or disadvantage) from variations in unemployment rates. The estimates for the interaction variable between Democratic incumbency and unemployment rate are significant and positive in our initial narrow specifications, but lose significance when we broaden the model. In column 1 and 2, we see that a one percentage-point increase in the unemployment rate is associated with a 0.18 percentage-point increase in Democratic vote share when there is a Democratic incumbent. This effect combines with the effect of unemployment not accounting for incumbency to produce a total increase in Democratic vote share of 0.74 percentage points ($0.18 + 0.56 = 0.74$) for every one percentage-point increase in the unemployment rate. The effect of the interaction variable between unemployment and Democratic incumbency is not significant, however, in the final three specifications that account for Democratic incumbency. In the last three specifications, unemployment alone remains significant, indicating that Democratic vote share benefits from increased unemployment, but that this benefit is not affected by Democratic incumbency.

The estimates for labor force participation are significant and positive across all specifications. In our first three columns, we see that that a one percentage-point increase in labor force participation increases Democratic vote share by 1.5 percentage points. In our fourth specification, we account for the interaction between the labor force participation rate and Democratic incumbency and in this case a one percentage-point increase in the labor force participation leads to a 1.6 percentage-point increase in Democratic vote share. Finally, when we introduce a variable to the fifth specification to account for the interaction of GSP growth and Democratic incumbency, the effect of a one percentage-point increase in labor force participation drops to a 1.3 percentage-point increase in Democratic vote share.

Interestingly, the size of the effect of labor force participation on Democratic vote share follows a similar trend as the size of the effect of the unemployment rate in columns 4 and 5. Both effects increase when include the variable interacting Democratic incumbency with labor force participation, then decrease when we account for the interaction of incumbency and GSP growth.

Estimates for the interaction variable between labor force participation and Democratic incumbency are insignificant across the final two specifications in which it is included. Inclusion of the variable interacting labor force with Democratic incumbency does appear to have an effect on the labor force variable.

Estimates for the Democratic incumbency dummy variable are insignificant across all specifications. The inclusion of this variable does have an effect on the model, however, as we can see in the changes to both the unemployment effect and the variable interacting unemployment with Democratic incumbency. In the first two specifications, the interaction variable is significant. In all models accounting for Democratic incumbency directly, the interaction variable is insignificant. The unemployment variable remains significant and actually increases in magnitude when Democratic incumbency is accounted for directly.

5. Conclusion

Research on the effects of economic performance on voting behavior has long struggled to find a compelling explanation for the effect of unemployment on voting behavior. Decades of work in the field has consolidated around a finding of voters rewarding or punishing incumbent presidential parties based on economic growth without any significant corresponding repercussion for unemployment. Wright (2012) built on the work of Kiewiet (1981) to attempt

to redefine the voting behavior model to account for unemployment and found a significant effect that operated outside of reward-punishment theory. This paper represents an attempt to bring Wright's findings together with the broader field of economic voting behavior research (e.g., Fair 1996; 2009).

We find that state-level unemployment is positively correlated with the Democratic vote share across elections regardless of whether there is a Democratic incumbent. Democratic vote share increases by 0.59 percentage points for each one percentage-point increase in state unemployment rate. This indicates that Democrats benefit from higher unemployment rates in a way that is not related to presidential performance, but is instead likely derived from expectations about social welfare policy. It is important to note that Democrats also benefit from increased labor force participation, seeing a 1.35 percentage-point increase in vote share for each one percentage-point increase in labor force participation rate. This suggests that the Democratic advantage in unemployment is not a result of an artificially low U-3 unemployment rate.

We move beyond Wright (2012) by expanding our range of presidential elections and including interaction variables for unemployment and growth that show a significant impact of not just unemployment, but also growth. Democrats benefit from unemployment in a way that is not connected to presidential performance, but they benefit from growth based on performance, with a 0.17 percentage-point increase in vote share for each additional one percentage-point increase in GSP when there is a Democratic incumbent. This is consistent with the long run of reward-punishment literature. As a result, this paper shows that the problem in measuring the effect of unemployment has been the framing of the measure. By looking for the unemployment effect through a partisan lens and the growth effect through a reward-punishment lens, we improve predictions of Democratic vote share based on macroeconomic performance.

Though Democrats benefit from growth, Republicans appear to benefit more. This suggests that overall Democrats count on the unemployment effect in a meaningful way and explains how Democratic vote share over this period averaged just over 48% despite a significant benefit from unemployment.

This model suggests that heading into elections, voters are interested both in the economic performance of the current president (at least the recent performance) and the expected social welfare policies of the next president. Incumbents from both parties are judged on growth, making it a measure that voters use to reward or punish both parties. Democrats consistently gain from higher unemployment regardless of who is office, making it an indicator that voters use to determine what type of policies they want from the next president.

Table 1. Means and Standard Deviations

Variable	Observation	Mean	Stan. Dev.	Min.	Max.
Democratic Share	459	0.4806	0.1075	0.2203	0.9340
ΔGSPpc	459	0.0222	0.0394	-0.1079	0.2899
LF participation	459	0.5039	0.0333	0.3969	0.5874
Unemployment rate	459	5.984	1.882	2.1	14.5
Democrat Incumbent	459	0.4444	0.4974	0	1

Democratic share represents the proportion of the two-party vote received by the Democratic candidate.

Δ GSPpc represents the one-year change in real Gross State Product per capita leading into each election in each state.

LF participation is a labor force participation rate produced by dividing each state's total labor force by its estimated population.

Unemployment rate is the U3 rate for October of each election year in each state.

Democratic Incumbent is a dummy variable equal to 1 if a Democrat holds the presidency and 0 otherwise.

Table 2. Regression Results on Democratic Share of Presidential Vote

	1	2	3	4	5
Variables	Coefficients (SE)	Coefficients (SE)	Coefficients (SE)	Coefficients (SE)	Coefficients (SE)
ΔGSPpc	-0.3299 (.0688)***	-0.3299 (.0603)***	-0.3262 (.0594)***	-0.3139 (.059)***	-0.742 (.0927)***
LF participation	1.559 (.1579)***	1.559 (.1894)***	1.537 (.1855)***	1.642 (.2087)***	1.35 (.2282)***
Unemployment Rate	0.00569 (.00192)***	0.00569 (.0017)***	0.00732 (.00218)***	0.00823 (.00225)***	0.00591 (.00243)**
Democratic Incumbent			0.0203 (.0139)	0.1315 (.084)	0.0922 (.0772)
Democratic Inc. * UR	0.00182 (.000855)**	0.00182 (.000586)***	-0.00128 (.00212)	-0.00306 (.00221)	-0.0007 (.00207)
Democratic Inc. * LF part.				-0.199 (.1508)	-0.1878 (.1367)
Democratic Inc. * ΔGSPpc					0.9075 (.1768)***
Constant	-0.3364 (.0860)***	-0.3364 (.1015)***	-0.3363 (.1019)***	-0.3953 (.1147)***	-0.2204 (.1264)*
R²	0.1526	0.1526	0.1545	0.1506	0.1514
N	459	459	459	459	459

Dependent variable = Democratic party share of the two-party vote for state i in year t (measured as a proportion).
 * = statistically significant at the 0.1 level, ** = statistically significant at the 0.05 level, and *** = statistically significant at the 0.01 level

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