

# Effect of Unemployment Rate on Voter Turnout: Evidence from Seventeen United States General Elections

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## Abstract

Do economic hardships such as unemployment affect whether people vote? Panel data from the United States Census Bureau from 1980 to 2014 are used to estimate the effect that unemployment has on voting turnout. Previous studies have shown that there tends to be a negative correlation between voter turnout and economic adversity, such as unemployment and poverty level. These findings are corroborated with time-series data from general elections. We use state and year fixed effects and time-variant state demographic controls to estimate the effect of current unemployment as well as spikes in unemployment affect current voter turnout. We check robustness of our estimates by controlling for the average duration of unemployment across years. We find that a statistically significant effect of an increase of unemployment by one percent accounts for a 0.45 percent increase of voter turnout. This result is consistent throughout the robustness checks.

## Introduction:

Unemployment has shown to cause difficulties in many different settings, including family situations, health, and society as a whole. In *The Unemployed Man and His Family*, Komarovsky writes about various reactions that frequently occur due to the husband's loss of

status through unemployment: men may react by way of aggression, increased demands on the family, and increased “touchiness” (pg 43). Further, using panel data from the Boston area, Liem and Liem argue in *Psychological Effects of Unemployment on Workers and Their Families* that “workers do not simply experience the hardships imposed by unemployment, but actively contest their displacement and the conditions it creates.” Data from *The American Journal of Public Health* also suggests that after unemployment, symptoms of somatization, depression, and anxiety increase in the unemployed.

While recognizing the damaging mental and emotional challenges of those who are or become unemployed, we primarily focus on the effect that unemployment has in the political arena of voting. In 1982, Rosenstone used time-series data from presidential and midterm elections to determine the effect that economic adversity, including unemployment, poverty, and a decline in financial well-being negatively has on voting turnout. Their findings suggest that each economic problem suppresses participation. Specifically, they find that a 1 percent increase in short-term unemployment decreases voter turnout by 2.8 percent.

## **Section I: Alternative Views**

Various viewpoints exist concerning the effect that unemployment rate has on voting turnout. One point of view is that economics duress increases political participation. The idea here is that people who have suffered economically may blame the government for their situation to redress their grievances (Schlozman and Verba, 1979, pp. 12-19). According to Lipset, “Groups subject to economic pressures with which individuals cannot cope, such as inflation, depression, monopolistic exploitation, or structural changes in the economy, might also be

expected to turn to government action as a solution and to show a high voting average (p. 192). This may be considered to be, in part, a sort of self-serving bias in which the failures are attributed to factors beyond one's control.

Another alternative view is based on the concept of withdrawal, which is that people with financial difficulties are less likely to vote. The reasoning here is that people with financial difficulties are preoccupied with personal economic adversity and are therefore withdrawn from concerns such as voting. Here, economic problems such as unemployment both increase the opportunity costs of political participation and decrease a person's ability to attend to politics. This theory falls in line with Maslow's Hierarchy of Needs, which explains that there exists a certain order for which personal needs are taken into consideration. Hence, this viewpoint says that similarly to how beggars normally do not worry about their appearance because they are more worried about where their next meal is going to come from, people who are unemployed oftentimes will not pay too much attention to politics and voting because they need to provide for their needs and for the needs of their families. According to Schlozman and Verba, it is also common for the unemployed to have decreased levels of satisfaction with their families and with personal accomplishments.

There exists one other view concerning the relationship between unemployment and voting turnout which states that unemployment, poverty, and other economic problems do not affect voter turnout (Garraty, 1978, p. 251). This idea was mainly in force in the 1970s when the average number of weeks unemployed was only around 8-10, when unemployment didn't hurt as much as it does now, and was based around the idea that because the length of unemployment is short, it is unlikely that it will have any effect on voting participation. However, and especially

since 2004, the average weeks unemployed in the United States has drastically increased, and currently, the average duration of unemployment is around 25.8 (FRED).

As an attempt to account for this discrepancy, we split the regression into two different periods: before and after 2004, when the average time unemployed was about 20 weeks for the first time in several decades. We will explain the results as well as the potential weaknesses of this design further in Section IV. However, it is still possible that this view may be possible because of various policies including Medicare and Medicaid, and other government programs aimed at reducing the pain of unemployment and other economic problems to the point that they no longer produce enough “sting” to generate any positive or negative political effect. Overall, if those who otherwise would vote either do not make the connection between unemployment and politics or if the negative effects of unemployment are simply not strong to produce any effect in voting, there may be no visible causal relationship between unemployment and voter outcomes.

## **Section II: Data**

In order to see the estimated effect of unemployment rates on voter turnout, we collected many data to see the main correlation and to control for variations in characteristics. Federal Reserve at St. Louis provided annual, seasonally adjusted state level unemployment data from 1980 to 2014. We found biannual data from 1980 to 2014 for the percentage of voting eligible population voting for highest offices, such as votes for presidential candidates. This will serve as a good proxy for percentage of voting eligible people casting ballots because many states do not record the amount of ballots casted. Even though voting turnout rates are significantly higher during presidential election years than normal primary election years, state fixed effect will control for

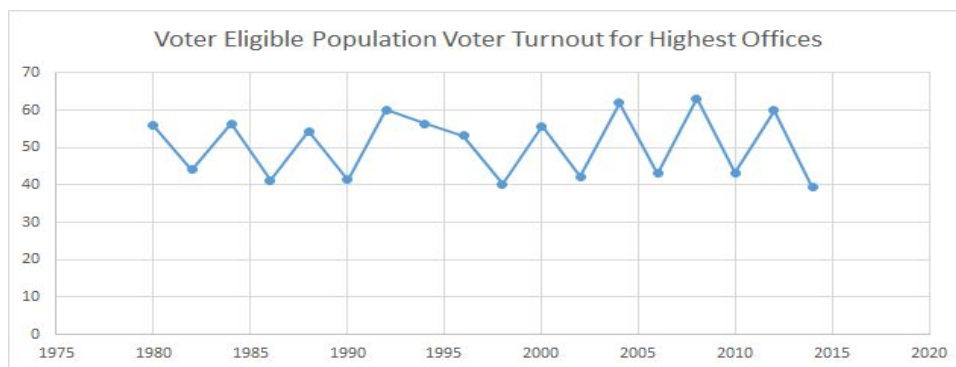
these differences. Dr. McDonald used voting age population data from the Census Bureau population and removed non-citizens, prisoners, those in probations, those in parole, and those who cannot vote because of their felony.

In order to control for time-varying different state characteristics that affect voter turnout, we included income level, racial demographics, age demographics, and education attainment level. We used state level income per capita from Federal Reserve at St. Louis in order to accurately compare different income levels across states with huge variance in population numbers. We also adjusted the income per capita per state for inflation by using year 2005 as the base. We found annual percentages of people 25 years or older in states with bachelor degrees or higher in Census Bureau from 1989 to 2014. Since the Census Bureau lacked data for a few years, we took averages of the year before and after to have data for the electorate years. We found white population per county in Surveillance, Epidemiology, and End Results Program(SEER) of National Cancer Institute from 1969-2015. We aggregated all the white population per county for each state and then we found the percentage of white persons in each state per year. The data we are using were collected by government agencies and, thus, are very reliable.

Variables	(1) N	(2) Mean	(3) Standard deviation	(4) Minimum	(5) Maximum
Voting Eligible Population	918	3.682e+06	3.824e+06	270,122	2.444e+07
Unemployment Rate	918	6.078	2.089	2.300	15.40
Previous Year Unemployment Rate	867	6.151	2.149	2.300	17.80
Income Per Capita	918	24,537	16,775	919.3	84,642
VEP Highest Office	917	47.38	10.87	19.90	73.90
White Percentage	918	83.29	14.13	24.14	99.28
Bachelor Degree or Higher	918	27.69	3.397	20.99	35.67
20-24 Age Percentage	918	7.623	1.115	5.453	11.46
25-29 Age Percentage	918	7.517	1.262	4.999	12.13
30-34 Age Percentage	918	7.527	1.114	5.350	12.20
35-39 Age Percentage	918	7.296	0.970	5.121	10.70
40-44 Age Percentage	918	6.892	1.011	4.346	9.786
45-49 Age Percentage	918	6.365	1.155	3.804	8.826
50-54 Age Percentage	918	5.818	1.188	3.479	8.647
55-59 Age Percentage	918	5.207	1.048	2.962	8.126
60-64 Age Percentage	918	4.529	0.814	2.040	7.380
65-69 Age Percentage	918	3.858	0.627	1.302	6.187
70-74 Age Percentage	918	3.136	0.505	0.780	4.990
75-79 Age Percentage	918	2.435	0.450	0.462	3.899
80-84 Age Percentage	918	1.675	0.391	0.194	2.619
85+ Age Percentage	918	1.454	0.451	0.153	2.679
State-Year	918	51,922	29,413	1,980	102,714
State-Year	918	51922	29413	1980	102714

We can see that the percentage of votes cast for highest office positions is approximately 47 percent with an 11 percent standard deviation when averaging all the data from 1980 to 2014. For the past several years, the average unemployment rate stayed around 6 percent with a 2 percent standard deviation.

A graphical illustration of the voter turnout from 1980 to 2014 is shown below.



## Section III: Identification Strategy

### A. Identifying Assumption

Our identifying assumption is that unemployment rate should be uncorrelated to the unobserved characteristics of voter turnout rate after controlling for specifics to the state and year. This will be verified with different robustness checks looking at characteristics like demographics, income, and spike in expectation of unemployment.

Before doing the robustness checks, we can already rule out some potential problems of correlation between unemployment and unobservables through thought experiments. According to economic theory, there are quite a few factors that contribute to unemployment, but it is unlikely that voting turnout is one of them. This resolves the concern of reverse causality. Another potential concern is a spillover effect. A spillover effect is unlikely as well because the way that people vote is organized through counties which would make it most efficient for people to vote within their county. It is possible that people voted out of state, but it's likely to be only a small percentage, such that it doesn't affect the voter percentage turnout by state.

### B. Empirical Strategy

As we have previously mentioned in the section 3.A, we are looking at the effects of the unemployment rate on voter turnout. We start off with a simple model using year fixed effects and state fixed effects to estimate the effects using the following equation:

$$\text{Voting Turnout}_{st} = \alpha_s + \theta_t + \beta \text{Unemployment Rate}_{st} + \epsilon_{st} \quad (1)$$

Voter Turnout(st) is the voter turnout percentage for State(s) at time(t) for the highest office,  $\alpha_s$  is the state fixed effect for each of the states,  $\theta_t$  is the time fixed effect for every even election year, Unemployment(st) is the unemployment rate of state(s) in time period(t), and lastly  $\epsilon_{st}$  is the random error that we allow to be correlated within the states. We modified the voter turnout percentage for highest office from decimal form to percentage form by multiplying by 100 to make the interpretation of the estimates easier to understand. Because both the voter turnout and the unemployment rate are already in percentages, we didn't feel it necessary to take a log transformation of the model.

Eq.(1) contains state fixed effects to help control for anything inherent about a state that might be unobservable to voter turnout. An example of this would be that it may be the case that some states have a stronger social pressure for the people to vote than others; without including the state fixed effects into the model, we may misrepresent the effect of unemployment. By including the state fixed effects we are able to control for unobservables that might be unique to that state.

Also within the model is the election year fixed effects which controls for anything contained with any given election year. This could include national events that would be unique to a certain election period. An example of this would be the destruction of Hurricane Sandy in 2012. Another example, maybe a little bit more relevant to the problem, would be that the combination of people running for office is accounted for in the year fixed effects. Because we



include election year fixed effects, we are able to control for those unobservable characteristics within each election year.

Along with controlling for year and state fixed effects, we also control for certain factors as robustness checks for our estimates. The most interesting robustness check is adding the lag of the unemployment rate into the regression. By adding this variable, we change the question slightly to “What is the effect of a spike of unemployment on voting turnout?” In other terms this can be seen as trying to estimate the effect of a change in unemployment given the expectation of unemployment of the year before on voter turnout. To do this we simply add the lag variable into Eq.(1) shown in the following equation:

$$\text{Voting Turnout}_{st} = \alpha_s + \theta_t + \beta \text{Unemployment Rate}_{st} + \Omega \text{Unemployment Rate}_{s,t-1} + \epsilon_{st} \quad (\text{II})$$

Where Unemployment(st-1) is the unemployment of the previous year. For additional robustness checks we included demographic measures such as: the percent white, the average income, the percent of certain age groups, and percent that have a bachelor’s degree or higher. These variables are measured for each state for the given year. We run these robustness checks with and without the unemployment of the previous year.

## Section IV: Results

### A. Effect of Unemployment Rate on Voter Turnout for Highest Political Office, 1980-2014

Variables	(1) OLS	(2) FE	(3) FE	(4) FE	(5) FE	(6) FE
Unemployment Rate	-0.434*** (0.154)	0.297*** (0.0710)	0.677*** (0.128)	0.450*** (0.130)	0.675*** (0.130)	0.454*** (0.132)
Constant	50.02*** (1.016)	45.58*** (0.431)	49.81*** (1.098)	67.41** (26.71)	49.68*** (1.272)	66.00** (25.07)
Observations	917	917	917	917	917	917
R-squared	0.007	0.003	0.878	0.889	0.878	0.889
Number of States		51				
State FE		Yes				
State and Year FE			Yes	Yes	Yes	Yes
Economic Controls					Yes	Yes
Demographic Controls				Yes		Yes

Robust standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### B. Effect of Unemployment Spike on Voter Turnout for Highest Political Office, 1980-2014

Variables	(1) OLS	(2) FE	(3) FE	(4) FE	(5) FE	(6) FE
Unemployment Rate	-0.994*** (0.339)	-0.487** (0.190)	0.490** (0.223)	0.343 (0.256)	0.482** (0.217)	0.342 (0.254)
Previous Year's Unemployment Rate	0.512 (0.347)	0.776*** (0.188)	0.185 (0.241)	0.0400 (0.274)	0.193 (0.241)	0.0434 (0.271)
Constant	49.81*** (1.055)	45.13*** (0.392)	37.01*** (1.472)	63.97** (30.06)	36.92*** (1.655)	63.43** (28.45)
Observations	866	866	866	866	866	866
R-squared	0.013	0.009	0.878	0.888	0.878	0.888
Number of States	51	51	51	51	51	51
State FE		Yes				
State and Year FE			Yes	Yes	Yes	Yes
Economic Controls					Yes	Yes
Demographic Controls				Yes		Yes

Robust standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## C. Interpretation and Conclusion

For Eq. (I), we estimate that a one percent change in unemployment causes roughly a 0.45 percent point increase in voting. We find this estimate to be robust across all included demographics. As noted in the literature review, these findings are limited in interpretability. The primary reason for this is that it is difficult to determine the type of people who were affected. We therefore propose two different interpretations to deal with this ambiguity problem.

The first proposal comes from the idea that it was primarily those who were unemployed during that year who determined this causal effect from unemployment to voting age. In this case, the argument of withdrawal, in which the people with financial difficulties are less likely to vote because they are withdrawn from concerns such as voting, would be refutable because of the relationship between unemployment and voting is positive, not negative. In a similar sense, the hypothesis that an unemployment rate does not affect voting participation is also rejected when taking into consideration all years from 1980 to 2014 inclusively ( $p < 0.01$ ). Hence, while further work must be explore this effect for years in which the unemployment duration was short, the proposition that unemployment rate has no bearing on voting participation must also be rejected at a 99% confidence level.

We are therefore left with the hypothesis that unemployment rate does, indeed, have a positive causal relationship toward voting participation for general elections. If it is the case, then, that it is strictly the unemployed that are being affected by the changes in unemployment rate, it may be caused by Lipset's hypothesis that during times of economic distress, people turn to government action, and therefore show an increase in voting participation. It may also have

been the case that those who were unemployed suddenly had more time to vote. This explanation would be more likely for years after 2004 in which the unemployment duration was near or above 15 weeks as voting only occurred every two years.

The second possible explanation to this phenomenon is that the effect did not entirely come from those who were unemployed, but may have been caused by investors who had to lay off employees, friends of the unemployed, or other unaffected citizens who perhaps merely noticed the change in unemployment. Similarly, we can argue that a likely cause of a positive change in unemployment was due to the citizens wanting a reform in government or were otherwise looking toward the government and voicing their concerns by way of becoming more politically active. One way to possibly determine this effect would be to look at the effect that an increase in unemployment had on the probability that there would be a change in representative, senate, or President in a given election.

While we do not present these findings here, we do know by equation (II) that a one percent spike in unemployment causes a 0.34 percentage point increase in voting. Note that this accounts for approximately 75 percent of the effect that unemployment in the current time period has on voting turnout. We therefore have reason to believe that it is not necessarily the flat unemployment rate that causes people to change their voting behavior, but rather a spike in unemployment that causes this change. We can therefore infer that on average, the salience of a higher, yet unchanging unemployment rate is lower than the salience of an initially lower unemployment rate that suddenly increases.

Upon further analysis, we find that for years prior to 2004, a one percent increase in unemployment increased voting participation by 0.46 percentage points (0.170), and for the

years post-2004, the effect is similar at 0.54 percentage points (0.254). It seems, then, that there is no noticeable difference in how unemployment rate affects voting turnout for periods where the duration of unemployment is different. This may be either because there is no effect of unemployment duration on the causal relationship. However, it is also possible that there were unobserved changes between the time periods, such as national pride or other cultural differences that caused the effect to balance out. With further analysis, it will be possible to understand more fully the implications of these findings, yet as per public policy, we know that on average, adults are more willing to vote when the unemployment rate is higher. The implementation is up to debate, but this may prove useful in understanding the human psychology as well as problems in historical economics.