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The Impact of the Economy on Presidential Elections Throughout US History

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Abstract

As numerous studies in the US and elsewhere document, voters often hold incumbents accountable for recent economic circumstances. However, our knowledge of the conditions that allow voters to do so remains incomplete. In particular, most findings about economic voting come from studies of modern economies (post World War II). Modern economies have a host of characteristics that seem to lend themselves to economic voting. Their governments play a large role in the economy and have the Keynesian toolset necessary to influence the economy. Their voters are educated and have access to detailed economic data from ubiquitous media. Are these and other modern conditions necessary for economic voting? Would voters still hold politicians accountable even under adverse conditions? Using economic measures now available back to the 1790s, we study economic voting from the earliest days of the US Republic when none of these conditions were met. Voters, we find, appear to judge incumbent presidents on the economy all the way back to George Washington. Consistent with this pattern, we also find that the economy appears to shape presidents' decisions to run again throughout US history. These findings support recent comparative evidence that economic voting is pervasive across a variety of contexts.

Keywords American politics · Economic voting · Presidential elections

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In modern US presidential elections, economic voting strongly impacts election outcomes (Erikson 1989; Fair 1996; Healy and Malhotra 2013; Hibbs 1989; Kramer 1971; Lewis-Beck and Stegmaier 2000; Markus 1992; Tufte 1980; Zaller 2004).[1] Economic voting refers to voters' tendency to reward or punish incumbent candidates at the polls based on economic growth preceding the election. The economy also influences election results in other countries (Dassonneville and Lewis-Beck 2017; Lewis-Beck 1988).

Comparative studies of economic voting show that the economy matters across a variety of contexts (Dassonneville and Lewis-Beck 2017, 2019; Singer and Carlin 2013; Lewis-Beck and Ratto 2013). These studies, however, almost exclusively examine modern economies, which have characteristics that may facilitate economic voting. In modern economies, incumbents have the Keynesian toolset to manage the economy. Governments play a large role in economies. They also collect and disseminate measures of the economy. Voters are educated, somewhat economically literate, and exposed to news media coverage of the economy. Most voters are also integrated into a national economy. Are these modern qualities necessary for economic voting to occur? Or, would economic voting occur under non-modern conditions where these factors are absent? Put differently, how minimal are the requirements for economic voting?

In this article, we contribute by examining the extent of retrospective voting when these conditions are generally not met: presidential elections back to 1792 and especially the 1792–1944 period. Using historical economic data, we investigate whether voters have held presidents accountable for the economy throughout US history. Despite these modern conditions not being met, we find evidence for retrospective economic voting all the way back to George Washington. Economic contractions predict incumbents choosing to retire and losing when they did run. We also find that the economy appears to have influenced the extent of these victories, as measured with vote share, but may have done so less when the economy influenced incumbents' decisions to run again or retire. Our findings contribute to the literature on economic voting by showing that the conditions necessary for retrospective economic voting appear quite minimal.

Context and Economic Voting

Scholars began studying the conditions necessary for economic voting when they started examining it in different national contexts (notably, Lewis-Beck 1988). Subsequent studies have notably tested theories about the conditioning impact of institutions on economic voting (Anderson 2007; Dassonneville and Lewis-Beck 2017; Duch and Stevenson 2008; Powell and Whitten 1993) and about the impact of the integration of the national economy in the world economy (Duch and Stevenson 2008; Hellwig and Samuels 2007).

[1] Replication materials for this study can be accessed at https://doi.org/10.7910/DVN/DTSJUI.

Nevertheless, we lack a full understanding of the conditions necessary for economic voting. Existing studies either focus on comparing different national contexts or on assessing changes over the post-World War II period (e.g. Dassonneville and Lewis-Beck 2019). By restricting analyses to the past 70 years, these analyses do not tell us whether economic voting requires the conditions that are particular to this period.

Most importantly, we do not know whether economic voting depends on a strongly interventionist government following Keynesian principles. Keynesianism did not become widely accepted among policymakers until after World War II. Most American and comparative studies of economic voting thus focus on the period after World War II, during which governments play a major role in the economy and frequently use Keynesian interventions to limit the severity of economic downturns. It would seem more reasonable for voters to hold incumbents accountable for the economy after the advent of Keynesianism when the government can better intervene to limit downturns.

We also do not know if voters need government-provided information about the economy to engage in economic voting. Governments began systematically collecting and disseminating economic data in the 1930s and 1940s (Coyle 2015). Before then, voters had to rely on anecdotes, media reports of business activity, stock market values, bankruptcies, etc. to gauge the state of the economy. Economists have noted that major economic busts were plainly evident without government data because of news coverage of large firms going bankrupt, especially banks and investment houses (Davis 2006). But slower declines and slower rises in economic activity may have been hard to detect. Even economic news that was available to voters was also less ubiquitous and less national than it has been since World War II.

We also do not know if economic voting requires some level of education. According to a prominent argument, education and information increase voters' ability to consider short-term factors like the economy when voting (Dalton 1984). Consistent with this argument, more informed voters appear to rely more on the economy (Duch 2001) and have more accurate economic assessments (Krause 1997). However, there is also evidence that less informed voters shift their votes more in response to the economy (Zaller 2004) and that economic voting has not increased in recent decades as education has increased (Dassonneville and Lewis-Beck 2019).

Finally, we do not know the degree to which voters need to be connected to the national economy for economic voting to occur in the aggregate. The economy was much more regional and many voters were probably less tied to national conditions through much of the 1792–1944 period. Transportation costs were higher and markets were consequently more regional. Indeed, per capita income across states converged dramatically starting in the 1940s (Barro and Sala-i-Martin 1992).

By examining economic voting back to the 1790s, we can therefore shed light on the degree to which these conditions are necessary for economic voting. Do voters punish incumbents for economic busts and reward them for booms even under minimal conditions?

Although most research has examined the post-WWII period, several US studies have examined earlier data. Kramer (1971) examines presidential elections back to 1896, finding mixed results. Lynch (1999) and Norpoth (2004) consider economic

voting for the president from 1872 to 1996 and find evidence that the economy mattered throughout this period, though Lynch found that it mattered more after World War II, when the government's intervention in the economy increased considerably. Achen (2016) briefly analyzes the effect of recessions on two early presidential elections. A handful of studies also examine congressional elections back to the 1890s (Kramer 1971; Kiewiet and Udell 1998). However, none of these studies go all the way back to the earliest days of US democracy and so do not fully assess the impact of contextual variables that change over time.

Besides shedding light on the conditions necessary for economic voting, examining pre-WWII economic voting has implications for other important questions in political science. In particular, it may inform discussions about whether economic voting simply reflects "blind retrospection," where voters reward or punish incumbent politicians for outcomes over which governments have no control (Achen and Bartels 2016). Presidents' ability to increase growth may always be somewhat limited. However, their ability to do so was presumably more limited before the acceptance of Keynesianism following the Great Depression. If economic voting was as strong before this period as after, it would suggest that voters' response to the economy does not depend on the magnitude of potential government intervention. Most importantly though, if economic voting was as strong in the earlier period, it would support the conclusions of recent studies showing that economic voting is a pervasive phenomenon (most notably, Dassonneville and Lewis-Beck 2017, 2019).

Were Economic Rationales Available in the Early Republic?

In modern US campaigns, voters are regularly exposed to economic rationales for voting. Incumbent presidents campaign on strong economies—if they are fortunate enough to preside over one—while challengers attack incumbents for any signs of economic weakness (Vavreck 2009). Were economic rationales available to voters in the early years of the United States? To answer this question, we read the scattered and highly informal coverage of elections from newspapers in the first several decades of US elections. We did not conduct a formal content analysis because of the inconsistent availability, inconsistent formats, etc., of newspaper coverage. We did, however, readily find examples of newspaper coverage blaming incumbents for economic contractions all the way back to George Washington.

For example, George Washington faced an economic contraction in his 8th year in office. It began with a land speculation bubble centered around Washington, DC, where speculators hoped to cash in on the construction of the national capital. The real estate bubble collapsed in early 1796 and appears to have started a mild recession. Benjamin Bache's *Aurora General Advertiser* directly blamed Washington: under his leadership "our ears are dinned with the tales of bankruptcy, the ruin of our commerce, and the distress of our citizens" (Mann 2002, p. 168). Newspaper coverage of Thomas Jefferson also frequently blamed him for an ongoing economic contraction in 1808—an easy connection to draw because his Embargo Act likely caused the hard times. Newspapers in 1816 similarly connected James Madison

to the hard times under his presidency, which stemmed from a financial panic in Britain.

We have compiled quotes illustrating these examples from election-year coverage during the first few decades of US history in the Supporting Information (SI). We think this coverage makes it clear that economic rationales for voting decisions were available to at least some voters during the earliest years of the Republic.

Data

To examine whether economic voting occurred throughout US history, we rely on annual real GDP estimates from Johnston and Williamson (2018), which attempt to measure GDP back to US independence. Other scholars have estimated pre-1930s GDP (McCusker 2000), but Johnston and Williamson (2018) provide the most comprehensive estimates. They rely on decennial census data and then attempt to bridge those once-a-decade estimates with economic series available on a yearly basis. Since they have greater confidence in the estimates of GDP levels than in the year-to-year changes, Johnston and Williamson (2018) caution against using these data for time-series analysis. To address such concerns, we examine whether the findings hold up with alternative economic measures and when we simply categorize years into expansions and contractions. In particular, we check robustness with GDP estimates from the Maddison Project (Bolt et al. 2018), updated versions of NBER recession dating (Davis 2006; National Bureau of Economic Research 2018), data on historical industrial production (Board of Governors of the Federal Reserve System 2018; Davis 2004), and annual qualitative analyses of the economy through 1926 (Thorp and Thorp 1926). Although the magnitude of booms and busts may be imprecise, these indicators agree on whether the economy expanded or contracted in any given year almost 90% of the time (202 of 229 years). With multiple measures of the economy, we could use a measurement error approach, but the measures depend on similar sources to estimate year-to-year changes in between census years (where we have the best estimates of GDP levels), so the measures are not independent.

The electoral data are from the American Presidency Project (Woolley and Peters 2020). For analyses of presidents' decisions to run again, we include the 52 contests in which incumbents did not face 22nd amendment term limits, thereby excluding five elections (1960, 1988, 2000, 2008, and 2016).

Appendix Table 4 provides descriptive statistics for the variables, and Supporting Information (SI) section 2 describes the sources for the data.

The Economy and Incumbent Presidents' Decisions to Run Again

Political scientists usually focus on incumbent (or incumbent party) vote share when studying economic voting. However, if incumbents notice that their popularity depends on the state of the economy, their decision about whether to run again may depend on how the economy is faring. Thus, focusing only on vote share likely

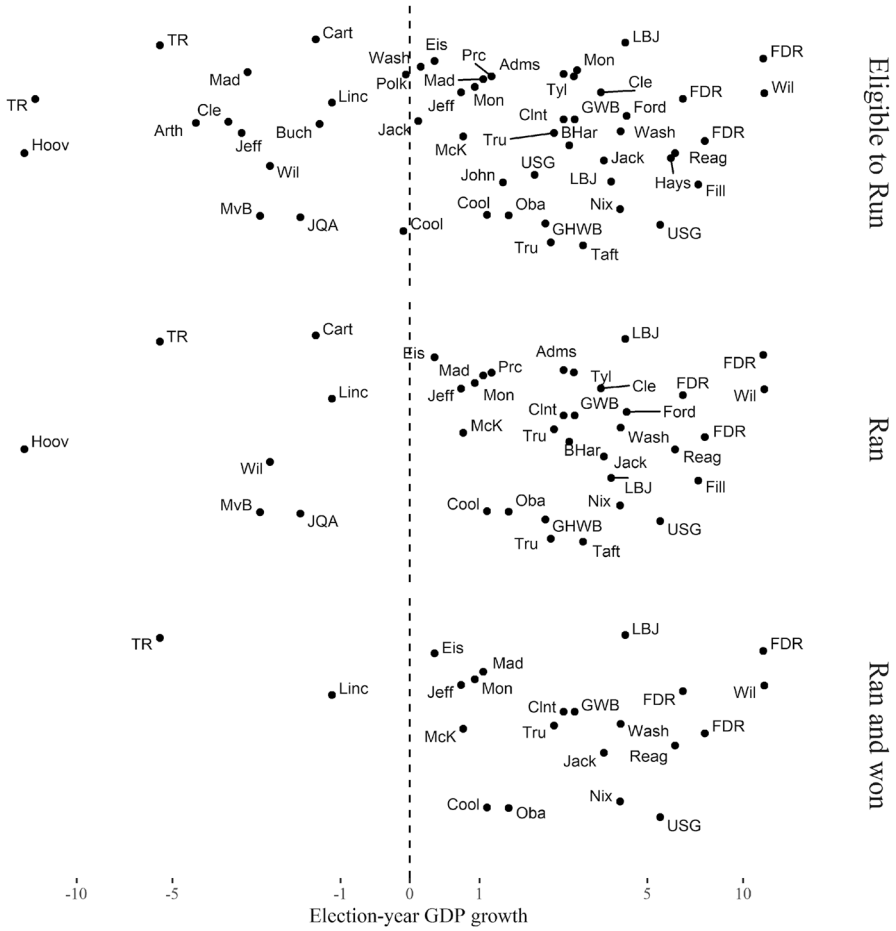

Fig. 1 Election-year GDP change and electoral outcomes, 1790–2016. Note: This figure shows the relationship between election-year GDP change and incumbent presidents' choice to run and, if they did run, whether they were reelected. The top panel shows all incumbent presidents who were eligible to run again. The middle panel shows those who chose to run. The bottom panel shows those who won. The figure shows that, when GDP contracted, presidents rarely ran and/or won. In the 15 elections occurring during election-year contractions, seven incumbents ran (47%) and only two won (13%). In contrast, in the 37 elections during economic growth, 31 incumbents ran (84%) and 20 won (54%). Using a chi-squared test, the difference on running is significant at $p=0.006$, while the difference on running and winning is significant at $p=0.011$. Only two incumbents with negative growth ran and won: Abraham Lincoln in 1864 and Theodore Roosevelt in 1904—both exceptions proving the rule (see text). For a similar graph with year-3 results, see SI section 2

understates the effect of the economy.[2] This is less of a problem for recent decades as most incumbents sought and secured renomination, but more of an issue

[2] Note that Jacobson and Kellner (1981) make a similar argument about the decisions of members of congress to seek re-election.

pre-WWII. However, when considering earlier elections, we consider incumbents' decisions to run again in addition to vote share.

Based on the historical data described above, GDP growth toward the end of incumbents' terms is a strong predictor of whether presidents managed to retain office throughout US history, that is, whether they chose to run and then, if they did, whether they won. Figure 1 depicts the relationship between GDP growth and presidential electoral outcomes from 1792 to 2016. We calculate GDP growth with the log change, which approximates percent change and addresses the symmetry and additivity problems with percent change (Wetherell 1986). The top shows all incumbents who were eligible to run again. Seventy-one percent of them faced re-election in years of economic growth and 29% in years with recessions. The figure shows that, when GDP contracted, presidents rarely ran and/or won. In the 15 elections occurring during election-year contractions, seven incumbents sought re-election (47%) and only two won (13%). In contrast, in the 37 elections during economic expansions, 31 incumbents sought re-election (84%) and 20 won (54%). Using a chi-squared test, the difference on running is significant at $p = 0.006$, while the difference on running and winning is significant at $p = 0.011$.

Presidents therefore rarely sought and won reelection with declining election-year GDP. The two exceptions to this pattern prove the rule: Abraham Lincoln in 1864 likely benefited from Civil War victories (Shafer 2016), while Theodore Roosevelt saw economic recovery set in by the fall of 1904, before voters cast their ballots (Flood 2009; Davis 2006; Thorp and Thorp 1926). Of course, the economy is not the only factor influencing incumbents' decisions. Almost half of incumbents still left office during economic expansions. Most notably, Millard Fillmore, Rutherford B. Hayes, Lyndon B. Johnson, and Gerald Ford each retired or lost likely for non-economic reasons, ranging from slavery to war to Watergate.[3]

We show the results for all of US history in Fig. 1, but the same patterns hold up when we examine the 1792–1944 period. In fact, all but one of the election-year economic contractions with an eligible incumbent occurred during these earlier years. Using a chi-squared test, the lower rate of running again during economic contractions is significant at $p = 0.048$, while the lower rate on the combined running and winning variable is also significant at $p = 0.048$.

To examine the strength of this finding and its consistency over time, we present regression estimates in Tables 1 and 2. Our two dependent variables capture whether an incumbent sought another term and whether they attained one. We code *Run Again* 1 if the incumbent ran for office and 0 if they retired, while we code *Run-Win* 1 for a victory and 0 for a retirement or loss. *Run-Win* is the most comprehensive

[3] Specifically, the Fugitive Slave Act split Fillmore's Whig party, he narrowly lost re-nomination, and the Whig defeat in the general election signaled its end as a national party. Hayes came to power through the Compromise of 1877, and strife over "Rutherfraud's" ascendance may have spurred him to honor his pre-election pledge of serving only one term (of course, numerous candidates broke such promises). LBJ's 1968 withdrawal during the nomination process may have been due to the Vietnam War—while he initially ran for a second full term, he withdrew after barely defeating anti-war candidate Eugene McCarthy in the New Hampshire primary. Ford's loss may have stemmed in part from his unpopular pardon of Nixon and a primary fight with Ronald Reagan.

Table 1 Effect of Election-Year GDP Change on Presidents' Decisions to Run Again and on Whether They Ran and Won, 1792–2016

	DV: run again				DV: run-win				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	1792–2016								
GDP growth (log change)	0.031 (0.014)	0.029 (0.014)	0.028 (0.014)	0.026 (0.015)	0.039 (0.012)	0.037 (0.011)	0.037 (0.011)	0.03(0.011) 8	0.038 (0.011)
Dies within one term		− 0.476 (0.227)	− 0.533 (0.183)	− 0.524 (0.192)		− 0.402 (0.091)	− 0.361 (0.093)	− 0.325 (0.154)	− 0.277 (0.175)
War			− 0.204 (0.103)	− 0.225 (0.116)			0.14(0.135) 6	0.04(0.124) 6	0.04(0.114) 2
Party years in power				− 0.009 (0.013)				− 0.025 (0.012)	− 0.026 (0.011)
Dominant party				0.028 (0.130)				0.245 (0.106)	0.266 (0.107)
Multicandidate race									− 0.350 (0.133)
Constant	0.689 (0.069)	0.729 (0.070)	0.734 (0.068)	0.799 (0.120)	0.371 (0.065)	0.405 (0.068)	0.401 (0.068)	0.529 (0.121)	0.576 (0.120)
Observations	52	52	52	52	52	52	52	52	52
R-squared	0.105	0.186	0.234	0.244	0.130	0.177	0.196	0.302	0.359
	1792–1944								
GDP growth (log change)	0.027 (0.016)	0.023 (0.015)	0.023 (0.015)	0.023 (0.017)	0.035 (0.012)	0.033 (0.012)	0.033 (0.012)	0.037 (0.013)	0.036 (0.013)
Dies within one term		− 0.637 (0.099)	− 0.647 (0.098)	− 0.633 (0.132)		− 0.308 (0.095)	− 0.299 (0.096)	− 0.249 (0.189)	− 0.288 (0.198)
War			− 0.175 (0.142)	− 0.206 (0.155)			0.156 (0.172)	0.027 (0.155)	0.044 (0.148)
Party years in power				− 0.007 (0.015)				− 0.016 (0.012)	− 0.018 (0.012)
Dominant party				0.057 (0.141)				0.270 (0.124)	0.291 (0.125)
Multicandidate race									− 0.316 (0.196)
Constant	0.616 (0.081)	0.669 (0.083)	0.679 (0.082)	0.715 (0.151)	0.328 (0.074)	0.353 (0.080)	0.345 (0.081)	0.383 (0.136)	0.436 (0.140)
Observations	39	39	39	39	39	39	39	39	39
R-squared	0.086	0.209	0.236	0.245	0.139	0.168	0.189	0.307	0.354

Bootstrap standard errors in parentheses. Each column shows a separate regression model. The table shows that election-year GDP growth predicts presidents' decision to run again and whether they run and win, even with a range of control variables. Appendix Table 4 shows descriptive statistics. Table 2 shows robustness checks. See text for variable coding

measure of incumbents returning to power. It accounts for both their decision to run again and whether voters reelected them. Some of those coded as having sought another term may surprise. John Tyler, Millard Fillmore, Franklin Pierce, Woodrow Wilson, Harry Truman, and Lyndon B. Johnson each tried and failed to win renomination (SI section 2, pages 6–9, for citations).[4]

Table 1 presents regression estimates using linear probability models. The top half of the table shows the 1792–2016 results, and the bottom half 1792–1944. We first discuss the overall results in the top half. Columns 1 and 5 show the bivariate estimates, revealing that GDP growth moderately affects the chances of running again and winning. The run-again coefficient of 0.031 implies that, per 1% increase in GDP growth, the incumbent's probability of running again rises by about 3%. The bivariate estimated effect on winning of 0.039 in Column 4 suggests that a 1% increase in GDP growth increases the incumbent's chances of running-winning by about 4%. These coefficients imply that the effects could be substantial: a 5% GDP swing would imply a 15-point change in the probability of running again and a 20-point change in the probability of running-winning. Historically 5% GDP changes were common, occurring in 22% of years between 1790 and 2016. Of course, the GDP growth measure is noisy and the coefficients are imprecisely estimated, though they are generally statistically significant at conventional levels (tests fail to find evidence of autocorrelation).[5] We employ "bootstrap" standard errors throughout the analysis, but they generally match plain-vanilla standard errors, as shown in Table 2.

We next control for variables that could correlate with growth and/or with the dependent variables. To capture the impact of poor health on a president's decision to (not) run again, we code a *Dies Within One Term* variable to 1 when a president died naturally within one term of leaving office. To capture the effect of wars, we subjectively code the variable *War* 1 for a politically popular war near the election, − 1 for an unpopular conflict, and 0 otherwise based on our reading of election coverage and historical work from these elections.[6] Given the subjective nature of this variable, we also tried several alternative war codings but the results remained unchanged in part due to the negligible correlation between war and GDP growth.[7] We also include *Party Years in Power*, which captures how long a party

[4] Several former presidents sought non-consecutive terms (such as van Buren, Fillmore, Grant, and Theodore Roosevelt), but these do not factor into our analysis.

[5] In part, the absence of autocorrelation arises because we code our dependent variables not based on candidate or party but incumbent. In a regression of our key run-win dependent variable on election-year GDP growth, the Durbin-Watson statistic is almost exactly 2, indicating no presence of autocorrelation at lag 1 in the residuals. The Breusch-Godfrey LM test for autocorrelation yields a p-value of 0.31 for the first lag and 0.10 for the second lag. In our analysis examining incumbent party vote share, we do detect autocorrelation but it's only clearly present post-World War II.

[6] We code the Quasi-War as unpopular in the 1800 election; the War of 1812 as unpopular in 1812 but popular in 1816; the Mexican–American War as popular in 1848; the Civil War as popular in 1864; the Spanish-American war as popular in 1900; World War I as unpopular in 1920; World War II as popular in 1944; the Korean War as unpopular in 1952; the Vietnam War as unpopular in 1968 but popular in 1972; and the Iraq war as unpopular in 2004.

[7] We tried an alternative version coding 1800, 1812, 1848, 1972, and 2004 to neither popular nor unpopular, a more conservative coding. We also tried a liberal version where we coded 1916, 1940, and 1964 as popular (popular for staying out in 1916 and 1940 and for responding to an alleged attack in 1964).

Table 2 Run again, run-win, and election year GDP growth robustness checks

	GDP growth's bivariate estimate (from first row of Table 1)	DV: run again			DV: run-win			
		b	SE	R^2	b	SE	R^2	N
1	Baseline: election-year GDP growth, 1792–2016	.031	.014	.105	.039	.012	.13	52
	GDP growth's robustness to various historical periods							
2	1792–1944	.027	.016	.086	.035	.012	.139	39
3	1948–2012	–	–	–	.054	.08	.042	13
4	1792—1928	.042	.016	.125	.025	.019	.051	35
5	1932 – 2016	–	–	–	.043	.019	.219	17
6	1792 – 1840	.072	.056	.115	.116	.042	.300	13
7	1844 – 2016	.027	.015	.109	.033	.012	.119	39
8	1792 – 1856	.076	.038	.17	.045	.043	.067	17
9	1860 – 2016	.025	.018	.103	.037	.011	.154	35
	GDP growth's robustness to various time trends							
10	Controlling for year	.027	.014	.201	.036	.011	.17	52
11	Controlling for year and year^2	.026	.014	.216	.034	.012	.197	52
12	Controlling for year, year^2, and year^3	.025	.013	.234	.033	.012	.212	52
	GDP growth's robustness to outliers							
13	Excluding the four biggest GDP swing elections (1908, 1916, 1932, 1936) and is	.053	.022	.125	.043	.023	.066	48
14	Smallest estimates after dropping each year, one by one, and reestimating	.027	.015	.064	.037	.014	.116	51
	GDP growth's robustness to alternative standard errors and estimators							
15	Robust standard errors (rather than bootstrapped)	.031	.014	.105	.039	.012	.13	52
16	Regular standard errors (rather than bootstrapped)	.031	.013	.105	.039	.010	.13	52
17	Probit estimate with bootstrapped standard errors	.099	.079	–	.136	.065	–	52
	Indicators for expansion (1) versus contraction (0) instead of GDP growth							
18	Indicator based on GDP growth	.371	.147	.144	.407	.124	.139	52
19	Indicator based on NBER recession history and Davis revisions (2006)	.239	.129	.067	.335	.131	.107	52

Table 2 (continued)

	GDP growth's bivariate estimate (from first row of Table 1)	DV: run again			DV: run-win			
		b	SE	R^2	b	SE	R^2	N
	Robustness to alternative economic growth measures							
20	GDP growth from Maddison Project data (1804–2016)	.022	.015	.057	.033	.011	.102	49
21	Davis + FRED Industrial Produc. Data (1790–1915, 1919–2016)	.015	.012	.042	-.001	.011	.000	51
22	Thorp's economic descriptions coded to 3-point scale (1792–1924)	.259	.096	.157	.159	.117	.063	34
	Election year or whole term?							
23	Whole-Term GDP Growth, 1796—2016	.006	.006	.025	.011	.006	.062	51
	Conservative Run-Again Coding							
24	Wilson, Truman, Lyndon Johnson Retire	.031	.016	.095	–	–	–	52

Each row presents estimates from two regression models based on the regression models in Table 1. Rows 1–17 use election-year GDP change as the key explanatory variable. Rows 18–23 check the results with other measures of the economy. Appendix Table 4 shows descriptive statistics; SI section 3 has a table analogous to Table 2 but analyzing party rather than presidential victories

had continuously controlled the presidency. We also try to account for lengthy periods in US history when one party failed to effectively contest national elections by including the variable *Dominant Party*, subjectively coding 1 for years in which incumbents faced comparatively weak opposition, − 1 when facing comparatively strong opposition, and 0 otherwise (see SI section 3 for details). Because even strong candidates may lose elections if their party fails to coalesce or significant third-party bids siphon votes, we code *Multicandidate* 1 if three or more candidates each secured 10% or more of the popular vote. This covariate is likely posttreatment and only relevant for winning. Across a variety of specifications, Table 1 shows that these variables leave the GDP estimate unchanged.[8]

Of course, researchers need little convincing that the economy mattered to presidential elections post-World War II—the evidence is strong. These data suggest, however, that this relationship existed beforehand, before presidents possessed the Keynesian toolset to manage growth. The bottom half of Table 1 addresses this directly by re-estimating these models only for elections from 1792 to 1944. The estimated effects of election-year GDP growth decrease somewhat for both dependent variables but remain substantively large. The estimates for running again do not quite reach statistical significance at conventional levels, but the estimates for run-win do.

In Table 2, we present numerous other robustness checks. The table displays the coefficient, standard error (bootstrapped), r-squared, and *n* across a variety of specifications. The first set of columns (1–4) shows these estimates for the dependent variable Run Again, and the second set (5–9) shows Run-Win. Rows 1 and 2 reiterate the baseline results from Table 1.

Rows 3–9 show how the results vary across US history. Row 3 shows the estimates for 1948–2016. It does not show run-again estimates because we cannot estimate the run-again models after 1928 because all incumbents ran again, by our coding, unless termed out. Row 4 displays the years before the government formally began measuring GDP, 1792–1928, and row 5 shows 1932–2016. Row 6 displays 1792–1840—capturing the critical early years of the Republic—and row 7 presents 1844–2016. Finally, row 8 presents 1792–1856 estimates and row 9 shows 1860–2016. The estimates for both dependent variables remain notably similar across these timeframes. The GDP change coefficients for Run-Again remain in the range 0.025–0.072. The estimated effect of GDP change on Run-Win ranges between 0.025 and 0.116.

Table 2 next shows that the results are not a function of long-run trends in politics or economics by controlling for time. It uses the baseline model from row 1. The estimates remain nearly identical to the baseline model when we control for the year, year^2, and year^3 (rows 10–12). Row 13 demonstrates their robustness to outliers: excluding the four election years that had the greatest expansions (1916, 1936)

[8] The control variables generally have their expected effects. Imminent death decreases the probability of running again and winning. War has the opposite of the expected effect on running again. The party's years in power has a negative effect on winning. Further analysis, however, reveals that this effect is absent in America's first century (SI section 2). Party dominance weakly predicts running again, but better predicts winning. The presence of multiple candidates understandably hurts the incumbent's chances of winning, although this may just represent a post-treatment consequence of a weak incumbent.

and the deepest contractions (1908, 1932) strengthens the results. Row 14 shows that the estimates are insensitive to excluding any one of the elections—the smallest Run Again coefficient occurs when we exclude the 1908 election, while the smallest Run-Win coefficient occurs when we exclude the 1940 election. We next present two alternative standard errors (row 15, robust standard errors and row 16, regular standard errors), both suggesting statistical significance below conventional levels. Row 17 shows results using probit rather than linear regression.

Next, we test the results using indicators of expansion rather than GDP change. These indicators help address heteroskedasticity and concerns about noise in the GDP estimates. In row 18, we replace the continuous GDP variable with a dummy that captures positive growth (coded as 1) or negative growth (0). Row 19 presents the *Davis* indicator of expansions (1) and contractions (0), based on estimates of industrial production through 1914 and NBER recession history afterward (Davis 2006; National Bureau of Economic Research 2018). Unsurprisingly, we find that recessions decreased the chances that an incumbent ran again and reduced their chances of reelection if they did run.

To further check robustness, we employ other economic measures, although these share similar sources (SI section 2 describes their methodologies). In row 20 we use the Maddison Project GDP dataset—drawn from numerous estimates but focused on cross-country comparison—and find similar results, albeit suggesting a milder association between GDP and electoral outcomes (Bolt et al. 2018). Next, row 21 shows results based on industrial production indexes (Board of Governors of the Federal Reserve System 2018; Davis 2004). We also use a qualitative measure based on Thorp and Thorp (1926), who provided annual descriptions of the US economy from 1790 to 1926. We had three coders independently rate each year on a 3-point scale (− 1 to + 1) based on Thorp's descriptions, and use the median score they assigned (Cronbach's alpha = .84). Although economists have noted flaws in his work (such as a tendency to miss signs of recovery and over-reliance on commodity prices, thereby exaggerating volatility), row 22 shows that his descriptions also predict running and Run-Win, albeit imprecisely. These variables cover somewhat different timespans: the Maddison project starts before the 1804 election, while Thorp's qualitative descriptions end in 1926, explaining some of the variation in estimates for these measures.

Consistent with studies finding that what matters most to election outcomes is the state of the economy toward the end of an incumbent's term, row 23 shows that total growth over the previous 4 years matters substantially less than election-year growth. In section 3 of the SI (page 16), we also report estimates for each year individually and the first and second halves of presidential terms. In those estimates, we find that only the election year predicts both run again and run-win. Growth in year 3 is less predictive of incumbents' choice to run again, suggesting less bias from selection for year 3 in analyses of incumbent re-election and vote share. Consistent with less bias from selection, year-3 growth predicts running and winning quite well (consistent with Wlezien 2015). In fact, in the pre-World War II period, year-3 growth predicts run-win as well as year 4 does, including in models that include both. Year-3 and year-4 growth are also considerably more correlated pre-World

War II. We therefore report a version of Table 2 for year-3 growth in SI section 3. We expand on this interesting year-3 finding in the next section.

Finally, row 24 assesses whether GDP growth's relationship with the choice to run again holds up with a more conservative coding of who ran again. In particular, we restrict the run again cases to only those presidents who continued to run after the nomination conventions (using the nomination itself does not work because of incumbents who ran on third party tickets). We thus switch three cases to retiring—Wilson, Truman, and Johnson—rather than seeking further terms. As row 24 shows, the estimate remains identical in size.

Do economic contractions also influence party turnovers? We examine whether the economy affects parties by using incumbent party reelection as the DV, finding largely similar if weaker relationships. We present these results in SI section 3.

Finally, in analyzing this data, we were struck by a pattern that may help explain the unusual peaceful turnover of power in the early Republic. Early presidents faced surprisingly bad luck with the economy. In non-election years, presidents faced recessions in 41% of years from 1792 through 1840. However, in election years during this span presidents faced recessions 54% of the time (1796, 1808, 1812, 1816, 1828, 1836, and 1840). In fact, Washington, Jefferson, Madison, and Jackson each retired during contractions. The only immediate male heir of an early president, John Quincy Adams, attempted to win a second term amid the 1828 contraction and lost, abbreviating the first American dynasty. Martin van Buren also lost reelection in 1840 amidst an apparent recession. These recessions appear to have been generally mild—strong enough to potentially make presidents less popular, but maybe not strong enough to produce widespread dissatisfaction with the fledgling democratic institutions.

The Economy and Vote share

When studying economic voting, researchers usually analyze incumbent (or incumbent party) vote percentage as the dependent variable, not running and winning. Doing so, however, may underestimate the economy's effect on election results if it ignores the economy's impact on incumbents' decisions to run again. In the previous section, we saw that election-year growth was a strong determinant of incumbents' decisions about whether to run again up to 1928: only 38% of eligible incumbents sought reelection with negative election-year GDP growth, while 73% did so with positive growth. After 1928, incumbents ran again regardless of the state of the economy, perhaps feeling confident that the government's Keynesian toolkit would ensure growth in time for the election. Because the election-year economy influenced incumbents' decisions to run again prior to the war, we expect estimates of the election-year economy's effect on incumbent (and incumbent party) vote share to be smaller in that earlier period.

However, that does not mean the economy did not matter to vote choice in the earlier period. While research on economic voting has found that the election-year economy is the strongest determinant of vote share, the state of the economy in the year before the election also has some impact on vote share (Achen and Bartels

2016; Healy and Lenz 2014, though see Wlezien 2015, which finds an equal effect for the last 2 years of an incumbent's term). Since we found that the election-year economy influences the choice to run, we would expect it to depress the impact of the election-year economy on vote share prior to World War II, but not depress the impact of the previous-year economy (year 3 of presidents' terms). Furthermore, because incumbents' choice to run again appears to have been less influenced by the economy since World War II, both the state of the economy in the 3rd and 4th years of an incumbent president's term should influence their vote share in that period, although the latter should matter more (Achen and Bartels 2016; Healy and Lenz 2014).

Starting in 1824, states generally recorded the popular vote. In 1824, however, all candidates ran in the same party and President Monroe chose not to run again, so the election lacked an incumbent candidate. We therefore start our vote-share analysis in the following election, 1828, and consequently miss the critical early years of the Republic.[9]

We begin by analyzing incumbent party vote share and then turn to incumbent candidate vote. Figure 2 presents scatterplots of the incumbent party vote percent by the GDP growth rate, showing this relationship for pre-World War II on the left and post-World War II on the right. The figure shows incumbent party vote for year 3 of incumbents' terms at the top and year 4 at the bottom. We calculate incumbent party vote percent over the two highest vote-getters. Each scatterplot also includes an OLS regression line. The plots reveal a positive relationship in both periods, though, as expected, a noticeably weaker relationship prewar for year 4. Consistent with voter myopia, the impact of year-4 growth exceeds that of year-3 growth during the post-war period.

Table 3 shows Ordinary Least Squares (OLS) regression estimates, with each row presenting a separate regression, as in Table 2. The first set of rows show regressions of incumbent party vote percent on election-year GDP change. These rows show that year-4 GDP change somewhat influenced incumbent vote share throughout US history, but did so more clearly post-World War II when the economy had less influence on incumbents' decisions about running again. Between 1828 and 1944, a 1% increase in GDP corresponded with a 0.3 increase in incumbent party vote percent. By contrast, after World War II, a 1% increase corresponded with a 1.2-percentage point increase in vote share. The estimates are imprecise, and the pre-World War II estimates are not statistically significant at conventional levels, though close.

Table 3 next examines incumbent candidate vote percent, as opposed to incumbent party vote percent. The estimates of GDP's effect are larger, consistent with evidence that voters hold incumbent presidents more accountable for the economy than incumbent parties (e.g. Norpoth 2004), but the estimates remain imprecise. As noted above, we are only observing the candidates who chose to run in that earlier period, and we know that the ones facing the stiffest headwinds chose not to, likely suppressing the relationship between growth and incumbent vote share. Moreover,

[9] Some states held popular votes before 1824, but the reporting was inconsistent, with totals for individual electors and totals across the candidates' electors sometimes failing to match.

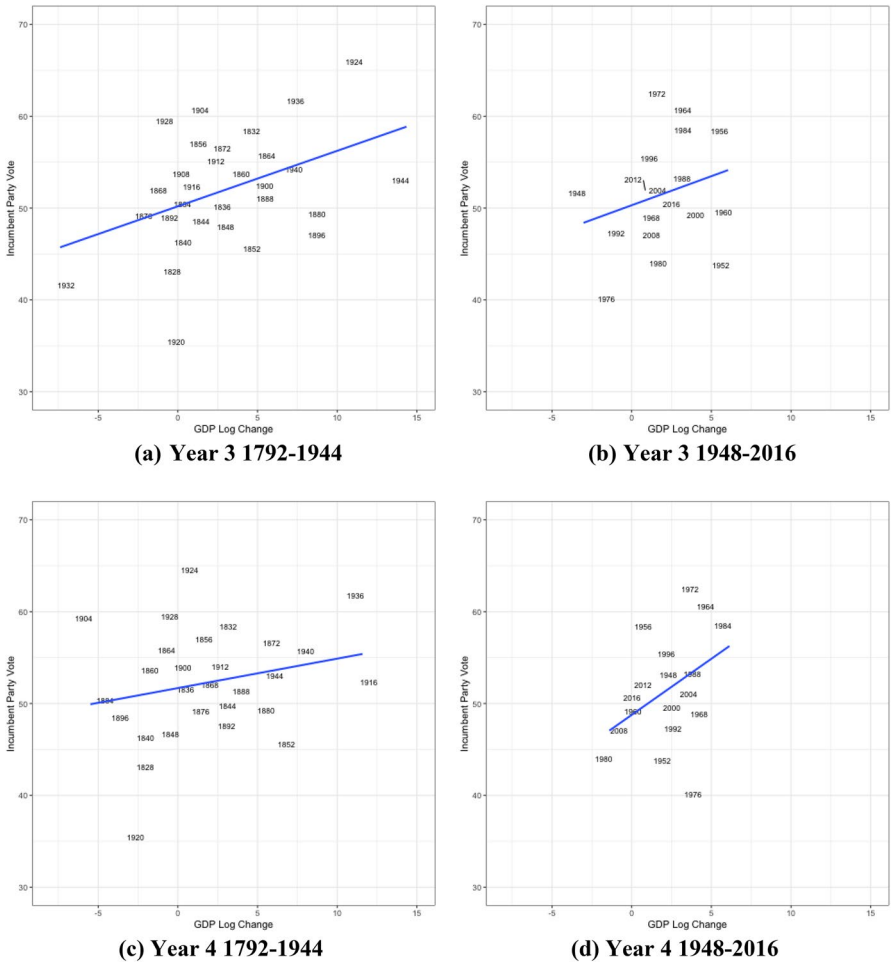

Fig. 2 Economic growth and incumbent party vote share

the 47% who do choose to run during recessions may do so precisely because they believe they have sufficient electoral advantages to offset the electoral disadvantages from economic contractions, such as when President Lincoln ran in 1864 during a recession but in the wake of capturing Atlanta and numerous other Civil War victories. Because of this downward bias, we believe that the Run-Win measure we use above is a better indicator of the economy's role in elections.[10]

[10] Another possible explanation for the weak relationship between election-year growth and incumbent vote percent is that the composition of the United States changed considerably across elections as states joined the union, making election to election comparisons of incumbent vote percent noisy. To explore this possibility, we recalculated incumbent vote percent only among states in the union in the prior election. We also explored analyzing change in incumbent party and incumbent candidate vote share by controlling for lagged incumbent vote, again focusing only on states in the union in subsequent elections. These analyses, however, yielded very similar estimates to those in Table 3.

Table 3 GDP growth and presidential vote share

	B	SE	R^2	N
Election year GDP growth (log change)				
DV: incumbent party vote %				
1828–2016	.357	.208	.079	48
1948–2016	1.222	.736	.167	18
1828–1944	.314	.216	.086	30
DV: incumbent candidate vote %				
1828–2016	.563	.252	.220	26
1948–2016	1.908	.887	.464	10
1828–1944	.475	.288	.220	16
Year before election GDP growth (log change)				
DV: incumbent party vote %				
1828–2016	.605	.246	.142	48
1948–2016	.633	.716	.062	18
1828–1944	.604	.251	.182	30
DV: incumbent candidate vote %				
1828–2016	.841	.310	.344	26
1948–2016	1.269	.731	.254	10
1828–1944	.864	.330	.454	16

Bootstrap standard errors in parentheses. Each row presents a separate regression model. Each B shows the estimate of vote % regressed on GDP growth, with the table's top half showing this estimate for election year GDP growth and the bottom half the year before election GDP growth

Other factors may also have weakened the relationship in year 4 simply by chance. In 1852, for example, internal debates about slavery split asunder the incumbent Whig Party, harming their nominee's chances despite a strong economy. The Whigs then vanished as an organized force in American politics. As we noted above, the 1904 outlier likely represents an exception that proves the rule, as the monthly industrial production data shows that growth had returned by the fall of 1904, just in time to reelect Theodore Roosevelt. 1924 is another such case: industrial production declined in most months between the summer of 1923 and the summer of 1924, but then grew consistently starting in August 1924, just in time for the election.

As shown in Fig. 2, GDP change in the year before the election was a stronger predictor of incumbent vote percent pre-World War II. So, Table 3 next shows regressions with this variable, rather than election-year GDP change, as the independent variable. The estimates are statistically significant at conventional levels pre-World War II.

It is intriguing that, while election-year growth mattered most for incumbents' decisions to run again prior to the development of Keynesian economic stimulus tools, year-4 growth may have mattered less for vote share. It may be the case that, prior to Keynesianism, incumbent presidents felt compelled to step down when facing a recession, while, with the advent of Keynesian economics, they now feel less bound by the economy because they have the tools to stimulate the economy. Incumbents

may also have felt more constrained by the state of the economy in early decades of US history because the two-term norm was only being established and the 22nd amendment, enforcing that norm, only became part of the Constitution in 1951. If incumbents used to decide whether to run again based on year-4 growth, that would account for the weaker impact of growth in that year on voters in the earlier period. With the modern primary system, incumbents likely must make decisions earlier, and can always hope that stimulative policies will kick in by Election Day.

Conclusion

While countless studies document the impact of the state of the economy on election results in the United States and elsewhere, nearly all those studies begin with elections in the mid-twentieth century. Doing so prevents us from assessing whether economic voting depends on governments having a Keynesian toolset to steer the economy, governments playing a large role in their economies, governments collecting and disseminating economic metrics, voters being educated and exposed to media coverage of the economy, and the economy being strongly integrated at the national level.

Ours is the first study to assess the impact of the economy on elections throughout American history. We found that incumbent presidents are more likely to run and win in a favorable economic context. When GDP declines in the election, presidents less often attempted to hold on to power, with only 47% of eligible incumbents running for reelection, and even fewer winning, just 13%. With positive GDP growth, by contrast, 84% sought another term and 54% succeeded. We found less clear results on the relationship between election-year economic growth and incumbent vote percent for the pre-World War II period, possibly because incumbents decided whether to run again on the basis of year-4 growth, thus potentially limiting the degree to which voters consider election-year growth when voting. We did, however, find a strong relationship between year-3 growth and election results, potentially because selection was weaker with year 3.

These findings suggest that the societal and economic preconditions necessary for economic voting may be more minimal than previously thought. Just as Dassonneville and Lewis-Beck (2017) recently showed that the state of the economy influences election results in a wide variety of institutional configurations, the economy seems to have mattered to election outcomes in the early United States even though American economic, societal, and electoral systems functioned very differently than today. Finally, they also suggest that voters held presidents accountable for the economy before presidents had the Keynesian toolset and before the federal government played as large a role in the economy. Our findings thus support the notion of blind retrospection discussed by Achen and Bartels (2016). Voters hold incumbents responsible for economic conditions regardless of the influence incumbents have on the economy.

Appendix

See Table 4.

Table 4 Descriptive statistics

Variables	(1) Mean	(2) SD	(3) Min	(4) Max	(5) N
Run again	0.731	0.448	0	1	52
Run-win	0.423	0.499	0	1	52
GDP growth in election year	1.347	4.645	− 14.44	11.59	52
Dies within one term	0.0769	0.269	0	1	52
War	0	0.485	− 1	1	52
Party years in power	8.442	5.819	3	28	52
Dominant party	0.327	0.585	− 1	1	52
Multicandidate	0.135	0.345	0	1	52
Indicator based on NBER recession history and Davis revisions (2006)	0.635	0.486	0	1	52
GDP growth from Maddison Project data (1804–2016)	1.303	4.890	− 16.38	11.52	49
Davis + FRED industrial production data (1790–1915, 1919–2016)	2.174	6.233	− 17.030	15.82	51
Thorp's economic descriptions coded to 3-point scale (1792–1924)	− 0.088	0.753	− 1	1	34
Whole-term GDP Growth, 1796–2016	6.676	10.956	− 26.959	52.38	51
Incumbent party vote %	0.520	.063	.361	.652	43
Incumbent candidate vote %	0.519	.063	.361	.652	43
GDP growth in year before election	2.245	3.799	− 7.390	14.348	52

References

Achen, C. H. (2016). A baseline for incumbency effects. In A. S. Gerber & E. Schickler (Eds.), *Governing in a polarized age: Elections, parties, and political representation in America* (pp. 90–112). Cambridge: Cambridge University Press.

Achen, C. H., & Bartels, L. M. (2016). *Democracy for realists: Why elections do not produce responsive government.s Princeton studies in political behavior*. Princeton, NJ: Princeton University Press.

Anderson, C. J. (2007). The end of economic voting? Contingency dilemmas and the limits of democratic accountability. *Annual Review of Political Science, 10,* 271–296. https://doi.org/10.1146/annurev.polisci.10.050806.155344.

Barro, R. J., & Sala-i Martin, X. (1992). Convergence. *Journal of Political Economy, 100*(2), 223–251. https://doi.org/10.1086/261816.

Board of Governors of the Federal Reserve System. (2018). "Industrial Production Index, 1919–2018." FRED, Federal Reserve Bank of St. Louis. 2018. https://fred.stlouisfed.org/series/INDPRO.

Bolt, J., Inklaar, R., de Jong, H., & van Zanden J. L. (2018). Maddison Project Database: 'Rebasing "Maddison": New income comparisons and the shape of long-run economic development.

Coyle, D. (2015). *GDP: A brief but affectionate history—Revised and expanded edition*. Princeton, NJ: Princeton University Press.

Dalton, R. J. (1984). Cognitive mobilization and partisan dealignment in advanced industrial democracies. *The Journal of Politics, 46*(1), 264–284. https://doi.org/10.2307/2130444.

Dassonneville, R., & Lewis-Beck, M. (2017). Rules, institutions and the economic vote: Clarifying clarity of responsibility. *West European Politics, 40*(3), 534–559. https://doi.org/10.1080/01402382.2016.1266186.

Dassonneville, R., & Lewis-Beck, M. (2019). A changing economic vote in Western Europe? Long-term vs. short-term forces. *European Political Science Review, 11*(1), 91–108. https://doi.org/10.1017/S1755773918000231.

Davis, J. H. (2004). An annual index of U. S. industrial production, 1790–1915. *The Quarterly Journal of Economics, 119*(4), 1177–1215.

Davis, J. H. (2006). An improved annual chronology of U.S. Business Cycles since the 1790s. *The Journal of Economic History, 66*(1), 103–121.

Duch, R. M. (2001). A developmental model of heterogeneous economic voting in new democracies. *American Political Science Review, 95*(4), 895–910. https://doi.org/10.1017/S0003055400400080.

Duch, R. M., & Stevenson, R. T. (2008). *The economic vote: How political and economic institutions condition election results*. Cambridge: Cambridge University Press.

Erikson, R. S. (1989). Economic conditions and the presidential vote. *The American Political Science Review, 83*(2), 567–573. https://doi.org/10.2307/1962406.

Fair, R. C. (1996). The effect of economic events on votes for president: 1992 update. *Political Behavior, 18*(2), 119–139. https://doi.org/10.1007/BF01498787.

Flood, C. B. (2009). *1864: Lincoln at the Gates of History* (1st Simon & Schuster hardcover). New York: Simon & Schuster.

Healy, A., & Lenz, G. (2014). Substituting the end for the whole: Why voters respond primarily to the election-year economy. *American Journal of Political Science, 58*(1), 31–47. https://doi.org/10.1111/ajps.12053.

Healy, A., & Malhotra, N. (2013). Retrospective voting reconsidered. *Annual Review of Political Science, 16,* 285–306. https://doi.org/10.1146/annurev-polisci-032211-212920.

Hellwig, T., & Samuels, D. (2007). Voting in open economies: The electoral consequences of globalization. *Comparative Political Studies, 40*(3), 283–306.

Hibbs, D.A. 1989. *The American Political Economy*. Harvard University Press.

Impartial Observer. 1808, December 3, 1808.

Johnston, L., & Williamson, S. H. (2018). Measuring worth—Gross domestic product—What was the U.S. GDP then? 2018. https://www.measuringworth.com/usgdp/.

Jacobson, G. C., & Kellner, S. (1981). *Strategy and choice in congressional elections*. New Haven: Yale University Press.

Kiewiet, D. R., & Udell, M. (1998). Twenty-five years after Kramer: An assessment of economic retrospective voting based upon improved estimates of income and unemployment. *Economics & Politics, 10*(3), 219–248. https://doi.org/10.1111/1468-0343.00045.

Kramer, G. H. (1971). Short-term fluctuations in U.S. voting behavior, 1896–1964. *The American Political Science Review, 65*(1), 131–143. https://doi.org/10.2307/1955049.

Krause, G. A. (1997). Voters, information heterogeneity, and the dynamics of aggregate economic expectations. *American Journal of Political Science, 41*(4), 1170–1200. https://doi.org/10.2307/2960486.

Lewis-Beck, M. S. (1988). *Economics and elections: The major western democracies*. Ann Arbor: University of Michigan Press.

Lewis-Beck, M. S., & Ratto, M. C. (2013). Economic voting in Latin America: A general model. *Electoral Studies, 32*(3), 489–493. https://doi.org/10.1016/j.electstud.2013.05.023.

Lewis-Beck, M. S., & Stegmaier, M. (2000). Economic determinants of electoral outcomes. *Annual Review of Political Science, 3*(1), 183–219. https://doi.org/10.1146/annurev.polisci.3.1.183.

Lynch, G. P. (1999). Presidential elections and the economy 1872 to 1996: The Times they are a 'Changin or the Song Remains the Same? *Political Research Quarterly, 52*(4), 825–844. https://doi.org/10.1177/106591299905200408.

Mann, B. H. (2002). *Republic of debtors: Bankruptcy in the age of American independence*. Cambridge, MA: Harvard University Press.

Markus, G. B. (1992). The impact of personal and national economic conditions on presidential voting, 1956–1988. *American Journal of Political Science, 36*(3), 829–834. https://doi.org/10.2307/2111594.

McCusker, J. J. (2000). Estimating early American gross domestic product. *Historical Methods, 33*(3), 155–162.

National Bureau of Economic Research. (2018). US business cycle expansions and contractions. 2018. http://www.nber.org/cycles.html.

New-Hampshire Gazette. 1840, August 4, 1840.

Norpoth, H. (2004). Bush v. Gore: The recount of economic voting. In H. F. Weisberg & C. Wilcox (Eds.), *Models of voting in presidential elections*. Stanford: Stanford University Press.

Powell, G. B., & Whitten, G. D. (1993). A cross-national analysis of economic voting: Taking account of the political context. *American Journal of Political Science, 37*(2), 391–414. https://doi.org/10.2307/2111378.

Shafer, R. G. (2016). *The Carnival Campaign: How the Rollicking 1840 Campaign of "Tippecanoe and Tyler Too" changed presidential elections forever*. Chicago, IL: Chicago Review Press.

Singer, M. M., & Carlin, R. E. (2013). Context counts: The election cycle, development, and the nature of economic voting. *The Journal of Politics, 75*(3), 730–742. https://doi.org/10.1017/S0022381613000467.

The Balance, and Columbian Repository. 1804. "Editorial," September 25, 1804.

The Pittsfield Sun. 1840, November 5, 1840.

Thorp, W. L., & Thorp, H. E. (1926). *Business annals: United States, England, France, Germany, Austria, Russia, Sweden, Netherlands, Italy, Argentina, Brazil, Canada, South Africa, Australia, India, Japan, China*. Publications of the National Bureau of Economic Research, no. 8. New York: National Bureau of Economic Research.

Tufte, E. R. (1980). *Political control of the economy*. Princeton: Princeton University Press.

Vavreck, L. (2009). *The message matters: The economy and presidential campaigns*. Princeton, NJ: Princeton University Press.

Wetherell, C. (1986). The log percent (L%): An absolute measure of relative change. *Historical Methods, 19*(1), 25–26.

Weekly Aurora. (1816). National Economy Banking No. IV, January 30, 1816, VI:51 edition.

Wlezien, C. (2015). The myopic voter? The economy and US presidential elections. *Electoral Studies, 39,* 195–204. https://doi.org/10.1016/j.electstud.2015.03.010.

Woolley, J. T., & Peters, G. (2020). The American Presidency Project [online]. Santa Barbara, CA. Available from the World Wide Web: http://www.presidency.ucsb.edu/ws/?pid=9259.

Zaller, J. (2004). Floating voters in U.S. presidential elections, 1948–2000. In W. E. Saris & P. M. Sniderman (Eds.), *Studied in public opinion: attitudes, nonattitudes, measurement error, and change*. Princeton: Princeton University Press.