

The Impact of Job Growth and Inflation on Presidential Elections

Abstract

This study seeks to identify the economic forces and structural variables that influence the share of the popular vote received by incumbent political parties for the 17 elections over the 1956-2020 period. The regression findings show that percentage changes over differing time periods prior to the election in employment and the CPI are highly significant in explaining the share of the popular vote received by presidential candidates. The share of the popular vote received by third parties did not significantly affect the outcome of any of the presidential elections in our sample. The optimal look-back period was explored to measure the cumulative impact of the percentage change on employment and the CPI. The findings suggest that voters have a longer recall for job versus price changes. Finally, simulations are presented to forecast the share of the popular vote for the presidential candidate of the incumbent party in the 2024 election.

Keywords: economics, election, forecast, president, inflation, jobs

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1 Introduction

This study will focus on identifying the economic factors that explain the popular vote for US Presidents 1956 – 2020 so as to make a prediction for the election of 2024. In particular, we are interested in exploring the salience of those economic variables over which a President has at least some influence. To attempt an answer, we need to create a forecasting model that makes use of data available at the time the President decides to implement any such strategy.

Each of the academic models most commonly used for predicting Presidential election outcomes has some imperfections for this task. Their specific deficiencies are that 1) most ignore a third-party effect by using as the dependent variable the percentage of the two-party popular vote won by an incumbent President's party rather than the percentage of the overall popular vote; 2) most rely on quarterly data, often not available until after the crucial periods in which a President would make the tactical decision to manipulate an economic lever; 3) few allow for a different look-back period for some economic variables than others; and 4) most include polling data as an independent variable, with potential collinearity since the economic variables measured at any time affect both then-current polling and the eventual popular vote outcome.

I. Third Party

Forecasts of US Presidential elections in the academic literature most frequently have used the percentage of the two major party votes cast for the party of the White House incumbent as the dependent variable. (See, e.g., Fair, 1996; Fair, 2014; Hibbs, 2000; Hibbs, 2012; Erikson and Wlezien, 2008; Abramowitz, 1988; Abramowitz, 2012; Cuzan, Heggen & Bundrick, 2021; Campbell 2012; the latter two collecting reports on many models; Strong & Kohli, 2019, regressing the two major-party vote share but including a dummy variable for a third-party candidate). This approach assumes votes for third-party candidates will be split among the two major-party candidates in proportion to the latter's relative votes (see Fair, 1996, p. 123.) An exactly proportional split of the third-party candidate's vote, however, is a probabilistic impossibility.

II. The need to use separate, and current, data for employment and price.

The most common independent economic variable used to explain US Presidential elections is an estimate of real GNP per capita, measured over varying numbers of quarters prior to the election, sometimes as a snapshot (e.g., Abramowitz, 2012), sometimes as a cumulation from a date prior to the election up to the election (e.g., Cuzan, Heggen & Bundrick, 2021; Tien & Lewis-Beck, 2023; Wink, 2019, see Table 1, p. 204, for accumulation of studies). Real GNP per capita, however, combines both economic growth and inflation phenomena in a single measure. Economic growth and inflation, however, might affect voters differently. In addition, an inflation-adjusted variable like real GDP is likely to be correlated with a separate variable measuring price change. So, we propose using two separate independent variables: the change in employment (a real variable related to economic growth) and the change in the CPI.

In addition, for forecasting purposes, a predictive model should use the most recent economic data as soon as they are available, whereas many studies focused on explaining rather than predicting have used data that became available only after an election. (Lewis-Beck & Rice made this point in 1984).

A similar problem stems from the fact that a predictive model that relies on economic data has to include an element of economic prediction: the cumulative growth in employment and in price levels up to the date of the election. Our study is unique in using values for those economic variables derived from an economic forecast model, thus drawing on techniques of economic forecasting to build a more accurate political prediction model.

III. Allowing for different dissipation of memory of past economic events

Memories of an administration's economic performance fade. We propose a simple way of testing how that phenomenon works. From October before the election, we go backward month by month, accumulating two economic statistics (price level and employment). We stop where the best fit of the model indicates: nine months back for prices and twenty-one months back for employment.

This approach contrasts with other studies. Fair (2014) used a cumulation of real growth per capita over the three quarters prior to the election and the growth rate in the GDP deflator from the start of the current term up to three quarters prior to the election. (Fair 2014). Sinha, Nagarnaik, et al. (2016) followed the identical lag structure. This approach seems internally inconsistent. Cutting off the accumulation of real growth numbers three quarters before the election reflects a model that voters forget earlier parts of a presidential term, but accumulating the price variable from the start of the term reflects a belief that voters do not forget. We think it advisable to allow for memories to fade on both economic measures—but not necessarily at the same rate.

Most other studies, however, simply assumed that whatever the proper measuring moment, it was the same for all independent variables. See, e.g., Czasonis & Kritzman, 2021 (growth in real GDP, government debt, and stock indices over 4-year term); Lewis-Beck & Rice, 1984 (growth in real per capita GNP in the second quarter of the election year, business sentiment index at same point); and Tien & Lewis-Beck, 2023 (same); and Cuzan, Heggen et al., 2000 (growth in real GDP during first fifteen quarters of a term; same period for growth in inflation.)

Other studies used only a single economic variable but measured at different time periods with a weighted lag structure (Erikson and Wleizien (2008); Tien & Lewis-Beck (2023); Hibbs (2000) who found no significant difference from an equally weighted measure). Some measured a single economic variable but taken at a snapshot in time rather than accumulated over a time period (Wink, 2019; Loewy, Singh, Gallagher, 2020).

Exceptional economic factors characterized the early part of President Biden's term, but not the months heading into the election. Inflation was high at the start of President Biden's term but is now coming under control. Jobs came roaring back as the Covid effect waned, but not as much later. The effect of stimulus checks and public works projects was also front-end loaded. These facts recommend focusing on differential look-back periods for different economic variables leading up to the 2024 vote.

IV. Inclusion of polling data

The great majority of presidential prediction models incorporate some measure of popular approval of the candidates, such as Gallup polling, or favorability indices. This is the case for every model we studied, except Cuzan, Heggen, et al. (2000), Fair (2014), and Hibbs (2000) (2012). The problem we see with including popularity is the obvious interconnectedness of popularity (largely out of the President's control) and eventual popular vote, resulting in a

confused interpretation of the economic signals that are within the President's ability to influence, if not control.

Therefore, we set out to create a model to predict the presidential popular vote, using data available on a monthly basis, relying on two economic variables, each with its own lag structure, and not including polling data. No other academic model we uncovered has those characteristics.

2 Empirical Model

a) The simple model

The percentage margin of victory or loss in the popular vote for a presidential candidate of the incumbent party is given by the dependent variable, INCMAR. Economic conditions postulated to have an explanatory effect on INCMAR are measured in the first stage of tests by year-to-year percentage changes in real GDP (PRGDP); year-to-year percentage changes in the consumer price index (PCPI); year-to-year percentage changes in payroll jobs (PNT0); and year-to-year absolute changes in the unemployment rate (CUNP).

The effect of an incumbent party vying for a third consecutive term is given by a dummy variable, CONSEC. This "time for a change" effect has been modeled in several preceding academic papers (See, e.g., Wink, 2019; Loewy, Singh, Gallagher, 2020; Sinha, Verma, Shah, 2020; Czanois, Kritzman, Turkington, 2021).

Our dependent variable will be indirectly influenced by the presence of a third-party or independent candidate, since the more such a candidate takes in popular vote, the less will be available to be divided between the Democratic and Republican candidates. However, we wanted to test if there were a more direct effect as well, so we included THIRD, the percentage of votes received by those candidates, as its own variable. (It proved statistically insignificant.)

Table 1 provides the definitions and mean values of these variables.

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Dependent variables

Description	Name	Mean	SD	CV	Min	Max	Source
Difference in the share of the total popular vote for a presidential party candidate of the incumbent political party less the share received out of the total popular vote for the non incumbent party candidate	INCMAR	4.41	10.12	229.48	-9.40	10.12	https://www.statista.com/statistics/1035521/popular-votes-republican-democratic-parties-since-1828/

Independent variables

I. Economic Factors

Real GDP, percentage change from a year ago	PRGDP	3.12	2.53	81.09	-2.80	7.26	https://fred.stlouisfed.org/series/GDPC1
All Employees, Total NonFarm, percentage change from a year ago	PNT0	1.71	2.34	136.84	-5.79	4.71	https://fred.stlouisfed.org/series/PAYEMS
Consumer Price Index, percentage change from a year ago	PCPI	3.53	2.88	81.59	1.30	13.50	https://fred.stlouisfed.org/series/CPIAUCSL
Unemployment Rate, level change from a year ago	CUNP	0.24	1.76	733.33	-2.90	2.20	https://fred.stlouisfed.org/series/UNRATE

II. Structural Factors

Incumbent political party vying for a third or fourth consecutive presidential term, dummy variable =1 when true; otherwise zero	CONSEC	0.47	0.51	108.51	0	1	https://www.statista.com/statistics/1035521/popular-votes-republican-democratic-parties-since-1828/
Cumulative percentage of popular vote received by third parties	THIRD	4.40	5.54	125.91	0.40	19.60	https://www.statista.com/statistics/1035521/popular-votes-republican-democratic-parties-since-1828/

TABLE 1. Dependent and independent variables used in the study

The hypothesized signs of association for the political and structural independent variables are shown in the following equation:

$$\text{INCMAR}_t = f \left(\begin{array}{c} + \quad - \quad + \quad - \\ \text{PRGDP}_t; \text{PCPI}_t; \text{PNTOT}_t; \text{CUNP}_t; \\ \underbrace{\hspace{10em}} \\ \text{Economic Variables} \\ - \quad ? \\ \text{CONSEC}_t; \text{THIRDT}_t \\ \underbrace{\hspace{10em}} \\ \text{Structural Variables} \end{array} \right) \quad (1)$$

The linear functional form in the following equation will be tested.

$$\text{INCMAR}_t = b_0 + b_1 \text{PRGDP}_t + b_2 \text{PCPI}_t + b_3 \text{PNTOT}_t + b_4 \text{CUNP}_t + b_5 \text{CONSEC}_t + b_6 \text{THIRDT}_t \quad (2)$$

The subscript t refers to the 17 presidential election years from 1956 to 2020.

b) Introducing different look-back periods for employment and for inflation

Our principal contribution to the model for presidential popular vote is to embrace the possibility that voters have different memory periods for job growth and for inflation. We alter the independent variable PNTOT from measuring the total job growth over the year preceding a presidential election to measuring total job growth over some other period preceding a presidential election—with that period varying from 6 months to 48 months prior to an election. We do the same for PCPI, measuring cumulative rise in price levels from 6 months to 48 months prior to an election. We measured at 3-month intervals. We ran the simplified regression of INCMAR by PNTOT-look back to period X, PCIP-look back to period Y, and CONSEC and derived the best fitting equation on the basis of the F-statistic and the adjusted R-squared.

The best fitting look-back periods (both using adjusted R-squared and the F statistic) were nine months before the election for the cumulated consumer price index (CPI9) and 21 months before the election for the cumulated employment growth (PNTOT21). The adjusted R-squared was 0.85, and the t and F statistics were all significant at the .01 level.

3 Empirical Results

Table 2 presents the results of the best-fitting equation. We ran a regression including all the independent variables in Regression 1, and then dropped the statistically insignificant independent variables for Regression 2.

The only structural variable that was significant was “CONSEC,” where the dummy variable “1” was used in those election years where the incumbent party was seeking a third or fourth consecutive term in office. The empirical results point to an 8.89 percentage point decrease in INCMAR when the third or fourth consecutive term was being sought. This occurred during the presidential elections of 1960, 1968, 1976, 1988, 1992, 2000, 2008 and 2016.

	Regression 1		Regression 2	
Number of observations	17		17	
R-squared	0.88		0.88	
Adj. R-squared	0.82		0.85	
S.E. of Regression	4.24		3.92	
F-Statistic	16.01		31.14	
Dependent Variable				
INCMAR				
Constant	7.94 (3.12) ***		7.86 (3.70) ***	
I. Economic Variables				
PNT021	2.44 *** (6.09)		2.46 *** (7.47)	
PCPI19	-2.50 *** (-3.93)		-2.57 *** (-4.63)	
CUNP	0.02 ** (0.03)			
II. Structural Variables				
CONSEC	-8.65 *** (3.96)		-8.89 *** (-4.65)	
THIRD	-0.07 (-0.33)			

Note: t values are in parentheses where *p < 0.10; **p < 0.05; ***p < 0.01

TABLE 2. Regression Results

b) Prediction scorecard

A comparison of the actual incumbent party margins of victory (+) or loss (-) with that fitted by Table 2, Regression 2, is shown in Table 3. A graphical comparison is presented in Figure 1. Notice that the regression equation correctly predicted whether the incumbent party would win or lose the popular vote margin in 15 of the 17 presidential elections between 1956-2020, as indicated by the actual and fitted values having the same signs of association.

Election Year	Incumbent Party vs. Nonincumbent Party	Actual Margin	Fitted Margin	Residual	Residual Plot
1956	Eisenhower vs. Stevenson	15.40	17.64	-2.24	. * .
1960	Nixon vs. Kennedy	-0.20	3.45	-3.65	. * .
1964	Johnson vs. Goldwater	22.60	18.11	4.49	. *
1968	Humphrey vs. Nixon	-0.70	2.36	-3.06	. * .
1972	Nixon vs. McGovern	23.20	14.82	8.38	. . *
1976	Ford vs. Carter	-2.00	-2.39	0.39	. * .
1980	Carter vs. Reagan	-9.40	-9.62	0.22	. * .
1984	Reagan vs. Mondale	18.20	18.63	-0.43	. * .
1988	Bush vs. Dukakis	7.70	3.99	3.71	. * .
1992	Bush vs. Clinton	-5.60	-7.17	1.57	. * .
1996	Clinton vs. Dole	8.50	10.82	-2.32	. * .
2000	Gore vs. Bush II	0.50	0.92	-0.42	. * .
2004	Bush II vs. Kerry	2.40	5.12	-2.72	. * .
2008	McCain vs. Obama	-7.20	-8.99	1.79	. * .
2012	Obama vs. Romney	3.90	10.76	-6.86	* . .
2016	Clinton vs. Trump	2.10	2.43	-0.33	. * .
2020	Trump vs. Biden	-4.40	-5.88	1.48	. * .

TABLE 3. Comparison of Actual and Fitted Incumbent Party Margin of Victory (+) or Loss (-) Fitted Values Derived from Table 2, Regression 2

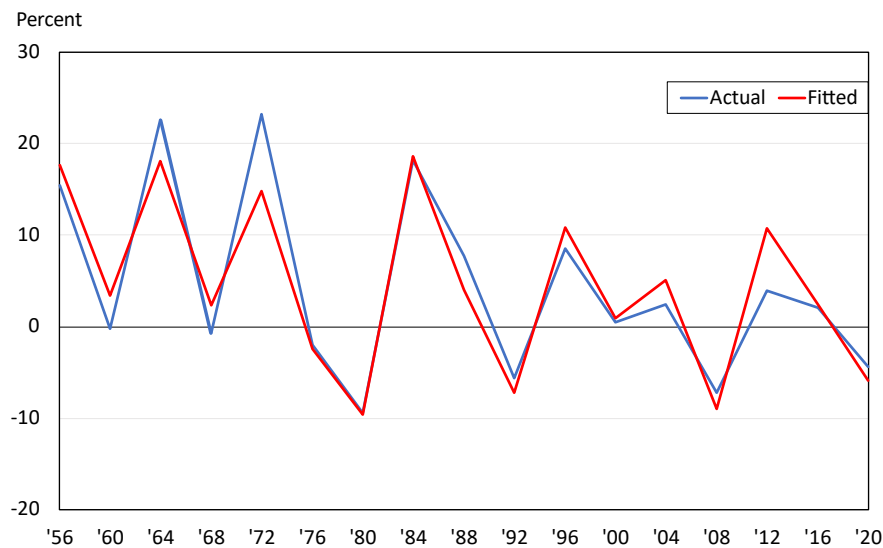


Figure 1. Incumbent Party's Percentage of Popular Vote Less Nonincumbent Party's Percentage of Popular Vote (INCMAR)

The only miscalls were the 1960 and 1968 presidential elections. In 1960, the incumbent Republican party candidate, Richard Nixon, lost in an extremely tight race against JFK. The actual margin of loss (INCMAR) for Nixon in 1960 was 0.20 percent. Table 3, however, predicted a 1.87 percent margin of victory (INCMAR) for Nixon. In any event, Table 3 correctly called for a close popular vote margin.

The other miscall was the 1968 election, where the loss of the incumbent party candidate, Hubert Humphrey, was a narrow -0.70 percent as compared to the fitted value of a win of 1.74 percent. As in the case of the 1960 presidential election, the regression was correct in predicting a close race.

4 Forecasting the 2024 Presidential Election

In order to forecast the 2024 election using Table 2, Regression 2, it will be necessary to have projected values for PNT021 and PCPI9. Since the incumbent Democratic party has been in office for one term since the 2020 election, the dummy variable for CONSEC will equal zero for the 2024 election forecast.

a) Using A. Gary Anderson Center projections for employment and CPI

In order to project PNT021 AND PCPI9 as of the election in 2024, we need to use an economic forecasting model. Previous studies of the Presidential popular vote have not done so; most have not needed to because they were attempting to explain rather than predict a Presidential popular vote, and hence could use actual economic data as of the time of the election. We were

able to use the forecast created by the A. Gary Anderson Center for Economic Research (*Economic & Business Review*, Volume 42, December 2023).

The projection for PNT021, using that forecast, calls for 157,600 employees by October 2024. The cumulative percentage change for PNT021 over the 21-month period from January 2023 to October 2024 is thus 1.64 percent, as shown in Figure 2.

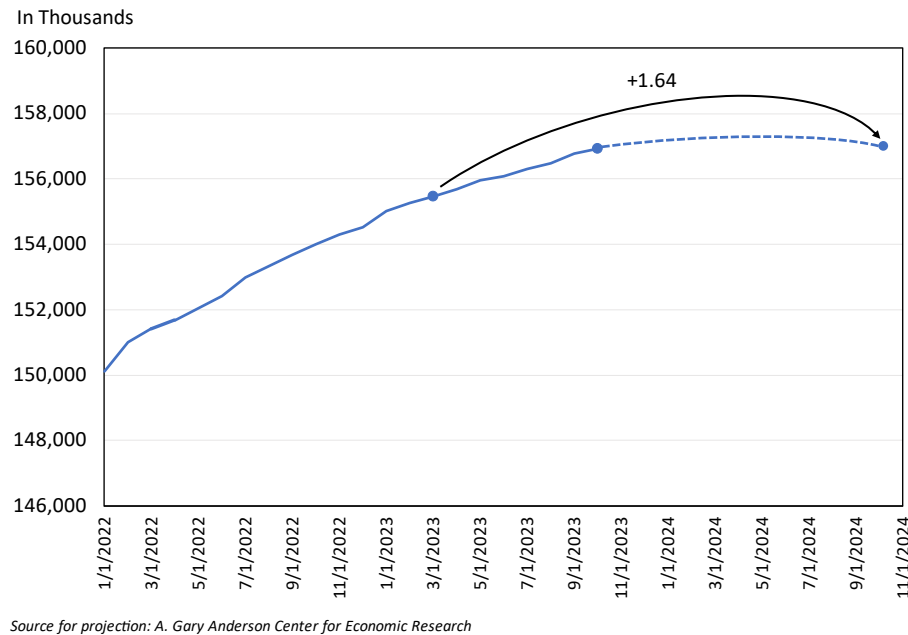


Figure 2. Employees, Total Nonfarm

The projection for PCPI9, using the forecast issued by the A. Gary Anderson Center for Economic Research (*Economic & Business Review*, Volume 42), in December 2023, calls for the CPI to increase from 310 in January 2024 to 315 in October 2024. The cumulative percentage change for PCPI9 over that 9-month period is 1.61 percent, as shown in Figure 3.

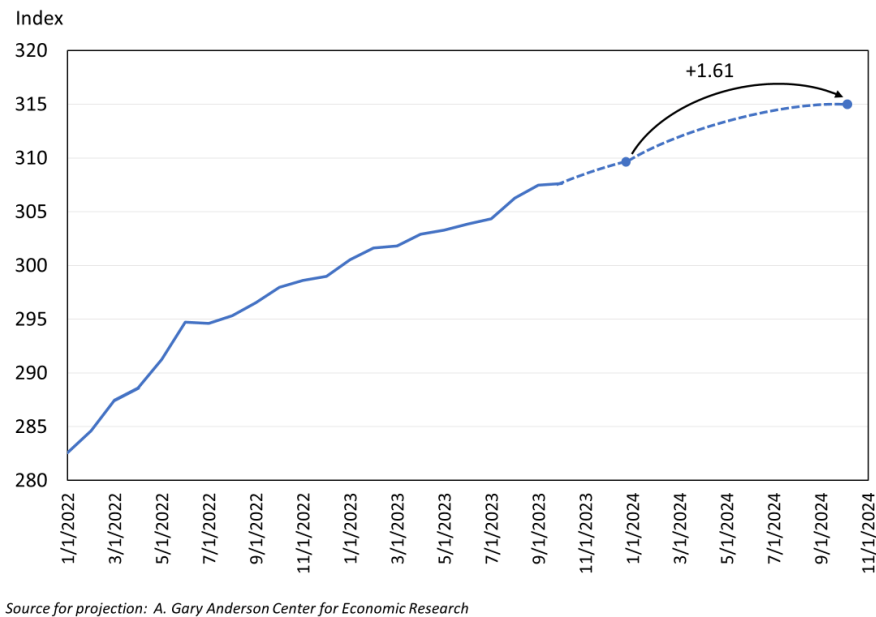


Figure 3. Consumer Price Index

A comparison of PCPI9 in October 2024 with PCPI9 for all of the other election years since 1956 is shown in Figure 4. The 1.61 percent projection for PCPI9 in October 2024 compares to a mean value of 2.65 for PCPI for all other presidential elections from 1956-2020.

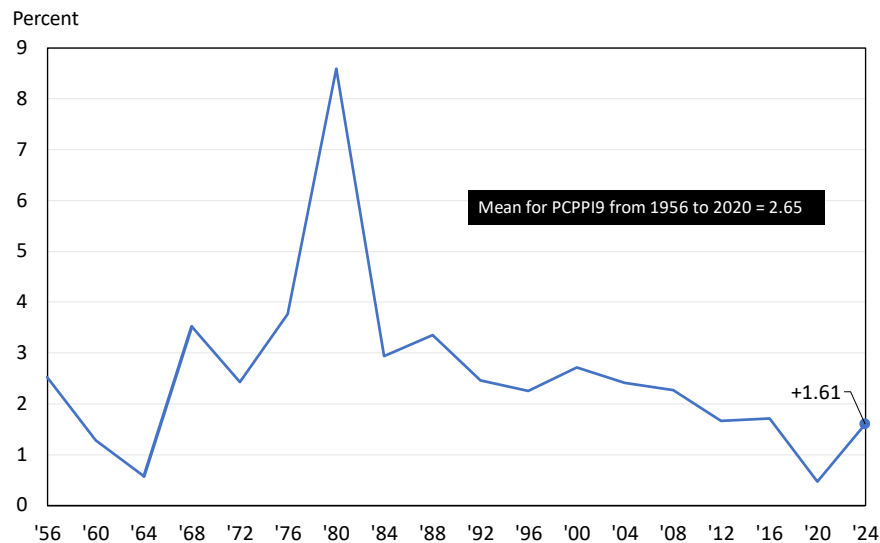


Figure 4. PCPI9 During Election Years

b) Making the 2024 prediction under A. Gary Anderson Center economic predictions

Substituting the projections of 1.64 for PNT021 and 1.61 for PCPI9 results in a forecast of an election victory for the incumbent Democratic party of 7.7 percent. This forecast is shown in Figure 5, which also includes the actual and fitted values for INCMAR over the 17 presidential elections between 1956-2020.

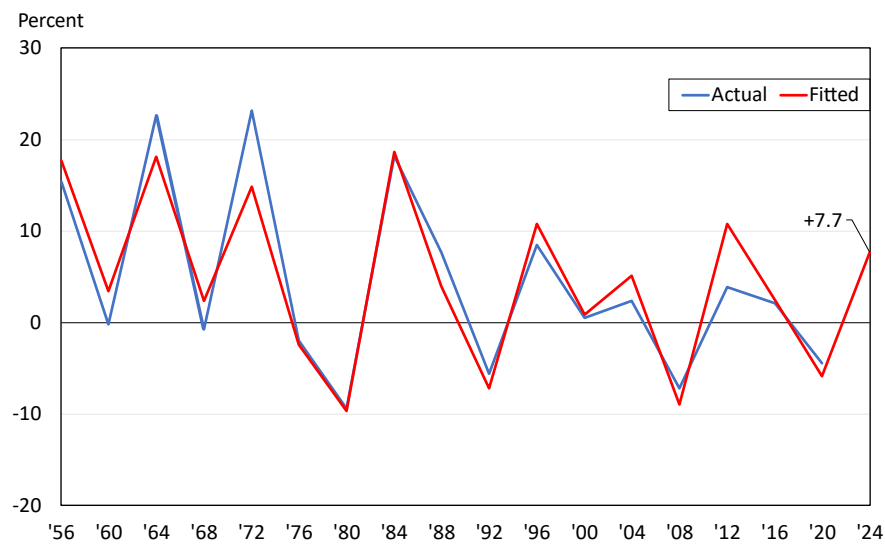


Figure 5. Incumbent Party's Percentage of Popular Vote Less Nonincumbent Party's Percentage of Popular Vote (INCMAR)

One might question how the incumbent party's presidential candidate can garner a winning margin of 7.7 percent in light of the relatively high inflation over President Biden's term of office. As shown in Figure 6, the cumulative rate of inflation over Biden's term is forecasted at 21.4 percent, significantly higher than the average cumulative inflation for all 17 previous terms of 13.5 percent. Our empirical findings, however, show that the measure for inflation that has the most significant impact on voters is the cumulative inflation over the nine months prior to the recession. Figure 6 shows that the PNT09 for the incumbent Democratic party in 2024 is the same as the average for all previous elections.

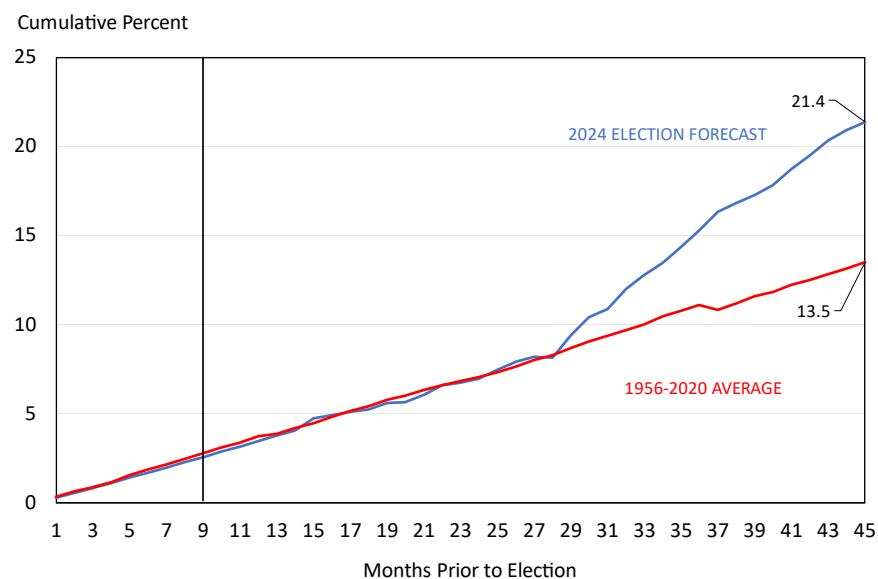


Figure 6. Cumulative Increase in the CPI from 1 to 45 Months Prior to Election

5 Policy Implications

An incumbent President will be tempted to take any action he can to improve the economic statistics that are predictive of his popular re-election vote. One such attractive anti-inflationary policy today might be to lower gasoline prices by emptying the strategic petroleum reserve, with a positive or negligible effect on employment. Where trade-offs have to be made, however, our findings indicate where President Biden is likely to go this late in his term.

As of today, the relevant employment numbers are already “baked in” for sixteen of the twenty-one months before the election. Inflation, by contrast, is salient only starting in January, nine months before October 2024. If President Biden could increase employment growth by one-tenth of a standard deviation over the remainder of his term, it would increase his predicted vote percentage by 0.37 of a percentage point [standard deviation = 3.02, coefficient 2.46, halfway through the relevant time period]; but if that caused inflation to grow by one-tenth of one standard deviation, the trade-off would not be worth it to him, since the inflation effect would lower his likely vote percentage by almost half a point (0.46) [standard deviation = 1.79, coefficient -2.57, measured over the entire relevant time period].

Of course, we would have to take into account whether President Biden could, in fact, affect either employment or price levels by any contemplated policy move. Our principal finding, however, suggests employment enhancement will take a back seat to curbing inflation in a President’s last nine months. If so, the implications in the current environment would be to stop

the administrative “workaround” regarding student loan repayments, not to accelerate payments on multi-year government contracts, and not to jaw-bone the Federal Reserve to lower interest rates (as President Trump had done). He could also direct his Secretary of the Treasury to be restrictive in her regulatory oversight role, thereby lowering the velocity of money. All those steps would reduce inflation, even at the cost of slowing employment growth.

6. Conclusion

Using cumulative employment and price data for months before a Presidential election and allowing the period of look-back to be different for these two economic measures, we developed a model that takes into account the possibility of voters having differing memories going into an election. These economic variables, with only one structural variable (whether the incumbent party’s candidate was running for a third or fourth term), were able to explain 15 of the last 17 Presidential popular vote margins with a tight-fitting equation. Using the A. Gary Anderson Center’s economic projections, we predict a victory for the Democratic party’s presidential candidate in the popular vote in 2024.

References

- Abramowitz, Alan. (1988). "An Improved Model for Predicting Presidential Election Outcomes." *PS: Political Science and Politics* 21 (4): 843–47.
<https://www.jstor.org/stable/420023>.
- Abramowitz, Alan. (2012). "Forecasting in a Polarized Era: the Time for Change Model and the 2012 Presidential Election." *PS: Political Science and Politics* 45 (4): 618-619.
<https://www.jstor.org/stable/41691397>.
- Alexander, Brittany. (2019). "A Bayesian Model for the Prediction of United States Presidential Elections." *SIAM Undergraduate Research Online* 12. doi:
[101137/17S016166](https://doi.org/10.1137/17S016166).
- Campbell, James. (2013). "Recap: Forecasting the 2012 Election," *PS: Political Science & Politics*, 46(1), pp. 37. doi:10.1017/S1049096512001801
- Cuzán, Alfred G., Richard J. Heggen, and Charles M. Bundrick. (2000). "Fiscal policy, economic conditions, and terms in office: simulating presidential election outcomes." *Proceedings of the World Congress of the Systems Sciences and ISSS International Society for the Systems Sciences, 44th Annual Meeting*, July 20 – 22, 2000.
- Erikson, Robert, and Christopher Wlezien. (2008). "Leading economic indicators, the polls, and the presidential vote." *PS, Political Science & Politics*.41 (4): 703-707. doi:
[10.1017/S1049096508081237](https://doi.org/10.1017/S1049096508081237).
- Fair, Ray. (1978). "The Effect of Economic Events on Votes for President," *Review of Economics and Statistics* 60(2): 159-173.
- Fair, Ray. (2014). "Vote-Share Equations: November 2014 Update." November 11, 2014. <https://fairmodel.econ.yale.edu/rayfair/pdf/2014b.pdf>.
- Hibbs, Jr., Douglas. (2000). "Bread and Peace Voting in US Presidential Elections." *Public Choice* 104(1/2): 149-180.
- Hibbs, Jr., Douglas. (2012). "Obama's Re-election Prospects under 'Bread and Peace' Voting in the 2012 US Presidential Election."
http://www.doulashibbs.com/HibbsArticles/HIBBS_OBAMA-REELECT-31July2012r1.pdf.
- Jerome, Bruno, and Veronique Jerome-Speziair. (2011). "Forecasting the 2012 US Presidential Election: What Can We Learn from a State Level Political Economy Model" *Proceedings of the APSA Annual Meeting, Seattle, September 1-4, 2011*.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1915071. doi:
[10.2139/ssrn.1915071](https://doi.org/10.2139/ssrn.1915071).
- Lewis-Beck, Michael, and Tom Rice. (1984). "Forecasting Presidential Elections: A Comparison of Naïve Models." *Political Behavior* 6(1): 9 – 21.
www.jstor.org/stable/586044.

Silver, Nate (2011) “On the Maddeningly Inexact Relationship Between Unemployment and Re-election.” <http://fivethirtyeight.blogs.nytimes.com/2011/06/02/on-themaddeningly-inexact-relationship-between-unemployment-and-re-election/>.

Sinha, Pankaj, Aniket Verma, Purav Shah, Jahnavi Singh, Utkash Panwar. (2020). “Prediction for the 21020 United States Presidential Election Using Linear Regression Model.” MPRA Paper, September 15, 2020. <https://mpra.ub.uni-muenchen.de/103890/>.

Wink, Kenneth. (2019). “Forecasting Models and the Presidential Vote.” *Political Science Quarterly* 134(2): 193 – 216.