November 1990

THE EFFECT OF ECONOMIC EVENTS ON VOTES FOR PRESIDENT: 1988 UPDATE

by

Ray C. Fair
Cowles Foundation
Department of Economics
Yale University

The equation that I have developed explaining votes for president predicted the 1988 election very well, and, as will be seen, updating the equation through the 1988 election has very little effect on it. This note can thus be short. The equation continues to show a remarkable forecasting ability and structural stability across time. It will help in reading the following to have read Fair (1988) first.

The estimated equation for 1916-1988, estimated by ordinary least squares, is (t-statistics are in parentheses):

$$\underset{}{V} = \underset{(11.70)}{.4021} + \underset{(0.34)}{.0053 \cdot I} + \underset{(2.74)}{.0424 \cdot DPER} + \underset{(1.97)}{.0036 \cdot t^{*}} + \underset{(5.30)}{.0104 \cdot g \cdot I} - \underset{(-1.07)}{.0031 \cdot p \cdot I} ,$$

$$SE = .0296, \quad R^2 = .890, \quad DW = 2.30$$

The variables are (all growth rates are at annual rates in percentage points):

V = Democratic share of the two-party vote.

g = growth rate of real per capita GNP in the second and third quarters of the election year.

p = absolute value of the rate of inflation in the two year period prior to the election.[1]

---

[1] Let P be the price level. For an election in year t, p is $[(P_{3t}/P_{3t-2})^{.5} - 1] \cdot 100$, where P_{3t} is the price level in the third quarter of year t and P_{3t-2} is the price level in the third quarter of year t-2.

DPER = 1 if there is a Democratic incumbent and he is running for election, -1 if there is a Republican incumbent and he is running for election, 0 otherwise.

I = 1 if there is a Democratic incumbent, -1 if there is a Republican incumbent.

t^* = time trend through 1976: 8 in 1916, 9 in 1920, ..., 23 in 1976 and on.

The actual and predicted values of V are:

Year	1916	1920	1924	1928	1932	1936	1940	1944	1948	1952	1956
Actual	.517	.361	.457	.412	.592	.625	.550	.538	.524	.446	.422
Predicted	.521	.351	.415	.446	.575	.632	.571	.570	.514	.457	.438
Error	.004	-.010	-.042	.034	-.017	.007	.021	.032	-.010	.011	.016

Year	1960	1964	1968	1972	1976	1980	1984	1988
Actual	.501	.613	.496	.382	.511	.447	.408	.461
Predicted	.492	.542	.513	.398	.496	.446	.417	.468
Error	-.009	-.071	.017	.016	-.015	-.001	.009	.007

The standard error of the equation is now slightly under 3 percentage points. The largest prediction error occurs for the 1964 election (Johnson vs. Goldwater), where Johnson won with 61.3 percent of the two-party vote but was predicted to get only 54.2 percent. The only other error greater than 4 percentage points is for the 1924 election (Davis vs. Coolidge), with an error of 4.2. The average error for the last six elections is only 1.1 percentage points, which is really quite remarkable. The winners of two of these six elections (1968 and 1976) were predicted incorrectly, but the elections were very close and the errors are small. The other election in which the winner was predicted incorrectly is 1960, which was also a very close election. The error for this election is only 0.9 percentage points. The 1988 election was predicted well. Dukakis was predicted to get 46.8 percent of the two-party vote, and he actually got 46.1 percent.

One change was made to the equation from the previous version. The time trend now stops increasing in 1976 rather than continuing to increase after that. The time trend is meant to pick up what appears to be a trend in favor of the Democrats from the beginning of the sample period (1916) on. It is not sensible, however, to expect this trend to continue indefinitely, and there are now enough observations (19) to begin to experiment to see where the trend stops. Five different equations were estimated, the first with the trend stopping in 1972, the second with the trend stopping in 1976, and so on. The minimum sum of squared residuals occurred for the trend stopping in 1976, and so this trend variable was chosen. The five estimated equations were, however, all very similar, and the differences in the sum of squared residuals across the five equations were almost trivial. The data thus provide only weak support for 1976 as the stopping point.

The growth rate variable (g) in the equation pertains to the second and third quarters of the election year. Almost identical results were obtained using the growth rate in the first three quarters of the election year in place of g. The data cannot distinguish between these two growth rates, and so either one could be used. g is used here because it has been used in previous versions of the equation. These two growth rates gave better results than did the use of the growth rate in the four quarters before the election and the growth rate in the single quarter before the election.

The inflation variable (p) pertains to the two year period prior to the election. This variable gave better results than did the use of the inflation rate for the year before the election and for the three-year period before the election.

The coefficient estimates in the equation are close to the coefficient estimates of the previous version, which is equation (1) in Fair (1988). The current versus previous estimates are : .4021 vs. .4073 for the constant, .0053 vs. .0049 for I, .0424 vs. .0449 for DPER, .0036 vs. .0033 for the time trend, .0104 vs. .0102 for g•I, and -.0031 vs. -.0034 for p•I. As with the previous version, the coefficient estimates are not changed very much if the equation is only estimated through 1968. When the previous version is used to predict the 1988 election, which is beyond its estimation period, the predicted value is .477 (using the actual values of g and p for the prediction). This compares to .468 above. The previous version thus makes an error of .016 compared to .007 for the current version, although both errors are small. One would, of course, expect the current version to do somewhat better because the forecast for it is within the estimation period.

The variable I in the above equation is not significant, whereas DPER is. This says that there is an incumbency advantage if the president runs again, but not much otherwise. The inflation variable is also not significant. It has been left in because the size of its coefficient estimate seems reasonable and is fairly stable across different estimation periods. The coefficient estimate is -.0031, which says that every one percentage point increase in the inflation rate lowers the vote for the incumbent party by .31 percentage points.

The coefficient estimate for g, which is highly significant, is .0104, which says that every one percentage point increase in the growth rate raises the vote for the incumbent party by 1.04 percentage points. This roughly one-for-one relation between the growth rate and the vote share has been true since I first began working on this equation over 15 years ago.

Given values for g and p, the equation can be used to predict the 1992 election. The following table gives the predictions assuming that Bush is the Republican candidate (DPER = -1):

Predicted Democratic Share of the Two-Party Vote for 1992 (V)
(Assuming Bush is Running for Re-election)

Inflation rate (p)

Growth rate (g)	0	1	2	3	4	5	6	7
-6	.500	.503	.506	.510	.513	.516	.519	.522
-5	.490	.493	.496	.499	.502	.505	.509	.512
-4	.479	.483	.486	.489	.492	.495	.498	.501
-3	.469	.472	.475	.478	.482	.485	.488	.491
-2	.459	.462	.465	.468	.471	.474	.477	.481
-1	.448	.451	.454	.458	.461	.464	.467	.470
0	.438	.441	.444	.447	.450	.454	.457	.460
1	.427	.431	.434	.437	.440	.443	.446	.449
2	.417	.420	.423	.426	.430	.433	.436	.439
3	.407	.410	.413	.416	.419	.422	.425	.429
4	.396	.399	.402	.406	.409	.412	.415	.418
5	.386	.389	.392	.395	.398	.402	.405	.408
6	.375	.379	.382	.385	.388	.391	.394	.397

This table says that unless the economy is very bad at election time (as measured by g and p), Bush should have a fairly easy time winning re-election. He has the incumbency advantage, and to defeat an incumbent requires a fairly poor economy (such as existed in 1980 for Carter, g = -5.69 and p = 8.99). If, for example, g is 3 percent and p is 5 percent, the Democrats are predicted to get 42.2 percent of the two-party vote, and so Bush wins with 57.8 percent of the vote. It's not until the growth rate is -4 percent and the inflation rate is 7 percent that the Democrats are predicted to get more than half the vote.

If the version of the equation with the time trend not truncated at 1976 is used to predict the 1992 election, all the numbers in the above table are raised by about .01. The Democrats do slightly better in this case because the trend variable is still increasing. This is not, however, a large difference.

REFERENCE

Fair, Ray C., "The Effect of Economic Events on Votes for President: 1984 Update," Political Behavior, 1988.

DATA APPENDIX

Year	V	I	DPER	g	p
1916	.5168	1	1	6.38	7.73
1920	.3612	1	0	-6.14	8.01
1924	.4568	-1	-1	-2.16	0.62
1928	.4118	-1	0	-0.63	0.81
1932	.5916	-1	-1	-13.98	10.01
1936	.6246	1	1	13.41	1.36
1940	.5500	1	1	6.97	0.53
1944	.5377	1	1	6.88	1.98
1948	.5237	1	1	3.77	10.39
1952	.4460	1	0	-0.34	2.66
1956	.4224	-1	-1	-0.69	3.59
1960	.5009	-1	0	-1.92	2.16
1964	.6134	1	1	2.38	1.73
1968	.4960	1	0	4.00	3.94
1972	.3821	-1	-1	5.05	5.17
1976	.5105	-1	0	0.78	7.64
1980	.4470	1	1	-5.69	8.99
1984	.4083	-1	-1	3.04	3.59
1988	.4610	-1	0	2.14	3.17

Notes: Variables are defined in the text. Remember that p is the absolute value of the rate of inflation.

The data are the latest revised data as of November 1990.