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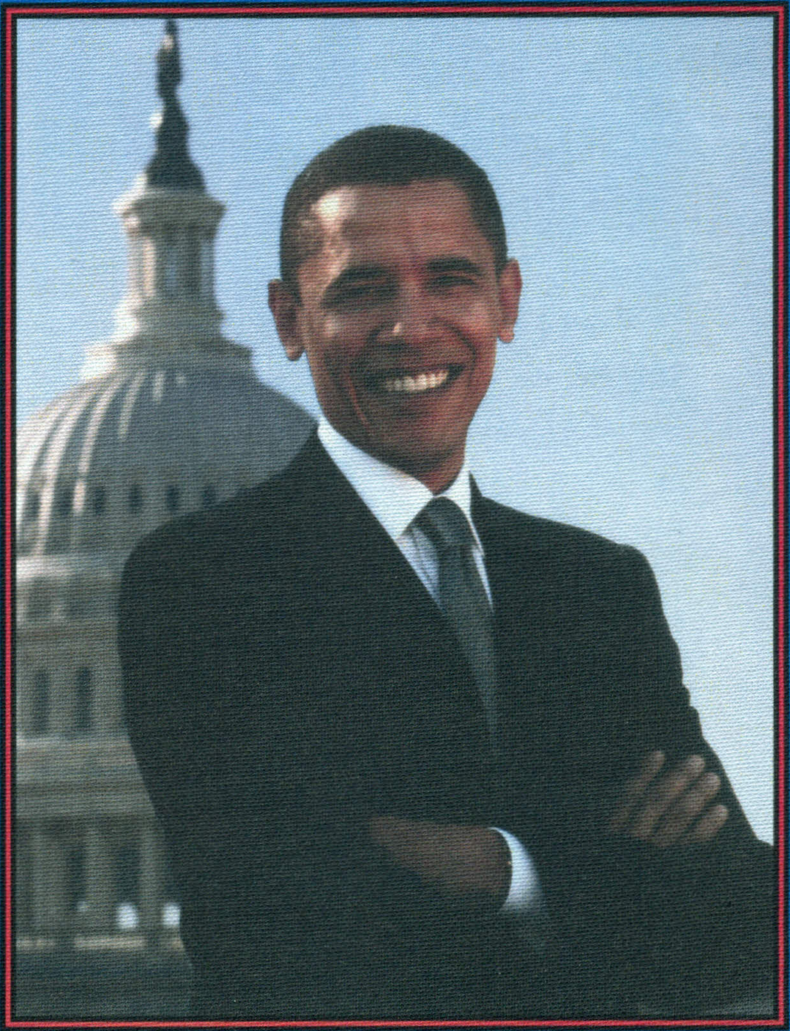

Methods of Forecasting American Election Outcomes

Studies in Strategies of Prediction

Edited by
Chandrasekhar Putcha

With a Foreword by
Phillip L. Gianos

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Dedicated to my wife, children and grandchildren

Chapter 7

Fiscal Policy and Vote-Getting Efficiency in Presidential Elections: A Data Envelopment Analysis, 1880-2008

William B. Tankersley

Associate Professor of Public Administration

Department of Professional and Community Leadership

and Department of Government

The University of West Florida, Pensacola, FL, 32514

wtankers@uwf.edu

Alfred G. Cuzán

Professor of Political Science

Department of Government

The University of West Florida, Pensacola, FL, 32514

acuzan@uwf.edu

Introduction

Our point of departure is the fiscal model of presidential elections. Originally designed as an explanatory model (Cuzán and Heggen 1984, Cuzán, Heggen and Bundrick 2009), in the last two elections it has performed well at *ex ante* forecasting (Cuzán and Bundrick 2005a, 2008, 2009). Here our objective is to use Data Envelopment Analysis in order to estimate and rank the relative efficiency of the party controlling the White House at converting economic and political variables taken from the fiscal model into votes. In the only other application of DEA to presidential elections that we know of, Berry and Chen (1999) ranked the efficiency of incumbent party reelection campaigns between 1948 and 1996 by comparing two election inputs, presidential popularity and the growth in employment, to the percent of the popular vote garnered by the party occupying the White House, their "output." Similarly, the percent of the two-party vote going to the incumbents is our "output," while two measures of economic growth and the number of terms the in-party has occupied the White House serve as our "inputs."

We proceed as follows. First, we summarize the structure and performance of the fiscal model. Next, we present a brief summary of Data Envelopment Analysis. Then, using economic and political variables selected from the fiscal model, we apply DEA to 32 elections held between 1880 and 2008. Finally, we inquire into factors that are associated with vote-getting efficiency. It turns out that, consistent with the fiscal model, incumbents that held back the rate of growth of spending relative to that of the economy operated more efficiently in terms of "vote-getting" than those who did not.

The Fiscal Model: A Brief Summary

Alone among presidential election models, the fiscal model assumes that the incumbents' spending policy is associated with how well their presidential

ticket does on Election Day.[1] It rests on the premise that support for the in-party (S), measured by the share of the two-party vote they pick up on Election Day (VOTE2), is inversely related to changes in F, the ratio of federal outlays to gross domestic product. This is shown in Figure 1. Note that F is a measure of *relative,* not total spending. Outlays may grow to keep up with population, but as long as they do not outpace economic growth F remains the same or falls. (For definition and measurement of all variables, see Table 1.) The intuitive suggestion is that F is analogous to a fee or price that the in-party charges the economy for its services. As with any commodity, the higher the federal fee, the less likely it is that the public will want another term from the incumbents. Assuming no change in the electorate's evaluation of federal goods and services,[2] when the federal fee goes up the voters decline to retain them at the end-of-term election. That is, they "fire" the in-party, replacing it with the opposition. In this interpretation, an election becomes a retrospective-minded referendum on, *ceteris paribus,* the president's fiscal policy.

F generates FPRIME, a binary variable describing spending policy. If F grows between presidential election years, this amounts to an expansive fiscal policy (FPRIME=1). On the other hand, if F shrinks from one election year to the next, policy is contractionary (FPRIME=-1). By itself, FPRIME is a powerful predictor of election outcome, viewed simply as victory or defeat for the incumbents in the two-party vote for president. Across all elections held since 1880, if incumbents pursued a contractionary policy they won over 90% of the time; if, by contrast, they implemented an expansive they lost 65% of the time. Almost 80% of the cases behave as expected (Cuzán and Bundrick 2008).

1 See Cuzán, Heggen, and Bundrick 2009 and Cuzán and Bundrick 2004 and 2005a.
2 See Cuzán and Bundrick 2004 for discussion of this issue.

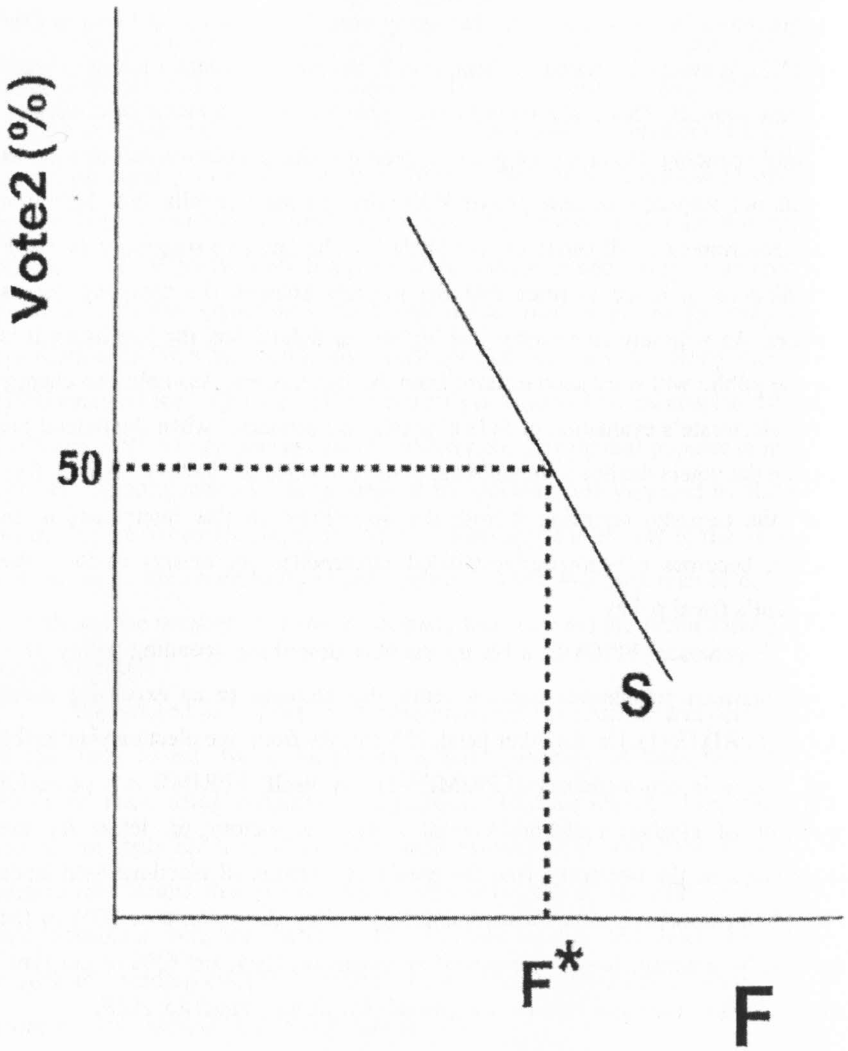

Figure 1

Table 1. Definition and Measurement of Variables

VARIABLE	DEFINITION AND MEASUREMENT
VOTE2	Percent of the two-party vote won by the incumbent party candidate.
VICTORY	Victory (1) or defeat (0) of incumbent party candidate in the two-party vote.
F	Federal expenditures as a percent of GDP: $F = \frac{\text{Federal Outlays}}{\text{GDP}} \times 100$,
F1	Arithmetic change in F between election years: $F1 = F_t - F_{t-1}$, where t=election year and t-1=previous election year.
F2	Arithmetic change in F1 between election years: $F2 = F_t - F1_{t-1}$, where t=election year and t-1=previous election year.
FISCAL	FISCAL=1 if $F1>0$ *and* $F2\geq0$ (expansionary) FISCAL=-1 if $F1<0$ *or* $F2<0$ (cutback)
FPRIME	FPRIME=1 if $F1>0$ (expansive) FPRIME=-1 if $F1<1$ (contractionary)
DURATION	The number of consecutive terms in the White House by presidents of the same party. DURATION=0 in the first term, 1.50 in the second term, 1.75 in the third, and so on.
TERMS	The number of consecutive terms in the White House by presidents of the same party. TERMS=0 in the first term, 1 in the second, 2 in the third, and so on.
RUNNING	RUNNING=1 if the sitting president is running for reelection, 0 otherwise. RUNNING takes the same values as Fair's PERSON except in 1976, where we score it 1 and he, 0.
PARTY	Party affiliation of the president. PARTY=-1 if Republican, 1 if Democrat.
GROWTH	Annual growth rate of real GDP per capita through the first three quarters of the presidential election year.
ALLNEWS	The number of quarters through the first fifteen quarters of the presidential term in which the annual growth rate of real GDP per capita exceeds 3.2 percent.

To account for, or forecast, the actual percent of the two-party vote going to the incumbents, VOTE2, four control variables are introduced. One denotes the incumbents' party, Democrat (1) or Republican (-1). Three others are borrowed or adapted from Ray Fair's presidential equation: GROWTH, ALLNEWS, and DURATION (again, see Table 1). Fair's data series covers the period 1880-2008. However, for the purpose of forecasting, his presidential equation is calibrated over a shorter period, 1916-2008. In Table 2 are displayed two estimates of the fiscal model, one for each period. Observe that, as in Fair's equation, GROWTH and ALLNEWS have a positive impact on VOTE2 while DURATION and PARTY exert a negative effect.[3] Note, as well, the negative association between FPRIME and VOTE2: a shift in policy from contractionary to expansive costs the incumbents between four and five percent of the two-party vote. (FPRIME takes two values, -1 or 1, so to estimate its effect on VOTE2 one multiplies the value of the coefficient by two.) The model accounts for almost 75% of the variation in the vote over the long period, and about 90 percent over the short one. Note, as well, that in out-of-sample forecasting, the mean absolute error (MAE) of the forecast is 2.4% in the long and 1.8% in the short period, while the Hit Rate is 94% and 88%, respectively. These results are better than those obtained by Fair (2006).

In the next section, we offer a brief summary of Data Envelopment Analysis and its present application. Then, estimating the fiscal model over 32 elections held between 1880 and 2008, we apply DEA to the data. Our objective is twofold. Firstly, to assess and rank presidents in terms of their relative efficiency at converting economic and political variables incorporated in the fiscal model into votes for themselves or their party's candidate at the end-of-term election across the entire 1880-2008 period. Secondly, to see what, if any, patterns are discernible in the distribution of presidential vote-getting efficiency scores by

3 Two other variables included in Fair's equation, PERSON (whether the sitting president is running for reelection, which we call RUNNING) and WAR (coded 1 in 1920, 1944, and 1948, 0 all other years) make no difference. See Cuzán and Bundrick 2005b.

fiscal policy, election outcome, whether the president himself is running, and his partisan affiliation.

Table 2. The Fiscal Model, 1880-2008 and 1916-2008

Dependent Variable: VOTE2 (Incumbent's Share of Two-Party Vote)
(t-values in parenthesis); out of sample predictions

	1880-2008 (*N*=33)	1916-2008 (*N*=24)
FPRIME	-2.65 (-4.80)	-2.17 (-5.20)
GROWTH	0.52 (5.04)	0.68 (8.49)
ALLNEWS	0.76 (3.62)	0.94 (6.04)
DURATION	-4.13 (-4.88)	-4.21 (-5.92)
PARTY	-1.54 (-2.70)	-2.08 (-4.74)
INTERCEPT	49.98 (34.30)	48.71 (44.82)
SEE	3.11	1.98
R^2	0.78	0.93
Adj. R^2	0.74	0.92
D.W.	1.74	1.63
1st order auto-corr.	0.07	0.16
MAE	2.44	1.85
Hit Rate*	94%	88%

Note: Percent of elections correctly predicted.
Percent of elections correctly predicted.

Data Envelopment Analysis (DEA): A Brief Summary

Data Envelopment Analysis (DEA) has been employed in many social science applications. Addressing the issue, Reisman (2003) reports,

> … DEA authors representing 42 countries have contributed to the theoretical and applied bases of this widely accepted, albeit relatively young, methodology. Significantly, *applications* in the case of DEA indeed do have real-world grounding and implications, as well as high rates of implementation. DEA applications-of-record range, sector-wise, from: banking to the not-for-profits; from welfare agencies to the military; from health services to manufacturing; from education to policing. Among the functional areas represented are: engineering, marketing, finance, policy analysis, and accounting, and the management of: human resources, pork producer farms, power plants, distribution and transportation systems, information systems, public procurements, order picking activity, etc. The objectives served are: organizational design, organizational effectiveness, credit evaluation, privatisation, insurance underwriting, benchmarking, productivity analysis, modernisation policy analysis, scale and performance measurement, physician report cards, environmental regulation, pollution prevention, facilities/equipment planning, evaluation of macroeconomic performance, leadership, ownership structure, mergers, and divestitures (p. 115).

Here we apply DEA to the science of politics. We begin with a brief summary of the technique, along the way referencing important works for anyone interested in probing a deeper understanding of the method.

DEA provides a measure of relative efficiency among reasonably similar organizational units or similar activities. Using a linear combination of actual historical operations of similar organizations, DEA provides a "relative efficiency" score based on historical best practices and is not limited to efficiency goals based solely on suboptimal, or average, past performance. Likewise, the relative efficiency scores produced are not based on highly optimistic stakeholder predictions (or hopes). Regression techniques commonly used to measure efficiency, as well as ratio analysis, cannot make these claims (Ludwin and Guthrie 1989). The conceptual grounding and details of the DEA logic follow.

The DEA algorithm defines the "relative efficiency" of a decision making unit (DMU) as the ratio of the unit's total weighted output to its total weighted input. Conceptually, this can be written as:

$$\text{Efficiency of DMU } k = \sum_{r=1}^{s} U_{rk}Y_{rk} \Big/ \sum_{i=1}^{m} V_{ik}X_{ik}$$

where:

k = the DMU under analysis;

s = number of outputs;

m = number of inputs;

Y_{rk} = amount of output r produced by DMU k, r = 1,...,s;

X_{ik} = amount of input i used by DMU k; i = 1,...,m;

U_{rk} = the unit weight placed on output r by DMU k, r = 1,...,s; and,

V_{ik} = the unit weight placed on input i by DMU k, i = 1,...,m.

This fractional linear program can be transformed into an ordinary linear program and solved using the Simplex method (Sexton 1986). In so doing, the weights U_{rk} and V_{ik} which are to be assigned to each output and each input by the algorithm in this formulation are based on the following: no weight can be negative, each DMU must be allowed to use the same set of weights to evaluate its efficiency, and the ratios resulting from each of these separate evaluations must not exceed one (Charnes, Cooper and Rhodes 1978; Charnes, Cooper and Rhodes 1981; Sexton, 1986). (For a discussion of linear programming techniques and related theory, see standard operations research texts, e.g., Anderson et al. 1985. More advanced treatment is found in Dorfman et al., 1986.)

A more intuitive way to understand this mathematical process is to approach the algorithm in steps, asking specific questions along the way. Consider the following. Assume that the decision-making units in the group under consideration have each been tasked to produce three outputs utilizing three specified inputs. Let us designate these outputs as Y_1, Y_2 and Y_n and the inputs as

X_1, X_2 and X_n. Assuming we are attempting to analyze the relative efficiency of DMU_1, the first unit in which we have an interest, we ask DMU_1 to perform the following operations to calculate its relative efficiency.

First step: We ask it to choose weights for each input and each output that it produces such that the ratio of weighted outputs to weighted inputs is maximized. This can be viewed as the following ratio: (weight for output one) x (units of output one) + (weight for output two) x (units of output two) + (weight for output n) x (units of output n) / (weight for input one) x (units of input one) + (weight for input two) x (units of input two) + (weight for input n) x (units of input n). The ratio of weighted outputs to weighted inputs produced at this first step would tell us nothing about the relative efficiency of DMU_1 because, being rational and competitive, and wishing its efficiency score to be the highest possible, it will choose weights for the outputs and inputs that cause the ratio to be infinitesimally large since we have put no constraints on the outcome. This however can be remedied with a second step.

Second step: We simply tell DMU_1 that its ratio of weighted outputs to weighted inputs is constrained to a maximum value of 1.0. Again, wishing to appear in the best light, it will, of course, choose weights such that the relative efficiency ratio reaches this maximum value, 1.0.

Third step: At this point, however, by enforcing one additional, if simple, constraint we can develop relative efficiency scores for this DMU based on the efficiencies of all other DMUs in the group. We simply inform DMU_1 that it must allow each other DMU in the set to apply the weights DMU_1 has chosen, but with the constraint that in so doing, the result for each other DMU cannot exceed the value 1.0.

Note the effect on the relative efficiency score for the DMU_1 when the second DMU has more output with less input: the score of the second DMU moves to the maximum value, i.e., 1.0, and since the first DMU is constrained to the same weights as the second DMU, but it has less output with more input than the second DMU, its relative efficiency is reduced, as it properly should be. This

step-by-step process provides us with an intuitive understanding of the fundamental concept utilized in DEA analysis to develop relative efficiency scores across different organizational units. That is, as seen in the mathematical notation given above, the DMU under analysis maximizes its efficiency ratio subject to the stated conditions. The constraints force comparison of the efficiency scores for the DMU being evaluated against every other DMU included in the comparison, using the assigned input and output weights. In order to meet the requirements of the third constraint, that is, that no DMU can have a DEA score greater than 1.0, relatively inefficient DMUs in this comparative process must adjust their weights to the point that their efficiency score moves proportionally below the higher efficiency of the most productive units that do, in fact, score 1.0.[4]

Evaluating Vote-Getting Efficiency

In the only other study that to the best of our knowledge has employed Data Envelopment Analysis to presidential elections, the "'output' variable selected for the case study is the percentage of the popular vote received by the incumbent party in the 13 presidential elections held from 1948 to 1996 (P_y). The two 'input' variables are the incumbent president's July approval rating A_y and the state of the economy in July as indicated by the growth rate of employment in the preceding 12 months (1 July of the preceding year to 30 June of the election year) E_y" (Berry and Chen 1999: 382). Of the 13 cases included in this analysis, six proved to be relatively efficient at translating the July conditions into November votes. These are the elections of 1948, 1952, 1964, 1972, 1980, and 1984. These cases, located at the DEA "efficiency frontier," serve as "reference" points for the others. By contrast, seven cases did not perform optimally: 1956, 1960, 1968,

4 For a comprehensive discussion of DEA, its applications, limitations, and its continuing refinement, the interested reader is referred to Blose and Tankersley (2004), Charnes et. al. (1978, 1981, 1994), Ganley and Cubbin (1992), Tankersley (2000), Tankersley and Tankersley (1996, 1997), and Cooper, Seiford and Tone (2000). The last-mentioned text is particularly appropriate for new users, as it is considered to be current, accessible, comprehensive in coverage, and, in general, a very practical guide to DEA applications.

1976, 1988, 1992, and 1996. These elections are located "behind the [DEA] frontier" (Berry and Chen 1999: 384). What this means is that in these elections a greater vote output could have been obtained had the incumbents been as efficient as some others at persuading the electorate that they deserved another term in the White House, given the conditions specified in their model. Berry and Chen interpret the results thus: "The [DEA] frontier identifies those campaigns that were most effective in converting the July baseline into their popular vote shares in November, those that were less effective and by how much" (Berry and Chen 1999: 385). Be it noted that being located on the efficiency frontier and winning the election are not synonymous. Incumbents may wage a relatively efficient effort to persuade the electorate to vote for them yet still lose at the polls, and vice-versa. In fact, Berry and Chen's found no relation between efficiency and victory (1999: 383).

Our application of DEA to presidential elections differs somewhat from that of Berry and Chen's. In the first place, we examine all but one[5] election since 1880, a total of 32. Secondly, neither the output nor the inputs are the same. The output consists not in the percent of the total vote, but in the percent of the two-party vote going to the incumbent party's candidate. This is the usual dependent variable in presidential election forecasting models.[6] The inputs are three: GROWTH, ALLNEWS, and TERMS (a substitute for DURATION). Having ranked presidents on relative efficiency on this basis, next we compare the efficiency scores by PARTY and FPRIME.

5 In 1912, the Republicans split in two factions, one led by the sitting president, William Howard Taft, and the other by his predecessor, Theodore Roosevelt. The latter, having failed to wrest the party's nomination from the former, bolted the Republicans and rode the Bull Moose party to place second in the election. So unusual a case warrants it being omitted from the analysis.

6. See, in addition to Fair 2001, two collections of articles on forecasting, one each for the 1996 and 2000, respectively, published in *American Politics Quarterly*, 24 (4), and *P.S. Political Science and Politics*, XXXIV (1). Also, be it noted that we ignore any discrepancy between the popular vote and the Electoral College, which has happened twice since 1880. In 1888 and in 2000 Democrats eked out a narrow majority in the two-party vote but lost in the Electoral College. These discrepancies notwithstanding, we call it a victory for the incumbents when they prevail in the popular vote.

Statistical Results

Figure 2 displays the distribution of DEA scores for all presidential elections between 1880 and 2008. The scores range between 0.77 and 1.0, with a mean of 0.93 and a standard deviation of 0.08. The 5% trimmed mean efficiency score is 0.93.

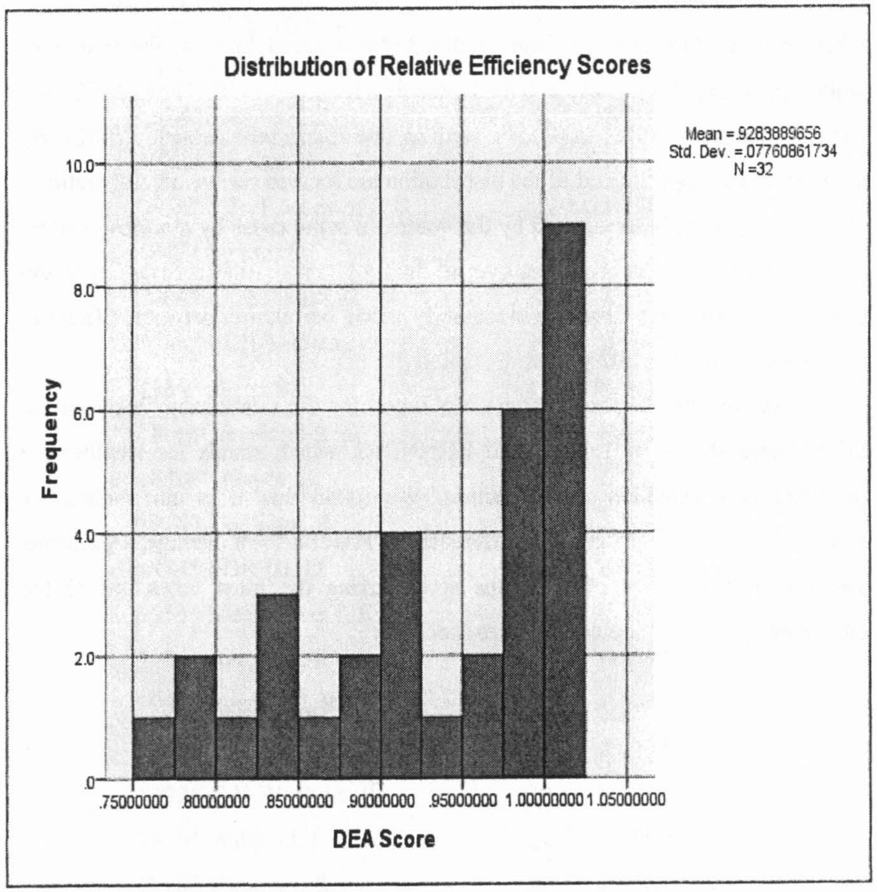

Figure 2 Distribution of Relative Efficiency Scores

As shown in Table 3, close to a dozen administrations earned a perfect efficiency score of 1.00 (rounding to two decimal places in the case of 1948 and 1964) another six scored 0.95 or higher. (Note that every election is described by the year in which it took place and also by the name of the sitting president, whether he was in his first or second (or, as in FDR's case, later term), his party, and whether he or his party's candidate won a majority of the two-party vote.) Observe that while most of these administrations found favor at the polls (see Data Appendix), they include both landslide victories (1936, 1964, 1972) and narrow squeakers (1880, 2004), as well as one incumbent debacle (1932). By contrast, at the opposite end of the distribution are located twelve administrations, all but two having been rejected by the voters, in some cases by a narrow margin (1960, 1968,1976), and in others overwhelmingly (1920, 1980). *Pace* Berry and Chen, across all cases there is a moderately strong correlation between efficiency and victory in the two-party vote.[7]

As well as election outcome, we tested for the relationship between the DEA scores shown in Table 3 and RUNNING, which stands for whether the president is a candidate for reelection. We found that it is not statistically significant.[8] Neither is there any difference by PARTY.[9] On average, Democrats are just as efficient as Republicans at squeezing the most votes out of the electorate, given the "inputs" we have specified.

7 Pearson's r=0.58, ρ=0.001.
8 Pearson's r=0.20, ρ=0.28.
9 The mean relative efficiency score of Republican presidents (n=18) is 0.94 (s.d.= 0..07). For Democrats (n=14), it is 0.91 (s.d.=0.08). The Mann-Whitney test indicates that the difference between the two median scores (respectively 0.970 and 0..913) is not significant(U=96.0, z=-1.152, ns, with an effect score of r =-0.204). This represents only a small to borderline-medium effect for party.

Table 3. Presidential Terms Ranked by Relative Vote Getting Efficiency 1880-2008

Presidential Term^	Rank	DEA score
1884# Garfield/Arthur, R	1	1
1888*# Cleveland I, D	1	1
1904* McK/TDR, R	1	1
1908* T.D. Roosevelt II R	1	1
1924*Harding/CC, R	1	1
1932# Hoover, R	1	1
1936* F.D. Roosevelt I, D	1	1
1972* Nixon, R	1	1
2004* G. W. Bush, R	1	1
1948* FDR/Truman, D	10	0.9996
1964* JFK/LBJ	11	0.9956
1896#Cleveland II, D	12	0.9901
1880#* Hayes, R	13	0.9873
1928* Coolidge, R	14	0.9802
1944* FDR III, D	15	0.9789
1956* Eisenhower I, R	16	0.9593
1984* Reagan I, R	17	0.9592
1988* Reagan II, R	18	0.9364
1940* F.D. Roosevelt II, D	19	0.9165
1992# G.H.W. Bush, R	20	0.9158
1916* Wilson I, D	21	0.9099
1996* Clinton I, D	22	0.9089
1900* McKinley I, R	23	0.8829
1952# Truman II	24	0.8774
2008# G. W. Bush, R	25	0.8518

Presidential Term^	Rank	DEA score
2000*# Clinton II, D	26	0.8377
1960# Eisenhower II, R	27	0.8317
1968# LBJ II, D	28	0.8265
1976# Nixon/Ford	29	0.8157
1892# Harrison, R	30	0.7898
1920# Wilson II, D	31	0.7887
1980#Carter, D	32	0.7685

Notes

^ 1912 Taft, R, excluded. See text.

*Won the two-party vote.

#Lost the two-party vote.

*#Won the two-party vote but lost in the Electoral College

#Lost the two-party vote but won in the Electoral College.

What does make a difference in efficiency is the incumbents' spending policy ($p<0.05$). Figure 3 displays this finding. Among the 17 incumbents that increased spending relative to GDP (FPRIME= 1), the mean relative efficiency score is 0.90 (s.d.=0..09). By contrast, the 15 that reduced spending (FPRIME=-1) obtained a mean DEA score of 0.96 (s.d.=0.05). The Mann-Whitney test indicates that the difference between the two respective median scores (0.88 vs. 0.99) is significant (U=69.0, z=-2.23, $p<0.05$, with an effect score of r=-0.395). This amounts to a (borderline) large effect for the expansive/contractionary fiscal dimension characterized here as FPRIME.

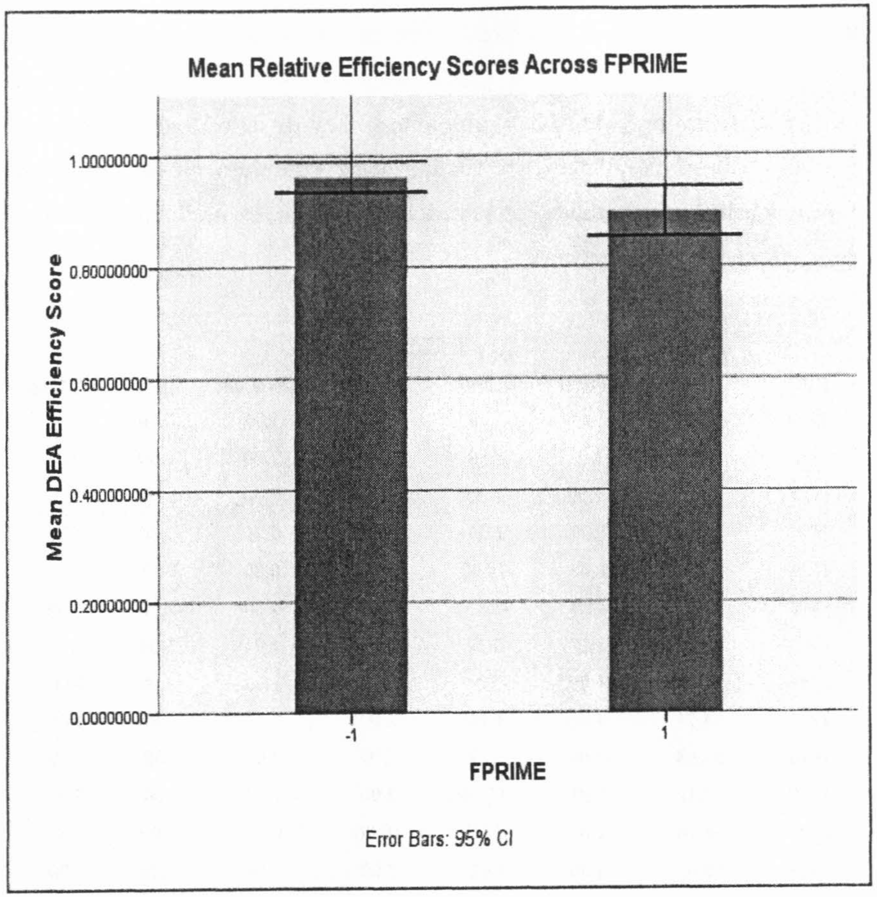

Figure 3 Relative Efficiency Scores Across the Expansionary/Contractionary Dimension

Conclusion

We applied Data Envelopment Analysis to 32 presidential elections held between 1880 and 2008, utilizing three inputs selected from the fiscal model in order to rank the incumbents on vote-getting efficiency.

The most important finding of our study is that what makes a significant difference (medium to border-line large effect) in efficiency scores is the incumbent's spending policy, much as is suggested by the fiscal model, a model that has performed well at presidential elections forecasting. It appears that when incumbents reduce the share of gross domestic product taken up by federal outlays, they not only win favor with voters, they do so relatively efficiently. Further study of this preliminary finding using extensions of the basic Data Envelopment Analysis model presented here may prove useful in generating practical advice for incumbents.

DATA

Year	Vote2	FPrime	Growth	Allnews	Duration	Party	Running
1880	50.22	-1.00	3.88	9.00	1.75	-1.00	0.00
1884	49.85	-1.00	1.59	2.00	2.00	-1.00	0.00
1888	50.41	-1.00	-5.55	3.00	0.00	1.00	1.00
1892	48.27	1.00	2.76	7.00	0.00	-1.00	1.00
1896	47.76	1.00	-10.02	6.00	0.00	1.00	0.00
1900	53.17	1.00	-1.43	7.00	0.00	-1.00	1.00
1904	60.01	-1.00	-2.42	5.00	1.00	-1.00	1.00
1908	54.48	-1.00	-6.28	8.00	1.25	-1.00	0.00
1912	54.71	-1.00	4.16	8.00	1.50	-1.00	1.00
1916	51.68	-1.00	2.23	3.00	0.00	1.00	1.00
1920	36.12	1.00	-11.46	5.00	1.00	1.00	0.00
1924	58.24	-1.00	-3.87	10.00	0.00	-1.00	1.00
1928	58.82	-1.00	4.62	7.00	1.00	-1.00	0.00
1932	40.84	1.00	-14.50	4.00	1.25	-1.00	1.00
1936	62.46	1.00	11.77	9.00	0.00	1.00	1.00
1940	55.00	-1.00	3.90	8.00	1.00	1.00	1.00
1944	53.77	1.00	4.28	14.00	1.25	1.00	1.00
1948	52.37	-1.00	3.58	5.00	1.50	1.00	1.00
1952	44.60	1.00	0.69	7.00	1.75	1.00	0.00
1956	57.76	-1.00	-1.45	5.00	0.00	-1.00	1.00
1960	49.91	1.00	0.38	5.00	1.00	-1.00	0.00
1964	61.34	1.00	5.11	10.00	0.00	1.00	1.00
1968	49.60	1.00	5.04	7.00	1.00	1.00	0.00
1972	61.79	-1.00	5.91	4.00	0.00	-1.00	1.00
1976	48.95	1.00	3.75	5.00	1.00	-1.00	1.00

DATA

Year	Vote3	FPrime	Growth	Allnews	Duration	Party	Running
1980	44.70	1.00	-3.60	5.00	0.00	1.00	1.00
1984	59.17	1.00	5.44	8.00	0.00	-1.00	1.00
1988	53.90	-1.00	2.18	4.00	1.00	-1.00	0.00
1992	46.55	1.00	2.66	2.00	1.25	-1.00	1.00
1996	54.74	-1.00	3.12	4.00	0.00	1.00	1.00
2000	50.27	-1.00	1.22	8.00	1.00	1.00	0.00
2004	51.23	1.00	2.69	1.00	0.00	-1.00	1.00
2008	46.31	1.00	0.22	3.00	1.00	-1.00	0.00
mean	52.09	0.03	0.62	6.00	0.71	-0.15	0.61
s.d.	6.06	1.02	5.46	2.77	0.66	1.00	0.50

Sources: Cuzán and Bundrick (2004, 2008, 2009); Fair 2006, 2008.

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Conclusion

This political science monograph on "Various aspects of American elections (with emphasis on Presidential elections)" is essentially an interdisciplinary book. It contains various chapters dealing with American elections. Some chapters are more mathematical than other. It should be of interest to readers of various disciplines.