ELECTION FORECASTING IN THE UNITED KINGDOM: A TWO-STEP MODEL

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ABSTRACT

Election forecasting in the United Kingdom has been experiencing a renaissance, as work travels from popularity function to vote function models. One strain of recent work stresses political economy explanations, which another stresses atheoretical but parsimonious prediction. Both approaches have their strengths, and are combined here in a two-step approach. First, a prediction equation is offered, based on a powerful proxy variable for the election outcome itself. Second, an explanatory equation is offered, accounting theoretically for that proxy variable. This double system of equations is estimated, evaluated and found, by various diagnostics, to be extremely robust. Then, forecasts are rendered for multiple measures of UK election outcomes, in order to bring together the various measures that have appeared in the literature: government vote (and seats) share, opposition vote (and seats) share, government vote (and seats) lead. Finally, as a test, the two-step model is applied to forecast the next UK general election. These hypothetical results imply a paradoxical result: the ruling Labour party would remain in office although well behind the Tories in the popular vote.

1. Introduction

Election forecasting research has made great strides in the last decades. Scientific models, scarce twenty five years ago, have proliferated on general elections in the United States, the United Kingdom and France. [See the recent review in Lewis-Beck (2005.] The present work focuses in particular on previous forecasting efforts for the United Kingdom (Mughan 1987; Sanders 1991, 1995, 1996, 2005a,b; Whiteley 1979, 2005; Lewis-Beck, Nadeau and Bélanger 2004; Bélanger, Lewis-Beck and Nadeau 2005; Lebo and Norpoth 2006). The aim is to develop and test a new forecasting model for general elections in that country. Two main ideas guide this effort. First, we think that the recently signaled move from popularity functions to vote functions in British election forecasting is salubrious (see Lewis-Beck, Nadeau and Bélanger 2004). After all, the goal of election forecasting is to predict electoral outcomes, rather than parties' standings in the opinion polls.

Second, we believe that in developing election forecasting models, political scientists face a necessary trade-off between explanation and prediction. The ultimate goal is to achieve predictive accuracy. But "empty", explanation-free accuracy could leave forecasters at the mercy of basing their predictions on spurious relationships. The modeling strategy here, then, recognizes these two faces of election forecasting. In a two-step approach, accuracy is featured. But, also, the theoretical content of the forecasting model selected undergoes scrutiny. This safeguard appears useful in devising models that not only have performed well in the past, but that also possess characteristics suggesting they will continue to do so in the future. As Lewis-Beck and Tien (2008, 230) observed in a current essay, "forecasting models informed by sound voting behavior theory will prove superior to those that are not."

The paper unfolds as follows. Initially, we rehearse the literature on election forecasting in the United Kingdom. Then, we offer a new, uniquely parsimonious forecasting model, based

on the fourteen general elections in Britain, 1955 - 2005. To test the robustness of this model, we perform a large variety of tests, including out-of-sample forecasts as well as two-step-ahead and two-step-back predictions, for the most recent and the most remote elections. Next, in keeping with our two-step approach, embodied in a double-equation system, we explore the theoretical foundations of our model. Having done that, we turn to modeling the opposition vote share, and the government vote lead. Finally, we translate the predicted vote into predicted seats, and apply these models to predict the next parliamentary contest.

2. Vote and popularity functions

In general, popularity functions have focused on the impact of factors explaining support for incumbents (president, prime minister or government), not so much to predict its future course as to understand the sources of its past variations. [See the classic treatment by Paldam (1981).] However, for the UK, things are different. Perhaps because their measure of government popularity (a vote intention question) is closer to the nature of electoral outcomes (vote shares) than the US measure (presidential approval),[1] UK popularity functions have put a great emphasis on forecasting popularity.[2] Whiteley (1979), for instance, utilized a monthly time series of poll data and Box-Jenkins techniques to model popularity as a dynamic function of past popularity, then attempted to predict the outcomes of the 1974 and 1979 elections (see also Clarke and Stewart 1994).

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[1] In the UK, the usual question measuring popularity is a vote intention question such as "If there were a general election tomorrow, which party would you vote for?" In the US, the focus is on the popularity of the president rather than the parties, measured with the standard Gallup question: "Do you approve or disapprove of how [the sitting President] is handling his job?"

[2] The intense debate about the impact of the Falklands War on the results of the 1983 election (see Sanders 1991 for a review) is also indicative of the fact that popularity function studies are more "election-oriented" in the UK.

David Sanders has devoted considerable attention to using popularity functions as an election forecasting tool ((1991, 1995, 1996, 2005a,b). He summarizes his approach as consisting of: (1) identifying a "satisfactory" statistical model of governmental popularity (usually based on monthly time series data), one that needs tailoring for each election and that includes an inertia component and substantive independent variables (political events and economic variables); and, (2) generating "contingent forecasts" based on assumptions about the values in the independent variables specified in the forecasting model at the expected time of the next general election (Sanders 2005a, 176). Since the selection of "plausible" values for the independent variables rests on the forecaster's judgment, Sanders (2005a, 187-188) concludes that "electoral forecasting…is more an art than a science" and goes as far as saying that "these forecasts [are] not produced as a result of rigorous scientific analysis [but rather] "of empirically informed common sense, and no more" (188).

In contrast to the flourishing work on popularity functions, studies using vote functions as forecasting tools in British elections have remained a rare commodity. For a long time, the paper written by Mughan (1987), over twenty years ago, stood alone. His main dependent variable was the government vote share during elections fought between 1951 and 1983. Mughan (1987, 196) makes clear his primary purpose is not explanation but forecasting –"predicting the outcome of an event before it occurs". Therefore, the various models tried - incremental (vote as a function of its lagged value), opinion poll (vote determined by the most recent popularity poll) and economic (vote as a function of lagged macroeconomic indicators) - were essentially evaluated in terms of their predictive accuracy. Despite inconclusive results (the economic model fares better in general but generates a less accurate out-of-sample forecast for the 1987 election than the incremental model), and the exploratory nature of his effort, Mughan's paper is clearly path-breaking.

The importance of vote functions as forecasting tools in Britain was re-discovered in a contemporary effort by Lewis-Beck, Nadeau and Bélanger (2004). [See, relatedly, Norpoth (2004).] Their model aims to explain and, most notably, to forecast the vote share (in percent). It includes three variables - the inflation rate, government approval (both measured six months prior to the general election), and a measure of "cost-of-ruling" (the number of terms of the governing party in office). Though the variables selected are well-grounded theoretically, and the overall performance of the model satisfying (adjusted R-sq. is .83), the gap between the actual and predicted 2001 vote share turned out to be off by 5.8 points. Subsequent efforts to improve the model, following suggestions from Mughan (2004), Norpoth (2004) and Sanders (2004), turned out to be unsuccessful, underlying its weaker performance in recent elections (Bélanger, Lewis-Beck and Nadeau 2005).

In a current piece, Lebo and Norpoth (2006) have continued the effort to arrive at better forecasting models, based on vote functions. Their core model incorporates two components in an attempt to forecast the Conservative vote lead during post-war elections. The first component, a second order auto-regressive model, tries to detect the presence of long-term, predictive patterns in electoral outcomes. The second component links itself to the immediate context of elections. Noting that "parsimony comes at a premium in election forecasting", Lebo and Norpoth (2006, 72) use one single indicator, the satisfaction towards the prime minister, to account for the short-term factors driving electoral outcomes on the basis that "no other factor promises to encapsulate all the short-term forces in an election better than PM approval".

Lebo and Norpoth's (2006) work has much to commend it. The model fit is quite good (adjusted R-square of .84) and their results plausible. The impact of the sitting prime minister's popularity on electoral outcomes in Britain makes good sense on theoretical and empirical grounds (Clarke, Sanders, Stewart and Whitely 2004; Nadeau, Niemi and Amato 1996). The

notion that time plays against the incumbent government is consistent with empirical research in the UK and elsewhere (Paldam 1986; Sanders, Clarke, Stewart and Whitely 2001; Lewis-Beck, Nadeau and Bélanger 2004; Bélanger, Lewis-Beck and Nadeau 2005). Their quest for minimalism seems reasonable, partly on the grounds that "the ups and downs of prime ministerial approval have been shown to register the state of the economy along with foreign policy" (Lebo and Nopoth, 2006, 76). Finally, the overall accuracy of their model, both in terms of predicting vote as well as seats share, marks an improvement over extant studies.[3] Nevertheless, despite its merits, we believe Lebo and Norpoth's approach can be improved. To this task, we now turn.

3. Searching for a model: the two faces of electoral forecasting

The essence of election forecasting is twofold. To begin, prediction primes explanation in the forecasting enterprise. The search for a "good" forecasting model is motivated by the goal of predictive accuracy. Election forecasting is empirical, goal-oriented and, to a significant extent, data-driven. But forecasting is more than that. Forecasting models with good track records can collapse abruptly if they are devised in a purely empirical fashion. While the immediate success of a forecasting model is essentially judged on observational grounds, its robustness rests on its theoretical foundation. As Lewis-Beck and Tien (2000, 98) argue, "Forecasting requires more than curve fitting. It wants good theory."

We apply these ideas to the development of a forecasting model for British general elections over the past 50 years (1959-2008). Building on previous work (Lewis-Beck, Nadeau and Bélanger 2004; Bélanger, Lewis-Beck and Nadeau 2005), we address our attention to

[3] Another stream of research concentrates its attention on seats prediction on the ground that it is seats distribution rather than vote share than ultimately determines the winners and the losers in UK elections (Whiteley, 2005). We address the question of seats forecasting in a latter section of this paper.

predicting the incumbent party share of the popular vote. Nobody, of course, disputes the notion that prediction should occur before the election outcome itself. That said, the definition of "how far in advance" election outcomes can be efficiently predicted varies, from as long as years (the outcome of the preceding election) to as short as a few days (the results of the last poll). In the US, where the election forecasting tradition is well-established, the most common "electoral lag" is six months before the November presidential election (Lewis-Beck and Rice, 1992). This six month lag has been followed in recent UK vote function work (Lewis-Beck, Nadeau and Bélanger 2004; Bélanger, Lewis-Beck and Nadeau 2005). Still more recently, Lebo and Norpoth (2006) have entered both short-term and long-term lags, including an auto-regressive component (past election results) and prime minister's popularity measured usually two months before the election. Based on all the literature, we compromise with a three-month, then a six-month, electoral lag for our key predictor, in a two-step process discussed below.

4. A two-step forecasting model

The initial purpose of our modelling effort is to forecast, three months in advance, the incumbent party share in the Britain's general elections over the last five decades. Given the small number of cases under study (14) we agree with Lebo and Norpoth (2006, 75) that good models must be "exercises in minimalism". Moving to a three-month lag, we initiate a search for an encompassing measure, able to account conceptually for the politics of the forthcoming election and, at the same time, form an efficient predictor of its outcome. Past research has shown that both the government's record and the personal popularity of government leaders are important decision criteria for voters (Clarke, Sanders, Stewart, and Whiteley, 2004; Lewis-Beck, Nadeau and Bélanger 2004; and Lebo and Norpoth, 2006). Based on this evidence, we use the

average of government approval and prime minister approval as the key predictor in our forecasting model.

The choice of this single indicator, labelled the Incumbent Approval Index (INC t-3), appears well-founded for different reasons. For one, it seems to better reflect the type of dual assessments – on the record and on the leadership - made by voters in forming their voting decisions. The selection of a new leader (e.g., John Major, Gordon Brown) in hopes that his popularity will overcome a poor record, is a common pattern in Britain and elsewhere. This suggests that political strategists think, not without good reason, that incumbency is plural rather than singular in the voter's mind.[4] The situation is, in fact, quite common. Contrary to Lebo and Norpoth's (2006, 76) observation that "in British elections, an incumbent prime minister is always in the race", many elections have been fought with new figures leading the incumbent party. The selection of Anthony Eden as Tory leader (and designated prime minister) in April 1955, two months before the election, is the clearest illustration of such a situation. The presence of a fresh figure, the "popular" John Major, leading an "unpopular" government at the time of the 1992 election, produced divergent forces that should both be accounted for in a forecasting model. Altogether, five of the fourteen elections (1955, 1959, 1964, 1979 and 1992) were fought under a "new" prime minister, and such will be the case for the forthcoming election in Britain.

For another reason, the creation of a single indicator is desirable because of the limited number of cases under study. Moreover, as it turns out, this Incumbent Approval Index, "costing" only one degree of freedom, outperforms all competing measures. That is, when various measures of incumbent approval (i.e., prime minister approval, government approval, prime minister + government approval, prime minister approval weighted, government approval

[4] In Canada, the strategy of changing leaders in the neighbourhood of elections is frequent and has been occasionally successful (Nadeau and Blais, 1995).

weighted) are correlated with the dependent variable of government vote share (VGV), it is our INC t-3, that correlates (r) most highly, at .95.[5]

A crucial question is whether variables other than this Incumbent Approval Index should be included in the forecasting equation. Given the choice of a three-month lag, and the very high theoretical and empirical correlation of INC t-3 with vote share, it becomes plausible to suppose that it provides an adequate summary of the forces driving electoral outcomes. Indeed, when standard independent variables from the election forecasting literature, such as measures of economic performance, are included as predictors along side it, they do not attain statistical significance. What does this mean? First, it means that INC t-3 acts as a *proxy* variable for government vote share. This is a formidable attainment in forecasting terms, suggesting that we have managed a measure of that as yet unobserved value of interest – the election outcome.[6]

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[5] The various measures of incumbent approval are highly correlated among themselves, as well as with government vote share (see below), but the highest correlation with our dependent variable is the one with our incumbent approval combined index. This variable outperforms a host of other specifications in regression analyses, including models where measures of approval were entered either separately or simultaneously. Simulations with different weights for governmental and prime ministerial approval did not improve the model's fit. It is worth noting, that our results differ from Lebo and Norpoth's (2006) findings on two accounts. First, our index variable outperforms all other available indicators. Second, when measured separately, government approval produced stronger results than prime minister's satisfaction. Two things account for this difference: a different sampling period and the fact that we use, with one necessary exception, "untransformed" measures for both variables Based on the expectation that "the relationship between prime ministerial satisfaction and vote choice is not linear", Lebo and Norpoth (2006, 78) made the decision "to cap the range of the prime ministerial satisfaction scale at 65".

	VGV	PM	GV	Both
VGV	1.00			
PM	.89			
GV	.91	.84		
Both	.95	.94	.97	1.00

[6] For the observed variable (INC t-3) to proxy unobserved variable (VGV t), it needs to be strongly correlated with it, which is certainly the case here. In a more technical sense, it should act as an instrumental variable, with exogenous status. In this situation, if VGV t = INC t-3 + e t, with the correlation of INC t-3 and e t at zero, then It is a "perfect" instrument, or proxy. Obviously, the fact that INC t-3 operates at a lag increases its exogeneity, making it more likely that it is not correlated with et. However, to the extent that some correlation between INC t-3 and e t remains, the "errors-in-variables"

Second, it does *not* mean that the standard political economy explanations in previous forecasting models are wrong. Rather, it simply means that they would better move away from single-equation explanations. The substantive consequences of conditions such as strong economic growth, or poor political performance, still operate, but they are transmitted via overall incumbent approval. Their effects remain, but they are indirect. The model becomes a two-equation model, with incumbent approval dependent in the second equation, and government vote share dependent in the first.

From the previous discussion, we can conceptualize the equation-set in the following general manner:

Vote = f (Incumbent Approval) Eq. 1

Incumbent Approval = f (Political, Economic issues) Eq. 2

The dependent variable for the forecasting equation (Eq. 1) is the vote share of the incumbent party, VGV, and the single predictor used is incumbent approval, INC t-3 (see the appendix for details). The specification of the explanatory equation (Eq. 2) derives from the recent model specification in Bélanger, Lewis-Beck, and Nadeau (2005), who identify key three independent variables: time in office, economics, and popularity. We consider these, in turn. First, the time in office variable, comes from the idea that "ruling costs votes" (Paldam 1986). Referred to as a "time for a change" in the US context (Abramowitz 2000), it taps a "fatigue effect", leading voters to judge incumbents with growing severity over time. The importance of this variable in the British context shows up with popularity functions (Sanders, Clarke, Stewart and Whitely 2001, 233) and analyses of long-term electoral trends (Lebo and Norpoth, 2006), as

problem does not totally subside. Still, there are trade-offs; it is likely better to use a "good" proxy, which this is, as opposed to no proxy at all (Kennedy, 2008, 3).

well as in an earlier vote function of Lewis-Beck, Nadeau and Bélanger (2004, 284). We label this time in office variable, TERM.

The second determinant of incumbent approval is the economy. [See Lewis-Beck and Stegmaier (2007) for an up-to-date review of this literature).] The impact of the economy on government popularity has been demonstrated frequently in the British context (see, among many other studies, Sanders, Ward and Marsh 1987; Sanders, Clarke, Stewart and Whitely 2001; Lewis-Beck 1988; Norpoth 1991, 1992). This abundant evidence has even led many scholars to conclude that economic voting is stronger in Britain than in most countries (Lewis-Beck 1988) due to the "clarity of responsibility" in a country characterized by one-party governments (Powell and Whitten 1993; Nadeau, Niemi and Yoshinaka 2002).

Most UK studies about economic impact have used government popularity (vote intentions) as their dependent variable. There are exceptions though. Norpoth (1991) has demonstrated the effect of unemployment on Margaret Thatcher's approval; Nadeau and Niemi (1999) have shown that Chancellor's ratings are linked to the state of the economy. This said, we concur with Lebo and Norpoth's (2006, 76) argument that "much of their [economic] effect on the vote must pass somehow through evaluations of incumbents", especially as the general election nears. The expectation is that the economy should be strongly joined to incumbent approval, consequently exerting a significant, indirect impact on electoral outcomes.

If the economy matters, which economic indicators matters most? David Sanders' work offers useful information. In most of his studies, he used economic perceptions as a predictor of future government popularity.[7] This strategy, not feasible in the present case (measures of

[7] We agree with Sanders on two important accounts. First, we concur that there is a strong link between the objective economy and economic perceptions (see Nadeau and Lewis-Beck 2001; see also Sanders' study about economic perceptions in the UK where he reached the conclusions that "there are strong

subjective economic expectations are not available prior to 1979), provides insights. It shows, among other things, that economic perceptions are tied to the objective economy, in particular to certain economic indicators, most notably inflation and interest rates (Sanders, Ward and Marsh 1987, 304; Sanders 1995, 253; Sanders 1996, 210).[8] These Sanders findings, along with related previous findings on the impact of inflation (Lewis-Beck, Nadeau and Bélanger 2004; Bélanger, Lewis-Beck and Nadeau 2005) lead us to believe that inflation and interest rates are especially important determinants. Given the quest for minimalism advocated by Lebo and Norpoth, both indicators are merged into a single index, labelled ECON t-6.

The final component of Eq. 2 is simply incumbent approval itself, lagged, INC t-6. Thus, prior government support and leader popularity are taken to influence, in part, the more current assessment. This inclusion takes into account the inertial aspects of incumbent approval, at the same time allowing other events and political factors, not otherwise measured, to exert themselve through it. The equations, operationalized, are as follows:

$$VGV = f(INC\ t\text{-}3) \qquad \text{Eq. 3}$$

$$INC\ t\text{-}3 = f(INC\ t\text{-}6, ECON\ t\text{-}6, TERM) \qquad \text{Eq. 4}$$

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connections between objective levels of unemployment and inflation and voters' unemployment and inflation perceptions" and that "[voters]' overall sense of macro-economic improvement and decline is remarkable acute…and matters electorally" (2000: 275)). Despite this strong link between the objective and the subjective economy, we also agree that economic perceptions are generally more strongly tied to electoral outcomes than objective indicators (Bélanger and Lewis-Beck, 2004; Nadeau and Lewis-Beck 2001). This means that, when available, economic perceptions variables should be used instead of objectives indicators such inflation or unemployment rates. This strategy, widely used by Sanders for studying recent elections, is not an option in our case since these variables were not available until the late 70s. Using objective indicators as we do in this paper could be consider as a second-best option. This means that we possibly underestimate the impact of the economy on electoral outcomes.

[8] This extract of a work published by Sanders in 1995 is particularly illustrative: "If the pattern of relationship observed during the recent past continued for the next 2-3 years, the government could easily expect that, provided it reduced interest rates and inflation to certain target levels before the next election, personal expectations would rise enough for it to be rewarded with a sufficient share of the popular vote to secure re-election" (1995: 253).

where INC t-3 = average of the prime minister and government approval three months before general elections;[9] INCt-6 = average of the prime minister and government approval measure six months before general elections; ECON t-6= sum of inflation and interest rates measured six months before general elections; TERM = number of terms the governing party has been in office; VGV = the percentage vote share received by the governing party.

5. Results: the government vote share

Eqs. 3 and 4 represent a system of equations, where causality is one-way, and two variables VGV and INC t-3 – are endogenous dependent variables. Let us assume that the independent variables in each equation are exogenous, in so much as their values are fixed at a prior time. Under the exogeneity assumption, the system is effectively recursive, and the ordinary least squares (OLS) estimator appropriate (Kmenta, 1997). The OLS estimates for our forecasting equation (Eq.3) are displayed in Eq.5 below.

As can be seen, it fits the data very well, accounting for nearly 90% of the variation in government support. The coefficient for our key predictor shows a strong impact of incumbent approval on government vote share. A one point shift in average support for the incumbents will translate in a half point loss or gain in vote support. The relationship between both variables is highly significant, with a t-ratio exceeding 10 for the incumbent approval variable. The small standard error of estimate for the regression is further evidence of the robustness of the link between the independent and dependent variables. Applying a jackknife approach, we reran the

[9] The data to calculate the INC variables have been taken from Gallup (up to 2001) and, thereafter, from MORI. We made only one transformation in these data, in order to account for the peculiar case of 1955, when a new prime minister was designated just before the general election. In this situation, the prime minister component of the INC variable is the average of the approval of the retiring (Churchill) and the entering (Eden) leader of the governing Tory party.

model 14 times, omitting each election one-at-the-time. The magnitude of the independent variable remains remarkably stable, staying at .50 on eight occasions and varying marginally (plus or minus .01) on four occasions. As well, the R-squared remains high, varying from .87 to .93.

VGV = 20.5 (8.85) + .50* INC t-3 (10.26) Eq. 5

R-sq. = 0.90; adj. R-sq. = .89; DW = 2.20; SEE = 2.27; N = 14,

where the figures in parentheses are absolute t-ratios; * = statistical significance at .0.01, one-tail; R-sq. = the coefficient of multiple determination; adj. R-sq. = the coefficient of multiple determination adjusted for degrees of freedom; DW = Durbin-Watson statistic; SEE = the standard error of estimate; N = the number of observations, on general elections, 1955-2005.

How well does the model forecast? Various assessments are possible. Within the sample itself, the average absolute prediction error is only 1.1 percentage point. Tougher tests are in order. When each of the elections is omitted in turn, the average absolute forecast error is quite low, at 1.5 points. The entries in Table 1 (panel A) compare the actual government vote share to these out-of-sample forecasts (columns 1 and 2). Three cases display higher deviations 1966 (+4.2), 1970 (-3.8) and 1992 (+3.9), all the other deviations being below 2 percentage points. Overall, the accuracy of these forecasts is impressive, with a mean absolute error of only 1.5 percentage points. Furthermore, when compared to the actual score of the opposition, the out-of-sample forecasts would have predicted the correct winner in all 14 instances. As a last observation, to which we shall return, the accuracy of the forecasts is also very high when they are based on the final nine elections held (1974-2005).

[TABLE 1 ABOUT HERE]

An even tougher test consists of performing “step-ahead” forecasts. This involves estimating the model with a smaller sample and predicting the remaining cases. The usual format

consists of estimating the model with a data-set up to t-1, then forecasting the outcome of the election at time t. We choose to use stringent tests, performing "step-ahead" as well as "step-back" forecasts, from models where two consecutive cases were deleted. We thus estimate a model including the general elections going from 1955 to 1997, performing forecasts for the 2001 and 2005 contests. We then estimated a model deleting the first two elections, 1955 and 1959, performing forecasts for these two elections.

The forecasts derived from these exercises are remarkably accurate (see Table 1, panel B). For the 2001 and 2005 elections, the forecasts are 42.7 and 37.3 percent, respectively, producing low forecasting errors, 2 percentage points in both cases; these magnitudes are virtually the same as for the within-sample (1.7 and 1.6 percentage points) and out-of-sample (1.8 and 1.9) forecasts. The accuracy of the step-back forecasts is even more striking. The forecasts for the 1955 and 1959 elections are very close to the actual results (48.7 in both cases). Further, these low forecasting errors (-1.0 and -0.7) are close to those obtained from within-sample (-0.6 and -0.3) and out-of-sample forecasts (-0.7 and -0.3).

Based on these various assessments of forecasting accuracy, the performance of our model appears very good. But this is not the end of the story. As mentioned at the outset, we believe that an additional test should be performed to establish the theoretical and empirical foundations of such models, to ensure their past successes at predicting elections are not based on spurious relationships. Put another way, we wish to show that these fine forecasting results are not simply based on "data-mining." Given that Incumbent Approval drives Government Vote Share, we must now demonstrate what, substantively, drives Incumbent Approval. Thus, our Eq. 4 for explaining Incumbent Approval, as estimated with OLS, appears below in Eq. 6.

The equation fits well, accounting for well over 80% of the variation in Incumbent Approval. This performance is impressive given the large variation in the dependent variable

(34.5 points separate the low and high values, with a standard deviation of 10.2 points). The slope coefficients appear plausible in magnitude, are in the expected direction and easily statistically significant. The strength of the inertial component, INC t-6 makes sense, suggesting that current incumbent approval results from a series of cumulative actions and events occurring earlier in a government's mandate. Further, results indicate that with each consecutive governmental term, the approval rating of incumbents decreases by almost 4 points.

INCt-3 = 34.6 (4.06) + .62* INCt-6 (4.54) - .90* ECON (4.79) - 3.85 *TERM (2.64)

Eq. 6

R-sq. = 0.88; adj. R-sq. = .84; Durbin-a, chi-square = 1.29; SEE = 4.1; N = 14

where the figures in parentheses are absolute t-ratios; * = statistical significance at .0.01, one-tail; R-sq. = the coefficient of multiple determination; adj. R-sq. = the coefficient of multiple determination adjusted for degrees of freedom; Durbin-a , used when a lagged dependent variable is one of the regressors, yields a chi-square test that shows no statistically significant autocorrelation; SEE = the standard error of estimate; N = the number of observations, on general elections, 1955-2005.

The economy-approval connection clearly stands out.[10] The link between the state of the economy and the satisfaction towards incumbents is strong and systematic. A one point increase

[10] The bivariate correlations presented below show that various economic indicators were linked with government vote share (VGV) and incumbents' approval (INC). All these economic indicators were entered, either separately, simultaneously or in various combination forms (like the traditional misery index or an economic index calculated from the sum of unemployment, inflation and interest rates) in the forecasting equation and explanation equations. None of the economic variables turns out to be significant in the forecasting equation. The indicator formed of the inflation and interest rates clearly outperforms all other indicators or set of indicators in the explanation equation.

in the inflation-interest rate index generates almost the same decrease (-.9 percentage point) in the level of incumbent satisfaction ratings. The magnitude of the economic coefficient on approval further signals the presence of a significant, indirect impact of the economy on electoral outcomes. Indeed, more than one-third of the average variation in the government vote share from election to election seems to be attributable to the evolution of the economic situation.[11] This result, consistent with a host of previous empirical studies, confirms that the economy exerts a strong impact on electoral outcomes in Britain. Here we show that this economic influence is indirect, as well as direct. Other variables in the system also exercise indirect effects. In particular, there appears a "cost-of-ruling" dynamic at work, with each consecutive government term reducing incumbent approval by almost 4 points, which in turn drops government vote share by about 2 percentage points. (That is, an indirect effect = TERM coefficient x INC t-3 coefficient = 3.85 x .50 = 1.93). Interestingly, this estimate is very close to the effect from the term variable earlier reported in Bélanger, Lewis-Beck, and Nadeau (2005). These effects of the independent variables in this recursive system, direct and indirect, are depicted in the path diagram of Figure 1.

[FIGURE 1 ABOUT HERE]

	VGV	INC
Unemployment	-.34	-.37
Inflation	-.27	-.32
Interest rate	-.42	-.55
Misery index	-.49	-.55
Economic index	-.48	-.57
Inflat + Interest	-.37	-.47

[11] This estimation is based on the magnitude of the economic coefficient in the approval equation, the size of the approval variable in the vote share regression and the absolute average value of the variation of vote share (4.4 points), incumbents' approval (9 points), and the inflation-interest rate index (3.5 points). This leads to the following calculation: Economic index average (3.5) x Economic coefficient (0.9) x INC t-3 coefficient (0.50) = 1.58 percentage points).

In sum, our forecasting model, as captured in this double-equation system, satisfies the two criteria enunciated at the outset of this piece. It produces accurate forecasts, plus is theoretically and empirically well-founded. Below we examine other dimensions of election forecasting – opposition vote share, government lead, and seat share, in order to complete our understanding of the art and practice of predicting UK electoral outcomes.

6. Opposition vote share and government lead

6.1 Opposition vote share

Few studies have attempted to forecast opposition votes or seats in the UK. Among the useful exceptions are Sanders'(2005a) analysis of the popularity function of the Tories between 1997 and 2004, Whiteley's (2005) attempts to model party seat share (including the opposition) during post-war elections, and Lebo and Norpoth's (2006) study on government lead over the opposition (though no analysis of the opposition vote is performed in this last piece). This said, to the best of our knowledge, no attempt has been made to devise a vote function to forecast the opposition vote share in Great Britain. We now turn our attention to this task.

Our efforts to model and forecast opposition vote share stem from two main ideas. First, the best variable to predict the official opposition vote share should be the approval rating of its leader. This idea seems plausible on two accounts. One, it is consistent with the electoral dynamics of British elections. Lebo and Norpoth (2006, 85) for instance, forcefully make the point that "several elections [in the UK] strongly hint at the influence of public assessments of opposition leaders". Two, it clearly distinguishes performance of the official opposition from that of the government. Whereas the incumbent party forms a "two-headed beast", with two potential

objects of evaluation (government and leader), the official opposition is a "one-headed beast", with only one prominent object of evaluation (the leader).

The second idea behind our modeling of the opposition vote share comes from the distinction between the meaning of a vote for the government and for the opposition. Voters as voters have only one alternative for expressing their sentiments toward a sitting government - vote for or against it. But there are at least a couple of ways for voters to express themselves, once the decision to punish the incumbent party is made (setting aside the option of abstention). One is to support the official opposition. The other is to vote for a smaller party. Based on this notion, two expectations can be derived. First, we anticipate that the vote for the official opposition will be influenced by the presence of candidates from smaller parties, notably candidates from the Liberal party. Second, we expect that the support for the Liberal party will be more closely linked to the satisfaction towards the leader of the official opposition than towards the incumbent.

Our analysis of the opposition vote bases itself on 13 elections (since there are no data on the approval of the opposition leader for the 1955 election). We expect the key predictor for the opposition vote share to be the opposition leader approval (again measured three months before the general election). The results displayed in Eq.7 confirm this hypothesis. The model fits the data well, accounting for about 80% of the variation in opposition support. Moreover, the impact of the opposition leader approval on the dependent variable is strong, with a one percentage point change in the former inducing a full half-percentage point change in the official opposition vote share.

VOPP = 18.8 (6.34) + .52* LOPP (6.71) Eq. 7

R-sq. = 0.80; adj. R-sq. = .79; DW = 2.03; SEE = 2.89; N = 13

where VOPP = official opposition vote share in percent; LOPP = leader of opposition's approval rating three months before a general election; the statistics are defined as before.

Three additional comments are in order. First, consistent with our expectation that satisfaction with the opposition leader essentially determines the opposition vote share, none of the variables measuring incumbent approval are significant when entered, either separately or simultaneously, into Eq.7.[12] Second, within-sample (not shown) and out-of-sample forecasts (see Table 2, panel A) show that the performance of the model is good overall. The mean absolute error for the out-of-sample forecasts is only 2.1 points (see Table 2, panel A) and the accuracy of the step-ahead forecasts is remarkable (see Table 2, panel B).

[TABLE 2 ABOUT HERE]

The performance of the model, however, is inferior for the elections prior to 1974, with many predicted values being higher than the actual opposition vote share. This result is not entirely surprising. Before 1974, the Liberal party fielded only a limited number of candidates, whose proportion constantly varied, from 35% in 1959 to 83% in the 1974 February election (the figures for 1964 and 1966, respectively, are 58 and 50%). We expect official opposition support to decrease when voters have more options to express their dissatisfaction towards the government. Therefore, a negative relationship should appear between the percentage of Liberal candidates in elections (a figure, incidentally, that is known before the election) and the opposition vote share. The results presented in Eq. 8 confirm this expectation. The variable

[12] The results for the equation including our combined index are the following:
VOPP = 17.2 (4.74) + .52 LOPP (.08)* + .04 INCt-3 (.09)

measuring the proportion of liberal candidates is correctly signed and statistically significant, and its inclusion notably improves the fit of the model.[13]

VOPP = 18.8 (5.70) + .43* LOPP (5.46) - 7.94* LBCAND (2.29) Eq. 8

R-sq. = 0.87; adj. R-sq. = .85; DW = 2.10; SEE = 2.46; N = 13

where LBCAND represents the proportion of liberal candidates in a given election, and the other variables and statistics are defined as before.

While the results for the entire period (1959-2005) appear satisfying, we must recognize that predicting the opposition vote share in the fluid UK political context prior to 1974 is a demanding task. Moreover, though the number of candidates is known before elections, this information is available only a few weeks before polling day, a delay shorter than the three-month lag used in our various models. Because of that, we also estimate a model for the opposition vote based on the elections held after 1970, a period during which Liberal candidates

[13] There are various possibilities for operationalizing the idea that ways of expressing a protest vote were limited until 1974. The data shown in Table A below (column 1) compares the potential level for a protest vote in a given election (operationalized as 100 – INC) and the proportion of seats without a liberal candidate (column 2). Two election years stand out. In 1959, the level of dissatisfaction was quite low (42%) but so was the possibility of voting for the Liberals. There were more liberal candidates in 1970, but the level of the protest vote was also very high (62%). The expectation is that the vote for the official opposition should have been higher than expected in these two elections. Including a dummy for the two elections (the Protest variable in the equation below) confirms this expectation. The level of variation explained increases to more than 90% and the forecast absolute error average drops to 1.7 percentage points.

VOPP = 19.1 (11.34) + .49 LOPP (10.91)* + 6.3 PROTEST (4.91)*

R-sq. = 0.94; adj. R-sq. = .93; SEE = 1.64; N = 13 (1955-2005)

Table A. Level of protest and proportion of seats without a liberal candidate, 1959-1974.

	Protest (%)	Seats without Liberal candidate (%)
1959	42	65
1964	56	42
1966	40	50
1970	62	47
1974f	63	17
1974o	64	1

were present in virtually all contests. The results in Eq.9 show that, when liberal candidates are present in almost every constituency, the relationship between the opposition leader's approval and the opposition vote share becomes even more systematic. The out-of-sample forecasts based on this equation are displayed in Table 2. As can be seen, the absolute average error for these forecasts is remarkably low, being less than one percentage point (0.9). Interestingly, the magnitude of the leader variable coefficient (LOPP), as well as the accuracy of the forecasts for the post-1970 elections, remain the same for both the models, whether estimated for the longer or the shorter period

VOPP = 17.5 (13.54) + .54* LOPP (14.22) Eq. 9

R-sq. = 0.97; adj. R-sq. = .96; DW = .81; SEE = 1.08; N = 9 (1974-2005)

where all variables and statistics are defined as with Eq. 8.

So far, we have devoted our efforts to the estimation of a forecasting equation for the opposition vote share. We now turn our attention to an explanatory equation for opposition approval, which is the decisive independent variable predicting the opposition vote share equation (see Eq.7). In our analysis, we found opposition approval, statistically, to be a function of itself, lagged an additional three months. Substantively, this suggests that past success and failures largely shape the official opposition leader's standing in the public mind. Interestingly, all the variables found important for explaining incumbent approval - earlier incumbent approval, the economy, or term length - are not significantly related to opposition approval. These analyses are presented in the footnote.[14]

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[14] As can be seen, approval for the opposition leader is unrelated to the state of the economy or the "time for a change effect" . We also included incumbent approval (INC) and, as expected, this variable was not significant.

LOPP = 1.1 (0.11) + .75LOPP(t-1) (3.31)* + .30 ECON (0.4) + 1.02 TERM (0.36)

R-sq. = 0.68; adj. R-sq. = .57; SEE = 7.0; N =13 (1959-2005)

Now that the predictive accuracy and the theoretical foundations of both government and opposition vote share have been explored, we develop another component of the forecasting equation in Britain, the government lead over the official opposition.

6.2 Government Vote Lead

Given the previous discussions about minimalism, predictive accuracy and theory, the specification of a vote lead equation becomes straightforward. The key variable predicting the difference between the government and the opposition vote share in British elections (government lead, labelled GOVLEAD) should be the difference between incumbent approval (INC) and the leader of opposition approval (LOPP). The results obtained from the estimation of such a specification for the longer, 1959-2005 period, are presented below in Eq. 10. As can be seen, this simple model provides a very good fit to the data, accounting for about 85% of the variation.

GOVLEAD = .83 (0.93) + .49* (INC-LOPP) (7.91) Eq. 10

R-sq. = 0.85; adj. R-sq. = .84; DW = 2.10; SEE = 3.04; N = 13 (1959-2005)

where GOVLEAD = the difference between the government and the official opposition vote share; INC is measured at before, and at the three month lag; the other variables, and the statistics, are defined as before.

For reasons presented in the previous section, forecasting the opposition vote entails special difficulties prior to the 1974 elections. Because of that, we also estimate government vote lead for the more restricted period starting with the 1974 elections. The results based on this shorter period are displayed in Eq. 11. The model for the 1974-2005 period provides an extremely good fit to the data, with close to 95% of the variation in the dependent variable

accounted for. Moreover, the accuracy of the out-of-sample and step-ahead forecasts based on this model are impressive; they are always in the right direction, with an absolute error of only 2.1 percentage points (see Table 3, panels A and B).

GOVLEAD = 1.2 (1.5) + .56* (INC-LOPP) (10.21) Eq. 11

R-sq. = 0.94; adj. R-sq. = .93; DW = .96; SEE = 2.34; N = 9 (1974-2005)

where the variables and statistics are defined as with Eq.10.

7. Forecasting vote and seat shares for the next general election

We now turn to the task of forecasting vote and seat shares, supposing a general election were held in June 2008. In order to so, we first discuss the difficult question of the translation of votes into seats in the United Kingdom. Then, we make seat and vote share forecasts, based on the most recent polling results available. We demonstrate that the outcome of the next election could be a perplexing one, with the Tories winning the vote but loosing the election.

7.1 Modeling seat share

A complex challenge for election forecasters in Britain is the translation of votes to seats. Their first-past-the-post system presumably produces two kinds of effects. The first, and most important, is an "exaggerative bias", which can turn "a slender lead in the popular vote into a solid parliamentary majority for the winner" (Norris and Crewe 1994: 202). The second is its tendency to penalize smaller parties, whose seats share will be *systematically* lower than their vote share in all elections.

Various methods have been proposed to account for these effects, in order to translate votes into seats. The "cube law", initially offered in 1909, was rediscovered in the early fifties (by Butler, and Kendall and Stuart). Its lack of precision has lead to its abandonment, and

replacement by Tufte's (1973) regression measure. He posits a linear relationship between seats and votes; S = aV +e, where S = the percentage of seats for the government party; V = the percentage of vote for the government party; a = regression slope; e = error term. Many scholars have documented the instability of this relationship for the British case (Curtice and Steed 1982; Norris and Crewe 1994; Norris 2001: Curtice 2001), going on to identify a series of factors that contribute to the changed relationship between these two variables.[15] Recent efforts (Curtice 2001; Whiteley 2005; Lebo and Norpoth 2006) to project or forecast seats share have tried to take into account the growing system bias favouring the Labour party. Curtice (2001, 343) for instance, noted that "the 2001 election was the third in a row at which the electoral system has displayed a significant and indeed growing bias in Labour's favour". Lebo and Norpoth (2006:, 81) share that conclusion, noting that: "Research has produced evidence of a bias whose partisan direction has flipped. While the Tories were the beneficiaries in the post-war elections until about 1970, the advantage has going to the Labour since then".

The remarks above clearly underline the problematic "micro-foundations" relating votes and seats in Great Britain. These various and changing conditions contribute to the instability of the votes-seats relationship, transforming it into a moving target. Given the difficulty of modelling this variability with the limited data available, we conclude that the best solution is to use updated information from the near-term, performing cautious "one-step-ahead" seats forecasts.

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[15] Various factors have contributed to altering the relationship between votes and seats share in Britain, including: the changing geographical spread of party support, notably the emerging North-South divide (Johnston, Pattie and Allsopp 1987), the effects of anti-Conservative tactical voting (Curtice 2001), the disparities in the size of constituency electorates (Curtice 2001), the disparities in voting turnout among constituencies (Curtice 2001), the split in the party system in 1983 and 1987 (Whitely 2005) and "a step-change evident in 1974 due to the growing vote-winning power of the minor parties" (Norris 2001, p3; see also Norris and Crewe 1994).

In previous work, Tufte's regression measure was employed to forecast the seat share of the governing party (Lewis-Beck, Nadeau and Bélanger 2004; Bélanger, Lewis-Beck and Nadeau 2005). These calculations drew on the post-1970 elections, a choice that seems sensible in light of the 70s transformation of British party system. A dimension neglected in these earlier simulations is the growing bias favouring Labour since the early 90s. Taking into account this updated information, and the notion that party seat share depends crucially on opponent party support, we estimate a modified Tufte's regression measure. We do this for the government share and the opposition share, as well as for the government lead over the opposition.

SGV = 46.7 (59.7) + 1.07* GOVLEAD (11.5) + 5.7* LBIAS (5.0) Eq. 12

R-sq. = 0.97; N = 9 (1974-2005)

SOPP = 44.7 (40.1) -.97* GOVLEAD (7.32) - 8.0* LBIAS (4.93) Eq. 13

R-sq. = 0.95; N = 9 (1974-2005)

SGVOPP=2.0(1.3)+2.04*GOVLEAD(11.1)+14.1*LBIAS(6.2) Eq. 14

R-sq. = 0.95; N = 9 (1974-2005)

where SGV, SOPP, and SGOPP represent the seat share (in %) projected for the governing party, the official opposition party, and the governing party seat lead over the opposition, respectively; GOVLEAD is the difference between the incumbent and opposition vote share (in %); LBIAS takes the value of 0 before 1992, -1 for the 1992 and 1997 elections, and +1 for the 2001 and 2005 elections; the statistics are defined as before.

As can be seen, the Labour party will benefit from an important bias in the translation of votes into seats in the next election. We now offer an estimation of Labour and Tories' seat and vote shares, based on recent poll data.

6.2 Vote and seat share forecasts

We use recent measures of incumbent and opposition leader approval, in an effort to estimate the vote and seat shares for the Labour and the Tories, if a general election were to be held in June 2008. The approval levels for the sitting Labour government and the Prime minister, from the relevant three-month-before period – March - were relatively low: 26% for the government and 27% for Gordon Brown (data taken from IPSOS-MORI). The level of approval for the leader of the Conservative Party was significantly higher, at 38%. Thus, the values for our key indicators, INC t-3, LOPP, and GOVLEAD, are as follows: 26.5, 38, and -11.5, respectively.

The models developed in this paper offer the possibility of producing the most detailed forecasts ever released on a UK general election contest. Previous efforts based on vote functions have limited their attention to forecasting government seat and vote shares (Mughan 1987; Lewis-Beck, Nadeau and Bélanger 2004), party seat shares (Whitely 2005), or government vote and seat lead over the opposition (Lebo and Norpoth 2006). Our models (see equations 5, 7, 10, 12, 13, and 14) allow us a complete set of forecasts - government vote and seat shares, opposition vote and seat shares, and government seat and vote share lead over the opposition. Our forecasts derive from the longer period (1955-2005 for government, 1959-2005 for the opposition and government lead). However, we also perform forecasts for the shorter period (1974-2005) given the peculiarities in the fluctuation of the opposition vote prior to 1974.[16]

The forecasts calculated from our models are displayed in Table 4. Our firmest forecast, perhaps, concerns the government vote share - 33.8%, assuming the level of approval for the

[16] The forecasts for the government and the opposition vote share based on models estimated for the shorter 1974-2005 period are 32.1% and 38%, respectively. Both estimates are quite close to the figures (32.8% and 38.7%) reported in the text. The forecast for the government vote share based on the 1959-2005 period, the same used for the estimation of the opposition vote and government vote lead is the same (32.8%) as for the 1955-2005 period.

incumbents (the Labour party and Gordon Brown) observed in March 2008, (thus, three months before a June election). This means that the support for the Labour party would drop another 1.5 percentage point from the last election (from 35.3%), reaching its lowest level since the general election of 1987.

[TABLE 4 ABOUT HERE]

Our second prediction concerns the opposition vote share. According to our model, and given a level of approval of 38% for the opposition leader registered in March, the Conservatives' vote share would have been 38.6% in June. This score represents a 6.3 point gain from the previous election, and is the highest vote share obtained by this party since 1992. These forecasts mean that the level of support for both major parties would increase in the next election (from 67.8% to 71.5%), while still being below the 75% mark for the second election in a row. It would also be the second consecutive election during which neither of the major parties secured at least 40% of the vote, a situation reminiscent of the mid-70s. Despite a support level in the low 70s, both major parties together would have been able to gain about 90% (88.6%) of the seats (see below).

Based on these separate estimates for government and opposition vote share (see Eq. 5 and 7), we conclude that the government would have trailed the opposition by nearly 5 percentage points (-4.8%) in a June election,[17] a result that would cause many to expect a decisive victory for the Tories. Nevertheless, this would not be the case. According to the government and opposition seat equations (12 and 13), the Labour party would suffer a loss of 50 seats (from 356 seats to 306), so losing its majority status in Parliament (the required number of

[17] We almost arrive at the same estimate when we use Eq.11. The calculation is: GOVLEAD = .8 + .49 (-11.5) = -4.8. Using the equation based on government vote lead (13) to forecast seats also produce nearly identical results to using government and opposition seats equation (11 and 12) separately. In this case, the calculation is: SGVOPP = 2.0 + 2.04 (-4.8) + 14.1 = 6.3 seats lead (41 seats).

seats for a majority is 324); still, it would remain the dominant party in Westminster. The Conservatives, despite a gain of close to 70 seats (from 198 to 267), would continue to form the opposition with 41.3% of the seats in the House of Commons (compared to 47.3% for the Labour). Thanks to the Labour bias in the votes-seats translation, Gordon Brown's party would have been able in June to win a "sham" victory, enjoying a 6 percentage point seats lead (39 seats), despite almost a 5-point vote deficit over the opposition.

8. Conclusion

Building from various sources – Mughan's (1987) path-breaking vote function, Sanders' (1995, 2005a,b) popularity functions, Lewis-Beck, Nadeau, and Bélanger (2004) and Bélanger, Lewis-Beck, and Nadeau (2005) with their political economy modelling, and Lebo and Norpoth's (2006) attention to prime minister approval – we have developed a two-step approach to forecasting UK general elections. This two-step procedure emphasizes a prediction equation coupled with an explanatory equation, thus combining the two goals of good forecasting models – strong theory and accurate prediction. Such a view, new the literature, breaks out of the single-equation paradigm. Instead, a system of two-equations is offered, the first emphasizing discovery of a proxy variable to serve as an empirical surrogate for the electoral outcome itself, the second offering a theoretical explanation of that proxy variable. We find this model provides extremely accurate forecasts, an accuracy explained by the overwhelming strength of key political economy variables – time in office, the economy, and incumbent approval.

Moreover, thanks to the various prediction equations devised –for government and opposition vote and seat shares, government votes and seats lead- we have been able to produce the most detailed electoral forecasts so far in Great Britain. The results show that the predictive accuracy of our forecasting equations is remarkably high, suggesting these models hold promise

for forthcoming elections. As a trial, we imagined that the next general election would be held in June 2008, and offered forecasts of that event. Utilizing recent poll data (March 2008), we conclude that such an election would have produced a paradoxical result, with the sitting Labour government being re-elected, despite trailing the Tories by nearly 5 points in the popular vote.

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Appendix

Vote, seats and terms (VGV, TERM, VOPP, GOVLEAD):

Electoral data taken from Mackie and Rose (1991, 1997) and updated with data from The Electoral Commission (http://www.electoralcommission.org.uk/)

Approval rates (INC, LOPP):

Data for the period 1954–1994 taken from Butler and Butler (1994: 249–259); data for the period 1994–2001 taken from various issues of the Gallup Political and Economic Index; data since 2001 taken from MORI website.

Economic indicators (ECON)

Inflation: Office for National Statistics. Series used is CZBH: annual change in retail price index (% monthly). Available on the web from StatBase at http://www.statistics.gov.uk

Interest Rates: Bank of England. Series used is KDMM: three-month Treasury Bill rate (monthly). Data taken from various issues of the *Annual Abstract of Statistics*.

Unemployment: Office for National Statistics. Series used is MGSX: monthly unemployment rate (% seasonally adjusted). Available on the web from StatBase at http://www.statistics.gov.uk Complementary data taken from various issues of the *Employment Gazette*.

Table 1. Incumbent Vote Share Forecasts (1955-2005; 1974-2005)

A. Out-of-sample forecasts

	1955-2005			1974-2005	
	(1) Incumbent Vote Share	(2) Predicted Values	(3) Difference (2) - (1)	(4) Predicted Values	(5) Difference (4) - (1)
1955	49.7	49.0	-0.7		
1959	49.4	49.1	-0.3		
1964	43.4	42.6	-0.8		
1966	48.0	51.9	3.9		
1970	43.1	39.4	-3.7		
1974f	37.9	37.9	0.0	37.4	-0.5
1974o	39.2	38.6	-0.6	38.3	-0.9
1979	36.9	36.9	0.0	36.1	-0.8
1983	42.4	42.4	0.0	43.3	0.9
1987	42.2	40.5	-1.7	40.6	-1.6
1992	41.9	40.0	-1.9	40.0	-1.9
1997	30.7	34.4	3.7	33.2	2.5
2001	40.7	42.5	1.8	44.0	3.3
2005	35.3	37.2	1.9	36.4	1.1
Mean absolute error			1.5		1.5

B. Step-back and step-ahead forecasts

	1955-2005				1974-2005		
	(1) Incumbent Vote Share	(2) Predicted Values	(3) Difference (2) - (1)		(4) Incumbent Vote Share	(5) Predicted Values	(6) Difference (4) - (5)
1955	49.7	48.7	-1.0	1974f	37.9	37.2	-0.7
1959	49.4	48.7	-0.7	1974o	39.2	38.2	-1.0
2001	40.7	42.7	2.0	2001	40.7	44.0	3.3
2005	35.3	37.3	2.0	2005	35.3	36.4	1.1

Table 2. Opposition Vote Share Forecasts (1959-2005; 1974-2005)

A. Out-of-sample forecasts

	1959-2005			1974-2005	
	(1) Opposition Vote Share	(2) Predicted Values	(3) Difference (2) - (1)	(4) Predicted Values	(5) Difference (4) - (1)
1959	43.8	40.4	-3.4		
1964	44.1	50.1	6.0		
1966	41.9	41.1	-0.8		
1970	46.4	38.5	-7.9		
1974f	37.2	38.2	-1.0	37.4	0.2
1974o	35.8	36.0	0.2	35.1	-0.7
1979	43.9	43.8	-0.1	42.8	-1.1
1983	27.6	29.2	1.6	27.8	0.2
1987	30.8	33.8	3.0	32.8	2.0
1992	34.4	36.7	2.3	35.9	1.5
1997	43.2	44.0	0.8	43.3	-0.7
2001	31.7	31.9	0.2	30.7	-1.0
2005	32.3	31.7	-0.6	30.6	1.1
Mean absolute error			2.1		0.9

B. Step-back and step-ahead forecasts

	1959-2005				1974-2005		
	(1) Opposition Vote Share	(2) Predicted Values	(3) Difference (2) - (1)		(4) Opposition Vote Share	(5) Predicted Values	(6) Difference (4) - (5)
1959	43.8	41.3	-2.5	1974f	37.2	37.3	0.1
1964	44.1	49.5	5.4	1974o	35.8	35.1	-0.7
2001	31.7	31.7	0.0	2001	31.7	30.3	-1.4
2005	32.3	31.7	-0.6	2005	32.3	30.3	-2.0

Table 3. Government lead Forecasts (1959-2005; 1974-2005)

A. Out-of-sample forecasts

	1959-2005			1974-2005	
	(1) Government Lead	(2) Predicted Values	(3) Difference (2) - (1)	(4) Predicted Values	(5) Difference (4) - (1)
1959	5.6	8.9	3.3		
1964	-0.7	-5.7	-5.0		
1966	6.1	10.0	3.9		
1970	-3.3	0.9	4.2		
1974f	0.7	-0.2	0.9	0.0	-0.7
1974o	3.4	2.5	-0.9	3.2	-0.2
1979	-7.0	-6.4	0.6	-7.2	-0.2
1983	14.8	12.5	-1.9	15.2	0.4
1987	11.4	6.4	-5.0	7.6	-3.8
1992	7.5	3.2	-4.3	3.9	-3.6
1997	-12.5	-8.5	-4.0	-8.0	-4.5
2001	9.0	10.4	1.4	12.7	-3.7
2005	3.0	4.9	1.9	6.1	3.1
Mean absolute error			2.9		2.1

B. Step-back and step-ahead forecasts

	1959-2005				1974-2005		
	(1) Gov. Lead	(2) Predicted Values	(3) Difference (2) - (1)		(4) Gov. Lead	(5) Predicted Values	(6) Difference (4) - (5)
1959	5.6	8.8	3.2	1974f	0.7	0.0	-0.7
1964	-0.7	-5.7	-5.0	1974o	3.4	3.1	-0.3
2001	9.0	10.6	1.6	2001	9.0	13.5	4.5
2005	3.0	5.1	2.1	2005	3.0	6.8	3.8

Table 4. Vote and Seats Share Forecasts: June 2008

A. Vote forecasts

March 2008: INC =26.5; LOPP = 38.0			
	Government Vote Share	Opposition Vote Share	Government Vote Lead
%	33.8	38.6	**-4.8**

B. Seats forecasts

March 2008: GOVLEAD = -4.9			
	Government Seats Share	Opposition Seats Share	Government Seats Lead
%	47.3	41.3	**+6.0**
Seats	306	267	**+39**

Figure 1. Election Forecasting in the UK: A Two-Step Model