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More on Economic Performance and Political Support in Britain: A Reply to William R. Keech

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I am flattered that a political scientist of William Keech's caliber uses words such as ingenious and outstanding to describe my work. I am also grateful that he took the time and was given the opportunity by the *Review* to show the implications of my theory of political support for a stylized case where unmeasured sources of support for British governments among the occupational classes are nil ($a_{qj} = 0$), the only performance variable valued by voters is the unemployment rate, which has a reasonable contemporaneous impact of -0.02, and where the decay rate parameter g for past performance outcomes is set equal to the sensible value of 0.8 (implying a backward-looking discount rate of 0.25 per quarter).

A check of selected entries in Keech's Table 1 indicates they are correct, and I have no important disagreements with his interpretations of their behavioral implications. One caveat, however, about Keech's statement that my model "presumes that the performance of the old government affects the support of the new one with exactly the same slope ($b_n = b_o$ in equation A), but with opposite sign": the absolute value of the partial derivative of Y^* with respect to Z_{t-k} in my model is $b\ g^k$, which of course depends on lag k. $b(b_n, b_o)$ is a scale parameter; the slope, as defined in the usual way, is given by the (time varying) derivative above.

Professor Keech's main point seems to be that if alternative models for the dynamics of political support are correct—in particular, models giving different representations of political support during so-called "honeymoon" periods early in a government's term—then my model is misspecified and will yield biased estimates. This is true by definition.[1] But Keech supplies no pertinent evidence on this issue. (My model makes no prediction whatever about the Pearson product moment correlation of a new government's first period support and a performance outcome during the last period of the previous government; the correlation computed by Keech with four post-1951 observations is, therefore, not relevant to his conjecture about specification bias.)

In light of Keech's comments, one bit of relevant evidence can be obtained from analysis of appropriately selected residuals from my weighted least-squares logistic model equations. If my model seriously misspecifies the honeymoon phenomenon, the residual errors of the model should be unusually large during the early periods of new governments. Keech makes no specific statement about the duration of the honeymoon, but in the work he cites by Samuel Kernell the honeymoon is assumed to last six months (two quarters). By this reasoning, the first and second periods of each government are the places to test for outlying residual errors.

The appropriate tests, which are conditional on the grid search estimates of the nonlinear parameter g and are, therefore, approximate, are made in the following way (see Weisberg 1980, chap. 5.3 and Miller 1966, chap. 3.2). Sequentially delete the suspected outlying observations from the data matrix and reestimate the weighted least-squares model obtaining new estimates of the regression parameters and weighted residual variances. If my model is for simplicity written

$$Y^*_{jt} = b_j \cdot Z^* + e_{jt} \qquad (1)$$

(where Y^* is a $1 \times T$ vector of weighted logits, Z^* is a $K \times T$ matrix representing the weighted intercept terms and distributed lags in Z appearing in my model and b_j is the associated $1 \times K$ parameter vector), then these regressions may be expressed

$$Y^*_{jt(-\theta)} = b_{j(-\theta)} \cdot Z^*_{(-\theta)} + e_{jt(-\theta)}, \qquad (2)$$

[1] The situation cannot be "worse" than this, notwithstanding Keech's reference to this effect to an unpublished revision of Samuel Kernell's 1980 APSA paper. Although he is discussing the same basic issue treated by Keech, Kernell's remarks about (statistical?) bias and his evaluation of the dynamics of my model are confusing to me. Keech's presentation in Table 1 has the story straight.

θ denoting the deleted observation or column of the data matrix. A separate regression of this form can be performed for each suspected outlier, $Y^*_{jt} = Y^*_{j\theta}$.

The predicted value(s) for the deleted case(s), $\hat{Y}^*_{j\theta}$, are then computed using the estimated coefficient vector $b_{j(-\theta)}$ from (2):

$$\hat{Y}^*_{j\theta} = b_{j(-\theta)} \cdot z^*\theta, \tag{3}$$

where $z^*\theta$ is the deleted column of Z^* corresponding to $t=\theta$. If the model is badly specified with respect to honeymoon periods, then asymptotically $\text{plim}(Y^*_{j\theta} - \hat{Y}^*_{j\theta}) \neq 0$, that is $\text{plim}(e\theta) \neq 0$. It is easy to show that the prediction errors $(Y^*_{j\theta} - \hat{Y}^*_{j\theta})$ have variance $\sigma^2(1 + z^*\theta'(Z^*_{(-\theta)} Z^*_{(-\theta)'})z^*\theta)$, and hence that a serviceable t-test for the hypothesis p lim $(e0) = p$ lim $(Y^*_{j0} - Y^*_{j0}) = 0$ is

$$t(e\theta) = \frac{e\theta}{[s^2_{(-\theta)}(1 + z^*\theta'(Z^*_{(-\theta)} Z^*_{(-\theta)'})z^*\theta)]^{1/2}}, \tag{4}$$

where $s^2_{(-\theta)}$ are weighted residual variances from equation (2).

Since we are simultaneously testing for the presence of $n=8$ outliers (the first two quarterly observations of the Wilson I, Heath, Wilson II and Callaghan governments), by the Bonferroni inequality the critical region for $t(e\theta)$ is given by $\alpha/2n$ with $64-10$ $(T-K) = 54$ degrees of freedom. For significance level $\alpha = 0.05$, the critical value of $t(e\theta)$ is approximately 3.1. The test statistics reported in the left-side entries in the columns of the upper part of Table 1 indicate that the only observation that appears to be an outlier is the second period of the

Table 1. Diagnostic Tests for British Political Support Equations

	Occupational Class Equation					
	Non-manual employees (ABC 1)		Skilled workers (C2)		Semi- and unskilled workers, widows and state pensioners (DE)	
	Model		Model		Model	
Residual outlier tests	Hibbs	Alternative	Hibbs	Alternative	Hibbs	Alternative
Macmillan-Home-to-Wilson I						
$t(e)$ 1964:4	0.86	−0.56	1.38	0.65	1.36	0.24
1965:1	−0.10	0.21	0.09	0.75	−0.11	0.46
Wilson I-to-Heath						
$t(e)$ 1970:3	1.08	−0.07	1.24	−0.20	1.98	0.62
1970:4	1.98	2.37	0.81	1.40	0.34	0.98
Heath-to-Wilson II						
$t(e)$ 1974:2	−0.62	−0.77	−0.76	−1.25	−0.66	−1.39
1974:3	−2.55	−1.87	−2.36	−2.03	−3.23*	−2.23
Wilson II-to-Callaghan						
$t(e)$ 1976:2	0.90	0.18	0.15	0.56	1.20	0.56
1976:3	0.58	0.65	0.18	−0.04	−0.34	−0.41
Fit of Alternative Models to entire data range						
Alternative model: Accumulated performance with early term trend (eq. 5)						
SSR/df	7.45		10.8		9.61	
Hibbs model 1982, Table 1						
SSR/df	7.04		8.24		9.41	

*e significantly different from zero at $\alpha = 0.05$.

Wilson II government (following the Heath-to-Wilson II transition) in the equation for semi- and unskilled workers.

$e_j\theta$ at θ = 1974:3 is, then, significantly different from zero (negative), which means that the political support predicted by my model in 1974:3 for the Labour government among semi- and unskilled workers was too high. Although I am of course not an impartial judge, I am reluctant to discard the model because one of the twenty-four suspect residuals appears to be a genuine outlier. This simply does not constitute evidence of important specification bias.

However, as Professor Keech points out in his comment, a more convincing treatment of the issue at hand requires consideration of a fully specified alternative model incorporating the idea that "governments are given a honeymoon of unearned popular support regardless of the performance of the previous government." Keech presents no concrete alternative model embodying this conjecture, but in the spirit of Kernell's work (cited by Keech) a sensible specification would be:

$$Y^*_{jt} = a_{qj} + (1/\sum_{k=0}^{tq} g^k) \cdot bj \cdot \sum_{k=0}^{tq} g^k Z_{t-k} + c_j \text{ Early Term} + e_{jt}, \quad (5)$$

where Y^* is the logit, a_{qj} are administration-specific constants, Z denotes the performance variables in my model, $0 \leqslant g < 1$, and Early Term is defined below. (All terms are weighted by the factor WT, as in the regression equations discussed in my article.)

In this alternative model, only the accumulated, discounted performance outcomes occurring during the q^{th} government's tenure in office (which runs from t = 1, 2, 3 ... t_q) influences its political support.[2] Following Kernell (1980), honeymoon effects are picked up by the Early Term trend variable, which takes the values 2.5, 1.0 during the first two periods of each government and is set equal to zero for all other periods.[3] This is precisely the sort of specification I designated as ad-hoc in my article, but it does seem to represent accurately what Keech and others have in mind as a promising alternative to my "relative, discounted performance" formulation.

The right-side entries in the columns of the upper part of Table 1 show the outlier tests for the $e\theta$ prediction errors of the alternative model. Not surprisingly, none of the prediction errors is significantly different from zero. After all, in this model an early term trend variable is devoted to fitting just these observations. What is notable, however, is that the alternative, early term-centered model does not in general do a markedly better job of minimizing prediction errors during so-called honeymoon periods than my model. Moreover, as the fit statistics at the bottom part of the Table show, the alternative model fits the entire range of the political support data significantly less well than the model developed in my article.[4]

Since my model does not generate peculiar predictions during the early periods of new governments as Keech conjectured, and because it fits these empirical data better than equations in the form of (5), I conclude that my *relative*, discounted performance theory of political support for governing parties is superior to alternatives assuming that political support responds to *absolute* performance evaluations and early-term, honeymoon trends.

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[2] The term $(1/\sum_{k=0}^{tq} g^k)$ in equation (5) is merely a normalizing factor assuring that the discount/lag decay weights sum to 1.0 at each period over the administration-specific time horizons of political evaluations (the tenure of the q^{th} government).

[3] This specification of Early Term for quarterly data corresponds to Kernell's (1980) formulation in monthly data. He set Early Term equal to 6, 5, 4, 3, 2, 1, 0 ... 0 in his monthly regressions.

[4] SSR/df is the same as the X^2/df statistic in my article. Note that $(SSR/df)^{1/2}$ gives the raw standard error of the regression for the weighted sample observations. Alternative fit statistics for choosing between the models yield the same inference. For example, the Akaire Information Criterion—here equal to $\frac{1}{2}$ SSR + K (K being the number of independent variables)—is smaller for my model than for the alternative model.