

Testing Rational Partisan Theory When Elections are Endogenous Events: Some Empirical Evidence from the United Kingdom

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Rational partisan theory predicts macroeconomic fluctuations are triggered by possible changes in government policies due to elections. Empirical testing may fall prey to an endogeneity problem when incumbent governments determine the timing of an election and voters respond to current economic conditions in their choice of party support. Hausman tests suggest elections in Britain are endogenous to growth. Stronger support is found for rational partisan theory using an instrumental variable routine.

Introduction

The connection between elections and macroeconomic fluctuations has spanned a lot of ground in the political economy literature. The more recent literature focuses primarily on partisan political policies and rational expectations. Under certain conditions, election outcomes may trigger temporary changes in the macroeconomy. In this paper, we argue that empirical tests need to account for the possibility that the economic environment may create elections and/or determine the election outcome. When this holds, instrumental variable estimation represents an improvement to the ordinary least squares (OLS) analysis commonly employed.

The next section highlights the development of the political business cycle literature.¹ Then we suggest a correction to the empirical approach to the most recent wave of electoral models, namely so-called rational partisan theory. Finally, we summarize the empirical results and offer suggestions for future research.

Development of Election Cycle Literature Political Business Cycles

Extensive research has been devoted to the notion of politically generated business cycles. Nordhaus (1975) has suggested incumbent politicians have an incentive to

¹ A more complete review of the literature is provided in the recent survey by Price (1997).

stimulate the economy to improve their reelection chances, even though any economic changes will be short-lived. A political business cycle is created due to a myopic electorate that displays retrospective voting behavior. Voters in the Nordhaus model employ adaptive expectations.

Two theoretical developments have been advanced in the literature to adjust the Nordhaus model. First, in response to Kramer's (1971) popularity functions estimates, Stigler (1973) argued that rational voters should be aware economic changes are transitory and thus should not look to economic indicators in deciding how to vote. The implication for the political business cycle is that voters should not reward incumbents for planned manipulation of the economy. In addition, the rational expectations approach to macroeconomics suggests expected fiscal and monetary manipulations will not affect real output growth or unemployment, which would seemingly break any link between elections and the economy.

Political cycles can exist, however, under imperfect information. For example, Rogoff and Sibert (1988) develop a model of asymmetric information incorporating rational expectations in which government performance is affected by competency shocks. Incumbents signal their competence by altering fiscal policy. Because the government's competence is revealed to the public only after a lag, changes to inflation may be unexpected. The composition of the resulting political cycle depends on the type of shock that occurs and whether a separating equilibrium exists.

Partisan Theory

A second criticism of the political business cycle theory entails the notion that politicians in the Nordhaus model are pure office-seekers. Hibbs (1987) provides evidence that partisan influences play a role. Alesina and Sachs (1988) combine the notion of partisan political parties, rational expectations, and uncertainty. Although economic agents are aware of the parties' differing monetary policies, they are uncertain of the election outcome when setting their wage contracts. To minimize the variance of their forecast error, inflationary expectations before the election are based upon a weighted average of the parties' expected monetary policies.

If a leftist government is elected, monetary policy will be more expansionary than expected and vice versa for a rightwing government. Thus, rational partisan theory predicts electoral cycles of higher output growth and employment if a leftist government is elected and lower output growth and rising unemployment following a rightwing victory.² These changes are expected to be short-lived as new contracts are adjusted to reflect the newly elected government's policy position.

Endogenous Elections

One major shortcoming to the first rational partisan theory models is their inability to explain changes in government.³ Uncertainty in the election outcome is due to

² Alesina and Sachs (1988) focus strictly on output cycles. The natural extension for unemployment consequences is derived in Chappell and Keech (1988).

³ For a critical review of rational partisan theory and its empirical evidence, see Hibbs (1992).

uncertainty over the distribution of voter preferences. As long as voter preferences remain stable (party preferences are assumed fixed), the incumbent government always should be reelected. Rational voters should realize this and accurately predict the incumbent reelection. Without uncertainty, no cycles will exist. Alesina and Rosenthal (1995) extend the Alesina and Sachs (1988) model by incorporating random preference shocks to voters. These shocks lead to cycles in both party power and economic conditions.⁴

If the economy is subject to cycles even without elections, Balke (1991) claims rational voters who realize the cyclical effects caused by each party upon election will vote for the party that will stabilize the economy. Thus, their choice of representation will be based in part on current economic conditions.⁵ In contrast to Alesina and Sachs (1988), Balke predicts that cycles end, rather than begin, with an election.

Frey and Schneider (1978) suggest politics more accurately represents a mix of partisan and opportunistic elements. Incumbent politicians are more likely to abandon their partisan goals as elections approach in order to retain power. Lachler (1982) shows that incumbents with the power of determining when an election will be held may call for elections when the economy is robust, rather than attempting to manipulate the economy as in Nordhaus (1975) and Frey and Schneider (1978). Conversely, the implication from Balke's (1991) rational voter model is only a tight-money incumbent party would call elections in booms and a loose-money incumbent party would call an election during a recession. Ellis and Thoma (1991) incorporate this notion of strategic election timing in a rational partisan theory framework. In their model, agents need to assess the probability of an election in addition to its outcome. Cycles are not limited to actual election periods.

While the theoretical literature recently has endogenized elections in rational partisan theory, empirical testing continues to assume elections are exogenous events. Pooled regression analysis presented in Alesina and Roubini (1992) implies strong empirical support for the rational partisan theory in panel analysis, but a discussion of the individual country regressions [presented in the earlier working paper version (Alesina and Roubini, 1990)] tempers this conclusion. Sheffrin's (1989) country-specific regressions also do not support rational partisan theory's implications, but a panel data set of seven small European nations used by Kapopoulos (1995) lends strong support. If elections are endogenous to the rational partisan theory models, however, standard regression estimates will not be consistent. An alternative estimation technique will be used in this paper to incorporate the possibility of endogenous elections in standard rational partisan theory regressions.

⁴ Other recent extensions include the role of exchange rates (Alogoskoufis *et al.*, 1992), revenue-smoothing (Berument, 1994), and stabilization (Kapopoulos, 1995).

⁵ Partisan differences in Balke's model also include non-economic platforms that voters consider in addition to the stabilization effect. This introduces an additional degree of uncertainty in predicting election winners.

Empirics

The Macroeconometric Model

Following Alesina and Roubini,⁶ we can test the rational partisan theory model for Britain assuming the quarterly macroeconomic series can be represented as truncated autoregressive processes.

$$(1a) y_t = a_0 + by_{t-1} + g\tilde{y}_t + v_t$$

$$(1b) u_t = a_1 + c_1u_{t-1} + c_2u_{t-2} + w_t$$

where:

y_t = GDP growth;

$\tilde{y}_t$ = A proxy for world or OECD growth rates;

u_t = Unemployment; and

v_t and w_t = White noise errors, at time t .⁷

The average OECD growth rate is included to capture "international trade and financial linkages [which] make OECD economies highly interdependent" (Alesina and Roubini 1992, p. 669). Furthermore, to control for the potential of unit-root problems associated with unemployment hysteresis among European nations, the unemployment series is transformed by Alesina and Roubini as deviations from the OECD average unemployment (and thus an additional separate OECD regressor for unemployment is not included).

Their test of the rational partisan theory involves the addition of an election variable, E_t , coded as +1 for rightwing victory, -1 for leftwing victory, and 0 for no election. The tests for the rational partisan theory then take the form:

$$(2a) y_t = a_0 + by_{t-1} + g\tilde{y}_t + d_0E_t + v_t$$

$$(2b) u_t = a_1 + c_1u_{t-1} + c_2u_{t-2} + d_1E_t + w_t.$$

The significance of the election variable determines if knowledge of an election outcome improves predictions of output and unemployment changes. Assuming leftwing governments are more concerned with unemployment and that rightwing governments are more concerned with controlling inflation (Hibbs, 1982; Alesina and Sachs, 1988), rational partisan theory predicts $d_0 < 0$ in tests of output cycles and $d_1 > 0$ for unemployment.

The election effect should last for the duration of the current contracts written before the election. Because contracts are assumed to last several quarters, Alesina and Roubini allow the election variable to retain its sign for eight (growth) or six (unemployment) quarters following the election. Because the series are autoregressive, this specification models the election effect to last long beyond this point. The election effect would be increasing in each of the first six quarters because part of the previous

⁶ Unless otherwise specified, all further references to Alesina and Roubini will refer to their original 1990 study that presents the U.K. regressions as well as the pooled regressions. The same discussion would apply as well to their 1992 paper with only slight alteration to the model specification.

⁷ Alesina and Roubini treat output growth as AR(2) in the pooled sample, but AR(1) when isolating U.K. Because we are investigating only U.K. here, their AR(1) specification is adopted to make the comparisons more direct. Alesina and Roubini treat the unemployment series as AR(2) for both pooled and U.K. alone.

quarters' effects will remain and be added to the current quarter's effect. Instead, the single period intervention is used here.

The election effect on output growth in each period $t + f$ following the election is thus found to be $d_0 b^f$. (The formula is more complicated for unemployment because it is an AR(2), but the same implication holds.) Assuming $b, d_0 < 1$ in absolute value, the election effect will be strongest in the first period and decrease in each subsequent period, which is consistent with rational partisan theory if various contracts differ in length. A second important distinction from Alesina and Roubini is that they only consider effects from changes in government composition (incumbent party loss), which, as detailed elsewhere (Sheffrin, 1989; Hibbs, 1992), is not consistent with the predictions of rational partisan theory.

For ordinary least squares analysis to be meaningful, it is assumed all variables on the right side of equations (2a) and (2b) are purely exogenous. The concern here is that E_t may be an endogenous variable in equations (2a) and (2b). We therefore will test for endogeneity using a Hausman test of the form

$$(3a) \ y_t = a_0 + b y_{t-1} + g \tilde{y}_t + d_0 E_t + d_0^* E_t^* + v_t$$

$$(3b) \ u_t = a_1 + c_1 u_{t-1} + c_2 u_{t-2} + d_1 E_t + d_1^* E_t^* + w_t$$

where E_t^* represents the instrumental variable (IV) estimate of E_t using a constant, one year of lags on both macroeconomic series, one year of lags on Conservative and Labor party support, and a counter variable that marks the number of quarters since the previous election (and also the average OECD growth proxy ($\tilde{y}_t$) for the output regression). Instrument specification tests are presented below. The Hausman test for exogeneity is an F-test for $d_0^* = 0$ in equation (3a) and $d_1^* = 0$ in equation (3b). If E_t is exogenous, including an instrumental variable should not have any additional explanatory power. Thus, if $d_0^* (d_1^*) \neq 0$, this suggests E_t is correlated with v_t (w_t), which is an indication of endogeneity.

Data and Specification Details

The macroeconomic data are from OECDMEI. Series names for each country are given in the data appendix. Output growth is measured as the annual growth rate in each quarter ($\log(y_t) - \log(y_{t-4})$) using the seasonally adjusted quarterly real GDP series. Alesina and Roubini did not use seasonally adjusted data for real GDP. Because the growth rates are measured as four-quarter changes, this should not make any difference. The OECD average uses, following Alesina and Roubini, data from the U.S., Canada, Germany, France, Italy, and Japan. The unemployment series includes seasonally adjusted monthly rates aggregated to quarterly rates by averaging the monthly data. The one exception is for Italy, where the OECD data are quarterly. Alesina and Roubini also use seasonally adjusted data for unemployment. The Alesina and Roubini regressions cover 1960:1-1987:4. For comparison purposes their sample dates are used here and also extended through 1993:4.

Party support data are from Butler and Butler (1994, pp. 250-259). They list monthly Gallup polls findings for "voting intention" for each major party through 1994:2. The monthly rates are averaged to match the quarterly macro series. Only April

1966 and July 1970 are missing data during the sample period, and we assume the support rates match the average of the other two months in that quarter. Butler and Butler also report survey results for "party thought likely to win," but this category contains too many missing data to be useful here.

Instrumental Variable Routines

The benefit in choosing instrumental variable estimation over OLS is derived from finding instruments that are correlated with the endogenous variable, but not correlated with the error term. Thus, it is necessary to show the endogeneity bias has been removed by testing the quality of the instruments chosen. The instrument tests focus on the excluded instruments in each regression: the additional lags of output growth and unemployment (all or some, depending on which regression), lags of the approval ratings, and the counter variable. Test results listed in Table 1 cover both the truncated and extended sample.

To show a high degree of correlation between the instruments and the election variable, regressions are run on E_t using all the instruments, and then only the first lag of output and average OECD growth and a constant, or the first two lags of unemployment and a constant. The regressions are estimated using OLS, which may be problematic as the dependent variable is polychotomous. An ordered probit is an alternative estimator often employed in this case, but that assumes there is an underlying latent variable to distinguish categories and that the categories are distinguishable only by a relative ranking. Neither assumption fits the election coding.

Additionally, convergence of the ordered probit regressions proved sensitive to the starting values, making it questionable as to whether a global minimum was reached. Although not particularly meaningful, the ordered probit estimates did produce t-ratios

Table 1—Diagnostic Tests of Joint Significance of Excluded Instruments

Dependent Variable	1960-1987		1960-1993	
	Election Variable	Fitted Residual	Election Variable	Fitted Residual
Panel A: Output Equations				
F-statistic	1.787**	1.119	2.126***	1.409
Degrees of Freedom	(16, 85)	(16, 87)	(16, 109)	(16, 111)
Change in Adjusted R ²	+ .250		+ .235	
Adjusted R ²		.018		.049
Panel B: Unemployment Equations				
F-statistic	1.70*	.655	1.890**	0.392
Degrees of Freedom	(15, 86)	(15, 88)	(15, 110)	(15, 112)
Change in Adjusted R ²	+ .224		+ .201	
Adjusted R ²		-.0529		-.0773

The election variable has values of +1 for Conservative party victory, -1 for Labor party victory, and 0 for no election. Instruments are listed in Table A2. Excluded instruments do not include first lag of growth and average OECD growth for GDP growth equations and the first two lags of unemployment for unemployment equations

*** Significant at 1 percent

** Significant at 5 percent

* Significant at 10 percent

similar to the OLS estimates. OLS estimates for the full instrument set are presented in the appendix, but these must be interpreted with caution. A full structural model would be needed to determine which variables have the greatest impact on election timing and party reelection, which is beyond the scope of this paper. As this is not a fully specified equation and there is a large degree of multicollinearity, individual t-tests are invalidated. This will not cause problems for the instrumental variable estimates, although the potential nonlinearity would.

With these caveats in mind, F-tests reject the hypothesis that the coefficients of the additional instruments are not significantly different from zero. Additionally, the change in adjusted R^2 from the restricted regressions are always positive, suggesting the improvement in fit is substantial even after correcting for the additional number of parameters needed. These results hold across all regressions on E_t .

Bias will still be present in the instrumental variable regressions if the instruments are correlated with the residual. Regressing the additional instruments against the fitted residuals from equations (2a) and (3a) suggests any correlation is small. F-tests are unable to reject the null hypothesis that all the coefficients are zero, and the adjusted R^2 is either negative or small. Thus, there is little evidence to reject the choice of instruments. The endogeneity bias from OLS, if it exists, should be eliminated in the instrumental variable regressions.

Estimation of Output Cycles

OLS results on equation (2a) are presented in Table 2. Despite the altered coding for the election variable, the interpretation of the results is the same as found by Alesina and Roubini for Britain. The election variable is not significant for either the truncated

Table 2—Election Effects on Real GDP Growth in Britain

Sample	1960-1987	1960-1987	1960-1993	1960-1993
Estimation Procedure	OLS	IV	OLS	IV
Constant	0.068*** (0.020)	0.076*** (0.022)	0.058*** (0.016)	0.067*** (0.018)
Output {-1}	0.0854*** (0.042)	0.856*** (0.045)	0.862*** (0.037)	0.866*** (0.040)
OECD Average Growth	-0.032*** (0.009)	-0.036*** (0.010)	-0.028*** (0.008)	-0.033*** (0.009)
Election Variable	-0.010 (0.033)	-0.120* (0.069)	-0.016 (0.029)	-0.156*** (0.066)
Mean of Dependent Variable	0.070	0.074	0.058	0.061
Sum of Squared Residuals	0.879	0.951	0.973	1.120
Hausman Test Statistic that Election Variable is Exogenous	3.867** F(1, 99)		7.368*** F(1, 123)	

Standard errors are in parentheses below coefficient estimates. The election variable has values of +1 for Conservative party victory, -1 for Labor party victory, and 0 for no election. Instruments are presented in Table A2

*** Significant at 1 percent

** Significant at 5 percent

* Significant at 10 percent

or extended sample regressions but does have a negative sign as predicted by rational partisan theory. (Although Alesina and Roubini find a higher t-ratio of -1.365, it is still not significant.) The Hausman tests suggest the election variable is endogenous to the growth rates, however, in which case the OLS estimates are not consistent.

Next we estimate equation (2a) via the instrumental variable technique using the instruments listed above. Replacing E_t by its instrumental variable representation has the added advantage of partially accounting for Chappell and Keech's (1988) criticism of nonstochastic probabilities for election outcomes in the Alesina and Sachs (1988) model, which further hampers the traditional election variable representation where all elections (or party changes in Alesina and Roubini) are treated equally. Controlling for endogeneity alters the conclusion, as now the election variable is found to be significant. The level of significance is further enhanced when the sample is extended through 1993.

Estimation of Unemployment Cycles

Rational partisan theory tests also are examined for unemployment. The OLS results of these regressions are presented in Table 3. Again, the election variable is not significant in either regression, but the variable does have the predicted sign. This is similar to Alesina and Roubini where they find a t-ratio of 1.501, which again is larger than found here but still not significant at conventional levels. The Hausman test statistics are not significant, suggesting the election variable is exogenous to unemployment, which validates the simple OLS estimates. The dependent variable here measures U.K. unemployment *relative* to the OECD average unemployment rate. If voters typically care only about domestic conditions (as suggested by the endogeneity of elections to the U.K. GDP growth rate), elections will not be timed or determined by this measure. In attempting to control for unit-root problems associated with hysteresis,

Table 3—Election Effects on Unemployment in Britain, Estimated by OLS

Sample	1960-1987	1960-1993
Constant	-0.001 (0.022)	-0.001 (0.021)
Unemployment{-1}	1.572*** (0.079)	1.610*** (0.069)
Unemployment{-2}	-0.594*** (0.079)	-0.640*** (0.170)
Election Variable	-0.059 (0.077)	0.038 (0.188)
Mean of Dependent Variable	-0.619	-0.406
Sum of Squared Residuals	4.85	6.46
Hausman Test Statistic that Election Variable is Exogenous	1.990 F(1, 100)	1.435 F(1, 124)

Standard errors are in parentheses below coefficient estimates. Unemployment is transformed as British civilian unemployment rate minus OECD average unemployment rate. The election variable has values of +1 for Conservative party victory, -1 for Labor party victory, and 0 for no election. Instruments for Hausman test are presented in Table A2

*** Significant at 1 percent

Alesina and Roubini also inadvertently mitigate the potential endogeneity problem. Support for the rational partisan theory model is minimal, however, in this specification.

Conclusions

The purpose of this paper is to test and, if necessary, account for endogenous election timing and outcomes in rational partisan theory models. Previous evidence in favor of rational partisan theory outside the U.S. case of fixed election timing has been limited to panel data. Individual country regressions typically do not support the model. Using the same macroeconometric framework as Alesina and Roubini (1990, 1992), we corroborate this conclusion for the case of the United Kingdom. The evidence presented, however, suggests elections in Britain are endogenous in empirical models of output growth; the rational partisan theory implications are more strongly supported in instrumental variable regressions. Election endogeneity is not found for unemployment. Because this variable is measured as domestic deviations from the OECD average, it is not clear the standard election variable properly captures the rational partisan theory predictions. The election cycle in other OECD nations could affect the transformed variable as well. Thus, rejection of rational partisan theory for unemployment is also tentative.

The endogeneity results imply institutional arrangements that allow current governments to determine when an election will be held need to be accounted for in the regressions. In addition, the election outcome also may be dependent on the macroeconomic environment at the time of the election.

Existing endogeneity tests cannot separate these two possibilities. It remains unclear whether British incumbents strategically determine the election event (Heckelman and Berument, 1998) or whether British voters support different parties under different current economic conditions (Hibbs, 1982). Future work may be directed in this vein by decomposing the election variable into different components to isolate the separate effects.

Thus, the endogeneity results suggest OLS coefficients in rational partisan theory tests are generally not consistent. This suggestion taints much of the earlier empirical research on rational partisan theory, which relied solely on OLS. The instrumental variable regressions generate stronger support for the implications of rational partisan theory in U.K., but only should be viewed as preliminary, as standard instrumental variable may not be optimal either. Because the election variable is not continuous, standard instrumental variable (for a proper set of instruments) should generate consistent coefficient estimates (and thus represents an improvement over OLS), but incorrect estimates of the variance-covariance matrix thereby make t-tests less certain. Although only one country is tested here, the implications extend to other countries. Empirical models need to be developed that incorporate the possibility of endogenous election timing and outcomes.

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Appendix

Table A1—Data Source Files and Sample Dates for OECDMEI Database

Nation	Variable	Series Name	Dates	Frequency
U.K.	Real GDP	GBRGDP	1960:1-1993:4	Quarterly
	Unemployment	GBRUNRAS	1960:1-1993:12	Monthly
Germany	Real GDP	DEURGDPS	1960:1-1993:4	Quarterly
	Unemployment	DEUUNRAS	1962:1-1993:12	Monthly
France	Real GDP	FRARGDPS	1970:1-1993:4	Quarterly
	Unemployment	FRAUNRAS	1978:1-1993:12	Monthly
Italy	Real GDP	ITARGDP	1970:1-1993:4	Quarterly
	Unemployment	ITAUNRAS	1960:1-1993:4	Quarterly
Japan	Real GDP	JPNRGDPS	1960:1-1993:4	Quarterly
	Unemployment	JPNUNRAS	1960:1-1993:12	Monthly
USA	Real GDP	USARGDP	1960:1-1993:4	Quarterly
	Unemployment	USAUNRAS	1960:1-1993:12	Monthly

Table A2—Election Variable Determinants

Sample	1960-1987		1960-1994	
Constant	-0.371 (0.530)	-0.155 (0.491)	-0.470 (0.445)	-0.305 (0.441)
Output{-1}	0.341 (0.470)	0.517 (0.441)	0.267 (0.431)	0.531 (0.412)
Output{-2}	-0.749 (0.680)	-0.782 (0.680)	-0.785 (0.635)	-0.897 (0.639)
Output{-3}	1.183 (0.674)	1.134 (0.673)	1.151 (0.622)	1.089 (0.628)
Output{-4}	-0.753 (0.419)	-0.787 (0.418)	-0.569 (0.358)	-0.557 (0.362)
Unemployment{-1}	-0.153 (0.145)	-0.177 (0.144)	-0.103 (0.119)	-0.112 (0.121)
Unemployment{-2}	0.163 (0.247)	0.139 (0.246)	0.082 (0.204)	0.070 (0.207)
Unemployment{-3}	-0.150 (0.249)	-0.131 (0.248)	-0.014 (0.209)	0.009 (0.211)
Unemployment{-4}	0.158 (0.155)	0.186 (0.153)	0.055 (0.129)	0.061 (0.131)
OECD Average Growth	-0.043 (0.040)		-0.057 (0.030)	
Labor Voting Intention{-1}	-0.022 (0.010)	-0.024 (0.009)	-0.020 (0.008)	-0.019 (0.008)
Labor Voting Intention{-2}	0.010 (0.011)	0.010 (0.011)	0.014 (0.010)	0.0148 (0.010)
Labor Voting Intention{-3}	0.015 (0.011)	0.014 (0.011)	0.010 (0.010)	0.009 (0.010)
Labor Voting Intention{-4}	-0.006 (0.009)	-0.007 (0.009)	-0.006 (0.008)	-0.008 (0.010)
Conservative Voting Intention{-1}	-0.001 (0.010)	-0.003 (0.010)	-0.002 (0.008)	-0.003 (0.008)
Conservative Voting Intention{-2}	-0.011 (0.012)	-0.012 (0.012)	-0.004 (0.010)	-0.005 (0.011)
Conservative Voting Intention{-3}	0.022 (0.012)	0.021 (0.012)	0.020 (0.011)	0.019 (0.011)
Conservative Voting Intention{-4}	0.002 (0.010)	0.002 (0.010)	-0.001 (0.008)	-0.002 (0.009)
Counter (Number of Quarters Since Last Election)	0.019 (0.006)	0.019 (0.006)	0.017 (0.005)	0.017 (0.005)
Mean of Dependent Variable	0.0192	0.0192	0.0234	0.0234
Sum of Squared Residuals	5.897	5.977	6.732	6.949

Standard errors are in parentheses below coefficient estimates. Estimation by OLS. Unemployment is transformed as British civilian unemployment rate minus OECD average unemployment rate. The election variable has values of +1 for Conservative party victory, -1 for Labor party victory, and 0 for no election. The average OECD growth rate is included only for the output regressions where it serves as an exogenous variable in the second-stage regressions