

Elections and Macroeconomic Outcomes in Ireland, 1948-91

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Abstract: This paper tests the main politico-economic theories of the relationships between elections and macroeconomic outcomes using Irish data over the period 1948-91. The results suggest that Fianna Fáil governments have been more expansionary than Fine Gael-led alternatives, that is they have been more concerned with output and unemployment rather than inflation. It is also tentatively suggested that lower unemployment acts as a signal for the incumbent to call an election. It is also found that minority governments tend to be more shortlived than majorities.

I INTRODUCTION

Models of macroeconomic policy relying on social planners, by definition tend to abstract from the dynamics of politico-economic interaction that arises between different economic agents. A whole area has evolved in recent years to rectify this situation; the basis of such an approach is that politicians are not neutral actors but possess their own clearcut goals that warrant modelling. Two key assumptions concerning the motivation of politicians dominate: office-motivation and ideology. The purpose of this paper is to undertake empirical tests of the cardinal hypotheses for the case of Ireland. The structure is as follows: Section II succinctly summarises the primary theories, Section III details the empirical support for these models, Section IV consists of a brief review of the Irish political system, Section V contains the key empirical results, and the final section is a conclusion.

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II REVIEW OF THEORY

The political business (PBC) cycle theory, based on the assumption that incumbents seek re-election, was developed by Nordhaus (1975) in the context of a naive Phillips Curve model. He predicted that the economy is stimulated prior to an election with output increasing above the natural rate and declining unemployment as the economy moved along a short-run Phillips Curve. After the election, contractionary policy is implemented to control inflation. Nordhaus was writing with the US case in mind and envisioned regular four-year cycles in macroeconomic outcomes.

Contemporary with the PBC model, the early partisan models emerged with the assumption that ideology is superior to opportunism in explaining policymaker motivation. Hibbs (1977, 1987) pioneered much of the work in this area. His formulation, known as the party cleavage model, encompasses partisan attitudes of policymakers to macroeconomic outcomes. Two parties are usually considered; liberal parties which regard unemployment as the key problem and hence are systematically more expansionary and more tolerant of inflation, and conservative parties with a higher inflation aversion, often associated with higher unemployment. Hibbs focuses distinctly on the US case with the Democratic and Republican parties fitting neatly into each category. As with the PBC, the partisan model is capable of generating cyclical behaviour at electoral frequencies, though of a fundamentally different nature. After a liberal victory, unemployment is lower and inflation is higher. Cycles are post-election, as opposed to pre-election.

The import of these models was compromised by the restrictive assumptions, resulting in a premature decline of the area. The main problem centred on the rationality assumptions: systematic manipulation of expectations was allowed for in both models and voters were assumed to be myopic in the PBC model. A further criticism is the assumption of exogenous election timing.¹

Recent developments emanate from the rational expectations and game-theoretic approach to macroeconomic modelling. In particular, the rational partisan theory as expounded by Alesina (1987) and Alesina (1988), is based on the credibility models of Kydland and Prescott (1977) and Barro and Gordon (1983a, b). The two-party ideological assumption from Hibbs is utilised with parties differing in their optimal policies and their incentives to surprise. The liberal party is relatively more concerned about output and more willing to accept higher inflation. Hence it is more inclined to generate unexpected inflation. When forming inflationary expectations, wage-setters use a weighted average of the inflation that would occur under each party,

1. The US is one of the few countries with this facet of electoral law. This makes analysis of the US far easier and partially explains why this country dominates the analysis.

weighted by probability of election, as the victor in the oncoming election is unknown. A number of implications emerge. First, inflation is always higher under a liberal government. Second, a temporary boom always follows a liberal victory as inflation is always higher than the expected level. Similarly a temporary recession follows a conservative victory. In the Alesina model elections occur every two periods so no electoral uncertainty exists in the next period and output reverts to the natural rate. Cyclical behaviour similar to that of the Hibbs model emerges but the rational partisan model stipulates that divergences from the natural rate should be concentrated in the first half of the electoral term.

Rational PBC models generally assume some asymmetry of information between the government and voters.² The model which probably receives the greatest number of citations as the archetypal PBC model is that of Rogoff and Sibert (1988), followed by Rogoff (1990). Parties are differentiated by their levels of "competency", defined in fiscal policy terms as the provision of government services with less revenue than other contenders. An asymmetry of information exists as competency cannot be directly observed by voters. Incumbents may be genuinely competent or may be incompetent feigning competence: both types attempt to secure re-election by signalling. After the election, incompetent types tend to use distorting money seignorage or budget deficits to finance the tax cut. A testable implication of this model is the existence of political budget cycles: fiscal policy distortions at electoral frequencies. No predictions about outcomes emerges: the cycles are over policy instruments.

Full rehabilitation of the PBC must allow for effects on outcomes: this forms the substance of the model of Persson and Tabellini (1991) in which the theory of "competence" has been extended to output and inflation. Here, competence is defined in terms of the natural rate. Output can be increased by inflationary surprises or simply by being competent.³ The latter cannot be directly observed and this creates an incentive to signal competence by increasing output. Inflation and competence are not observed until after the election creating the temptation to inflate prior to elections. This model provides a rational justification for Nordhaus-style cyclical behaviour. However, the cycles are less pronounced and regular.

One final model that should be examined is the strategic timing model under the assumptions of office-motivation and endogenous election timing. Most of the previous theories focus on the cyclical behaviour generated over a regular four-year period. If the election is a choice variable, according to Balke (1990), the government becomes more inclined to time elections to

2. Early work on this theme includes Ferejohn (1986) and Cukierman and Meltzer (1986).

3. Technically, the competency shock is modelled as an error term in a supply function.

coincide with favourable economic conditions, i.e., favourable supply shocks. Thus, the direction of causality is reversed: instead of elections resulting in booms, booms result in elections. Further implications of this revised PBC model are developed by Terrones (1987) who holds that the probability of calling an election increases with the strength of the economy. This is tempered by the amount of time left in the term. Towards the end of the term, an election may be called even in situations of moderate growth as the risk of a weak economy at a later stage becomes too great.

III EMPIRICAL REVIEW

Little evidence in favour of a PBC in outcomes emerges from the literature. One of the first to test the theory in the US context was McCallum (1978) who decries the empirical relevance of the Nordhaus model. Such negative conclusions have been verified by numerous other US studies including Golden and Poterba (1980), Beck (1982), Hibbs (1987) and Alesina (1988). Further evidence to bolster this conclusion emerges from cross-country tests of OECD countries by Alesina (1989), Alesina and Roubini (1990) and Alesina, Cohen, and Roubini (1991). The only positive result to emanate is a shortlived post-election increase in inflation, compatible with the rational models.

The partisan model performs much better. Hibbs (1977, 1987), finds permanent differences in the pattern of outcomes between the two parties in the US. Strong evidence in favour of the Alesina model for the post-war period in the US is presented in Alesina and Sachs (1987) and Alesina (1988). Five of the seven recessions in the sample period occurred under Republicans, and Alesina (1991) updates his results to include the recession under the Bush administration. Alesina, Londregan, and Rosenthal (1991) show that the model is not rejected for the period 1914-88 adjusting for oil shocks and wars. Cohen (1992) argues that forward interest rates predict higher inflation under Democratic administrations.

This testing procedure is extended to OECD countries, informally in Alesina (1989) and more rigourously with pooled cross-section time-series data in Alesina and Roubini (1990). Precisely what is being tested in these multi-country studies is a weaker version of the rational partisan theory which isolates only distinct left-right shifts i.e., excluding re-elected incumbents. This is justified by pointing to the minimal political uncertainty which has existed in certain countries. Furthermore, recent Keynesian models have shown that real effects can derive from expected as well as unexpected policy changes. In generalising the theory in this manner, a number of problems are bound to arise. First, a clear right-left divergence may not exist, especially

in countries dominated by multi-party coalitions. Second, the problem of endogenous election timing arises.⁴ A multi-party system will be more inclined towards frequent elections, so that all evidence of cycles may be erased. Third, monetary policy is not always unfettered, especially where there is a commitment to fixed exchange rates. Fourth, world demand is an important factor especially for small open economies.

The evidence can be construed as favourable to the rational partisan theory. Alesina (1989) reports that, out of 12 countries, only 2 out of 33 regime changes are associated with outcomes moving in a direction inconsistent with the theory.⁵ More formally, the Alesina and Roubini (1990) report ascertains strong evidence in favour of the rational partisan theory for unemployment and growth; less so for inflation. The strongest results hold for bipartisan countries, and the theory performs weakest in regimes associated with large coalitions and early elections. Paldam (1991a, 1991b) comes to similar conclusions.⁶

IV THE IRISH POLITICAL SYSTEM

The political incentives inherent in the Irish political system must be studied. The Irish governments that have been formed over the period 1948-91 are listed in Table 1. Throughout the sample period, the politics of government was dominated by three key actors: Fianna Fáil, Fine Gael, and Labour. The dominant role of Fianna Fáil is clear; before 1989, the only alternative to Fianna Fáil government was a coalition comprised of the other parties.

One aspect that should be analysed is the partisan leanings of Irish governments. Alt (1985) labelled Fianna Fáil as the conservative party and Fine Gael-Labour coalitions as the social democratic alternative. No reasoning was adduced for this classification, but it was adopted by Alesina and Roubini (1990). From the political science literature, the overwhelming conclusion that emerges suggests that it is justifiable to place Fianna Fáil in a centre position, though usually closer to Fine Gael on the right than Labour on the left. This emerges from a survey of policy scales by Laver and Schofield (1990).⁷

4. Ellis and Thoma (1991) have shown how this enhances electoral uncertainty.

5. Excluding The Netherlands.

6. In direct contradiction to Alesina, Paldam argues that the Hibbs model has more explanatory power for the US.

7. The various studies vary in both timescale and methodology. Time-specific studies such as Laver (1992) apply expert judgements, while the comprehensive Laver and Budge (1991) study uses party manifestos to compute an average position on the scale for each election over the period 1948-81.

Table 1: *Irish Governments, 1948-91*

<i>Date</i>	<i>Type</i>	<i>Taoiseach</i>	<i>Government Deputies</i>	<i>Opposition Deputies</i>	<i>Dail Support %</i>
18/02/48	Coalition	Costello	67	80	45.6
13/06/51	Fianna Fáil	deValera	69	78	46.9
02/06/54	Coalition	Costello	74	73	50.3
20/03/57	Fianna Fáil	deValera/ Lemass	78	69	53.1
11/10/61	Fianna Fáil	Lemass	70	74	48.6
21/04/65	Fianna Fáil	Lemass/ Lynch	72	72	50.0
02/07/69	Fianna Fáil	Lynch	75	69	52.1
14/03/73	Coalition	Cosgrave	73	71	50.7
05/07/77	Fianna Fáil	Lynch/ Haughey	84	64	56.8
30/06/81	Coalition	Fitzgerald	80	86	48.2
09/03/82	Fianna Fáil	Haughey	81	85	48.8
14/12/82	Coalition	Fitzgerald	86	80	51.8
10/03/87	Fianna Fáil	Haughey	81	85	48.8
20/06/89	Coalition	Haughey/ Reynolds	83	83	50.0

Composition of Governments

1948: Fine Gael, Labour, National Labour, Clann na Poblachta, Clann na Talmhan

1951: Fianna Fáil

1954: Fine Gael, Labour, Clann na Talmhan

1957: Fianna Fáil

1961: Fianna Fáil

1965: Fianna Fáil

1969: Fianna Fáil

1973: Fine Gael, Labour

1977: Fianna Fáil

1981: Fine Gael, Labour

1982: Fianna Fáil

1982: Fine Gael, Labour

1987: Fianna Fáil

1989: Fianna Fáil, Progressive Democrats

Source: Coakley and Gallagher (1992).

The interpolation of pre-electoral policy scales to actual policy is not trivial, especially for coalitions which require an element of policy bargaining. Based on policy scales, Fine Gael-Labour coalitions appear to be quite ideologically distant. The traditional refusal of Fianna Fáil to enter coalition undoubtedly lessened the importance of ideological closeness as a vital criterion for coalition.⁸ Once the coalition is formed, Fine Gael as the largest party would enjoy greater bargaining power and has always held the key position of Finance.⁹ Since the Constitution upholds collective cabinet responsibility, the only serious option open to Labour on an issue it cannot compromise on is to leave government.

Mair (1992) argues that Fianna Fáil has consistently acted as the social democratic party. If Fine Gael impose its will in the realm of economic policy then such coalitions would act as the conservative alternative to Fianna Fáil. Therefore a partisan coding can be identified that is the opposite of the suggestion of Alt (1985). It is oversimplistic to base a classification on the participation of Labour in coalitions especially given the evidence of Mair (1992) that Fianna Fáil acts as a vent for social democratic politics.

V EMPIRICAL RESULTS

Before the actual tests and results are presented, the underlying methodology shall be outlined. This includes a brief description of the data. The actual results are presented in the following format: annual, quarterly, and binary.

5.1 Methodology and Data

What follows is a statistical analysis that seeks consistent PBC or partisan effects in Irish unemployment, inflation, and growth over the period 1948-91. Hence the methodology is similar to that used in previous studies such as Alesina and Roubini (1990). Regression techniques are used to examine the impact of specified dummy variables on each economic variable. The primary difference is in scope. Searching for widespread trends over numerous countries tends to overlook and blur country-specific effects. The arbitrary partisan coding of previous studies is the clearest example of this. So embarking on a study of Ireland alone is a worthy exercise. One endemic problem in this sort of study is the relative paucity of elections in each country. So to compensate for the narrower focus in this country-specific analysis a long time-period, spanning 14 elections, has been selected. Of

8. It is conceivable that in other areas, such as social policy, Fine Gael and Labour may be closer to each other than either of them is to Fianna Fáil.

9. Throughout his historical treatise, Lee (1989) credits this department as a crucial source of policy formation.

course, this argument is implicitly assuming stable relationships over the entire period. This need not be the case. Indeed, there are often intuitive reasons why political effects will be unstable over time. For example, it is possible that the partisan positioning of parties over time is in flux.

In order to truly isolate country-specific effects, a narrative as opposed to a statistical approach would be required.¹⁰ This approach utilises an array of historical information from each time period that would not be revealed in statistical tests which seek overall patterns. For example, the issue of personality would become important. Lee (1989) can be drawn upon to provide some examples. Comparing the (Fine Gael) Finance Ministers in the first two interparty coalitions, the expansionary sentiments of McGilligan in 1948 must be contrasted with the more mundane conservatism of Sweetman in 1954. Similarly, in development of Fianna Fáil policy prior to Lemass's ascension to party leadership in 1959, a power struggle ensued between MacEntee, a conservative, and Lemass, an expansionist. Furthermore, Lee (1989) even uses the precise term "political business cycle" to describe the Fianna Fáil Colley budget of 1972.¹¹ If such bouts of electoral motivation are highly infrequent, then a dummy in a regression will not pick up the effect.

Thus the narrative approach can enhance clarity. However it is prone to bias and selectivity in the information reported while the econometric approach examines consistent relationships between variables over the time period. Precedent is followed in adopting the latter method: a narrative approach would require an in-depth knowledge of history. The main weakness of the statistical approach is data inaccuracy and incompatibility over long samples. In this analysis, both quarterly and annual data are used. Only annual observations on growth are available. Unemployment and inflation can be calculated on a quarterly basis; annual results are also derived. Note that the unemployment variable used is the percentage change in the quarterly rate of unemployment. The level is not used given its non-stationary behaviour. The use of percentages is implicitly assuming that a similar absolute change occurring at low and high levels of unemployment should not be treated identically.¹² Inflation is modelled as the quarterly percentage change in the Consumer Price Index. A detailed description of the economic data is provided in Appendix 1.

It is not the purpose of this paper to detail a comprehensive model of the

10. In a pioneering paper, Romer and Romer (1989) undertake an objective narrative analysis of the long-term trends in US monetary policy.

11. Coincidentally, although the consensus is against PBC effects in the US data, there is almost unanimous acceptance of Nixon's PBC-driven policy in 1972.

12. This is theoretically equivalent to including the level as an explanatory variable in a model of first differences.

determinants of growth, unemployment, and inflation. Rather, the focal point hinges on the significance of the political dummy. Even with this restrictive emphasis, an adequate robust model needs to be realised. The principal specification of the model is autoregressive to control for internal dynamics of the system.¹³ Generally, a basic equation is established and only one dummy is included at a time in order to ascertain its significance.

A number of problems remain concerning the applicability of this model to Ireland. In tackling the issue of world demand, the methodology of Alt (1985) and Alesina and Roubini (1990) is applied: a proxy is added to each equation. The latter paper uses as a proxy the average level of the outcome variable in the 7 largest OECD economies, weighted by share of total GNP. Here, a similar but simpler proxy is invoked. Given the historical goods, factor, and financial market linkages with the UK, the UK equivalent of each variable is included in the equation.

Other problems of extension include the relevance of the political hypotheses. The previous section has provided a testable partisan hypothesis. Even though the left-right division is not as clearcut as in bipartisan countries, neither does Ireland correspond to the European norm of large coalitions and short-lived governments; its alternative governments are reasonably clearcut over a long time period. The existence of endogenous election timing acts as a serious complicating factor and may invalidate standard PBC tests. To account for this possibility, a probit model is applied to the sample to ascertain the determinants of the probability of calling an election. Irregular elections also make it more difficult to identify rational partisan cycles given the uneven term lengths and may create difficulty in distinguishing the permanent and transitory partisan effects associated with the traditional and rational versions of the model.

Appendix 2 details the construction of the political dummies, both annual and quarterly. Dummies isolating electoral cycles are designed for each government and also for Fianna Fáil governments alone, to test if single-party government has a greater impact. These dummies are generally specified in the standard manner by isolating a given number of quarters, or years, prior to the election. One exception to this is the quarterly dummy PBCCY. This derives from Keil (1988) and attempts to fit cycles between each election adapted to the length of the electoral term which is admittedly highly tenuous given endogenous election timing. The inflationary dummies attempt to pick up spurts of inflation around election time. Two such quarterly variables have been created: one assumes a rise in inflation in the election quarter, and two quarters before and after, while the second isolates the

13. This follows the approach of McCallum (1978), which is now standard.

election quarter and the following three quarters. This derives from Alesina and Roubini (1990).

A test of the naive partisan model, or the permanent effects model, is provided by the creation of the HPART dummy. Likewise, the variable WRPT tests the weak version of the rational partisan model; these variables also derive from Alesina and Roubini (1990). The strong version of the Alesina model is tested by including three variables — D1, D2, and R1 — in the same equation. These dummies are used to mirror the early work on US data by Alesina and Sachs (1987) and Alesina (1988a). The hypothesis tested is that partisan effects should only be visible in the first half of each term; likewise, no significant effects should emerge in the second half.

Appendix 2 also details a number of stability variables isolating coalition and minority governments. These are primarily used in the probit equation but are also beneficial in testing the hypothesis that weaker governments are more prone to inflation.

5.2 Annual Regressions

Even though the analysis of quarterly data is more conducive to movements of variables around elections, growth over the entire period is only available on an annual basis. For the sake of comparison, unemployment and inflation series have been derived. Results are displayed in Table 2.

Table 2: Annual Equations

<i>(i) Annual Growth</i>					
Dependent Variable: IREG					
43 observations from 1949 to 1991					
Regressor	Coefficient		T-statistic		
CONST	1.02		1.50		
IREG[-1]	0.41		3.06		
UKEG	0.36		2.35		
R-Squared = 0.27			F-statistic	F(2,40) = 7.30	
Durbin's h-statistic = 0.73					
Serial Correlation Test: (LM Test)			Chi-Sq (1) = 0.33	F(1,39) = 0.29	
Functional Form Test: (Ramsey's RESET Test)			Chi-Sq (1) = 0.003	F(1,39) = 0.003	
Normality Test: (Skewness and kurtosis of residuals)			Chi-Sq (2) = 0.91		
Heteroskedasticity Test: (Regression of squared residuals on squared fitted values)			Chi-Sq (1) = 0.69	F(1,41) = 0.66	
Additional Variables Added to the Basic Equation:					
PBC1	0.001	(0.001)	HPART	0.82	(2.62)
PBC2	0.31	(0.47)	WRPT	0.36	(0.70)
FFPBC1	-0.51	(-0.62)	D1	-1.08	(-1.25)
FFPBC2	-0.31	(-0.44)	D2	-3.00	(-3.21)
			R1	-0.45	(-0.64)

Table 2: *Annual Equations (Cont'd)**(ii) Annual Unemployment*

Dependent Variable: IRUNEMP

43 observations from 1949 to 1991

Regressor	Coefficient	T-statistic
CONST	2.09	1.19
UKUNEMP	0.24	3.63

R-Squared = 0.24

F-statistic

F(1, 41) = 13.17

DW = 1.95

Serial Correlation Test:

Chi-Sq (1) = 0.02 F(1,41) = 0.03

(LM Test)

Functional Form Test:

Chi-Sq (1) = 0.06 F(1,41) = 0.06

(Ramsey's RESET Test)

Normality Test:

Chi-Sq (2) = 0.81

(Skewness and kurtosis of residuals)

Heteroskedasticity Test:

Chi-Sq (1) = 7.29 F(1,42) = 8.34

(Regression of squared residuals on squared fitted values)

Additional Variables Added to the Basic Equation:

PBC1	-3.47	(-0.90)	HPART	-3.30	(-1.90)
PBC2	-3.91	(-1.08)	WRPT[-1]	-7.12	(-2.83)
FFPBC1	-0.31	(-0.07)	D1[-1]	6.64	(1.37)
FFPBC2	-4.10	(-1.08)	D2[-1]	-3.71	(-0.69)
			R1[-1]	-6.64	(-1.59)

(iii) Annual Inflation

Dependent Variable: IRINF

42 observations from 1950 to 1991

Regressor	Coefficient	T-statistic
CONST	-0.13	-0.23
IRINF[-1]	0.63	4.72
IRINF[-2]	-0.15	-1.41
UKINF	0.57	6.46

R-Squared = 0.88

F-statistic

F(3, 38) = 96.96

Serial Correlation Test:

Chi-Sq (1) = 2.18 F(1,37) = 2.02

(LM Test)

Functional Form Test:

Chi-Sq (1) = 0.67 F(1,37) = 0.60

(Ramsey's RESET Test)

Normality Test:

Chi-Sq (2) = 2.60

(Skewness and kurtosis of residuals)

Heteroskedasticity Test:

Chi-Sq (1) = 3.01 F(1,40) = 3.09

(Regression of squared residuals on squared fitted values)

Additional Variables Added to the Basic Equation:

PBCINF	0.54	(0.76)	STAB1	1.02	(1.33)
FFPBCINF	0.92	(1.09)	STAB2	-0.06	(-0.08)
HPART	-0.40	(-1.11)			

The basic growth equation includes a one period lag on the dependent variable and the equivalent UK growth variable; both are significant. None of the included PBC dummies is significant, though those that isolate Fianna Fáil single-party governments have the hypothesised sign. There is no evidence that growth is higher in the year of the election, or in the two years prior to the election, including the election year. The Hibbs partisan variable, HPART, is positive and strongly significant, which is indicative of Fianna Fáil being the more expansionary party associated with higher growth. There is no evidence that growth is consistent with the rational partisan theory, either the weak or strong version. In effect the strong test, incorporating D1, D2, and R1, suggests that the growth difference occurs in the latter half of the term. Paldam (1991a, b) argues that growth alone is inadequate as a test of the rational partisan cycles as more long-term factors may be involved.

The annual unemployment equation is set up as a simple static linear model with UK unemployment as the explanatory variable. As with the growth equation, a low level of explanatory power is evident. No problematic issues arise from the diagnostics.¹⁴ Once again, none of the PBC variables is significant; indeed, the sign on each of them is the reverse of what is expected by the hypothesis. The prevailing pattern from the growth equations is evident when the partisan dummies are added to the equation. The HPART variable predicts lower unemployment under Fianna Fáil. Lagged one period, WRPT is highly significant yielding evidence in favour of the weak rational partisan model. Incorporating the strong rational partisan dummies, also lagged one period, does not provide much evidence in favour of cyclical behaviour after each election. D2 is insignificant, in accordance with the theory. D1 and R1 both possess the correct sign, and the latter verges on significance. In sum, while it is evident partisan unemployment effects exist, it is difficult to distinguish between the patterns envisioned by the permanent and transitory versions of the theory. This may be resolved by a detailed analysis of quarterly unemployment. It may also be a reflection of the complicated partisan patterns caused by endogenous election timing.

Annual inflation is modelled with two autoregressive terms and UK inflation to proxy external effects. The explanatory power of this model is much greater than the previous two models. Once again, no problems emerge from an examination of the basic diagnostics. In this case, none of the political dummies is significant. No inflationary bout around elections is evident from the PBCINF variable. Furthermore, the insignificance of HPART shows that no partisan inflationary differences emerge. This may reflect the reason forwarded by Alesina and Roubini (1990) to explain the

14. The apparent heteroskedasticity in the basic model vanishes with the incorporation of the partisan dummies into the model.

weak evidence for partisan inflationary effects: price stability over much of the sample period combined with fixed exchange rates. To examine the hypothesis of Persson and Tabellini (1991) that higher inflation is associated with weak governments, the variables STAB1 and STAB2 are included in the equation; the former isolates all minority governments while the latter is concerned with all coalitions. Neither is significant.

5.2 Quarterly Regressions

The quarterly unemployment and inflation equations are detailed in Tables 3 and 4 respectively. In each case, full sample equations are presented together with results from two subsamples. The principal motivation for this endeavour is to ascertain whether PBC or partisan behaviour is important in either the first or second half of the sample period. This is quite a logical exercise: Section IV argued that it is unlikely that partisan positions remain unchanged over a 44 year time-period. Reducing the sample size is also costly given that the number of governments analysed declines. This may lead to inaccurate inferences based on a small sample. In general, a high level of explanatory power emerges from each model.

Turning first to unemployment, an independent reason for subdividing the sample is revealed by an evident structural break midway through the series.¹⁵ The main manifestation of this problem can be observed by the extra variability in the earlier period. Not surprisingly in this context, modelling unemployment over the entire period can have dire implications for the diagnostics. Table 3(i) details such a model. Much of the variation is caused by seasonal factors, as accounted for by three seasonal dummies, S1, S2, and S3. The second and fourth lags of the dependent variable are also included as key explanatory factors; likewise for UK unemployment. Furthermore, two dummies are included to control for the extra variation in the earlier period.¹⁶ Even so, error non-normality remains as a persistent problem: Box-Cox type transformations failed to resolve it. Some evidence of heteroskedasticity also emanates from the data.¹⁷ These diagnostic problems most likely arise from the structural change. Before consideration is given to the significance of the political dummies, this caveat must be remembered.

Consistent with the annual results, none of the PBC variables are significant; these include the Keil cyclical dummy and dummies isolating two and

15. This is undoubtedly caused by changing definitions in compiling the Live Register, meaning the earlier and later periods are not strictly comparable.

16. EARLYDUM takes the value of unity for the second and fourth quarters on each year from 1948-71, since these observations are the root of the excess variation. EARLYDUMSL is a slope dummy, created by multiplying EARLYDUM and UKUNEMP. Both variables are significant.

17. To minimise the impact of this, heteroskedastic-consistent standard errors have been calculated.

Table 3: *Quarterly Unemployment Equations**(i) Full Sample*

Dependent Variable is IRUNEMP

168 observations from 1949Q1 to 1991Q4

Regressor	Coefficient	T-Statistic
CONST	7.74	4.25
S1	-8.48	-3.85
S2	-7.09	-2.68
S3	-10.56	-4.56
EARLYDUM	8.48	4.72
EARLYDUMSL	0.56	4.23
IRUNEMP[-2]	-0.34	-5.51
IRUNEMP[-4]	0.17	2.57
UKUNEMP	0.24	2.92

R-Squared* = 0.89

F-Statistic

F(9, 159) = 143.98

Serial Correlation Test:
(LM Test)

Chi-Sq (4) = 6.87

F(4,70) = 1.65

Functional Form Test:
(Ramsey's RESET Test)

F(1,158) = 0.81

Normality Test:
(Skewness and kurtosis of residuals)

Chi-Sq (2) = 75.76

Heteroskedasticity Test:
(White Test)

F(12, 145) = 2.84

Additional Variables Added to the Basic Equation:

PBCCY	-0.04	(-0.15)	HPART[-2]	-1.60	(-2.56)
PBC2	-0.47	(-0.27)	WRPT[-2]	-1.94	(-1.79)
PBC6	-1.35	(-1.13)	D1[-2]	3.19	(1.78)
FFPBC2	0.41	(0.19)	D2[-2]	2.03	(1.18)
FFPBC6	-0.35	(-0.26)	R1[-2]	-1.21	(-0.83)

(ii) Early Period

Dependent Variable is IRUNEMP

98 observations from 1948Q1 to 1972Q4

Regressor	Coefficient	T-Statistic
CONST	28.83	8.44
S1	-23.85	-3.97
S2	-30.80	-3.95
S3	-39.01	-8.71
IRUNEMP[-1]	-0.14	-1.52
IRUNEMP[-2]	-0.37	-4.01
UKUNEMP	0.46	4.30

R-Squared = 0.90

F-Statistic

F(6, 91) = 141.42

Serial Correlation Test:
(LM Test)

Chi-Sq (4) = 2.35

F(4, 81) = 0.53

Functional Form Test:
(Ramsey's RESET Test)

Chi-Sq (1) = 12.06

F(1, 90) = 12.64

Table 3: *Quarterly Unemployment Equations (Cont'd)*

Normality Test: Chi-Sq (2) = 2.12
 (Skewness and kurtosis of residuals)

Heteroskedasticity Test: Chi-Sq (1) = 3.92 F(1, 96) = 3.99
 (Regression of squared residuals on squared fitted values)

Additional Variables Added to the Basic Equation:

PBCCY	0.01 (0.02)	HPART[-3]	-2.39 (-2.16)
PBC2	1.55 (0.52)	WRPT[-2]	-0.22 (-0.11)
PBC6	-1.22 (-0.59)	D1[-2]	2.69 (0.90)
FFPBC2	4.37 (1.23)	D2[-2]	5.16 (1.50)
FFPBC6	1.52 (0.68)	R1[-2]	0.27 (0.30)

(iii) Late Period

Dependent Variable is IRUNEMP

76 observations from 1974Q1 to 1991Q4

Regressor	Coefficient	T-Statistic
CONST	5.59	4.95
S1	-10.44	-6.58
S2	-4.47	-2.22
S3	-5.11	-3.30
IRUNEMP[-1]	0.48	4.21
IRUNEMP[-2]	-0.29	-2.85
IRUNEMP[-4]	0.23	2.71
UKUNEMP	0.23	3.78

R-Squared = 0.76 F-Statistic F(7, 68) = 30.60

Serial Correlation Test: Chi-Sq (4) = 7.89 F(4, 64) = 1.85
 (LM Test)

Functional Form Test: Chi-Sq (1) = 4.12 F(1, 67) = 3.84
 (Ramsey's RESET Test)

Normality Test: Chi-Sq (2) = 0.16
 (Skewness and kurtosis of residuals)

Heteroskedasticity Test: Chi-Sq (1) = 0.87 F(1, 74) = 0.85
 (Regression of squared residuals on squared fitted values)

Additional Variables Added to the Basic Equation:

PBCCY	0.08 (0.51)	HPART[-2]	-0.53 (-1.33)
PBC2	0.11 (0.10)	WRPT[-2]	-1.44 (-2.43)
PBC6	0.58 (0.75)	D1[-2]	2.57 (2.35)
FFPBC2	0.88 (0.61)	D2[-2]	-1.10 (-0.20)
FFPBC6	-0.68 (-0.87)	R1[-2]	0.19 (0.17)

* R-Squared in this equation does not allow for the mean.

six quarters prior to the election, for all governments and for Fianna Fáil single-party governments. The partisan dummies have all been lagged twice. HPART emerges as strongly significant; evidence also points to the significance of WRPT. Once again, partisan results emerge with Fianna Fáil

as the expansionary party. No real evidence emerges in favour of the strong rational partisan theory. Even though the *t*-statistic is stronger for the Hibbs than for the Alesina version of the partisan theory, it is difficult to reject one model in favour of the other. Subdividing the sample may clarify this issue.

The two subsamples are defined as follows: 1948-72 and 1973-91, roughly corresponding to the break in the series. For both models, the diagnostic checks suggest a marked improvement over the model estimated for the full period, meaning that results deriving from the former may be more reliable. Results from the early period are summarised in Table 3(ii).¹⁸ Consistent with the previous model, none of the electoral dummies is significant. HPART, lagged by three quarters, is significant. This time, none of the rational partisan variables is significant, suggesting the predomination of the permanent partisan model in the early period.

Table 3(iii) displays the respecified model of the later period, from 1973 to 1991. The diagnostics appear adequate.¹⁹ Again, the PBC variables are all insignificant. This time, WRPT is significant and HPART, while possessing the "correct" sign, is not. Neither does the evidence favour the strong rational partisan model: as in Table 3(i), R1 is not significant. In this later period, the situation seems to be reversed: the weak rational partisan model now appears to dominate. In conclusion, running separate regressions in the two sub-periods generates interesting results that are disguised by the model estimated for the full sample period: the importance of the Hibbs cycle in the first and the Alesina cycle in the second period.

Table 4 displays the inflation results, once again for the entire sample and the two sub-periods. For the former model, the key explanatory variables consist of the second and fourth lags on the explanatory variable and UK inflation. Running this model alone created severe diagnostic problems especially involving error non-normality. Box-Cox type transformations failed to rid the data of this problem. Once it was ascertained that the kernel of the issue centred on a number of outliers in the data due to certain shocks, an effort was made to control for this by incorporating two shock dummies, DUMSH and DUMSHSL.²⁰ Appending the political dummies, it emerges

18. The Ramsey RESET test detects evidence of functional form inadequacy. However, the PCGIVE version of the general functional form mis-specification test (including all squares and cross-products of regressors) suggests the model is adequate. Weak evidence of heteroskedasticity emerges, vanishing when the significant partisan dummies are incorporated into the equation.

19. The functional form statistic becomes insignificant when the significant partisan variable is included.

20. DUMSH is equal to unity for the quarters in which large quarterly inflationary shocks have occurred in 1951, 1952, 1974, 1975, 1976, 1980, 1981, and 1982. DUMSHSL is an equivalent slope, calculated by multiplying DUMSH by UKUNEMP. It was also discovered that the actual decline in the CPI for the third quarter of 1975 created insurmountable problems; hence this observation was ignored and a value was interpolated.

Table 4: *Quarterly Inflation Equations**(i) Full Sample*

Dependent Variable is IRINF

171 observations from 1949Q1 to 1991Q4

Regressor	Coefficient	T-Statistic
CONST	0.32	2.45
DUMSH	6.45	10.10
DUMSHSL	-0.61	-4.30
IRINF[-2]	0.15	3.15
IRINF[-4]	0.09	1.76
UKINF	0.45	6.32

R-Squared* = 0.84

F-Statistic

F(6,166) = 145.54

Serial Correlation Test:
(LM Test)

Chi-Sq (4) = 4.31

F(4, 162) = 1.04

Functional Form Test:
(Ramsey's RESET Test)

F(1, 165) = 1.51

Normality Test:
(Skewness and kurtosis of residuals)

Chi-Sq (2) = 3.82

Heteroskedasticity Test:
(White Test)

F(9, 155) = 1.71

Additional Variables Added to the Basic Equation:

PBCINF1	0.04	(0.24)	HPART[-1]	0.01	(0.09)
PBCINF2	0.10	(0.60)	STAB1	-0.37	(-2.13)
FFPBCINF1	0.13	(0.63)	STAB2[-1]	-0.28	(-1.69)
FFPBCINF2	0.12	(0.63)			

(ii) Early Period

Dependent Variable is IRINF

84 observations from 1949Q1 to 1969Q4

Regressor	Coefficient	T-Statistic
CONST	0.42	2.49
S2	0.76	2.91
DUMSH	5.93	6.04
DUMSHSL	-0.61	-1.80
IRINF[-4]	-0.14	-1.65
UKINF	0.38	3.15

R-Squared = 0.50

F-Statistic

F(7,78) = 15.44

Serial Correlation Test:
(LM Test)

Chi-Sq (4) = 3.99

F(4,74) = 0.92

Functional Form Test:
(Ramsey's RESET Test)

Chi-Sq (1) = 0.22

F(1,77) = 0.21

Normality Test:
(Skewness and kurtosis of residuals)

Chi-Sq (2) = 5.35

Heteroskedasticity Test:
(Regression of squared residuals on squared fitted values)

Chi-Sq (1) = 0.99

F(1,82) = 0.97

Table 4: *Quarterly Inflation Equations (Cont'd)*

Additional Variables Added to the Basic Equation:					
PBCINF1	0.06	(0.23)	HPART	0.24	(1.92)
PBCINF2	0.37	(1.61)	STAB1	-0.01	(-0.07)
FFPBCINF1	-0.16	(-0.58)	STAB2	-0.28	(-1.78)
FFPBCINF2	0.14	(0.57)			
<i>(iii) Late Period</i>					
Dependent Variable is IRINF					
88 observations from 1971Q1 to 1991Q					
Regressor	Coefficient		T-Statistic		
CONST	0.66		2.75		
S2	-0.40		-1.35		
DUMSH	6.99		8.92		
DUMSHSL	-0.71		-4.28		
IRINF[-2]	0.20		2.95		
IRINF[-4]	0.11		1.82		
UKINF	0.49		4.71		
UKINF[-1]	0.09		1.04		
UKINF[-2]	-0.26		-3.14		
R-Squared = 0.79			F-Statistic	F(8,79) = 36.12	
Serial Correlation Test:			Chi-Sq (4) = 5.19	F(4,75) = 1.17	
(LM Test)					
Functional Form Test:			Chi-Sq (1) = 0.88	F(1,78) = 0.79	
(Ramsey's RESET Test)					
Normality Test:			Chi-Sq (2) = 4.19		
(Skewness and kurtosis of residuals)					
Heteroskedasticity Test:			Chi-Sq (1) = 3.56	F(1,86) = 3.63	
(Regression of squared residuals on squared fitted values)					
Additional Variables Added to the Basic Equation:					
PBCINF1	0.02	(0.10)	HPART[-2]	0.15	(1.32)
PBCINF2	-0.03	(-0.13)	STAB1	-0.61	(-2.14)
FFPBCINF1	0.26	(0.93)	STAB2[-1]	-0.50	(-2.41)
FFPBCINF2	0.21	(0.79)			
* R-Squared in this equation does not allow for the mean.					

that little is significant; neither the PBC variables or HPART. As with the annual variables, no evidence of a burst of inflation around elections or permanent partisan differences in inflation emerges. However, STAB1 predicts lower inflation under minority governments, a result difficult to rationalise. Lagged one period, STAB2 is marginally significant, highlighting lower inflation under coalitions. Given that coalitions have almost uniquely been associated with non-Fianna Fáil governments, partisan and coalition effects may be impossible to distinguish. In this light, the variable contradicts

the insignificance of HPART.²¹ Hence, this may be tenuously interpreted as a partisan effect consistent with the previous evidence.

Tables 4(ii) and 4(iii) display the results for the two sub-periods. For the period 1948-69, HPART is significant with higher inflation for Fianna Fáil governments. STAB2 is of similar magnitude, verifying the result. Contrasting with all previous results, PBCINF2 is weakly significant suggesting a burst of inflation around the time of the election. In sum, the partisan evidence is much clearer in this earlier period. For the later model, no PBC effects emerge. Devoid of supporting evidence from any other model, not much credence is given to the PBC result in the earlier period. Table 4(iii) shows that HPART, lagged twice, has the correct positive sign, but is not significant. STAB2, lagged once, is significantly negative. Once again, an apparent paradox emanates from the data with one variable suggesting lower inflation under coalition governments and similar variable insignificant.²² STAB1 is also negatively significant meaning lower inflation under minority governments.

5.3 Binary Dependent Variable Testing

Following Alesina and Roubini (1990), logit and probit models have been estimated to test the hypotheses concerning endogenous election timing as enunciated in Section II.²³ Results are reported in Table 5 for the models which span the entire sample period. The motivating factor behind this procedure is a desire to examine the causes behind the decision to call an election, or equivalently, to establish the determinants of the probability of an election being called. The dependent variable, PROB, is set equal to unity in every election quarter and zero otherwise. Alesina and Roubini (1990) include as explanatory variables quarterly growth, inflation, and the number of quarters passed since the previous election. The hypothesis to be tested is that elections are called to coincide with favourable economic conditions, but that as time passes, moderate conditions may be sufficient to prompt an election. Hence the probability of calling an election increases with favourable economic conditions and with the length of time since the last election.

In Table 5, the dependent economic variables in both the probit and logit models are quarterly inflation and the quarterly change in unemployment is as defined already. Also included is TL, defined as the number of quarters since the previous election. This latter variable is strongly significant,

21. There exists two differences between the variables: the coding of the 1989 Fianna Fáil-led coalition and the values of the dummy, (1, -1) for HPART and (1, 0) for STAB2.

22. It is conceivable that the Fianna Fáil-Progressive Democrat 1989 coalition altered the established partisan structure and became less expansionary. However, this only accounts for one brief period over the entire sample.

23. Alesina and Roubini (1990) only estimate a probit model.

suggesting the length of time is an important consideration. There is no evidence to imply that inflation is a consideration in the probability of calling an election. However, the models reveal marginal significance of the unemployment variable implying that the hypothesis postulating a negative relationship between unemployment and the probability of an election being called cannot be rejected outright. The evidence is stronger for the logit model. This contrasts with the previous distinct lack of evidence of PBC effects. Evidence suggests that the strategic endogenous election timing variant of opportunistic behaviour outperforms the traditional model. The conclusion appears to be that low unemployment enhances the chances of an election being called in any quarter, but this is tempered by the number of quarters lapsed since the last election.

Table 5: *Binary Dependent Variable Equations*

(i) *Probit Equations*

Dependent Variable is PROB

176 observations from 1948Q1 to 1991Q4

Regressor	Coefficient	T-Statistic
CONST	-2.89	-6.36
IRUNEMP	-0.01	-1.53
IRINF	0.09	1.09
TL	0.13	3.69

Log Likelihood = -37.55

Additional Variables Added to the Basic Equation:

STAB1	1.19 (2.83)	STAB5	0.23 (1.45)
STAB2	0.07 (0.22)	STAB6	0.50 (2.92)
STAB3	0.16 (0.75)	STAB7	0.32 (2.77)
STAB4	0.50 (2.69)	STAB8	0.16 (1.55)

(ii) *Logit Equations*

Dependent Variable is PROB

176 observations from 1948Q1 to 1991Q4

Regressor	Coefficient	T-Statistic
CONST	-5.91	-5.43
IRUNEMP	-0.03	-1.72
IRINF	0.14	0.91
TL	0.30	3.66

Log Likelihood = -36.52

Additional Variables Added to the Basic Equation:

STAB1	2.22 (2.75)	STAB5	0.44 (1.46)
STAB2	0.23 (0.35)	STAB6	0.88 (2.81)
STAB3	0.42 (0.97)	STAB7	0.58 (2.69)
STAB4	0.92 (2.60)	STAB8	0.33 (1.67)

Alesina and Roubini (1990) find no evidence of this hypothesis except for Japan and Finland. The authors do not include unemployment in their estimation. Such weak findings are rationalised by the valid argument that the economy is merely one factor in the decision to call an election. An implicit assumption behind the analysis of Alesina and Roubini (1990), and the model stated in this section, is that the timing of an election is a choice variable. This may not be the case: government weakness may cause the government to collapse. While the authors argue that the strategic endogenous election timing model is more applicable to bipartisan countries in so far as coalition partners may disagree over the optimal timing of the election, an equally valid conjecture is that such disagreement may in itself be a contributory factor to the calling of an election. Weak or unstable governments can reduce the durability of a government; this could apply to both coalitions and minority governments. Collapse of a government implies an involuntary election. The strategic model is limited by its assumption that elections are purely a choice variable.

It is necessary to include some proxy variable to measure government instability. The hypothesis under investigation is that weak governments in themselves increase the probability of an election being called in each quarter; such instability may be increased by unfavourable economic conditions. Stability dummies- STAB1 and STAB2- have already been used in the inflation model. In these models, six similar dummies are included to analyse the broader implications of stability, such as the effects of coalition size and minority coalitions as opposed to minority single-party governments. The results are evident from Table 5. First, STAB1 is strongly significant while STAB2 is insignificant. The probability of calling an election is increased under minority governments but there is no coalition effect. STAB3 is also insignificant; this distinguishes large from small coalitions.²⁴ STAB4, STAB6, and STAB7 are also strongly significant: all emphasise minorities. STAB4 distinguishes minority single-party and coalition, while STAB8 distinguishes minority single-party governments, large and small coalitions.

The overwhelming conclusion is that while minority governments may be destabilising, coalitions are not. Two interpretations of this result are possible. First, minorities may be unstable with a greater probability of collapse in each time-period than majority governments. Second, minorities may possess a greater incentive to call an early election coinciding with favourable economic conditions in order to gain a parliamentary majority. This explanation is an extension of the strategic timing model and assumes the date of an election is a choice variable. The evidence is not sufficient to

24. A small coalition is defined as comprising two parties; a large coalition is any larger number.

distinguish between the two interpretations, which are certainly not mutually exclusive. To conclude, there is evidence that elections are timed to coincide with periods of lower unemployment, and that minorities are more shortlived.

VI CONCLUSIONS

The purpose of this paper has been to test the primary politico-economic theories of elections and macroeconomic outcomes using Irish data over the period 1948-91. A long sample period has been deliberately chosen to maximise the number of governments that can be analysed.

The strongest results to emerge from this analysis reflect the importance of partisan effects on macroeconomic outcomes. Fianna Fáil governments appear to be more expansionary than Fine-Gael led alternatives, with evidence of more concern for output and unemployment than for inflation. This appears to be confirmed by both annual and quarterly models over the time-period in question in which higher growth, lower unemployment, and (sometimes) higher inflation are consistently associated with Fianna Fáil governments. Unfortunately, the data are often unable to differentiate between the naive and rational versions of the partisan theory, predicting permanent and transitory effects respectively. This predicament may well be explained by endogenous election timing which implies uneven and irregular term lengths, thus obscuring the permanent or transitory nature of post-election partisan behaviour. Furthermore, Ellis and Thoma (1991) conclude that under endogenous election timing an added degree of electoral uncertainty is evident in the rational partisan model meaning that booms and recessions could be prolonged. The quarterly unemployment evidence appears to point to the domination of the naive model in the first half of the sample and the rational model in the last two decades. Evidence of partisan effects on inflation tends to be weak, probably reflecting the commitment to fixed exchange rates over most of the sample.

Little support for the office-motivation hypothesis is discernible. This may reflect the once-off nature of a political business cycle. A more optimistic explanation is that the nature of endogenous election timing serves to make the standard PBC model defunct. Tentative evidence exists to suggest that lower unemployment may act as a signal for the incumbent to call an election, especially if late in the term. A further result is that minority governments tend to be more shortlived than majorities. One explanation of this is government weakness; another is a revised strategic timing theory which envisions a greater urgency for minorities to call an election and return with a majority.

One goal of this paper has been to provoke discussion and further research

concerning the application of these models to Ireland. One obvious implication of the partisan results is that the parties in the current Fianna Fáil-Labour coalition may be more compatible than often envisioned. To conclude, there remains much scope for theoretical extension and empirical refinement of these models in the Irish context. For example, the models in this paper are simple outcome models with no reference to policy variables: this extension represents an obvious course for future research.

REFERENCES

- ALESINA A., 1987. "Macroeconomic Policy in a Two-Party System as a Repeated Game", *Quarterly Journal of Economics*, Vol. 102, pp. 651-678.
- ALESINA, A., 1988. "Macroeconomics and Politics", in S. Fischer (ed.), *Macroeconomics Annual*, Vol. 3, MIT Press.
- ALESINA, A., 1989. "Politics and Business Cycles in Industrial Democracies", *Economic Policy*, Vol. 8, pp. 55-98.
- ALESINA, A., 1991. "Evaluating Rational Partisan Business Cycle Theory: A Response", *Economics and Politics*, Vol. 3, No. 1, pp. 63-71.
- ALESINA, A., G. COHEN, and N. ROUBINI, 1991. "Macroeconomic Policy and Elections in OECD Democracies", NBER Working Paper No. 3830.
- ALESINA, A., J. LONDREGAN, and H. ROSENTHAL, 1991. "A Model of the Political Economy of the United States", NBER Working Paper No. 3611.
- ALESINA, A., and N. ROUBINI, 1990. "Political Cycles in OECD Economies", CEPR Discussion Paper No. 470.
- ALESINA, A., and J. SACHS, 1988. "Political Parties and the Business Cycle in the United States, 1948-1984", *Journal of Money, Credit and Banking*, Vol. 20, No. 1, pp. 63-82.
- ALT, J., 1985. "Political Parties, World Demand, and Unemployment: Domestic and International Sources of Economic Activity", *American Political Science Review*, Vol. 79, pp. 1016-1040.
- BALKE, N., 1990. "The Rational Timing of Parliamentary Elections", *Public Choice*, Vol. 65, pp. 201-216.
- BARRO, R., and D. GORDON, 1983a. "A Positive Theory of Monetary Policy in a Natural Rate Model", *Journal of Political Economy*, Vol. 91, No. 4, pp. 589-610.
- BARRO, R., and D. GORDON, 1983b. "Rules, Discretion and Reputation in a Model of Monetary Policy", *Journal of Monetary Economics*, Vol. 12, pp. 101-122.
- BECK, N., 1982. "Does There Exist a Political Business Cycle?", *Public Choice*, Vol. 8, pp. 205-209.
- COAKLEY, J., and M. GALLAGHER, 1992. *Politics in the Republic of Ireland*, Galway: Political Studies Association of Ireland.
- COHEN, G., 1992. "Polls, Partisan Politics, and Financial Markets: Evidence from US Elections", Unpublished paper, Harvard University.
- CUKIERMAN, A., and A. MELTZER, 1986. "A Positive Theory of Discretionary Policy, the Cost of Democratic Government, and the Benefits of a Constitution", *Economic Inquiry*, Vol. 24, pp. 367-388.
- ELLIS, C., and M. THOMA, 1991. "Partisan Effects in Economies with Variable Electoral Terms", *Journal of Money, Credit, and Banking*, Vol. 23, No. 4, pp. 728-741.

- FEREJOHN, J., 1986. "Incumbent Performance and Electoral Control", *Public Choice*, Vol. 50, pp. 5-25.
- FINDLAY, D., 1990. "The Political Business Cycle and Republican Administrations: An Empirical Investigation", *Public Finance Quarterly*, Vol. 18, No. 3, pp. 328-338.
- GOLDEN, D., and J. POTERBA, 1980. "The Price of Popularity: The Political Business Cycle Reexamined," *American Journal of Political Science*, Vol. 24, pp. 696-714.
- HAYNES, S., and J. STONE, 1990. "Political Models of the Business Cycle Should Be Revived", *Economic Inquiry*, Vol. 28, No. 3, pp. 442-465.
- HIBBS, D., 1977. "Political Parties and Macroeconomic Policy", *American Political Science Review*, Vol. 7, pp. 1467-1487.
- HIBBS, D., 1987. *The American Political Economy- Macroeconomics and Electoral Politics*, Harvard University Press.
- KEIL, M., 1988. "Is the Political Business Cycle Really Dead?", *Southern Economic Journal*, Vol. 55, No. 1, pp. 86-99.
- KYDLAND, F., and E. PRESCOTT, 1977. "Rules Rather than Discretion: the Inconsistency of Optimal Plans", *Journal of Political Economy*, Vol. 85, pp. 473-490.
- LAVER, M., 1992. "Are Irish parties peculiar?", in J. Goldthorpe and C. Whelan (eds.), *The Development of Industrial Society in Ireland*, Oxford University Press.
- LAVER, M., and I. BUDGE, 1991. *Party and Coalition Policy In Western Europe*, Cambridge University Press.
- LAVER, M., and N. SCHOFIELD, 1990. *Multiparty Government: The Politics of Coalition in Europe*, Oxford University Press.
- LEE, J.J., 1989. *Ireland 1912-1985: Politics and Society*, Cambridge University Press.
- MAIR, P., 1992. "Expaining the absence of class politics in Ireland" in J. Goldthorpe and C. Whelan (eds.), *The Development of Industrial Society in Ireland*, Oxford University Press.
- McCALLUM, B., 1978. "The Political Business Cycle: An Empirical Test", *Southern Economic Journal*, Vol. 44, pp. 504-515.
- NORDHAUS, W., 1975. "The Political Business Cycle", *Review of Economic Studies*, Vol. 42, No. 2, pp. 169-190.
- PALDAM, M., 1991a. "Macroeconomic Stabilization Policy: Does Politics Matter?", in A. Hilman (ed.), *Markets and Politicians: Politicised Economic Choice*, Kluwer Academic Publishers.
- PALDAM, M., 1991b. "Politics Matter After All: Testing Alesina's Theory of RE Partisan Cycles on Data for Seventeen Countries", in N. Thygesen, K. Velupillai and S. Zambelli (eds.), *Business Cycles: Theories, Evidence, and Analysis*, New York University Press.
- PERSSON, T., and G. TABELLINI, 1991. *Macroeconomic Policy, Credibility, and Politics*. New York: Harwood Academic Publishers.
- ROGOFF, K., 1990. "Equilibrium Political Budget Cycles" *American Economic Review*, Vol. 80, pp. 21-36.
- ROGOFF, K., and A. SIBERT, 1988. "Elections and Macroeconomic Policy Cycles" *Review of Economic Studies*, Vol. 55, pp. 1-16.
- ROMER, C., and D. ROMER, 1989. "Does Monetary Policy Matter? A New Test in the Spirit of Friedman and Schwarz" in O. Blanchard and S. Fischer (eds.), *NBER Macroeconomics Annual Vol. 4*, MIT Press.

TERRONES, M., 1987. "Macroeconomic Policy Cycles under Alternative Electoral Structures: a Signaling Approach", Unpublished.

APPENDIX 1: ECONOMIC VARIABLES

IREG: The annual Irish growth rate, defined as the percentage change in real GDP. *Source:* CSO.

IRUNEMP: A measure of annual and quarterly Irish unemployment trends. The quarterly version is defined as the percentage quarterly change in the rate of unemployment which itself is defined as the total number on the unseasonally adjusted Live Register divided by the Labour Force for that year. The annual version measures the percentage change in this rate from December to December of each year. The CSO labour force estimates only begin in 1951, so the 1951 estimate is also used for the first three years of the sample. *Source:* CSO.

IRINF: A measure of annual and quarterly Irish inflation. The quarterly version is defined as the quarterly percentage change in the Consumer Price Index, while the annual version is the percentage change in the average annual index. *Source:* CSO.

UKEG: The annual UK growth rate, defined as the percentage change in real GDP. *Source:* UK CSO, Economic Trends.

UKUNEMP: A measure of both quarterly and annual UK unemployment trends. The quarterly version is defined as the percentage quarterly change in the rate of unemployment which itself is defined as the total workforce in unemployment divided by the total workforce (not seasonally adjusted). The annual version measures the percentage change in this rate between the fourth quarter of one year and the next. *Source:* UK CSO, Economic Trends.

UKINF: A measure of annual and quarterly UK inflation. The quarterly version is defined as the quarterly percentage change in the Retail Price Index, while the annual version is the percentage change in the average annual index. *Source:* UK CSO, Economic Trends.

APPENDIX 2: POLITICAL DUMMY VARIABLES

(i) Quarterly Variables

PBC6: 0 in the 6 quarters preceding the election, including the election quarter. 1 otherwise.

PBC2: 0 in the 2 quarters preceding the election, including the election quarter. 1 otherwise.

PBCCY: increasing by units of 1 for each quarter in first half of the term of office, decreasing in second half. (Due to endogenous election timing, cycles are irregular).

PBCINF1: 1 in election quarter and 3 following quarters. 0 otherwise.

PBCINF2: 1 in the two quarters before the election, the election quarter, and two quarters after the election. 0 otherwise.

FFPBC6: 0 in the six quarters preceding the election, including the election quarter, for Fianna Fáil single-party governments. 1 otherwise.

FFPBC2: 0 in the two quarters preceding the election, including the election quarter, for Fianna Fáil single-party governments. 1 otherwise.

FFPBCINF1: 1 in the election quarter and 3 following quarters, for Fianna Fáil single-party governments. 0 otherwise.

FFPBCINF2: 1 in the two quarters before the election, the election quarter, and two quarters after the election, for Fianna Fáil single-party governments. 0 otherwise.

HPART: 1 for governments involving Fianna Fáil. -1 otherwise.

WRPT: 1 in the six quarters following the election, including the election quarter, for governments involving a change in power towards Fianna Fáil. -1 in the six quarters following the election, including the election quarter, for governments involving a change in power away from Fianna Fáil. 0 otherwise.

D1: 1 for the first seven quarters in a term, for all governments that do not involve Fianna Fáil. 0 otherwise.

D2: 1 in the remaining quarters in a term (not equal to 1 in the D1 variable), for all governments that do not involve Fianna Fáil. 0 otherwise.

R1: 1 for the first seven quarters in a term, for all governments involving Fianna Fáil. 0 otherwise.

(ii) Annual Variables

PBC1: 0 in the election year (the preceding year if the election is before June). 1 otherwise.

PBC2: 0 in the election year and the preceding year. 1 otherwise.

PBCINF: 1 in the election year (the following year if the election is held in the last quarter). 0 otherwise.

FFPBC1: 0 in the election year (the preceding year if the election is before June) for Fianna Fáil governments. 1 otherwise.

FFPBC2: 0 in the election year and the preceding year for Fianna Fáil governments. 1 otherwise.

FFPBCINF: 1 in the election year (the following year if the election is held in the last quarter) for Fianna Fáil governments. 0 otherwise.

HPART: 1 for years with Fianna Fáil governments. -1 otherwise.

WRPT: 1 in the two years after the election, including the election year, for governments involving a change in power towards Fianna Fáil. -1 in the two years after the election, including the election year, for governments involving changes in power away from Fianna Fáil. 0 otherwise.

D1: 1 for the first two years of governments that do not involve Fianna Fáil, including the election year. 0 otherwise.

D2: 1 for the remaining years of the term (not equal to 1 in D1) for governments that do not involve Fianna Fáil. 0 otherwise

R1: 1 for the first two years of Fianna Fáil governments, including the election year. 0 otherwise.

(iii) Stability Variables (Both Annual and Quarterly)

STAB1: 0 for all majority governments, 1 for all minority governments.

STAB2: 0 for all single-party governments, 1 for all coalitions.

STAB3: 0 for all single-party governments, 1 for small coalitions (two parties), 2 for large coalitions (more than two parties).

STAB4: 0 for majority single-party government, 1 for majority coalitions, 2 for minority single-party governments, 3 for minority coalitions.

STAB5: 0 for majority single-party governments, 1 for minority single-party governments, 2 for majority coalitions, 3 for minority coalitions.

STAB6: 0 for majority single-party governments, 1 for small majority coalitions, 2 for large majority coalitions, 3 for all minority governments (single-party or coalition).

STAB7: 0 for majority single-party government, 1 for small majority coalitions, 2 for large majority coalitions, 3 for minority single-party governments, 4 for small minority coalitions, 5 for large minority coalitions.

STAB8: 0 for majority single-party governments, 1 for minority single-party governments, 2 for small majority coalitions, 3 for small minority coalitions, 4 for large majority coalitions, 5 for large minority coalitions.