



Politics and unemployment in industrialized democracies*

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Abstract. This paper provides an empirical appraisal of the influence of politics on the evolution of unemployment rates in 13 industrialized democracies (12 European Union countries and the U.S.) from 1960 to 1999. We conduct new tests of opportunistic and partisan business cycle models, using richer data and more general specifications than previous studies. In contrast to most previous studies, we pay particular attention to the importance of labor market structure in conditioning the influence of politics on unemployment. We also investigate the relationship between political stability and economic stability.

The results suggest the existence of partisan effects, with higher unemployment rates prevailing under “right” parties than “left” parties. There is more support for “rational” partisan models that embody transient partisan impacts than for models with permanent effects. We find evidence that union power is associated with higher average unemployment rates, but that centralized bargaining institutions tend to lower unemployment rates. The evidence also suggests that more fragmented coalition governments are associated with higher unemployment rates than single party governments.

1. Introduction

This paper analyzes the political determinants of unemployment in a sample of 13 industrialized nations (the U.S. and 12 European Union countries), from 1960 to 1999. Three major objectives of this paper can be identified. The first is to undertake improved and generalized tests of the predictions about unemployment rates made by existing political business cycle (PBC) models. Our tests consider variants of both “opportunistic” models (Nordhaus, 1975; Rogoff and Sibert, 1988) and “partisan” models (Hibbs, 1977; Chappell and Keech, 1986, 1988; Alesina, 1987; Alesina and Sachs, 1988). The second objective is to investigate how the structure of labor markets affects the determination of unemployment and conditions the operation of political

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pressures. Our third objective is to investigate how political fragmentation affects the level or variability of unemployment rates.

A major contribution of this paper is the development of a richer data set than those used in previous studies investigating political determinants of unemployment. Our data allows us to distinguish presidential, semi-presidential and parliamentary governmental regimes, and to refine our empirical tests to reflect these differences. Improvements in the quality of political data also allow us to construct a continuous rather than a discrete measure of governmental ideology. This is particularly important in testing for partisan differences when coalition governments have been formed by parties with differing ideologies. Our data set also includes variables describing the structure of labor markets across time and countries, permitting us to investigate and control for these conditions as we investigate political influences.

The paper is organized as follows. Section 2 presents a brief survey of the relevant literature. Section 3 describes the data set, and Section 4 develops the empirical methodology and describes the results. Finally, a critique and conclusions are reported in Section 5.

2. Background

This section provides a brief description of the literature relating political influences to macroeconomic outcomes, particularly unemployment. We review several well-known models of partisan and opportunistic political business cycles, discuss microeconomic implications of labor market structures and political fragmentation for unemployment, and review empirical work that investigates these subjects using panel data.

2.1. Early models of political business cycles¹

Nordhaus (1975) and Lindbeck (1976) describe early versions of what we call the “opportunistic” political business cycle model. These models assume that voters evaluate an incumbent politician on the basis of recent macroeconomic conditions, that the incumbent manipulates election-day conditions in order to maximize his share of the vote, and that the economy can be represented by an expectations-augmented Phillips curve. A consequence of these assumptions is a political business cycle pattern in which unemployment is unsustainably low in pre-election periods and unsustainably high in post-election periods.

Hibbs (1977) develops an alternative “partisan” political business cycle model. His model assumes that parties have differing preferences over macroeconomic outcomes, based on the differing intrinsic interests of their clienteles. Hibbs’s original model assumes that the economy is characterized by

a Phillips curve featuring a permanently exploitable inflation-unemployment tradeoff. The key prediction of this model is that as parties alternate in and out of office, macroeconomic conditions will fluctuate to reflect the preferences of the current incumbent party. As usually operationalized, unemployment should be lower when “left” parties control the government, and higher when “right” parties rule.

2.2. *Rational expectations and political business cycles*

Both the Nordhaus and Hibbs political business cycle models were undermined by the introduction of the rational expectations hypothesis. If expectations are rational, then, under plausible circumstances, anticipated shifts of aggregated demand have no effects on real economic outcomes. Since partisan and opportunistic manipulations of aggregate demand should be predictable, unemployment should not be systematically affected.

In recent years, both opportunistic and partisan models have been modified to incorporate rational expectations. In the opportunistic model of Rogoff and Sibert (1988),² voters have rational expectations, but they are imperfectly informed about the “competence” of policymakers. In equilibrium, the incentive to manipulate voters’ beliefs leads politicians to choose an electorally timed pattern in policy actions. Voters should anticipate this pattern, however, so it is not obvious that there would be a cycle in unemployment.³

Models introduced by Alesina (1987) and Chappell and Keech (1986) extend Hibbs’s analysis of party differences to a setting that incorporates rational expectations. We refer to these as “rational partisan” theories (or RPT models). Following the example of Barro and Gordon (1983), these models assume that inflation expectations and nominal wages are set in advance of monetary policy decisions. If expected inflation were zero, policymakers would have an incentive to generate an inflation surprise to increase output and lower unemployment. However, since wage-setters are rational and forward looking, they recognize the incumbent’s incentive to inflate. The result, in the Barro-Gordon equilibrium, is positive anticipated inflation with unemployment at its natural rate.

In the rational partisan models, uncertainty about election outcomes produces uncertainty about future inflation. So long as left and right party politicians have differing preferences over macroeconomic outcomes, they will choose different policy actions. Election surprises therefore result in inflation surprises, which in turn result in temporary deviations of unemployment from its natural rate. Under the conventional hypothesis, inflation will be higher under left-wing administrations than right-wing administrations; furthermore, unemployment will be below its natural rate at the beginning of a left-wing government and above its natural rate at the beginning of a

right-wing administration. In both the Chappell-Keech and Alesina models, the existence of long-term labor contracts permits election surprises to be reflected in persistent but impermanent unemployment fluctuations.

2.3. *Political microeconomics*

Thus far our review has focused on short-term business cycle attributable to politically induced variability in macroeconomic policies. However, the political economy of unemployment encompasses microeconomic issues as well. In recent years the disparate unemployment performances of the U.S. and Europe have highlighted microeconomic concerns. Although no single explanation for the difference is uniformly accepted, “labor market rigidities” are often invoked to explain persistently high European unemployment rates (see Siebert, 1997; and Nickell, 1997, among others). Such rigidities might include high levels of unemployment compensation benefits, high taxes on labor income, generous welfare programs, restrictions on work time, restrictions on layoffs, etc. Determining how each of these policy options affects unemployment rates is beyond the scope of our investigation here. We will, however, indirectly address these issues by investigating the link between unemployment and the sources of political pressure that might produce governmental intrusions in labor markets. For example, union membership rates could serve as a measure of political pressure for labor market restrictions, resulting in higher unemployment. Alternatively, centralized and highly coordinated bargaining institutions could lower unemployment if they facilitate multi-lateral concessions by unions who would otherwise seek restrictions. Alvarez, Garrett, and Lange (1991) further suggest that partisan interactions with labor market conditions could be important. For example, they find that left-leaning governments produce lower unemployment when union power is high and bargaining is centralized, but higher unemployment when labor markets are flexible and atomistic.

Labor market rigidities also play a role in the “rational” partisan political business cycle models discussed above. In a perfectly flexible labor market, wages would quickly adjust to the information provided by elections and unemployment should not be affected by election surprises. It is only when rigidities prevent quick wage adjustments that we would observe output and unemployment fluctuations following elections. This argument suggests that partisan unemployment effects may be conditioned by structural labor market conditions.

A second microeconomic route for political influence comes via political instability. The recent political economic literature suggests that countries with more unstable political systems tend to have poorer economic performances (see Cukierman, Edwards, and Tabellini, 1992; Roubini and Sachs,

1989; and Alesina, Cohen, and Roubini, 1997). The intuition behind this is that in countries where the government is formed by a coalition of parties, policy choices are the result of negotiations between contending interest groups with conflicting interests, and deviations from optimality may occur due to coordination problems caused by the mechanisms of making collective choices. Furthermore, if an incumbent has a low probability of being re-elected, he has a short time planning horizon and, therefore, an incentive to adopt shortsighted policies. Although previous studies have tested the effects of political instability and fragmentation on seignorage, budget deficits, debt, and inflation, no direct tests of the influence of these factors on unemployment have been undertaken.

Although these political-microeconomic aspects of unemployment are of intrinsic interest, we also stress that properly controlling for them is essential if we are to appropriately test political business cycle models that focus on shorter-run movements of unemployment related to elections or ideological changes in the government.

2.4. *Previous empirical research*

The number of papers testing political business cycle models over time and countries is now quite extensive. For a comprehensive review with updated results, readers are referred to Alesina, Cohen, and Roubini (1997). Three main results emerge from this literature. First, empirical results support the existence of partisan political business cycles, with greatest support for the “rational” partisan model, which specifies that partisan movements in unemployment and output will be temporary rather than permanent. Second, the partisan effects are stronger in countries where governments are stable and clearly identifiable as right or left-wing. Third, evidence of “opportunistic” political business cycles is weak.

None of the existing studies uses a continuous measure of partisan identity, accounts for differences between parliamentary and non-parliamentary regimes, or simultaneously accounts for electoral pressures and labor-market conditions as determinants of unemployment differences. Our analysis extends the existing literature in these directions, and also provides an update adding an additional six years of data.

3. The data set

The data set used in the empirical investigation covers 13 industrialized countries (the U.S. and 12 European Union – E.U. countries)⁴ for the period between 1960 and 1999. The main macroeconomic series analyzed is the

quarterly unemployment rate for each country, which provides the dependent variable for our empirical analysis. Unemployment rates were obtained from the OECD-Main Economic Indicators. As an explanatory variable, we include a measure of international demand in our empirical models. For this purpose we have employed the IMF's quarterly growth of the industrial production index aggregated over industrialized nations.

In order to take account labor market conditions in the determination of unemployment rates, we have gathered information on union density rates, union coverage rates, and measures of bargaining centralization and coordination. These data have been obtained from the OECD Employment Outlook (1994, 1997) reports and augmented with data from Current Population Survey for the U.S.

We have also gathered information on political conditions and institutions.⁵ Governments have been classified as majority/minority or coalition/single party governments in order to test hypotheses about political fragmentation and economic performance. Data on presidential and parliamentary election dates and outcomes were collected in order to construct variables to be used in testing political business cycle models.

Measurement of governments' left-right partisan identities presents additional complications. For parliamentary regimes, we first categorized all parties participating in governments as left- or right-wing parties. We then calculated the percentage of deputies in governing coalitions who belonged, respectively, to left- and right-wing parties. We employ the percentage of right-wing deputies in the governing coalition as a continuous measure of partisanship for parliamentary regimes. For presidential regimes (only the U.S.), we assume that the party affiliation of the president determines the partisanship of the government; i.e., under a Republican president, the government is 100% right-leaning. For semi-presidential regimes (France and Finland), our continuous measure of partisanship is a simple average of parliamentary and presidential partisanship measures. Because most previous studies have used discrete measures of partisanship, for purposes of comparability we have also constructed a discrete measure. To do so, we classify a regime as "right-wing" when our underlying continuous variable exceeds 50%.

Much of our analysis will focus on macroeconomic reactions to *changes* in the partisan composition of the government. When we use a continuous variable to measure partisanship, measuring the change in partisanship is straightforward. However, in most previous studies, changes in partisan identity have also been indicated by discrete variables. This creates additional ambiguities; for example, if a left-oriented coalition changes its composition by moving to the right, but remains a left-oriented coalition, has a change in partisan identity occurred? Alesina, Cohen, and Roubini assume, that partisan

change occurs whenever there is a “substantial” change in the make-up of a coalition. We follow a more mechanical procedure when measuring discrete changes: we code a discrete change, only when our continuous variable moves across the 50% threshold.⁶

Table 1 presents descriptive statistics for political data by country. In our sample period, the average time between elections or changes in a government’s ideology was 11.4 quarters. Finland and Italy had the lowest percentage time governed by right-wing governments, while Belgium, the Netherlands, and the U.K. had the highest. All governments in Belgium, Germany, and Netherlands were coalitions; there were no coalition governments in Spain and in the U.K. Among parliamentary regimes, only Belgium, Germany and Netherlands had majority governments during the entire sample period.

4. Empirical analysis

In this section we describe the results of our empirical analysis. As we have noted, the dependent variable in the analysis is the level of the unemployment rate. Explanatory variables include a proxy for international demand growth, measures of labor market structure, measures of political fragmentation, and variables capturing political business cycle effects. All equations also include fixed effects for individual countries, although we do not report estimates for those coefficients.⁷

In order to test the hypotheses, regressions corresponding to the general form specified below were estimated (variables are indexed by both countries and time):

$$U_{it} = f(U_{it-1}, U_{it-2}, \dots, AGIPIInd_{t-1}, LMC_{it-1}, FRAG_{it-1}, POL_{it-1}) \quad (1)$$

In this equation, U is the quarterly unemployment rate,⁸ $AGIPIInd$ is annual growth of the industrial production index for industrialized economies (providing a measure of international demand), LMC is a vector of variables characterizing labor market conditions, $FRAG$ is a vector of variables indicating political fragmentation, and POL is a vector of political variables used to test PBC. All variables enter the model with lags as specified. Table 2 provides a detailed summary of definitions for all variables employed in the analysis.

Table 1. Country statistics

Country	Number of elections or changes in ideology	% Time of right-wing governments in office	% Time of coalition governments in office	% Time of majority governments in office	Average time between an election or a change	Period analyzed
Austria	11	35	56	96	14.4	60:1–99:2
Belgium	11	82	100	100	7.4	79:1–99:2
Denmark	15	45	68	6	7.9	70:1–99:2
Finland	23	0	28	100	6.9	60:1–99:2
France	10	45	23	100	11.8	70:1–99:2
Germany	12	62	100	100	12.6	62:1–99:3
Italy	10	10	84	68	15.8	60:1–99:2
Netherlands	6	67	100	100	11.7	82:1–99:2
Portugal	5	62	17	67	13.2	83:2–99:2
Spain	7	40	0	31	12.7	77:2–99:2
Sweden	10	31	28	15	11.8	70:1–99:2
U.K.	10	67	0	98	15.8	60:1–99:2
U.S.A.	10	53	54	100	15.8	60:1–99:2
Total number of elections or changes in ideology					144	
Average duration all governments					11.4	

Table 2. Summary of definitions for all variables employed in the analysis.

Abreviation	Definition
U	Quarterly unemployment rate.
AGIPIInd	Annual growth of the industrial production index aggregated over industrialized economies.
UnionM	Percentage of wage and salary workers who are members of unions.
UnionC	Percentage of wage and salary workers covered by collective bargaining agreements.
BargL	Index measure of the average “bargaining level” in a country. Bargaining can occur at the level of individual companies, at the industry level, or at the level of multi-industry employer and worker organizations. Assumes integer values from 1 to 3, with 3 indicating the most centralized bargaining systems.
BargC	Index measure of bargaining coordination between employer and labor organizations. Takes on integer values from 1 to 3, with higher values indicating greater coordination.
Coal	Dummy variable equal to 1 for coalition governments, otherwise equal to 0. See note 9.
Min	Dummy variable equal to 1 for minority governments, otherwise equal to 0. See note 10.
OEBN	Dummy variable equal to 1 in the N quarters preceding an election and 0 otherwise. N = 4, 6, 8.
OEAN	Dummy variable equal to 1 in the N quarters after an election and 0 otherwise. N = 4, 6, 8.
PP1	Dummy variable equal to 1 when PP2 (defined below) exceeds 0; equal to -1 when PP2 is less than or equal to 0.
PP2	For a parliamentary government, PP2 is the percentage of deputies belonging to right-wing parties forming government, less 50%. For a presidential government (the U.S.) percentage control of the government is equal to 100% for Republican presidents and 0% for Democratic presidents, and PP2 is this percentage less 50%. For a semi-presidential regime (France and Finland) PP2 is an average of the percentage partisan strength of the parliament and the president, less 50%.
UnionM*PPk	Interaction variable between UnionM and PP1 or PP2 (i.e., k = 1,2).
UnionC*PPk	Interaction variable between UnionC and PP1 or PP2 (k = 1,2).
BargL*PPk	Interaction variable between BargL and PP1 or PP2 (k = 1,2).
BargC*PPk	Interaction variable between BargC and PP1 or PP2 (k = 1,2).
RP1N	Dummy variable set equal to 1 (-1) for the N quarters including and following a discrete change in government (i.e., a change in PP1) toward the right (left) and otherwise set equal to zero. N = 4, 6, 8.
RP2N	For the N quarters following a change in government, RP2N is equal to the change in PP2; otherwise equal to 0. N = 4, 6, 8.

Table 2. Continued.

Abreviation	Definition
RP3N	A dummy variable 1 in the first N quarters of a right-wing government and -1 in the first N quarters of a left-wing government (where partisanship is defined by PP1). N = 4, 6, 8.
RP4N	For the first N quarters following an election or change in government, RP4N is equal to PP2; otherwise equal to 0.

We employ four variables as measures of labor market structure in the vector **LMC**. The first two variables measure union power. UnionM is the percentage of wage and salary workers who are members of unions and UnionC is the percentage of wage and salary workers covered by collective bargaining agreements. The next two variables describe collective bargaining institutions. BargL is an index measure of the average “bargaining level” in a country. Bargaining can occur at the level of individual companies, at the industry level, or at the level of multi-industry employer and worker organizations. BargL assumes integer values from 1 to 3, with 3 indicating the most centralized bargaining systems. BargC is an index measure of bargaining coordination between employer and labor organizations. This also takes on integer values from 1 to 3, with higher values indicating greater coordination. The OECD Employment Outlook (1994, 1997) reports data on these four labor market variables for all countries in our sample. Five data points (for most countries 1970, 1980, 1990 and 1994) are available. For the union membership and coverage variables a continuous series was interpolated from these data points. For the U.S. only, annual data on union membership for 1973 to 1999 were available from the Current Population Survey.

Two dummy variables are included in the **FRAG** vector. The first variable, Coal, equals one when a government is formed by a coalition of parties and otherwise equals zero.⁹ The second variable, Min, equals one when the parties forming the government fail to gain a majority in the parliament, and otherwise equals zero.¹⁰ Both Coal and Min indicate higher governmental fragmentation, thus positive coefficients are expected.

A variety of variables for the **POL** vector are suggested by alternative political business cycle theories. We will discuss the specification of these variables as the results are presented.

Table 3. Estimates of a “baseline” model.

	Panel				
U(-1)	-1.35*** (55.1)	-1.36*** (55.2)	-1.36*** (55.1)	-1.36*** (55.2)	1.35*** (54.9)
U(-2)	-.14*** (-3.5)	-.14*** (-3.5)	-.14*** (-3.4)	-.14*** (-3.5)	-.14*** (-3.4)
U(-3)	-.23*** (-9.6)	-.23*** (-9.6)	-.23*** (-9.8)	-.23*** (-9.7)	-.23*** (-9.6)
AGIPIInd(-1)	-.97*** (-4.8)	-.97*** (-4.8)	-.94*** (-4.7)	-.96*** (-4.8)	-.97*** (-4.8)
UnionM(-1)	.002** (2.0)				.001 (.9)
UnionC(-1)		0.001 (.6)			.0006 (.3)
BargL(-1)			-.12*** (-2.7)		-.14*** (-2.5)
BargC(-1)				.003 (.08)	.06 (1.3)
Coal(-1)	.04** (2.1)	.04** (2.0)	.03** (1.9)	.04** (2.0)	.04** (2.0)
Min(-1)	-.02 (-.8)	-.02 (-.7)	-.02 (-.9)	-.01 (-.7)	-.03 (-1.1)
Adjusted R ²	0.99	0.99	0.99	0.99	0.99

Notes. The coefficients on the dummies included to control for fixed effects are not reported.

t-statistics are in parenthesis.

*** significant at the 1% level; ** significant at the 5% level; * significant at the 10% level.

4.1. A baseline empirical model

In Table 3 we present estimates of a “baseline” model that excludes political business cycle variables. Several findings are immediately evident. First, we note that the international demand variable (AGIPIInd) is significant, implying that strong demand is associated with lower unemployment. Second, the significance of lagged unemployment rates also shows that unemployment moves in a highly inertial fashion.¹¹

Turning to labor market issues, we find that two labor market structure variables, UnionM and BargL, are significant. Higher unionization is associated with higher unemployment, as one would expect if unionization is a source of pressure for labor market rigidities. However, more centralized bargaining is associated with lower unemployment. This is consistent with the hypothesis that centralization promotes internalization of cross-industry externalities, perhaps by encouraging individual unions to limit demands when all other unions are making similar concessions.¹² Finally, the results also show that political fragmentation is associated with higher unemployment rates. The coalition government variable has a significant positive coefficient, suggesting that divided governments are less successful at implementing policies that keep unemployment rates low.

Estimates of our “baseline” model demonstrate the potential importance of political-microeconomic influences in the determination of unemployment, and underscore the need to include variables to control for them when testing for electoral effects. In our subsequent modifications of the empirical model, we will continue to include UnionM, BargL, and Coal as explanatory variables. These variables are consistently signed and frequently statistically significant in the estimations that follow.

4.2. *Opportunistic political business cycles*

The Nordhaus model predicts that macroeconomic conditions will be manipulated around election dates in order to maximize incumbents’ reelection chances. According to the theory, unemployment will fall before elections and then return to a normal level in the post-election period. To test this hypothesis, we augment our baseline model with two variables that were employed by Alesina, Cohen, and Roubini (1997) to capture pre- and post-election movements. OEBN takes a value of 1 in the N quarters preceding an election and is otherwise equal to zero; OEAN takes a value of 1 in the N quarters after an election and is otherwise equal to zero. For both variables, N takes on the values 4, 6, and 8 in alternative estimations.

For this estimation elections separated by less than two years were excluded from the analysis in order to insure that the pre- and post-election dummy variables would not coincide. Empirical results presented in Table 4 show that none of the political variables is statistically significant at conventional significance levels. In unreported regressions, we find that more flexible specifications of political business cycle effects like those suggested by Haynes and Stone (1989) also fail to support the Nordhaus hypothesis.

Although these results do not support the Nordhaus political business cycle, they do not necessarily reject opportunistic models that build in the rational expectations assumption. Those models predict cycles in policy in-

Table 4. Tests for opportunistic effects.

	Before (OEBN)			After (OEAN)		
	N=4	N=6	N=8	N=4	N=6	N=8
U(-1)	1.35*** (54.2)	1.35*** (54.2)	1.35*** (54.2)	1.35*** (54.2)	1.35*** (54.2)	1.35*** (54.2)
U(-2)	-.13*** (-3.1)	-.13*** (-3.2)	-.13*** (-3.1)	-.13*** (-3.2)	-.13*** (-3.2)	-.13*** (-3.2)
U(-3)	-.24*** (-10.1)	-.24*** (-10.1)	-.24*** (-10.1)	-.24*** (-10.1)	-.24*** (-10.1)	-.24*** (-10.1)
AGIPIInd(-1)	-.74*** (-3.6)	-.74*** (-3.7)	-.74*** (-3.7)	-.73*** (-3.6)	-.73*** (-3.6)	-.75*** (-3.7)
UnionM(-1)	.002* (1.7)	.002* (1.7)	.002* (1.7)	.002* (1.7)	.002* (1.7)	.002* (1.6)
BargL(-1)	-.08* (-1.7)	-.08* (-1.7)	-.08* (-1.7)	-.08* (-1.7)	-.08* (-1.7)	-.09* (-1.8)
Coal(-1)	.05*** (2.6)	.05*** (2.6)	.05*** (2.6)	.05*** (2.5)	.05*** (2.6)	.05*** (2.6)
OEBN	-.007 (-.5)	-.008 (-.6)	-.008 (-.5)			
OEAN				-.005 (-.3)	.003 (.2)	.01 (1.1)
Adjusted R ²	0.99	0.99	0.99	0.99	0.99	0.99

Notes. The coefficients on the dummies included to control for fixed effects are not reported. *t*-statistics are in parenthesis.

*** significant at the 1% level; ** significant at the 5% level; * significant at the 10% level.

struments, but not (necessarily) cycles in real outcomes. Because our focus is on unemployment, we do not pursue such distinctions here.

4.3. Testing partisan theory with permanent effects

If the policies of left and right parties create permanent differences in unemployment rates, our baseline model is appropriately modified by adding a variable indicating the partisan identity of the government. Following Alesina, Cohen, and Roubini (1997) we first augment our model with the discrete dummy variable PPI, which is set equal to 1 when right-wing parties rule and is set equal to -1 when left wing parties rule. According to the conventional hypothesis, a positive sign is expected on the estimated coefficient. We noted

Table 5. Tests for partisan theory with permanent effects.

	Panel	
	Discrete variable (PP1)	Continuous variable (PP2)
U(-1)	1.35*** (55.0)	1.35*** (55.0)
U(-2)	-.14*** (-3.4)	-.14*** (-3.4)
U(-3)	-.23*** (-9.7)	-.23*** (-9.6)
AGIPIInd(-1)	-.93*** (-4.7)	-.94*** (-4.7)
UnionM(-1)	.001 (1.0)	.001 (.9)
BargL(-1)	-.10** (-2.0)	-.10** (-2.0)
Coal(-1)	.04** (2.1)	.03* (1.7)
PPk(-1)	.007 (.8)	.0002 (1.5)
Adjusted R ²	0.99	0.99

Notes. The coefficients on the dummies included to control for fixed effects in the panel estimations were not reported.

t-statistics are in parenthesis.

*** Significant at the 1% level; ** significant at the 5% level; * significant at the 10% level.

earlier that it is possible to replace the discrete party indicator with a continuous measure. Our continuous measure is PP2, indicating the right-wing “percentage” strength of the government, expressed as a deviation from the 50% midpoint. Again, a positive sign is predicted.

Empirical results are reported in Table 5. As in Alesina, Cohen, and Roubini (1997) the discrete party variable, PP1, is not statistically significant but has the expected sign. The results using the continuous variable, PP2, provide slightly stronger support for the existence of permanent partisan effects, but again the coefficient is not statistically significant.

Because partisan effects could depend on labor market conditions, regressions were also run using interactions of the partisan variables with the variables describing labor market structure. Table 6 shows that the interac-

tion between the continuous partisanship variable and union membership is consistently positive and significant. Reminiscent of the findings of Alvarez, Garrett, and Lange (1991), this result indicates that the combination of strong unions and right-wing governments produces especially high unemployment rates. However, the interaction of BargL and the continuous partisan variable is negative and marginally significant, suggesting that the high unemployment rates prevailing under right-wing governments are reduced when bargaining is more highly centralized.

4.4. *Testing the rational partisan theory (RPT)*

Rational partisan theories predict that transient unemployment changes will follow election surprises. While the theory is clear that the surprise element of an election outcome is the key to subsequent changes in unemployment, it is often difficult to measure the extent of the surprise component in a given election result. Alesina, Cohen, and Roubini (1997) implicitly assume that incumbent governments are expected to win all elections. Under this assumption, election surprises occur when partisan changes take place.

This suggests that our baseline model should be augmented with RP1N, a dummy variable set equal to 1 (–1) for the N quarters including and following a discrete change in government toward the right (left) and otherwise set equal to zero. As before, changes in government can also be measured in with a continuous variable. We define RP2N to be the change in the right-wing percentage strength of the government in the N quarters starting with a change in governmental ideology. A positive sign on the estimated coefficient is predicted for each of these variables. Once again, N is permitted to take the values 4, 6, and 8 in alternative estimations.

Results for models employing RP1N and RP2N are presented in Table 7. The discrete change variable, RP1N, is statistically significant at the 5% significance level or better for N equal to 4, 6 or 8. The alternative continuous variable, RP2N, generates even stronger supportive results. Estimated coefficients have the expected signs and are statistically significant at the 1% significance level for N equal to 4, 6, and 8.

So far tests of the RPT model have been performed under the assumption that changes in governments' partisan identities are a good proxy for electoral surprises.¹³ That is, individuals expect the governing party to be elected for another term. An alternative assumption is that individuals regard the outcome of an election to be uncertain. Under the assumption that left or right party wins are equally likely, any election outcome produces some surprise, even if there is no change in governmental control. Under this scenario, a better specification of the discrete political variable would be provided by RP3N, a variable equal to 1 (–1) in the first N quarters following an election

Table 6. Tests for partisan theory with permanent effects and interaction variables.

	Panel	
	Discrete variable (PP1)	Continuous variable (PP2)
U(-1)	1.35*** (54.9)	1.35*** (54.8)
U(-2)	-.14*** (-3.4)	-.14*** (-3.4)
U(-3)	-.23*** (-9.6)	-.23*** (-9.6)
AGIPIInd(-1)	-.95*** (-4.8)	-.96*** (-4.8)
UnionM(-1)	.001 (1.5)	.001 (1.5)
BargL(-1)	-.11** (-2.3)	-.11** (-2.4)
Coal(-1)	.02 (1.4)	.01 (.9)
PPk(-1)	.02 (.7)	.0008 (1.1)
UnionM*PPk	.0008* (1.9)	.00002*** (2.7)
BargL*PPk	-.02 (-1.3)	-.0008* (-1.8)
Adjusted R ²	0.99	0.99

Notes. The coefficients on the dummies included to control for fixed effects in the panel estimations were not reported.

t-statistics are in parenthesis.

*** Significant at the 1% level; ** significant at the 5% level; * significant at the 10% level.

or governmental change in which right (left) parties govern. Analogously, an appropriate continuous variable is given by RP4N, which is right-wing percentage strength of the government (expressed as a deviation from 50%) in the first N quarters following an election or governmental change. For each of these variables, N is set equal to 4, 6, and 8 in alternative estimations. Table 8 provides the results for these variants of the rational partisan model.

Table 7. Rational partisan theory: unemployment levels and pooled sample (changes in ideology = electoral surprises)

	Discrete variable			Percentage variable		
	RP14(-1)	RP16(-1)	RP18(-1)	RP24(-1)	RP26(-1)	RP28(-1)
U(-1)	1.35*** (55.1)	1.35*** (55.0)	1.35*** (54.9)	1.35*** (55.1)	1.35*** (55.0)	1.35*** (54.9)
U(-2)	-.14*** (-3.4)	-.14*** (-3.4)	-.14*** (-3.4)	-.14*** (-3.4)	-.14*** (-3.3)	-.14*** (-3.4)
U(-3)	-.23*** (-9.7)	-.23*** (-9.7)	-.23*** (-9.6)	-.23*** (-9.7)	-.23*** (-9.7)	-.23*** (-9.7)
AGIPIInd(-1)	-.94*** (-4.8)	-.96*** (-4.8)	-.96*** (-4.8)	-.96*** (-4.8)	-.96*** (-4.8)	-.95*** (-4.8)
UnionM(-1)	.001 (.9)	.001 (.9)	.001 (.9)	.001 (1.0)	.001 (1.0)	.001 (1.0)
BargL(-1)	-.10** (-2.1)	-.10** (-2.2)	-.10** (-2.1)	-.10** (-2.2)	-.10** (-2.2)	-.10** (-2.2)
Coal(-1)	.04** (2.0)	.03** (2.0)	.03** (2.0)	.03* (1.8)	.03* (1.6)	.03* (1.6)
RP(-1)	.06*** (2.8)	.05*** (3.0)	.03** (2.3)	.0007*** (3.1)	.0006*** (3.3)	.0004*** (2.6)
Adjusted R ²	0.99	0.99	0.99	0.99	0.99	0.99

Notes. The coefficients on the dummies included to control for fixed effects are not reported. *t*-statistics are in parenthesis.

*** significant at the 1% level; ** significant at the 5% level; * significant at the 10% level.

The results indicate that the discrete variable, RP3N, is significant at the 5% level or better for each value of N, while the continuous variable, RP4N, is statistically significant at the 1% level for each value of N. While these results are “consistent” with predictions of the rational partisan models, they also highlight the problem of identifying electoral surprises. We have now found that the RPT model is supported under two different assumptions about pre-election expectations. If we assume that incumbents are expected to win or if we assume that elections seen as toss-ups, results of the RPT model are comparable. Of course, neither of these assumptions is likely to be perfectly correct, so it should not be surprising that both versions of the model work well empirically.

Our final exercise was to include labor market interactions with partisan variables in the RPT models. Our hypothesis was that more severe labor mar-

Table 8. Tests for rational partisan theory: unemployment levels and pooled data (incumbent ideology = electoral surprise).

	Discrete variable			Percentage variable		
	RP34(-1)	RP36(-1)	RP38(-1)	RP44(-1)	RP46(-1)	RP48(-1)
U(-1)	1.35*** (55.1)	1.35*** (55.1)	1.35*** (55.1)	1.35*** (55.1)	1.35*** (55.1)	1.35*** (55.1)
U(-2)	-.14*** (-3.4)	-.14*** (-3.3)	-.14*** (-3.4)	-.14*** (-3.4)	-.13*** (-3.3)	-.14*** (-3.4)
U(-3)	-.23*** (-9.7)	-.23*** (-9.8)	-.23*** (-9.7)	-.23*** (-9.7)	-.23*** (-9.8)	-.23*** (-9.7)
AGIPIInd(-1)	-.94*** (-4.7)	-.92*** (-4.6)	-.92*** (-4.6)	-.94*** (-4.7)	-.92*** (-4.6)	-.92*** (-4.6)
UnionM(-1)	.001 (.9)	.001 (.8)	.001 (.8)	.001 (.9)	.0009 (.8)	.0009 (.8)
BargL(-1)	-.10** (-2.0)	-.10** (-2.1)	-.10** (-2.1)	-.10** (-2.0)	-.10** (-2.1)	-.10** (-2.1)
Coal(-1)	.03** (2.0)	.03* (1.8)	.03* (1.9)	.03* (1.7)	.02 (1.4)	.02 (1.4)
RP(-1)	.03** (2.4)	.03*** (2.9)	.02** (2.1)	.0008*** (2.9)	.0008*** (3.5)	.0006*** (2.7)
Adjusted R ²	0.99	0.99	0.99	0.99	0.99	0.99

Notes. The coefficients on the dummies included to control for fixed effects are not reported. *t*-statistics are in parentheses.

*** significant at the 1% level; ** significant at the 5% level; * significant at the 10% level.

ket restrictions should amplify partisan cycles. Results of these estimations produced no significant interactions, however, and are not reported in the paper.

5. Conclusions

We have presented an analysis of the political determinants of unemployment rates in a sample of industrialized economies for the 1960–1999 period. Our analysis considers both microeconomic and macroeconomic sources of politically induced variations in unemployment. At a microeconomic level, the analysis shows that labor market structure and political fragmentation are important determinants of unemployment. Specifically, labor union mem-

bership rates and the presence of coalition governments are associated with higher unemployment rates, while centralized wage bargaining institutions are associated with lower unemployment rates.

When we extend the model to include both microeconomic and macroeconomic impacts, we find strong support for transient cycles predicted by the rational partisan (RPT) models of Alesina and Sachs (1988) and Chappell and Keech (1988), but little support for Nordhaus's opportunistic political business cycle model or Hibbs's partisan model with permanent unemployment effects.

Although these results on political business cycles generally confirm those of Alesina, Cohen, and Roubini (1997), our results make a stronger case in several ways. First, by including controls for labor market conditions and political fragmentation, our analysis embeds tests of political impacts in a more complete political model of unemployment determination. Second, we have shown that the key results are robust to refinements in measurement of partisanship. Alesina, Cohen, and Roubini (1997) used simple discrete measures of the left-right stance of a government. We have employed a continuous measure of partisan identity. Our measure makes use of detailed information on the composition of parliamentary coalitions and distinguishes between parliamentary and non-parliamentary regimes. Results for the partisan models are stronger when our continuous measure replaces the simple discrete variable. Third, we have shown that results for the rational partisan model are robust to alternative assumptions about the nature of electoral surprises. Evidence is supportive whether one assumes that incumbents are expected to win or assumes that all election outcomes are uncertain. Finally, we have shown that results supporting the rational partisan model are robust to the addition of six years of additional data.

Support for the rational partisan model is tempered by two concerns. First, as with most previous studies, we have not explicitly measured the surprise element in election outcomes. A distinguishing feature of the RPT model is the importance it attaches to such surprises in producing cyclical effects; consequently, a truly discriminating test should measure those surprises and investigate their impacts more directly. Second, we found no evidence of interactions between partisanship and labor market structure in our tests of the RPT model. Because the RPT theory relies on some labor market rigidities (specifically, long-term contracts) to produce partisan cycles, the absence of interaction effects weakens support for it. Future investigations would benefit from additional attention to these issues.

Notes

1. For detailed surveys on the political business cycle (PBC) literature see Price (1997), and Alesina, Cohen, and Roubini (1997).
2. Other opportunistic models incorporating rational expectations include Cukierman and Meltzer (1986), Rogoff (1990), and Person and Tabellini (1990).
3. Although the rational expectations hypothesis is often linked to a policy ineffectiveness result (implying no real effects of anticipated policy actions), this result also depends on a variety of ancillary assumptions made to characterize the economy.
4. The included EU countries are Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Portugal, Spain, Sweden, and the United Kingdom. The only EU countries excluded are Greece and Ireland. Greece was excluded from the sample because of missing quarterly unemployment data; Ireland was excluded because of missing data on labor market institutions.
5. Details of the political data sources are provided in Appendix 1.
6. Following this procedure, we do code several observations differently than Alesina, Cohen, and Roubini (1997). For example, from the 1st quarter of 1970 to the 2nd quarter of 1983 a single left-wing party (Socialist Party of Austria) ruled in Austria. Alesina, Cohen, and Roubini (1997) and the authors of this paper classified this government as left-wing. After the 2nd quarter of 1983, the Socialist Party formed a coalition with the Freedom Party of Austria, which is a right-wing party, but the overall coalition was still best described as left-wing. Alesina, Cohen, and Roubini (1997) reported this as a change to the right. In this paper, no change in the orientation is reported when the discrete variable is used, but some change occurs when using the percentage variable.
7. For all regressions, an F-test for the coefficients for the dummies was performed, and in all cases these coefficient estimates were jointly statistically significant.
8. We measure unemployment as a level in all reported results. There is some question as to whether unemployment has a unit root. For most individual countries (with the U.S. as a notable exception), we are unable to reject the hypothesis that unemployment contains a unit root. This is partly due to the low power of the Dickey-Fuller tests, and the fact that samples are short for individual countries. However, for results over the full panel we do reject the unit root hypothesis. We further note that, *a priori*, a unit root for unemployment is implausible because its range is restricted. We have also estimated models in which the dependent variable is expressed as a deviation from an estimated trend. This specification reduces concerns with unit roots and produces similar results concerning political business cycle effects, but does not permit us to capture the microeconomic determinants of the trend values themselves.
9. This definition is altered for presidential (the U.S.) and semi-presidential (France and Finland) regimes. For the United States, a coalition is assumed to exist when the Presidents' party lacks a majority in Congress. For France and Finland, a coalition is assumed to exist when the President and the Government have different ideologies.
10. Presidential and semi-presidential regimes were all classified as majorities.
11. The optimal number of lags was decided according to the Schwarz Bayesian Information Criterion in all specifications. The Breusch-Godfrey test was used to test for autocorrelation.
12. Supporting this conjecture, in unreported regressions we find that the negative impact of BargL on unemployment is largely attributable to a strong effect among countries at the highest bargaining level classification; i.e., countries with multi-industry bargaining.

13. Recall that partisan theory argues that real partisan effects only occur due to expectational errors about the ideology of the newly elected government.

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Appendix 1. Political data sources

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