Dynamics of public opinion and policy response under proportional and plurality elections

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ORIGINAL ARTICLE

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Abstract

We compare the patterns of adjustment of government policy to changes in public opinion in the Netherlands and the United Kingdom. These countries are similar in many ways, except that the United Kingdom has plurality elections and single-party government, while the Netherlands has proportional representation (PR) and coalition government. This provides the first application of the Macro Polity approach to a country with PR elections. We find that government policy in the Netherlands is highly responsive to public opinion. This cannot be the result of alternation of government, but instead must be the result of some other process, such as coalition bargaining. In the United Kingdom, however, the dynamic of adjustment is far more complex. Alternation of government does not produce responsiveness, but rather seems to get in the way of it. This leads to an over-correction dynamic in which policy can be out of line with public opinion for long periods of time.

KEYWORDS
government expenditure, government policy, plurality elections, proportional representation, public opinion

1 | INTRODUCTION

We examine the dynamics of how public policy adjusts to changes in public opinion in two countries, one with first-past-the-post elections and (typically) single-party government, the other with proportional elections and coalition government. There is considerable literature arguing that electoral institutions affect economic outcomes, claiming for example that countries with proportional representation (PR) have higher government spending, less inequality and more (or less, depending on the study) difficulty imposing fiscal discipline or reforming welfare states. However, hardly any of this literature considers public opinion. If different electoral systems lead to different economic outcomes, then surely the mechanism for this is how they channel public opinion—for example, whether a certain electoral system leads to more or less public spending will surely depend to some degree on whether the public demands more or less spending. We address this by considering the process by which public policy adjusts to changes in public opinion, following in the steps of the Macro Polity approach (Erikson et al., 2002) and Wlezien's thermostatic model (Soroka & Wlezien, 2010; Wlezien, 1995). This is the first time to our knowledge that this approach has been applied in-depth to a country with PR.

Given that both the Netherlands and the United Kingdom, both have majority rule parliament, we would expect some kind of median voter process in both countries. However, we would expect the exact mechanism to be very different. In the Netherlands, public opinion is channeled indirectly through negotiations in parliament. With proportional elections, changes in public opinion produce changes in the composition on parliament. In line with Black's (1948) median voter theorem, we would expect this to produce a change in the policy outcome that is negotiated. This does not necessarily require a change in government. In the United Kingdom, we would expect changes in public opinion to affect policy through changes of government, following the logic of Down's (1957) median voter theory, with the main parties competing to capture the median voter.

The dynamics of adjustment we find are surprising. In the Netherlands, we find that policy responds strongly to changes in public opinion, even though it is mediated through an indirect process of coalition negotiation as opposed to alternation of government. There is, however, a time lag, with the greatest effect appearing after 3 years. This is not surprising—a negotiated process between parties, including coalition formation, parliamentary committees, and consultation with social partners will take time. In case, of the United Kingdom, however, the dynamics are more complex. We observe an "overshooting" dynamic, by which policy can move in the opposite direction to public opinion for a considerable length of time. If the public lack faith in the competence of the opposition, it may continue to elect the government, even though the public no longer favors the policy changes the government is implementing. Of course, the government eventually becomes unpopular and is replaced, and the overcorrection dynamic begins again in the other direction.

We measure government policy through government spending as a proportion of GDP, and public opinion using an year-by-year scale derived from opinion surveys. The share of GDP spent by the government is an extremely appropriate measure of overall government policy. The balance between the public and private sectors is one of the main—if not the main—dimension of political competition in most European countries. Furthermore, it captures the choice that democracies make concerning which institutions govern other aspects of social and economic life, which Knight and Johnson (2011) argue is the fundamental task of democratic choice. Finally, it is a measure of political values and ideology—there is no technocratic correct

answer to how large a role the state should play and countries in the OECD currently choose values from under 30% to almost 60%. If the majority of the people want more spending and is willing to pay for it (or vice versa) and the government provides the opposite, it cannot claim to be acting as a trustee with superior technical knowledge (as it might with an individual issue); rather it is substituting its values for those of the people.

We measure public opinion using survey questions asking about the trade-off between government spending and taxes. To model the dynamics of how policy responds to public opinion, we need a measure of public opinion that is comparable year to year. Much of the existing literature relies on extremely indirect measures of public opinion or uses only a few data points. However, if we use national data instead of the large cross-national data sets, there is enough data to directly estimate public opinion annually, at least in the case of the United Kingdom and the Netherlands. The only difficulty is that the same questions are not necessarily asked every year. We use a recently developed technique from McGann (2014) to address this problem. There are a few studies that attempt to model responsiveness in larger number of countries using cross-national datasets (e.g., Soroka & Wlezien, 2015; Wlezien & Soroka, 2012). Unfortunately, these suffer from extremely sparse data (at best four observations of public opinion per country over a 20 year period, and in most cases only two). It is impossible to draw conclusions about the dynamics of policy responsiveness over time with such data. As a result, we follow a strategy similar to Soroka and Wlezien (2010), intensely analysing a small number of cases where sufficient data is available.

We also need to distinguish our work on responsiveness from the literature on the congruence between public opinion and government outcomes under different electoral systems (Blais & Bodet, 2006; Golder & Stramski, 2010; Powell, 2000, 2011; Rasmussen et al., 2018). Responsiveness measures the degree to which changes in public opinion produce changes in policy, while congruence is concerned with the degree to which policy matches public opinion at any given time. The congruence literature produces mixed results. Some studies find that PR produces greater congruence, while many find that electoral system makes no difference. No study finds that first-past-the-post elections provide significantly more congruence. However, we would be skeptical of these results as they rely on highly indirect measures of public opinion derived from large cross-national studies.[1]

Our findings also address a series of ongoing debates in political economy. There is a considerable literature that claims that countries with multiparty governments have a hard time controlling public spending, enforcing fiscal discipline and making painful reforms (e.g., Alesina & Perotti, 1995, 1997; Persson & Tabellini, 2003; von Hagen & Harden, 1995). While countries with first-past-the-post elections do better in terms of "hard" qualities such as decisiveness and fiscal discipline, it is argued that proportional elections may provide "softer" qualities, such as inclusive welfare states, more redistribution and higher government spending (Iversen & Soskice, 2006; Lijphart, 1999; Persson & Tabellini, 2003). On the other hand, there are also a considerable number of studies that claim that countries with PR elections and coalition governments are actually more capable of taking difficult policy choices like cutting expenditure and reforming welfare states (Hauptmeier et al., 2006; Lindvall, 2017; McGann & Latner, 2013).

Of course, it is important not to overstate what can be shown by two case studies. We have simply modeled the process of adjustment in two countries, and found rather somewhat surprising dynamics. Research designs that allow us to consider more cases, such as cross-sectional time series models, may allow us to draw more general conclusions, but here too we have to be cautious. The increased generalizability of these designs comes at the cost of making the assumption that all countries are examples of a single process that is invariant across time

and space (Kittel, 2006), with the consequence that results may be extremely sensitive to changes in model specification (see Achen, 2005). This strategy is particularly risky if we do not yet have a clear understanding of how the process works in individual countries. Our case studies show that processes of policy adjustment differ between countries in complex ways. The different mechanisms, lags and dynamics we observe cannot simply be reduced to country-level fixed effects or dummy variables for political institutions. Building cross-national models is an important goal, but understanding the differences between the adjustment dynamics of individual countries is a vital first step.

2 | THERMOSTATIC ADJUSTMENT UNDER PLURALITY AND PR

We model the relationship between public opinion in the United Kingdom and the Netherlands using the thermostatic approach of Wlezien (Soroka & Wlezien, 2010; Wlezien, 1995). The thermostatic model has two components. First, public opinion reacts "thermostatically" to the level of taxes and spending. If the level of tax and spending is too high, public opinion moves to the "right" (signaling that the government should reduce taxes and spending), whereas if the level of spending is too low, it moves to the "left" (signaling that people are willing to pay for more government services). Second, government policy responds to these changes in public opinion, cutting or increasing government spending and taxes accordingly.

The fact that there are a few constraints on parliamentary majorities in either country means that we would expect simple majority rule dynamics to exist in both parliaments. However, these dynamics work differently in countries with single-party and multiparty government. In a country with a coalition government like the Netherlands, we would expect the Black (1948) median voter result to apply, as McDonald and Budge (2005) argue. We would expect the policy to be that preferred by the median legislator (or more realistically party, if party discipline applies), and for policy to rapidly adjust to changes in the position of the median. If parties are representative of the public (as we might expect in an extremely proportional system), this will correspond to the position of the median citizen as well. This conclusion does not change much if political competition is multidimensional (see McGann & Latner, 2013).[2]

In countries with two-party systems and single-party government, we would expect things to work very differently. Generally, one party will have a majority of seats and be able to implement its preferred policies. This will only produce a median result if the policy position of the ruling party converges to that of the median voter. Thus we can no longer rely on the Black (1948) median voter theorem, but rather we need the median voter result of Downs (1957). This argues that with two-party competition, both parties will converge on the position of the median voter to maximize their chances of winning the election. The problem is that in the United Kingdom, the two parties have frequently not converged to the center. It is now clear that the assumptions required by the Downs median voter results are rarely met (see Grofman, 2004). In particular, if voter choice depends on both the policy positions of the parties and valence (e.g., reputation for economic competence), and one party has a valence advantage, then we would expect both parties to diverge from the median voter (Comanor, 1976; Schofield & Sened, 2005). Since the positions of the two parties diverge, we would expect government policy to bounce back and forth depending on who is in government. Furthermore, there is a considerable literature on UK elections that concludes that valence issues (in particular economic competence) are more important to vote choice than policy issues (Clarke et al., 1996, 2009; Whitely et al., 2013).

Of course, policy does not only change with elections, but can also change as a result of changes in public opinion between elections. For example, Soroka and Wlezien (2015) argue that proportional elections will lead to less policy responsiveness between elections than plurality elections. They argue this for two reasons: First, the need to renegotiate coalitions makes it harder to change policy in response to changes in public opinion. Second, plurality elections create more incentive to adapt to the new median voter, as the potential swing in seats is greater. We find neither of these arguments convincing. In the first case, there is now considerable empirical evidence that coalition government actually increases policy mobility (Lindvall, 2017; McGann & Latner, 2013)—when public opinion changes, parties have to consider not only future elections, but also what policies will be viable in future coalition negotiations. In the second case, Soroka and Wlezien's argument depends on the strongly Downsian assumption that the election result depends on which party is closer to the median voter. As we will see, empirical evidence in the United Kingdom suggests that valence issues (such as economic competence) are more important. Nevertheless, as we have annual data, we are able to test Soroka and Wlezien's proposition in the United Kingdom and the Netherlands.[3]

3 | METHODS

To model the relationship between economic policy mood and government spending, it is necessary to have an annual measure of public opinion on government spending. The challenge in constructing such a measure is that, while there are many survey questions asked on the subject, question-wording changes over time and the same questions are not asked every year. We need a technique that can take the survey marginals of whatever questions were asked in the various years (the proportion of respondents that answered the question a particular way) and produce a single scale that is comparable across time. Various techniques have been proposed to do this, including the Kalman filter approach of Beck (1989) and the more widely used Stimson dyad-ratio algorithm (Stimson, 1991). We use the Bayesian item response model algorithm of McGann (2014), which takes an item response theory model of how subjects respond to standardized test questions, and applies it to aggregate public opinion. The extension to this model from McGann et al. (2019) can handle scales with more than two values, as opposed to requiring dichotomous data. This is important here because many questions on tax and spending have a neutral category that is substantively important—for example, whether respondents want more spending, less spending or about the current level.

We turn now to the econometric techniques used to model the relationship between economic policy mood and the level of government spending. According to the thermostatic model, an increase in the level of government spending will lead to an increase in the level of public mood. An error correction model of the form $\Delta Y_t = b_0 + b_1 \Delta X_t + a (Y_{t-1} - g_0 - g_1 X_{t-1})$ is appropriate to model this relationship, as it assumes that there is a long-term equilibrium relationship between the variables, and that the further out of equilibrium we are the larger the adjustment (the parameter a represents the speed of this adjustment). On the other hand, when we consider how public opinion affects policy, we would expect the *annual change* in government spending to depend on the level of economic policy mood. Our measure of economic policy mood is based on questions that are "thermostatic"—that ask about whether spending is too high or low, not about its absolute level. We can model this using a differenced distributed lag model of the form $\Delta Y_t = b_0 + b_1 X_{t-1} + b_2 X_{t-2} + b_3 X_{t-3} + b_4 X_{t-4}$. This is similar to the approach used in Soroka and Wlezien (2010), except that we include four lags instead of just one. We do this because we do not know in advance how long it

takes for the government to react to changes in public opinion. We can estimate the total effect of a one unit change in the economic policy mood by simply summing the lagged coefficients.

One significant issue that arises when dealing with time-series data is spurious correlation. When data is nonstationary (the expected value of the variables move over time, as opposed to the variable oscillating around a single mean like white noise), it is common to find statistically significant coefficients even when there is no underlying relationship between the variables. Indeed, two randomly generated variables with autocorrelation will often produce statistically significant correlations. For this reason, it is not sufficient to show that our model produces statistically significant results. It is a standard requirement in time series econometrics to show the model is cointegrated (Enders, 2004). Intuitively speaking, this means that the predicted value and the observed value of the dependent variable move up and down in parallel, so that the model fits equally well over the entire time period.[4] We check that all our models are cointegrated using an augmented Dickey–Fuller test of the residuals.

Checking for cointegration is especially important when using error correction models. These models are only appropriate with nonstationary data if the variables are cointegrated (Engle & Granger, 1987). We check for cointegration using the tests recommended by Grant and Lebo (2016). First, we test the stationarity of the residuals using an augmented Dickey–Fuller test. Second, we use the error correction parameter as a test of cointegration, but use the distribution derived by MacKinnon (1994) and Ericsson and MacKinnon (2002) for this purpose, instead of the *t*-distribution reported by most software packages (see Grant & Lebo, 2016).

In addition to econometrically modeling the relationship between public opinion and government policy, we engage in process tracing, matching the results of the models to the history of policy change in the two countries. We do this to provide further assurance that the results of the models are not a spurious statistical relationship, but the consequence of a plausible policy-making process. Just as importantly, we want to understand the mechanisms by which public demands opinion is translated into policy change in the two countries.

4 | DATA AND MEASUREMENT

We measure public opinion using repeated survey questions that ask about the appropriate level of public spending and taxes, using the methodology described in the previous section. In the case of the Netherlands these questions are drawn from domestic sources, such as *SCP Cultural Change in the Netherlands* (Middendorp, 1975; Sociaal en Cultureel Planbureau [SCP] & Centraal Bureau voor de Statistiek [CBS], 2008), the *Continuous Monitor Citizen Perspectives* series (Sociaal en Cultureel Planbureau [SCP], 2010), and the *Dutch Parliamentary Election Study* (Stichting Kiezersonderzoek Nederland [SKON], Centraal Bureau voor de Statistiek [CBS] et al., 2012), as well as international series such as the *European Social Survey* (ESS ERIC, 2002) and the *International Social Survey Project* (ISSP Research Group, 1986).

In the case of the United Kingdom, sources include *British Social Attitudes* (NatCen Social Research, 2017), the *British Election Study* (Alt et al., 1976) and private polls conducted by organizations such as Gallup (Social Surveys [Gallup Poll] Limited, 1970). The typical question asks whether public spending should be increased (even if it means higher taxes), decreased or should remain about the same. There are also questions that deal whether the government should act to reduce income inequality from current levels.

Figure 1 graphs our estimates for policy mood on tax and spending levels in the Netherlands and the United Kingdom. Higher values indicate that mood is more "left-wing"—favouring
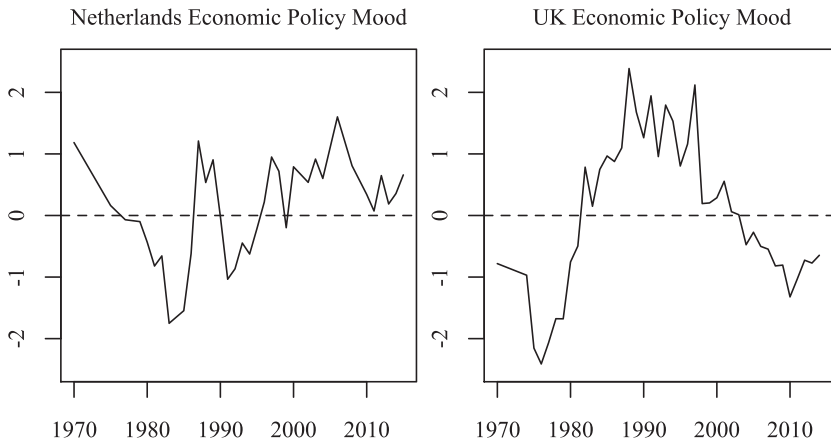
-WILEY-

Netherlands Economic Policy Mood   UK Economic Policy Mood

FIGURE 1 Economic policy mood in the Netherlands and the United Kingdom.
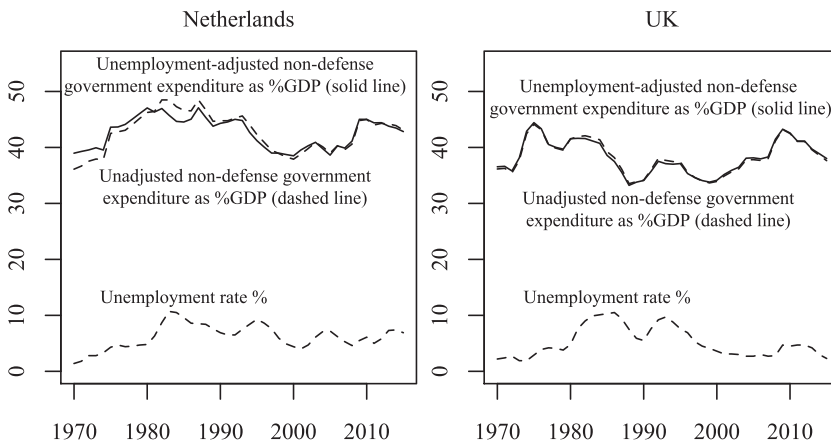
Netherlands   UK

FIGURE 2 Government spending in the Netherlands and the United Kingdom.

higher spending and taxes than at present. The scale is arbitrary, but has been normalized so that the mean is zero and the standard deviation one.

We use nondefence government spending as a proportion of GDP as our measure of government policy. We do not include spending on defense and interest, as these reflect external factors as opposed to current policy choices.[5] In the case of the United Kingdom, this is measured using Office of Budget Responsibility (2016) data for total managed expenditure.[6] In the case of the Netherlands we use data from CPB Netherlands Bureau for Economic Policy Analysis (2016) data for primary gross government spending.[7] Finally we adjusted non-defense government spending for each country to take into account the mechanical effect of the level of unemployment. That is, we adjust for the amount unemployment raises expenditure on unemployment compensation, sick and disability pay, assuming policy remains the same, but not for any effect unemployment may have on policy or discretionary spending.[8] We are interested in the policy response to changes in public opinion, not the automatic changes in spending produced by economic conditions. Figure 2 graphs nondefence government expenditure in the Netherlands and the United Kingdom.

Given the importance of alternation of government in the United Kingdom, we also model the relative vote share of the two main parties in terms of economic policy mood and the public's assessment of the relative competence of the two parties. The measure of the perceived competence of the two parties is taken from Bartle et al. (2018), and is based on survey questions asking which party is best at dealing with various issues.[9]

5 | RESULTS

For both the United Kingdom and the Netherlands, we address two questions. First, does economic policy influences public mood? Second, does public mood have any effect on government policy, and if so, how? We test these propositions over a time period where we have sufficient data to accurately estimate public mood. In the case of the United Kingdom this is the period 1970–2015. In the case of the Netherlands, we only have sufficient data from 1975, so we model the period 1975–2015.

5.1 | Does policy influence public mood?

We find that both that public mood in both the United Kingdom and the Netherlands behaves as we would expect from the thermostatic model. That is, as government spending increases, public mood moves to the right as the public demand for more spending decreases, and vice versa. Table 1

TABLE 1 Error correction model of economic policy mood in the United Kingdom.

	Estimate	Std. error	*t* value	Pr(>|*t*|)
Short term				
(Intercept) b_0	0.00	0.08	0.05	0.96
ΔNondefence expenditure b_1	−0.23	0.07	−3.38	0.002
ΔUnemployment b_2	0.10	0.09	1.00	0.32
ΔInflation b_3	−0.04	0.03	−1.35	0.19
Error correction term a	0.78	0.18	4.32	0.0001
The McKinnon 0.01 critical *t* value for error correction term a is 4.28				
R^2	0.38			
Long term				
(Intercept) g_0	7.49	1.13	6.65	5.1e−8
Nondefence expenditure g_1	−0.23	0.03	−7.48	3.5e−9
Unemployment g_2	0.25	0.03	8.34	2.3e−10
Inflation g_3	−0.03	0.02	−1.50	0.14
R^2	0.81			
Augmented Dickey–Fuller	−3.49 (lag order 3)			0.05

Note: ΔEconomic policy mood $= b_0 + b_1\Delta$Nondefence primary government expenditure $+ b_2\Delta$Unemployment $+ b_3$ ΔInflation $+ a$ (Economic policy mood $- g_0 - g_1$ Nondefence expenditure $- g_2$ Unemployment $- g_3$ Inflation).

gives the results for the error correction model of public mood for the United Kingdom. The model predicts that public mood moves to its equilibrium value for a particular level of government spending quickly—the error correction coefficient is 0.78, which means that public mood converges 78% of the way to its new equilibrium in 1 year. The cointegration diagnostics show that the model is indeed cointegrated, and that the use of an error correction model is appropriate.[10] The long-term coefficient for the effect of government spending is −0.23, which is both substantively and statistically significant. If government expenditure increase by one percentage point, then public mood moves to the right by 0.23 standard deviation units (higher scores for public mood indicate a more left-wing position).

We observe a similar pattern for the Netherlands (Table 2). The model adjusts rapidly to its equilibrium value (the error correction term is 0.55, indicating that the model eliminates 55% of the deviation from equilibrium in 1 year) and the cointegration diagnostics show that the error correction model is appropriate.[11] As in the case of the United Kingdom, public opinion reacts to changes in government spending and economic conditions, although the long-term coefficient for the effect of government spending is rather lower than that for the United Kingdom (0.08 as opposed to 0.23).

Thus in the United Kingdom when there is a policy change, public opinion moves sharply against it. In the Netherlands, the negative reaction to a policy change is still noticeable, but far less drastic. This difference is in line with what we would expect given the different political systems. In an adversarial system like the United Kingdom, a new government may not feel the need to build a consensus for a policy change. Rather it may feel it has a mandate to proceed with the change immediately, while the opposition mobilizes as strongly as it can against it,

TABLE 2 Error correction model of economic policy mood in the Netherlands.

	Estimate	Std. Error	t value	Pr($>|t|$)
Short term				
(Intercept) b_0	−0.002	0.08	−0.02	0.98
ΔPrimary gross expenditure b_1	0.02	0.07	0.32	0.75
ΔUnemployment b_2	−0.16	0.09	−1.81	0.08
ΔInflation b_3	−0.15	0.07	−2.08	0.04
Error correction term a	0.55	0.15	3.57	0.001
The McKinnon 0.05 critical t value for error correction term a is 3.39				
R^2	0.61			
Long term				
(Intercept) g_0	5.93	1.46	4.06	0.0002
Primary gross expenditure g_1	−0.08	0.04	−2.29	0.03
Unemployment g_2	−0.25	0.06	−4.41	8.5e-5
Inflation g_3	−0.18	0.05	−3.85	0.0004
R^2	0.56			
Augmented Dickey–Fuller	−4.58 (lag order 3)			0.01

Note: ΔEconomic policy mood $= b_0 + b_1$ΔNondefence primary gross expenditure $+ b_2$ΔUnemployment $+ b_3$ΔInflation $+ a$ (Economic policy mood $- g_0 - g_1$ Nondefence primary gross expenditure $- g_2$ Unemployment $- g_3$ Inflation).

producing a strong reaction in public opinion. In a coalition system such as the Netherlands, however, policy change may be the result of a long period of negotiations between parties (including those not in the government), and thus may already include concessions to those who would oppose it. There is a second explanation for the milder response to policy change in the Netherlands. As we will see in the next section, changes in mood are translated into policy quite rapidly in the Netherlands, which results in a mild swing in mooback in the other direction. In the United Kingdom this is not always the case. Often governments continue to change policy in line with their preferences, even after public opinion has moved against them, which leads to public opinion moving even further in the other direction (compare the graphs on public mood for the two countries in Figure 1).

5.2 | Does public mood influence policy?

We have very different expectations for the United Kingdom and the Netherlands in terms of how public mood affects government spending. Following previous work (Bartle et al., 2018; Soroka & Wlezien, 2010), we expect that government spending will not be very responsive to public opinion in the United Kingdom. Rather we expect government policy in the United Kingdom to depend mostly on which party is in government, not what public opinion happens to be at the time. In the Netherlands, we expect government policy to be very responsive to economic policy mood, in line with the median voter result. However, we do not expect which party leads the government in the Netherlands to make much difference.

Table 3 displays the results for the models of government spending in the United Kingdom. We concentrate on the distributed model with four lags, as we do not have a strong prior reasons about what the appropriate lag structure is. The coefficient for a Labour Prime Minister the previous year is 1.52, which is highly statistically significant. Given that the intercept is −0.89, this means that the model predicts that government spending as a proportion of GDP falls 0.89% per year when there is a Conservative government and increases 0.63% when there is a Labour government, assuming that public opinion is neutral. The coefficient for the sum of lagged policy mood is statistically significant and has a value of 0.44%.[12] That is, a one standard deviation change in economic policy mood produce a 0.44% change in government spending over a 4-year period.[13] If we want, we can also run a model with just the most significant lag from the distributed model (1 year). This gives very similar results in terms of the relative importance of partisan control and policy mood. (We include dummy variables for the years 1974, 1980, and 2009. In each of these years GDP declined more than 2%, and thus government spending as a proportion of GDP increased by a comparable amount as a direct mathematical consequence.)

It might be tempting to interpret the statistically significant effect of policy mood as meaning that the government responds to a movement of public opinion by adjusting policy accordingly. However, this would be misleading. In fact, a Conservative government will cut spending, and a Labour government will increase it, whatever the state of public opinion. This is because the effect of partisan control is far stronger than that of public opinion. Public opinion effectively only acts as a brake on the tendency of the government to follow its ideological preferences. Figure 3 demonstrates this. For example, our results predict that a Conservative government would cut public expenditure around 0.89% per year when public opinion is neutral. From the results of the previous section, we would expect that this would lead to public opinion moving to left quite rapidly. However, the Conservative government

TABLE 3 Distributed lag model of government spending in the United Kingdom.

| DV: Δ unemployment-adjusted nondefence government expenditure						
	Model 1			**Model 2**		
	Estimate	**Std. Error**	**Pr (>|t|)**	**Estimate**	**Std. Error**	**Pr(>|t|)**
(Intercept)	−0.55	0.25	0.03	−0.89	0.27	0.00
Economic policy mood$_{t-1}$	**0.32**	0.17	0.07	0.77	0.35	0.03
Economic policy mood$_{t-2}$				−0.07	0.35	0.84
Economic policy mood$_{t-3}$				−0.25	0.35	0.48
Economic policy mood$_{t-4}$				0.00	0.32	1.00
Sum of lags				**0.44**	0.18	0.008
1974	5.60	1.23	0.00	6.08	1.17	0.00
1980	2.95	1.27	0.02	3.40	1.22	0.01
2009	1.63	1.22	0.19	1.63	1.15	0.17
Labour PM$_{t-1}$	**0.98**	0.42	0.03	**1.52**	0.48	0.00
R^2	0.34			0.53		
Augmented Dickey–Fuller	−4.23 (lag order 3)		0.01	−3.43 (lag order 3)		0.07
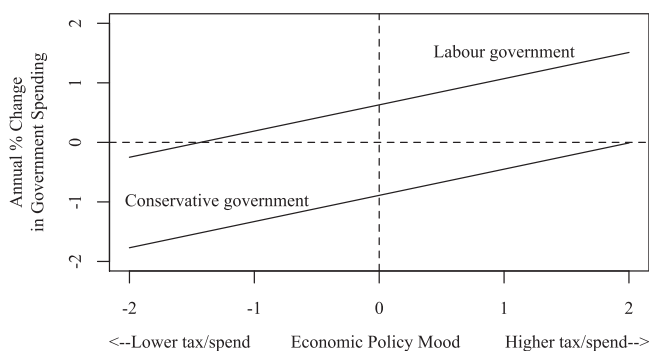
FIGURE 3 Policy response under Labour and Conservative governments in the United Kingdom.

would respond to this by reducing expenditure again, admittedly at a lower rate. It is not until public opinion is two standard deviations left of center that effect of public opinion balances out the effect of partisan control, and the cuts in expenditure stop. This approximates the situation in the 1990s, after the Conservatives had been in government for more than 10 years.

This, however, poses another problem. If the government continues to enact policies that the public does not favor, why does the public not simply vote it out of office at the next
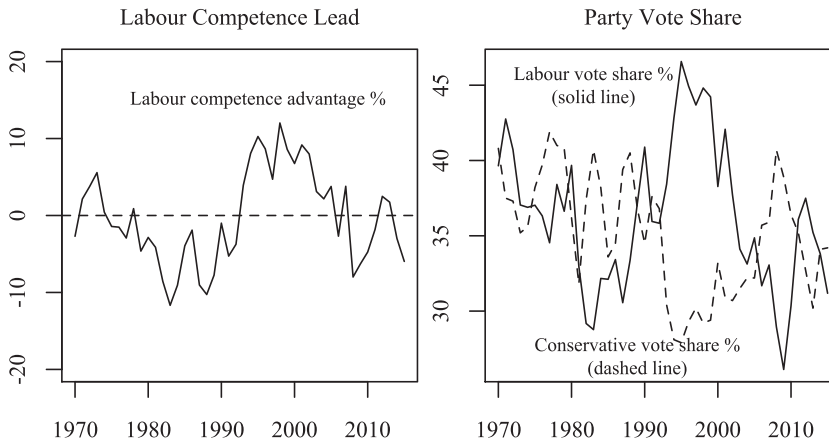
FIGURE 4 Labour competence advantage and vote share in the United Kingdom.

election? We can find an answer in the literature on electoral choice in the United Kingdom. Much of this literature argues that valence issues, such as competence and economic performance, matter more to British voters more than positional issues (Clarke et al., 1996, 2009; Whitely et al., 2013). People may strongly favor more left-wing policies, but if they think that the Labour Party is incompetent to manage the economy, they will continue to vote Conservative (and vice versa). We model the difference between the Labour and Conservative vote share using a model similar to that in Bartle et al. (2018). This is graphed together with party vote share in Figure 4.

The results for the error correction model are given in Table 4. We find that economic policy mood has a modest effect on the relative vote share of the parties, but this can easily be overwhelmed by a small difference in the assessments of the relative competence of the parties. The long-run coefficient for economic policy mood is 1.88, meaning that a one standard deviation movement to the left increases Labour's electoral lead by 1.88 percentage points. However, the coefficient for relative competence is 1.11. Thus a change in competence of only 1.5 percentage points can offset a one standard deviation change in economic policy mood (the standard deviation of relative competence was six percentage points). The cointegration diagnostics show that the model is indeed cointegrated, and thus that the use of an error correction model is appropriate.[14]

These results, combined with the results of the policy response to public opinion and partisan control, imply that it is possible for policy in the United Kingdom to move in the opposite direction to public opinion for a considerable length of time. Governments pursue policies that fit their ideological preferences (Labour governments increasing expenditure and Conservatives reducing it), while public opinion only provides a modest constraint on this. Furthermore, governments who pursue policies that go against public opinion are not necessarily punished electorally, at least as long as the opposition party is viewed as economically incompetent. In contrast to the argument of Soroka and Wlezien (2015), parties have little incentive to respond to changes in public opinion between elections, at least as long as the opposition has not regained electoral credibility. In the next section, we will see that this dynamic fits the United Kingdom for a considerable period of time.

TABLE 4 Error correction model of UK election results.

	Estimate	**Std. Error**	***t* value**	**Pr(>|*t*|)**
Short term				
(Intercept) b_0	0.28	0.46	0.61	0.55
Δ Economic policy mood b_1	0.71	0.78	0.91	0.37
Δ Competence Lab-Con b_2	0.94	0.11	8.32	2.4e−1-
Error correction term a	0.61	0.16	3.96	0.0003
The McKinnon 0.01 critical t-value for error correction term a is 3.33				
R^2	0.68			
Long term				
(Intercept) g_0	1.62	0.46	3.51	0.001
Economic policy mood g_1	1.88	0.39	4.80	2.2e−5
Competence Lab-Con g_2	1.11	0.08	14.38	2e−16
R^2	0.85			
Augmented Dickey-Fuller	−3.35 (lag order 3)			0.05

Note: Δ(Lab-Con) vote share $= b_0 + b_1 \Delta$ Economic policy mood $+ b_2 \Delta$ (Lab-Con) Competence $+ a$ ((Lab-Con) vote share $- g_0 - g_1$ Economic policy mood $- g_2$ (Lab-Con) Competence).

We expect government spending in the Netherlands to be highly responsive to economic policy mood, in line with the median voter theorem. We expect this to be the case regardless of which party leads the government. Table 5 displays the results for the Netherlands.

Our results for the Netherlands are in line with our expectations from the median voter theorem. Government spending is highly responsive to economic policy mood. In the full model (Model 2), the sum of the coefficients for the various lags of economic policy mood is 0.96. Not only is this statistically significant, but it is substantively large. This means that if economic policy mood moves one standard deviation to the left for 1 year, the government spending will increase a total of 0.96 percentage points over the next 4 years. Thus, if economic policy mood stays one standard deviation on the left (right) for several years, government spending as a proportion of GDP will rise (fall) by several percentage points. The effect on government spending of having economic policy mood one standard deviation on the right in the Netherlands is approximately the same as having a Conservative government in the United Kingdom.[15] Furthermore, this result is not the consequence of spurious correlation resulting from a common trend in the variables. The model is cointegrated—the values predicted by the model move up and down in parallel with the observed values.[16] However, having a Labor Prime Minister in the Netherlands does not have a statistically significant effect—the effect is substantively moderate, but considerably lower than the effect of policy mood. Once again, we can also run a model with just the most significant lag from the distributed model (this time 3 years), and it produces very similar results.

It is notable that the lag of economic policy mood that has the strongest effect is the 3-year lag. This may initially seem surprising, but actually makes a lot of sense given the style of policy-making in the Netherlands. Major policy change requires an extensive period of consultation and negotiation, often including parliamentary commissions and discussions with

TABLE 5 Distributed lag model of government spending in the Netherlands.

DV: Δ unemployment-adjusted nondefence government expenditure						
	Model 1			**Model 2**		
	Estimate	**Std. Error**	**Pr(>|t|)**	**Estimate**	**Std. Error**	**Pr(>|t|)**
(Intercept)	−0.67	0.17	0.001	−0.72	0.20	0.001
Economic policy mood$_{t-1}$				0.22	0.26	0.40
Economic policy mood$_{t-2}$				−0.14	0.30	0.64
Economic policy mood$_{t-3}$	**0.82**	0.18	0.001	**0.73**	0.30	0.02
Economic policy mood$_{t-4}$				0.16	0.24	0.51
Sum of lags				**0.96**	0.26	0.0005
Pre-1987	1.05	0.31	0.001	1.20	0.42	0.01
1987	4.04	0.82	0.001	4.14	0.91	9.4e−5
2009	3.25	0.78	0.001	3.27	0.82	0.0004
Labor PM$_{t-1}$	0.50	0.29	0.09	0.53	0.33	0.12
R^2	0.67			0.67		
Augmented Dickey–Fuller	−3.79 (lag order 3)		0.03	−3.56 (lag order 3)		0.05

the "social partners" (trades unions and employers' federation). This process may take several years.

6 | PROCESS TRACING AND DISCUSSION

In the previous section, we constructed econometric models of the relationship between economic policy mood and government spending. These models imply certain dynamics of adjustment between the two variables. In this section, we derive these dynamics and compare them to the actual development of public opinion and government spending, as well as tracing the policy changes and political decisions that produced them.

Our econometric model of the United Kingdom case implies an "overshooting" dynamic. Changes in government spending depend most on which party is in power, with public opinion only providing a modest "brake" on this. However, who is in power depends mostly on which party the electorate thinks is most competent, with preference over policy only having a minor effect. When a party is elected to government, we would expect it to move policy in its preferred direction (Labour increases government spending, while the Conservatives reduce it). As policy changes, public opinion moves rapidly in the opposite direction. However, if the public believes the opposition is incompetent, they may continue to elect the government even though they

now prefer the policies of the opposition. As a result government spending may be reduced or increased far more than the public wants, moving in the opposite direction to public opinion for considerable periods of time. Eventually the government becomes sufficiently unpopular that it is discredited and replaced, and the process repeats itself in the other direction.

Figure 5 shows how dramatically this overshooting dynamic works itself out in the United Kingdom. Government spending actually moves in the opposite direction to public opinion for most of the time period. Public opinion moves strongly to the right in the 1970s, reaching its extreme point at the time of the 1976 Sterling crisis, when the United Kingdom was forced to take IMF loans. This led to the election of a Conservative government led by Margaret Thatcher in 1979. This government reduced public spending as a proportion of GDP as it promised, in spite of an economic contraction in 1980 and 1981 that reduced GDP by 4%. However, these spending cuts led to public opinion moving rapidly to the left. Nevertheless, Conservatives governments continued to be elected because the public lacked faith in the competence of the Labour Party, which was also internally divided and facing competition for center-left votes from the Liberal-SDP Alliance. As a result, the Conservative government decreased public spending at an accelerating pace, even though public opinion now favored increased spending. Furthermore, the role of government was reduced in significant ways—state owned industries were privatized, public housing was sold off and the state-earning related pension scheme was largely dismantled before it came to maturity (Gamble, 1988; Schulze & Moran, 2007).

By 1990 economic policy mood was now two standard deviation units to the left. In this situation, the model predicts that the effect of left-wing public opinion exactly balances the effect of having a Conservative government, resulting in no change in government spending. This is broadly what happened in the 1990s. In 1990 Margaret Thatcher was replaced as Conservative leader and Prime Minister by John Major. Government spending under Major increased very slightly during the 1991 recession then moderated. Throughout this period, however, economic policy mood remained very left-wing.

After the election of the Labour government led by Tony Blair in 1997, the process repeated itself in the opposite direction. Admittedly the Blair government did not increase government spending as a proportion of GDP until 2001, having promised to honor the spending plans of the previous government. However, after 2001, Labour governments consistently increased spending, and public opinion steadily moved to the right. Nevertheless, a Labour government was re-elected in 2005, in spite of receiving only 35% of the vote, reflecting the electorate's low
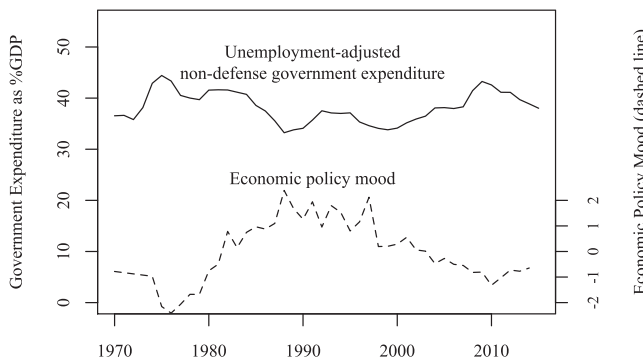

FIGURE 5 Government spending and economic policy mood in the United Kingdom.

evaluation of the competence of the Conservative opposition. By 2010 government spending had returned to similar levels as in the 1970s.

In the case of the Netherlands, the econometric model implies a very different dynamic of adjustment. In the Netherlands, government policy reacts very strongly to public opinion, but not to which party is leading the government. If economic policy mood is considerably to the right (the public demands lower government spending), then the government will cut spending. This in turn will lead to economic policy mood moving back to the center, as public demands for reduced spending are satisfied. Unlike the United Kingdom, we would not expect to see long periods of time when economic policy mood is either extremely left-wing or right-wing, but the government does not respond (or even moves in the opposite direction) because of its partisanship.

The pattern we observe in Figure 6 largely corresponds to these expectations. Policy mood in the Netherlands in the 1970s was generally left of center and there was a substantial increase in government spending. In the early 1980s there was a sharp movement of public opinion to the right, corresponding to the economic crisis of this period. In 1982, Ruud Lubbers replaced Dries van Agt as Prime Minister, although the government was still a coalition of the Christian Democratic Appeal (CDA) and the Liberals (VVD). Under this government there was a steady reduction of government spending, using the "salami principle," making many small incremental cuts to existing programs (Visser & Hemerijck, 1997, p. 135). As the thermostatic model would predict, these cuts in expenditure led to public opinion moving back to the center-left. The reductions in government expenditure came to a halt and in 1986 Lubbers declared that from now on there would be "peace on the social security front" (Green-Pederson, 2002).

The next episode of cutting government spending takes place in the 1990s. This coincides with a shift in economic policy mood to the right between 1991 and 1995. In 1991 the government—since 1989 a coalition of the CDA (still led by Lubbers) and the Labor Party (PvdA)—began a process of reforming the sickness and disability pay system. The process of building a consensus in favor of reform involved an all-parliamentary inquiry (the Buurmeijer Inquiry), which eventually led to legislation in 1994 that privatized the sickness insurance system (employers were made responsible for paying it) and substantially reformed long term disability insurance. By the mid-1990s this produced very large reductions in government spending. Following this, the economic policy mood moves back to the left, and government spending stabilizes and then rises in the 2000s, even before the economic crisis. Of course, as in
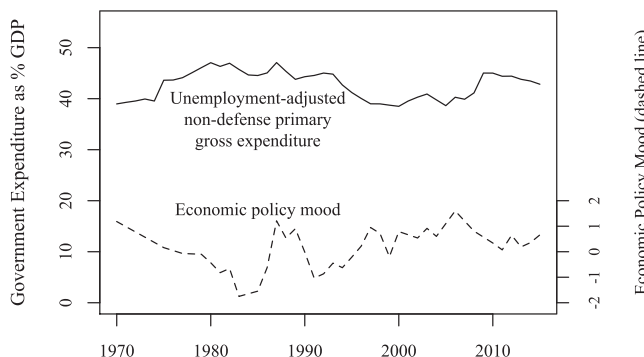

FIGURE 6 Government spending and economic policy mood in the Netherlands.

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the United Kingdom there is a large increase in government spending as a result of the banking crisis of 2008, and a period of gradual reduction following this.

It is notable that the largest changes in public opinion (1982, 1986, 1991) and the policy changes that accompanied them occurred between elections. Policy in the Netherlands seems very responsive to changes in public opinion between election, while policy in the United Kingdom does not. This is the opposite of the pattern predicted by Soroka and Wlezien (2015). Of course, we have already seen in the previous section that policy in the Netherlands responds more to public opinion than the identity of the government.

The corporatist system of interest intermediation in the Netherlands is clearly an important part of this story, but it cannot explain the pattern of adjustment we see in the absence of political choices. In the Netherlands corporatism exists very much "in the shadow of hierarchy," relying on the support of the government and consensual political system (Visser & Hemerijck, 1997). Trades unions are relatively weak (in the 1980s only a quarter of the workforce were unionized, and membership has declined since then) and rely on the government to pass "extension" laws that apply union contracts to non-unionized workers. Nevertheless, the story of corporatist adjustment fits the post-1982 retrenchment quite well. The unions, the employers' federation and the government negotiated the Wassenaar Accord in 1982, agreeing to a package of spending cuts and wage restraint. However, the disability and sickness pay reforms of the 1990s are harder to explain in corporatist terms. These reforms were carried out over the opposition of the trades unions and employers' federation. Indeed, the Buurmeijer Inquiry found that the trades unions and the employers had both abused the disability insurance system to externalize the cost of unemployment at the taxpayers' expense. The reforms could better be described as a political consensus to hold both corporatist partners to account (see Green-Pedersen, 2001; van Wijnbergen, 2002).

The behavior of the PvdA in the 1990s—when it participated in significantly reducing government spending and reforming the sickness and disability insurance systems—is especially interesting. This illustrates how a change in public opinion can be translated into a change in policy, even when there is considerable opposition to it from within the governing coalition. The reform of the disability and sickness system faced very strong opposition from within the trades unions and the PvdA (Visser & Hemerijck, 1997). However, the PvdA did not really have the ability to block changes to the welfare state, despite being part of the government. The CDA could always go back to a majority coalition with the (free-market liberal) VVD, so the median voter in parliament favored reform. Unable to block reform, the PvdA chose to participate in it, so that could at least influence its implementation. In exchange the PvdA and the labor movement did indeed receive important concessions. For example, the extension of union contracts to nonunion workers was applied to part-time workers, and social contributions were applied pro-rata (Visser & Hemerijck, 1997), which became increasingly important as part-time work became more common in the Netherlands. Inequality in the Netherlands did not increase in the 1990s (following only modest increases in the 1980s), even though significant cuts were made to the welfare state. This is in stark contrast with the United Kingdom, where inequality increased sharply in the 1980s (Atkinson & Salveda, 2005; Atkinson et al., 2017).

Although we find that government policy in the Netherlands is highly responsive to public opinion, this does not mean that public opinion determines policy independently of the rest of the political process. In a democracy, we would expect public opinion to be influenced by the political debate, in which the political parties play a leading role. We can see this in the welfare state reforms of the 1990s and the rightward movement in public opinion that accompanied it.

While the movement of public opinion to the right in the 1980s can be explained by the economic crisis, in the years 1991–1995 there was merely slow growth. However, the fact that all three main parties (including the strongly prowelfare state PvdA) argued that reform of the disability insurance system was necessary almost certainly had a role in moving public opinion in this period. As Cox (2001) argues, one reason welfare state reform happened in the Netherlands and not elsewhere was that elites were able to skilfully frame it as being unavoidable. Nevertheless, it is notable that it was necessary to build and maintain public support for welfare state reform to pass in the Netherlands, whereas in the United Kingdom it was possible to continue making radical changes even after public support had declined.

7 | CONCLUSION

We find very different patterns of policy adjustment to changes in public opinion in the Netherlands and the United Kingdom. In the Netherlands, there is a strong policy response to changes in public opinion, albeit with a few years lag. It appears that proportional elections, coalition bargaining and parliamentary negotiation provides a reliable transmission belt from public opinion to policy, as we would expect from Black's median voter theorem. However, changes in policy are not driven by who happens to be in government. In the United Kingdom we find a far more complex dynamic, even though elections usually determine who is in government directly without the need for coalition negotiations. Changes of government do indeed produce changes in policy, but who is in government depends less on the electorate's policy preferences than on their assessment of government competence. If the opposition is seen as incompetent, this can produce an "overshooting" dynamic where policy diverges from public opinion for long periods of time. The conditions of Downs' median voter theory are not met—vote choice does not depend only on the parties' policy positions, so the two parties do not converge on the position of the median voter—and a quite different dynamic is the result.

These results force us to rethink the mechanisms that produce responsive government. It is often assumed (at least in Anglo-Saxon countries) that democratic responsiveness means that the electorate has to "control" the government through elections. However, this is not the case in the Netherlands, except very indirectly. Elections determine who is in parliament, but who is in government depends on coalition negotiations. Nevertheless, the result of this process is responsive government. This is not at all surprising when we think through the logic of the bargaining process. The parliament in the Netherlands operates under majority rule with few checks and balances, so we would expect bargaining to produce a median voter result (or a multidimensional equivalent such as the uncovered set). As public opinion moves to the left or right, then so should the median in parliament, and with it government policy.

In the case of the United Kingdom, decisive elections and the alternation of power does not lead to responsive government. In fact, they positively seem to get in the way of it. Having a Labour government in power locks in increasing government spending, while Conservative government locks in public spending cuts, regardless of how public opinion changes in the meantime. This frequently generates an "overshooting" dynamic. A party can stay in power for several terms even after public opinion has moved against it, because the opposition has not yet rebuilt the credibility it lost in its last stint in office. During this period government policy may move a long way from what the public wants, leading to subsequent over-correction in the opposite direction. The argument that alternation of government produces accountability—the

usual justification for the Westminster system—loses a lot of its force if voters do not see the opposition as a competent, alternative government.

There is considerable literature in political economy that argues that countries with PR elections and coalition governments have a hard time enforcing fiscal discipline and enacting difficult reform because of collective action problems. Of course, our case study of the Netherlands is incompatible with this literature, but there is already plenty of comparative evidence showing that multiparty governments are in general quite capable of fiscal reform. Our study of the Netherlands points to a broader problem with this literature—it ignores public opinion. For example, it is argued that PR elections lead to higher government spending. However, political institutions like electoral systems cannot directly determine outcomes like the level of government spending. Rather they can only channel the demands of the public. We find that the political system in the Netherlands is broadly responsive, which mean that it can lead to either public spending going up or going down, depending on what the public wants.

DATA AVAILABILITY STATEMENT

The analysis in this paper is based on secondary data, all of which is publically available. We have provided replication datasets, which are available as supplementary information with this article.

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ENDNOTES

[1] Most of this literature relies on the left-right self-placement of respondents or measures inferred from the manifesto positions of the political parties. Rasmussen et al. (2018) is an exception to this, comparing public opinion on 20 policy measures to whether the measures were enacted. However, this study only has two cases with first-past-the-post elections (United Kingdom and France) and covers mainly social issues.

[2] It used to be argued that mathematical social choice theory showed that multidimensional competition produced chaotic results (notably Riker, 1982). However, more recent advances in social choice theory has shown that the bargained solution is likely to fall in the "uncovered set" (Miller, 1980), and that this will tend to be a relatively small, centrally located region (Bianco et al., 2004). While legislators may have some leeway to negotiate different outcomes, we would still expect large changes in public opinion to be translated into public policy.

[3] Given that the time between observations in public opinion data in Soroka and Wlezien (2015) is at best 5 years—greater than the time between elections—it is not possible for them to test these propositions.

[4] More precisely, cointegration requires that the residuals are stationary.

[5] Interest payments reflect past tax and spending decisions, and the interest rate faced by the country. Defense spending reflects external factors such as the international threat level, as opposed to internal political factors. Furthermore, preferences for defense spending follow a different political logic to other spending, in that political conservatives prefer often prefer higher defense spending.

[6] Total managed expenditure includes departmental expenditure limits (DELs) that have been allocated to Departments and Annually Managed Expenditure (AME) that is not controlled by government departments. See the Glossary in the Public Finances Data Bank: http://budgetresponsibility.org.uk/docs/dlm_uploads/PSF_aggregates_databank_September_2016.xls.

[7] We calculated nondefence primary gross government spending by subtracting defense spending and interest payments from gross government expenditure. (CPB Netherlands Bureau for Economic Policy Analysis, 2016 Appendix 08). We standardized all figures to the new EU methodology adopted in 1995, which resulted in a 6.6% increase in the GDP of the Netherlands. As a result, all quantities before 1995 measured as a proportion of GDP were divided by 1.0665. In addition, in 1995 annual subsidies to housing associations were bought out by a one-time transfer of 4.9% of GDP. We subtracted this sum from the spending for that year.

[8] We calculated unemployment adjusted government spending using the following methodology. First, we regressed unemployment on the level of unemployment-sensitive benefits. In the United Kingdom we measured this using data on working age benefits (Department of Work and Pensions, 2018). In the Netherlands, we used data on unemployment compensation, disability pay and other social security payments (but not pensions or survivor benefits) (CPB Netherlands Bureau for Economic Policy Analysis, 2016 Appendix 08). In the case of the Netherlands, we also included a dummy variable for post-1994 years and an interaction term, because of the major reforms to the disability pay system in the early 1990s. We then calculated unemployment adjusted government spending as follows: Unemployment-adjusted government spending = government spending − fitted value (unemployment sensitive benefits) + predicted value (unemployment sensitive benefits|unemployment at mean level). The regression equation for unemployment sensitive benefits for the United Kingdom was: Benefits = 2.5(0.15) + 0.13 (0.02) unemployment (standard errors in parentheses, $R^2 = .45$). The equation for the Netherlands was: Benefits = 6.4 (0.36) + 0.6 (0.05) unemployment − 1.6 (0.84) post-1994 − 0.25 (0.13) unemployment × post-1994 ($R^2 = 0.90$).

[9] Bartle et al. (2018) use the Stimson dyad-ratio algorithm to create a competence scale for each party from the various survey questions. A similar approach is also used by Green and Jennings (2012). We also use Bartle et al.'s measure of relative vote share, which also uses the dyad-ratio algorithm to correct for "house effects" (the tendency of different polling organizations to find different levels of support) in the data for voting intentions.

[10] The augmented Dickey–Fuller statistic is −3.49 (significant at 0.05 level) and the t value of the error correction term is 4.32, which exceeds the McKinnon 0.01 critical value of 4.28.

[11] The augmented Dickey–Fuller statistic is −3.94 (significant at 0.02 level) and the t value of the error correction term is 4.28, which exceeds the McKinnon 0.05 critical value of 3.43.

[12] This differs somewhat to the results in Bartle et al. (2018), which find that economic policy mood has no direct effect on policy. There are various modeling differences, but the most significant is that we only model from 1970, while Bartle et al.'s data goes back further. If we extend our data back to 1948, we can replicate Bartle et al.'s result of policy mood having no significant effect.

[13] The cointegration diagnostic of the model (Augmented Dickey–Fuller) is statistically significant, although only marginally so ($p = 0.07$).

[14] The augmented Dickey Fuller statistic is −3.35 (significant at 0.05 level) and the t value of the error correction term is 3.96, which exceeds the McKinnon 0.01 critical value of 3.33.

[15] The coefficient for the sum of lags of economic policy mood in the Netherlands is 0.96, while the intercept for Model 2 in the United Kingdom (Table 4) is −0.89.

[16] The augmented Dickey–Fuller statistic is −3.56 (significant at 0.05 level).

REFERENCES

Achen, C. (2005). Let's put garbage-can regressions and garbage-can probits where they belong. *Conflict Management and Peace Science*, 22, 327–339.

Alesina, A., & Perotti, R. (1995). Fiscal expansions and adjustments in OECD countries. *Economic Policy*, 10(2), 207–248.

Alesina, A., & Perotti, R. (1997). Fiscal adjustments in OECD countries: Composition and macro-economics effects. *IMF Staff Papers 44*, 210–244.

Alt, J., Crewe, I. M., & Sarlvik, B. (1976). *British election study, February 1974; Cross-section survey*. UK Data Archive. https://www.britishelectionstudy.com

Atkinson, A. B., Hassell, J., Morelli, S., & Roser, M. (2017). *The chartbook of economic inequality*. INET Oxford Working Paper. https://www.chartbookofeconomicinequality.com

Atkinson, A. B., & Salveda, W. (2005). Top incomes in the Netherlands and the United Kingdom over the 20th century. *Journal of the European Economic Association*, *3*, 883–913.

Bartle, J., Dellepiane-Avellaneda, S., & McGann, A. J. (2018). Policy accommodation versus electoral turnover: Policy representation in Britain, 1945–2015. *Journal of Public Policy*, *39*(2), 235–265.

Beck, N. (1989). Estimating dynamic models using Kalman filtering. *Political Analysis*, *1*, 121–156.

Bianco, W., Jeliazkov, I., & Sened, I. (2004). The uncovered set and the limits of legislative action. *Political Analysis*, *12*(3), 256–276.

Black, D. (1948). On the rationale of group decision making. *Journal of Political Economy*, *56*, 23–34.

Blais, A., & Bodet, M. (2006). Does proportional representation foster closer congruence between citizens and policy makers? *Comparative Political Studies*, *39*, 1243–1262.

Clarke, H. D., Sanders, D., Stewart, M. C., & Whitely, P. F. (1996). *Political choice in Britain*. Oxford University Press.

Clarke, H. D., Sanders, D., Stewart, M. C., & Whitely, P. F. (2009). *Performance politics and the British voter*. Cambridge University Press.

Comanor, W. (1976). The median voter rule and the theory of political choice. *Journal of Public Economics*, *5*, 169–177.

Cox, R. H. (2001). The social construction of an imperative: Why welfare reform happened in Denmark and the Netherlands but not in Germany. *World Politics*, *53*(9), 463–498.

CPB Netherlands Bureau for Economic Policy Analysis. (2016). *Macro economic outlook (MEV) 2017*. CPB Netherlands Bureau for Economic Policy Analysis.

Department of Work and Pensions. (2018). *Benefit expenditure and caseload tables*. https://www.gov.uk/government/collections/benefit-expenditure-tables

Downs, A. (1957). *An economic theory of democracy*. Harper & Brothers.

Enders, W. (2004). *Applied econometric time series*. John Wiley & Sons.

Engle, R. F., & Granger, C. W. J. (1987). Co-integration and error correction: Representation, estimation, and testing. *Econometrica*, *55*(2), 251–276.

Ericsson, N. R., & MacKinnon, J. G. (2002). Distributions of error correction tests for cointegration. *Econometrics Journal*, *5*(2), 285–318.

Erikson, R. S., MacKuen, M., & Stimson, J. A. (2002). *The macro polity*. Cambridge University Press.

ESS ERIC. (2002). *ESS round 1: European social survey round 1 data (2002). Data file edition 6.6*. NSD—Norwegian Centre for Research Data, Norway—Data Archive and distributor of ESS data for ESS ERIC. https://doi.org/10.21338/NSD-ESS1-2002. https://www.europeansocialsurvey.org/

Gamble, A. (1988). *The free economy and the strong state: The politics of thatcherism*. Macmillan.

Golder, M., & Stramski, J. (2010). Ideological congruence and electoral institutions. *American Journal of Poitical Science*, *54*, 90–106.

Grant, T., & Lebo, M. J. (2016). Error correction methods with political time series. *Political Analysis*, *24*, 3–30.

Green, J., & Jennings, W. (2012). Valence as macro-competence: An analysis of mood in party competence evaluations in Great Britain. *British Journal of Political Science*, *42*, 311–343.

Green-Pedersen, C. (2001). The puzzle of Dutch welfare state retrenchment. *West European Politics*, *24*(3), 135–150.

Green-Pederson, C. (2002). *The politics of justification: Party competition and welfare-state retrenchment in Denmark and the Netherlands from 1982 to 1998*. Amsterdam University Press.

Grofman, B. (2004). Downs and two-party convergence. *Annual Review of Political Science*, *7*, 25–46.

von Hagen, J., & Harden, I. (1995). Budget processes and commitment to fiscal discipline. *European Economic Review*, *39*, 771–779.

Hauptmeier, S., Heipertz, M., & Schknecht, L. (2006). *Expenditure reform in industrialised countries: A case study approach*. European Central Bank Working Paper Series. European Central Bank.

ISSP Research Group. (1986). *International social survey programme: Role of Government I—ISSP 1985*. GESIS Data Archive, Cologne. ZA1490 Data file Version 1.0.0. https://doi.org/10.4232/1.1490

Iversen, T., & Soskice, D. (2006). Electoral institutions and the politics of coalitions: Why some democracies redistribute more than others. *American Political Science Review*, *100*(2), 165–181.

Kittel, B. (2006). A crazy methodology? On the limits of macro-quantitative social science research. *International Sociology*, *21*, 647–677.

Knight, J., & Johnson, J. (2011). *The priority of democracy: Political consequences of pragmatism*. Princeton University Press.

Lijphart, A. (1999). *Patterns of democracy: Government forms and performance in thirty-six countries*. Yale University Press.

Lindvall, J. (2017). *Reform capacity*. Oxford University Press.

MacKinnon, J. G. (1994). Asymptotic distribution functions for unit-root and cointegration tests. *Journal of Business & Economic Statistics*, *12*(2), 167–176.

McDonald, M., & Budge, I. (2005). *Elections, parties, democracy: conferring the median mandate*. Oxford University Press.

McGann, A. J. (2014). Estimating the political center from aggregate data: An item response theory alternative to the stimson dyad ratios algorithm. *Political Analysis*, *22*, 115–129.

McGann, A. J., Dellepiane-Avellaneda, S., & Bartle, J. (2019). Parallel lines? Policy mood in a plurinational democracy. *Electoral Studies*, *58*, 48–57.

McGann, A. J., & Latner, M. (2013). The calculus of consensual democracy: Rethinking patterns of democracy without veto players. *Comparative Political Studies*, *46*(7), 823–850.

Middendorp, C. P. (1975). C*ulturele veranderingen in Nederland 1970–1985 en 1975–1980, cumulatief—CV'70'85 en CV'75'80*. DANS. https://doi.org/10.17026/dans-2ah-wwx9

Miller, N. (1980). A new solution set for tournaments and majority voting: Further graph-theoretical approaches to the theory of voting. *American Journal of Political Science*, *24*(1), 68–96.

NatCen Social Research. (2017). *British social attitudes survey, 2015*, 3rd ed. UK Data Service. SN: 8116. https://doi.org/10.5255/UKDA-SN-8116-3

Office of Budget Responsibility. (2016). *Public finances databank*. http://budgetresponsibility.org.uk/docs/dlm_uploads/PSF_aggregates_databank_September_2016.xls

Persson, T., & Tabellini, G. E. (2003). *The economic effects of constitutions*. MIT Press.

Powell, G. B. J. (2000). *Elections as instruments of democracy: Majoritarian and proportional visions*. Yale University Press.

Powell, G. B. J. (2011). Party polarization and the ideological congruence of governments. In R. Dalton, & C. Anderson (Eds.), *Citizens, context, and choice: How context shapes citizens' electoral choices*. Oxford University Press.

Rasmussen, A., Reher, S., & Toshkov, D. (2018). The opinion-policy nexus in Europe and the role of political institutions. *European Journal of Political Research*, *58*(2), 412–434.

Riker, W. (1982). *Liberalism against populism: A confrontation between the theory of democracy and the theory of social choice*. Freeman.

Schofield, N., & Sened, I. (2005). Modeling the interaction of parties, activists and voters: Why is the political centre so empty? *European Journal of Poiltical Research*, *44*, 355–390.

Schulze, I., & Moran, M. (2007). United Kingdom: Pension politics in an adversarial system. In E. Immergut, K. Anderson, & I. Schultze (Eds.), *The handbook of West European pension politics* (pp. 49–96). Oxford University Press.

Sociaal en Cultureel Planbureau (SCP). (2010). *Continu onderzoek burgerperspectieven 2010—COB2010*. DANS. https://doi.org/10.17026/dans-xj2-b5py

Sociaal en Cultureel Planbureau (SCP) & Centraal Bureau voor de Statistiek (CBS). (2008). *Culturele veranderingen in Nederland 2008—CV'08*. DANS. https://doi.org/10.17026/dans-z2s-f36j

Social Surveys (Gallup Poll) Limited. (1970). *British gallup poll CQ 720*. 1970 Roper #31072382, Version 3. Cornell University, Roper Center for Public Opinion Research. https://doi.org/10.25940/ROPER-31072382. https://ropercenter.cornell.edu/ipoll/study/31072382

Soroka, S. N., & Wlezien, C. (2010). *Degrees of democracy: Politics, public opinion, and policy*. Cambridge University Press.

Soroka, S. N., & Wlezien, C. (2015). The majoritarian and proportional visions and democratic responsiveness. *Electoral Studies*, *40*, 539–547.

Stichting Kiezersonderzoek Nederland (SKON), Centraal Bureau voor de Statistiek (CBS), Kolk, H. vd, Tillie, J. N., Erkel, P. v, Velden, M. vd, & Damstra, A. (2012). *Dutch parliamentary election study 2012— DPES 2012*. DANS. https://doi.org/10.17026/dans-x5h-akds

Stimson, J. A. (1991). *Public opinion in America: Moods, cycles, and swings*. Westview Press.

Visser, J., & Hemerijck, A. (1997). *"A Dutch miracle": Job growth, welfare reform and corporatism in the Netherlands*. Amsterdam University Press.

Whitely, P. F., Clarke, H. D., Sanders, D., & Stewart, M. C. (2013). *Affluence, austerity and electoral change in Britain*. Cambridge University Press.

van Wijnbergen, C. (2002). *Imposing consensus: State steering of welfare and labor market reforms in continental Europe* (Ph.D). Northwestern University, Evanston, IL.

Wlezien, C. (1995). The public as thermostat—Dynamics of preferences for spending. *American Journal of Political Science*, 39(4), 981–1000.

Wlezien, C., & Soroka, S. N. (2012). Political institutions and the opinion-policy link. *West European Politics*, 35(6), 1407–1432.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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