OPINION REPRESENTATION AND POLICY FEEDBACK:
CANADA IN COMPARATIVE PERSPECTIVE*

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ABSTRACT

Work exploring the relationship between public opinion and public policy over time has largely been restricted to the US. A wider application of this line of research can provide valuable insights into whether and how representation varies across political systems, however. This paper takes a step in this direction using a new body of data on public opinion and government spending in Canada. Analyses reveal that the Canadian public notices and responds (thermostatically) to changes in public spending in particular domains, and also that Canadian policymakers represent these public preferences in spending. The extent and nature of public responsiveness and policy representation varies across domains, however: The relationships are more pronounced in certain domains; they also are more ‘specific’ in some domains and more ‘global’ in others. The findings generally accord with the results of similar work in the US and UK, although the details differ in important ways. Indeed, the differences are strongly suggestive about the structuring role of institutions.
Perhaps the primary concern of empirical democratic theory is the relationship between public preferences and public policy. Scholars have stressed the importance of ‘responsive rule’ – the correspondence between citizens’ preferences and government actions – in democratic governance (see, e.g., Pitkin 1967; Dahl 1971; Saward 1994). Yet scholars also have questioned whether citizens are sufficiently informed and/or reactive enough to play a role governing the state (Plato’s Republic; Mill 1861; Lippmann 1925; Schumpeter 1950; Converse 1964; Page and Shapiro 1992; Dahl 1998). This work highlights the importance of the interrelationships between public opinion and policy, both from opinion to policy and from policy to opinion itself. It implies that those interested in studying democracy should be concerned with policy representation—whether and how policy follows public preferences—and public responsiveness—whether preferences react to policy as well as to real-world developments.

There already is a large and growing body of work on the correspondence between public opinion and policy behaviour (e.g., Miller and Stokes 1961; Weissberg 1976; McCrone and Kuklinski 1979; Monroe 1979; Bartels 1991; Page and Shapiro 1992; Hartley and Russett 1992; Erikson, Wright, and McIver, 1993; Goggin and Wlezien, 1993; Jacobs 1993; Stimson, MacKuen, and Erikson 1995; Wlezien 1996a; Wood and Hinton-Anderson 1998; Hill and Hurley 1998; Smith 1999; Sharpe 1999; Erikson, MacKuen, and Stimson 2002; Soroka 2003; Eichenberg and Stoll 2003; Wlezien 2004; Soroka and Wlezien N.d.).¹ And work on ‘thermostatic’ models of the opinion-policy relationship suggest not just that policymakers respond to the public, but that the public adjusts its preferences over time in reaction to policy change (Wlezien 1995, 1996a; Soroka and Wlezien N.d.). This work is important. Narrowly conceived, it suggests that policymakers are attentive to public preferences and that the public is aware of and reactive to policy change, at least in certain domains. More broadly conceived, it offers empirical evidence on the nature and quality of representative democracy.
Unfortunately, longitudinal empirical research on the opinion-policy link has for the most part been restricted to the United States (US).\(^2\) A wider application of this line of research could provide valuable insights into how representation varies across political systems and issue areas, however. Indeed, work using an opinion-policy congruence approach has already flagged some potentially significant differences across domains and, to a lesser extent, countries (Brooks 1987, 1990; Monroe 1979, 1998; Petry 1999 N.d.; Powell 2000; see also Miller and Stokes 1963). Such differences in representation across countries may be linked to institutional factors. (So too may differences in public responsiveness, though this has received even less attention in past work.) There is reason to suspect that electoral institutions are important, for instance (Lijphart 1999; Powell 2000). Government institutions also may matter, such as the relative power of the cabinet versus the legislature. Highlighting differences in the opinion-policy link and connecting these with institutional differences may offer crucial information on the comparative effectiveness of democratic institutions and policymaking structures.

The current paper takes another step towards a comparative study of the dynamic interrelationships between public preferences and budgetary policy. Using a new body of data on public opinion and government spending, we extend our own previous research on the dynamics of spending opinion and policy in the US and UK to Canada. Specifically, we explore (1) public responsiveness—the degree to which the public responds ‘thermostatically’ to public expenditures, and (2) policy representation—the extent to which budgetary decisions reflect public preferences for spending. In the course of our analyses, we also consider the nature of responsiveness and representation, that is, whether the public and policymakers respond to information that is specific to particular domains or more ‘global’, across different domestic domains.

The results are interesting, especially in comparative context. As in the US and UK, the Canadian public appears to respond thermostatically to changes in public spending, and Canadian policymakers appear to respond to public preferences. The underlying details are not the same,
however, and the pattern of results across the three countries actually is suggestive about the structuring role of institutions. Before telling you where we end up, let us show you how we get there. We begin with our theoretical model of opinion and policy.

**THE THERMOSTATIC MODEL OF OPINION AND POLICY**

The representation of public opinion in policy presupposes that the public notices and responds to what policymakers do. Without such responsiveness, policymakers would have little incentive to represent what the public wants. Indeed, public preferences would contain little meaningful information. There not only would be a limited basis for holding politicians accountable; expressed preferences would be of little use even to those politicians motivated to represent the public for other reasons.

A responsive public behaves much like a thermostat (Wlezien 1995). That is, the public adjusts its preferences for ‘more’ or ‘less’ policy in response to what policymakers do. When policy increases (decreases), the preference for more policy decreases (increases). For expository purposes, the public can be viewed as a collection of individuals distributed along a dimension of preference for policy activity, say, spending on defence. This characterization is not meant to imply that individuals have specific preferred levels of spending in mind; rather, it is intended to reflect the fact that some people want more than others. The public preference can be represented by the median along the dimension, which implies a certain ‘ideal’ level of defence spending.

Now, if the level of policy differs from the level the public prefers, the public favours a corresponding change in policy—basically, either more or less. If the preferred level is greater than policy itself, the public favours more spending than currently is being undertaken. If policymakers respond, and provide more—but not too much—for defence, then the new policy position would more closely correspond to the preferred level of spending. And if the public is indeed responsive to what policymakers do, then the public would now not favour as much more activity on defence. It might still favour more, on balance, but not as substantially as in the prior
period; if policymakers overshoot the public's preferred level of spending, it would favour less.

In effect, following the thermostatic metaphor, a departure from the favoured policy temperature, which itself can change, produces a signal to adjust policy accordingly and once sufficiently adjusted the signal stops.\(^4\)

These expectations can be expressed formally. The public’s preference for ‘more’ policy—its relative preference, \(R\)—represents the difference between the public’s preferred level of policy \(P^*\) and the level it actually gets \(P\):

\[
R_t = P^*_t - P_t
\]  

Thus, as the preferred level of policy or policy itself changes, the relative preference signal changes accordingly. The public is expected to respond currently to actual policy change when put into effect (at \(t\)). This is straightforward, at least in theory. It is less straightforward in practice.

Most importantly, we typically do not directly observe \(P^*\). Survey organizations typically do not ask people how much policy they want. Instead, these organizations ask about relative preferences, whether we are spending ‘too little,’ whether spending should ‘be increased,’ or whether we should ‘do more.’ This, presumably, is how people think about most policies. (Imagine asking people how much health or education spending they want.) The public preference, however defined, also is necessarily relative. This actually is quite convenient, as we can measure the thermostatic signal the public sends to policymakers. Because we must rely on proxies for \(P^*\)—and also because metrics of each variable in the model will differ—it is necessary to rewrite the model of \(R_t\) as follows:

\[
R_t = a_0 + \beta_1 P_t + \beta_2 W_t + e_t
\]  

where \(a_0\) and \(e_t\) represent the intercept and the error term, respectively, and \(W\) designates the indicators of the public’s preferred level of policy. Notice that levels of relative preferences are expected to be associated with current (time \(t\)) levels of policy; if the thermostatic model applies, the coefficient \((\beta_1)\) relating the two is expected to be less than 0.
Now, if policymakers are responsive to these public preferences, changes in policy ($\Delta P$) will be associated with lagged levels of the public’s relative preference ($R$), as follows:

$$\Delta P_t = a_1 + \beta_3 R_{t-1} + \beta_4 Z_{t-1} + \mu_t,$$

(3)

where $a_1$ and $\mu_t$ represent the intercept and the error term, respectively, and $Z$ represents the set of other determinants of policy. The coefficient $\beta_3$ captures responsiveness, where the effect of preferences on policy is independent of other factors; if the coefficient is greater than 0, policy ‘responds’ to preferences. Notice that the change in expenditure for fiscal year $t$ is modelled as a function of net support in year $t-1$. This specification is not meant to imply that policies do not respond to current opinion; rather, it is intended to reflect the reality of budgetary decision-making, which largely happens over the course of the previous fiscal year (see Wlezien 1996b; Wlezien and Soroka 2003). Thus, the specification captures responsiveness to opinion when most budgetary decisions are made.

These expectations are very general ones and we do not expect the model to apply in all policy domains in all countries. Indeed, public and policy responsiveness is likely to reflect the political importance (or ‘salience’) of the different domains, if only due to possible electoral consequences. Following Wlezien (2004), we might expect the pattern of representation to be symmetric to patterns of public responsiveness: where the public notices and responds to policy in a particular domain, policymakers will notice and respond to public preferences themselves; where the public does not respond to policy, policymakers will not represent public preferences. This structure fits very well in the US. It fits less well in the UK, however. There, we observe pervasive and specific public responsiveness and more limited and general policy responsiveness (Soroka and Wlezien N.d.). Now, let us see how things work in Canada.
THE DATA

Relative Preferences for Policy

Environics has asked the Canadian public about their preferences for spending relatively frequently using a similar question to that used in the US and UK. The question is as follows:

Keeping in mind that increasing services could increase taxes, do you think the federal government is spending too much, just the right amount, or should be spending more on each of the following… [i.e., defence]?

Respondents are asked about spending in up to 18 categories in a given survey. Those that have been asked consistently for an extended period and for which budgetary data are readily available are: defence, welfare, education, health care, environmental protection, and transportation. Following previous research, we create percentage difference measures by subtracting the percentage of people who think we are spending ‘too much’ from the percentage of people who think we are spending ‘too little’ in each domain. The resulting measures of ‘net support’ thus capture the degree to which the public wants more or less spending over time—they capture both direction and magnitude. We rely on results from Environics for all years in which data are available; for FY1996-97, we ‘link’ results from a similar question asked by Pollara. Complete details are provided in the Appendix.

Budgetary Policy

Unlike the US federal government, the Canadian government does not provide data on appropriations of budget authority at any level of aggregation. What is readily available are data on actual expenditures. And although expenditures surely are important, they are not policy per se. That is, elected politicians have only limited control over what is actually spent, which may reflect things that they can’t anticipate or manage.7

We nevertheless are thankful that reliable data are available from Statistics Canada for expenditures by function back to FY1988-89. Most importantly for our purposes, these data are
functionally consistent over time—yearly changes reliably reflect changes in functional spending rather than changes in functional definitions.\(^8\)

Another now-discontinued Statistics Canada matrix contains functional spending data from FY1965-66 to FY1994-95. These data are also functionally consistent over time, but use slightly different definitions than the current series.\(^9\) Directly merging the data without any manipulation would create a strange punctuation in FY1988-89 for many series. Accordingly, in lieu of a single matrix that covers the entire period we are studying we merge the two datasets as follows: the % difference from FY1988-89 to FY1987-1988 is calculated based on the old series, and this % change is then applied to the new series. This is repeated back to FY1984-85, the first year for which we have public opinion data. The pre-FY1988-89 data are used only intermittently in forthcoming analyses, due to the (un)availability of public preferences data; these analyses should be regarded as preliminary, however, given our estimation of spending series for this early period.

A second issue in measuring budgetary policy in Canada is whether to use federal spending or consolidated federal, provincial and local spending. The survey questions we rely on for public preferences ask about the federal government; we nevertheless rely on consolidated spending measures for all domains except defence, where all spending is federal. Our use of consolidated spending is based on measurement. The nature of funding in most major policy domains in Canada is such that federal spending estimates are quite poor measures of federal budgetary policy. More precisely, federal spending estimates do not include general- or combined-purpose transfers from the federal to provincial governments. This is a particular problem in social policy domains, where a vast majority of federal funding occurs via transfers such as the Canada Health and Social Transfer (CHST) – transfers that are entirely excluded from federal spending figures. As a consequence, budgetary policy in these domains can only be accurately measured using consolidated spending data. Our data thus reflect a combination of federal and provincial policymaking, which is important to keep in mind in the analyses that follow.
Consolidated spending is available for all functions and some subfunctions from FY1988-89 to FY2001-02, and for all functions before FY1988-89. Some of our spending series are based on general functional classifications, and so can be estimated using the procedure outlined above from FY1984-85 to the present. Other series rely on data derived from a combination of functional and subfunctional estimates. These data are available only back to FY1988-89. The exception is the (subfunctional, federal) defence spending series, which was made available to us by Statistics Canada, and which runs from FY1965-66 to the present. Complete details of our spending data are available in the appendix.

A Basic Analysis of Structure

The resulting spending and preferences data are illustrated in Figure 1. In Figure 1A, we can see that spending on different functions cluster together, at least in levels. A lot more is spent on some programs—health, welfare, and education—than others—defence, the environment, and transportation. The former also show more variance over time, and the latter change more deliberately. Spending in all of the domains does tend to trend upward over time, documenting a well-known pattern of government growth. Most programs do grow faster in some periods than in others, however; in some periods, spending actually shrinks, at least in real dollars. Preferences for spending (in Figure 1B) exhibit a similar structure. Indeed, preferences for more spending tend to be higher for the exact same set of programs, namely, health, welfare, and education. Preferences in all of the various domains – including defence – track together over time. Indeed, preferences appear to be surprisingly ‘global’ by comparison with the US and UK.

Factor analyses reported in Table 1 confirm these patterns and provide additional detail. The analysis of expenditures in Table 1A reveals a guns-butter tradeoff, consistent with what we find in the US and UK (Wlezien 2004; Soroka and Wlezien N.d.). That is, defence spending is negatively related to spending in the domestic domains, which tend to load (positively) together.
in the first factor. The one domestic exception is transportation, for which we have no perfect explanation, e.g., it is not ‘social’ spending but then again neither is spending on the ‘environment,’ which loads positively. Regardless, the pattern does describe the realities of policymaker behaviour, at least in a very general way, during the period.

Interestingly, the analysis of preferences in Table 1B shows that the guns-butter tradeoff evident in spending is not apparent in public preferences. Instead, preferences in all domains are positively related over time. This may be a function of the time period for which we have opinion data. Regardless, the pattern indicates that preferences for spending in all domains tend to move in the same liberal-conservative direction over time during the period since 1989. There thus appears to be a certain ‘global’ movement of opinion that may drive politicians' behavior in various policy domains (Stimson, et al. 1995). The inter-correlations, even across the purely ‘social’ domains, are much larger than what we have observed in the US and UK (Wlezien 2004; Soroka and Wlezien N.d). This is of real consequence for our analysis, as we will see.

It also is clear from the factor loadings that the structure of preferences for spending is not perfectly unidimensional. That is, each of the preference series exhibit variance over time that is specific to the particular domains. By inference from the factor loadings, the minimum proportion of variance that is specific ranges from 14% in the case of transportation to 82% in the case of the environment. The median is 22%. This also is of consequence for the analysis that follows, as it makes possible specific policy responsiveness in each of the different spending domains.

**The Analysis**

**Public Responsiveness**

Recall that the thermostatic model implies that the public’s relative preference for policy \( R \) is the difference between the public’s preferred level of policy \( P^* \) and policy \( P \) itself. Now, we
have available measures of $R$ and $P$, at least in six spending domains in Canada. We do not, however, have measures of $P^*$ in these domains, as noted earlier in the paper. It thus is necessary to rely on proxies. Previous research is a useful guide.

We know that public preferences for defence spending in the US closely follow perceived variation in national security over time. Specifically, preferences have reflected ‘likes’ and ‘dislikes’ of the Soviet Union/Russia (Wlezien 1995, 1996a). There is reason to expect a similar pattern to hold in the Canada. The problem is that we do not have comparable measures of likes/dislikes of Russia in this country. However, if the measure from the US provides a reliable indication of the actual security threat from the Soviet Union during the period, or broad public perceptions of that threat, then it should work equally well in the Canada. Thus, we use the US measure here. Our measure of Net Dislike represents the percentage of Americans who dislike Russia minus the percentage who like the country. The data are drawn from the General Social Survey. Other sources of threat may be more relevant during the period, including that associated with September 11, 2001, and its aftermath. This is difficult to measure in any general way but nevertheless easy to control for in the particular years.

Identifying specific variables to indicate underlying preferences in each of the different domestic domains is much less straightforward. We nevertheless know that preferences in these areas do exhibit common movement, and previous research indicates that it follows variation in economic security over time. It is not clear exactly what effect the economy has, however, as the findings of different studies differ quite a lot: economic security is positively related to spending opinion in some studies (Durr 1992) and negatively in others (Erikson, et al. 2002). The studies do rely on different measures – business expectations and unemployment rates, respectively. Still other research on public opinion relies on the sum of unemployment and inflation rates (Franklin and Wlezien 1997). Following our work in the UK, we adopt the latter measure, commonly known as the ‘misery index.’ Specifically, the measure used here represents the average misery index in the current fiscal year.
Following the theoretical model in equation 2, the dependent variables used in the analysis represent the levels of net support for spending. To preserve precious degrees of freedom, we impute values when opinion data is missing using a straight linear interpolation. This allows preference time series of up to 17 years each, and has relatively little consequence for the general pattern of results; it really only serves to increase the estimated standard errors.\textsuperscript{14} The measures are regressed on corresponding levels of spending (in billions of 1992 dollars) and the proxies for the public’s preferred level of spending.\textsuperscript{15} A linear counter variable also is included to account for any trend in the underlying preferred levels of spending over time, other things being equal (Wlezien 1995). When significant, lagged net support also is included in the models.\textsuperscript{16} The results of estimating separate models of spending preferences for the eight domains are shown in Table 2.

[Table 2 about here]

Results in the first column indicate that defence spending preferences in Canada do closely follow the measures of net dislike of Russia in the US. The coefficient actually is larger than what we observe in the US and twice the estimated effect in the UK. It thus appears that the public’s underlying preferred levels of defence spending in Canada, as in the US and UK, appear to change in understandable ways.\textsuperscript{17} In direct contrast with what we see in the US and UK, however, the coefficient for spending actually is positive but not significant. This implies that the Canadian public does not notice and respond to what policymakers do. Part of the problem may be extremely high levels of collinearity among the independent variables, where the bivariate correlations with spending are .73 and .83. Excluding the counter variable, the significant positive coefficient for which makes little sense without negative feedback, shifts things substantially.\textsuperscript{18} As can be seen in the second column, the coefficient for spending now is negative and significant, if only modestly so. At the same time, the estimated effect of net dislike is much lower and no longer significant. The results imply that the defence spending domain is only of modest importance to the Canadian public.\textsuperscript{19}
Results for the domestic domains are more supportive of the thermostatic model. To begin with, note that effects of the misery index are consistently negative, if only significant for health and environment. When the misery index increases, the public favours less spending. This is exactly the opposite relationship of what we found in the UK, where the public wants governments to spend more during periods of recession. It is to some extent consistent with what we see in the US, however (Wlezien 1996a). 20

Most importantly for our analysis, it appears in Table 2 that the public adjusts its preferences for more domestic spending in response to spending itself. That is, when spending goes up (down), preferences for ‘more’ spending go down (up), other things being equal. This is the crux of the thermostatic model. The negative coefficient on spending obtains in all domains, although its size and significance varies substantially. Only for welfare and environment can we conclude with much confidence that the public responds to changes in government spending over time (although analyses below reveal responsiveness in health as well).

The welfare spending coefficient in the third column of Table 2 implies that a one billion dollar increase in spending produces a 1.2 point decrease in net support for more welfare spending. The environment spending coefficient implies a much greater effect of an identical increase in spending, a 6.3 point drop in preferences. These differences actually are quite understandable given the differences in the size and variance of spending in the two domains. For example, a one-standard deviation (4.6 billion dollar) increase in welfare spending leads to a 5.7 point decrease in preferences, on average, roughly the same as a one standard deviation (or 1.1 billion dollar) increase in environment spending, which produces a 6.7 point drop in preferences.

In the other domains, the evidence of public responsiveness is more tenuous. This is in sharp contrast with what we observe in the US and especially the UK, where public responsiveness is pervasive. It nevertheless is clear that the Canadian public does respond
thermostatically to changes in policy. In a forthcoming section, the extent and nature of this responsiveness will become clearer still. First, however, let us examine policy representation.

**Policy Representation**

Thus far, we have seen that the public responds to spending in Canada, although the responsiveness varies in significant ways. This is of obvious importance. However, we also want to know whether and to what extent politicians represent these preferences in policy itself. For this analysis, we build directly on recent ‘political’ models of policy change in the US (Stimson, MacKuen, and Erikson 1995; Wlezien 1996a, 2004; Smith 1999) and UK (Soroka and Wlezien N.d.), which include measures of (relative) public preferences and party control of government.

Following equation 3, the dependent variables used in the analyses represent the first differences of spending (in billions of 1992 dollars) for each of the six spending categories. Recall that these changes in spending are expected to be positively related to the levels of net support for spending, which capture the public’s relative preferences. Politicians are expected to respond currently. In the budgetary context, this means that change in spending for fiscal year $t$ follows the level of net support in year $t-1$, when the bulk of spending decisions for fiscal year $t$ are made.

The party control variable is fairly standard and takes the value ‘1’ under Liberal federal governments and ‘0’ under Conservative federal governments. The measure thus taps the levels of partisan control, which might appear to be inconsistent with the (differenced) dependent variables. Given that budgetary policy feeds back in ‘thermostatic’ fashion on public preferences, however, the specification actually is theoretically implied (Wlezien 2004). It also is supported by separate diagnostic analyses. As mentioned above, using consolidated spending complicates somewhat the use of party control variables. Party control of the federal government is likely not an ideal predictor of party influence on consolidated (federal, provincial and municipal)
expenditures. It is the best we can do, however, and we include it here to test the extent to which federal partisanship is related to combined federal and provincial budgetary policy.\textsuperscript{21}

In addition to preferences and party control variables, the model includes a measure of net public debt (in billions of 1992 dollars). This is included based on the expectation that Canadian governments will tend to reduce spending in reaction to accumulated deficits, following comparative work by Blais, Blake, and Dion (1993, 1996) and our own work in the UK (Soroka and Wlezien N.d.). That debt is included in levels rather than changes suggests a particular kind of reaction—when the national debt remains high, governments are expected to continue to reduce spending, or at least not increase spending as much. In line with our spending estimates, we use net federal debt for defence and net consolidated debt otherwise. Including other ‘baseline’ variables such as unemployment and inflation does not meaningfully alter the results, except for welfare spending, where unemployment is a significant predictor.\textsuperscript{22} As for our models of preferences, we include the lagged level of spending when its effect is statistically significant (also see note 16). Otherwise, the analysis that follows largely relies on a simple model that includes measures of public preferences for spending, the party control of government, and the level of public debt.

[Table 3 about here]

Results of estimating the model for the six budgetary domains are shown in Table 3. The control variables act about as we would predict. The debt coefficient is negative in all domestic domains, although it is statistically significant only twice—for welfare and education. Liberal control of (federal) government is much less consistent in its effect, as we might expect given the use of consolidated spending figures. The party control of government appears to have made little difference, other things being equal.

Our central interest is in the public preferences variables. In the first column notice that the link between defence spending preferences and actual spending is modest: The coefficient is positive but just misses conventional levels ($p = .10$) of significance. There thus is a strong hint
of representation in the Canadian defence spending domain. Although this in clear contrast with the US and UK, where responsiveness is highly reliable, it fits nicely with the analysis of Canadian public preferences, which shows only weak responsiveness to spending. Indeed, the result is exactly as we might expect.

For the other domains, the preference coefficient is positive in every case except transportation, and statistically significant twice, for welfare and health. A one-point increase in net preferences is associated with an average increase in consolidated welfare spending of about 348 million (1992) dollars and to a smaller 80 million (1992) dollar increase in consolidated health spending. Given that levels of spending in the two domains are about equal on balance, the differences are quite meaningful.

But why welfare and health? What about the other four domains? One possibility is that welfare and health are the more salient domains. This clearly seems the case for welfare, where we have seen clear evidence of public responsiveness. In this domain, therefore, responsiveness and representation are symmetrical. It is less clear for health care, where we have not yet observed public responsiveness, but see the analyses to come. The environment domain is more troublesome. Here we see striking public responsiveness that is unmatched by policy representation.

**On the Nature of Responsiveness and Representation in Different Domains**

Thus far, we have assumed that representation (and public responsiveness) is specific to domains. That is, politicians are expected to respond to public opinion within particular areas. This reflects the traditional characterization of representation (see, e.g., Monroe 1979; Bartels 1991; Page and Shapiro 1992; Hartley and Russett 1992; Geer 1996; Sharpe 1999). It may be, however, that representation is more general (see Stimson, et al. 1995; Wlezien 2004). We have already seen that preferences for spending and actual spending in the different domestic programs move together over time. Perhaps policymakers notice this common or ‘global’ movement and
not the specific movement unique to the different domains. Perhaps the public likewise notices the changes in spending for the different programs taken together and not the changes that are particular to each domain. It is important to consider these possibilities.

One way to address these issues is to separate out the specific component of spending preferences (and spending itself) in the different areas from the common component that is shared across these domains. For expository purposes, let us focus on spending. The most direct measure of the common variance of spending comes from factor analysis of the five domestic domains. This gives us the domestic (‘global’) component. The specific component is simply the variance that is unique to each domain. To create a common metric, the domestic component of spending represents the predicted values from the pooled regression of by-domain spending on the underlying factor score. The domain-specific component consists of the residuals from this regression, i.e., the actual value of spending minus the domestic component.

By substituting the ‘domestic’ and ‘specific’ components of spending into the models of preferences, we can directly assess the focus of public responsiveness (Wlezien 2004). If the public is responding to spending in particular domains, preferences will be about equally related to both components of spending; if the public is responding to domestic spending alone, preferences only will be related to the common component. An identical set of expectations applies on the spending side, of course. That is, we can substitute the ‘domestic’ and ‘specific’ components of preferences into the models of spending and directly assess the focus of policy responsiveness. The results of analysis of preferences and spending are described in Tables 4 and 5, respectively.

[Tables 4 and 5 about here]

Consider first the results of analyses of public preferences in Table 4. Here we can see that the coefficients for the ‘global’ component are negative and statistically significant in all domains but transport. The public thus is much more responsive than analysis using by-domain measures of spending would lead us to believe. That is, there is evident responsiveness for health and
education, where we did not see responsiveness in the preceding analysis. This helps make more understandable the fairly strict parallelism of preferences over time. The coefficients do differ, however, and especially in the case of the environment, and this is because the metrics relating spending and preferences differ. For the environment, the variance (and mean) of the global spending measure is much smaller than for the other domains, approximately one-ninth as much on average. Thus, as noted earlier, a much larger change in ‘welfare’ spending is required to generate the same public response as a change in spending on the ‘environment.’

The coefficient for the specific component is significant only for welfare, however. As the global and specific coefficients in this domain also are not distinguishable ($F_{1,9} = .11, p = .75$), we can conclude that the Canadian public notices welfare spending, which is exactly what we see in the US. In the health and education domains, the coefficients for the specific components are positive. In the environment domain, the coefficient is appropriately negative but highly unreliable. With the important exception of welfare, the public in Canada appears to notice only very general patterns of social spending, more so than in the US. Let us see how this fits with the spending side.

The results of estimating the parallel models of spending change are displayed in Table 5. What we see here is only partly consistent with what we saw in the preceding table. There is clear, specific responsiveness in the welfare domain. The effects of both global and specific preferences are positive and significant; indeed, the coefficients are virtually identical. This fits perfectly with the analysis of public preferences. There also is clear global responsiveness in the health domain. The effect of the global preference is positive and significant and the effect of the specific preference is tiny, and irretrievable. This also is consistent with the analysis of public preferences. There is no evidence of representation in the other domains, however. This is in contrast with our analysis of public preferences for education and environmental spending, which revealed strong global public responsiveness. Canadian policymakers thus appear dependent – at least reliant – on public opinion in some domains and largely independent in others.
The Domestic Domains Taken Together

Although the analysis shows that public responsiveness and policy representation vary across domains, it is useful to consider what happens when we aggregate across the set of social programs. It has, after all, become quite commonplace to lump programs together in analyses, especially of representation (e.g., Erikson, Wright, and McIver 1993; Stimson, MacKuen, and Erikson 1995; Wood and Hinton Andersson 1998), and doing so may have consequences for our analyses. Doing so may actually reveal additional feedback and/or representation. That is, it may be that the different policy domains are substitutable to the public (policymakers), so that responsiveness (representation) is collective. Were this the case, responsiveness and representation would be more pronounced when the domains are taken together than when taken separately (Wlezien 2004).

To consider the effects of aggregating, the basic model is estimated using total domestic spending and average net support in the five domestic domains. The results of this analysis are shown in Table 6. The first column contains results from an aggregate model of domestic spending preferences – our model of public responsiveness. These results essentially summarize the results of the by-domain analyses in Table 2. The ‘domestic’ spending preference moves alongside economic conditions: When the misery index increases, the Canadian public favours less spending in these domains. The domestic preference also reflects spending itself. A one-billion (1992) dollar increase in spending across the seven domestic domains produces a .3 point decrease in average net preferences for spending in these domains.25

The second column of Table 6 shows the results of the aggregate spending model – our model of policy representation. These results also summarize the by-domain analyses, from Table 3. A one-point increase in net preferences leads to an average increase in aggregate domestic spending of 282 million (1992) dollars. This is less than we would expect based on the by-domain coefficients. The sum of the coefficients for the five domains in Table 3 is .437,
which implies that a one-point change in preferences in each domain would produce a 400-500 million (1992) dollar increase in spending. Thus, aggregating does not clearly add anything to what we already knew from Table 3; if anything, it would appear to subtract.26

The results for the other variables are less straightforward. The estimated effect of party control is appropriately positive and highly unreliable, which is expected given the mixed effects from the results in Table 3. The effect of debt is appropriately negative, consistent with the by-domain analyses, but nevertheless insignificant. This is somewhat surprising. It also is deceiving, as high collinearity ($r=.89$) between government partisanship and debt inflates the standard errors.27 Including partisanship and debt in the model individually provides some clarity. In column 3, where the debt variable is excluded from the model, we see that partisanship has a significant effect on government spending. The negative coefficient for Liberal government is not what one would expect, however – all other things equal, Liberal governments should spend more than Conservative governments. In column 4, where the party variable is excluded, we can see that the public debt coefficient is both significant and appropriately negatively signed. The adjusted $R^2$-squareds also indicate that this model outperforms the others. It appears that it was looming debt, not government partisanship, that mattered for domestic spending during this period.28 Of course, as we have seen, public opinion did too.

**DISCUSSION AND CONCLUSIONS**

What we have observed in Canada both comports with and conflicts with what we observe in other countries. To begin with, consider the fundamental similarity: As in the US and UK, the thermostatic model works in Canada. We observe that the public adjusts its relative preferences for spending in response to spending itself—there is negative feedback. We also observe that spending itself follows changes in preferences over time—there is representation. In effect, democracy works, at least in a very general sense.
There are important differences in the details, however. First, public responsiveness is less pronounced in Canada than in the US and UK. Responsiveness is spottier and also more general, particularly by comparison with the UK. We have suggested elsewhere that the particularly pronounced feedback in the UK may partly be a product of that country’s unitary system, which makes the locus of responsibility for policy comparatively clear and reliable (Soroka and Wlezien N.d.). The Canadian findings are perfectly consistent with this conjecture, that is, given the country’s very high level of federalism. The vertical division of powers increases the number of different governments making policy, and in theory makes less clear what ‘government’ is doing (see, e.g., Downs, 1999). As effective public responsiveness depends on an accurate signal of what government is doing, it may be that the relationship between spending and opinion is mitigated in policy domains for which multiple governments have responsibility. This may make the apparently only very global responsiveness in health and education in Canada more understandable.

Second, policy representation in Canada is less pronounced than in the US and more like what we observe in the UK. We have suggested that the differences between the US and UK may reflect the horizontal separation of powers (Soroka and Wlezien N.d.). That is, we might expect that policymakers are less representative in parliamentary systems than in presidential systems, reflecting the relative imbalance of power between the executive and legislature. In parliamentary systems, the cabinet exercises substantial control over policy decisions in all domains. The legislature not only does not propose; it cannot effectively amend what the cabinet does propose. We thus might expect governments in parliamentary systems to be less reliably responsive to the public. This is what we observe in the UK and Canada.

We of course cannot be sure about these explanations. After all, what we have provided here is a third case. Only when our analyses encompass a larger and more wide-ranging set of countries can we really sort out how and why opinion-policy linkages vary. We do now know
quite a lot, however. Most importantly, we know that the thermostatic model works in at least three different countries.
Appendix. Data Sources

**Government Expenditures**

Complete descriptions of functions and subfunctions are available in Statistics Canada, *Financial Management System (FMS) 2002*. Series were transformed into constant 1992 Canadian dollars using the deflator in CANSIM series V735319. Brief descriptions of the series follow.

**Defence**: Subfunction 12.01, National Defence. A series that is functionally consistent from FY1965-66 was made available by Statistics Canada. All spending is by the federal government.

**Welfare**: Subfunction 15.01, Social Assistance. Includes income maintenance, social security, family allowances and miscellaneous social services. Consolidated expenditures available from FY1988-99; federal spending accounts for between 75 and 90% of consolidated spending.

**Education**: Function 16, Education. Includes elementary and secondary education, and retraining services. Consolidated expenditures estimated from 1980-81; from FY1988-89, federal spending accounts for between 6 and 12% of consolidated spending.

**Health**: Function 14, Health. Includes hospital care, medical care, preventative care and other health services. Consolidated expenditures estimated from 1980-81; from FY1988-89 to 1995-96, federal spending accounts for between 15 and 20% of total spending; following the establishment of CHST (FY1996-97), federal spending accounts for about 2% of consolidated spending.

**Environmental Protection**: Function 18, Environment. Includes water purification and supply, pollution control, and other environmental services. Consolidated expenditures estimated from 1980-81; from FY1988-89 to 1992-93, federal spending accounts for about 10% of consolidated spending; following the Green Plan (FY1993-94), federal spending accounts for about 16% of consolidated spending.
Transportation/Infrastructure: Function 13, Transportation and Communication minus federal expenditures on subfunction 13.07, Telecommunications (provincial expenditures on subfunction 13.07 are unavailable). Includes air transport, road transport, public transit, rail transit, water transit, etc. Consolidated expenditures available from FY1988-99; federal spending declines steadily from 25 to 10% of total expenditures.

Public Preferences

Series on net public preferences for spending are drawn from Environics’ Focus Canada omnibus surveys, usually in the 3rd quarter of the current fiscal year. Environics did not ask these questions in FY1996-97, so this missing data is filled in using results from Pollara. The Pollara question is not preceded with the caveat “Keeping in mind that increasing services could mean increasing taxes…” As a consequence, Pollara net preferences are consistently higher than Environics net preferences. Predictably, the two series move together longitudinally (see Figure A1), so we use the Pollara data to estimate the missing value in the Environics series, at least in those series where Pollara has equivalent spending domains (defence, welfare, health care, environmental protection, and transportation).

[Figure A1 about here]
NOTES

1 Also see Burstein’s (2003) and Weakliem’s (2003) reviews of the literature.

2 There are some exceptions. See, especially, Eichenberg and Stoll’s (2003) analysis of the defence spending and opinion in different countries.

3 This discussion closely follows Wlezien (1995: 981-983).

4 This conceptualization of public preferences has deep roots in political science, including Easton’s (1965) classic depiction of a political system and Deutsch’s (1963) models of ‘control.’

5 This does not mean that politicians actually respond to changing public preferences, for it may be that they and the public both respond to something else. All we can say for sure is that the coefficient ($\beta_3$) captures policy responsiveness in a statistical sense, that is, whether and the extent to which public preferences directly influence policy change, other things being equal.

6 We can explicitly incorporate salience ($S$) into our model as follows:

$$\Delta P_t = \rho + \beta_3 S_{t-1}R_{t-1} + \beta_4 W_{t-1} + \mu_t,$$

where $S$ ranges between 0 and 1. Here the effect of opinion on policy depends on the level of salience. This follows Franklin and Wlezien (1997); also see Jones (1994) and Soroka (2003).

7 Using expenditures thus biases analyses against finding opinion representation and policy feedback itself. See Wlezien (1996a) and Wlezien and Soroka (N.d.).

8 This was not the case in the UK, for example; our analyses in that country required that we create entirely new estimates of spending by function.

9 There are minor changes in functional definitions, and also in the definition of total government expenditures. That said, the differences in spending estimates are relatively small. For a complete description of the differences between the old and new CANSIM matrices, see Statistics Canada (2002).

10 Because some of our preferences series do not begin until that year, this factor analysis only includes data since 1989, and it is entirely possible that this period—at the Cold War, and
during a period of economic boom—shows a very different relationship between defence and domestic preferences than earlier periods.

11 As the factors are based on analysis that includes preferences in each of the domains, these estimates clearly are conservative ones. Also note that the specific movement in preferences is not mere sampling error. Given the frequencies and sample sizes of the actual polls, the amount of observed variance that is due to sampling error is 3-4 percent on average, and no higher than 6 percent (welfare). See Heise (1969).

12 The measure works very well in the UK (Soroka and Wlezien N.d.).

13 The original decision was based on theoretical grounds—that the measure provides a good indication of the direction and impact of economic change—and empirical analyses of the various measures.

14 More powerful techniques for imputing missing data are not appropriate here—or even possible in some cases—given the relatively short length of our time series.

15 Using a first-difference specification produces similar results, though ones that are less robust, partly owing to missing data.

16 That is, lagged net support is included for statistical reasons only – to capture correlation among the residuals. Where there is no statistical reason to include this lag, it is dropped. Note also that Dickey-Fuller tests indicate that the preference series exhibit stationary tendencies, which is exactly as we expect given the thermostatic model. That is, preferences represent the difference between what the public wants and what the public gets, both of which are, in theory, integrated. If this is true, and if policymakers represent preferences over time, then preferences are stationary by definition, i.e., the linear combination of two cointegrated series. See Wlezien (2000).

17 Note also that preferences for more defence spending increased sharply after September 11th.

18 Positive trend without negative feedback would imply that preferences for more spending keep
increasing over time, which is impossible.

19 This is consistent with some previous research (Nevitte and Gibbins 1986).

20 Separate diagnostic analyses reveal that estimating the separate effects of the two components of misery – unemployment and inflation – offers little additional information.

21 We tested additional measures of the partisan composition of provincial governments, including the mean partisanship score for provincial dummy variables where Liberal, NDP and Bloc governments were lumped together, and a version where these provincial partisanship dummies were weighted by the provinces’ average yearly shares of total provincial expenditures. These measures were not statistically significant and did not have any consistent, discernable effects on the other estimated parameters. These specifications all are far less than perfect of course, but still about the best we can do without valid and reliable measures of spending (and opinion) by province.

22 This is exactly as we expect given the automatic nature of many welfare entitlements. It also was not possible to neatly isolate and subtract out entitlement funding, in contrast with the US.

23 And note that even minimal adjustment for sampling error boosts significance across the threshold.

24 For instance, the differences in standardized effects for the two domains are only slightly less pronounced: For welfare, a one-standard deviation (or 9.1-point) increase in preferences leads to a 3.2 billion dollar increase in welfare spending; for health, a one-standard deviation (17-point) increase leads to a 1.4 billion dollar increase in spending.

25 This is a slightly smaller level of responsiveness than we would expect based solely on the analyses in Table 2, though this is not entirely clear from the by-domain results. The total spending figures conceal important differences in the levels and, more importantly, the annual changes in spending differ across domains. A one-billion dollar change in our measure of domestic spending does not come equally from the five domains, but instead is more likely in
welfare and health and education. In order to draw strict comparisons with by-domain analyses, we must weight the coefficients in Table 2. Doing so, which is not straightforward, indicates that estimated responsiveness to aggregate domestic spending is slightly less than we would expect based on evident by-domain responsiveness. Also see note 24.

26 This is to some extent deceiving, as the results of the aggregate model are not directly comparable to the results of the by-domain analyses. That is, aggregate domestic spending preferences reflect the different variances of preferences in the particular domains. Thus, a one-unit change in aggregate preferences does not represent a one-unit change in all of the particular domains. Taking the variances into account predictably reduces the difference in estimated representation. Also see note 25.

27 The collinearity is understandable given that the move from Conservative to Liberal rule coincided with a move towards balanced budgets.

28 Recall that the weakness of the partisanship variable here is not surprising, given that our dependent variable is consolidated (federal and provincial) spending.

29 For a very useful fiscal perspective, see Joumard and Kongsrud (2003).

30 See Bagehot (1867) and Jennings (1959) for traditional statements and Laver and March (1996) for a more modern one, but especially see Tsebelis (2002).

31 It can decline to approve government policies. This obviously is – or can be – a very big check on government if it takes the form of a no-confidence vote. Undertaking such a vote, after all, requires that governing party legislators are willing to face election.
REFERENCES


**Figure A1.** Evironics and Pollara net preferences data on welfare
Figure 1A. Spending, by function

Figure 1B. Net Preferences, by function
Table 1A. Factor analysis, spending

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defence</td>
<td>-.774</td>
<td>.453</td>
</tr>
<tr>
<td>Education</td>
<td>.906</td>
<td>.371</td>
</tr>
<tr>
<td>Environment</td>
<td>.824</td>
<td>.230</td>
</tr>
<tr>
<td>Health</td>
<td>.839</td>
<td>-.296</td>
</tr>
<tr>
<td>Transportation</td>
<td>-.819</td>
<td>.457</td>
</tr>
<tr>
<td>Welfare</td>
<td>.666</td>
<td>.671</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>3.916</td>
<td>1.143</td>
</tr>
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N=14.
Results are based on a principal components factor analysis, unrotated.

Table 1B. Factor analysis, preferences

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defence</td>
<td>.887</td>
<td>.135</td>
</tr>
<tr>
<td>Education</td>
<td>.837</td>
<td>-.433</td>
</tr>
<tr>
<td>Environment</td>
<td>.427</td>
<td>.854</td>
</tr>
<tr>
<td>Health</td>
<td>.880</td>
<td>-.418</td>
</tr>
<tr>
<td>Transportation</td>
<td>.928</td>
<td>.130</td>
</tr>
<tr>
<td>Welfare</td>
<td>.886</td>
<td>.141</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>4.089</td>
<td>1.147</td>
</tr>
</tbody>
</table>

N= 14.
Results are based on a principal components factor analysis, unrotated.
### Table 2. Public responsiveness, by function

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Defence</th>
<th>Welfare</th>
<th>Health</th>
<th>Education</th>
<th>Environment</th>
<th>Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spending (billions $1992)^c_1</td>
<td>3.968</td>
<td>-3.626*</td>
<td>-1.242**</td>
<td>- .377</td>
<td>-.520</td>
<td>-6.265**</td>
</tr>
<tr>
<td></td>
<td>(3.337)</td>
<td>(1.835)</td>
<td>(.482)</td>
<td>(1.109)</td>
<td>(.637)</td>
<td>(2.545)</td>
</tr>
<tr>
<td>Misery Index$_t$</td>
<td>———</td>
<td>———</td>
<td>-.191</td>
<td>-4.481*</td>
<td>-1.966</td>
<td>-3.770**</td>
</tr>
<tr>
<td></td>
<td>(1.577)</td>
<td>(2.353)</td>
<td>(1.247)</td>
<td>(1.606)</td>
<td>(1.425)</td>
<td></td>
</tr>
<tr>
<td>Net US Dislike of Russia$_t$</td>
<td>.514**</td>
<td>.095</td>
<td>———</td>
<td>———</td>
<td>———</td>
<td>———</td>
</tr>
<tr>
<td></td>
<td>(.187)</td>
<td>(.107)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counter</td>
<td>3.277**</td>
<td>———</td>
<td>1.110</td>
<td>.174</td>
<td>-.033</td>
<td>-.240</td>
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<tr>
<td></td>
<td>(1.282)</td>
<td>(1.777)</td>
<td>(1.847)</td>
<td>(.887)</td>
<td>(.757)</td>
<td>(.788)</td>
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<tr>
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<td>-5.477**</td>
<td>-7.038</td>
<td>35.007**</td>
<td>43.490**</td>
<td>49.049***</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Observations</th>
<th>17</th>
<th>18</th>
<th>14</th>
<th>14</th>
<th>14</th>
<th>17</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>R²</td>
<td>.931</td>
<td>.890</td>
<td>.878</td>
<td>.871</td>
<td>.879</td>
<td>.858</td>
<td>.882</td>
</tr>
<tr>
<td>Adj R²</td>
<td>.900</td>
<td>.854</td>
<td>.823</td>
<td>.813</td>
<td>.826</td>
<td>.811</td>
<td>.830</td>
</tr>
</tbody>
</table>

| Durbin's h   | .084 | .078 | -.708 | -1.01 | -.056 | .137 | -.056 |

Cells contain OLS regression coefficients with standard errors in parentheses. All variables are mean-centred.

- $^a$ Model includes lagged dependent variable (at $t-1$).
- $^b$ Includes a dummy variable for the post-9.11 period.
- $^* p < .10$; $^{**} p < .05$; $^{***} p < .01$. 
Table 3. Policy representation, by function

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Defence</th>
<th>Welfare</th>
<th>Health</th>
<th>Education</th>
<th>Environment</th>
<th>Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Functional Preferences&lt;sub&gt;t-1&lt;/sub&gt;</td>
<td>.026</td>
<td>.348***</td>
<td>.080***</td>
<td>.029</td>
<td>.007</td>
<td>-.021</td>
</tr>
<tr>
<td>(0.015)</td>
<td>(0.077)</td>
<td>(0.022)</td>
<td>(0.038)</td>
<td>(0.008)</td>
<td>(0.049)</td>
<td></td>
</tr>
<tr>
<td>Public Debt (billions $1992)&lt;sub&gt;t-1&lt;/sub&gt;</td>
<td>-.681</td>
<td>-.018*</td>
<td>-.004</td>
<td>-.014**</td>
<td>-.001</td>
<td>-.013</td>
</tr>
<tr>
<td>(0.670)</td>
<td>(0.009)</td>
<td>(0.007)</td>
<td>(0.006)</td>
<td>(0.001)</td>
<td>(0.009)</td>
<td></td>
</tr>
<tr>
<td>Government (Lib=1)&lt;sub&gt;t-1&lt;/sub&gt;</td>
<td>.003</td>
<td>2.642</td>
<td>-.244</td>
<td>1.092</td>
<td>-.052</td>
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</tr>
<tr>
<td>(0.003)</td>
<td>(2.304)</td>
<td>(1.575)</td>
<td>(1.427)</td>
<td>(.380)</td>
<td>(1.575)</td>
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</tr>
<tr>
<td>Constant</td>
<td>.167</td>
<td>-1.626</td>
<td>.139</td>
<td>-.624</td>
<td>.025</td>
<td>-1.490</td>
</tr>
<tr>
<td>(0.343)</td>
<td>(1.457)</td>
<td>(0.949)</td>
<td>(0.864)</td>
<td>(.195)</td>
<td>(1.017)</td>
<td></td>
</tr>
</tbody>
</table>

Observations | 17 | 13 | 14 | 14 | 17 | 13 |
R<sup>2</sup>  | .215 | .878 | .623 | .547 | .218 | .231 |
Adj R<sup>2</sup> | .034 | .816 | .510 | .410 | .037 | -.025 |
DW                | 1.984 | 2.537 | 2.686 | 1.785 | 1.645 | 2.435 |

Cells contain OLS regression coefficients with standard errors in parentheses. All variables are mean-centred.

<sup>a</sup> Federal spending for defence, and Consolidated spending otherwise.
<sup>b</sup> The model includes a control for the level of unemployment.
<sup>c</sup> Federal debt for defence, and consolidated debt otherwise.

*p < .10; ** p < .05; *** p < .01.
Table 4. Assessing the focus of public responsiveness, by function

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Welfare</th>
<th>Health</th>
<th>Education</th>
<th>Environment</th>
<th>Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(.964)</td>
<td>(1.018)</td>
<td>(1.082)</td>
<td>(5.606)</td>
<td>(3.049)</td>
</tr>
<tr>
<td>Specific Spending (billions $1992) (_t)</td>
<td>-1.778*b</td>
<td>1.606</td>
<td>.618</td>
<td>-1.301</td>
<td>-2.427</td>
</tr>
<tr>
<td></td>
<td>(1.932)</td>
<td>(1.138)</td>
<td>(1.734)</td>
<td>(5.556)</td>
<td>(1.756)</td>
</tr>
<tr>
<td>Misery Index (_t)</td>
<td>1.855</td>
<td>-2.114</td>
<td>1.663</td>
<td>-2.269</td>
<td>-.400</td>
</tr>
<tr>
<td></td>
<td>(1.604)</td>
<td>(1.941)</td>
<td>(1.734)</td>
<td>(1.736)</td>
<td>(1.596)</td>
</tr>
<tr>
<td>Counter</td>
<td>2.548**</td>
<td>4.324**</td>
<td>3.896***</td>
<td>1.238</td>
<td>1.093</td>
</tr>
<tr>
<td></td>
<td>(1.183)</td>
<td>(1.772)</td>
<td>(1.133)</td>
<td>(.894)</td>
<td>(1.160)</td>
</tr>
<tr>
<td>Constant</td>
<td>-19.700*</td>
<td>-23.737</td>
<td>33.169</td>
<td>35.468**</td>
<td>9.605</td>
</tr>
</tbody>
</table>

Observations 14 14 14 14 14
R\(^2\) .813 .926 .808 .934 .913
Adj R\(^2\) .730 .893 .723 .893 .859
DW 1.609 2.449 1.458 -.430*c 2.588

Cells contain OLS regression coefficients with standard errors in parentheses. All variables are mean-centred.

* \( p < .10 \); ** \( p < .05 \); *** \( p < .01 \).

* Results based on an estimated model that includes a lagged dependent variable.

* The coefficients for the global and specific components are not significantly different (\( F_{1,9} = .11, p = .75 \)).

* As the model contains a lagged dependent variable, the statistic is Durbin’s h.
Table 5. Assessing the focus of policy representation, by function

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Preferences t-1</td>
<td>.351***</td>
<td>.092***</td>
<td>.040</td>
<td>-.020</td>
<td>-.012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.092)</td>
<td>(0.027)</td>
<td>(0.048)</td>
<td>(0.021)</td>
<td>(0.050)</td>
<td></td>
</tr>
<tr>
<td>Specific Preferences t-1</td>
<td>.341**</td>
<td>.015</td>
<td>-.012</td>
<td>-.004</td>
<td>.048</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.132)</td>
<td>(0.079)</td>
<td>(0.107)</td>
<td>(0.018)</td>
<td>(0.088)</td>
<td></td>
</tr>
<tr>
<td>Public Debt (billions $1992)t-1</td>
<td>-.018</td>
<td>-.001</td>
<td>-.012</td>
<td>-.003</td>
<td>-.013</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.007)</td>
<td>(0.008)</td>
<td>(0.002)</td>
<td>(0.009)</td>
<td></td>
</tr>
<tr>
<td>Government (Lib=1) t-1</td>
<td>2.567</td>
<td>.145</td>
<td>1.012</td>
<td>.293</td>
<td>2.631</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.675)</td>
<td>(1.663)</td>
<td>(1.503)</td>
<td>(1.460)</td>
<td>(1.601)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-1.457</td>
<td>-.009</td>
<td>-.667</td>
<td>-.177</td>
<td>-1.619</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.658)</td>
<td>(1.081)</td>
<td>(0.996)</td>
<td>(0.296)</td>
<td>(1.033)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Observations</th>
<th>13</th>
<th>14</th>
<th>14</th>
<th>14</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>R²</td>
<td>.878</td>
<td>.651</td>
<td>.555</td>
<td>.399</td>
<td>.307</td>
</tr>
<tr>
<td>Adj R²</td>
<td>.790</td>
<td>.495</td>
<td>.357</td>
<td>.132</td>
<td>-.039</td>
</tr>
<tr>
<td>DW</td>
<td>2.547</td>
<td>2.325</td>
<td>1.875</td>
<td>2.298</td>
<td>2.369</td>
</tr>
</tbody>
</table>

Cells contain OLS regression coefficients with standard errors in parentheses. All variables are mean-centred.
* p < .10; ** p < .05; *** p < .01.

a Federal spending for defence, and Consolidated spending otherwise.
b The model includes a control for the level of unemployment.
c Federal debt for defence, and consolidated debt otherwise.
Table 6. Responsiveness & representation, domestic functions combined

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Preferences, (^a)</th>
<th>Changes in Spending (billions $1992), (_t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Spending (billions $1992), (_t)</td>
<td>-.327** (.125)</td>
<td>---</td>
</tr>
<tr>
<td>Misery Index, (_t)</td>
<td>-1.994** (.865)</td>
<td>---</td>
</tr>
<tr>
<td>Counter</td>
<td>.427 (.551)</td>
<td>---</td>
</tr>
<tr>
<td>Net Preferences (_{t-1})</td>
<td>---</td>
<td>.282** (.100)</td>
</tr>
<tr>
<td>Public Debt (billions $1992), (_t)</td>
<td>---</td>
<td>-.028 (.019)</td>
</tr>
<tr>
<td>Party in Government, (_t)</td>
<td>---</td>
<td>.277 (3.662)</td>
</tr>
<tr>
<td>Constant</td>
<td>26.851*** (5.315)</td>
<td>-.140 (2.321)</td>
</tr>
</tbody>
</table>

| | Observations | 14 | 13 | 13 | 13 |
| | R\(^2\) | .959 | .774 | .721 | .774 |
| | Adj R\(^2\) | .941 | .699 | .665 | .729 |
| | DW | -.781\(^b\) | 2.158 | 2.559 | 2.185 |

Cells contain OLS regression coefficients with standard errors in parentheses. All variables are mean-centred.

* p < .10; ** p < .05; *** p < .01.

\(^a\) Model includes lagged dependent variable.

\(^b\) As the model contains a lagged dependent variable, the statistic is Durbin's h.