

All pain, no gain:
The asymmetric relationship between economic conditions and
incumbent support in Canada and the United States.¹

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Abstract: The human tendency to respond more strongly to negative rather than positive stimuli is well documented in the field of psychology. Despite some important early work, this pervasive feature of human information processing has not been fully incorporated into existing models of political opinion formation. This paper explores the degree to which citizens demonstrate a greater proclivity to punish incumbents for policy failures than reward them for successes. Drawing on analyses of the dynamics of U.S. presidential approval and the electoral fortunes of incumbent parties in Canadian federal elections, the paper provides evidence that citizens are in fact considerably more responsive when economic times are good than when they are bad. These results suggest that studies that ignore this unique but pervasive psychological trait may well produce misleading conclusions about the dynamics of democratic accountability.

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The tendency for individuals to be more sensitive to negative than positive stimuli is well established in the study of psychology and figures prominently in many psychological theories of human cognition and behavior (Taylor 1991; Lewicka et al 1992; Cacioppo & Berntson 1994; Baumeister et al 2001; Rozin and Royzman 2001). More specifically, people tend to react more strongly to stimuli with a negative valence than they do to stimuli equal in magnitude but positive in valence. For example, people will tend to be more displeased with a day 10 degrees colder than the seasonal average than they are pleased by a day 10 degrees warmer. The psychological literature suggests that this ‘positive-negative asymmetry’ (PNA) affects human behavior and information processing in a variety of ways. In a review of the psychological studies, Rozin and Royzman cite studies finding evidence of a negativity bias in physiological arousal, sensation and perception, attention and salience, learning, motivation, memory, impression formation, and attributional activity (Rozin and Royzman 2001).² Put simply, the positive-negative asymmetry, is no minor or occasional quirk of human psychology.

Despite the wealth of psychological evidence that demonstrates the pervasive and substantive importance of the PNA, attention to this central feature of human psychology within political science has been scattered and fleeting. Beyond motivating the claim that negative political messages should exert more substantial effects than positive communications, this asymmetry in human information processing is largely absent from most political behavior research. The limited theoretical impact of the PNA is perhaps

² In a separate review Baumeister and his colleagues sought to identify the conditions under which individuals are more sensitive to positive, rather than negative, stimulus but abandon this effort upon failing to identify more than a handful of such instances (Baumiester et al, 2001). For additional reviews of this literature see Taylor 1991, Cacioppo and Bernston 1994, Peters and Czapinski 1990.

even more surprising given the attention paid to this concept in early empirical studies of public opinion (Campbell et al 1960, Mueller 1973, Bloom and Price 1975, Kernell 1977, Lau 1982 & 1985). For the most part, however, these studies have not had a lasting impact on how scholars understand politics.³ Given the pervasive nature of this bias, additional work that better incorporates this feature of human cognition into our existing theories of political behavior and that elaborates the political implications of this bias is very much in order.

This paper presents preliminary results from a broader project designed to enhance our understanding of the manner and extent to which the ‘positive-negative asymmetry’ influences how citizens form politically relevant opinions. Given the pervasive nature of this asymmetry (which I alternatively label the ‘negativity bias’) there is good reason to suspect it affects a host of different political attitudes including party identification, turnout decisions, political satisfaction, political participation and so forth. One particularly intriguing avenue for investigation is the ultimate effect that this trait of information processing among individual citizens has on how elites arrive at policy decisions. Since responsiveness by policy-makers to public preferences is in large part motivated by re-election seeking politicians, I focus on citizens’ evaluations of incumbent candidates and parties. That is, I consider the citizens’ half of the democratic accountability relationship and ask whether citizens respond to incumbent actions in a manner consistent with the positive-negative asymmetry. If individuals do assimilate information about incumbent actions in an asymmetrical fashion, the public may send a rather unique signal to political elites. Specifically, if politicians tend to be punished for

³ Some notable exceptions to this general trend can be found in Blais and Aarts (forthcoming); Soroka 2006 Klien & Ahluwalia 2005; Nannestad & Paldam 1997.

their failures but not rewarded for successful policy changes we should tend to see a general bias toward status-quo policies. As a first step to tracing out the potential implications of this psychological trait for public policy, this paper explores whether citizens respond to incumbent actions in an asymmetrical fashion.

Specifically, this paper considers how economic conditions influence aggregate support for incumbent politicians. The relationship between economic conditions and incumbent support is one of the most well-established facts of empirical research on democratic elections.⁴ Since this relationship offers perhaps the best empirical evidence of democratic accountability it provides an obvious starting point for an investigation of the impact of the PNA on the relationship between policy outcomes and incumbent support. In addition, economic conditions are uniquely well suited to enable consideration of the PNA because there exists a variety of quantitative measures of economic conditions. In order to test whether citizens respond to policy outcomes in an asymmetrical fashion we need to be able to measure outcomes using a common metric that enables comparison between an improvement in some policy outcome and a deterioration of precisely the same magnitude. The wealth of quantitative data on economic conditions provides an opportunity for these sorts of comparisons.

In this paper I explore the relationship between economic conditions and incumbent support in two different cases. In the first section, I consider the relationship between economic growth and U.S. presidential approval from 1953-2006 though Muller's early work on presidential popularity found evidence of an asymmetrical public response to unemployment, subsequent work has generally assumed a constant linear relationship between economic conditions and presidential approval (Mueller, 1973). I

⁴ For a recent review of this literature, see Lewis-Beck and Stegmaier 2000.

provide an explicit test of, and find considerable empirical support for, the claim that the public responds to economic growth in an asymmetrical fashion. The second section of this paper considers economic voting in Canadian federal elections at the aggregate level. Again, despite early evidence consistent with the PNA (Bloom and Price 1975) aggregate studies of economic voting rarely account for this possibility and no study of Canadian elections has done so. In contrast, I find that the Canadian public tends to punish incumbent parties for poor economic conditions but fails to reward economic expansion.⁵

The Positive Negative Asymmetry and U.S. Presidential Approval

In this section I explore whether presidential approval responds to the economy in an asymmetrical fashion. The time series of aggregate presidential approval is a useful topic of study because the well-established presidential approval literature provides an example of a sizeable political science literature that has failed to take account of the positive-negative asymmetry. In the empirical work presented below I confirm that the public does indeed respond to economic conditions in an asymmetrical fashion. Before moving on, I want to emphasize that the analysis below does not test whether the negativity bias exists at the individual level. Rather, I consider whether the relationship between aggregate presidential approval and the economy is asymmetrical.⁶

⁵ The selection of these cases may appear somewhat odd. The research presented here is part of an ongoing project. In future work I will test whether government popularity in Canada and aggregate voting in the U.S. are asymmetrically related to economic conditions.

⁶ While I animate this analysis with a discussion of the psychological literature on the effect of the negativity bias at the individual level, my empirical work considers aggregate public opinion. Even though I find compelling evidence consistent with the idea that individuals respond in an asymmetric way I am not directly testing this theory. Rather I consider the response of the public as a whole. This approach makes sense since politicians are generally concerned with public response to political events but at this point my results are also consistent with the idea that media coverage of economic conditions is biased toward

The absence of the positive-negative asymmetry from most studies of presidential approval has implications that are potentially important for our understanding of the dynamics of presidential approval. This absence also comes as somewhat of a surprise since Mueller's (1973) pioneering work on presidential popularity clearly suggests the public responds to economic conditions in an asymmetrical fashion. Specifically, Mueller found that the public reacts to unemployment only when it exceeds the value of the unemployment rate at the start of an incumbent president's term. A decline in unemployment, relative to the start of the incumbents' term, has no effect on presidential approval while an increase in unemployment is associated with a decline in approval. Thus there is a clear asymmetry in responsiveness to the economy. Notice that in order to identify 'economic slumps' (as measured by unemployment) Mueller must choose a reference point against which people evaluate current unemployment. Mueller readily acknowledged that he operationalized 'the economy' in this way in order to generate correctly signed coefficients. Nevertheless, his findings are consistent with a negativity bias.

A review of the presidential approval literature points to the central role Mueller's work played in identifying a set questions central to most subsequent research (Gronke and Newman, 2003). Interestingly, however, Mueller's assertion that "there is punishment but never reward" has rarely been incorporated into subsequent studies (Mueller 1973, 215). In my review of the more recent empirical work, a search of databases of academic articles, and a recent survey article on the approval literature by Gronke and Newman, I found only one reference to the negativity bias outside of

negative news and that it is this bias, and not an individual psychological bias, that accounts for the asymmetry in public responsiveness. Soroka (2006) provides a compelling study of the media's role in the economy-approval relationship.

Mueller's work.⁷ If Mueller's initial claims are correct, and the psychological literature suggests they likely are, then assuming that the relationship between economic conditions and presidential approval is constant across both positive and negative conditions may yield misleading conclusions about this relationship and the nature of citizens' role in the accountability framework.

One approach to modeling this relationship in light of a negativity bias assumes a linear relationship between economics and political evaluations but allows for different slope coefficients under positive and negative conditions. This approach, employed in some individual-level studies of economic voting follows directly from the most straightforward conception of the negativity bias, which holds that negative information is weighted more heavily than equally valued positive information. For presidential approval, if the weight applied to economic information depends only on whether this information is positive or negative, then to model this bias we need only estimate separate coefficients for the economy under positive and negative conditions. I adopt this approach in the analysis below and find consistent support for the negativity bias.

In order to assess empirically whether and how the negativity bias moderates the relationship between the economy and approval, we first need to consider how people form impressions about the economy. To do so, we must address two specific questions. First, what information do people use to construct evaluations of the current economy?

⁷ Nicholson et al (2002) cite the negativity bias in deriving their expectation that presidential approval will tend to be higher under divided government (since, they argue, divided government will have a greater effect of presidential blame avoidance than credit claiming). Ironically, however, they fail to incorporate the negativity bias when modeling the relationship between the economy and approval. Other presidential studies I consulted include: Burden and Mughan 2003; Clarke et al 2005; Nickelsburg and Norpoth 2000; Gubala and Dietz 2002; Nadeau et al 1999; Fox and Phillips 2003; McAvoy 2006; Marra et al 1990; Ostrom and Simon 1985; Newman 2002; Gronke and Brehm 2002; Eichenberg et al 2006; Erickson et al 2002.

The majority of economic voting models rely on some combination of the rate of inflation, unemployment and growth. For now I concentrate strictly on growth.⁸ Concentrating on growth alone, however, does not provide a complete response to this first question. Governments collect myriad statistics relating to growth, many of which may influence citizens' evaluations. For now I focus on real personal disposable income per capita since any measure of the economy should reflect, as close as possible, citizens' own economic experiences rather than output measures such as GDP (Bartels and Zaller, 2001).⁹ I also consider three distinct measures of growth in personal disposable income: *Quarterly Growth at Annual Rate* is simply the percentage increase in PDI from one quarter to the next compounded into an annual rate. The *Four Quarter Growth Rate* considers the percentage change in GDP since the same quarter a year earlier. Finally, *Annual Average Growth Rate* is the average of *Four Quarter Growth Rate* over the previous year. In the analysis below I focus primarily on the latter two measures since it seems unlikely that citizens restrict their attention to growth in only the most recent quarter.

The second question relating to public impressions of the economy is: how do people classify current conditions as either 'good' or 'bad'? Distinguishing between the two is obviously central to my endeavor and requires considering the reference point people use in evaluating economic growth. The most straightforward reference point is

⁸ I fully intend, however, to expand this analysis to include additional economic indicators in the near future.

⁹ In order to provide a comprehensive account of economic conditions, I also estimated all of the models discussed below using GDP. The results of this analysis appear in Table A2. Regardless of the specific measure of GDP I employ or the reference point I use to distinguish positive and negative economic conditions (see below for a discussion of these reference points) in all cases I find evidence of a stronger positive relationship between GDP and approval during 'bad' economic times. Consistent with the claim that GDP is a less appropriate measure of citizens' economic experiences, the GDP-approval relationship tends to be weaker than that between PDI and approval.

obviously zero. Economic growth means good times and economic contractions are bad. Given that there is a general tendency for the U.S. economy to grow (average annualized quarterly growth rate is 2.2% for PDI), however, it seems misguided to assume that very modest economic growth should actually be counted as 'good'. I therefore consider two alternative reference points.

First, I look at the difference between recent economic growth and average growth over the past five years. The idea here is that citizens compare the current economy to some general evaluation of the economy in previous years. While it is surely plausible that citizens combine previous economic trends in a more complex manner (for instance a weighted average where the weights reflect the elapsed time), the mean seems a reasonable place to start.

Second, I test whether citizens use their expectations about economic growth as the reference point against which they compare current growth. In their efforts to assess aggregate economic voting across countries and time, Palmer and Whitten (1990) suggest that citizens generate beliefs about expected growth for a given time period based on their knowledge of the economy over many previous years. They further posit that citizens' voting decisions are primarily related to unexpected growth and inflation. I adopt Palmer and Whitten's framework and approximate unexpected growth for a given quarter using residuals from a series of auxiliary autoregressive models of growth. Specifically, for each quarter, unexpected growth is the difference between actual growth and expected growth estimated from a unique regression for that quarter. Each regression models current growth as a function of lagged growth, a business cycle effect, and quarterly indicator variables that should capture any seasonal economic effects. Expected

economic growth is simply the predicted value of growth for a quarter generated using the unique set of coefficient estimates based on economic data from the previous twenty years.¹⁰

In my empirical analysis I employ a quarterly data set of presidential approval and economic growth for the years 1953 to 2006. Presidential approval is measured using the average approval rate in all Gallup surveys during the quarter. In order to generate results that can be compared to much of the existing literature on presidential approval, the statistical approach and model specification I adopt draw on the vast amount of existing empirical work on presidential approval. With respect to the latter, since presidential approval is a first-order autoregressive time series (Erikson et al 2002) I employ least squares regression and include a lagged dependent variable. As control variables, I include the following:

Events: There is considerable debate in the literature over the appropriate selection mechanism for events and the best way to model their effects. In the analysis below I rely on the list of events used in the Erikson et al's *The Macropolity* and augment the list with events that occurred during the Clinton and current administrations (Erikson et al 2002). I estimate different effects for positive and negative events.

Presidency Indicators: In order to account for systematic differences in the popularity of different presidents I include a series of indicator variables. The excluded category is the 32 quarters of Reagan's presidency.

¹⁰ I also estimated a series of models which include measures of economic conditions in the previous quarter. In most cases the coefficients are smaller. Results of these analyses are available from the author upon request.

Vietnam War: Following the convention in the literature I include a variable measuring the natural log of cumulative deaths in Vietnam during the Johnson administration. For all other quarters, this variable is equal to zero.

I also exclude from analysis the first quarter for each President as there is no appropriate value for lagged approval for these quarters. Doing so also helps me to account for the ‘honeymoon’ effect. I have also excluded from analysis the first quarter of 1991 (1st Gulf war) and the last two quarters of 2001 (9/11 terrorist attacks). Approval in both these quarters is not well explained by the base model outlined above.

As a first step in testing for the presence of the PNA in the economy-approval relationship, I estimated the magnitude of the strength of the linear relationship between each economic measure and presidential approval. As discussed, the vast majority of existing work on presidential approval adopts this approach. I then estimated a separate regression which includes two separate economic variables. The ‘good economic conditions’ variable is simply the value of the base economic variable for all quarters where growth is above the relevant reference point. For any quarter with growth below this reference point this variable takes a value of zero. The ‘bad economic conditions’ variable is similar but provides a measure of the economy only when growth is below the relevant reference point. For example, if we believe that citizens evaluate current conditions in light of average conditions over the past five years, the good economic conditions variable equals zero for all quarters where growth is below the five year mean. When growth is above this mean, the good economic conditions variable is equal to the difference between current economic growth and the five year mean. The coefficients for

these two variables capture the relationship between economic growth and approval during good and bad economic times respectively.

The results of these two separate approaches, presented in Table 1, clearly support the claim that the public responds to economic information in an asymmetrical fashion. Consider first the different conclusions one would reach about the relationship between four-quarter growth rate and presidential approval. The results of this analysis appear at the intersection of the first horizontal and vertical panel in Table 1. The first row in this box reports the regression estimates of a simple linear relationship between economic growth and approval. The coefficient is positive ($\beta=0.55$) and significant which suggests a 1% increase in annualized quarterly growth is associated with an increase in presidential approval of approximately half of one percent. The next two rows report the coefficients for economic growth from the second model. To be clear, the coefficients in these two rows ('Bad Conditions' & 'Good Conditions') are drawn from a *different* regression from the coefficient for 'All Economic Conditions'. These coefficients suggest that a 1% increase in growth rate (when growth is above zero) is associated with an increase in approval of only .24% and this effect cannot be statistically distinguished from zero. In sharp contrast, however, a 1% difference in growth rate when economic growth is below zero yields an increase in approval of 2.62%. The fourth row provides information about the difference between these two coefficients. In this case, the difference is 2.38 and is statistically significant.

Results obtained from a model that does not take into account the PNA suggest that economic growth is positively and rather weakly related to presidential approval. In contrast, allowing for the possibility that this relationship differs when economic growth

is above and below zero suggests that economic conditions are quite strongly related to approval when times are bad but have little affect on approval when the economy is growing. The results from a similar analysis when growth is measured using annual average growth in PDI are quite similar. The difference in the estimated slope for positive and negative conditions in this case is both large, positive and statistically significant ($\beta=3.14$, $p=0.03$). The third vertical panel of Table 1 presents results from analyses using annualized quarterly growth rate. While the difference between good and bad economic conditions is not statistically significant it is in the expected direction ($\beta=0.10$, $p=.76$).

One might reasonably object that citizens do not use zero growth as the reference point against which current conditions are compared. Results based on models which employ alternative reference points to distinguish positive from negative economic conditions, however, continue to suggest a substantially stronger public reaction to negative economic conditions than positive economic conditions. The second horizontal panel of Table 1 presents the results if we assume average growth over the past five years serves as the reference point. For the four-quarter growth rate, there is again a positive relationship between economic conditions and presidential approval when a simple linear relationship is assumed ($\beta=0.43$). If we allow for the possibility of a PNA centered around average growth over the past five years, however, results reveal that this positive relationship is strictly a function of the economy-approval relationship when growth is below average. The coefficient for growth when it falls below the five-year average is 0.86. That is, presidential approval should be almost 1% higher when growth is 0.5% below the five-year average compared to being 1.5% below this average. In contrast, these results suggest no relationship between growth and approval when growth exceeds

average conditions over the past five years. A very similar pattern of results obtains regardless of which of the three growth measures is employed (difference is .98 and .35 for ‘annual average’ and ‘annualized quarterly’ growth respectively). Results from these three analyses suggest the public is quick to punish the President for poor economic growth but decidedly unlikely to reward positive income growth.

Results from regressions where the reference point for evaluations of the economy is based on the more complex calculation of ‘expected growth’ offer somewhat weaker support for the existence of a positive-negative asymmetry. When current four-quarter growth exceeds expected growth there is only a moderately strong positive relationship between economic growth and approval (0.42). The relationship between growth and approval differs very little when growth is unexpectedly high or low. The difference is in the expected direction but is small (0.11) and not significant. If annual average growth rate or quarterly growth rate is used, the results offer stronger evidence of a PNA. The difference between coefficients for ‘bad’ and ‘good’ coefficients are both positive as expected (1.15, 0.28 respectively), but neither is statistically significant.¹¹

Overall, this analysis of the relationship between economic growth and presidential approval strongly suggests that the public responds to changes in personal disposable income in an asymmetric fashion. Across a variety of different specifications, there is consistent support for the claim that the relationship between growth and approval is considerably stronger when economic conditions are poor than when

¹¹ In addition to the results discussed above, I conducted a series of additional tests for the PNA by using additional reference points (average growth over ten years, average growth of all previous years, the state of the economy at start of presidential term, and an alternative specification of the ‘unexpected growth’ measure) and a full set of analysis using GDP in place of PDI. In only 3 of the 42 different specifications I considered did the size of the coefficient for good economic conditions exceed the coefficient for bad conditions and this difference was never statistically significant. These results are included in the appendix (Tables A1 and A2).

conditions are good. The American public thus appears to send the president a unique signal. Presidents ought to be expressly concerned with avoiding low and negative economic growth but they have little to gain by pursuing relatively high levels of economic growth. The pervasive nature of the PNA further suggests that this result should not be due to some quirk of the dynamics of aggregate presidential approval and/or of the American public. Accordingly, the next section of this paper considers the relationship between economic conditions and incumbent support in a rather different context: Canadian federal elections.

The Positive-Negative Asymmetry and Economic Voting in Canada

The relationship between economic conditions and incumbent electoral support is a well-established fact of political science and one which offers a second opportunity to test for the existence of a positive-negative asymmetry in the citizenry's end of the democratic accountability bargain. The positive relationship between economic conditions and the electoral fortunes of incumbent parties and candidates is one of the most well-established facts of political behavior in older democracies. Just as Mueller's initial claims concerning the PNA did not spark continued attention, scholars have failed to test for an asymmetrical relationship between economic conditions and aggregate outcomes in spite of the fact that early aggregate economic voting work found clear evidence of such an asymmetry (Bloom and Price 1975).¹² In the years since this article appeared, the existence and magnitude of a negativity bias has taken a backseat to other

¹² Lewis-Beck (1988) finds no evidence of a PNA in a micro-level study of vote choice. The endogenous nature of perceptions of economic conditions (which serves as the measure of economic 'conditions' in this study) suggest caution (Wlezein et al 1997). In fact, two more recent analyses that combine macro-level economic data and micro-level survey data on vote choice (Nannestad & Paldam 1997) and perceptions of the economy (Soroka, 2006) find clear support for the PNA.

questions surrounding economic voting (including debates over whether economic evaluations are egocentric or sociotropic and prospective or retrospective).¹³

In the Canadian context, the existence of an asymmetry in aggregate economic voting, to my knowledge, has never been tested. Interestingly, studies of the relationship between economic conditions and aggregate voting in Canada have generated mixed results and offer only weak support for the hypothesized positive relationship between economic conditions and incumbent vote share (Belanger & Gelineau 2005; Carmichael 1990; Happy 1986 & 1989; Nadeau and Blais 1993). Indeed one study (Carmichael 1990) finds a *negative* relationship between economic conditions and incumbent vote share between 1945 and 1972. One intriguing possibility is that a model which accounts for the PNA may generate results more in line with the basic premise of economic voting.

To test for evidence of a negativity bias in the Canadian voters' response to economic conditions I employ a pooled cross-sectional time-series design. For each election from 1953 though 2000 I combine data on the national unemployment rate and growth in personal disposable income along with the incumbent vote share in each province.¹⁴ Because quarterly and monthly data are not available at the provincial level as far back as 1953, I rely on annual data. To generate a reasonable estimate of economic

¹³ One follow-up study (Claggett 1986) extended the analysis of Bloom and Price (1975) to a broader set of elections and offered further confirmation of the negativity bias. The fact that this latter effort has been cited only three times (according to the ISI web of knowledge) provides further evidence of the disinterest scholars have shown in the PNA.

¹⁴ The economic data comes from a range of CANSIM series available from Statistics Canada. The electoral data were kindly made available to me by François Gelineau and Eric Bélanger. Gelineau & Bélanger (2006) provides an intriguing analysis of the aggregate economic voting in a federal context. They find that national economic conditions are positively related to incumbent vote shares in both federal and provincial elections. Accordingly I consider only national economic conditions in the models reported here. In future work I will expand my analysis to include provincial level elections and economic conditions.

conditions at the time of the election, I weighted economic data by the month during which the election occurred.¹⁵

To generate the results presented below I estimated the relationship between economic conditions and incumbent vote share using OLS with panel corrected standard errors to account for the specific nature of my data. My model specification follows directly from the most recent scholarly investigation of aggregate economic voting in Canada: Gélinau and Bélanger (2006). Each model includes one measure of economic conditions, lagged incumbent vote share, the length of the incumbents' mandate (logged), indicator variables that control for the presence of new parties (Reform and the Bloc Québécois), and a dichotomous variable identifying elections with liberal incumbents along with provincial indicator variables to account for unexplained heterogeneity across panel members. Full results of all of these models appear in the appendix. The results presented in the text below are also based on analyses that exclude the elections of 1958 and 1980. The incumbent party leading into both these elections had governed for less than a year and there is thus good reason to expect that citizens were less likely to hold the parties who led these new and short-lived governments accountable for the economy.¹⁶

The results presented in Table 2 strongly suggest that incumbent parties in Canada are punished when economic conditions deteriorate but not similarly rewarded in good economic times. The first horizontal panel of Table 2 reports the results of two separate

¹⁵ Specifically, I employ the formula provided by Gelineau and Belanger (2006). Economic measures for election year are calculated to equal $[E_{(t-1)} * (12-m)/12] + [E_{(t)} * m/12]$. Where E is the economic indicator, t is the year, and m is the month in which the election occurred.

¹⁶ Elections following other short-lived minority governments (1963 & 1974) are included because these administrations were preceded by majority governments of the same partisan stripe. Nadeau and Blais (1993) similarly excludes the elections of 1958 and 1980 from analysis. I did, however, estimate models that included these two cases and the results are substantially different. The results of these analyses are included in the appendix. (Table B1).

models of the relationship between national unemployment rate and incumbent vote share. As a first approach to distinguishing acceptable from unacceptable levels of unemployment I subtracted from the unemployment rate for each election the average rate of unemployment for the whole period (6.6%). The coefficient in the first row in this first horizontal panel (-1.49%) derives from a model that assumes a constant linear relationship between unemployment and incumbent vote share. As expected, the relationship between these two variables is negative and an increase in the unemployment rate of 1% is associated with a decrease in incumbent vote share of 1.5%. The second column within this first horizontal panel displays the results of a model that allows for a different effect of unemployment when the rate of unemployment is above and below the average for the whole period. These results suggest that when unemployment is below 7% there is no relationship between the unemployment rate and the electoral fate of incumbent parties ($\beta = -0.32$). In sharp contrast, when unemployment is relatively high it is strongly related to incumbent vote share ($\beta = -2.2$). One potential objection to these findings is that since the average unemployment rate has tended to increase over the past 50 years using the period mean as the reference point that distinguishes good conditions from bad may generate misleading results.

Accordingly, the second horizontal panel in Table 2 presents the results of analysis which employs a reference point more sensitive to recent economic conditions. Specifically the value of the unemployment rate for each election is the difference between the actual unemployment rate and the average of the five preceding years. Using this approach, evidence of an asymmetrical response to unemployment conditions is even stronger. The apparent effect of unemployment estimated assuming a constant linear

relationship ($\beta=-2.93$) is driven solely by the strong negative relationship when unemployment exceeds the five year average ($\beta=-5.85$). The extent to which the unemployment rate is lower than this average is unrelated to incumbent support ($\beta=-0.19$). Overall, the results of this analysis of the relationship between unemployment and incumbent vote share clearly suggest that the public responds to levels of unemployment in an asymmetrical fashion consistent with the claim that individuals place considerably more weight on negative information.

The right half of Table 2 reports the results of a similar analysis of the relationship between growth in real personal disposable income and electoral support for the incumbent party. The third horizontal panel presents results of the relationship between annual growth in PDI (minus the period average of 1.94%) and incumbent vote share. The coefficient ($\beta=0.86$) in the first row implies that if we do not distinguish between good and bad economic times, there is a moderate positive relationship between PDI growth and incumbent vote share. If, however, we employ a model that accounts for a positive-negative asymmetry, the results suggest that there is no relationship between PDI growth and incumbent vote share when growth exceeds 2% ($\beta=-0.02$) and a strong positive relationship when growth falls below this period average ($\beta=3.89$). That is, a change in PDI growth from 1% to 0% is associated with a nearly 4% decline in incumbent vote share while a decrease from 3% to 2% is unrelated to incumbent support.

The last horizontal panel in Table 2 presents some rather unexpected results. Assuming a constant linear relationship between PDI growth (minus average growth over the past five years) yields a weak and statistically insignificant positive relationship between growth and incumbent vote share. If we account for potentially different effects

of growth above and below average growth over the past half decade, the results are inconsistent with the basic claim that animates this paper. Specifically, while there is a moderate positive relationship between growth and incumbent vote share when growth exceeds the recent average ($\beta=1.22$), the relationship between this measure of growth and incumbent support is negative and quite large when growth is lower than the recent average ($\beta=-4.32$). This result appears to derive from the sensitivity of a regression based on 14 elections. Specifically the ‘deviation from five year average’ measure of PDI growth offers a very different perspective on the relative economic conditions for a handful of elections.¹⁷ Further analysis which adopts alternative reference points should suggest whether this unexpected result is in fact robust.

The majority of the results presented in Table 2 offer strong support for the claim that the public is considerably more responsive to economic conditions when times are bad than they are when the economy is doing well. In particular, the unemployment results suggest that relatively low levels of unemployment have little effect on the electoral fortunes of incumbent parties. In contrast, when unemployment is relatively high, voters are quick to punish incumbents. This sort of reaction suggests that politicians in Canada ought not to concern themselves with simply minimizing unemployment. In

¹⁷ In the ‘earthquake election’ of 1993, after just over 8 years in office, the Progressive Conservative party fell from a majority government with 151 seats to ‘unofficial’ party status with only 2 seats while their share of the vote fell by 27%. This result obtained as the economy continued to deteriorate. For the 1993 election, the average across the provinces for the raw measure of real PDI growth was -0.35% the lowest average for all 14 elections. Since this election came in the midst of the recession of the early 1990’s, the ‘deviation from five year average’ measure suggests a relatively stronger economy (-0.05). Based on this measure, two other elections had worse economic conditions. Most importantly, in 1968 this measure of growth was -1.08 (lowest of all 14 elections) while average raw PDI growth for the same year was 2.4% (the 9th highest of the 14 elections). 1968 saw the incumbent Liberals ride the new and charismatic leader Pierre Trudeau’s ‘Trudeaumania’ to a 5% increase in their share of the national vote. Taken together these two elections generate the negative relationship between incumbent vote share and ‘deviation from 5yr average growth’ evident in Table 2. The 1968 election brings higher incumbent vote share and a poor economy (as measured by deviation from the five year average) while the 1993 election has a relatively stronger economy and dramatically lower incumbent vote share.

fact, these results suggest there is little electoral benefit in achieving very low levels of unemployment. In contrast, high unemployment has clear electoral consequences. My results suggest that unemployment which exceeds the five-year average by 1% can reduce the incumbents' vote share by 5%, which can easily jeopardize their chances of re-election. Accordingly, we should expect incumbent parties to devote considerable effort to avoiding high unemployment and rather less effort to pursuing low unemployment.

Conclusion

The empirical analyses presented above provide strong evidence of an asymmetry in the relationship between economic conditions and the public's evaluation of political incumbents. Both presidential approval in the U.S. and incumbent vote share in Canada are quite strongly related to the economy when times are bad and only very weakly related to the economy when times are good. The nature of these relationships follows directly from the well-documented psychological individual tendency to respond in more pronounced ways to negative than to positive stimuli. In addition to providing support for the basic claim that the positive-negative asymmetry ought to be better incorporated into existing models of citizen attitude formation, the results presented here further suggest that many existing studies of economics and incumbent support have drawn misleading conclusions about the nature of the relationship between these two variables. My results suggest that in many cases the apparent moderate relationship between economic conditions and incumbent support in fact masks an very different underlying dynamic.

The results also have implications for how we conceive of the relationship between citizens' preferences and the policy choices made by elected officials. Citizens' greater proclivity to punish incumbents for policy failures than reward them for successes suggests a new and interesting lens through which to study the incentives facing re-election seeking politicians. The severity of the positive-negative asymmetry in citizens' responses to policy outcomes should have important implications for politicians' desire to avoid potential policy failures rather than pursue policy successes.

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Table 1 Economic Growth and Presidential Approval (1953-2000)

Reference Point	Range of Economic Conditions	PDI Per Capita Four Quarter Growth Rate			PDI Per Capita Annual Average Growth Rate			PDI Per Capita Quarterly Growth at Annual Rate		
		Coeff.	s.e.	p-value	Coeff.	s.e.	p-value	Coeff.	s.e.	p-value
Zero	All Economic Conditions	0.55	0.18	0.00	0.36	0.22	0.11	0.32	0.09	0.00
	Bad Conditions	2.62	0.80	0.00	3.26	1.38	0.02	0.39	0.24	0.11
	Good Conditions	0.24	0.21	0.27	0.12	0.25	0.64	0.29	0.13	0.03
	Difference	2.38	0.91	0.01	3.14	1.48	0.03	0.10	0.32	0.76
Five Year Average	All Economic Conditions	0.43	0.17	0.01	0.23	0.21	0.28	0.27	0.09	0.00
	Bad Conditions	0.86	0.30	0.00	0.77	0.40	0.06	0.44	0.15	0.00
	Good Conditions	0.01	0.29	0.98	-0.21	0.35	0.55	0.08	0.16	0.59
	Difference	0.86	0.49	0.08	0.98	0.62	0.11	0.35	0.25	0.17
Unexpected Change - 20yrs	All Economic Conditions	0.42	0.21	0.05	-0.11	0.45	0.81	0.19	0.07	0.01
	Bad Conditions	0.47	0.39	0.23	0.38	0.79	0.63	0.31	0.12	0.01
	Good Conditions	0.36	0.45	0.43	-0.76	0.98	0.44	0.03	0.15	0.85
	Difference	0.11	0.71	0.87	1.15	1.52	0.45	0.28	0.22	0.20

Note: This table reports the results of a series of regressions estimating the relationship between presidential approval and various measures of economic growth. For each growth measure I estimated one linear regression where growth serves as the key independent variable (All Economic Conditions) I then estimated a second regression including separate variables for ‘Good’ and ‘Bad’ Economic conditions. The difference between the coefficients for these two variables appears in the row marked ‘Difference’. Standard errors are in parentheses

Table 2: Economic Conditions and Incumbent Vote Share in Canadian Federal Elections (1953-2000)

	Unemployment Rate minus Period Average (6.6%)	Unemployment Rate minus Five Year Average	PDI Growth Rate minus Period Average (1.94%)	PDI Growth Rate minus Five Year Average
All Economic Conditions	-1.498 (0.258)	-2.925 (0.569)	0.863 (0.332)	0.253 (0.447)
Good Economic Conditions	-0.319 (0.528)	-0.185 (1.061)	-0.015 (0.394)	1.224 (0.607)
Bad Economic Conditions	-2.188 (0.372)	-5.848 (1.148)	3.892 (0.830)	-4.320 (2.037)
Difference	-1.870 (0.737)	-5.664 (1.916)	3.906 (1.002)	-5.544 (2.407)

Note: This table presents coefficients of interest from eight separate regressions. The dependent variable in all models is incumbent vote share. For each economic variable I estimated one linear regression where the economic indicator serves as the key independent variable (All Economic Conditions) I then estimated a second regression including separate variables for ‘Good’ and ‘Bad’ Economic conditions. The difference between the coefficients for these two variables appears in the row marked ‘Difference’. Standard errors are in parentheses

Table A1: Presidential Approval and Economic Conditions – Additional Results

Reference Point		PDI Per Capita Quarterly Growth at Annual Rate			PDI Per Capita Four Quarter Growth Rate			PDI Per Capita Annual Average Growth Rate		
		Coeff.	s.e.	p-value	Coeff.	s.e.	p-value	Coeff.	s.e.	p-value
Zero	All Economic Conditions	0.32	0.09	0.00	0.55	0.18	0.00	0.36	0.22	0.11
	Bad Conditions	0.39	0.24	0.11	2.62	0.80	0.00	3.26	1.38	0.02
	Good Conditions	0.29	0.13	0.03	0.24	0.21	0.27	0.12	0.25	0.64
	Difference	0.10	0.32	0.76	2.38	0.91	0.01	3.14	1.48	0.03
Five Year Average	All Economic Conditions	0.27	0.09	0.00	0.43	0.17	0.01	0.23	0.21	0.28
	Bad Conditions	0.44	0.15	0.00	0.86	0.30	0.00	0.77	0.40	0.06
	Good Conditions	0.08	0.16	0.59	0.01	0.29	0.98	-0.21	0.35	0.55
	Difference	0.35	0.25	0.17	0.86	0.49	0.08	0.98	0.62	0.11
Ten Year Average	All Economic Conditions	0.29	0.09	0.00	0.58	0.19	0.00	0.47	0.24	0.05
	Bad Economy	0.39	0.16	0.01	1.05	0.31	0.00	1.41	0.42	0.00
	Good Economy	0.17	0.17	0.30	0.09	0.32	0.78	-0.32	0.38	0.39
	Difference	0.22	0.27	0.42	0.96	0.50	0.06	1.73	0.63	0.01
All Previous Years Average	All Economic Conditions	0.32	0.09	0.00	0.56	0.18	0.00	0.38	0.22	0.09
	Bad Economy	0.47	0.16	0.00	1.14	0.30	0.00	1.35	0.37	0.00
	Good Economy	0.15	0.17	0.38	-0.09	0.32	0.77	-0.63	0.38	0.10
	Difference	0.32	0.27	0.22	1.23	0.51	0.02	1.98	0.65	0.00
Economy at Start of Term	All Economic Conditions	0.15	0.08	0.06	0.40	0.15	0.01	0.16	0.17	0.36
	Bad Economy	0.54	0.18	0.00	0.24	0.25	0.34	0.27	0.32	0.40
	Good Economy	-0.02	0.10	0.85	0.57	0.25	0.02	0.02	0.37	0.95
	Difference	0.56	0.23	0.02	-0.34	0.40	0.40	0.25	0.59	0.67
Unexpected Change	All Economic Conditions	0.31	0.09	0.00	0.71	0.24	0.00	0.76	0.51	0.14
	Bad Economy	0.44	0.15	0.00	0.79	0.47	0.09	1.58	0.95	0.12
	Good Economy	0.16	0.16	0.32	0.62	0.51	0.23	-0.48	1.05	0.96
	Difference	0.28	0.26	0.29	0.17	0.84	0.83	2.06	1.48	0.16
Unexpected Change - 20yrs	All Economic Conditions	0.19	0.07	0.01	0.42	0.21	0.05	-0.11	0.45	0.81
	Bad Economy	0.31	0.12	0.01	0.47	0.39	0.23	0.38	0.79	0.63
	Good Economy	0.03	0.15	0.85	0.36	0.45	0.43	-0.76	0.98	0.44
	Difference	0.28	0.22	0.20	0.11	0.71	0.87	1.15	1.52	0.45

Table A2: Presidential Approval and Economic Conditions – Additional Results

Reference Point		GDP Per Capita Quarterly Growth at Annual Rate			GDP Per Capita Four Quarter Growth Rate			GDP Per Capita Annual Average Growth Rate		
		Coeff.	s.e.	p-value	Coeff.	s.e.	p-value	Coeff.	s.e.	p-value
Zero	All Economic Conditions	0.30	0.08	0.00	0.37	0.13	0.01	0.16	0.16	0.34
	Bad Conditions	0.52	0.19	0.01	0.71	0.42	0.09	0.77	0.61	0.21
	Good Conditions	0.17	0.13	0.18	0.25	0.19	0.20	0.00	0.22	1.00
	Difference	0.35	0.27	0.20	0.46	0.53	0.39	0.77	0.74	0.30
Five Year Average	All Economic Conditions	0.24	0.08	0.00	0.28	0.13	0.04	0.09	0.16	0.56
	Bad Conditions	0.34	0.16	0.03	0.37	0.26	0.16	0.46	0.32	0.16
	Good Conditions	0.15	0.16	0.36	0.20	0.25	0.43	-0.24	0.30	0.43
	Difference	0.19	0.26	0.48	0.17	0.43	0.69	0.70	0.53	0.19
Ten Year Average	All Economic Conditions	0.28	0.10	0.00	0.35	0.16	0.03	0.17	0.19	0.38
	Bad Economy	0.45	0.18	0.01	0.60	0.29	0.04	0.66	0.34	0.06
	Good Economy	0.11	0.18	0.55	0.07	0.31	0.82	-0.38	0.37	0.31
	Difference	0.34	0.30	0.27	0.53	0.50	0.29	1.04	0.60	0.08
All Previous Years Average	All Economic Conditions	0.29	0.08	0.00	0.35	0.13	0.01	0.15	0.16	0.36
	Bad Economy	0.40	0.14	0.00	0.49	0.21	0.02	0.42	0.25	0.10
	Good Economy	0.13	0.17	0.44	0.11	0.31	0.73	-0.34	0.38	0.38
	Difference	0.26	0.26	0.32	0.39	0.44	0.59	0.76	0.54	0.16
Economy at Start of Term	All Economic Conditions	0.26	0.08	0.00	0.32	0.13	0.01	0.03	0.15	0.86
	Bad Economy	0.25	0.10	0.02	0.34	0.22	0.12	-0.06	0.28	0.83
	Good Economy	0.28	0.17	0.09	0.31	0.23	0.18	0.10	0.25	0.69
	Difference	-0.03	0.22	0.87	0.03	0.36	0.93	-0.16	0.43	0.71
Unexpected Change	All Economic Conditions	0.24	0.08	0.00	0.71	0.20	0.00	0.74	0.42	0.08
	Bad Economy	0.45	0.15	0.00	0.65	0.36	0.07	1.44	0.78	0.07
	Good Economy	0.00	0.17	1.00	0.78	0.40	0.06	-0.08	0.87	0.93
	Difference	0.45	0.27	0.09	-0.13	0.68	0.83	1.52	1.42	0.28
Unexpected Change - 20yrs	All Economic Conditions	0.17	0.08	0.03	0.64	0.21	0.00	0.07	0.46	0.88
	Bad Economy	0.44	0.14	0.00	0.69	0.42	0.10	0.03	1.01	0.98
	Good Economy	-0.13	0.15	0.37	0.60	0.39	0.13	0.10	0.81	0.90
	Difference	0.58	0.24	0.02	0.09	0.69	0.89	-0.07	1.50	0.96

Table A3. Descriptive Statistics for US Presidential Approval Analysis

Reference Point	Real PDI per capita Growth at Annual Rate					Real GDP per capita Growth at Annual Rate				
	Min	Median	Mean	Max	N	Min	Median	Mean	Max	N
Zero	-8.28	2.32	2.19	17.56	196	-12.31	2.05	2.08	14.71	196
Five Year Average	-11.02	0.10	-0.04	15.36	192	-12.88	0.19	0.11	13.35	192
Ten Year Average	-10.82	0.00	-0.03	14.79	172	-11.41	0.08	0.15	12.75	172
All Previous Years Average	-10.74	-0.03	-0.11	15.14	196	-14.50	-0.26	-0.29	12.32	196
Economy at Start of Term	-10.60	1.74	1.98	17.18	196	-14.67	-0.37	-1.11	12.98	196
Unexpected Change	-11.20	-0.15	-0.16	15.35	196	-11.48	-0.03	-0.05	13.48	196
Unexpected Change -20yrs	-20.54	-0.10	-0.12	12.81	192	-13.85	0.36	0.10	12.72	192
	Real PDI per capita Four Quarter Growth Rate					Real GDP per capita Four Quarter Growth Rate				
Zero	-3.34	2.08	2.23	7.37	196	-4.67	2.33	2.10	7.65	196
Five Year Average	-6.47	-0.10	-0.02	5.68	196	-5.90	0.28	0.09	7.06	189
Ten Year Average	-6.76	-0.03	-0.02	5.48	177	-5.79	0.35	0.09	6.27	169
All Previous Years Average	-6.02	-0.26	-0.18	4.87	196	-8.25	-0.01	-0.41	5.49	196
Economy at Start of Term	-8.77	0.26	0.18	7.48	196	-8.49	-0.29	-0.20	8.49	196
Unexpected Change	-3.58	-0.02	-0.05	4.26	196	-7.05	0.04	0.04	4.98	194
Unexpected Change -20yrs	-5.79	0.05	0.01	4.45	196	-4.25	0.09	0.12	5.17	189

Table A3 Continued.

	Real PDI per capita Annual Average Growth Rate					Real GDP per capita Annual Average Growth Rate				
Zero	-2.20	2.13	2.23	6.72	196	-3.14	2.42	2.08	6.81	196
Five Year Average	-5.39	-0.27	-0.05	4.97	194	-4.46	0.31	0.04	6.11	186
Ten Year Average	-5.71	-0.01	0.00	4.83	174	-5.27	0.22	0.06	5.41	166
All Previous Years Average	-4.95	-0.22	-0.22	4.13	196	-7.10	0.02	-0.42	4.54	196
Economy at Start of Term	-5.24	-0.51	-0.48	6.72	196	-5.26	-0.26	-0.33	8.10	196
Unexpected Change	-1.91	-0.01	0.00	2.05	183	-3.23	0.12	0.07	2.53	177
Unexpected Change -20yrs	-3.14	0.07	0.01	1.69	165	-2.04	0.13	0.14	2.42	172
Presidential Approval	25.67	56.83	56.11	87						

Table B1: Economic Conditions and Incumbent Vote Share in Canadian Federal Elections –Full Results.

	Unemployment Rate				Unemployment Rate minus Five Year Average			
	All Years		Excluding 1958 & 1980		All Years		Excluding 1958 & 1980	
All Economic Conditions	-1.540 (0.279)		-1.498 (0.258)		-1.258 (0.616)		-2.925 (0.569)	
Good Economic Conditions		-0.870 (0.600)		-0.319 (0.528)		-1.104 (1.286)		-0.185 (1.061)
Bad Economic Conditions		-1.951 (0.425)		-2.188 (0.372)		-1.408 (1.282)		-5.848 (1.148)
Lagged incumbent vote share	0.610 (0.072)	0.614 (0.072)	0.568 (0.071)	0.582 (0.069)	0.676 (0.076)	0.673 (0.081)	0.630 (0.071)	0.561 (0.075)
Mandate length (logged)	-5.813 (1.087)	-5.668 (1.091)	-3.270 (1.280)	-2.957 (1.261)	-8.179 (1.069)	-8.109 (1.199)	-4.225 (1.293)	-2.687 (1.359)
Bloc 1993	-22.065 (10.848)	-20.915 (10.814)	-23.469 (9.888)	-21.461 (9.737)	-24.119 (11.351)	-24.041 (11.375)	-22.303 (9.679)	-20.872 (9.568)
Reform/Alliance	-3.604 (2.451)	-3.618 (2.445)	-2.631 (2.057)	-2.688 (2.005)	-7.480 (2.449)	-7.402 (2.509)	-7.290 (1.726)	-5.892 (1.770)
Liberal incumbent	2.893 (1.511)	3.288 (1.525)	3.545 (1.409)	4.356 (1.400)	6.155 (1.483)	6.066 (1.655)	6.992 (1.317)	5.253 (1.454)
nfl	0.136 (2.270)	0.121 (2.243)	0.149 (2.345)	0.066 (2.278)	-0.111 (2.491)	-0.100 (2.492)	-0.224 (2.494)	0.193 (2.427)
ns	0.121 (1.919)	0.124 (1.899)	0.042 (1.952)	0.058 (1.886)	0.166 (2.160)	0.165 (2.161)	0.115 (2.027)	0.034 (1.946)
nb	0.508 (2.006)	0.500 (1.962)	1.002 (1.916)	0.970 (1.791)	0.382 (2.330)	0.387 (2.327)	0.858 (2.111)	1.019 (1.925)
pei	3.314 (1.708)	3.298 (1.712)	3.364 (1.629)	3.319 (1.600)	3.059 (1.848)	3.070 (1.852)	3.161 (1.548)	3.388 (1.478)
qc	3.065 (3.120)	2.986 (3.095)	3.937 (3.089)	3.728 (3.008)	3.175 (3.215)	3.171 (3.218)	3.602 (2.861)	3.767 (2.830)
mn	-1.812 (2.346)	-1.782 (2.327)	-3.316 (2.224)	-3.211 (2.130)	-0.600 (2.335)	-0.633 (2.358)	-1.828 (1.717)	-2.613 (1.759)
sk	-0.731 (2.425)	-0.681 (2.388)	-2.629 (2.390)	-2.466 (2.255)	0.794 (2.454)	0.747 (2.492)	-0.878 (1.962)	-1.957 (2.001)
ab	-0.912 (2.697)	-0.876 (2.683)	-4.068 (2.306)	-3.929 (2.226)	0.383 (2.713)	0.346 (2.733)	-2.426 (1.844)	-3.383 (1.800)
bc	-3.300 (2.455)	-3.251 (2.454)	-5.085 (2.412)	-4.912 (2.372)	-1.788 (2.385)	-1.834 (2.425)	-3.288 (1.949)	-4.419 (2.007)
_cons	31.414 (4.159)	31.490 (4.131)	23.564 (4.909)	23.062 (4.794)	34.411 (4.409)	34.463 (4.456)	21.475 (4.978)	22.454 (4.854)
r2_a								
N	150.000	150.000	130.000	130.000	150.000	150.000	130.000	130.000

Table B1 Continued.

	PDI Growth Rate				PDI Growth Rate minus Five Year Average			
	All Years		Excluding 1958 & 1980		All Years		Excluding 1958 & 1980	
All Economic Conditions	-0.057 (0.325)		0.863 (0.332)		-0.681 (0.399)		0.253 (0.447)	
Good Economic Conditions		-0.195 (0.428)		-0.015 (0.394)		1.857 (0.562)		1.224 (0.607)
Bad Economic Conditions		0.375 (0.900)		3.892 (0.830)		-8.513 (1.382)		-4.320 (2.037)
Lagged incumbent vote share	0.717 (0.071)	0.714 (0.072)	0.707 (0.069)	0.686 (0.067)	0.720 (0.071)	0.758 (0.066)	0.708 (0.071)	0.727 (0.071)
Mandate length (logged)	-8.661 (1.038)	-8.691 (1.037)	-5.338 (1.323)	-5.612 (1.256)	-8.348 (1.031)	-5.546 (1.051)	-6.715 (1.271)	-6.011 (1.286)
Bloc 1993	-26.391 (11.123)	-25.696 (11.266)	-25.137 (10.456)	-20.298 (10.739)	-27.012 (10.774)	-24.498 (9.995)	-26.683 (10.577)	-25.741 (10.406)
Reform/Alliance	-6.582 (2.500)	-6.154 (2.629)	-3.529 (2.157)	-0.360 (2.157)	-6.753 (2.330)	-4.066 (2.068)	-5.397 (1.952)	-4.129 (1.954)
Liberal incumbent	6.407 (1.522)	6.360 (1.526)	5.960 (1.360)	5.476 (1.317)	6.451 (1.414)	6.189 (1.296)	7.034 (1.355)	6.566 (1.349)
nfl	0.220 (2.429)	0.233 (2.423)	-0.099 (2.383)	0.049 (2.356)	0.207 (2.478)	0.028 (2.420)	-0.105 (2.541)	-0.237 (2.582)
ns	0.064 (2.096)	0.062 (2.081)	0.058 (1.983)	0.035 (1.802)	0.066 (2.131)	0.090 (1.965)	0.059 (2.084)	0.079 (2.068)
nb	0.484 (2.258)	0.490 (2.257)	0.857 (2.085)	0.905 (2.028)	0.479 (2.275)	0.408 (2.074)	0.855 (2.210)	0.812 (2.167)
pei	2.749 (1.774)	2.759 (1.777)	2.728 (1.624)	2.794 (1.616)	2.739 (1.777)	2.599 (1.649)	2.726 (1.626)	2.667 (1.645)
qc	3.260 (3.086)	3.218 (3.106)	3.438 (3.102)	3.171 (3.179)	3.298 (3.005)	3.128 (2.798)	3.545 (3.123)	3.408 (3.085)
mn	-0.706 (2.285)	-0.807 (2.294)	-2.289 (2.147)	-3.121 (2.036)	-0.655 (2.234)	-0.890 (1.877)	-1.882 (2.078)	-2.018 (1.976)
sk	0.777 (2.417)	0.662 (2.440)	-1.111 (2.212)	-2.041 (2.205)	0.842 (2.407)	0.800 (2.176)	-0.700 (2.193)	-0.747 (2.195)
ab	0.250 (2.665)	0.144 (2.675)	-2.688 (2.399)	-3.586 (2.307)	0.306 (2.590)	0.145 (2.361)	-2.278 (2.309)	-2.354 (2.264)
bc	-1.643 (2.313)	-1.756 (2.331)	-3.280 (2.312)	-4.213 (2.298)	-1.580 (2.235)	-1.648 (2.067)	-2.869 (2.249)	-2.914 (2.216)
_cons	34.032 (4.383)	34.651 (4.555)	21.690 (5.684)	26.336 (5.625)	33.288 (4.304)	17.039 (4.912)	26.722 (5.546)	21.788 (5.900)
r2_a								
N	160.000	160.000	140.000	140.000	160.000	160.000	140.000	140.000