Accountability, Knowledge and Economic Voting in Canada

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Introduction

A central tenet of democratic theory is that the exercise of governance be both legitimate and accountable. Elections constitute the fundamental means through which these ends are met. Critical to this process is the ability of the citizen to correctly assign responsibility for government action. Institutional arrangements are central to defining the pathways of accountability. In institutional contexts with only one level of government, assigning responsibility is relatively straightforward. However, in situations of multiple and overlapping levels of government, the process of correctly assigning responsibility and ultimately holding governments accountable for their actions is much more difficult.

A fundamental means by which to consider these issues is to draw on the reward and punishment calculus of economic voting. The economic voting model argues that citizens hold governments accountable for economic conditions (and/or perceptions of them) by supporting the incumbent government when the economy is performing well and voting against the government when the economy is going badly. This model assumes that lines of accountability are clear. However, where multiple levels of decentralized authority cloud responsibility voters will find it harder to apportion credit (blame) and accountability for economic outcomes (either positive or negative) is likely to be muted.

Previous research has demonstrated that the ability of voters to correctly attribute responsibility and hold national governments accountable for actions and outcomes while in office is diminished in institutional milieus of extensive multi-level governance (Anderson 2004; 2005). While these findings indicate that general levels of accountability for economic conditions in a country such as Canada are undermined by the presence of multiple orders of government, much less is known about how effectively citizens attribute responsibility and hold governments accountable at different levels. This paper further explores aspects of the relationship between multi-level institutions and accountability by developing an accountability-centered model of economic voting that considers the extent to which voters are able to hold governments accountable at both the federal and provincial levels in Canada.

The accountability-centered model contends that governments should only be held accountable for those actions and outcomes that they can reasonably be seen to have influence over. As such, this model of economic voting posits that federal incumbent support should be affected by both national and provincial economic conditions because the parameters of both fall within the realm of federal policy-making and power. By contrast, provincial incumbents should only be held accountable for provincial economic conditions. Findings that contradict the expectations of this model are likely evidence for the deleterious effects of multi-level institutions on accountability.

Logistic regression models are estimated using individual-level data from the 1988, 1993 and 1997 Canadian Election Studies. In addition to testing the central propositions of the accountability-centered model, the analysis also considers the effects of knowledge on respondent ability to hold government accountable.

The Accountability-Centered Model

Previous work on the relationship between multi-level institutions and economic voting has demonstrated that economic voting is weakened in multi-level states

(Anderson 2004, 2005). The logic underlying these findings is that the existence of more than one level of government makes it harder for voters to attribute responsibility for economic conditions. There are three reasons for this. First, the actions of other levels of government may also have an effect on economic conditions, second, increased information demands are placed on voters when governance spans multiple levels and this is likely to undermine the ability of voters to accurately attribute credit and blame for economic conditions and finally, incentives are created for government actors to actively and passively engage in blame-shifting and credit-taking.

While these previous findings suggest that the presence of multiple orders of government may serve to undermine the ease of attributing responsibility and ultimately holding governments accountable, the results do not rule out economic voting writ large. In the context of a highly decentralized multi-level state like Canada, economic effects in the voting calculus remain (as evidenced by the volume of literature on economic voting in Canada). The central question that this paper addresses is how the complexity of multiple levels of government influences the attribution of responsibility and the extent of accountability for economic conditions to which governments at each level are subject.

From the perspective of an accountability-centered logic governments can and should only be held accountable for decisions and the general political and economic outcomes within their geographically and legally determined jurisdiction. For instance, it would make little sense for the provincial governments in Canada to be held accountable for the successes (or failures) of Canada's military policy. It is the federal government, not provincial governments, who should be held accountable for these types of outcomes. Likewise, the federal government should not be held accountable for successes (or problems) with elementary or secondary education in particular provinces because, in the Canadian case, the federal government has no direct or indirect policy-making jurisdiction over public-school education.

This rationale implies a number of hypotheses regarding the relationships between federal and provincial economic conditions and incumbent support at the federal and provincial levels in Canada. At the federal level, positive (negative) perceptions of national economic conditions are expected to increase (decrease) the likelihood of supporting the federal incumbent. Additionally, positive perceptions of the provincial economy should also increase incumbent support at the federal level. This is expected for a variety of reasons. In the first instance, the federal government has more power to set macroeconomic policy than provincial governments and as such the condition of provincial economies is, in part, a result of federal macroeconomic policy decisions. In addition to macroeconomic policy, the federal government is vested with superior fiscal powers amongst governments in Canada. The ability of provincial governments to manage the provincial economy as well as to provide services is, in part, a function of the extent of fiscal transfers to the provinces from the federal government. Finally, the federal government has been engaged in various projects of regional development that, by extension, implicate the federal government as, in part, responsible for the health and condition of provincial economies.

Conversely, at the provincial level it is expected that perceptions of provincial economic conditions will influence vote intention for provincial incumbents. Positive (negative) perceptions of the provincial economy should increase (decrease) the likelihood of electoral support for the incumbent. This effect is expected because

provincial governments are not only central managers of provincial economies but also have a variety of policy tools at their disposal to affect economic conditions. Provincial governments have the ability to recruit business through offering such carrots as tax incentives and inexpensive land (Atkeson and Partin 1995) as well as try to attract international investment in provincial economies (e.g. Alberta and Quebec). Voters may also compare the state of their provincial economy with that of other provinces or the national average and determine that responsibility for differences (either positive or negative) is attributable to the provincial government (Atkeson and Partin 1995). Finally, it is expected that perceptions of national economic conditions will not influence vote choice at the provincial level. This is expected because provincial governments can neither reasonably be expected to have any substantial impact on the national economy nor be held accountable for such conditions.

Previous research on these questions has largely taken place within the context of the United States. In the American case, the effect of state and national economic conditions on both approval and electoral support for elected offices within both state and federal levels of government has been extensively tested. It has been long established that Presidential popularity and electoral support is, in significant part, a function of national economic conditions and individual perceptions of them (see Lewis-Beck and Stegmaier 2000 for a thorough review). Additionally, past work shows that vote choice in House and Senate elections is also a function of national economic conditions (Kramer 1971; Abramowitz and Segal 1986) as well as a referendum on Presidential support and performance ratings (Abramowitz 1984, 1985; Abramowitz and Segal 1988; Atkeson and Partin 1995; Carsey and Wright 1998). Less known are the effects of state level economic conditions and evaluations on Presidential approval and support. One study finds that state-level economic evaluations do have an influence on Presidential approval ratings (Orth 2002).

At the state level, economic effects at different levels of aggregation have been extensively studied. However, no clear resolution of the issues has yet emerged. Some work suggests that state economic conditions alone (not national) influence gubernatorial (state governor) approval (Hansen 1999; Howell and Vanderleeuw 1990) and electoral support in gubernatorial elections (Atkeson and Partin, 1995; Carsey and Wright 1998; Niemi, Stanley and Vogel 1995; Partin 1995; Squire and Fastnow 1992). By contrast, others have found that national, not state, economic conditions influence electoral support (Kone and Winters 1993; Peltzman 1987) and approval of state governors (Crew and Weiher 1996). Further studies find that both state and national economic evaluations influence gubernatorial elections (Chubb 1988; Svoboda 1995). Finally, other research suggests that state governors are only held accountable for economic conditions in certain situations such as election years or when they preside over a unified state government (Levernier 1991; Leyden and Borelli 1995; MacDonald and Sigelman 1999).

Outside of the United States, studies in two countries consider economic voting in the context of multi-level institutions. In a study of support for the Catalan regional government, Diaz and Riba (2002), using both aggregate and individual-level data, find that regional economic conditions influence support for this government even though the government of Catalonia has no independent macroeconomic policy making capacity. In the context of Argentina, Remmer and Gelineau (2003) observe that national economic

conditions more than sub-national ones shape support of provincial governments in that multi-level state.

Knowledge and the Accountability-Centered Model

In addition to testing the accountability-centered model, this paper also considers the effects of respondent knowledge on the ability of the electorate to correctly attribute responsibility and hold governments accountable. The presence of multi-level institutions imposes information demands upon citizens that may undermine their ability to accurately evaluate government performance on the basis of economic conditions (Anderson 2005). In the context of multi-level governance and economic voting in Canada, there are good theoretical reasons to expect that citizens' ability to attribute inter-institutional responsibility for economic outcomes are influenced by knowledge.

In the first instance, citizen knowledge will likely be positively related to more accurate perceptions of actual economic conditions at both the national and provincial levels. Having some sense of economic conditions is a likely first step towards being able to attribute responsibility and hold government accountable. Respondents with higher levels of knowledge should also have a more accurate sense of which order of government to hold accountable for economic conditions at different levels of aggregation. Not only may the more knowledgeable be better able to accurately attribute responsibility for economic conditions at different levels of aggregation, they are also likely to have a better sense of which level of government is most responsible for economic conditions more generally.

A range of literature suggests that levels of knowledge are not high (Luskin 1987; Sniderman, Brody and Tetlock 1991) and that knowledge has substantial effects on political behavior. For example, the politically knowledgeable are more likely to vote (Delli Carpini & Keeter 1996; Gidengil et al. 2004). They are better able to link their individual and group interests with their issue positions (Althaus 1998; Gidengil et al. 2004) and vote choices (Delli Carpini and Keeter 1996; Johnston et al. 1996).

This discussion leads to specific hypotheses to be tested in this paper. It is expected that higher levels of respondent knowledge will act to heighten those effects predicted in the general test of the clarity of the accountability-centered model. If the presence of multiple levels of government weakens economic voting for the federal government, it is expected that this blurring effect should matter less for the most knowledgeable. It follows that the effect of evaluations of the national economy on federal incumbent voting should be greater for the most knowledgeable. Additionally, the effects on federal incumbent vote of evaluations of provincial conditions should also be greater for the most knowledgeable. According to the accountability-centered model, however, evaluations of the national economy should not have any impact on incumbent support at the provincial level. This should especially be the case for knowledgeable citizens. Finally, the effect of evaluations of the provincial economy on provincial incumbent support should increase among the most knowledgeable respondents.

Economic Voting In Canada

In the Canadian case, most studies of economic voting have considered the impact of economic conditions on approval and voting for the federal government.[1] In three separate studies of economic voting in Canadian federal elections, Happy (1986, 1989, 1992) finds significant effects on incumbent vote share of such aggregate economic conditions as unemployment, inflation and income. Confirming these findings, Canadian federal vote functions constructed by Nadeau and Blais (1993, 1995) demonstrate the significant effects of rising unemployment on vote shares for the federal Liberal Party. By contrast, Carmichael (1990) finds that, between 1945 and 1972, bad economic conditions (such as rising unemployment or inflation) benefited the incumbent governing party in federal elections. For federal elections after this period, Carmichael finds no significant effects of economic conditions on federal incumbent support (1990). On this basis, Carmichael concludes that the general model of economic voting as developed in the American context may not have universal applicability. However, as Nadeau and Blais (1993) note, one reason for these conflicting findings likely stems from different methodological choices made in the specification of these aggregate models.[2]

Using individual-level data, evidence of economic effects on voting for the federal incumbent is established yet tepid. On the one hand, Clarke and Kornberg (1992) make a strong case for the effects of economic conditions on Conservative support throughout the 1980's and early 1990's. These authors contend that the conventional wisdom that the Conservatives lost support because of unpopular domestic policy initiatives (such as the failed Meech Lake Accord, the introduction of a new federal tax called the Goods and Services Tax (GST) and the Canada-U.S. Free Trade Agreement) was wrong (Clarke and Kornberg 1992). Rather, Clarke and Kornberg demonstrate that the Canadian electorate blamed the governing Conservatives for declining economic conditions throughout this period and these negative effects on Conservative support outweighed the effects of unpopular policy choices. On the other hand, Blais and his colleagues (2002) suggest that economic voting in Canada may not be as prominent as conventional wisdom suggests. Indeed, while Blais et al. (2002a) find some evidence of economic voting in the 1997 federal election they argue that these effects did not exert a prominent impact on vote choice nor did they impact the outcome of the election. In the 2000 federal election, the same authors find greater evidence for economic voting at the federal level but suggest that the impact of the economy was limited (Blais et al. 2002a).

Beyond general findings such as these, past studies of federal economic voting in Canada have considered variation within the Canadian electorate. For instance, Guerin and Nadeau (1998) considered the impact of the linguistic cleavage on federal economic voting. This study finds that, contrary to voters in other Canadian provinces, voters in Quebec did not vote according to their evaluations of economic conditions. The authors contend that these findings suggest a different electoral rationality for minorities in long-established democracies. Godbout and Belanger (2002) consider whether regional

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[1] In the Canadian case there is a wealth of literature assessing the effects of economic perceptions and conditions on support for Quebec sovereignty (Blais, Martin and Nadeau 1995; Duchesne, Eagles and Erfle 2003; Mendelsohn 2003) as well as constitutional choices in the 1992 Charlottetown Accord referendum (Clarke and Kornberg 1994). Further, Monroe and Erikson (1986) consider economic effects in support for the NDP.

[2] The use of aggregate modeling can be highly sensitive to subtle changes in specification and this is one of the reasons why aggregate findings should also be tested at the individual-level.

patterns of partisan competition and the structure of regional economies shape the effects of economic perceptions on federal vote choice. They find that the presence of a strong regional party weakens economic voting and that economic effects in strong ('have') regional economies are typically socio-tropic whereas egocentric evaluations are more prominent amongst respondents in weak ('have not') regional economies.[3]

Finally, Cutler (2004) considers the effects of respondent perceptions on a variety of policy issues (including the economy) on vote choice within both federal and provincial contexts. In particular, Cutler seeks to understand to which level of government voters assign responsibility for outcomes in specific policy areas and the extent to which voters are able to use their responsibility judgments to accurately hold governments accountable for policy outcomes. Results indicate that while in some policy areas such as health care respondents are unable to hold governments accountable, in others, such as the economy or environment, there is some evidence of the ability of voters to correctly hold governments accountable (2004).

Of relevance to present purposes, there is only one study that considers the relative impact of provincial and national economic conditions on electoral support for provincial and national governments in Canada. Using aggregate data, Belanger and Gelineau (2004) consider the effect of both national and provincial economic conditions on federal government electoral support from 1953-2001. Their results indicate that national economic conditions (specifically unemployment and inflation), not provincial economic conditions, influence incumbent support in federal elections. At the provincial level, they found that none of the provincial economic conditions (including unemployment, inflation and income) had significant effects on provincial electoral outcomes. By contrast, national economic conditions (in particular, rates of unemployment) had statistically significant effects on provincial election outcomes. Finally, they found evidence of a referendum effect in that support of provincial governing parties of the same partisan family as the federal government are influenced by national economic conditions while other provincial governing parties are not.

However, there are a variety of good theoretical and empirical reasons why the use of objective, aggregate economic indicators may produce results that are inconsistent with findings at the individual-level. In terms of actually explaining voter motivation and behavior, it may be that it is not objective economic conditions per se that determine vote choice but rather voter's subjective perceptions of economic conditions that matter (Blais et al. 2002a). Past work on economic voting in both Canada (Nadeau et al. 2000) and the United Kingdom (Sanders et al. 2001) has shown that voters can have misperceptions of macroeconomic conditions. In the case of the 1997 Canadian federal election, Nadeau et al. (2000) found that a significant portion of the electorate held misperceptions of recent changes in the unemployment rate and, as such, failed to properly reward the incumbent Liberals for this good economic performance. Similarly, in the United Kingdom, Sanders et al. (2001) note the relative importance of subjective perceptions of economic conditions relative to actual macroeconomic reality. For instance, during the period from 1992 to 1997, under the governing Conservative Party the rates of unemployment and inflation went down by 4% and 2% respectively and the Conservatives still lost the 1997 General Election. Sanders et al. (2001) argue that this occurred because notwithstanding

[3] The designation 'have' refers to provinces with economies that perform above the national average while 'have not' denotes provinces and regions with comparatively poorer economies.

objective reality the electorate believed that economic conditions had not improved and as a result punished the incumbent Conservatives in the 1997 General Election.

There are a number of plausible reasons to explain the disjuncture between objective economic conditions and the subjective perceptions of them. One reason centres on actual levels of voter knowledge. As has been discussed, general levels of knowledge about the political world are relatively low. These low levels of knowledge are likely to exist in other areas of societal condition such as the economy and by extension it is probable that voters exhibit a general ignorance about actual economic conditions. A second factor that may cause misperceptions of macroeconomic conditions could be differential attention and exposure to media. Indeed, past research has found that limited exposure to forms of media as well as low levels of knowledge are related to misunderstandings about political issues (Price and Hsu 1992; Zaller 1992). Finally, attitudinal cues such as identification with the incumbent party may also have the effect of biasing views of objective economic conditions (Nadeau et al. 2000).

There are clear reasons why the effect of economic conditions on electoral outcomes may be influenced by the nature and type of criteria used to assess economic conditions. As a result, objective economic conditions may be less efficient or accurate predictors of incumbent support. Accordingly, the analyses in this paper draw on subjective evaluations from individual-level data.

Data and Methods

The hypotheses are tested using pooled individual-level data from the 1988, 1993 and 1997 Canadian Election Studies. These election studies are particularly useful for two central reasons. All three have questions pertaining to respondents' socio-tropic retrospective perceptions of both federal and provincial economic conditions. Socio-tropic questions tap respondents' evaluations of the economy at the national or provincial level (depending on the question asked) as opposed to their personal or household situation. The retrospective aspect of the question directs respondents to evaluate past economic conditions, usually over the past 12 months, in contrast to prospective evaluations of what is likely to happen in the future. Past work on economic voting has demonstrated that socio-tropic retrospective evaluations have a larger and more consistent impact on vote choice than either egocentric or prospective variations (Lewis-Beck and Paldam 1999).

These particular CES data are useful because they also include questions about electoral choice at both the federal and provincial levels (only in 1993 and 1997). Respondents are asked in a post-election wave how they voted in the recent federal election. Additionally, respondents are asked to identify their vote intention if a provincial election were to be held at that time. Ideally, questions pertaining to vote choice at the provincial level would correspond to the occurrence of a provincial election; when voters are arguably more mobilized to be informed and think critically about their elected leaders and the available alternatives. While provincial vote intention at a particular point in time is sub-optimal, the instrument should not be discounted completely because it does indicate a general measure of electoral support or approval of the provincial incumbent at that specific point.

All models include a range of standard socio-demographic and political controls known to influence vote choice in Canada.[4] Models include controls for gender, age, education, religion, ethnicity and income.[5] All models control for party identification where the respondent indicates a strong or fairly strong attachment to the respective incumbent party or opposition parties (Blais et al. 2002b).

Federal vote models also include election year and regional dummy variables as controls.[6] As the federal vote model includes the 1988, 1993 and 1997 elections, dummy variables are included in the model for election year.[7] To control for geographic variation in vote choice, regional dummies are included.[8] Provincial vote models incorporate neither regional nor election year dummy variables but rather integrate dummy controls for each province for each time point (i.e. there is a Quebec dummy for both 1993 and 1997).[9] These dummies are included in the vote models for a variety of reasons. In the first instance, the political context within which provincial vote intentions are gathered may be strongly shaped by political, economic or other factors unique to that context that either increase or decrease the general levels of support for the incumbent. Additionally, political, economic and other factors may inordinately influence the effects of other variables known to affect vote choice. Therefore, the addition of such dummies allows for a generalized control of election, region and province specific stochastic variation. Coefficients (and odds ratios) for each dummy have no substantive interpretation except to increase or decrease the value of the constant term in each model.

Separate models are estimated for federal vote choice and for provincial vote intention. As the analyses look to find overall trends, all models include data from all time points. Models only differ in the combination of economic variables included in the model. The models take the following form:

Model 1 (Federal Vote Choice 1988-1997)

Incumbent Vote = a + socio-demographics + federal incumbent partyid + federal opposition partyid + regional dummies + election dummies + national economic evaluations + e

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[4] However, the argument may be made that no socio-demographic controls should be included in the models because these are known to impact vote choice for specific political parties as opposed to the incumbent more generally. For example, ethnic minorities are more likely to vote for the Liberals regardless of whether they are the incumbent party. As the dependent variable of incumbent includes both the Progressive Conservatives (in 1988 and 1993) and the Liberals (in 1997), it is theoretically nonsensical to expect that ethnic minorities will be more likely to vote for the incumbent. To address these potential concerns, models were run without the standard socio-demographic controls. Indicating the robustness of the results, substantive findings remain the same as with these controls included in the model.

[5] Past work on voting behavior in Canada indicates that: women are less likely to vote for parties of the ideological right such as the Reform/Alliance Parties (Blais et al. 2002a), university graduates, ethnic minorities and Catholics are more likely to vote for the Liberal Party (Blais et al. 2002a; Irvine 1974; Mendelsohn and Nadeau 1997).

[6] For the same reasons expressed in footnote 4, there may be an argument against controlling for region because regional differences reflect partisan differences not the likelihood of supporting the incumbent. For instance, voters in the West are much less likely to support the Liberal Party. Regardless, models run without regional dummies produce the same substantive conclusions as those run with these controls.

[7] The reference case is the 1988 Federal Election.

[8] The reference case is Ontario.

[9] The reference case is Ontario for both 1993 and 1997.

Model 2 (Federal Vote Choice 1988-1997)

Incumbent Vote = *a* + socio-demographics + federal incumbent partyid + federal opposition partyid + regional dummies + election dummies + provincial economic evaluations + *e*

Model 3 (Federal Vote Choice 1988-1997)

Incumbent Vote = *a* + socio-demographics + federal incumbent partyid + federal opposition partyid + regional dummies + election dummies + national economic evaluations + provincial economic evaluations + *e*

Model 4 (Provincial Vote Choice 1993-1997)

Incumbent Vote Intention = *a* + socio-demographics + provincial incumbent partyid + provincial opposition partyid + 1993 provincial dummies + 1997 provincial dummies + national economic evaluations + *e*

Model 5 (Provincial Vote Choice 1993-1997)

Incumbent Vote Intention = *a* + socio-demographics + provincial incumbent partyid + provincial opposition partyid + 1993 provincial dummies + 1997 provincial dummies + provincial economic evaluations + *e*

Model 6 (Provincial Vote Choice 1993-1997)

Incumbent Vote Intention = *a* + socio-demographics + provincial incumbent partyid + provincial opposition partyid + 1993 provincial dummies + 1997 provincial dummies + national economic evaluations + provincial economic evaluations + *e*

where *a* is the constant and *e* is the error term.

All analyses are conducted using logistic regression because the dependent variable is dichotomous ('voted/intend to vote for incumbent'=1 or 'did not vote/intend to vote for incumbent'=0). Because all respondents from each election (in federal vote models) or province (in provincial vote models) are responding to the same economic and political contexts, it is likely that the error terms violate an assumption of regression analysis that they are independent. As a result, standard errors may be underestimated. To avoid this problem, the standard errors for each model are adjusted by clustering on each federal election (in the federal models) and each province (in the provincial models) (Rogers 1993).[10]

[10] All models are run using a demographic weight controlling for regional and socio-demographic selection bias.

For the effects of knowledge, interaction terms were created with knowledge scales and economic perceptions.[11] Knowledge scales were created on the basis of correct answers to factual questions included in each election survey. Ideally, these scales would be constructed on the basis of the same questions in each election study. However, the existing data prevent this possibility. As a result knowledge indices were constructed on the basis of the best available indicators of general political knowledge from each survey. For the 1988 election study, the knowledge scale was constructed based on respondents knowing if a candidate had been nominated in their riding for each of the major political parties (the Progressive Conservatives, the Liberals and the New Democrats) during the election campaign and after the election if they could remember the candidate's names for each political party. The knowledge scale for 1993 consisted of identifying party positions on major issues of the campaign including support or opposition for the Goods and Services Tax, the North American Free Trade Agreement, eliminating the deficit in 3 or 5 years as well as increasing public works spending. Finally, the 1997 knowledge scale is made up correct answers to questions including naming the President of the United States, the Federal Finance Minister, the respondent's current Provincial Premier and the first female Prime Minister of Canada.[12]

To create comparable scales, the knowledge index for each election was transformed into a 0 to 1 scale. This was accomplished by adding the correct number of answers for each respondent and dividing by the total number of questions in each index. Upon pooling the data sets, the 0 to 1 scale was recoded into a dummy variable in which respondents in the highest quartile were recoded into 'high knowledge' (=1) and all other respondents were recoded into 'not high knowledge' (=0). Recoding the knowledge scales in this manner provides a consistent and unbiased means through which to consider the effect of knowledge from different elections. Interaction terms were created by multiplying socio-tropic retrospective economic evaluations by knowledge. Following exactly the same modeling strategy as in Models 1 through 6, the interaction terms are sequentially included to test effects at both the federal and provincial levels.[13]

Results

As Table 1 shows, the electoral time periods under consideration exhibit prominent differences in the distribution of perceptions about the national and provincial economies. In 1988, almost 36% of respondents thought that the national economy had improved over the past 12 months. By contrast, only 14% thought that the economy had worsened. At the provincial level in 1988, distributions of retrospective evaluations resemble national evaluations although provincial evaluations are slightly more negative.

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[11] See Appendix for wording of knowledge questions.

[12] The alpha score for each knowledge scale is 0.71 for 1988, 0.76 for 1993 and 0.60 for 1997.

[13] An alternate test of the effect of knowledge can be conducted using levels of education instead of correct answers to factual questions. Under this strategy, education can be coded as a dummy variable in which respondents are given the value of 1 if they have completed a university degree and 0 otherwise. In the same patterns as in models 1 through 6, effects at both the federal and provincial levels were considered by the sequential introduction of interactions terms of evaluations of economic conditions and levels of education. Results, not shown, indicate that the only significant effect of education levels is to increase the effects of national economic conditions on voting for the federal incumbent. In none of the other models did education levels have a statistically significant effect on economic voting for federal and provincial incumbents.

In 1993, the picture is vastly different. Only 7% of respondents thought that the national economy had improved over the past year. As staggering as that, almost 2/3 of respondents (64%) thought that the national economy had worsened over the past year. Analogous to 1988, retrospective evaluations of provincial economic conditions in 1993 share a similar distribution to that found at the national level- respondents overwhelmingly sensed poor economic conditions over the previous 12 months. Finally, socio-tropic retrospective economic perceptions in 1997 returned to levels previously observed in 1988. Roughly 33% of respondents thought that the national economy had

Table 1 Socio-tropic Retrospective Evaluations of National and Provincial Economies, by Election Year (in percentages)

Economic Evaluations	1988		1993		1997	
	National	Provincial	National	Provincial	National	Provincial
Worse	13.6%	20.4	64.0	67.8	22.1	34.4
Same	50.6	43.1	28.8	24.4	45.4	34.8
Better	35.8	36.5	7.2	7.8	32.5	30.8

improved over the previous year while just over 22% thought that the national economy had deteriorated. At the provincial level, while 31% of respondents thought that their respective provincial economy had improved, 34% believed that the provincial economy had worsened over the previous 12 months. The general picture that emerges is one of positive evaluations of economic conditions in the low to mid 30% range and in 1993 a strong swing in negative evaluations of economic conditions within the country.

Before turning to the regression models, cross-tabulations of economic perceptions and vote choice provide a useful first look at the data and theorized relationships. Table 2a confirms the expected relationship between evaluations of the national economy and federal incumbent vote choice.

Table 2a Federal Vote and Evaluations of National Economy (1988-1997)

	Socio-tropic Retrospective Evaluations of National Economy			
Incumbent Vote	Worse	Same	Better	Total
No	83.8%	68.4	52.2	69.3
Yes	16.2	31.6	47.8	30.7
Total	100	100	100	100

N=7095 Pearson chi2(2) = 496.0178 Pr = 0.000

Table 2b Federal Vote and Evaluations of Provincial Economy (1988-1997)

	Socio-tropic Retrospective Evaluations of Provincial Economy			
Incumbent Vote	Worse	Same	Better	Total
No	79.0%	65.0	58.9	69.4
Yes	21.0	35.0	41.1	30.7
Total	100	100	100	100

N=7147 Pearson chi2(2) = 244.9140 Pr = 0.000

Among respondents who think that the national economy had worsened over the past 12 months, only 16% vote for the federal incumbent. By contrast, 48% of respondents who thought that the national economy was better voted for the federal incumbent. Table 2b reveals that federal incumbent voting is also shaped by positive evaluations of the provincial economy. While the effect is not as great as for evaluations of the national economy, the percentage difference in voting for the federal incumbent between those who thought the provincial economy was worse as compared to better was 20 points. These cross-tabulation results confirm expectations of the accountability-centered model.

At the provincial level, results are somewhat contrary to expectations. As observed in Table 3a, provincial governments are rewarded for positive evaluations of the provincial economy. Of respondents who thought that the provincial economy was worse over the past 12 months, only 21% stated an intention to vote for the provincial incumbent. By contrast, of respondents who thought that the provincial economy was better, 48% expressed an intention to vote for the provincial incumbent.

Table 3a Provincial Vote and Evaluations of Provincial Economy (1993-1997)

	Socio-tropic Retrospective Evaluations of Provincial Economy			
Incumbent Vote	Worse	Same	Better	Total
No	78.2%	66.2	51.6	69.5
Yes	21.8	33.8	48.4	30.5
Total	100	100	100	100

N=7103 Pearson chi2(2) = 346.9370 Pr = 0.000

Table 3b Provincial Vote and Evaluations of National Economy (1993-1997)

	Socio-tropic Retrospective Evaluations of National Economy			
Incumbent Vote	Worse	Same	Better	Total
No	74.9%	67.1	62.3	69.5
Yes	25.1	32.9	37.7	30.5
Total	100	100	100	100

N=7077 Pearson chi2(2) = 83.5487 Pr = 0.000

Although the effect is the smallest amongst the four cross-tabulations, Table 3b shows that positive evaluations of the national economy are also related to increasing likelihood of vote intention for the provincial incumbent. Consistent with an accountability-centered model of credit and blame, it was expected that national conditions would have little effect on vote intention at the provincial level. However, these initial tests of the model seem to indicate that federal and provincial governments are rewarded for positive evaluations of the economy at both levels of aggregation, even though there are no plausible grounds upon which provincial governments should be held accountable (rewarded or punished) for national conditions.

A more rigorous test of these hypotheses is achieved through conducting logistic regression analysis. In all regression models considered in this analysis, a fairly or very strong identification with the incumbent party results in respondents being much more

likely to vote for the incumbent governing party and conversely a fairly or very strong identification with an opposition party weakens support for the incumbent. Table 4 contains the results from three regression models that test the accountability-centered model at the federal level: the extent to which federal incumbent voting is affected by evaluations of national economic conditions and provincial economic conditions. The models vary by inclusion of different combinations of economic evaluations.

(Table 4 about here)

Results from Model 1 indicate that a one-unit increase in respondents' evaluation of the national economy increase the odds of voting for the federal incumbent by 29%. This is a strong effect and consistent with expectations regarding the role of evaluations of the national economy and federal voting. By contrast, as seen in Model 2, federal incumbents are neither rewarded nor punished for evaluations of provincial economic conditions as the coefficient is small in magnitude and not statistically significant. This finding is contrary to that found in the cross-tabulation results and to theoretical expectations. This finding may be reflective of citizens' inability to properly attribute responsibility and hold accountable federal incumbents for economic outcomes that they are, in part, responsible for. Finally, Model 3 includes economic evaluations from both levels of aggregation. Findings in this model conform to the patterns established in Models 1 and 2: evaluations of national economic conditions, not provincial economic conditions, matter for federal incumbent support.

(Table 5 about here)

Table 5 presents results for the impact of economic evaluations on provincial vote intentions as asked in the Canadian Election Studies of both 1993 and 1997. As in Table 4, models vary by the combination of economic evaluations included. Model 4 indicates that positive evaluations of the national economy increase the likelihood of expressing a vote intention for the provincial incumbent. While consistent with findings from Table 3b, this result contradicts expectations of the accountability-centered model in that provincial governments cannot realistically be held accountable for the state of the national economy. As found in Model 5, positive evaluations of provincial economies significantly increase the likelihood of vote intention for the prevailing incumbent. Indeed, a one-unit increase in the evaluation of the provincial economy doubles the odds of expressing a vote intention for the provincial incumbent. Finally, model 6 tests the effects on provincial vote intention of economic evaluations at both levels of aggregation simultaneously. In this model, while evaluations of the provincial economy continue to have a significant effect on provincial vote intention, the effects of evaluations of national economic conditions no longer remain. This result is likely because of high correlation between economic evaluations at the provincial and national levels. In short, when controlling for evaluations at the provincial level, the results found in Model 6 conform to the expectations of the accountability-centered model: in determining support for provincial incumbents, provincial evaluations should matter and national evaluations should not.

To summarize, based on the more robust test of logistic regression, most of the theoretical expectations of the responsibility-centered model are confirmed. Evaluations of national, but not provincial, economic conditions influence incumbent voting at the federal level in Canada. At the provincial level, provincial economic evaluations have a much more consistent and powerful effect on vote intention for the provincial incumbent

than evaluations of national economic conditions. In the context of federal incumbent support, the impact of a one-unit increase in evaluation of the national economy increases the odds of voting for the incumbent by about 29% (Model 3, Table 4). By contrast, a similar change in evaluation of the provincial economy produces a 94% increase in the odds of expressing a vote intention for the provincial incumbent (Model 6, Table 5). This is a striking and not inconsequential difference in the importance of evaluations of economic conditions on incumbent support.

Two reasons can be proffered for this finding. The first explanation draws on reasoning offered by Lewis-Beck and Nadeau in the context of U.S presidential voting (2001). They find that retrospective economic evaluations matter most for American presidents when they are seeking re-election. By contrast, when a new candidate for the incumbent party is seeking office (e.g. Al Gore in the 2000 election), economic evaluations matter much less because the candidate cannot (or should not) be held responsible for past economic conditions. As the data in this analysis of federal incumbent support come from 1988 through 1997, it is possible that the national economic effects for the federal incumbents are weaker because of the 1993 federal election in which the incumbent Progressive Conservative party was led by a newly chosen leader (Kim Campbell) who could not be held responsible for past economic conditions in the way that was the case in both 1988 and 1997. Indeed, separate tests of economic voting for each of these three elections confirm that economic effects were not statistically significant in 1993 but were in both 1988 and 1997. By contrast, the question of provincial vote intention was inevitably posed during the middle of mandates in which incumbent parties did not likely have new leadership.[14]

The second reason deals more specifically with the dynamics of multi-level governance in Canada.[15] It is plausible that within a multi-level state that is as decentralized as Canada citizens see provincial government action as being more important for determining the state of the economy in Canada (at either a provincial or national level of aggregation) than the federal government. While provincial governments inevitably have some independent ability to influence economic conditions within their jurisdictions (as argued earlier), the fact remains that the federal government has responsibility for all the most important fiscal, economic and trade policy components in Canada. To the extent that jurisdiction-specific economic evaluations matter much more for provincial incumbents than for federal ones, this may be evidence for the confusing dynamics that multi-level institutions pose for citizens in the attribution of responsibility for economic outcomes in Canada.

To this point in the analysis, two of the main expectations of the accountability-centered model have been confirmed. At both the federal and provincial levels, incumbent support is significantly influenced by jurisdiction-specific economic

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[14] Of the 10 provinces in both 1993 and 1997, only Nova Scotia's John Savage became a new Premier in the six months before a federal election. On June 11, 1993 the Savage-lead Liberal Party of Nova Scotia won power from the provincial Conservatives. In this one case (of out a possible 20), provincial voters were confronted with a new or relatively leader when stating provincial vote intention at the time of the federal elections.

[15] Tests of economic voting at the federal level were run without the 1993 election. However, even upon dropping the 1993 election (where no statistically significant economic voting occurred), the aggregate level of economic voting for the federal government in the 1988 and 1997 elections still remains well below provincial levels.

evaluations. Further, when the provincial incumbent support model is fully elaborated (including both national and provincial evaluations), only provincial evaluations have a significant effect as expected. However, where effects were expected, none were found (provincial economic evaluations have no statistically significant effect on federal incumbent support).

(Table 6 about here)

The analysis is extended to consider the effects of knowledge on economic voting in a multi-level system (see Table 6). In the first instance, the effect of greater respondent knowledge should heighten and clarify the extent to which governments are held accountable for economic conditions in general. Additionally, pertaining to the unexpected findings summarized above, it is expected that the effects of greater knowledge will improve respondents' ability to correctly attribute responsibility and hold governments accountable for economic conditions.

Results contained in Model 7 of Table 6 demonstrate that the effects of national economic evaluations on electoral support for the federal incumbent are not significantly increased among the most knowledgeable. Model 8 presents results of the effect of knowledge on evaluations of the provincial economy on the likelihood of voting for the federal incumbent. Previous results in Model 2 of Table 4 indicated that, contrary to expectations of the accountability-centered model, evaluations of the provincial economy had no effect on federal incumbent support. Results in Model 8, however, reveal that greater knowledge does not strengthen the effect of provincial economic evaluations on federal incumbent support.

When the knowledge interactions of both national and provincial evaluations are included in the federal incumbent vote model (Model 9), the effect of knowledge on national economic evaluations begins to have a statistically significant effect on the impact of these evaluations. Based on odds ratios from model 9, the effect of national economic evaluations on federal vote choice is about 11 points for the highly knowledgeable as compared to all other respondents. The effect of knowledge on provincial economic evaluations remains negligible.

The finding that evaluations of the national economy matter more in federal voting among the most knowledgeable is a telling result. An important component of the overall argument is that democratic accountability is undermined because the presence of multiple levels of government blurs lines of responsibility for economic outcomes and puts extra cognitive demands on citizens' ability to properly assign responsibility and hold governments accountable. These results suggest that the most knowledgeable are better able to accomplish this task.

(Table 7 about here)

Table 7 presents results from models that test for knowledge effects on the impact of economic evaluations on provincial vote intention. Upon initial inspection of the results, it appears that the highly knowledgeable are more likely to express a vote intention for the provincial incumbent. While this result was not expected it is possible that this result is an artifact of the effect of knowledge. As noted above, provincial vote intention was asked during federal election studies. Regardless of their prior levels of knowledge of federal politics, in the context of a federal election campaign respondents likely become more attuned to details of federal politics. By contrast, the analogous details of respective provincial politics may not be as salient to the average respondent.

In particular, relative to the highly knowledgeable, a low knowledge respondent may not be as clear on the identity of the current provincial incumbent. As a result, the positive and significant effects of knowledge on provincial vote intention may reflect the greater ability of highly knowledgeable respondents to correctly identify the provincial incumbent.

Contrary to expectations, previous results in model 4 (Table 5) revealed that evaluations of the national economy had a significant impact on the likelihood of expressing a vote intention for the provincial incumbent. As Model 10 shows, when knowledge is factored into the equation, evaluations of the national economy still have significant impacts on provincial vote intentions. These results suggest that knowledge does not influence the effects of national economic evaluations on provincial vote choice. Model 11 does not reveal an analogous result to that observed for federal incumbents: knowledge does significantly increase the effect of jurisdiction-specific economic evaluations on provincial incumbent support. Indeed, the effects of provincial economic evaluations on the likelihood of expressing a vote intention for the provincial incumbent are about 26 points higher (based on the odds ratio) among the most knowledgeable respondents. When knowledge interactions of both federal and provincial evaluations are included in the provincial incumbent vote intention model (Model 12), provincial economic evaluations continue to have a greater effect on provincial incumbent vote intention for the most knowledgeable respondents.

The effect of political knowledge on economic voting in the multi-level state of Canada yields particularly interesting results. In the first instance, knowledge seems to have the greatest effect on increasing the impact of jurisdiction-specific economic evaluations. The most knowledgeable do hold federal incumbents more accountable for national economic conditions. Similarly, at the provincial level, provincial economic evaluations have a greater effect on provincial incumbent vote intention among the highly knowledgeable as compared to respondents with lower levels of knowledge. By contrast, knowledge appears to have the little impact in the inter-jurisdictional attribution of responsibility for economic conditions. Indeed, this may be the context where lines of accountability in a multi-level system are likely to be the most difficult to accurately decipher. That said, where effects are found in voting for the federal and provincial incumbents, the blurring effect of multi-level institutions seems to have the most deleterious effect on the processes of democratic accountability among respondents with the lowest levels of political knowledge.

Discussion and Conclusion

The central problem considered in this paper is how accountability for economic outcomes is conditioned by the presence of multi-level institutions. Two hypotheses were tested within this chapter. The first followed the parameters of an accountability-centered model of economic voting and posited that governments within a multi-level system such as Canada should only be held accountable for those economic conditions that are consistent with their sphere of jurisdiction. On this basis, while the federal government in Canada should be held accountable for both national and provincial economic conditions, provincial governments should only be held accountable for economic conditions within the respective provinces. The second hypothesis considered the additional effects of knowledge on the accountability-centered model. It was

hypothesized that the most knowledgeable respondents would be most able to accurately hold governments in a multi-level system accountable for jurisdiction-specific economic conditions.

Results for the first hypothesis indicate that there is some plausibility to the accountability-centered model. While voters seem capable of holding governments in multi-level systems accountable for jurisdiction-specific economic evaluations, they are often unable to correctly apportion blame and credit for economic conditions when these attributions intersect jurisdictional levels. In particular, voters typically do not hold the federal government accountable for provincial conditions and use national conditions to evaluate provincial incumbents. These findings suggest that within a highly decentralized multi-level state such as Canada many voters may be unable to cope with the additional complexities introduced into daily political life by the presence of multi-level institutions.

With respect to the second hypothesis, results suggest that highly knowledgeable respondents are better able to accurately determine and use correct attributions of responsibility for evaluations of jurisdictional-specific economic conditions. Indeed, the effects of jurisdiction-specific economic evaluations on incumbent vote choice are significantly greater for the most knowledgeable respondents.

While these findings contribute to the broader literature on economic voting in Canada and economic voting within multi-level states, they also serve to support the central proposition that multi-level institutions undermine democratic accountability. Indeed, it seems that many Canadian voters hold the wrong level of government accountable for some of the economic conditions in Canada and the above results suggest that the use of the economic voting heuristic is likely to be most effectively and accurately used only among the most knowledgeable citizens.

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Appendix
Independent Variables

Female:
Respondent's gender
1 = female, 0 = male

Age:
Age of respondents is a continuous variable based on age at time of interview.

University Graduate:
Highest level of education completed
1=graduated from university, 0 = no university degree

Income:
Index of respondent's household income,10 income categories ranging from $0-$10,000 to $80,000 and over

Religion:
Respondent's religious affiliation is Catholic.
1= Catholic, 0=not catholic

Non-European:
Respondent is of non-European ethnic origin
1 = non-European, 0 = European

Region:
Dummy variables for West, Quebec and Atlantic provinces with Ontario as the reference category.

Province:
Dummy variables for each province in both 1993 and 1997 with Ontario as the reference category.

Election:
Dummy variables for 1993 and 1997 federal elections with 1988 as the reference category.

Political Knowledge Index:

1988 Knowledge Questions
Index comprised of six questions on knowledge of politics. (Cronbach's Alpha= 0.71)

1.-3. Do you know if the PC, Liberal, NDP have nominated a candidate in your riding? (asked during campaign)

4.-6. Do you recall the name of the PC, Liberal, NDP candidate nominated in your riding? (asked after the election)

1993 Knowledge Questions
Index comprised of six questions on knowledge of politics. (Cronbach's Alpha= 0.76)

1. Do you recall which party(ies) supports the Goods and Services Tax?
2. Do you recall which party(ies) opposes the Goods and Services Tax?
3. Do you recall which party promises to do away with NAFTA?
4. Do you recall which party promises to eliminate the deficit in three years?
5. Do you recall which party promises to eliminate the deficit in five years?
6. Do you recall which party promises to increase spending on public works?

1997 Knowledge Questions
Index comprised of four questions on knowledge of politics. (Cronbach's Alpha= 0.60)

1. "Do you recall the name of the President of the United States?"
2. "Do you recall the name of the Minister of Finance of Canada?"
3. "Do you happen to know the name of the first female Prime Minister of Canada?"
4. "Do you recall the name of your province's premier?"

For each knowledge item, respondents were given a score of 1 for correct responses and a score of 0 for incorrect responses. To create comparable scales, the knowledge index for each election was transformed into a 0 to 1 scale. This was accomplished by adding the correct number of answers for each respondent and dividing by the total number of questions in the index. Upon pooling the data sets, the 0 to 1 scale was recoded into a dummy variable in which respondents in the highest quartile were recoded into 'high knowledge' (=1) and all other respondents were recoded into 'not high knowledge' (=0).

Table 4 Federal Vote Models (1988-1997)

		Model 1		Model 2		Model 3	
Socio-tropic Retrospective Economic Evaluations	**National Conditions**	**.25 (.04)*** **	***1.29***	-		**.26 (.09)*** **	***1.29***
	Provincial Conditions	-		**.08 (.12)**	***1.09***	**-.00 (.13)**	***.99***
Socio-Demographic and Political Variables	Female	.08 (.19)	*1.08*	.07 (.15)	*1.07*	.08 (.18)	*1.09*
	Age (in years)	.00 (.00)	*1.00*	.00 (.00)***	*1.00*	.00 (.00)	*1.00*
	University Grad	-.01 (.06)	*.99*	.01 (.07)	*1.00*	-.03 (.05)	*.97*
	Religion (Catholic)	.04 (.20)	*1.04*	.06 (.20)	*1.06*	.06 (.22)	*1.06*
	Ethnicity	.34 (.30)	*1.40*	.36 (.32)	*1.43*	.35 (.31)	*1.43*
	Income	.04 (.03)	*1.04*	.05 (.02)**	*1.05*	.04 (.03)*	*1.04*
	Incumbent Party ID	1.92 (.20)***	*6.79*	1.94 (.20)***	*6.96*	1.91 (.20)***	*6.74*
	Opposition Party ID	-1.73 (.26)***	*.15*	-1.72 (.23)***	*.18*	-1.73 (.25)***	*.18*
Regional and Election Dummies	Atlantic	-.33 (.39)	*.72*	-.32 (.28)	*.73*	-.32 (.40)	*.73*
	Quebec	.02 (.46)	*1.01*	.00 (.44)	*1.00*	.00 (.48)	*1.00*
	West	-.39 (.17)***	*.67*	-.42 (.14)***	*.66*	-.39 (.15)***	*.68*
	1993	-1.87 (.05)***	*.15*	-2.00 (.09)***	*.14*	-1.87 (.03)***	*.15*
	1997	-.64 (.04)***	*.53*	-.66 (.01)***	*.52*	-.65 (.01)***	*.52*
	Constant	-.28 (.04)***		-.24 (.07)***		-.29 (.04)***	
		n=5201 Pseudo R^2=0.33		n=5223 Pseudo R^2= 0.33		n=5140 Pseudo R^2= 0.33	

Note: Cells contain coefficients from binary logistic regression, robust standard errors in parentheses and odds ratios in italics.
*** p<.01 ** p<.05 * p<.1

Table 5 Provincial Vote Models (1993-1997)

		Model 4		Model 5		Model 6	
Socio-tropic Retrospective Economic Evaluations	**National Conditions**	**.37 (.13)*** **	***.96***	-		**.09 (.10)**	***1.09***
	Provincial Conditions	-		**.70 (.11)*** **	***2.01***	**.66 (.10)*** **	***1.94***
Socio-demographic and Political Variables	Female	-.29 (.10)***	*.75*	-.25 (.08)***	*.78*	-.24 (.09)***	*.78*
	Age (in years)	.01 (.00)	*1.01*	.01 (.01)	*1.01*	.01 (.01)	*1.01*
	University Grad	.13 (.10)	*1.13*	.14 (.10)	*1.16*	.13 (.10)	*1.14*
	Religion (Catholic)	.09 (.14)	*1.09*	.07 (.14)	*1.07*	.07 (.14)	*1.07*
	Ethnicity	-.13 (.18)	*.88*	-.10 (.18)	*.90*	-.09 (.18)	*.92*
	Income	.03 (.02)*	*1.03*	.04 (.02)**	*1.04*	.04 (.02)**	*1.04*
	Incumbent Party ID	2.72 (.11)***	*15.13*	2.64 (.11)***	*14.04*	2.62 (.11)***	*13.82*
	Opposition Party ID	-1.67 (.24)***	*.19*	-1.64 (.27)***	*.19*	-1.64 (.26)***	*.19*
Provincial Dummies	Nfld93	1.08 (.32)***	*2.94*	1.33 (.23)***	*3.77*	1.40 (.22)***	*4.07*
	PEI93	.77 (.32)**	*2.17*	1.03 (.22)***	*2.80*	1.04 (.21)***	*2.82*
	NS93	1.13 (.33)***	*3.08*	1.42 (.24)***	*4.13*	1.44 (.23)***	*4.20*
	NB93	1.59 (.32)***	*4.93*	1.55 (.21)***	*4.69*	1.54 (.21)***	*4.65*
	Qc93	.62 (.34)*	*1.86*	.79 (.23)***	*2.20*	.80 (.23)***	*2.21*
	Man93	.61 (.33)*	*1.84*	.67 (.22)***	*1.95*	.70 (.21)***	*2.02*
	Sask93	.17 (.33)	*1.18*	.41 (.23)*	*1.50*	.42 (.22)*	*1.52*
	Ab93	.54 (.32)*	*1.71*	.55 (.21)***	*1.74*	.59 (.21)***	*1.80*
	BC93	-.19 (.33)	*.82*	-.37 (.22)*	*.69*	-.31 (.21)	*.73*
	Nfld97	.17 (.31)	*1.17*	.38 (.20)*	*1.46*	.37 (.19)*	*1.45*
	PEI97	1.14 (.33)***	*3.13*	1.10 (.22)***	*3.01*	1.13 (.21)***	*3.08*
	NS97	-.39 (.31)	*.68*	-.07 (.21)	*.94*	-.10 (.19)	*.91*
	NB97	1.18 (.32)***	*3.25*	1.13 (.22)***	*3.10*	1.14 (.22)***	*3.11*
	Qc97	.49 (.31)	*1.62*	.64 (.21)***	*1.90*	.61 (.20)***	*1.84*
	Man97	.24 (.33)	*1.27*	.15 (.22)	*1.16*	.14 (.21)	*1.15*
	Sask97	.19 (.33)	*1.21*	-.11 (.23)	*.89*	-.11 (.22)	*.89*
	Ab97	.95 (.33)***	*2.59*	.52 (.24)**	*1.67*	.52 (.23)**	*1.68*
	BC97	-.13 (.34)	*.88*	-.13 (.22)	*.88*	-.14 (.21)	*.87*
	Constant	-1.92 (.39)***		-1.88 (.34)***		-1.89 (.32)***	
		n=4985		n=4988		n=4921	
		PseudoR^2=0.35		PseudoR^2=0.37		PseudoR^2=0.37	

Note: Cells contain coefficients from binary logistic regression, robust standard errors in parentheses and odds ratios in italics.
*** p<.01 ** p<.05 * p<.1

Table 6 Knowledge Interactions and Federal Vote Models (1988-1997)

		Model 7		Model 8		Model 9	
Socio-tropic Retrospective Economic Evaluations	**High Knowledge**	**-.03 (.21)**	***.97***	**.03 (.15)**	***1.03***	**-.02 (.19)**	***.98***
	Knowledge*National Conditions	**.05 (.08)**	***1.05***	-		**.10 (.05)****	***1.11***
	National Conditions	**.23 (.03)*****	***1.25***	-		**.20 (.09)****	***1.22***
	Knowledge*Provincial Conditions	-		**-.02 (.08)**	***.98***	**-.08 (.08)**	***.93***
	Provincial Conditions	-		**.10 (.11)**	***1.10***	**.04 (.14)**	***1.04***
Socio-Demographic and Political Variables	Female	.08 (.20)	*1.09*	.08 (.17)	*1.08*	.09 (.19)	*1.09*
	Age (in years)	.00 (.00)	*1.00*	.00 (.00)	*1.00*	.00 (.00)	*1.00*
	University Grad	-.00 (.08)	*0.99*	.01 (.09)	*1.01*	-.02 (.07)	*.98*
	Religion (Catholic)	.06 (.19)	*1.06*	.08 (.18)	*1.08*	.08 (.21)	*1.08*
	Ethnicity	.34 (.31)	*1.40*	.35 (.32)	*1.42*	.35 (.32)	*1.41*
	Income	.04 (.03)	*1.04*	.05 (.02)*	*1.05*	.04 (.03)*	*1.05*
	Incumbent Party ID	1.92 (.20)***	*6.81*	1.94 (.21)***	*6.95*	1.91 (.20)***	*6.73*
	Opposition Party ID	-1.72 (.27)***	.18	-1.72 (.24)***	*.18*	-1.72 (.25)***	*.18*
Regional and Election Dummies	Atlantic	-.34 (.38)	*.71*	-.34 (.39)	*.72*	-.34 (.39)	*.71*
	Quebec	.03 (.46)	*1.03*	.01 (.45)	*1.01*	.00 (.49)	*1.00*
	West	-.39 (.17)**	*.68*	-.41 (.14)***	*.66*	-.39 (.15)***	*.68*
	1993	-1.87 (.05)***	*.15*	-1.99 (.10)***	*.14*	-1.87 (.03)***	*.15*
	1997	-.64 (.05)***	*.53*	-.66 (.01)***	*.52*	-.65 (.01)***	*.52*
	Constant	-.27 (.01)***		-.25 (.06)***		-.27 (.01)***	
		n=5121 Pseudo R^2=0.33		n=5145 Pseudo R^2= 0.33		n=5062 Pseudo R^2= 0.33	

Note: Cells contain coefficients from binary logistic regression, robust standard errors in parentheses and odds ratios in italics.
*** p<.01 ** p<.05 * p<.1

Table 7 Knowledge Interactions and Provincial Vote Models (1993-1997)

		Model 10		Model 11		Model 12	
Socio-tropic Retrospective Economic Evaluations	**High Knowledge**	**.24 (.09)****	***1.27***	**.20 (.08)****	***1.22***	**.20 (.08)****	***1.22***
	Knowledge*National Conditions	**.02 (.07)**	***1.02***	**-**		**-.08 (.12)**	***.93***
	National Conditions	**.34 (.14)****	***1.40***	**-**		**.09 (.13)**	***1.10***
	Knowledge*Provincial Conditions	**-**		**.23 (.09)****	***1.26***	**.26 (.12)****	***1.30***
	Provincial Conditions	**-**		**.61 (.10)*****	***1.84***	**.57 (.07)*****	***1.77***
Socio-demographic and Political Variables	Female	-.25 (.10)**	*.78*	-.22 (.09)**	*.81*	-.21 (.09)**	*.81*
	Age (in years)	.01 (.01)	*1.01*	.01 (.01)	*1.01*	.01 (.01)	*1.01*
	University Grad	.06 (.11)	*1.06*	.10 (.10)	*1.10*	.09 (.10)	*1.09*
	Religion (Catholic)	.11 (.15)	*1.11*	.09 (.15)	*1.10*	.09 (.15)	*1.10*
	Ethnicity	-.11 (.19)	*.90*	-.10 (.19)	*.90*	-.08 (.19)	*.92*
	Income	.02 (.02)	*1.02*	.03 (.02)	*1.03*	.03 (.02)	*1.03*
	Incumbent Party ID	2.70 (.12)***	*14.89*	2.63 (.13)***	*13.81*	2.61 (.13)***	*13.54*
	Opposition Party ID	-1.65 (.22)***	*.19*	-1.61 (.25)***	*.20*	-1.61 (.25)***	*.20*
Provincial Dummies	Nfld93	.95 (.32)***	*2.59*	1.23 (.23)***	*3.41*	1.29 (.23)***	*3.65*
	PEI93	.79 (.31)**	*2.21*	1.08 (.21)***	*2.96*	1.09 (.20)***	*2.96*
	NS93	1.15 (.33)***	*3.16*	1.48 (.23)***	*4.37*	1.49 (.23)***	*4.44*
	NB93	1.69 (.33)***	*5.41*	1.62 (.21)***	*5.04*	1.60 (.22)***	*4.96*
	Qc93	.65 (.34)*	*1.92*	.82 (.23)***	*2.27*	.82 (.24)***	*2.27*
	Man93	.48 (.33)	*1.62*	.62 (.22)***	*1.85*	.63 (.21)***	*1.88*
	Sask93	.24 (.33)	*1.27*	.49 (.22)**	*1.63*	.50 (.22)**	*1.65*
	Ab93	.44 (.32)	*1.55*	.47 (.21)**	*1.60*	.49 (.20)**	*1.64*
	BC93	-.06 (.33)	*.94*	-.23 (.22)	*.80*	-.18 (.21)	*.83*
	Nfld97	.09 (.30)	*1.10*	.36 (.18)**	*1.43*	.36 (.18)**	*1.43*
	PEI97	1.09 (.33)***	*2.98*	1.07 (.21)***	*2.91*	1.09 (.20)***	*2.98*
	NS97	-.40 (.30)	*.67*	-.07 (.20)	*.93*	-.09 (.19)	*.91*
	NB97	1.14 (.31)***	*3.13*	1.11 (.21)***	*3.03*	1.11 (.21)***	*3.02*
	Qc97	.43 (.31)	*1.53*	.62 (.19)***	*1.86*	.60 (.18)***	*1.82*
	Man97	.21 (.33)	*1.24*	.10 (.22)	*1.11*	.11 (.21)	*1.11*
	Sask97	.18 (.33)	*1.20*	-.12 (.22)	*.89*	-.12 (.21)	*.89*
	Ab97	.93 (.33)***	*2.53*	.47 (.23)**	*1.59*	.46 (.21)**	*1.59*
	BC97	-.15 (.34)	*.86*	-.13 (.21)	*.88*	-.12 (.21)	*.89*
	Constant	-1.92 (.38)***		-1.92 (.32)***		-1.93 (.31)***	
		n=4617		n=4625		n=4561	
		PseudoR^2=0.35		PseudoR^2=0.37		PseudoR^2=0.37	

Note: Cells contain coefficients from binary logistic regression, robust standard errors in parentheses and odds ratios in italics.
*** p<.01 ** p<.05 * p<.1