Local Conditions with National Consequences: How the Local Economic Environment Influences National Economic Perceptions

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Abstract:
Underlying the phenomena of economic voting are voters' perceptions of economic conditions. Where do these evaluations come from? What is an 'accurate' account of economic conditions? A number of studies have attempted to explain variation in perceptions of the economy that voters hold. Many point to partisanship as a key variable influencing these impressions. Others highlight individual-level differences in personal disposition, information levels and perception of group interests. However, to date, there has been limited work that considers how local economic conditions may affect national economic perceptions (but see Cutler, 2002). This paper aims to address this gap, combining data from the 2006 Canadian Election Studies with neighbourhood level economic indicators drawn from Canadian Census data (2006). The result is a rich dataset that allows us to examine the impact of local economic context (e.g. unemployment rates) on economic perceptions. Our argument contends that voters use local economic conditions as a reference point when evaluating economic performance. In turn, it is this local level variation that shapes perceptions of the national economy.

Section 1 – Introduction

The relationship between economic evaluations and vote choice has been well established in the literature (e.g. Lewis-Beck and Stegmaier 2000). The most basic understanding of 'pocketbook voting' contends that an individual simply considers whether or not he / she has done well economically, and if so, votes for the incumbent party / president (Fiorina 1981). To this foundation research has added a number of criteria, including whether it is personal or national conditions that matter (Anderson 2000; McKuen, Erikson and Stimson 1992), whether voters take into account retrospective or prospective economic considerations (Fiorina 1981), as well as conditional factors, such as government responsibility for economic conditions (Anderson 2006). Although debate continues as to the underlying mechanism driving economic voting, there is a general consensus that economic evaluations play an important role in the vote calculus (Lewis-Beck and Stegmaier 2000).

We begin with the premise that one's view of retrospective national economic conditions (RNEC) is, typically, a relevant factor that is taken into account when casting a ballot. The question we ask is what factors influence perceptions of these conditions? We consider three types of factors. The first is defined as 'predisposition' factors. These include individual level characteristics, such as socio-economic factors, party identification, and personal retrospective economic evaluation. Our second set of considerations is 'information and awareness' factors. Here we consider education level, political knowledge and attention to media. We then add contextual factors at the neighbourhood level to examine how the local economic environment affects national economic evaluations net of predisposition and information and awareness factors. Our findings support our expectation that even after controlling for these individual level characteristics, the local economic environment plays a significant role in shaping national economic perceptions. However, the impact of the local economic environment is not universal. Our findings show that university educated and more politically informed individuals are less likely to be influenced by local economic conditions relative to those without a university degree and their low information counterparts.

Section 2 - Background
2.1 – What is 'economic voting'?

The general idea behind "economic voting" is that citizens evaluate economic conditions to measure the performance of the incumbent government. If the economy (either real or perceived) is doing well, then the incumbent may be rewarded with re-election. By contrast, according to the economic voting model, if the economy is performing poorly, the chance of electoral defeat for the incumbent becomes much greater. The central theoretical proposition of economic voting model is that economic conditions influence election outcomes: a poor/good economy influences incumbent support by decreasing/increasing the chances of re-election.

Of course, when talking about the "economy" there are a number of features that might be considered. One clear distinction within the literature is that between the 'real' and 'subjective' economy. The real economy pertains to actual objective economic conditions like unemployment rates, inflation or GDP growth. All else being equal, approval and re-election of incumbents are more likely when the actual economy is performing well (for instance, low or declining unemployment, low and stable inflation and/or positive GDP growth) (e.g. Lewis-Beck and Stegmaier 2000).

In contrast to the real economy is the 'subjective' economy. The subjective economy is made up of perceptions of economic conditions. These perceptions may or may not be correct or accurate but they most clearly exist in the minds of individual voters.[1] In the context of economic voting, these subjective perceptions are part of what drives the vote decision: if voters think or believe that the economy is good/bad then they are more/less likely to vote for the incumbent party or executive. This dichotomy of conceptualizing the economy is characteristic of the economic voting literature (see Lewis-Beck and Stegmaier's review of economic voting literature (2000)).

2.2 – Individual level determinants of economic evaluations

Building from the distinction between real and subjective economies, a pivotal question arises for the bases of subjective economy: where do these evaluations come from? Despite actual economic conditions, individuals hold beliefs and perceptions about the economy that may have little or no bearing on what the real state of the economy is. As such, an important consideration pertains to the basis upon which subjective impressions of economic conditions are formed.

In this paper we focus exclusively on one mechanism that we expect influences perceptions of the national economy: local economic conditions. Of course, given the importance of economic evaluations and how they relate to vote choice and election outcomes, we are not the first to consider the broader question of how these evaluations are formed. In perhaps the most exhaustive piece on the topic, Duch, Palmer and Anderson (2000) systematically assess factors which contribute to the nature of national economic evaluations in the United States. Drawn from previous work and synthesized for their purposes, they highlight four categories of determinants. We briefly recount their findings here (Duch, Palmer and Anderson 2000).

In the first instance, Duch et al. (2000) suggest 'information' may be an important factor differentiating the formation of economic evaluations. Because the economy is a complex and multifaceted entity a significant amount of time and energy may be required for voters to regularly inform themselves and update their understanding about the nature and condition of the economy. A significant literature has arisen that finds that individual differences in information are politically consequential (e.g. Bartels 1996; Johnston et al. 1996; Lau and Redlawsk 2006). More informed individuals have more liberal value and policy orientations (Althaus 1998), vote differently (Bartels 1996) and make more complex vote decisions (Roy 2009) than their less informed counterparts. Based on theoretical work such as this and in the context of forming economic evaluations, Duch et al. (2000) find that information has a direct and interactive effect that leads more informed individuals to have accurate evaluations of national economic conditions.

Duch et al. also consider the impact of "group self-interest" on economic evaluations (2000). Group self-interest may have an effect on the likelihood of ascertaining correct economic evaluations through two mechanisms: increased information acquisition and self-interest. Because the acquisition of economic information is costly (time and resources) some types of groups may be less likely to acquire economic information. Indeed past work on information more generally suggests that women, lower income and less educated individuals

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[1] The popularly reported measure of 'consumer confidence' is very much akin to subjective economic perceptions.

systematically have less political information (Althaus 1998; Bartels 1996). The second route lies in the relevance of economic information to self-interest. In short, certain types of economic information are more salient for different types of people: the unemployment rate may be more relevant to an unemployed individual, the growth rate may be more important to small business owners, or provincial economic conditions may be more important to Quebecers, for example.

Duch et al. suggest that national economic evaluations may also be influenced by perceptions of their own economic situation (2000). Using personal economic conditions (which they are well aware of) as a heuristic (see Sniderman et al. 1991), individuals may infer something about national conditions (on which they have little information). In their work, Duch et al. find support for this relationship, congruent with existing literature (e.g. Anderson 2010; Clarke and Kornberg 1992).

Finally, Duch et al. identify a 'political attitude' effect on the formation of national economic evaluations (2000). This effect refers to a partisan bias in the formation of economic evaluations. Where someone is a partisan with the incumbent/non-incumbent party, they are more likely to think that the economy is doing well/poorly.[2]

2.3 – Contextual level determinants of economic evaluations

Beyond individual level determinants of economic evaluations, the literature observes a range of contextual factors that influence the nature of economic evaluations. In particular, the consideration of the effects of contextual level factors examines how the mechanisms through which objective economic conditions are perceived by voters and are used to shape the subjective evaluations of the economic world around them. One such factor is local economic conditions.

There are a number of reasons why voters might look to local economic conditions to form evaluations of the national economy. As a heuristic, one does not have to form an actual appraisal of national economic conditions but may simply overcome imperfect information about the national economy by judging local conditions and applying these observations to make inferences to the national realm (Cutler 2002; Weatherford 1983). This process may also be aided by the consumption of media coverage of local economic developments (Weatherford 1983). Additionally, local economies may be a useful means for developing perceptions of national economic conditions because a considerable amount of government policy and spending decision are targeted to local regions (Cutler 2002; Weatherford 1983). Finally, it is possible that local conditions can influence national evaluations through information and experience gained via interpersonal contact within the local region. Through contact with family and friends individuals can become aware of situations of growing (un)employment or rising prices for goods and services. Thus, for any number of reasons, local economic conditions are likely to influence and shape perceptions of national economic performance.

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[2] In the study of economic voting, the role of partisan bias in considering the effect of economic evaluations on casting a ballot in support of the incumbent has been a source of significant debate in the literature. Simply put, the charge is that the consideration of the effects of subjective economic evaluations on vote choice is importantly polluted because partisan bias is significantly intertwined with the formation of positive and negative economic evaluations in the first instance. As such, economic evaluations are highly endogenous and cannot reliably be differentiated from partisan choice. This possibility has been extensively debated and the conclusions remain mixed. Some (e.g. Anderson et al. 2004; Evans 1999; Evans and Andersen 2006) find evidence of endogeneity while others (e.g. Lewis-Beck 2006; Lewis-Beck, Nadeau and Elias 2008) dispute these findings.

Broadly speaking the literature finds some evidence for the role of local conditions shaping national level economic evaluations. For example, Weatherford (1983) found US evidence of local economic conditions providing an empirical link between the wildly idiosyncratic personal economic situation of voters and the difficult to ascertain condition of the national economy. Indeed, his findings suggest an effect of local economic conditions (unemployment) on perceptions of national level unemployment (controlling for many of the pre-dispositional factors mentioned above).

In the case of Britain, scholars such as Pattie, Dorling and Johnston have considered the role of local economic conditions on personal, regional and national-level economic evaluations (1997). Their findings suggest that (net of some pre-dispositional factors) local housing market indicators have a small effect on national economic evaluations but local unemployment has no effect. Although Pattie et al. do observe an effect of local unemployment rates on regional economic evaluations (1997). Finally, Cutler considers the role of local economic conditions on incumbent vote choice in Canadian federal elections (2002). Cutler's findings indicate that voters take local economic conditions (such as unemployment) into account when casting their ballots.

2.4 – The conditional effect of new local economy measures?

This paper builds on this body of literature to consider ways in which local economic conditions influence the accuracy of national economic evaluations. One of our major contributions to the literature is the use of data drawn at the Canadian census tract or census sub-subdivision level that allows us to develop a much more acute measure of local conditions than has been previously utilized. Indeed, our measure of local conditions includes geographic areas that range in population size from 2500 to 8000 individuals.[3] We believe this level of analysis provides a much more accurate reflection of local conditions, capturing the day-to-day lived experience of individuals within their neighbourhoods (see Stolle, Soroka and Johnston 2008).

Using these new data, we explore the extent to which local economic conditions influence national evaluations. The literature on the effects of local economic conditions suggests that voters use local economic information as a shortcut to develop impressions and expectations about the condition of the national economy. This is done because individuals tend to lack information about and experience with the national economy. As such, voters may draw on more readily available sources of information about the condition of the economy to arrive at perceptions about the economy. Stated explicitly, we anticipate that local economic conditions will directly impact the nature of national economic evaluations such that individuals living in areas with poor economic conditions will be more likely to think that the national economy is worse compared to individuals residing in geographic locales experiencing favourable economic conditions.

Beyond the expectation that local conditions may help alleviate the information gap in forming accurate evaluations of the national economy, we advance the literature in a second area by examining the conditional relationship between information, education and awareness and local economic perceptions. We expect that individuals with higher levels of political information or education as well as those who are more attentive will be less influenced by local economic conditions when evaluating national economic conditions. The rationale is relatively straightforward. In the first instance, being more attentive or informed may provide a more

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[3] For more information, see http://www12.statcan.gc.ca/english/census06/reference/dictionary/atoz.cfm

accurate sense of the condition of the national economy. Beyond this, the more educated, politically informed and attentive are expected to display a greater ability to differentiate between the salient but perhaps idiosyncratic features of the local economic conditions and the nature of a national economy. For these reasons then, we suggest that any observed relationship between local economic conditions and national economic evaluations will vary according to information, education and attentiveness.

Section 3 – Data and methods

This study employs data from the 2006 Canadian Election Study (CES) merged with neighbourhood level data drawn from the 2006 Canadian census. As noted above, we use contextual data at the census tract level for individuals living in urban areas, and where this data is not available we apply measures at the census sub-division (e.g. rural areas). This allows us to measure local conditions according to populations between 2500 to 8000 individuals. The size of the population is similar in census tracts and census sub-divisions, although the geographic area in the latter is somewhat larger.

In all cases we use a probit regression to model 'correct retrospective national economic conditions (RNEC)' (1) versus incorrect assessments (0) drawn from the 2006 CES.[4] In the lead up to the 2006 federal election, all national economic indicators showed an improvement. For instance, the national unemployment rate decreased in each of 2004, 2005 and 2006. Similarly, the economic growth rate at the national level remained positive throughout each of 2004, 2005 and 2006. Finally, the rate of national inflation remained low and relatively constant over this time period. Collectively, this presents a picture of the national economy which is uniformly positive across multiple measures.[5]

In our first estimates of RNEC, we examine a series of socio-economic control variables, what we refer to as "predisposition factors" that are drawn from the 2006 CES. Similar to Duch et al.'s (2000) "group self-interest" factors, we includes age (18-90), gender (female =1), employment status (unemployed=1), and income (10 point scale).[6] In addition, we add a measure of rural residence (rural resident =1) and whether the respondent lives in Quebec (Quebec resident =1), two important controls within the Canadian context. We also include a measure of retrospective personal economic conditions (-1 to 1) and a control for strong or very strong Liberal party identifiers (identifiers =1), partisans of the incumbent government.[7] As discussed above, we believe these factors will influence RNEC regardless of actual performance. For example, it seems reasonable to assume that individuals who have done well personally will be more apt to view RNEC in a more favourable light. In order to estimate the impact of awareness

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[4] In the economic voting literature, evaluations of the national economy can be both retrospective ('how has the national economy been doing over the past year?') and prospective ('how will the national economy do over the next year?'). It is generally found that national retrospective evaluations have the greatest effect on incumbent support (Lewis-Beck and Paldam 2000).

[5] The sources for these economic data come from Statistics Canada Tables 379-0025 (GDP Growth) and 326-0021 (Inflation) (these data were accessed on March 2, 2010). The data for national unemployment are drawn from Statistic Canada Table Cd1T46an (these data were accessed February 25, 2010).

[6] In accordance with the work of Duch et al. (2000) we also estimated models with a control for union membership. In no instance did this variable prove to be statistically significance and as such we exclude it from our reported results.

[7] We also tested our models with Conservative and NDP partisans. However, neither of the party identification coefficients was found to be a statistically significant factor for RNEC. Therefore we retained only the measure of incumbent party identification.

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and information as well as local conditions on economic assessment, we argue that it is necessary to first take account socio-economic factors that are likely to influence RNEC.

To the pre-disposition factors we add three variables that tap information and awareness: a seven point additive scale based on correct responses to factual political knowledge questions (see Delli Carpini and Keeter 1996), a 30 point scale that takes into account television, radio, and newspaper consumption, and a dichotomous variable that differentiates between university graduates and those without university degrees.[8] In all cases, our expectation is the same, that given the larger store of information to draw upon, the cognitive resources to apply this information to evaluations of national conditions, as well as the increased level of attention to media, greater information and awareness will increase the probability of accurately assessing RNEC.

To measure the impact of local conditions, we employ the local unemployment rate drawn from the 2006 Canadian Census. We choose this measure for a number of reasons. First, unemployment is an economic condition that is readily observed. It is quite noticeable when one's neighbour and/or friend are no longer working. Our argument is that these sorts of situations can importantly shape one's perception of economic conditions both locally and nationally (especially for the less informed or attentive). By contrast, levels, declines or increases in household income are essentially silent and much less noticeable within the local milieu. As such, we believe that local unemployment rates is a superior indicator of local conditions, providing an objective, comparable, and arguably visible (from the individual's perspective) indicator of local economic performance.

Section 4 – Results
4.1 – Predisposition

Looking at the results of the predisposition model, we find that all factors fit with expectations. Older individuals, those with higher incomes, Liberal partisans, and individuals with positive personal retrospective economic evaluations are more likely to view the RNEC as improving (table 1). In all cases the relationship is statistically significant ($p < .001$). For example, based on the estimate of the discrete change of moving from non-partisan to partisan, we find that the probability of a Liberal partisan evaluating the RNEC positively is 15 percentage points higher than non-partisans (see appendix 1).[9] These results fit with our expectations and existing literature that incumbent partisans are more likely to see RNEC as having improved than their non-partisan counterparts.

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[8] Both the political information scale and the media attention scale where rescaled to fit between 0-1.

[9] In all cases, the marginal effects / discrete changes reported here are estimated with all other factors set to their mean.

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Table 1: Predisposition factors and RNEC[10]

	Predisposition	*Information and awareness*	*Local conditions*
Age	0.01 (.00)***	0.01 (.00)**	0.01 (.00)**
Female	-0.27 (.06)***	-0.22 (.06)***	-0.23 (.06)***
Quebec resident	-0.37 (.07)***	-0.40 (.07)***	-0.39 (.07)***
Unemployed	-0.12 (.18)	-0.04 (.19)	-0.01 (.19)
Income	0.05 (.01)***	0.03 (.01)**	0.03 (.01)**
Rural resident	-0.18 (.07)*	-0.12 (.07)	-0.11 (.07)
Liberal PID	0.37 (.08)***	0.34 (.08)***	0.35 (.08)***
Retrospective personal economic evaluations	0.29 (.05)***	0.29 (.05)***	0.28 (.05)***
Media attention	-	0.68 (.14)***	0.68 (.14)***
Political information	-	0.25 (.12)*	0.23 (.12)
University graduate	-	0.16 (.07)*	0.17 (.07)*
% Local unemployment	-	-	-0.02 (.01)*
constant	-0.64 (.14)***	-0.92 (.15)***	-0.78 (.16)***
N	2415	2415	2415
McFadden's Pseudo R^2	0.08	0.10	0.10
Wald Chi^2	191.94	245.65	248.56

NOTE: Standardized probit coefficients with standard errors shown in parentheses.
*** p<.001 ** p<.01 * p<.05

On the other hand, the results from our first model suggest three groups of individuals who are less likely to gauge the RNEC positively, even when economic conditions have improved. Women, Quebec residents and individuals living in rural settings were less positive in their RNEC assessment compared to their male counterparts, individuals living outside of Quebec, and individuals living in urban centers, respectively. While the sign of the unemployed coefficient is as expected, it is not found to be a statistically significant factor in accurately assessing RNEC. The strongest negative effect is observed for Quebec residents who are 14 percentage points less likely to accurately evaluate RNEC compared to non-Quebec residents (appendix 1). There is also a sizeable and significant difference between women and men with the probability of women reporting a positive RNEC 11 percentage points less than men. Overall, our first set of results offer evidence supporting the notion that there are factors, what we have called 'predisposition' factors, which are likely to influence economic evaluations regardless of actual conditions. Controlling for these factors, we next consider the impact of information and awareness on RNEC evaluations.

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[10] A Wald test is used in place of a likelihood ratio test given the use of STATA's pweights with robust standard errors. See http://www.stata.com/support/faqs/stat/lrtest.html for further details. The Wald Chi^2 test compares the improvement of model fit between the restricted (preceding model) and unrestricted (current model).

4.2 – Information and awareness

Looking at the results with the addition of information and awareness factors, we find that all three of our measures fit with expectations.[11] Put simply, individuals who pay more attention to media, those who are more politically informed, and those with university degrees, are more likely to accurately assess RNEC (column 3 of table 1). According to our findings, moving from the lowest to highest level of media consumption increases the probability of correctly evaluating the RNEC by 27 percentage points (column 3 of appendix 1). Political information also plays a significant role in predicting correct RNEC assessment. The probability of a correct RNEC assessment increases by 10 percentage points when moving from the lowest to highest measure on our information scale. Finally, the discrete change from non-university graduate to university graduate is found to yield a 7 percentage point increase in the probability of a correct RNEC estimate. In all three cases we find support for our argument that information and attention matters when it comes to accurately perceiving RNEC.

Re-examining the predisposition measures following the addition of our information and awareness variables, we find little change. With only one exception, rural residents (p=0.10), predisposition coefficients remain statistically significant and nearly identical in the strength of their effect. In other words, our predisposition measures are robust and not necessarily a reflection of types of individuals more apt to be more/less informed or attentive. Even after including measures of political information, education and media attention, nearly all of our predisposition measures maintain a significant influence on RNEC.[12]

4.3 – Local conditions

We turn now to the effect of local conditions. To this point we have found that predisposition factors can affect correct assessment of RNEC, even after taking into account measures of information and awareness. We also find that having a university degree, being more politically informed and paying attention to media can certainly improve one's probability of correctly evaluating RNEC. The next stage of our analysis considers how local economic conditions may affect assessment of RNEC. To do so, we add a measure of local unemployment rates (% unemployed) to our predisposition and information and awareness model. These results are presented in column 4 of table 1.

In accordance with our expectations we find that local conditions play a significant role in one's measure of RNEC, even with controls for predisposition factors and information and awareness indicators. The results indicate that a one unit increase in the local unemployment rate yields a 1 percentage point *decrease* in the probability of accurately assessing the RNEC (column 4 of Appendix 1), net of information and awareness and predisposition factors. While this may not seem like an overly large effect, given the range of unemployment rates across neighbourhoods, this translates into a 47 point difference in the probability of correctly gauging

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[11] While we accept that there is some overlap between the information and awareness measures (the strongest is between media attention and political information with a correlation coefficient of 0.36), we do not believe the strength of these relationships preclude us from including each measure in our model.

[12] An interesting direction for future work would be to examine the conditional effect of information and awareness factors on our predisposition measures (e.g. whether information and awareness affect Quebec and non-Quebec residents differently). However, given the main interest of the impact of local conditions on RNEC evaluations, we set this question aside for now.

the RNEC between individuals living in areas with the lowest level of unemployment compared to their counterparts living in neighbourhoods with the highest rate of unemployment. Indeed, this result clearly shows that local conditions matter when it comes to forming national economic evaluations.

However, might the influence of local conditions vary with information and awareness? It seems plausible that the effect of local evaluations will be conditional upon one's level of information and awareness. As we argue above, individuals who are more likely to be "paying attention" may be less susceptible to the influence of local conditions. To assess this possibility, we employ a series of interaction models that allow us to estimate how attention to media, political information, and higher levels of education may offset the impact of local conditions on RNEC assessments. These results are presented in Table 2.

Table 2: Local conditions interaction models

	Original	Interaction 1	Interaction 2	Interaction 3
Media attention	**0.68 (.14)***	**0.57 (.24)***	**0.68 (.14)***	**0.68 (.14)***
Political information	0.23 (.12)	0.23 (.12)	-0.01 (.23)	0.23 (.12)
University graduate	**0.17 (.07)***	**0.17 (.07)***	**0.17 (.07)***	-0.08 (.14)
% Local unemployment	**-0.02 (.01)***	-0.03 (.01)	**-0.04 (.02)***	**-0.03 (.01)****
%unemployed*Media	-	0.02 (.03)	-	-
%unemployed* Info	-	-	0.04 (.03)	-
%unemployed*UGrad	-	-	-	**0.04 (.02)***
constant	**-0.78 (.16)***	**-0.73 (.18)***	**-0.61 (.20)****	**-0.70 (.16)***
N	2415	2415	2415	2415
McFadden's Pseudo R^2	0.10	0.10	0.10	0.10
Wald Chi^2	248.56	247.81	250.29	255.43

NOTE: Standardized probit coefficients with standard errors shown in parentheses. All models estimated controlling for predisposition factors (results not reported).
*** p<.001 ** p<.01 * p<.05

The first interaction model considers the relationship between media attention, local unemployment rates and RNEC. With the inclusion of the interaction term, the two constitutive variables, media attention and the percent of individuals unemployed in the neighbourhood, can be read as an indication of the impact of media attention when unemployment is at 0 % and the effect of unemployment when media attention is set to 0. Accordingly, our results suggest that media attention maintains a significant effect on the probability of a correctly assessing RNEC even when local unemployment conditions are much better than the national average. When media attention is at zero (the % local unemployment coefficient in the first interaction model), a one point increase in the unemployment rate translates to a one point decrease in the probability of correctly evaluating RNEC (see Appendix 1). However, this finding falls just short of statistical significance (p=0.07).

The interaction coefficient suggests little differences across media consumers in regards to the effect of local unemployment conditions on RNEC. However, in order to fully interpret this effect it is preferable to estimate the influence of local unemployment across a range of media consumption rates. To do this, we follow the approach of Brambor et al. (2006) who advise graphing the relationship. The results of these estimates are presented in Figure 1. The solid line represents the effect of a one standard deviation increase from the mean local

unemployment rate across increasing levels of media attention. This effect is statistically significant when the upper and lower bounds of the confidence error (represented by the dotted lines) are both above or below zero.

Figure 1: Effect of % unemployment on probability of correct RNEC evaluation by media attention
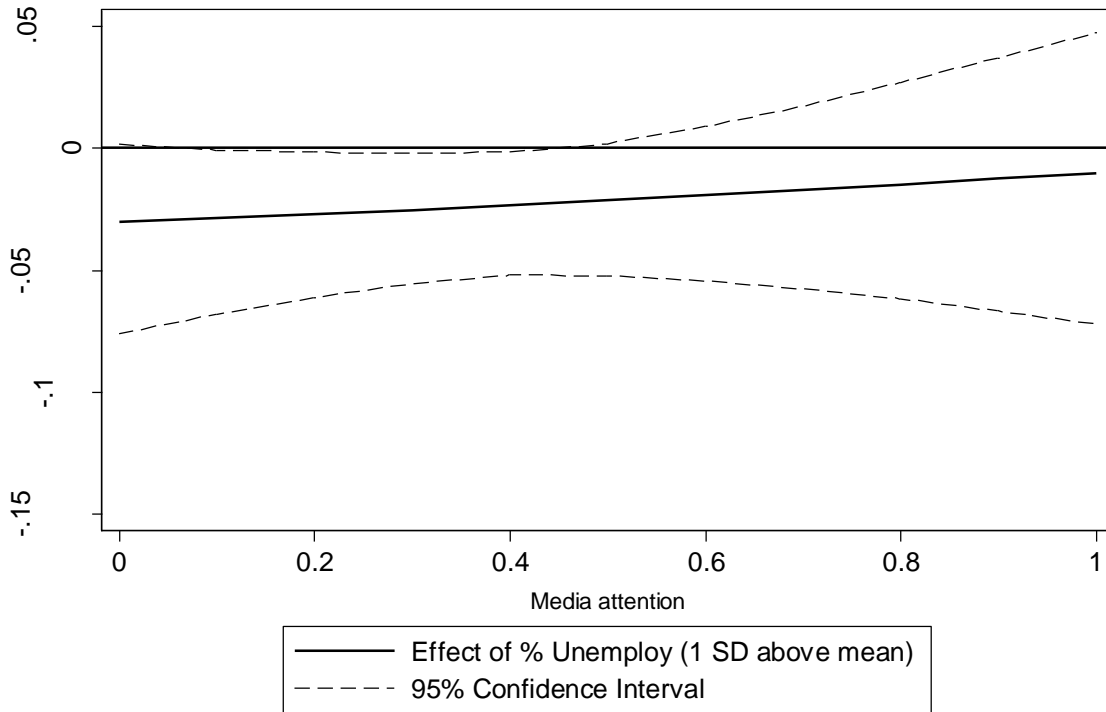
As we can see from the graph, while the conditional effect is statistically significant for the first half of the media attention scale, the size of this effect is trivial. In fact, the change in the probability of correctly assessing RNEC increases by less than three percentage points between the lowest and highest level of media attention (figure 1). In other words, media consumption appears to do little to offset the impact of local economic factors when evaluating RNEC. However, this should not be mistaken as an indication that paying attention to media does not improve one's probability of accurately assessing national conditions; indeed the results above suggest it improves one's chances significantly. Instead, this finding suggests that the differences across media consumers in regards to the effect local conditions have on RNEC is marginal at best.

Turning to the interaction of political information and unemployment, we once again observe a significant relationship (column 4 of table 2). When political information is at its lowest value (0), a one point increase in the unemployment rate yields a 2 point *decrease* in correct economic perceptions (see appendix 1). In other words, local unemployment rates play a substantial role in conditioning the perception of RNEC for the least informed members of the electorate. To examine the interaction of political information and local unemployment rates we once again graph the relationship. These results are presented in Figure 2.

Figure 2: Effect of % unemployment on probability of correct RNEC evaluation by political information
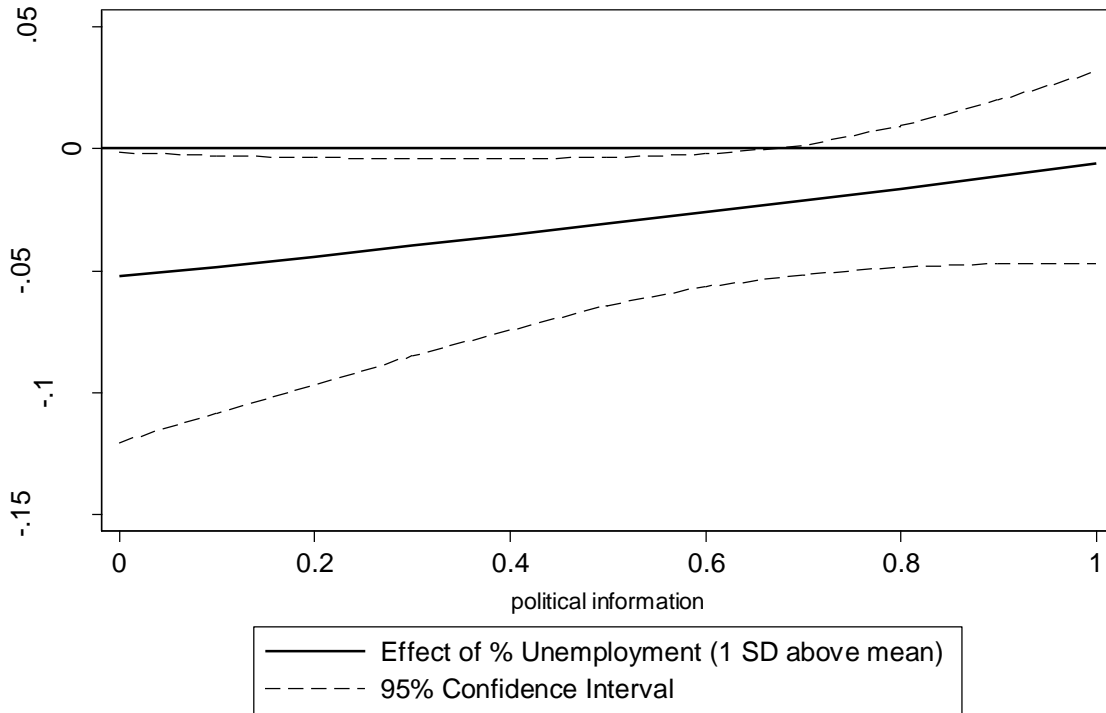
The results reported in Figure 2 show that increased levels of political information can dampen the effect of local economic conditions when it comes to correctly assessing RNEC. The improvement in the probability of correctly assessing RNEC is nearly five percentage points moving from the least to most informed members of the electorate, although the relationship is only statistically significant when information levels fall between 0 and 0.7 on the 0 to 1 scale. Readers should also note that this 5 point improvement is estimated based on a one standard deviation change from the mean in local unemployment rates. If we were to estimate the improvement given a change from the lowest to highest levels of unemployment in our sample, we observe an improvement of nearly 40 percentage points (appendix 2). However, even based on the more conservative estimate the interpretation is the same: increased levels of political information dampen the effect of local economic evaluations when it comes to correctly evaluating RNEC. In other words, more informed individuals are more likely to correctly assess RNEC than their less informed counterparts given above average levels of local unemployment.

Our third model considers the interaction between university education and unemployment rates. Once again we find evidence of conditional effects (column 5 of table 2). For non-university educated individuals, a 1 point increase in unemployment rates decreases the probability of correctly interpreting RNEC by 1.2 points (see appendix 1). Given the dichotomous nature of our education variable, it is not appropriate to apply a similar graphical presentation of the conditional effect of education. However, we can easily interpret the

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difference across the two education groups by examining the marginal effect of unemployment for university graduates compared to the marginal effect of unemployment rates for non-university graduates. These results are presented in table 3.

Table 3: Marginal effect of local unemployment by education level

	Marginal effect	[95% CI]
University graduates	0.00 (.01)	[-.01 .02]
Non-university graduates	-0.01 (.00)**	[-.02 -.00]

NOTE: Marginal effects estimated after probit with standard errors shown in parentheses (with all other factors set to their mean).
*** p<.001 ** p<.01 * p<.05

Unlike their less educated counterparts, the results indicate that more educated citizens are able to offset negative local conditions when formulating national evaluations. Although not statistically significant, the direction of the relationship for university graduates is as expected: for every point increase in local unemployment rates, the probability of a university graduate correctly assessing RNEC increase by 0.4 percentage points. Unlike their less educated counterparts university educated individuals are less likely to let local conditions shape their national economic perceptions. However, for those with less education, the impact of poor local conditions is considerable. The relationship between local unemployment rates and negative RNEC is significant: a one point increase in unemployment translates into a 1.2 point decrease in the probability of correctly interpreting national conditions.

Section 5 – Discussion and Conclusion

Based on the results of our study, we offer three main conclusions regarding national economic evaluations. First, in accordance with earlier research, individual level differences, what we have called 'predisposition' factors, play a significant role in shaping one's economic perceptions. Even after controlling for subsequent blocs of variables, these measures of socio-economic characteristics and group interest remain a significant predictor of economic perceptions.

Our information and awareness indicators also offer insight into the formation of national economic conditions. As expected, more educated, more informed and more attentive individuals were more likely to correctly report RNEC then their less educated, informed and attentive counterparts. The implications of these findings are important. If individuals are employing economic evaluations in formulating their vote choice, misinterpreting economic conditions may lead to a vote that does not necessarily reflect actual preferences, at least insomuch as these preferences are reflected in economic evaluations.

Perhaps the most interesting finding to come from this work reflects the effect of local economic conditions on national economic evaluations. The findings here show that even after controlling for predisposition and information and awareness factors, local conditions matter. All else being equal, individuals living in areas with higher rates of unemployment are less likely to correctly assess national economic conditions. However, this effect is not universal. Our findings

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suggest that those with higher levels of political information and those with university degrees can balance the negative effect of higher unemployment rates and are more likely to accurately assess national conditions in spite of their local environment.

While we may draw some comfort from this finding, given the typically low levels of political information within electorates as well as the limited number of individuals with university degrees, optimism is limited at best. In the end our findings show that a majority of Canadians draw from their local environment to make inferences about national conditions. If incorrect inferences are then applied to the vote decision, a sizeable number of Canadians are likely being led astray at the ballot box as a result of local conditions.

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Appendix 1: Marginal effects

	Predisposition	Information and awareness	Local conditions	Interaction 1	Interaction 2	Interaction 3
Age	0.00 (.00)***					
Female [a]	-0.11 (.02)***					
Quebec resident [a]	-0.14 (.03)***					
Unemployed [a]	-0.05 (.07)					
Income	0.02 (.00)***					
Rural resident [a]	-0.07 (.03)*					
Liberal PID [a]	0.15 (.03)***					
Retrospective personal economic evaluations	0.12 (.02)***					
Media attention	-	0.27 (.06)***	-	0.23 (.10)*	0.27 (.06)***	0.27 (.06)***
Political information	-	0.10 (.05)*	-	0.09 (.05)	-0.01 (.09)	0.09 (.05)
University graduate [a]	-	0.07 (.03)*	-	0.07 (.03)*	0.07 (.03)*	-0.03 (.06)
% Local unemployment			-0.01 (.00)*	-0.01 (.01)	-0.02 (.01)*	-0.01 (.00)**
%unemployed*Media				0.01 (.01)	-	-
%unemployed* Info				-	0.02 (.01)	-
%unemployed*UGrad				-	-	0.02 (.01)*
Prob y=1	0.45	0.44	0.44	0.44	0.44	0.44

NOTE: Marginal effects estimated after probit with standard errors shown in parentheses (with all other factors set to their mean).
 [a] indicates a discrete change of dummy variable from 0 to 1.
*** p<.001 ** p<.01 * p<.05

Appendix 2: Effect of % unemployment on probability of correct RNEC evaluation by political information (min to max change in % unemployment)