The Economy and Federal Election Outcomes in Canada:

Taking Provincial Economic Conditions Into Account

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Current work showing the impact of the economy on vote choice is now commonplace (for comparative studies, see Lewis-Beck 1988; Lewis-Beck and Stegmaier 2007; Duch and Stevenson 2008; Nadeau, Lewis-Beck and Bélanger 2013; for Canada, see Nadeau and Blais 1993, 1995; Anderson 2010). These studies have mainly taken three forms. The first two, which are the oldest, make use of aggregate-level political and economic data. "Vote functions" seek to explain the result of national elections while "popularity functions" seek to model either vote intention or satisfaction towards government (for a review of these two types, see Nannestad and Paldam 1994). The third type of study relies on individual-level data and seeks to establish links between individual voters' economic perceptions and vote choice in a given election (Kiewiet 1983).

This paper fits within the body of work looking to establish the fundamentals of a vote function for Canadian federal elections. These studies developed in two stages. Researchers first examined the link between national economic conditions and the results of federal elections (see Happy 1986, 1989, 1992; Carmichael 1990). The work of Nadeau and Blais (1993, 1995) can be seen as the final outcome of this first phase. They showed that two main factors weigh upon Canadians' vote choice: the unemployment rate and leader image. A second wave of vote function work later set upon making use of data disaggregated to the level of Canadian provinces (Gélineau and Bélanger 2005; Bélanger and Gélineau 2010). These studies mainly conclude that vote choice in the provinces during federal elections is explained by one local-level factor, that of regional partisan traditions in Canada, and by two national-level factors, the longevity of the incumbent government and the national unemployment rate.

The current study will examine more specifically this last conclusion by looking at Canadian federal elections between 1953 and 2011. The motivations behind this study are four-fold. First, there is the fact that a small amount of work has been conducted on this question in Canada. Before concluding that local or regional conditions have no influence on the result of national elections in Canada, one must examine this question in a more detailed manner.

Second, there are theoretical motivations. Certainly, it is normal that national economic conditions play a leading role during national-level elections, notably due to the large amount of media coverage given to statistics on national conditions and the importance that political parties pay to these statistics to either defend their policies or criticize their opponents (Nadeau et al. 2000; Blais et al. 2002). However, many studies have also shown (see notably Weatherford 1983; Mondak, Mutz and Huckfeldt 1996) that certain voters rely on local-level economic conditions to draw conclusions about how the economy has fared nationally. Using individual-level data, Cutler (2002) confirmed this phenomenon in the Canadian context. We might expect therefore that provincial-level economic conditions colour certain voters' national-level perceptions and consequently have an impact on vote choice either for or against the incumbent government.

Another theoretical argument touches upon the importance of regional economic development in political parties' discourse. During electoral campaigns, political parties send explicit messages to voters in different provinces by presenting themselves as being in a better position than their opponents to bring prosperity to the province. As a result, party discourse tends to make provincial-level economic realities more salient in the eyes of voters (Cutler 2002). In addition,

many federal policy programs, as well as fiscal transfers from the federal government to the provinces, aim at improving the economy of specific regions, thus trying to level economic prosperity across the country (Savoie 1992; Brown 2007). Consequently, we should expect this dynamic to lead a certain number of voters to express a national-level economic vote based on provincial-level indicators.

A fourth and final reason for this study is the need for a re-examination of the Canadian case. It can be expected that the effect of provincial-level indicators on national-level vote choice should be more important when an election is carried out in a country where the sub-national entities exercise important powers, such as Canada. In this context, regional economic statistics are largely diffused and commented on by provincial political actors. For example, these same actors may sometimes remind voters during national election campaigns that the policies of the national government have disadvantaged their province in favour of others. This last point seems to be supported by work that has studied national-level vote functions based on regional-level data. In a pioneering study, Rosenstone (1983) proposed a model that would predict the level of support received by American presidential candidates at the state level in order to determine the number of Electoral College votes received by each candidate, thereby predicting the result of the election (see also Holbrook 1991). From this, a more parsimonious model developed by Campbell (1992) leads to an interesting conclusion. He observes that, all other things being equal, the score that a presidential candidate receives in a given state depends mainly on national economic growth but also, to a smaller extent, on growth observed at the state level, with the effect of national economic conditions being about six times more

important than those of the state (see Campbell 1992, Table 2, p.399; for similar conclusions, see Strumpf and Phillippe 1999; Orth 2001; Eisenberg and Ketcham 2004).

These results differ from those obtained by Jérôme and Jérôme-Speziari (2005, 2010a, 2011) who studied the determinants of electoral results in France with the help of vote functions disaggregated to the level of French *départements* and *régions*. The models used by these authors include a single economic indicator that measures the unemployment rate in the *région* during the presidential mandates. The use of just this particular variable does not allow to determine if local-level economic conditions add to explaining the vote beyond national-level economic conditions. Jérôme and Jerôme-Speziari implicitly admit this shortcoming when they say that this economic indicator "must be considered like a (dominant) national economic trend adjusted to local economic situation" (2011, p.10).

The present study will allow us to see if there is a link between regional entities' political and economic importance and the magnitude of the impact of regional economic conditions on the result of national elections. The political weight of regions appears greater in Canada, especially given the importance of the province of Quebec in the country's history. Available data indicate that the economic weight of regions is very important in the case of Canadian provinces and not very important for French *régions*, with American states occupying a position somewhere in the middle. Figure 1 compares the regions' economic and fiscal weight (i.e., expenditures of Canadian provinces, French regions, and American states in terms of the national GDP) with the degree of decentralization of their expenditures (i.e., as a function of total national expenditures). The figure clearly shows that Canada and France are two polar cases flanking the

United States.[1] Our expectation is thus that local economic conditions will have more of an impact in Canada than what has been observed in the United States or in France.

The Vote Function

The theoretical foundations of vote and popularity functions are well-established (Nannestad and Paldam 1994). It is generally accepted that the result of an election can be explained by a combination of political and economic factors. Therefore, the general model of a vote function for a given country is the following:

(1) Vote = ƒ (ECN, POL).

A majority of studies on vote functions use data aggregated at the national level. For example, a typical vote function study in Canada for elections held between 1953 and 2011 would be based on a sample of 20 cases. The model used would then try to link the results of these federal elections – in a majority of cases, the dependent variable is the percentage of popular support received by the incumbent government – to a limited number of political and economic

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[1] The economic and fiscal weight of Canadian provinces represents 18% of the GDP while that of French regions represents only 1.4% of the GDP (for the United States the ratio is 12%). Also, Canadian expenditures are more decentralized (ratio of 45%) than American (30%) and French (2.6%) expenditures. The Canadian model thus corresponds to the canon of fiscal federalism as theorized by Oates (1972). Note however that the French case appears less extreme when one looks at the economic and fiscal weight of the "local state" (*lato sensu*), that is when one takes into account lower territorial strata – like the French *départements* and *communes* – in the calculus (see Gilbert 1996). Even though French regions remain "economic midgets", they have a sufficiently large size – both demographically and geographically – for voters to perceive the local consequences of macroeconomic policies (see Jérôme and Jérôme-Speziari 2010b, p.227). Still, the relatively light economic and fiscal weight of regions can only affect the national-level vote under exceptional circumstances.

variables such as leader popularity, longevity of the incumbent government, or the unemployment rate at the time of the election.

This approach has a number of limitations, mainly due to the small number of cases upon which it rests. To resolve this, some authors have proposed that we study the results of national-level elections by breaking them down into subdivisions of significant regions, such as American states, Canadian provinces, or French *régions* or *départements*. This method has a number of advantages. Increasing the number of degrees of freedom allows us to arrive at a more finely tuned vote model and to obtain more statistically reliable results. Conceptually, this approach allows us to conceive of national elections as the result of a series of regional-level elections. The case of American presidential elections is the clearest example of this point, where the outcome depends on the result of 50 local elections that determine the number of Electoral College votes that candidates will receive, and therefore the winner.

A disaggregated approach to the use of vote functions therefore allows to account for both local and national dynamics at work when elections are being carried out on the national level. This type of vote function remains understudied in general, and even more so in the Canadian case. What is more, the conclusion that comes out of the rare studies using this type of vote function in Canada stipulates that only national-level economic conditions, notably the unemployment rate, have a significant impact on federal election outcomes (Gélineau and Bélanger 2005; Bélanger and Gélineau 2010).

As mentioned earlier, a re-examination of this conclusion is at the heart of the present study. The argument proposed is relatively simple. In a federal regime, voters can be conceived of as participating in a single election, but also as participating in a series of regional elections. Consequently, the result of a federal election in Canada will depend upon both national- and provincial-level political and economic factors. In this case, the vote function will take the following form:

(2) Vote = f (ECN$_{Nat}$, ECN$_{Prov}$, POL$_{Nat}$, POL$_{Prov}$).

This equation simply states that the result of Canadian federal elections will depend on both local and national factors. These factors, as well as the hypotheses that concern them, are presented in the next section.

A Vote Function for Canada

The first decision to be made in a vote function study for Canada concerns the definition of the dependent variable. The usual choice at this point is to use the percentage of the vote going to the incumbent party, be it the Liberal Party or the Conservative Party. We have nonetheless opted for another way of defining the dependent variable, which is the percentage of the vote going to the Liberal Party (with appropriate adjustments made to the independent variables so as to maintain the consistency of the signs of their regression coefficients; see below). This choice is easily explained. The Liberal Party has been in power during 38 of the 58 years under study, which is about 66% of the time between 1953 and 2011. This political organization, unlike

the Conservative Party, has not seen any schisms or major divisions over the period under study. Its support, with perhaps the exception of the last two elections, has fluctuated within a stable margin. It can therefore be believed that the variations in support for the Liberal Party are a more accurate reflection of the fluctuations in short-term variables, such as the unemployment rate, than anything else. Finally, using the Liberal vote as the dependent variable marks a return to Nadeau and Blais' (1993, 1995) original model specification.

Vote function studies in Canada (Nadeau and Blais 1993, 1995; Gélineau and Bélanger 2005; Bélanger and Gélineau 2010) generally conclude that unemployment is the economic indicator most directly and systematically linked to federal electoral outcomes. A preliminary analysis of our data confirms this assertion. Therefore, the first independent variable that will be included in our vote function model is the unemployment rate. Keeping in mind the objectives of the present study, both the national and provincial unemployment rates will be included in the model. However, there still remains the matter of establishing the most appropriate lag between the economic measure chosen and the date of the election. This question is both empirical and conceptual. The lag chosen must resemble the delay in publishing data on unemployment. The search for a more systematic link between unemployment data and vote choice should also guide our decision. Different tests have been carried out and a lag of three months between unemployment data and the election seems to be the best choice from both a theoretical and empirical point of view.[2]

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[2] The unemployment data come from Statistics Canada. In order to go as far back as 1953, annual unemployment data had to be used (see Gélineau and Bélanger 2005, p.412). These annual measures were weighted for the month in which the specific federal election occurred, on the basis of the following formula: $\rho = [\rho_{(t-1)} * (12-\sigma_{(t)})/12] + [\rho_{(t)} * (\sigma_{(t)}/12)]$, whereas "$\rho$" is the annual unemployment measure, "σ" the month of the election, and "t" the election year. For example, if an election was held in March of

In addition to the unemployment rate (no other economic indicator has proved to be statistically significant when included in the analysis; these results are available on request), political variables need to be included in the model. The first among them is the lagged dependent variable, which captures the effect of all the factors explaining inertia or stability of the Liberal vote over time. The inclusion of this variable in the vote function offers several theoretical and empirical advantages. On the theoretical side, the lagged variable allows to capture electoral adjustments due to the political parties' "captive" voter base being more or less loyal to them over time. Also, the lagged variable registers the residual memory effect associated with past economic and political shocks. If such dynamic effects are plausible, then it is essential from a statistical point of view to include an endogenous, autoregressive-type variable on the right-hand side of the vote equation. The quality of the model is even higher when the autoregressive trend sustains itself over time.

Other political variables should also be included. The disaggregated models must take into account political parties' regional strongholds (see Campbell 1992; Jérôme and Jérôme-Speziari 2010a; Bélanger and Gélineau 2010). We keep this factor in mind and include in the model a series of dichotomous variables that allow us to take into account the regional bases of Liberal Party support in Canada (the omitted province is Alberta; the regression coefficients in this case will measure the difference between support for the Liberal Party in Alberta and in the other provinces). These strongholds have remained rather consistent across the period under study –

2007, we would multiply the 2006 annual indicator by 9/12 and add it to the 2007 annual indicator multiplied by 3/12.

with the exception of Quebec, a Liberal bastion until the 1984 election, when it deserted this party following the repatriation of the Canadian Constitution without that province's consent. A special dichotomous variable will take account of this historic break between Quebec and the Liberal Party.

One last national-level political variable that is likely to influence vote choice is the popularity of the party leader. Unfortunately, there does not exist a satisfactory series of opinion data measuring this variable over time in Canada. The strategy used for this study is to introduce dichotomous variables for each of the Liberal Party leaders, with the most recent (i.e., Michael Ignatieff) being the omitted category. The inclusion of the leader variable responds to an imperative to be prudent in this sort of aggregate-level study. Its inclusion should allow us to significantly increase the percentage of explained variance and avoid overestimating the impact of unemployment on electoral results. Thus, the vote function that will be estimated takes the following form:

$$(3) \quad VLIB(PR/E_t) = b_o + b_1 VLIB(PR/E_{t-1}) + b_2 LEADERS + b_3 PROVS + b_4 UNR(NAT/t\text{-}3) +$$

$$b_5 UNR(PR/t\text{-}3) + e$$

'VLIB(PR/E_t)' is the percentage of the vote received by the Liberal Party in the ten Canadian provinces during the 20 federal elections that took place in Canada between 1953 and 2011 (N=200); 'VLIB(PR/E_{t-1})' is the percentage of votes received by the Liberal Party in the ten Canadian provinces during the previous election (1949 to 2008); 'LEADERS' is a series of

dichotomous variables that take the value of 1 for elections where the Liberal Party was led by Louis St-Laurent (1957), Lester Pearson (1958, 1962, 1963, 1965), Pierre Elliott Trudeau (1968, 1972, 1974, 1979, 1980), John Turner (1984, 1988), Jean Chrétien (1993, 1997, 2000), Paul Martin (2004, 2006) and Stéphane Dion (2008) (omitted category = Michael Ignatieff in 2011); 'PROVS' are dichotomous variables that take the value of 1 for each province (with the exception of Alberta) and 0 otherwise; 'UNR(NAT/t-3)' is the national unemployment rate measured three months before the election; 'UNR(PR/t-3)' is the unemployment rate in each of the ten Canadian provinces measured three months before the election; finally, 'e' is the error term.

The components of Equation 3 that interest us in particular are the national and provincial unemployment rates. Provincial unemployment rates are often absent from studies of national vote functions in Canada. The implicit hypothesis in this case would therefore be that $b_5 = 0$. For reasons mentioned in the previous sections, we believe that the impact of provincial unemployment rates could be significant, without being as important as that of the national unemployment rate. Therefore, the two hypotheses that we are going to test in the next section can be formalized as follows:

(H1) $b_4, b_5 \neq 0$

(H2) $|b_4| > |b_5|$

Findings

The vote function results are presented in Table 1. The statistical analysis relies on ordinary least squares regression with panel-corrected standard errors to address potential problems of

heteroskedasticity. This specification is introduced because of the cross-sectional nature of the dataset, for which residuals cannot be assumed to be independent across provinces (the inclusion of dichotomous provincial variables also allows to control for possible heterogeneity across units). An additional variable is introduced into the model. This variable, called 'incumbency', takes the value of 1 when the Liberal Party was the incumbent government during an election and -1 otherwise. The national and provincial unemployment rates have been multiplied by this variable, thus ensuring the consistency of their signs (negative) whether or not the Liberal Party was in power.

The results of column 1 correspond to the model based on the hypothesis that the unemployment rate in a province would not influence the vote in that province during a federal election (i.e., $b_5 = 0$). The overall performance of the model is very good, since 80% of the variation both in a province's vote and from one election to another is explained by the model. The coefficients of the different variables are of the expected sign and statistically significant. The coefficient of the lagged dependent variable accounts for the stability of the Liberal vote across space and time. The size and sign of the 'incumbency' variable's coefficient show the advantage of having formed the incumbent government when an election is called. It also reflects the fact that periods of Liberal Party rule culminate in large amounts of support for this political organization.

The dichotomous provincial variables reflect the presence of regional strongholds for the Liberal Party. The positive and similar coefficients in the Atlantic (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick) and central (Quebec and Ontario) provinces clearly

show that the electoral strength of the Liberal Party has been more important in eastern Canada. However, this supremacy has not been immutable, as shown by the variable 'Quebec break' which very clearly demonstrates the drop in Liberal Party support in Quebec after 1980. Furthermore, two periods of LPC domination stand out. Between 1953 and 1984, this party held onto power almost continuously (from 1953 to 1957, and from 1963 to 1984 with the only exception of Joe Clark's brief mandate for nine months in 1979). The Liberal Party then was in power for nearly thirteen years, between 1993 and 2006, thanks to the support of the Atlantic provinces and a huge amount of support in Ontario, which allowed the Liberals to compensate for losses in Quebec due to the rise of the Bloc Québécois.

The effect of unemployment on vote choice is at the heart of the present study. The results of the first model are unequivocal. The effect of unemployment on Liberal Party support is of the expected sign, statistically significant, and of an important magnitude. The coefficient of 1.44 associated with this variable shows that the vote share for the Liberal Party diminishes by nearly one and a half percentage points in a province where unemployment increases by one point while the Liberals are in power; it also shows that the inverse effect is seen when the LPC is in opposition. Separate regressions corresponding to the Liberals' periods in power and in opposition demonstrate the relative stability of this effect.[3] The results presented in column 1 show that the model used to explain the outcome of Canadian federal elections from 1953 to

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[3] The coefficient is -1.36** (0.17) when the Liberal Party is in power and -2.24** (0.33) when it is in opposition. This slight asymmetry in effects is consistent with the findings of Bélanger and Gélineau (2010) who show that, when in power, the Liberal vote share is slightly less affected by the national unemployment rate than the Conservative vote share, for reasons having to do with the Liberals being generally perceived as more competent economic managers. The difference between the two coefficients is smaller when the provincial unemployment rate is added to the model (-1.10** when in power versus -1.23** when in opposition).

2011 performs on a level that is comparable to similar vote functions used in both Canada and elsewhere. Thus, a significant effect of the provincial unemployment rate variable cannot be attributed to the fact that the vote function model may be underspecified.

The regression including provincial unemployment is presented in column 2 of Table 1. From this, two findings stand out. The first finding is obviously the stability of our previous results. All of the aforementioned conclusions, including those regarding the national unemployment rate, are confirmed in this new specification of the model. The second finding speaks to confirming our two hypotheses. The provincial unemployment rate has an autonomous effect, independent from the national unemployment rate, in explaining the results of Canadian federal elections. This effect is, as was expected, not as pronounced as that observed for the national unemployment rate, with the relationship between the two being around 3 to 1 (1.05/0.38 = 2.76). That said, the impact of provincial unemployment is far from being negligible. An increase of one point in unemployment in a province will translate into a decrease of close to one-half point of support for the Liberal Party when it is in power (and into a gain of similar magnitude when it is in opposition). What is more, this impact is added to that of national-level unemployment. Certainly, the two rates are correlated – the simple bivariate correlation coefficient between the two variables is 0.65 – and this is particularly true for the most important provinces. However, this correlation is not as high as one might have expected. The economic situation of a province is strongly related to the national economic situation, but it is not uniquely determined by these national conditions. Deterioration in the economy of one province can have an autonomous influence on the outcome of an election, as was the case in British Columbia due to the forestry crisis or in Ontario when the automobile industry was

severely affected during the last recession. Thus, the effect of the economy on the behaviour of Canadian voters may actually be more important than previous studies that only included national economic indicators would suggest.

There remains one more important national-level factor, leader popularity, that is absent from the first two models of Table 1. This variable is also missing from many Canadian vote functions, notably because of the absence of satisfactory data measuring leader popularity over a long period of time (however, see Crête and Simard 1984; Nadeau and Blais 1995). The model presented in column 3 includes a series of dichotomous variables that try to take into account the effect of leader image on Liberal vote share. These variables are surely far from being ideal indicators for the leadership phenomenon. However, the substantial increase in the percentage of variance explained, which goes from 81% to 87%, shows that these dichotomous variables partially capture this effect. The variables also probably capture the decline in Liberal Party support since the mid-2000s, something that can be seen as an advantage since we are interested in the effect of the economic situation beyond structural variables believed to influence the outcome of an election.

The most notable result of the model shown in column 3 is that the inclusion of a variable measuring a national-level political effect does not reduce the influence of the national unemployment variable, whose coefficient grows in absolute value by 15% (from 1.05 to 1.22). The coefficient of the provincial unemployment variable stays practically the same (it goes from -.38 to -.39) and the t-statistic associated with it increases considerably (from 2.71 to 3.25). The relative effect of national unemployment in relation to provincial unemployment remains

roughly the same, that is to say 3 to 1 (1.22/0.39 = 3.12), which constitutes a perfectly plausible result taking into account the visibility of national-level economic indicators during federal election campaigns. Finally, it is interesting to note that the inclusion of new variables that help push the percentage of explained variance up to nearly 90% does not affect in any negative way the effect of political and economic variables in the vote model. It can be believed that the results showing the existence of a relationship between vote shares and both national and provincial unemployment rates rest on solid grounds. An examination of observed and predicted values (using the technique of "out-of-sample forecasts") confirms the good explanatory power of the model. As Table 2 shows, the mean absolute prediction error is 2.2 percentage points, which is a level similar to that observed in the United States (Nadeau and Lewis-Beck 2012) and in Great Britain (Nadeau, Lewis-Beck and Bélanger 2009).

Conclusion

The use of regional units of analysis in the study of vote functions is a fruitful approach, but still not very widespread. First used in the United States (Rosenstone 1983; Holbrook 1991; Campbell 1992) and then in France (Jérôme and Lewis-Beck 1999), this approach has been recently used to study the Canadian case (Gélineau and Bélanger 2005; Bélanger and Gélineau 2010).

The small number of studies focused on Canada and the main conclusion drawn from these, that local economic conditions have no effect on federal-level voting in Canadian provinces, has led us to re-examine this question with the help of more complete data and a different model. The

results of these efforts have been clear; they show that regional economic conditions, namely the provincial unemployment rate, have an impact on vote choice, which is combined with the more important factor of national economic conditions.

The results of the study show that the effect of national unemployment is about three times larger than that of provincial unemployment. This result is not surprising given the nationwide character of federal elections and the visibility of national-level economic indicators during this time. The most surprising aspect was the absence of provincial economic conditions in previous studies. This conclusion could seem surprising for two reasons. First, it can be surprising given the economic and political importance of Canadian provinces. For example, in terms of economic importance, provincial government expenditures are a large part of Canada's entire public sector spending; in terms of political importance, Quebec seems to be the clearest example of provinces affecting national politics. Secondly, it is surprising in light of work done in the United States showing the significant effect of both national- and state-level economic conditions in presidential elections. In fact, given the importance of regional governments in the three countries where disaggregated vote functions have been used – very important for Canadian provinces, not very important for French *régions*, and somewhere in between for American states – it is in Canada that the effect of regional economic conditions on vote choice should have been more commonly observed.

Our study confirms not only that regional economic conditions weigh upon the result of national-level elections in Canada, but also that it is in Canada where the effect appears to be the most pronounced. For example, in Campbell's (1992) study on American elections, the effect

of national economic conditions is about six times more important than that of local conditions. For Canada, the impact of national-level conditions is about three times higher, while the results for France suggest that local-level conditions only play a marginal role in French presidential elections. The hierarchy of the impact of local economies during national elections, stronger in Canada than in the United States and in France, thus seems to reflect the political and economic importance of regional governments in these three countries. In the future, it would be interesting to extend the study of disaggregated vote functions to other countries in order to see if this relationship between political importance of regional entities and the impact of local-level economic conditions on the outcome of national-level elections can be observed beyond the three cases examined until now.

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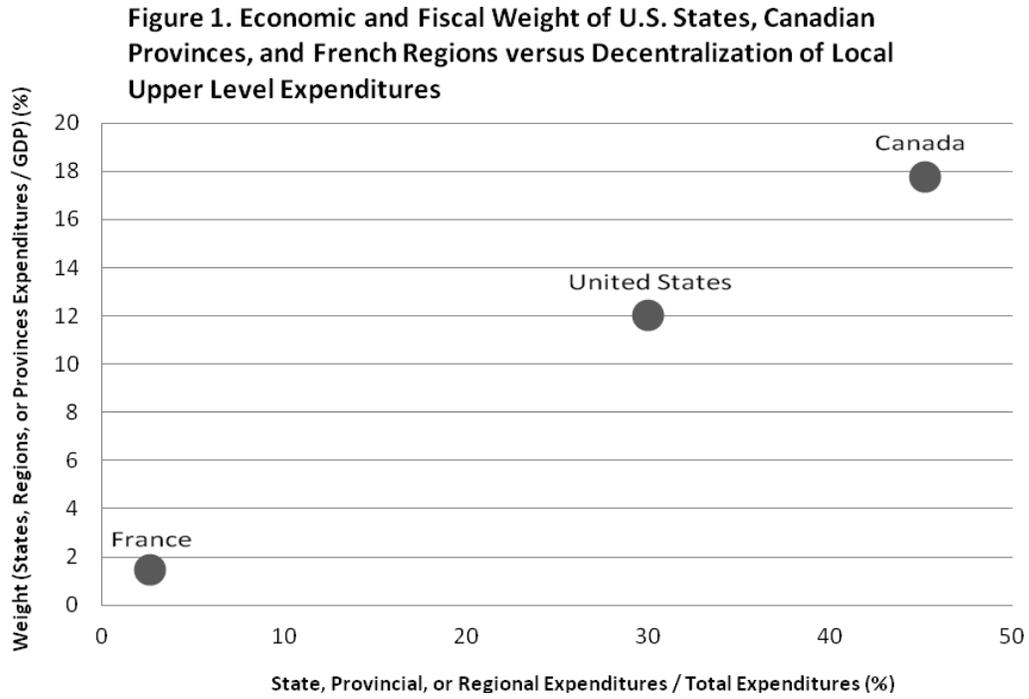
Table 1. OLS Regressions of Liberal Party Vote Share in Canadian Federal Elections, 1953-2011.

	Model 1	Model 2	Model 3
Liberal Vote t-1	0.42***	0.40***	0.37***
	(0.07)	(0.06)	(0.07)
Incumbency	9.76***	10.07***	10.21***
	(1.31)	(1.29)	(1.52)
UNR national t-3	-1.44***	-1.05***	-1.22***
	(0.17)	(0.22)	(0.23)
UNR provincial t-3	_	-0.38***	-0.39***
		(0.14)	(0.12)
Newfoundland	16.45***	17.57***	18.37***
	(2.74)	(2.63)	(2.54)
Nova Scotia	10.54***	11.00***	11.49***
	(1.93)	(1.84)	(1.76)
New Brunswick	12.45***	13.10***	13.70***
	(2.19)	(2.14)	(1.91)
Prince Edward Island	14.81***	15.48***	16.14***
	(2.12)	(2.07)	(2.00)
Quebec	18.05***	18.93***	19.59***
	(2.99)	(2.99)	(2.89)
Quebec break	-13.54***	-13.85***	-13.97***
	(3.24)	(3.30)	(3.16)
Ontario	11.61***	12.09***	12.62***
	(2.07)	(2.06)	(1.80)
Manitoba	4.94***	5.16***	5.40***
	(1.70)	(1.69)	(1.45)
Saskatchewan	1.22	1.22	1.30
	(1.38)	(1.31)	(1.09)
British Columbia	2.70	2.94*	3.06**
	(1.67)	(1.62)	(1.44)
St-Laurent	_	_	10.44***
			(2.37)
Pearson	_	_	12.76***
			(1.67)
Trudeau	_	_	12.77***
			(1.78)
Turner	_	_	12.47***
			(1.84)
Chrétien	_	_	15.43***
			(1.83)
Martin	_	_	15.48***
			(1.98)
Dion	_	_	7.18***
			(2.08)
Constant	11.20***	11.54***	0.04
	(1.74)	(1.68)	(2.03)
R^2	0.80	0.81	0.87
N	200	200	200

Table 2. Observed and Predicted Values of Liberal Party Vote Share at the National Level

Election	Actual share	Predicted share (weighted) *	Difference (error)
1953	48.6	48.4	-0.2
1957	40.9	45.1	4.2
1958	33.5	37.9	4.4
1962	37.2	38.2	1.0
1963	41.7	38.1	-3.6
1965	40.2	44.0	3.8
1968	45.5	43.9	-1.6
1972	38.4	42.3	3.9
1974	43.2	40.8	-2.4
1979	40.1	36.9	-3.2
1980	44.4	42.0	-2.4
1984	28.0	27.8	-0.2
1988	31.9	32.3	0.4
1993	41.2	41.6	0.4
1997	38.5	33.5	-5.0
2000	40.9	36.3	-4.6
2004	36.7	36.6	-0.1
2006	30.2	33.2	3.0
2008	26.2	25.8	-0.4
2011	18.9	19.9	1.0
Mean absolute error			**2.2**

* The predicted national vote share is calculated as the weighted average of predicted provincial-level vote shares. The weighting is based on the size of each province's population. Note however that computing an unweighted average of predicted provincial scores provides very similar results.

Figure 1. Economic and Fiscal Weight of U.S. States, Canadian Provinces, and French Regions versus Decentralization of Local Upper Level Expenditures

Sources: Organisation for Economic Co-operation and Development, and Direction générale des collectivités locales de France (2008 data; authors' calculus).