

# **The determinants of public spending in Canada: meta-analysis and data challenges**

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This paper surveys and replicates previous analyses of the determinants of public spending in Canada. Although some earlier findings appear to be robust, limitations in terms of data availability undermine the confidence with which conclusive inferences can be drawn. The second part of the paper highlights gaps in the availability of basic descriptive statistics and sets out an agenda for the CPPN pertaining to data collection and organization. With respect to expenditure data, Canadian policy scholars would benefit from an easily-accessible dataset based on budget estimates and public accounts. Regarding public opinion data, the challenge lies in obtaining permissions from polling organizations and aggregating estimates into a single easily-accessible database. A proposal is advanced for the development of an online tool that would allow for easy exploration of descriptive statistics across time and space. Such a tool could serve as both an online supplement to an introductory Canadian policy textbook and a complement to the Comparative Agendas Project.

## **Introduction**

What factors determine the size and composition of public budgets? This question has occupied Canadian and international researchers for decades. Yet surprisingly little is known about the determinants of government expenditure. The purpose of this paper is to identify gaps in the research and offer suggestions for how the problems responsible for creating these gaps can be remedied.

The paper is divided into two parts. The first part provides an overview of previous research and undertakes a meta-analysis of the determinants of government expenditure in Canada. Four previous findings receive discussion: Tellier's (2006) finding that government expenditure is a function of the governing party's popularity as measured in public opinion polls; Tapp's (2013) finding that legislated "fiscal rules" curb government spending; Pickup's (2006) finding that union density interacts with the ideology of the governing party to affect budget composition; and findings from Kneebone and McKenzie (1999), Bodet (2013) and Simon and Tatalovich (2014) that government ideology has an independent effect on government spending. Replication and extension of previous analyses reveals that government ideology is not a robust predictor of government expenditure in Canada. Moreover, while the effect of electoral incentives, public opinion and fiscal rules may be comparatively more consistent predictors of government spending, limitations with respect to data availability and reliability hinder the development of a research program. This is a problem insofar as reliable data and a coherent research program are required to draw conclusive inferences about a topic so fundamental to policy research.

The second part of the paper outlines a research agenda to overcome data availability issues. Aggregation and organization of basic descriptive statistics are highlighted as priorities. With respect to government spending, there is a pressing need for a one-stop databank from which researchers can glean program-level data based on budget estimates and public accounts. Regarding public opinion, it is imperative to establish an "official" metric of government support from aggregate poll data. Analysis of media attention, legislative agendas, party manifestos, court rulings, regulations and social media activity could also complement the proposed research program. Indeed, future research should be integrated with the Canadian Agendas Project —itself part of the international Comparative Agendas Project— which will facilitate important cross-national research (cf. Gauvin & Montpetit 2019).

There can be little doubt that social science will be increasingly data-driven in coming years. Cataloging and responding to "known unknowns" is essential for policy scholarship to proceed efficiently (if at all). The Canadian Public Policy Network (CPPN) has potential to serve as a permanent forum in which dedicated policy researchers devise collaborative research strategies, share ideas and marshal resources to solve what can be considered a collective action problem. To date, where resources have been mobilized, effort is often expended without the maximum benefit ever being realized. Projects are started but never finished or widely publicized, and valuable data are often lost in a maze of broken links. The information is out there. A concerted effort is required to make full use of it.

## **Previous research findings**

The behaviouralist-pluralist tradition in political science led earlier researchers to a focus on either or both the severity of social problems and governing party as the primary determinants of public policy. Regarding the severity of social problems, it seemed reasonable to assume that public spending should mirror the business cycle; governments have electoral incentives to respond to recessions with increased

spending. Moreover, per Keynes, counter-cyclical fiscal policy was just good economics. Regarding the importance of governing parties, it seemed equally reasonable to assume that individual and organized interests in society support political parties whose platforms best reflect their own values and objectives.

The intuitive prediction was that government spending would increase during recessions, but that the ideology of the governing party would blunt counter-cyclical spending when right governments were in power, and accentuate counter-cyclical spending when left governments were in power. However, quantitative evidence to this effect has been elusive. For instance, Solano's (1983) analysis of government expenditure across sixteen countries in 1968 found that party ideology had no effect on spending patterns. Cameron (1985) found the opposite of the expected tendency—greater surpluses and lower deficits where left parties dominate—in a comparative analysis of twenty-one countries over the 1965-1981 period. Still, Blais, Blake and Dion (1993) examined expenditures during the 1960 to 1987 period in fifteen liberal democracies and found that entrenched (i.e., long-lasting) majority left governments spend slightly more than their counterparts on the right.

Within Canada, Blais and Nadeau (1992) undertook an analysis of ten provincial governments during the 1950 to 1984 period and found a modest positive relationship between the government spending and electoral cycle, on one hand, and governing party and expenditure by function, on the other. Specifically, Blais and Nadeau found that left governments spent more on roads and social services, while right governments spent more on agriculture. In an analysis of federal and provincial spending, Kneebone and McKenzie (1999) reported “strong evidence” of both electoral incentives and partisan effects over the 1962-1996 period, with left governments having “looser fiscal policy” than right governments. Since then, Bodet (2013) found only a “marginal” partisan effect on federal government expenditure by function in an analysis of the 1965-2008 period. Likewise, Simon and Tatalovich (2014) examined provincial expenditures for the 1965 to 2009 period and reported that left governments spend more than right, although the effect is substantively meagre.

In terms of other determinants of public spending, Pickup (2006) set out to test competing theories of convergence and compensation by looking at interaction effects of union density, trade openness and governing party on government spending at the provincial level over the 1981-1999 period. Pickup found that most governments compensate for greater liberalization by increasing government expenditure on consumption and transfers, but that these results do not obtain for left governments when union density is high. Tellier (2006) examined the interaction between ideology, electoral incentives and government popularity at the provincial level for the 1983-2005 in the six most populous provinces and found that government spending reflects party ideology when the government is popular. Finally, Tapp (2013) examined the impact of legislated “fiscal rules” and found that such rules appear to curb government spending—a finding that was carried forward by Mou, Atkinson and Tapp (2018).

To date, the most comprehensive analysis of which we are aware is Simon and Tatalovich (2014). Accordingly the next section begins by replicating, updating and extending their analysis. We find that government ideology is non-robust and substantively insignificant predictor of public spending at both the aggregate and functional levels. Fiscal rules, legislative majorities, electoral incentives and government popularity, on the other hand, may hold explanatory value.

## Updated and consolidated findings

We preface this section by stressing that, although we plan to eventually publish a thoroughgoing meta-analysis, we have not yet collected the data required to replicate all of the studies discussed above—a point to which we return later. As such, the following findings, although illuminating, are rather tentative.

Per the summary given above, Simon and Tatalovich (2014) examined the determinants of provincial government expenditure from 1966 to 2009 using Arellano-Bond autoregressive (AR2) two-step generalized method of moments (GMM) estimation. Their objective was to isolate the effect of governing party on surplus(deficit)/GDP. Unlike many other analyses, which use categorical or dummy variables to represent party ideology, Simon and Tatalovich employ a scale. As seen in Figure 1, NDP

governments are considered the most left-leaning on the scale (with a score of 3.1) and Social Credit governments are considered the most right-leaning (with a score of 7.8).

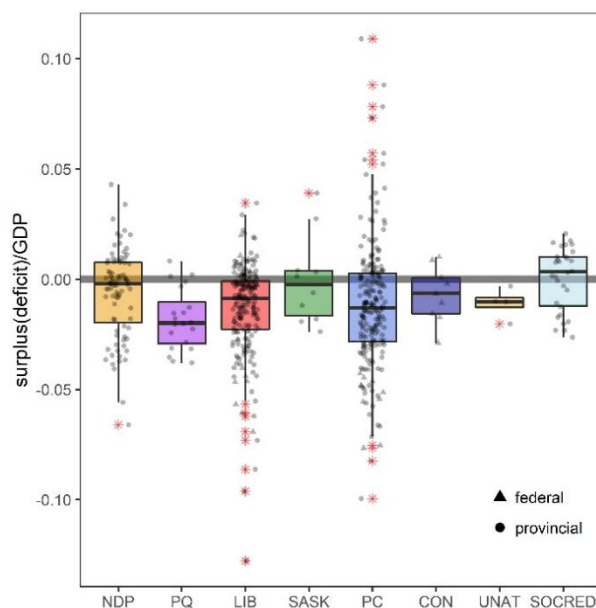
Figure 1 displays the conditional distribution of budgetary balance by party for the years 1965 to 2017, and includes both provincial and federal data. Although convincing arguments could be made for assigning a unique ideology score to every administration, we are not aware of any such scale. Accordingly, although we are skeptical of the propriety of the coding scheme, we score the federal Conservatives the same as all other Progressive Conservative governments.

As indicated by the distributions in Figure 1, there is little prima facie evidence to support the contention that surpluses are more frequent when right governments are in power. On the other hand, while it may be tempting to draw the opposite inference based on comparatively high median budgetary balances for Liberal and NDP governments, the fact that the conditional median is highest for

Social Credit governments suggests a null relationship between governing party and government spending. Not surprisingly, simple pooled bivariate regression returns a null result.

Figure 2 sheds more descriptive light on the relationship between government ideology and budgetary balance by conveying the distribution and size of surpluses and deficits by party over time. To assist in assessment of the extent to which deficits correspond with recessions, vertical bars have been superimposed on the time series during recession years. To isolate the independent effect of oil shocks on

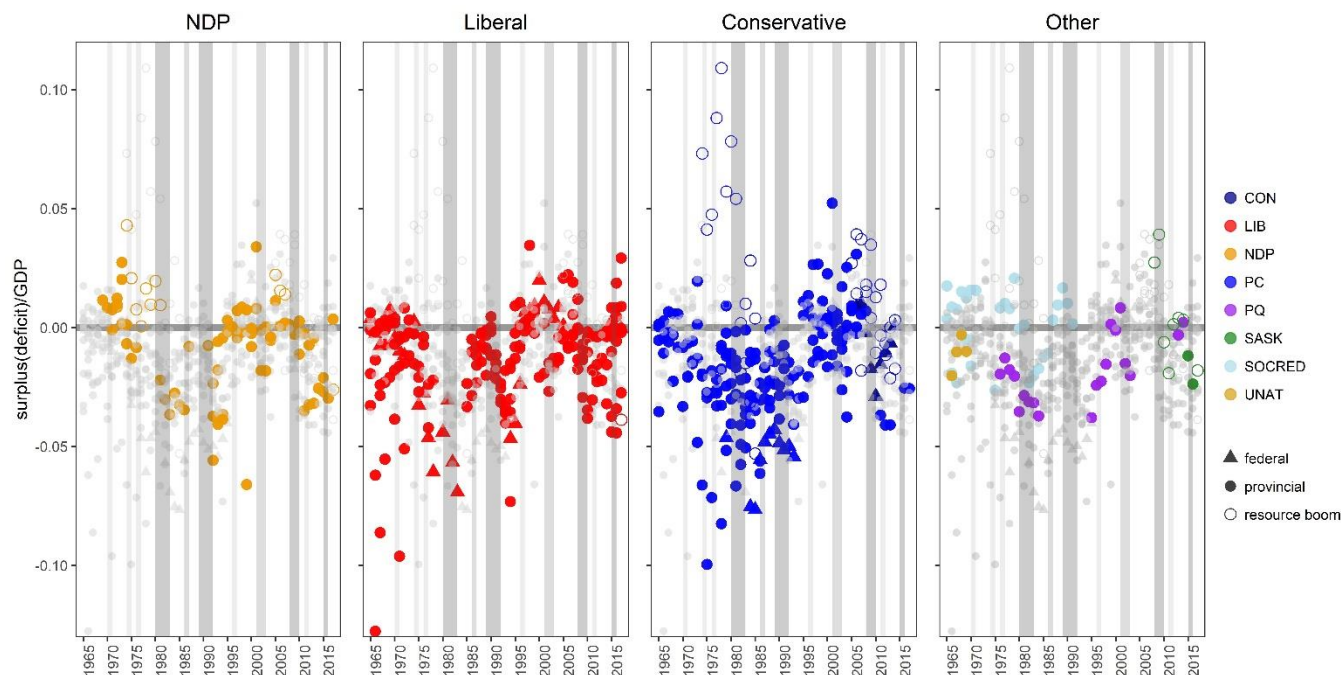
Figure 1: budgetary balance by party, 1965-2017



Source: Statistics Canada Table 384-0015 Provincial gross domestic product, expenditure-based, provincial economic accounts; Table 385-0001 Consolidated government revenue and expenditures; Table 380-0080 Revenue, expenditure and budgetary balance; Table 384-0047 Revenue, expenditure and budgetary balance.

government revenue, data points in which resource-driven economies benefited from a real price of oil above \$50 per barrel are hollowed.<sup>1</sup>

Figure 2: budgetary balance by party over time, 1965-2017



Source: Statistics Canada Table 384-0015 Provincial gross domestic product, expenditure-based, provincial economic accounts; Table 385-0001 Consolidated government revenue and expenditures; Table 380-0080 Revenue, expenditure and budgetary balance; Table 384-0047 Revenue, expenditure and budgetary balance. Resource boom calculated as real price of oil  $\geq$  \$50/barrel in oil producing provinces. Vertical bars represent recessions.

Very high surpluses enjoyed by Progressive Conservative governments in Alberta aside, it is not evident from Figure 2 that right governments systematically return larger surpluses or smaller deficits than left governments. The statistical results reported in Table 1 confirm a null relationship. The Model 1 column reports the generalized method of moments (GMM) coefficients from Simon and Tatalovich (2014). While they found a relationship between ideology and government expenditure that is statistically significant at the ten percent level, the substantive significance of ideology on spending —indicated by the standardized coefficient in bold— suggests that the effect is negligible compared to the effect of population and unemployment rate.<sup>2</sup>

Although we were eventually able to replicate the generalized method of moments (GMM) model employed by Simon and Tatalovich (by running the analysis in Stata instead of R), the fact that the time series (i.e., years) exceeds the cross-sectional observations (i.e., provinces) suggests that dynamic fixed

<sup>1</sup> Resource-driven economies are considered to be Alberta, Saskatchewan and Newfoundland-Labrador after the Hibernia project came online.

<sup>2</sup> Standardized coefficients are interpreted as the estimated standard deviation change in the dependent variable per one standard deviation increase in the independent variable. They are useful for assessing the magnitude of effects when variables are measured on different scales, as they are here.

effects estimation is a more appropriate model for this application (cf. Arellano & Bond 1991). Model 2 thus employs heteroskedasticity and autocorrelation-corrected fixed effects and updates the analysis to 2017. We see that the ideology variable loses its statistical significance (and changes signs), while GDP and the unemployment rate lose their significance. The “fiscal rules index” variable, on the other hand, which was developed by Tapp (2013), gains both statistical and substantive significance. Election year retains its statistical significance and sign. Model 3 adds federal level data and suggests that the results are robust across provincial and federal levels of government, as indicated by little change to the coefficients and R-squared value. Note, however, that majority government is a statistically significant predictor of government spending in Models 3 and 4. Model 4 controls for the effect of resource booms with fairly little overall effect.

Table 1: replication and extension of Simon and Tatalovich —determinants of nominal surplus (deficit) as percentage of nominal GDP since 1965

|                                 | Model 1<br>S&T (2014) GMM<br>1966-2009<br>no federal | Model 2<br>fixed effects<br>1966-2017<br>no federal | Model 3<br>fixed effects<br>1966-2017<br>incl. federal | Model 4<br>fixed effects<br>1966-2017<br>incl. federal |
|---------------------------------|------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|
| lagged surplus<br>(deficit)/GDP | 0.56***<br>(0.04)<br><b>0.56</b>                     | 0.59***<br>(0.05)<br><b>0.59</b>                    | 0.63***<br>(0.05)<br><b>0.63</b>                       | 0.61***<br>(0.05)<br><b>0.61</b>                       |
| government ideology             | 0.0001*<br>(0.00005)<br><b>0.006</b>                 | −0.0001<br>(0.0006)<br><b>−0.006</b>                | 0.0008<br>(0.0005)<br><b>0.05</b>                      | −0.0002<br>(0.0005)<br><b>−0.01</b>                    |
| log GDP                         | 0.004***<br>(0.001)<br><b>0.24</b>                   | 0.004<br>(0.003)<br><b>0.25</b>                     | 0.005<br>(0.004)<br><b>0.36</b>                        | 0.002<br>(0.003)<br><b>0.14</b>                        |
| log unemployment                | −0.009***<br>(0.002)<br><b>−0.18</b>                 | −0.004<br>(0.003)<br><b>−0.08</b>                   | −0.003<br>(0.003)<br><b>−0.06</b>                      | −0.002<br>(0.003)<br><b>−0.03</b>                      |
| log population                  | −0.005***<br>(0.002)<br><b>−0.25</b>                 | −0.025***<br>(0.008)<br><b>−1.34</b>                | −0.025***<br>(0.009)<br><b>−1.55</b>                   | −0.019**<br>(0.008)<br><b>−1.18</b>                    |
| majority                        | −0.001<br>(0.004)                                    | −0.003<br>(0.002)                                   | −0.003**<br>(0.002)                                    | −0.004**<br>(0.002)                                    |
| election year                   | −0.005***<br>(0.002)                                 | −0.006***<br>(0.002)                                | −0.005***<br>(0.002)                                   | −0.005***<br>(0.002)                                   |
| fiscal rules index (FRI)        | 0.0004<br>(0.0005)<br><b>0.01</b>                    | 0.005***<br>(0.0005)<br><b>0.16</b>                 | 0.005***<br>(0.0007)<br><b>0.15</b>                    | 0.005***<br>(0.001)<br><b>0.15</b>                     |
| Resource boom                   | -                                                    | -                                                   | -                                                      | 0.008**<br>(0.003)                                     |
| Federal                         | -                                                    | -                                                   | 0.034**<br>(0.015)                                     | 0.033*<br>(0.02)                                       |
| Newfoundland                    | -                                                    | −0.037***<br>(0.008)                                | −0.031***<br>(0.01)                                    | −0.030**<br>(0.01)                                     |
| Prince Edward Island            | -                                                    | −0.063***<br>(0.017)                                | −0.049***<br>(0.02)                                    | −0.045**<br>(0.02)                                     |

|                             |                     |                      |                      |                      |
|-----------------------------|---------------------|----------------------|----------------------|----------------------|
| New Brunswick               | -                   | -0.033***<br>(0.007) | -0.025***<br>(0.008) | -0.023**<br>(0.009)  |
| Nova Scotia                 | -                   | -0.026***<br>(0.006) | -0.020***<br>(0.006) | -0.018**<br>(0.007)  |
| Quebec                      | -                   | 0.016**<br>(0.006)   | 0.014**<br>(0.007)   | 0.014*<br>(0.007)    |
| Ontario                     | -                   | 0.024**<br>(0.009)   | 0.019**<br>(0.009)   | 0.02*<br>(0.01)      |
| Manitoba                    | -                   | -0.025***<br>(0.005) | -0.019***<br>(0.005) | -0.016***<br>(0.006) |
| Saskatchewan                | -                   | -0.025***<br>(0.006) | -0.019***<br>(0.006) | -0.019***<br>(0.007) |
| British Columbia            | -                   | 0.005**<br>(0.002)   | 0.005***<br>(0.002)  | 0.007***<br>(0.003)  |
| (intercept)                 | 0.046***<br>(0.017) | 0.29***<br>(0.077)   | 0.21***<br>(0.073)   | 0.22**<br>(0.01)     |
| Adjusted R-squared          | -                   | 0.33                 | 0.33                 | 0.36                 |
| Wald chi-square             | 427.68***           | -                    | -                    | -                    |
| Sargan test <i>p</i> -value | 0.149               | -                    | -                    | -                    |
| <i>N</i>                    | 439                 | 520                  | 583                  | 583                  |

\*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Standardized coefficients in bold; Arellano HAC standard errors in parentheses. R-squared values exclude the autoregressive term (i.e., lagged surplus (deficit)/GDP).

Model 1 results are those reported in Simon and Tatalovich (2014) from an Arellano-Bond AR2 two-step Generalized Method of Moments (GMM). Model 2 is a fixed effects extension of the Simon and Tatalovich model, updated to 2017. Model 3 includes federal level data. Model 4 includes the 'Resource Boom' dummy variable. Alberta is the reference category (intercept) in the fixed effects models.

Based on *Statistics Canada Labour Force Survey estimates*; *Table 384-0015 Provincial gross domestic product, expenditure-based, provincial economic accounts*; *Table 385-0001 Consolidated government revenue and expenditures*; *Table 380-0080 Revenue, expenditure and budgetary balance*; *Table 384-0047 Revenue, expenditure and budgetary balance*. Custom Statistics Canada data for the years 1965-1989 supplied by Simon and Tatalovich. Fiscal rules index supplied by Tapp, Mou and Atkinson (see Tapp, Mou & Atkinson 2015). The authors thank these researchers for their assistance.

The takeaway from Table 1 is that, majority governments and electoral incentives have modest effects in terms of increased expenditures; that government ideology has a null effect; that more populous provinces run larger and/or more frequent deficits; and that fiscal rules are quite effective at disciplining spending. What about the other variables identified in the previous literature? Table 2 reports the findings of a rather circumscribed dataset consisting of data from the federal and six provincial governments from the 1980s to 2001, as these are the only years for which public opinion data are readily available. Using these data, we find that government popularity and fiscal rules are both positively signed and both substantively and statistically significant at the one per cent level. While union density is estimated to have a large negative effect, it does not meet the threshold of statistical significance. Recall, however, that Pickup's (2006) findings were premised on an interaction with trade openness, which is not included in the model (more on this later). Majority government retains its modest but statically significant effect. Election year loses significance.

Table 2: meta-analysis of previous research —fixed effects determinants of nominal surplus (deficit) as percentage of nominal GDP, 1981-2001 (excludes Atlantic provinces)

|                              | Model 5                          | Model 6                          | Model 7                          | Model 8                          | Model 9                            | Model 10                              |
|------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|------------------------------------|---------------------------------------|
| lagged surplus (deficit)/GDP | 0.67***<br>(0.13)<br><b>0.67</b> | 0.67***<br>(0.08)<br><b>0.67</b> | 0.67***<br>(0.13)<br><b>0.67</b> | 0.66***<br>(0.11)<br><b>0.66</b> | 0.46***<br>(0.09)<br><b>0.46</b>   | 0.43***<br>(0.12)<br><b>0.43</b>      |
| government ideology          | 0.0003<br>(0.001)<br><b>0.02</b> | 0.0003<br>(0.001)<br><b>0.02</b> | 0.0003<br>(0.001)<br><b>0.02</b> | 0.016<br>(0.015)<br><b>1.12</b>  | 0.0032<br>(0.009)<br><b>0.23</b>   | 0.0008<br>(0.010)<br><b>0.05</b>      |
| majority                     | -                                | -0.004<br>(0.005)                | -0.003<br>(0.005)                | -0.006<br>(0.005)                | -0.011***<br>(0.003)               | -0.012***<br>(0.003)                  |
| election year                | -                                | -                                | 0.002<br>(0.002)                 | 0.002<br>(0.002)                 | -0.0006<br>(0.003)                 | -0.001<br>(0.003)                     |
| union density                | -                                | -                                | -                                | 0.0007<br>(0.004)<br><b>0.14</b> | -0.001<br>(0.003)<br><b>-0.20</b>  | -0.002<br>(0.008)<br><b>-0.34</b>     |
| union density × ideology     | -                                | -                                | -                                | -0.00004<br>(0.0004)             | -0.00004<br>(0.0003)               | 0.00003<br>(0.0003)                   |
| fiscal rules index (FRI)     | -                                | -                                | -                                | -                                | 0.013***<br>(0.003)<br><b>0.41</b> | 0.012***<br>(0.003)<br><b>0.39</b>    |
| popularity lead              | -                                | -                                | -                                | -                                | -                                  | 0.0002***<br>(0.00003)<br><b>0.14</b> |
| Federal                      | -0.009<br>(0.006)                | -0.009**<br>(0.004)              | -0.009**<br>(0.004)              | 0.010<br>(0.015)                 | 0.0004<br>(0.013)                  | 0.0032<br>(0.01)                      |
| Quebec                       | -0.004<br>(0.006)                | -0.004<br>(0.003)                | -0.004<br>(0.003)                | 0.023<br>(0.027)                 | 0.018<br>(0.019)                   | 0.025<br>(0.017)                      |
| Ontario                      | -0.003<br>(0.006)                | -0.004**<br>(0.001)              | -0.004*<br>(0.002)               | 0.009<br>(0.007)                 | 0.010**<br>(0.005)                 | 0.013***<br>(0.004)                   |
| Manitoba                     | 0.002<br>(0.006)                 | 0.001<br>(0.001)                 | 0.001<br>(0.001)                 | 0.025<br>(0.019)                 | 0.013<br>(0.013)                   | 0.018<br>(0.011)                      |
| Saskatchewan                 | 0.003<br>(0.006)                 | 0.002<br>(0.002)                 | 0.002<br>(0.003)                 | 0.022<br>(0.015)                 | 0.015<br>(0.009)                   | 0.02**<br>(0.009)                     |
| British Columbia             | 0.0002<br>(0.006)                | 0.0002<br>(0.001)                | 0.0002<br>(0.001)                | 0.026<br>(0.020)                 | 0.026*<br>(0.013)                  | 0.034***<br>(0.011)                   |
| (intercept)                  | -0.003<br>(0.007)                | 0.005<br>(0.007)                 | 0.0001<br>(0.008)                | -0.046<br>(0.125)                | 0.0086<br>(0.086)                  | 0.03<br>(0.09)                        |
| Adjusted R-squared           | 0.16                             | 0.16                             | 0.16                             | 0.17                             | 0.48                               | 0.53                                  |
| N                            | 130                              | 130                              | 130                              | 130                              | 130                                | 130                                   |

\*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Standardized coefficients in bold; Arellano HAC standard errors in parentheses.

R-squared values exclude the autoregressive term (i.e., lagged surplus (deficit)/GDP).

Alberta is the reference category (intercept).

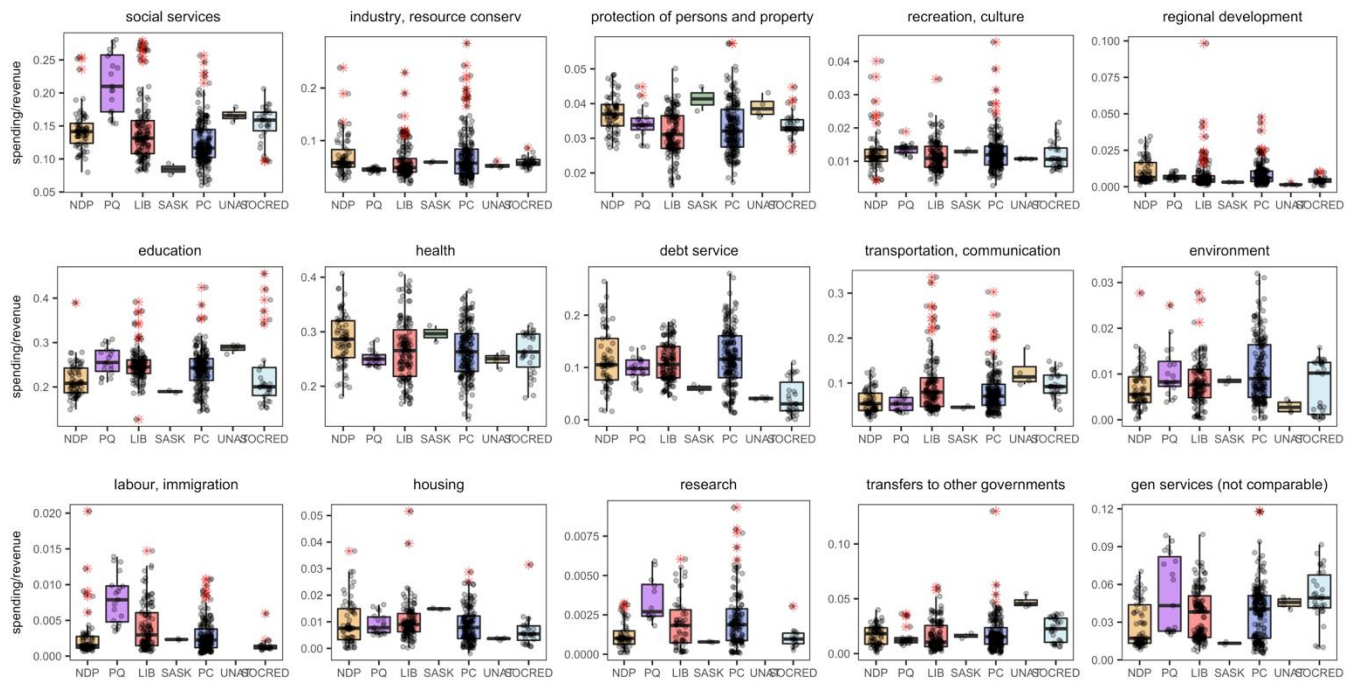
Series for Alberta and British Columbia include data for years 1984-2001. Series for Manitoba and Saskatchewan cover 1986-2001.

Popularity lead is operationalized as the governing party's percentage point lead over the most preferred rival in public opinion polls

Based on *Statistics Canada Labour Force Survey estimates; Table 279-0025 Number of unionized workers, employees and union density, by sex and province; Table 384-0015 Provincial gross domestic product, expenditure-based, provincial economic accounts; Table 385-0001 Consolidated government revenue and expenditures; Table 380-0080 Revenue, expenditure and budgetary balance; Table 384-0047 Revenue, expenditure and budgetary balance*. The fiscal rules index supplied by Tapp, Mou and Atkinson (see Tapp, Mou & Atkinson 2015). Popularity lead data obtained from Tellier (2005). The authors thank these researchers for their assistance.

Insofar as government spending by function is concerned, Statistics Canada data are not comparable across the provincial and federal levels of government. Moreover, data are not comparable between periods prior to and after 2009. With that said, fixed effects estimation fails to return substantively significant coefficients for government ideology, even in instances where the relationship between ideology and spending by function is statistically significant. Given that, we refrain from reporting coefficients here. Instead, Figure 3 displays descriptive statistics of expenditure by function as percent of revenue.

Figure 3: government spending by function and governing party, 1965-2009



Source: Statistics Canada Table 385-0001 Consolidated federal, provincial, territorial and local government revenue and expenditures; Custom Statistics Canada data (inquire to request)

Finally, to assess the possibility that government ideology may be associated with certain combinations of spending priorities, we conducted exploratory factor analysis on spending by function series. If government ideology is associated with discernible “spending profiles,” these should manifest as loadings on latent variables. Exploratory factor analysis does not reveal the existence of any such spending profiles. This is not to say that governments do not vary predictably in their spending priorities, as further analysis of program-level data may be necessary to reveal hitherto undocumented nuances. However, we find no evidence that government ideology has a significant independent effect on public spending priorities.

## Limitations and implications for a research program

If one thing is clear from the preceding literature review and analysis, it is that Canadian policy scholars have little reason to be confident about our inferences concerning the determinants of government spending. Whereas most studies to date have been of the “one-off” variety, it is preferable to establish a research program according to which knowledge builds incrementally on a series of comparable findings (Lakatos 1976). The main barrier to establishing a research program is limited data. This is not an insurmountable problem by any means, but it will require time and resources to overcome. Part of the problem is that data constitute public goods; data are costly to obtain but free to use. It is well-known that frequent interaction is helpful for leveraging cooperation in joint ventures, however. One function of the Canadian Public Policy Network (CPPN) could be to serve as a forum for communicating and coordinating the data collection and organization effort required to move policy studies in Canada forward.

Table 3 paints a picture of the disconnect between the existence and availability of critical data. Regarding program level figures, a tremendous amount of information is published by governments and legislatures but is rarely used by policy scholars. These data should be compiled and made available online, either freely or through library subscription. The US-based Policy Agendas Project is a shining example of what is possible (<http://www.comparativeagendas.net/us>) (granted, the trends tool could, and presumably will be, more fully integrated with the various datasets).

Table 3: data availability, federal and provincial levels in Canada

|                                                                              | exists           | compiled        | complete      | available       |
|------------------------------------------------------------------------------|------------------|-----------------|---------------|-----------------|
| government revenue and expenditure<br>1965-present                           | yes              | yes             | yes           | yes             |
| government ideology<br>1965-present                                          | yes              | yes             | yes           | yes             |
| program level data<br>any                                                    | yes              | no              | no            | no              |
| trade openness<br>1981-present                                               | yes              | yes             | yes           | no              |
| union density<br>1975-present                                                | yes              | yes             | yes           | yes             |
| popular support (polling data)<br>1981-2001<br>2001-present<br>prior to 1981 | yes<br>yes<br>no | yes<br>no<br>no | no<br>?<br>no | yes<br>no<br>no |
| most important issue (polling data)<br>any                                   | yes              | yes             | ?             | no              |
| legislative agendas<br>any                                                   | yes              | yes             | no            | no              |
| media attention<br>any                                                       | yes              | yes             | no            | no              |

A one-stop descriptive tool for exploring the complete universe of programs implemented in Canada would be of tremendous value even for the most knowledgeable policy scholars. For those new to

public policy, software that permits users to easily navigate the policy landscape would go a long way to inculcate a sense of what public policy in Canada entails. The platform should therefore be implemented as a supplement to an introductory textbook on Canadian public policy.

Regarding a research program, such a tool would be indispensable for ensuring data are readily available and transparent. For its part, Statistics Canada has begun implementing visual tools (see <https://www.statcan.gc.ca/eng/interact/datavis>). Statistics Canada does not, however, publish ministerial-level data from budget estimates and public accounts —precisely the data which would be of most value to Canadian policy scholars. It will be up to policy scholars to collect and publish these figures.

Polling data constitute another major gap. This is surprising. While it is understandable that public opinion data might not exist at the provincial level before the mid-1980s, polling data from the post-2001 period are also unavailable. Although these data undoubtedly exist, they must be acquired from polling agencies and compiled into data series. Many university libraries have agreements with polling agencies, but access is nevertheless quite limited. This state of affairs is problematic insofar as policy researchers require some sort of official metric that represents public support for government over time if they are to assess the causal impact of public opinion on policy.

On the topic of public opinion, researchers with the Canadian Agendas Project confirm that poll data on the “most important issue” have been compiled for the national level, along with data pertaining to legislative agendas and media attention. The release of the Canadian Agendas Project has been on hold for some time now, however. The tendency for data aggregation projects to be held up drives home the point that permanent forums are often necessary for ongoing research coordination and collaboration. Regular interaction for the purpose of setting priorities and marshalling resources (i.e., applying for grants) could go a long way toward making quality data available to Canadian policy researchers.

## Conclusion

The jury is still very much out on the determinants of government spending in Canada and elsewhere. Not only is the received wisdom quite polarized, each position appears to be tenuous considering the evidence. Becoming more confident in our inferences requires disciplined and systematic analysis; it requires a research program. However, serious data collection and organization efforts will be necessary before we can even begin to seriously investigate many pressing questions.

As social sciences become increasingly data-driven, policy studies are at risk of falling behind. Methodological sophistication is one thing; having access to data on which to exploit methods is another. The collection and organization of basic descriptive statistics should therefore be prioritized. This, it seems, is easier said than done. Fortunately, organizations like the Canadian Public Policy Network (CPPN) have the potential to serve as permanent forums in which research efforts can be coordinated on an ongoing basis.

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