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Crowding Out of Private Contributions by Government Funding: The Importance of Charitable Activities and Population Served

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Abstract

Existing literature on crowding out typically focuses on donations to any charity or to those providing services in specific areas, like arts or social services. We depart from this literature by focusing on all charities that serve a specific geographic/cultural population, namely Indigenous peoples. This specific population is of interest for several reasons. Firstly, charities that serve Indigenous people are much more likely to receive government funding relative to all other charities: 57% versus 35%. We wonder if government funding helps explain the large difference in average donations to Indigenous-serving as compared to non-Indigenous serving charities. Secondly, we know very little about the role of the charitable sector in serving the Indigenous population even though it is amongst the most vulnerable in Canada. We uncover several useful findings: government funding always crowds out Indigenous-serving charities; the crowding-out of Indigenous-serving charities is usually larger but never smaller than that of non-Indigenous serving ones; and the crowding-out of Indigenous-serving charities is invariant to whether the charity is located on or off reserve.

KEY WORDS: crowding-in, crowding-out, charitable giving, government funding, Indigenous charities, charitable sector.

JEL Classification: H2, H3, H4, H8

1 Introduction

Researchers have long wondered about the link between the government funding of charities and private donations: if the government contributes to a charity, do private donations fall (crowding-out), rise (crowding-in) or are they independent of each other? With the risk of over-simplifying the current state of knowledge, more studies seem to find crowding out than crowding in, the sign and magnitude of the effect varies according to the area of charitable activity, and the results are generally sensitive to the data set and empirical techniques employed (e.g., Abrams and Schitz, 1978; De Wit and Bekkers, 2017). Most agree that the crowding-out/in is not perfect: a one-dollar increase in government funding engenders a less-than-one-dollar decrease/increase in private donations, supporting the idea of 'impure' altruism. The private provision of public goods, or 'voluntary contributions', model explains impure altruism as arising from the fact that individuals derive utility not only from the public goods financed from contributions, but from the act of giving itself (Bergstrom et al., 1986; Andreoni, 1990). It also explains why relying on voluntary contributions yields a sub-optimal level of public goods, thus suggesting a role for government funding – to ensure that an 'optimal' level of the good is provided. How private donations react to this government funding is clearly of importance in the quest to achieve the optimal provision of the public good. The voluntary contributions model generally assumes one homogeneous good, but the plethora of charitable services, even within the same field, belies this assumption. The role of government, therefore, may vary quite significantly across the types of services provided.

Existing work on crowding out focuses either on all charities (e.g., Abrams and Schitz, 1978; Kingma, 1989; Duncan, 1999; Brooks, 2000; Heutel, 2014) or on charities that provide services in specific areas, like orchestras (Brooks, 2003; Hughes et al., 2014), arts, museums and social services (Hughes and Luksetich, 1999; Andreoni and Payne, 2003; Smith, 2007; Dokko, 2009; Kim and Van Ryzin, 2014), schools (Gordon, 2004), universities (Payne, 2001) and libraries (Ferreira and Borges, 2018). We distinguish ourselves from this literature by focusing on all charities that service a specific geographic/cultural population, namely Indigenous peoples. This specific population is of interest for at least two reasons. Firstly, charities that serve Indigenous people are much more likely to receive government funding relative to other charities (Devlin and Planatscher, 2023): 57% of Indigenous-serving charities receive some form of government funding

as opposed to ones 35% of non-Indigenous serving ones (table 2 below). Does this reliance on government funding help explain the lower-than-average private donations to Indigenous-serving charities? Secondly, we know very little about the role of the charitable sector in serving this population even though it is amongst the most vulnerable in Canada.

One challenge with determining if government funding crowds out private donations is endogeneity. Reverse causality is a concern: government funding may be affected by the level of private donations and vice versa. Moreover, factors that affect the government's decision to fund charities may be the same as those that affect private giving – perceived need, for instance. We deal with the potential endogeneity of government funding by applying an instrumental variables approach using a novel instrument that captures variations in the amount of government funding received over past years.

Whether the charity is located on an Indigenous reserve or not, may also influence the response of private donors. Reserves are funded differently than other communities, receiving federal government financing for a host of essential services, augmented by provincial and municipal funding programs. Furthermore, 71% of Indigenous-serving charities located off reserve receive government funding as opposed to 39% of those on reserve, leading us to wonder if donors to charities within a reserve react differently from donors to Indigenous-serving charities outside of a reserve. We also disaggregate charities into six fields of activities to see whether this matters.

Many findings are of interest. For instance: government funding always crowds out Indigenous-serving charities; the crowding-out of Indigenous-serving charities is usually larger but never smaller than that of non-Indigenous serving ones; and the crowding-out of Indigenous-serving charities is invariant to whether the charity is located on or off reserve.

2 Data

To maintain registered status and hence issue tax receipts for donations, charities in Canada must submit an annual T3010 Registered Charity Information Return to the Canada Revenue Agency (CRA). The T3010 return provides detailed financial information on all registered charitable organizations. We use this administrative dataset from 2003 to 2017 and parse charities into two groups: those that serve Indigenous peoples and all others ('non-Indigenous-serving' charities). Indigenous-serving charities are identified by applying three criteria: charities located

within the borders of an Indigenous community, charities that have an Indigenous reference in their legal name, and charities that report providing benefits almost exclusively to Indigenous peoples. For the first group, the postal codes of the registered charities are matched to the addresses of Indigenous Census Subdivisions (CSD) as classified by the government department Aboriginal Affairs and Northern Development (AANDC, now Indigenous Services Canada (ISC)). The second group encompasses charities that contain in their legal name words such as *Aboriginal*, *Indigenous*, *First Nation*, *Inuit*, *Métis, Indian* or *Native.* We removed charities whose name contained the word *Indian* and pertained to the country India or the locality Indian Harbour. All charities reporting one of their primary fields of activity (lines 1200, 1210 or 1220 in the T3010 form) as code A9 - *Services for Aboriginal Peoples* were included. A few "Friendship Centres" not picked up by applying these three criteria were added to the sample.

All charities are required to report government revenues, but only those obliged to fill out 'Schedule 6' in the financial section of the T3010 return need specify whether the funding came from federal, provincial, and/or municipal coffers. Schedule 6 applies if: *"a) the charity's revenue exceeds $100,000;* or *b) the amount of all property (for example, investments, rental properties) not used in charitable activities is more than $25,000;* or *c) the charity has permission to accumulate funds during this fiscal period"* (T3010 form, p. 3). We examine how private contributions react to total government funding (line 4570) and funding by government level for the 'Schedule 6' charities: federal (line 4540), provincial/territorial (line 4550), and municipal/regional (line 4560). Private donations are monetary gifts for which the charity issues an official donation receipt. Every dollar amount is adjusted for inflation using the consumer price index expressed in 2017 dollars.

To prepare the data set for analysis, several modifications were required. The 39 observations from 37 different charities with negative private donations were dropped, and we excluded charities with three or fewer years of data (20,633 observations). The full dataset has over 1.2 million observations, coming from 96,849 different charities. From table 1, Indigenous-serving charities comprise 11,179 observations on 958 organizations; all other charities comprise 1,205,204 observations on 95,891 organizations. The former group can be further broken down into those located off reserve (6,388 observations, 564 charities) and on reserve (4,791 observations, 394 charities).

Table 1: Sample Sizes

	Non-Indigenous-serving charities	Indigenous-serving charities	Indigenous-serving charities off-reserve	Indigenous-serving charities on-reserve
Observations full sample: n=1,216,383 Number of charities: N=96,849	n=1,205,204 N=95,891	n=11,179 N=958	n=6,388 N=564	n=4,791 N=394
Observations sample Schedule 6: n=856,626 Number of charities: N=87,953	n=848,979 N=87,040	n=8,647 N=913	n=5,487 N=538	n=3,160 N=375

Data on the median total income at the provincial level come from Statistics Canada.[1] We also include provincial marginal tax credit rates for the first dollar donated to a charity (www.TaxTips.ca). These correspond to the lowest personal tax rate, except in Quebec, and are reported in table A1.

Clear differences are apparent in private donations across Indigenous-serving and non-Indigenous-serving charities. Summary statistics and the differences in means are reported in table 2 for the full sample (for space reasons, we do not provide these statistics for the Schedule 6 sample which, by and large, amplifies the differences noted here). Eighteen percent more non-Indigenous-serving charities are beneficiaries of private donations in comparison to Indigenous-serving charities. On average, non-Indigenous-serving charities receive $190,728 in private donations versus $58,573 for Indigenous-serving ones.

Fifty-seven percent of Indigenous-serving charities are government-funded compared to 35% of non-Indigenous-serving ones. However, non-Indigenous-serving charities receive on average $612,172 *more* public funds than the Indigenous-serving ones. Indigenous-serving charities off reserve receive $700,947 *more* government support than those on reserve. Provincial governments are the leading supporters of Indigenous-serving charities, providing them, on average, with $764,398 in funding. Although not reported in table 2 for space reasons, on-reserve charities receiving the highest amounts of provincial funding are in the areas of education, with 1.5 million and welfare with over one million dollars. Off reserve, charities in health receive the highest average level of funding, with over 3 million dollars, followed by welfare charities with 1.5 million dollars in provincial funding on average.

Differences are also found in the types of services provided across the two groups of charities. Non-Indigenous serving charities are comprised of 40% religious organizations as opposed to 28%

[1] Table 11-10-0047-01 Summary characteristics of Canadian tax filers (preliminary T1 Family File). Retrieved from https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1110004701.

for the Indigenous serving group; this latter group has proportionately more 'benefits to community' charities (23% versus 15%) and 'welfare' charities (27% versus 21%). Indigenous-serving charities are more likely to be in a rural area (41%) relative to non-Indigenous-serving ones (23%).

Table 2 reveals that Indigenous-serving charities tend to be proportionately larger, on average, than the other group, as measured by revenues. While 27% of non-Indigenous-serving charities have revenues of less than $25K, only 20% of Indigenous-serving charities are in this category. Six percent of charities in this latter group are found in the $5M-$10M revenue range, twice as much as the non-Indigenous-serving group.

3 Empirical model and identification strategy

We begin with baseline OLS regressions. Equation (1) uses the whole sample and focusses on Indigenous-serving charities versus all other charities, and equation (2) uses only Indigenous-serving charities and distinguishes between on reserve and off reserve.

$$Y_{it} = \alpha + \beta_1 GovtFund_{it} + \beta_2 Ind\_Status_{it} + \beta_3 GovtFund_{it} * Ind\_Status_{it} + X'_{it}\gamma + I_{pt} + \delta_p + \theta_t + \varepsilon_{it} \quad (1)$$

$$Y_{it} = \kappa + \lambda_1 GovtFund_{it} + \lambda_2 On\_Reserve_{it} + \lambda_3 GovtFund_{it} * On\_Reserve_{it} + X'_{it}\chi + oI_{pt} + \tau_p + \pi_t + \nu_{it} \quad (2)$$

The subscript *i* denotes the charity, and *t* is the year it filed the T3010 return. Y_{it} represents private donations in dollars including zero values. $GovtFund_{it}$ is total government funding, which is replaced by federal funding, provincial funding, and municipal funding, respectively, in the Schedule 6 sample. Ind_Status_{it} is a binary variable that takes the value 1 if the charity is Indigenous serving; $On\_reserve_{it}$ in equation (2) is a binary variable that takes the value 1 if the Indigenous-serving charity is located on a reserve. X'_{it} is a vector of characteristics denoting if the charity is a public foundation, private foundation or registered charity, the program of the charity

(benefits to community, education, health, religion, welfare, other),[2] the size of the charities in terms of total revenues (below $25K, between $25 and $100K, between $100k and $250K, between $250K and $500K, between $500K and $1 million, between $1 million and $5 million, between $5 million and $10 million, above $10 million), its location (rural or urban). I_{pt} is the median per capita total income at the provincial level. Time-invariant factors are captured by provincial fixed effects δ_p and τ_p; year fixed effects θ_t and π_t account for general time trends. ε_{it} and ν_{it} are the error components. Robust standard errors are clustered at the postal code level.

In equation (1), the coefficient β_1 represents the change in private donations associated with a one dollar increase in government funding to non-Indigenous-serving charities, to which we add the coefficient β_3 to determine this effect for Indigenous-serving charities. The coefficient β_3 thus represents the difference between Indigenous-serving and other charities. A similar interpretation holds for the coefficients λ_1 and λ_3 in equation (2). In both equations, a positive coefficient or sum suggests a crowding in effect and a negative one points to crowding out.

The OLS procedure is likely to lead to bias estimates of crowding in/out in the presence of endogenous regressors. Reverse causality is the main cause of concern: Government funding may affect private donations, and private donations may affect government funding. A charity might not apply for government grants if it receives a large private donation or conversely it might apply for more government grants if funding from individual donations decreases.

Our identification strategy relies on an Instrumental Variables (IV) approach wherein the endogenous regressor is instrumented with an exogenous variable *Z* that is correlated with the endogenous explanatory variable (corr (*Z, GovtFund*) ≠ 0) but not with the error term (corr (*Z, e*) = 0) (Greene, 2002). The big challenge is finding such a variable, especially when it comes to this latter exclusion restriction. Here, we employ the cumulative amount of government funding a charity has obtained over the years, as a novel instrument. A similar approach was undertaken by Sav (2010) when determining the causal effect of private donations on state funding in higher education. Private donations were instrumented with accumulated wealth in the form of institutional endowments, remarking that for colleges and universities private fundraising is more

[2] The 'other' category is very small, about 1% of observations, and entails a hodgepodge of charities not otherwise categorizable. We ignore this category in the detailed analysis by area of activity. In addition, although 'religion' is the largest category of charities, it is only religious organizations that provide services to the community irrespective of religious affiliation that are eligible for government funding. Such services include food banks, women's centres, and the like.

profitable if the past donor base is large. Our instrument sums government funding; the instrument is thus the cumulative amount of funding received in all previous years if government funding was obtained. The year 2003 is excluded as there is no information on funding for the previous year. For the year 2004, the instrument is the lag of government funding, for the year 2005 the instrument is the sum of government funding in 2003 and 2004, and so on. When funding from different levels of government are analyzed, the instrument changes accordingly. These instruments approximate the ability to get public support: the larger the funding collected in the past, the higher the likelihood of receiving public funding again, for at least two reasons. First, there is a demonstration effect: given that your activities merited funds in the past, they are likely to merit funds today; and second, an expertise effect: experience gained in grant writing is likely to lead to more successful outcomes. This instrument solves the problem of simultaneity, as it is exogenous to the error term in period *t* and current donations can never have an impact on past government funding decisions. As cumulative funding over the years is the best predictor of government funding in monetary terms, this is the preferred instrument and is used in the program breakdown regressions and in the robustness checks.

A valid instrument must trigger variation in the endogenous regressors and satisfy the exclusion restriction. The first condition can be assessed using the F-statistic in the first-stage regressions. The second condition demands no direct relationship between the instrument and the outcome variables, usually based on economic reasoning. In the case at hand, the exclusion restriction requires that the cumulative amount of government funding a charity received in the past does not directly affect current donations. Charities are obliged to disburse all monies received and are not allowed to accumulate funds under normal circumstances. Only 1.2% of charities reported having permission to accumulate funds during the fiscal years of our sample, usually because of a pending major investment expenditure. The disbursement constraint suggests that the cumulative amount of government funding received in the past would not affect current efforts to obtain donations. Furthermore, when deciding to donate to a particular charity, individuals are seldom aware of how much government support the charity has received (Horne, Johnson, and Van Slyke, 2005) and may be equally unaware of past support. A reduced form regression can further help to validate this requirement if it assesses that the instrument has no impact on the dependent variables.

Some scenarios could cast doubt on the validity of these instruments. For instance, a donor with information on the amounts of funding a charity received in the past from all the levels of government may change his or her decision to donate. Two different outcomes may arise in such a case: a donor decides to refrain from giving because the charity is being funded by government sources, or he or she decides to donate as government funding signals something about the 'quality' of the charity. The randomness of the decision to either donate or not is purely exogenous.

In equation (1) there are two endogenous variables: $GovtFund$ and $GovtFund * Ind\_Status$. The variable Ind_Status is assumed exogenous. We find no evidence that charities elected to serve Indigenous peoples to obtain government funding: in our sample period, only 47 charities switched to serve the Indigenous-serving populations, while 40 stopped serving them and pursued other objectives. Furthermore, when a charity starts its mission, it must first identify a social need that is itself exogenous.

A two-stage least square model (2SLS) is employed. To ensure that the number of instruments at least coincides with the number of endogenous regressors, we use the instrument and the instrument interacted with the exogenous part of the endogenous interaction term, as implemented by Aghion, Howitt and Mayer-Foulkes (2005) when analyzing the effect of financial development on convergence. Balli and Sørensen (2013) agree the interaction of the exogenous regressor with the instrument is the right approach for a valid instrument,[3] also taken by Bun and Harrison (2014, 2019).

The two instruments of Z'_{it} are used in the first stage regressions and the 2SLS model uses their predicted values for the second stage as per equations (3) and (4).

[3] The Stata syntax is ivreg2 Y I (G GI = Z ZI) X, where Y is the dependent variable, I Indigenous-serving status, G government funding, Z the instrument, X controls and fixed effects. This approach is sometimes compared to a model with an endogenous regressor and the square of the endogenous regressor. According to Wooldridge (2002), it is key to apply the instruments directly to the structural equation in such a case. Running the first stage regression and substitute the fitted values in the structural equation would lead the second one to be a "forbidden regression". The approach with the additional interacted instrument is suggested in several Stata fora from various scholars including Jeff Wooldridge:
https://www.stata.com/statalist/archive/2002-11/msg00558.html
https://www.stata.com/statalist/archive/2013-11/msg01021.html
https://www.statalist.org/forums/forum/general-stata-discussion/general/18775-iv-regression-with-continuous-interaction-term
https://www.statalist.org/forums/forum/general-stata-discussion/general/5429-iv-with-factor-variables-interaction-terms

$$Y_{it} = \alpha + \beta_1 \widehat{GovtFund}_{it} + \beta_2 Ind\_Status_{it} + \beta_3 \widehat{GovtFund_{it} * Ind\_Status_{it}} + X'_{it}\gamma + \sigma I_{pt} + \delta_p + \theta_t + \varepsilon_{it} \quad (3)$$

$$Y_{it} = \kappa + \lambda_1 \widehat{GovtFund}_{it} + \lambda_2 On\_Reserve_{it} + \lambda_3 \widehat{GovtFund_{it} * On\_Reserve_{it}} + X'_{it}\chi + oI_{pt} + \tau_p + \pi_t + \nu_{it} \quad (4)$$

In the 2SLS approach, special attention is given to the first stage F-statistics Kleibergen-Paap value that provides insight on the weakness of the instrument. We apply the rule of thumb of having an F-statistic greater than 10 to assure that the instrument is reliable (Staiger and Stock, 1997).

Twenty-two percent of all charities do not receive private donations. Besides OLS and IV regressions, we employ a limited-dependent variable Tobit model to deal with the potential of inconsistent OLS estimates from the skewed distribution.

4 Empirical Results: Government Policies and Private Donations

4.1 Government Funding

Table 3 reports the estimated coefficients for overall government funding and for funding by government level (schedule 6 sample), and their interactions with Indigenous-serving status. Column 1 provides the OLS coefficient estimates and column 2 reports the IV results using 'cumulative funding' to identify the impact of government funding. This instrument affects only those charities that are government funded, producing a local average treatment effect that can be compared to the "true" average treatment effect from the OLS regressions. For each IV regression, the first stage F-test is well above the threshold of 10.

For overall government funding, the estimated effects from the OLS and IV regressions are very similar; small differences emerge when the funding is disaggregated by government level. In panel A, total government funding has a precisely zero effect on private donations to non-Indigenous-serving charities but leads to a small crowding out for Indigenous-serving ones: one dollar in government funding reduces private donations by seven cents. The source of government funding matters. Federal funding engenders a *crowding in* of private giving to non-Indigenous serving charities, leading to an increase in private donations. By contrast, the much larger estimated negative coefficient on the interactive *Ind*Fed* variable means that private donations to

Indigenous-serving charities are *crowded out* by federal funds (by 14 cents in the OLS specification and 15 cents in the IV specification). The slightly larger effect with the IV strategy and federal funding, and much larger effect in the regression with municipal funding, suggests that government funding may negatively select on private donations leading to the OLS underestimating the link between government funding and private giving. Although municipal funding represents the least-likely source of government revenue, when present, it causes the largest crowding out effect. One might speculate that municipal funding is more 'visible' to donors, especially in smaller communities, prompting a larger response. Irrespective of the source of government funding, however, donations to Indigenous-serving charities are crowded out.

We also estimated equations (1) and (2) using only Indigenous-serving charities, distinguishing between those on and off reserve, and found that donations to Indigenous-serving charities react similarly to government funding irrespective of their location. These results are not reported for space reasons. However, we do observe some differences in the response of donors to Indigenous-serving charities on and off reserve when we parse the data by charitable activity.

Table 4 presents the IV specification for giving by area of charitable activities (we omit the category 'other' as it is a small catch-all difficult to interpret). The shaded cells represent regressions where the first-stage F statistic is below the standard benchmark of 10; although presented, we do not rely on the consequent second-stage estimates. We see that overall government funding (column (1)) crowds out donations to non-Indigenous-serving charities providing services benefiting the community, and those in religious and welfare areas. No statistically significant effects from overall government funding were detected for donations to charities in education and health. The situation is different for Indigenous-serving charities where we find a larger crowding out effect for all but those in religion and welfare. Looking across table 4 to the level of government funding, we can identify the source of the crowding in effect observed in table 3 for federal funding and non-Indigenous-serving charities: education charities, where we see that donations *increase* by 18 cents for every dollar of federal funding. We also find a small crowding in from provincial funding for these charities. Indigenous-serving charities, by contrast, always experience a crowding out in these areas. To verify the robustness of this finding, we ran the models excluding education charities and health charities in turn and excluding both types of charities. We confirm that the crowding out effect of government funding on private giving persists.

The largest crowding out effect arises from the government funding of religious organizations, where a one dollar increase in any government funding engenders a 37-cent fall in private donations for both Indigenous-serving and non-Indigenous-serving charities. Recall, however, that *only* religious organizations providing services to the community are eligible for funding – like a church that provides a food bank or soup kitchen open to anyone. So, the large crowding out effect of government funding for religious charities is reflecting the crowding out of private contributions to 'grassroot' services. Looking at funding by level of government, we see that religious organizations experience a large, over-whelming, crowding-out effect if funded by the federal government – a one dollar increase in funding reduces private donations by $1.61. Provincial funding crowds out Indigenous-serving charities more than non-Indigenous-serving ones for all activities except welfare. Finally, we note that Indigenous-serving charities that 'benefit the community', experience a 24 cent crowding out from a dollar of government funding, nine cents more than their non-Indigenous-serving counterparts, as reflected in the estimated coefficient on the interactive term.

More insight is gained when we focus on Indigenous-serving charities off and on reserves and types of charitable activities, reported in table 5. Focusing on the interactive term, we see that education charities on reserve experience either a crowding-in effect or a smaller crowding out effect relative to these charities off reserve. For instance, in column (1), we find a crowding out of four cents for every dollar of government funding to education charities for charities off reserve, which falls by three cents for charities on reserve. In column (2), there no statistically significant crowding-in/out when Indigenous-serving charities in education are funded federally, but a crowding-in effect of nine cents when the charity is on a reserve. For provincial funding to education charities, private donations are crowded out by six cents for every dollar for charities off reserve, which is reduced to one cent for charities on reserve.

Donations to religious charities continue to be responsive to government funding. Indigenous-serving religious charities off reserve experience a 15 cent decrease in private donations for every dollar of government funding in general, which falls by an additional 78 cents if the charity is located on a reserve meaning that a dollar of public funds crowds out almost a dollar of private giving. This finding appears to be driven by provincial government funding. The coefficient estimates of the interaction term for health charities are very small, and only statistically significant

for the total government funding sample (column 1). Finally, government funding has the same effect on and off reserve for welfare charities.

Because 21 percent of non-Indigenous-serving charities and 40 percent of Indigenous-serving charities do not receive any private donations, we estimated a Tobit model to see if the censoring of the data mattered. It did not. Very small differences were found when comparing the Tobit to the OLS estimates; we do not report these for space considerations.

4.2 Charitable Tax Credits and Government Grants

All the results just discussed include a tax-price measure that reflects the tax credit (t) available on the first dollar donated: tax price is defined as (1-t) and reflects the 'price' of this donation.[4] In Canada, the tax credit varies by province, by the amount donated, and has some intertemporal variation as jurisdictions modified their treatment of charitable contributions. Donations above $200 receive greater credit than those up to $200, hence it is customary to examine the tax price on the first dollar donated, to rule out endogenizing price. Table A1 reports these charitable tax credits (in percentages) for all provinces and territories from 2003 to 2020. Red text indicates that the rate changed from the previous year. This table reveals that seven of the ten provinces (and one territory) experienced some intertemporal change.

Normally, the tax-price is expected to exert a negative impact on donations: as the price of donations increases (lower tax credit), the amount of donations falls. Estimates of the tax-price elasticity of donations vary considerably in the literature, depending upon the data set and jurisdiction under consideration. Estimates tend to be smaller and less precise in the Canadian context because identification relies heavily on interprovincial variations, with a spattering of time variations. We use the price of the first dollar donated, thought to be a good exogenous measure, but it is not the only approach to tax-price; Hickey et al. (2023) estimate and use the 'last-dollar' tax price to study how tax-price elasticities vary across the income distribution in Canada.

The effect of tax-price is statistically insignificant in most regressions. The main exceptions are for donations to three areas of charitable activities: benefits to the community, education and welfare. Table 6 presents the estimated coefficients on 'tax-price' for the full sample underlying table 4 and the Indigenous-serving sample underlying table 5. Several points stand out. Donations

[4] If the tax credit is 20% then a one-dollar donation costs the donor 80 cents. The higher the credit, the lower the price.

to charities that provide benefits to the community or welfare services respond consistently to the tax price. This response differs in magnitude if we look at the whole sample versus the sample of Indigenous-serving charities. Donations to charities that benefit the community are *more* responsive in the Indigenous-serving sample than the larger sample, and donations fall as tax-price increases. However, donations to charities that provide welfare activities respond unexpectedly to tax-price for Indigenous-serving charities; the positive estimated coefficients on tax price suggest that individuals donate more to Indigenous-serving charities that provide welfare activities as the tax price increases. We see a similar phenomenon when we look at the estimated coefficient on tax-price for 'Education' charities – it is unexpectedly positive in the specification with provincial funding for the sample as a whole and for the federal and provincial funding specifications for the Indigenous-serving sample.

Charitable tax credits and direct funding are two ways that government can support charities. We wondered if these were 'independent' policies or whether they might be linked to each other. To this end, we estimated a simple OLS model:

$$GovtFund_{it} = \text{b} + b_1 TaxPrice_{itp} + b_2 Ind\_Status_{it} + b_3 TaxPrice_{itp} * Ind\_Status_{it} + X'_{it}h + e_{pt} \quad (5)$$

$$GovtFund_{it} = \text{a} + a_1 TaxPrice_{itp} + a_2 On\ Reserve_{it} + a_3 TaxPrice_{itp} * On\ Reserve_{it} + X'_{it}k + u_{pt} \quad (6)$$

Where the variables are as previously defined except *X* no longer contains tax price and *e* and *u* are the error terms. The idea is to see if there is any association between the level of government funding and tax price. Equation (5) uses the whole sample and looks at the marginal impact of being an Indigenous-serving charity on the response of government funding to tax price; expression (6) focusses only on Indigenous-serving charities and looks at the marginal impact of being located on a reserve on the response of government funding to tax price. Table 7 provides these results for equation (5) and table 8 for equation (6).

From table 7 we see that tax price has no association with total government funding, provincial funding and municipal funding, for non-Indigenous-serving charities. It does, however, have a statistically significant and positive estimated coefficient in the federal funding regression, suggesting that a higher tax price (lower tax credit) is associated with higher federal funding,

possibly pointing to government substituting direct funding for tax credits. We also see that the interactive term *Indigenous*tax price* is negative and statistically significant for all but federal funds, meaning that tax price is associated with lower funding to Indigenous-serving charities relative to their non-Indigenous-serving counterparts: as the tax price falls (tax credit increases) government funding increases, suggesting a complementary relationship between funding and tax credits.

The type of charitable activity affects the estimated relationships. The large negative association between tax price and total government funding for Indigenous-serving charities seems to be driven by health charities, where a one percentage point increase in the tax price is associated with a reduction in funding of $975,560. More specifically, reading across the different types of government funding to Health charities, we see further that this complementary link between tax price and government funding arises from provincial funding.

Table 8 focusses on the impact of tax-price on government funding to Indigenous-serving charities located on and off reserve. The negative estimated coefficient on tax-price in the first row indicates that government funding to off reserve Indigenous-serving charities falls as tax price increases, consistent, again, with a complementary relationship between these two forms of fiscal support. The positive estimated coefficient on the interactive *On-Reserve*tax price* variable for total government funding points to a much smaller complementarity between tax credits and direct funding for charities on reserve compared to off reserve – a mitigation driven by the association between provincial funding and charitable tax credits. These findings suggest that the possible complementarity observed in table 7 for Indigenous-serving charities, is dominated by the reaction of government funding to Indigenous-serving charities located off reserve.

Scrolling down table 8 reveals significant differences in the response of government funding to tax price for Indigenous-serving charities on and off reserve by field of activity. It confirms that total government grants to charities in Education and Health are driving the negative association (complementarity) between tax price and direct funding. In the case of health, this complementarity is much smaller for charities on reserve. For welfare charities, no statistical association is detected between total government funding and tax price for Indigenous-serving charities off reserve, but on reserve we find a positive link between tax price and government funding, suggesting that they are substitutes; looking across the table, we see that this

substitutability is driven by provincial funding. Federal funding continues to have a complementary relationship with tax credits for welfare charities.

Tables 7 and 8 reveal that public funds going to charities *may* be influenced by public policy on tax credits. For non-Indigenous-serving charities, when a statistically significant association exists, it is positive, suggesting that tax credits for private donations may substitute for direct government funding. For Indigenous-serving charities, the link is much more nuanced. More times than not, we see a negative association with tax price, suggesting that direct funding and tax credits are complementary policies, especially for Indigenous-serving charities located off reserve. The area of charitable activity matters: funding to health charities seems to be particularly sensitive to tax credits. Our findings are suggestive, and point to the need for future work to unpack these relationships.

5 Robustness Checks

Several robustness checks were performed, table 9 presents the results from five of them. By and large, the main results in table 3 hold firm. Column (1) of table 9 reports the impact of one level of government funding when we control for the other two levels in the regression. It could be that one government level refrains from subsidizing a charity, or increasing its funding to a charity, because it is already funded by another level. For instance, in *Panel C*, which analyzes the effect of provincial funding on private donations, we include the amount of federal and municipal funding that charities receive as controls. The magnitude of the estimated coefficient is slightly larger in this case relative to the estimates reported in table 3 (-0.01 vs 0.00). Column (2) keeps only those charities that report a positive amount of government funding, the results are smaller in magnitude for Indigenous charities relative to table 3. In column (3), we exclude the first five years of the sample as one might expect that more recent funding would have a larger effect on private donations, but this does not appear to be the case. Only for municipal funding is the magnitude of the coefficient estimate smaller. In column (4), we include only charities that have observations for the entire 15 years. The results are smaller in magnitude for Indigenous charities in *Panels B* and *D*.

Instead of using the cumulative funding IV, we use the 'rank order' of government funding as an alternative specification, ranked by deciles. Rank order is a good instrument if the

measurement error variance on the government funding variable is small (Kennedy, Ch. 9, 2008), which may be the case but is difficult to verify. The interesting finding with using rank order is that while it yields an estimated coefficient on funding (total, federal, provincial and municipal) that is different from the estimates obtained using the other instrument, the estimated coefficients on the interactive term Ind*Gov (Ind*Fed, Ind*Prov, Ind*Mun) is similar. So, the effect of government spending on private donations to Indigenous-serving charities is robust using this different approach to instruments, the effect of government spending on non-Indigenous-serving charities is not.

We repeat these robustness checks for the sample of Indigenous-serving charities on and off reserve and find that the results reported in table 4 are insensitive to different samples or scenarios. We confirm an overall crowding out effect from total government funding for off-reserve Indigenous charities and no impact for on-reserve ones. These results are suppressed for space considerations.

6 Conclusions

Government funding helps charitable organizations deliver services to communities, but it may also cause private donations to change. We find a clear crowding out effect of government funding on donations to Indigenous-serving charities, with the magnitude of the impact differing by the level of government in question. This is not the case for non-Indigenous-serving charities whereby sometimes government funding crowds in private donations.

Indigenous-serving charities are more likely to receive government funding relative to non-Indigenous-serving ones. Possibly, the consistent crowding-out effect found in our analysis helps to partially explain why Indigenous-serving charities receive fewer private donations. Although Indigenous-serving charities receive more support from the provinces, $764,398 per charity on average, compared to $423,291 from the federal government, crowding out from federal funding is larger than that of provincial funding. The least amount of support is provided by municipal funds, which engenders the largest crowding out effect. One explanation is that private donors are more aware of funding from local authorities and consequently more likely to adjust their donation behaviour. Average donations to Indigenous-serving charities are much lower than to other

charities: $58,573 versus $190,728. The fact that we find a larger crowding out of donations to Indigenous-serving charities, may help explain some of this difference.

In the analysis of on-reserve versus off-reserve Indigenous-serving charities, we find little evidence to suggest that government grants impact private donations differently based on their location. However, that Indigenous-serving charities located off reserve are much more likely to receive government funding – 71% versus 39% for those on reserve – suggests, again, that crowding out may partially explain why average donations off reserve ($55,314) are significantly lower than those on reserve ($62,917). Furthermore, the program area in which Indigenous-serving charities operate matters when it comes to explaining private donations.

Governments can influence charitable activities by directly funding charities or by indirectly subsidizing private giving via tax credits. Preliminary analysis suggests that tax credits and government funding may be related but differently depending upon whether they are Indigenous-serving or not. We find possible substitution between these two forms of support for non-Indigenous-serving charities, with a complementary relationship arising for some Indigenous-serving charities. While too early to make any pronouncements in this regard, our preliminary work points to the need for additional analyses that examines more fully the relationship between government fiscal policies and charitable activities.

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Table 2: Summary statistics and difference in means

	Mean (Std. Dev.) Full Sample				Mean (Std. Dev.) Indigenous Sample		
	Full sample	**Sample A**	**Sample B**		**Sample C**	**Sample D**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Full sample n=1,216,383	Non-Indigenous charities n=1,205,120	Indigenous charities n=11,179	Difference in means (A-B)	Indigenous charities off-reserve n=6,388	Indigenous charities on-reserve n=4,791	Difference in means (C-D)
Private donations (Y/N)	0.78	0.79	0.60	0.18*** (0.004)	0.61	0.61	-0.01 (0.009)
Private donations ($)	189,513	190,728	58,573	132,155***	55,314	62,918	-7,605
	(2,428,984)	(2,439,093)	(759,817)	(23,079)	(382,976)	(1,073,146)	(14,522)
Gov funding (Y/N)	0.35	0.35	0.57	-0.22*** (0.005)	0.71	0.39	0.32*** (0.009)
Fed funding (Y/N)	0.16	0.16	0.42	-0.26*** (0.003)	0.54	0.25	0.29*** (0.009)
Prov funding (Y/N)	0.23	0.23	0.44	-0.21*** (0.004)	0.58	0.25	0.32*** (0.009)
Mun funding (Y/N)	0.13	0.13	0.21	-0.08*** (0.003)	0.29	0.11	0.18*** (0.008)
Gov funding ($)	1,856,098	1,861,724	1,249,553	612,172	1,549,959	849,011	700,947***
	(45,505,892)	(45,714,470)	(4,377,935)	(432,385)	(4,492,910)	(4,186,829)	(83,412)
Fed funding ($)	89,506	86,410	423,291	-336,881***	501,844	318,553	183,291***
	(2,793,760)	(2,802,353)	(1,583,929)	(26,544)	(1,630,266)	(1,513,791)	(30,224)
Prov funding ($)	1,643,562	1,651,717	764,398	887,318**	958,539	505,543	452,996***
	(43,599,420)	(43,799,637)	(3,687,792)	(414,270)	(3,705,592)	(3,648,272)	(70,354)
Mun funding ($)	122,500	123,066	61,543	61,522	89,215	24,648	64,566***
	(6,292,416)	(6,321,430)	(366,660)	(59,789)	(425,868)	(263,660)	(6,981)
Public foundation	0.06	0.06	0.02	0.04*** (0.002)	0.02	0.03	-0.01*** (0.003)
Private foundation	0.06	0.06	0.03	0.03*** (0.002)	0.02	0.03	-0.01** (0.003)
Registered charity	0.89	0.89	0.95	-0.07*** (0.003)	0.96	0.94	0.02*** (0.004)
Benefits to community	0.15	0.15	0.23	-0.08*** (0.003)	0.29	0.16	0.13*** (0.008)
Education	0.16	0.16	0.17	-0.01 (0.003)	0.14	0.20	-0.07*** (0.007)
Health	0.07	0.07	0.05	0.02*** (0.002)	0.05	0.04	0.01** (0.004)
Religion	0.40	0.40	0.28	0.12*** (0.005)	0.15	0.44	-0.30*** (0.008)
Welfare	0.21	0.21	0.27	-0.06*** (0.004)	0.37	0.15	0.22*** (0.008)
Other	0.01	0.01	0.01	0.00*** (0.001)	0.01	0.00	0.01*** (0.002)
Total assets*	3,882,732	3,902,219	1,781,982	2,120,237***	2,323,596	1,059,828	1,263,767***
	(67,560,384)	(67,867,990)	(8,292,736)	(641,939)	(10,474,837)	(3,642,049)	(158,046)
Total Revenue*	2,764,850	2,774,587	1,715,159	1,059,428**	2,176,715	1,099,752	1,076,962***
	(53,381,736)	(53,626,348)	(5,151,266)	(50,7219)	(5,439,940)	(4,669,198)	(97,927)
Total Expenditure*	2,689,166	2,698,463	1,686,935	1,011,528**	2152,909	1,065,636	1,087,272***
	(52,734,413)	(52,976,103)	(5,045,434)	(501,068)	(5,350,050)	(4,534,717)	(95,883)

Table 2 cont.: Summary statistics and difference in means

	Mean (Std. Dev.) Full Sample				Mean (Std. Dev.) Indigenous Sample		
	Full sample	**Sample A**	**Sample B**		**Sample C**	**Sample D**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Full sample n=1,216,383	Non-Indigenous charities n=1,205,204	Indigenous charities n=11,179	Difference in means (A-B)	Indigenous charities off-reserve n=6,388	Indigenous charities on-reserve n=4,791	Difference in means (C-D)
Size<25K	0.27	0.27	0.20	0.06*** (0.004)	0.14	0.29	-0.15*** (0.008)
Size25K<100K	0.24	0.24	0.17	0.07*** (0.004)	0.11	0.26	-0.16*** (0.007)
Size100K<250K	0.18	0.18	0.11	0.07*** (0.004)	0.09	0.14	-0.05*** (0.006)
Size250K<500K	0.11	0.11	0.08	0.03*** (0.003)	0.10	0.07	0.03*** (0.005)
Size500K<1MIL	0.08	0.08	0.12	-0.04*** (0.003)	0.16	0.08	0.08*** (0.006)
Size1MIL<5MIL	0.08	0.08	0.24	-0.16*** (0.003)	0.33	0.14	0.19*** (0.008)
Size5MIL<10MIL	0.03	0.03	0.06	-0.03*** (0.002)	0.08	0.03	0.05*** (0.005)
Size>10MIL	0.00	0.00	0.00	0.00*** (0.001)	0.00	0.00	0.00 (0.000)
Prov median income*	32,825	32,819	33,506	-687***	33,737	33,198	538***
	(3,382)	(3,370)	(4,412)	(32)	(3,743)	(5,156)	(84)
Prov median income (log)	10.39	10.39	10.41	-0.02*** (0.001)	10.42	10.40	0.02*** (0.002)
Rural	0.23	0.23	0.41	-0.18*** (0.004)	0.18	0.72	-0.54*** (0.008)
Urban	0.77	0.77	0.59	0.18*** (0.004)	0.82	0.28	0.55*** (0.008)
AB	0.11	0.11	0.11	0.00 (0.003)	0.14	0.06	0.08*** (0.006)
BC	0.14	0.14	0.23	-0.09*** (0.003)	0.23	0.22	0.01 (0.008)
MB	0.05	0.05	0.09	-0.03*** (0.002)	0.13	0.02	0.11*** (0.005)
NB	0.03	0.03	0.02	0.02*** (0.002)	0.01	0.03	-0.02*** (0.002)
NL	0.01	0.01	0.01	0.00** (0.001)	0.01	0.02	-0.01*** (0.002)
NS	0.05	0.05	0.01	0.03*** (0.002)	0.01	0.02	-0.01*** (0.002)
NT	0.00	0.00	0.04	-0.04*** (0.000)	0.01	0.08	-0.07*** (0.004)
NU	0.00	0.00	0.04	-0.04*** (0.000)	0.00	0.10	-0.10*** (0.004)
ON	0.35	0.36	0.27	0.08*** (0.005)	0.30	0.24	0.05*** (0.008)
PE	0.01	0.01	0.01	0.00** (0.001)	0.01	0.00	0.00*** (0.001)
QC	0.19	0.19	0.10	0.09*** (0.004)	0.06	0.16	-0.10*** (0.006)
SK	0.05	0.05	0.07	-0.01*** (0.002)	0.09	0.03	0.06*** (0.005)
YT	0.00	0.00	0.01	-0.01*** (0.000)	0.01	0.02	-0.01*** (0.002)

*These variables have not been used in the regressions. The standard deviation (in parenthesis) is not provided for dichotomous variables.
The standard errors are provided for the difference in means. Significance: * p<.10, ** p<.05, *** p<.01

Table 3: Private donation regressions for Non-Indigenous and Indigenous charities

	Private donations ($)	Private donations ($)
	(1)	(2)
	OLS	IV Cumulative funding
Panel A: Government Funding		
Gov funding	-0.00*	-0.00*
	(0.00)	(0.00)
Ind*Gov ($)	-0.07***	-0.07***
	(0.01)	(0.01)
F-test Gov fund		259.23
F-test abo*Gov fund		650.35
Kleibergen-Paap F-Stat		16.97
Observations	1,216,383	1,119,632
Panel B: Federal Funding		
Fed funding	0.12***	0.15***
	(0.03)	(0.03)
Ind*Fed ($)	-0.26***	-0.30***
	(0.04)	(0.04)
F-test Fed fund		397.79
F-test abo*Fed fund		174.47
Kleibergen-Paap F-Stat		264.73
Panel C: Provincial Funding		
Prov funding	-0.00*	-0.00*
	(0.00)	(0.00)
Ind*Prov ($)	-0.06***	-0.06***
	(0.01)	(0.01)
F-test Prov fund		367.95
F-test abo* Prov fund		759.88
Kleibergen-Paap F-Stat		18.31
Panel D: Municipal Funding		
Mun funding	-0.01**	-0.02**
	(0.01)	(0.01)
Ind*Mun ($)	-0.25***	-0.44***
	(0.05)	(0.10)
F-test Mun fund		53.67
F-test abo* Mun fund		56.37
Kleibergen-Paap F-Stat		20.44
Controls	Yes	Yes
Province fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	856,626	768,774

Panels B, *C* and *D* employ the sample Schedule 6 which differentiates between federal, provincial and municipal funding. The instrumental variables are always constructed based on the level of government funding used in the regression. Robust standard errors in parentheses are clustered at the postal code level. Significance: * p<.10, ** p<.05, *** p<.01

Table 4: IV Regressions by program for Non-Indigenous and Indigenous charities

	Full sample		Sample Schedule 6					
	(1)		(2)		(3)		(4)	
	GvtFund	**GvtFund *Ind**	**Fed Fund**	**FedFund *Ind**	**Prov Fund**	**ProvFund *Ind**	**MunFund**	**MunFund *Ind**
	Private Donations ($)							
Benefits to community	-0.15**	-0.09*	-0.14*	-0.10	0.01	-0.18***	-0.15**	-0.97
	(0.06)	(0.05)	(0.08)	(0.10)	(0.04)	(0.05)	(0.07)	(0.73)
Observations	171,945		108,863		108,863		108,863	
Education	0.01	-0.03***	0.18***	-0.21***	0.01*	-0.03***	-0.01**	-2.72
	(0.01)	(0.01)	(0.03)	(0.05)	(0.01)	(0.01)	(0.01)	(3.40)
Observations	179,877		121,555		121,555		121,555	
Health	-0.00	-0.05**	0.41	-0.59*	-0.00	-0.05**	-0.03	-2.14**
	(0.00)	(0.02)	(0.37)	(0.35)	(0.00)	(0.02)	(0.02)	(0.88)
Observations	75,489		57,265		57,265		57,265	
Religion	-0.37***	-0.16	-1.61**	-0.25	-0.35***	-0.29**	-0.95**	-2.34
	(0.13)	(0.14)	(0.63)	(0.66)	(0.12)	(0.13)	(0.39)	(2.99)
Observations	442,811		296,376		296,376		296,376	
Welfare	-0.22***	0.09	0.17	-0.35	-0.21**	0.09	-0.29***	-0.08
	(0.08)	(0.06)	(0.69)	(0.66)	(0.09)	(0.07)	(0.08)	(0.09)
Observations	234,846		176,603		176,603		176,603	
Other	-1.22***	-2.26***	-2.59***	-0.23	-1.35***	-15.04	-0.29***	1,066.83
	(0.26)	(0.44)	(0.64)	(0.65)	(0.32)	(22.80)	(0.04)	(949.72)
Observations	14,664		8,112		8,112		8,112	

The instrument used in this table is the "cumulative amount of government funding". For the regressions in gray, the Kleibergen-Paap F-Statistic is below 10. Robust standard errors in parentheses are clustered at the postal code level, except for the sample of other charities. Significance: * p<.10, ** p<.05, *** p<.01

Table 5: IV Private Donation regressions by program for Indigenous charities off-reserve and on-reserve

	Full sample		Sample Schedule 6					
	(1)		(2)		(3)		(4)	
	GvtFund	**GvtFund *On-res**	**Fed Fund**	**FedFund *On-res**	**Prov Fund**	**ProvFund *On-res**	**MunFund**	**MunFund *On-res**
Benefits to community	-0.23**	-0.03	-0.26**	0.01	-0.19**	-0.09	-0.50*	-1.98
	(0.10)	(0.04)	(0.12)	(0.06)	(0.09)	(0.08)	(0.28)	(1.36)
Observations	2,382		2,056		2,056		2,056	
Education	-0.04**	0.03**	0.02	0.09*	-0.06***	0.05***	-0.55	4.70
	(0.01)	(0.01)	(0.01)	(0.05)	(0.02)	(0.01)	(0.70)	(16.99)
Observations	1,693		1,292		1,292		1,292	
Health	-0.00***	-0.01***	-0.07	0.06	-0.00***	-0.00	0.21**	-0.11
	(0.00)	(0.00)	(0.38)	(0.46)	(0.00)	(0.00)	(0.09)	(0.28)
Observations	462		401		401		401	
Religion	-0.15***	-0.78***	-0.50***	1.73	-0.17***	-0.51***	-3.18***	2.24**
	(0.03)	(0.16)	(0.09)	(5.60)	(0.04)	(0.17)	(0.94)	(0.96)
Observations	2,826		1,527		1,527		15,27	
Welfare	-0.02***	0.00	-0.03***	0.00	-0.02***	-0.00	-0.07***	0.01
	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.02)	(0.03)
Observations	2,826		2,470		2,470		2,470	

The instrument used in this table is the "cumulative amount of government funding", which is always constructed based on the level of government funding used in the regression. As other charities on-reserve do not get any government funding, these are not reported. For the regressions in gray, the Kleibergen-Paap F-Statistic is below 10. Robust standard errors in parentheses are not clustered. Significance: * p<.10, ** p<.05, *** p<.01

Table 6: Statistically Significant Estimated Coefficients on Tax-Price from Tables 4 and 5

Only statistically significant estimates are reported here. Blank cells means that the estimate was statistically insignificant.

	Full Sample (table 4)				Indigenous-serving Sample (table 5)			
Area	All Gov't	Fed Funding	Prov Funding	Mun Funding	All Gov't	Fed Funding	Prov Funding	Mun Funding
Benefits to Community	-30,224.79*	-38,800.84*	-44,417.63*	-42,723.35*	-123,606.13*	-139,982.12*	-162,717.11*	
Education			43,260.34*			53,303.09**	40,308.64*	
Welfare	-95,053.62**	-119,456.93**	-121,035.92**	-111,180.66**	51,363.45**	72,096.08***	76,948.98***	74,906.34***

Table 7: OLS estimates: Association between Indigenous-serving Charity, Tax-price, and the amount of Government Funding, for all Charities and by Area of Activity. Full Sample

ALL CHARITIES	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	4,851.84	24,962.31*	-18,700.92	2,417.00
	(154,433.34)	(14,148.21)	(339,227.05)	(19,947.62)
Indigenous*tax price	-82,469.16**	-7,597.62	-91,637.05**	-13,027.69***
	(38,050.71)	(14,553.47)	(45,532.80)	(4,860.20)
Observations	1,216,383	856,626	856,626	856,626
Benefits to community	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	29,617.95*	29,155.88	42,882.58**	11,613.85
	(16,773.41)	(18,696.73)	(20,610.72)	(20,172.12)
Indigenous*tax price	-8,924.13	18,674.09	-4,245.83	-28,333.87***
	(14,657.46)	(14,758.77)	(11,581.12)	(7,505.98)
Observations	186,502	122,227	122,227	122,227
Education	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	-179,651.98	48,092.82	5,391.95	-53,635.51
	(268,350.54)	(87,112.07)	(501,121.20)	(140,402.02)
Indigenous*tax price	-70,795.17	-23,595.15	-26,004.33	-67,546.69***
	(54,056.52)	(39,295.29)	(75,468.15)	(22,853.00)
Observations	195,556	135,881	135,881	135,881
Health	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	-84,762.44	110,068.69	-186,750.42	-114,266.12
	(2,507,402.44)	(82,310.39)	(4,577,014.00)	(91,681.80)
Indigenous*tax price	-975,560.50*	-94,313.86	-1061984.53*	18,521.48
	(589,369.94)	(101,255.05)	(610,806.17)	(15,797.54)
Observations	82,063	63,293	63,293	63,293
Welfare	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	51,166.93	16,023.88*	-33,656.26	9,897.72**
	(52,207.01)	(8,421.31)	(73,743.83)	(4,960.36)
Indigenous*tax price	-114,071.36	-33,442.63	-91,123.49	1,455.07
	(110,812.79)	(38,181.24)	(101,986.92)	(7,171.87)
Observations	255,702	195,267	195,267	195,267
Religion	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	1,211.41	461.19	-2,563.62	2,865.12**
	(1,804.59)	(1,195.80)	(4,421.72)	(1,411.05)
Indigenous*tax price	-2,306.36*	-944.03*	-2,125.20	-1,277.66**
	(1,401.87)	(554.02)	(1,940.49)	(582.17)
Observations	480,674	330,641	330,641	330,641
Other	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	8,013.84	-9,933.17	-12,656.95	4,431.69
	(8,635.18)	(13,474.98)	(30,440.51)	(4,415.12)
Indigenous*tax price	-17,412.14*	-22,707.76	-3,971.47	1,416.73
	(9,861.92)	(24,871.98)	(19,304.52)	(5,284.74)
Observations	15,886	9,317	9,317	9,317

Table 8: OLS estimates: Association between Tax-price, and the amount of Government Funding, for all Charities and by Area of Activity. Indigenous-serving Charities Sample

	(1)	(2)	(3)	(4)
Indigenous charities	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	-364,287.29***	-102,290.05*	-399,361.03**	-26,830.75
	(133,475.80)	(58,609.97)	(191,879.45)	(22,772.43)
On-Reserve*tax price	194,110.51**	42,267.91	195,489.96**	-12,484.98***
	(88,024.18)	(28,804.64)	(95,948.87)	(4,074.79)
Observations	11,179	8,647	8,647	8,647
Benefits to community	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	29,731.51	41,873.22	-40,210.94	40,619.88*
	(131,113.45)	(88,920.09)	(115,676.60)	(21,664.44)
On-Reserve*tax price	-9,230.48	6,998.67	-17,500.86	-3,278.03
	(19,575.70)	(16,518.20)	(13,590.40)	(3,316.14)
Observations	2,583	2,251	2,251	2,251
Education	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	-913,989.19*	-60,147.00	-1,487,902.79*	-115,138.51
	(527,025.81)	(145,447.72)	(878,308.80)	(110,426.89)
On-Reserve*tax price	-42,543.97	-48,841.23	11,093.11	-7,167.56
	(48,095.85)	(57,041.29)	(78,545.86)	(7,818.23)
Observations	1,853	1,437	1,437	1,437
Health	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	-2,449,004.55**	-334,640.27	-1,462,314.70**	20,244.56
	(1,076,703.75)	(386,610.50)	(715,374.09)	(53,767.59)
On-Reserve*tax price	1,974,404.60***	414,691.43***	1,862,656.87***	-23,456.59***
	(343,067.23)	(34,244.90)	(168,458.18)	(7,780.07)
Observations	501	439	439	439
Welfare	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	-370,172.95	-204,192.86*	-149,234.96	-66,135.48
	(320,695.18)	(111,600.75)	(339,417.99)	(42,779.08)
On-Reserve*tax price	331,122.08**	92,128.58	301,170.33*	-36,921.88**
	(153,327.00)	(58,821.69)	(153,262.04)	(18,555.43)
Observations	3,067	2,700	2,700	2,700
Religion	Government Funding	Federal Funding	Provincial Funding	Municipal Funding
Tax price	-9,518.67	-20,966.37*	-35,373.69	883.12
	(11,396.05)	(12,408.93)	(32,583.26)	(4,239.62)
On-Reserve*tax price	6,828.17	4,983.67	9,263.11	-420.75
	(5,950.09)	(3,440.13)	(8,300.74)	(664.28)
Observations	3,075	1,751	1,751	1,751

Table 9: Robustness check private donation for Non-Indigenous and Indigenous charities

	Private donations including other levels of gvt funding	Private donations with only positive gvt funding	Private donations 2008-2017	Private donations charity has observations in each year	Private donations
	(1)	(2)	(3)	(4)	(5)
	IV Cumulative funding	IV Cumulative funding	IV Cumulative funding	IV Cumulative funding	IV Rank order
			Panel A: Government funding		
Gov funding	-	-0.00	-0.00*	-0.00	-0.29***
	-	(0.00)	(0.00)	(0.00)	(0.02)
Ind*Gov ($)	-	-0.03***	-0.07***	-0.07***	-0.06*
	-	(0.00)	(0.01)	(0.01)	(0.03)
F-stat Gov fund		185.93	273.45	221.46	130.66
F-stat abo*Gov fund		613.63	677.14	633.15	53.42
Kleibergen-Paap F-Stat		16.71	16.66	16.73	117.36
Observations	-	396,827	826,880	779,324	1,216,383
			Panel B: Federal funding		
Fed funding	0.15***	0.16***	0.15***	0.16***	-0.10*
	(0.04)	(0.03)	(0.03)	(0.03)	(0.05)
Ind*Fed ($)	-0.31***	-0.23***	-0.30***	-0.27***	-0.21***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.06)
F-stat Gov fund	400.90	340.29	423.94	351.24	148.78
F-stat abo*Gov fund	173.98	151.04	137.52	132.99	64.64
Kleibergen-Paap F-Stat	267.62	253.32	315.46	258.11	109.05
Observations	768,774	167,770	467,123	565,070	856,626
			Panel C: Provincial funding		
Prov funding	-0.01*	-0.00	-0.00*	-0.00*	-0.24***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)
Ind*Prov ($)	-0.07***	-0.02***	-0.06***	-0.06***	-0.07*
	(0.01)	(0.00)	(0.01)	(0.01)	(0.04)
F-stat Gov fund	149.84	141.79	288.40	439.80	124.00
F-stat abo*Gov fund	805.90	619.14	771.95	1,087.33	30.96
Kleibergen-Paap F-Stat	17.97	18.08	18.56	18.13	116.18
Observations	768,774	240,163	467,123	565,070	856,626
			Panel D: Municipal funding		
Mun funding	-0.01*	-0.02*	-0.02**	-0.02**	-0.15***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.03)
Ind*Mun ($)	-0.43***	-0.15***	-0.41***	-0.37***	-0.33***
	(0.10)	(0.03)	(0.09)	(0.09)	(0.11)
F-stat Gov fund	56.21	67.41	45.97	52.92	45.09
F-stat abo*Gov fund	54.50	96.29	52.12	53.37	29.60
Kleibergen-Paap F-Stat	21.77	81.79	12.33	21.21	25.15
Other levels of gvt funding	Yes	No	No	No	No
Controls	Yes	Yes	Yes	Yes	Yes
Province fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	768,774	133,624	467,123	565,070	856,626

Panel B, *C* and *D* employs the sample Schedule 6 which differentiates between federal, provincial and municipal funding. The dependent variable in column 4 is the amount of private donations, fundraising and gifts from other charities combined. The instrumental variable is always constructed based on the level of government funding used in the regression. Robust standard errors in parentheses are clustered at the postal code level. Significance: * p<.10, ** p<.05, *** p<.01

Table A1: Tax Credit Rates (in percentages) by Province over Time

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AB	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
BC	6.05	6.05	6.05	6.05	5.70	5.06	5.06	5.06	5.06	5.06	5.06	5.06	5.06	5.06	5.06	5.06	5.06	5.06
MB	10.90	10.90	10.90	10.90	10.90	10.90	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80	10.80
NB	9.68	9.68	9.68	9.68	10.12	10.12	9.65	9.30	9.10	9.10	9.39	9.68	9.68	9.68	9.68	9.68	9.68	9.68
NL	10.57	10.57	10.57	10.57	9.64	8.20	7.70	7.70	7.70	7.70	7.70	7.70	7.70	8.20	8.70	8.70	8.70	8.70
NS	9.77	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79	8.79
NT	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90
NU	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
ON	6.05	6.05	6.05	6.05	6.05	6.05	6.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05
PE	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80
QC	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
SK	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	10.75	10.75	10.50	10.50
YT	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04	6.40	6.40	6.40	6.40	6.40	6.40

Source: Retrieved from Taxtips.ca starting from 2010. For the previous years, calculated from the lowest personal tax rate (first bracket of taxable income), retrievable from the same website.

Note: red indicates a change in the tax credit from the previous year.