

Charitable Donations and Wealth: Effect of a Legal Reform of Tax

Incentives on Regular Donors

Marta Pittavino^{1,2*} and Giedre Lideikyte-Huber^{2,3}

¹ Venice School of Management (VSM), Ca' Foscari University of Venice (UNIVE), Venice, Italy

² Geneva Centre for Philanthropy (GCP), University of Geneva (UNIGE), Geneva, Switzerland

³ Institute for Law and Economics, University of Saint Gallen (UNISG), Saint Gallen, Switzerland

Corresponding Author: *Marta Pittavino, Email: marta.pittavino@unive.it

Summary

The present study is the first large-scale analysis of tax incentives for charitable giving in Switzerland for constant donors. In this work, we use unique panel data of the entire population of Geneva's taxpayers from 2001 to 2011, which includes rare information on the individual wealth of donors, an important variable for tax policymaking in the context of charitable donations. We analyze tax incentives for charitable giving: income tax deductions, focusing on the frequency of donations and the characteristics of regular donors. The latter are not primarily driven by the ceilings for income tax incentives, even though their donations increase over time. However, we find that wealth is an important variable characterizing the frequency of donations based on linear regression estimates. Based on the empirical and quantitative findings from our study, we suggest some potential political actions for increasing the total volume of charitable

donations, which is a common legislative goal in tax law reforms related to charitable giving, while expanding tax incentives.

KEYWORDS

Tax Incentives, Income Tax Deductions, Regularity, Regression Methods, Interaction, Wealth.

1. INTRODUCTION

Tax incentives for charitable giving are a prevalent feature of legal systems around the world (OCDE, 2020). The primary goal of such incentives, at least from an economic perspective, is to boost donations. Other policy objectives can be and often are followed simultaneously: for instance, it is argued that the system that grants tax incentives for charitable donations increases transparency in the philanthropic sector (Reiser, D. B., and Steven A. D., 2023). Legislative proposals are often vague on the goal of such incentives. Indicating that they want to increase charitable giving in general, they often fail to say how exactly donors' giving behavior is expected to change as a result of the legal standards establishing tax incentives for charitable giving or which donors these reforms intend to benefit (Lideikyte-Huber, Pittavino and Peter, 2021). However, the intention to encourage the redistribution of private wealth is on the policy agenda concerning tax incentives for charitable giving (see below regarding Swiss reforms). Such a political discourse is to a certain extent a response to the increasing academic research that documents the changes in income and wealth inequality patterns over the previous century, some of the most noted authors in this domain being *Piketty and Saez (2003)* and *Piketty and Zucman (2014)*. For this reason, our study provides evidence in this direction by further analyzing unique data, which leads to

interesting findings for the redistribution of private wealth.

There has been little research done globally on the behavior and characteristics of donors, especially in the upper income and wealth brackets, also partly because such data on wealth is difficult to obtain. This information is, however, valuable for policymakers, because to effectively boost giving through tax incentives, they must first understand how donors react to them. In the field of charitable giving, recent US research shows the tendency of increasing concentration of donors at upper income and wealth classes (*Duquette and Mayo, 2021; Duquette, 2018*), no such research exists to our knowledge regarding European jurisdictions. In addition, relatively few studies, particularly in Europe, examine the constancy of donors who respond to tax incentives for charitable giving, and even fewer studies concentrate on changes in donors' behavior to current changes in tax law. One of the most recent (and limited) studies on the subject, *Ring and Thoreson (2021)* analyzes the effect of a wealth tax on charitable giving behavior, but their work does not focus on the regularity of donations and the impact of specific tax incentives on charitable giving.

The rest of the paper is structured as follows: Section 2 introduces the Swiss tax law framework, Section 3 presents data and methods, Section 4 provides empirical results, and Section 5 concludes.

2. SWISS TAX LAW FRAMEWORK

Swiss law allows taxpayers to deduct, up to a certain threshold, charitable contributions from their taxable income for individuals and corporations. This deduction is subject to a threshold which is

currently 20% of the net taxable income or profits for federal income tax purposes, with a minimum donation requirement of 100 CHF (*Federal Act of 14 December 1990 on Direct Federal Taxation (DFTA), AS 1991 1184, Art. 33a DFTA*). According to the Federal Constitution, cantons can fix their own income tax rates, but most of the cantonal tax thresholds are also fixed at the same threshold of 20% (*Art. 129 of the Swiss Federal Constitution*). It is not possible to deduct donations to political parties under this norm; member contributions and other payments of up to CHF 10,300 to a political party are deductible as general deductions under another legal norm (*Art. 33 para. 1 (i) DFTA*).

The deductible donation must be paid to a legal entity that receives a tax exemption for pursuing public interest or service aims (*Arts 33a and 56 let. g DFTA*). The conditions for this type of entity's tax exemption are laid out in the legislation and, in particular, in case law. One of the primary requirements is that the entity cannot pursue economic aims since they cannot be regarded as being in the interest of the general public (*Art. 56 let. g DFTA*). For instance, maintaining sizable shareholdings in business firms is, in principle, considered an economic goal; it can only be accepted if it is subordinate to the entity's pursuit of public interest goals, and if it is necessary to achieve them.

Tax laws changed the ceiling and conditions for charitable deductions twice during the study period: at a cantonal level in 2001 and 2009 respectively. In our study, we sought to understand whether these changes had had an impact on deduction behavior.

The first reform came into force at a cantonal level in 2001, at the very beginning of our study period. It introduced the possibility of deducting donations made not only to charitable

organizations established in the canton of Geneva but also elsewhere in Switzerland (*Lideikyte Huber, G. and Peter, H. 2022*). In addition, the rule on deductions has been simplified, and the circle of eligible charities has been widened: before 2001, only religious, social, humanitarian, cultural or nature conservation objectives were considered eligible (*Lideikyte-Huber, G. and Peter, H. 2022*).

The second cantonal reform followed the changes that had been carried out at the federal level. On January 1, 2006, the Federal legislator introduced the 20% deduction threshold on taxable income as part of a larger reform of the Swiss federal law (*Swiss civil code - modifications*), replacing the previous threshold of 10%. This reform has also carried out other major modifications of federal tax law norms related to charitable giving, introducing a deduction of charitable non-cash donations and allowing the deduction of donations to the Swiss Confederation, the cantons, the communes, and their institutions (*Swiss civil code - modifications*). The general aim of this reform was to encourage donors “to give up part of their wealth”, due to the fact that private wealth had risen sharply in the previous years and the previous tax incentives were considered insufficient to encourage individuals to part with a “significant” portion of their wealth (*Report 2003, p. 7428, 7426-7427; Schiesser initiative*). Such a justification was the only tax policy objective expressly stipulated by the legislator; thus, at least one of the goals of the reform was to boost donations (the general goal of the 2006 reform was “the liberalization of the Swiss foundation law in order to boost the establishment of foundations”) (*Report 2003, p. 7426; Lideikyte-Huber and Pittavino, 2022*).

After the reform at the federal level, cantonal law modifications were introduced; in the canton

of Geneva, the 5% deduction threshold of taxable net individual income (*Personal Income Tax Act – V*) increased to 20% in 2010 (*Personal Income Tax Act of September 27, 2009, FR : Loi sur l'imposition des personnes physiques - 27 September 2009 ; LIPP ; D 3 08, in force: 01.01.2010*) and the deduction threshold for corporations increased from 10% to 20% (*Corporate Income Tax Act of September 23, 1994*). Table 1 summarizes the timeline with the two deduction ceilings (5% and 20%) for the two reforms regarding charitable deductions, which were computed based on the intermediary net income in the Geneva cantonal individual income tax laws. It is important to note that both reforms from 2001 and 2009, as shown in Table 1, are related to income tax incentives. So far, no dedicated reforms to wealth tax incentives are present or available.

In the work published in Lideikyte-Huber and Pittavino in 2022, the authors of this paper analyzed the characteristics of donors' giving in relation to their income and within the framework of an income tax law reform. The objective of the present paper shifts the focus from a legal context to the time influence. In this work, we study the timing of giving, concentrating on the frequency of deductions over an 11-year time period, together with the statistical analysis of the significant factors mainly influencing the deductions among regular deductors.

Table 1. Timeline with the two deduction ceilings (5% and 20%) for the two reforms regarding charitable deductions, computed on the intermediary net income, in the Geneva cantonal individual income tax laws.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Cantonal law (GE)	5%								20%		
	1 st reform								2 nd reform		

3. DATA AND METHODS

I. Data Description

Our analysis is based on information from taxpayer returns over 11 years from the year 2001 to 2011 that the Tax Administration of the Canton of Geneva (TACG) confidentially gave us for this study. The selected variables provide information on the entire population of taxpayers in the Canton of Geneva (approximately 250,000 households). A different data set was provided for each year under study, 11 in total. Each data set comprised the same nine variables; an entire description of them is provided in *Lideikyte-Huber and Pittavino (2022)* and *Lideikyte-Huber, Pittavino, and Peter (2021)*; the ones specifically used in the present study are described and listed below with their original name provided in brackets. For this specific study, two new variables have specifically been created (“year” and “freqded”) to allow a more in-depth longitudinal analysis for the year of study and the characterization and computation of the frequency of donation over the study period. A merging of the 11 different data sets, with the elimination of double IDs, if any, was performed to create the appropriate unique dataset:

- “coded ID” (“identifiant”) : a coded ID for each taxpayer. This variable allows us to follow the same taxpayer over time. The same coded ID is used for any given taxpayer for each fiscal year. As Switzerland has a joint filing system, married couples are considered and treated the same as a single non-married individual, and they have only one coded ID (in this paper, any deducting taxpayer, couple, or individual is referred to as “deductor” or “deducter” interchangeably).

- “year of birth” (“`annee_de_naissance`”) : the year of birth of a taxpayer (which is either an individual or a household, depending on marital status). For married couples, it is the year of birth of the “principal” taxpayer, usually the man.
- “income_bracket” (“`bareme_revenu`”) : the binary (0/1) indication of a possible “splitting” of income tax rate in the tax income computation, showing if a taxpayer is a couple (1) and not a single individual (0).
- “global net taxable income” (“`revenu_net_imposable_taux`”): the net taxable income (after all deductions) applied to set the tax rate; this includes any and all foreign income.
- “gross wealth” (“`fortune_brute`”) : global gross wealth of the taxpayer.
- “deductions for donations” (“`versements_benevoles`”): the amount of deduction (if any) for charitable giving, representing the entire annual amount of the deducted donations (in case it is less than the deductible threshold) or capped amount of annual donations, if exceeding the deductible threshold.
- “intermediary net income for deductible donations” (“`Sous_total_ded_dons`”): this variable serves as a key reference point for calculating deductions that are under, equal to, or more than the legal threshold (10% or 20%, depending on the year). It could only be

digitally extracted from the databases of the Tax Administration of the Canton of Geneva (TACG) for the tax years 2010 and 2011. For the previous years, it was determined by internal calculations performed by the TACG, based on the elements of the tax base that are included in its definition (information provided by TAGC).

- “year under study” (“*year*”): this new variable has been generated for the purpose of this study to keep track of the evolution of the collected data by year. It indicates the 11 years under consideration for this study, from 2001 to 2011.
- “frequency of deductions” (“*freqded*”): innovative additional variable created to count the frequency with which a given ID repeated the charitable deductions over the study period.

This data was selected for taxpayers residing in the Canton of Geneva as well as for taxpayers residing in another Swiss canton or abroad, however still taxed in Geneva. The information above does not allow us to distinguish between these different categories of taxpayers. In addition, as from the 2009 tax year, taxpayers who are usually taxed at source (“*impôts à la source*”, a dedicated taxation practice for newcomers in Switzerland) can fill in a tax return, if they meet certain conditions, and are then treated as resident taxpayers (“*quasi-residents*”). There were approximately 2,000 of these taxpayers in 2009, 4,000 in 2010, and 5,600 in 2011. The variables provided by TACG do not allow us to identify quasi-resident taxpayers (*Loi sur l'imposition des personnes physiques (LIPP-V)*).

As reported in *Lideikyte Huber, Pittavino, and Peter, 2021*, the total number of taxpayers in the

canton of Geneva saw a steady increase, from 234,117 in 2001 to 266,336 in 2011. The share of the taxpayers deducting charitable donations more than doubled, growing from 8.3% in 2001 to 19.3% in 2011, with a steep increase in 2005 (deducting taxpayers reaching 16.3%). Concerning the general pattern of deductions during the studied period, the total amount of yearly charitable deductions increased significantly, from CHF 29,133,697 in 2001 to CHF 72,741,235 in 2011 (amounts not adjusted for inflation) which is due to the rise in population; a substantial increase of 48% is recorded in 2009.

In the present analysis, we use the terminology of “deductors” or “deducters” (interchangeably) to indicate the taxpayers who contributed to charitable donations and used a tax incentive (deduction) in relation to their donation, since we want to investigate this specific subset of the taxpayer population.

II. Data subset and description by frequency of deductors and deduction ceiling

The last described variable “freqded” has been generated to allow innovative data analysis by highlighting the frequency of donations from the deductors over the 11 years under study.

Table 2 indicates the frequency of deductions by each deducter, the total number of deducters within each frequency value, and the resulting percentage of deducters. We observe that 29.4% of deductors (corresponding to a total of 30,319 deductors) donated only once. The remaining 70.6% of deductors donated more than once, showing knowledge of the tax incentives for charitable deductions, a related interest for this fiscal advantage, and the start of repeated behavior within their donations. With this targeted analysis, it was possible to identify a specific

group of deductors who donated over the entire period of 11 years. This subgroup corresponds to 5,948 taxpayers, who represent 2.54% of the starting Geneva taxpayer population from 2001 - those people who gave consistently from 2001 to 2011. This subgroup of deductors will be called *deductors11* from now on and it will be compared to another subgroup of deductors identified in Lideikyte-Huber and Pittavino, 2022, who are more interested in targeting the ceiling of deductions, referred to as 'deducter subset'.

The figures related to the frequency of deductions have also been represented in the bar graph in Figure 1, where for each frequency, the total number of deductors is shown. This graph shows the declining pattern of the frequency of deductions for all deductors, the majority presenting as people who deducted once, as well as those who repeated the process over time more than once, which reflects a repeated behavior in the deductors and an awareness of the tax incentives by the entire taxpayer population. However, this declining pattern plateaus considerably. It is interesting to observe that the number of donors who give very regularly, from 5 to 11 years during the studied period, is very similar. For instance, the number of donors who give once every two years and once a year is nearly the same.

Table 2. Frequency of deductions, total number, and percentage of deductors.

Frequency of deductions	Total number	Percentage
1	30319	29.4
2	15597	15.1
3	10994	10.7
4	8530	8.3
5	7003	6.8
6	5739	5.5
7	5378	5.2
8	4677	4.5
9	4467	4.3
10	4490	4.4
11	5948	5.8

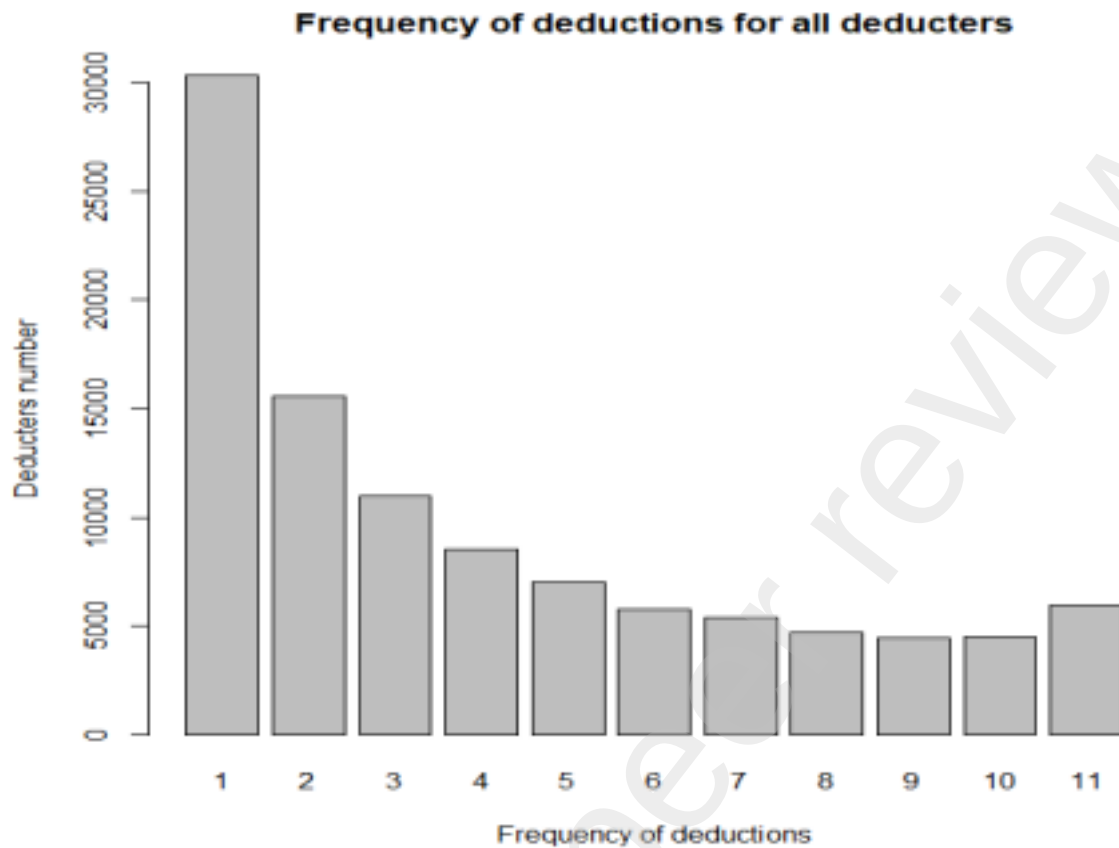


Figure 1. Bar graph representing the frequency of deductions by each deducter over a total of 11 years.

In Table 3, the figures for the frequency of deductions for deducters interested in reaching the ceiling of deductions of 5% of their taxable income and more are reported. In Lideikyte-Huber and Pittavino, 2022, the 4% threshold was chosen to observe taxpayers who might be targeting the legal 5% deductible threshold, to which the tax incentive was limited during most of the study period. The reason for lowering the threshold in our work was the fact that it is not easy for taxpayers to predict the exact taxable income for the year in progress - it depends on several factors, such as which deductions will be accepted by the tax authorities upon filing tax returns. Thus, we estimated that the taxpayers who wanted to reach the deductible ceiling but not exceed

it might have cautiously estimated their maximum amount of deduction available, and therefore did not fully reach the official ceiling of 5% (because everything exceeding that is non-deductable).

In the third column, 49% of all deductors who reached this legal ceiling donated only once. Moreover, of the 3.1% who regularly donated over the 11 years under study, they represent only 5% of the total of constant deductors (*deductors11*.) These first results highlight that taxpayers who reached the legal ceiling for deduction were not constant deductors. Half of the taxpayers who reached the above ceiling donated only once, as also shown in Figure 2. From now on we will call *deductors11-ceiling* the constant deductors who reached or exceeded the donation ceiling for tax incentives.

Table 3. Frequency of deductions, total number, overall percentage and percentage over regular deductors (*deductors11*) for taxpayers who donated amounts reaching or exceeding the ceiling of 5% (*deductors11-ceiling*).

Frequency of deductions	Total number	Percentage	Percentage over <i>deductors11</i>
1	4667	49.0	15.4
2	1459	15.3	9.4
3	826	8.7	7.5
4	604	6.4	7.1
5	424	4.5	6.1
6	323	3.4	5.6
7	265	2.8	4.9
8	235	2.5	5.0
9	213	2.2	4.8

10	202	2.1	4.5
11	297	3.1	5.0

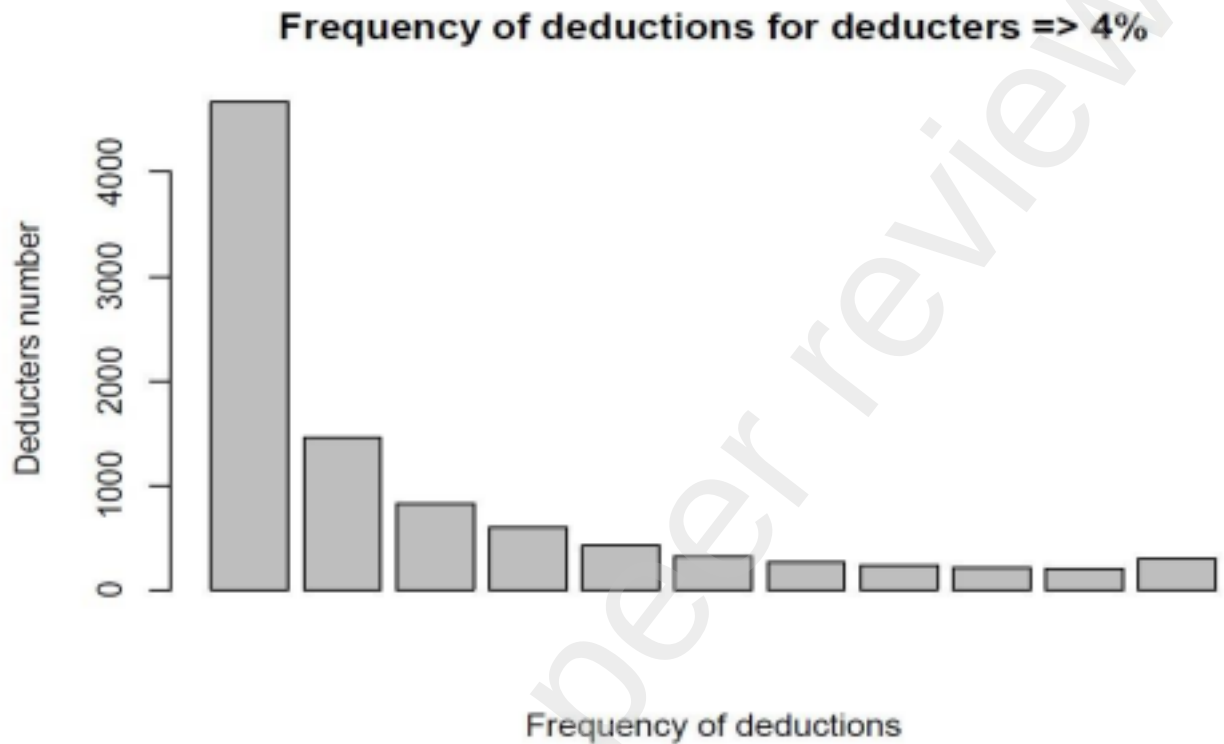


Figure 2. Bar graph representing the frequency of deductions by each deductor, who donated the legal ceiling of 4% and more, over the 11 years under study.

The third variable described above (“splitting”) and presented in our dataset shows whether the taxpayer’s household is entitled to specific rates that apply to spouses, registered partners (same-sex couples), or taxpayers who live in the same household as their minor or adult children, or a close relative who is a family dependent. By analyzing all the deductors, the *deductors11*, and *deductes11-ceiling*, this variable always shows an equally distributed population between these characteristics, even with a prevalence of joint filling. This indicates that the regularity of deductions is typical of family households (married couple, a person with dependents, etc.) rather

than single taxpayers, as revealed by Lideikyte-Huber and Pittavino (2022), while looking at the population's subset features.

III. Methods

Regression methods (linear and linear mixed models) with and without interaction have been applied. In particular, linear bivariable models applied to two subgroups of deducters: *deducters11* and *deducters11-ceiling* to identify the main significant variables driving the charitable deductions in regular deducters, who did and did not reach the ceiling threshold. The entire data set, without any subsetting, was analyzed in detail in *Lideikyte-Huber and Pittavino (2022)*. For the Exploratory Data Analysis (EDA) we proceeded to focus on the new subset of datasets *deducters11* and *deducters11-ceiling*. The main summary statistics (e.g., mean, SD, min, max, median) have been checked and computed. Since some of the variables represent almost the same quantity (i.e., "global net taxable income" ("revenu_net_imposable_taux"), "intermediary net income for deductible donations" ("Sous_total_ded_dons")), they share the same part of the variance to describe the response which resulted in a very high multicollinearity between some pairs of variables. The variance inflation factor (VIF) (*Faraway J. Julian, 2002*) has been calculated to measure the amount of variance presented by each one of them for the resulting model. This quantity was computed to select the optimal set of variables for our analysis. This is an indication of the presence of multicollinearity. Two variables, X1: "global net taxable income" and X2: "gross wealth" resulted in an overall Mean for the VIF of 2.75.

The first method used to analyze the data for the frequency of deductions of *deducters11* and *deducters11-ceiling* was a bi-variable linear regression analysis between income (X1) and wealth

(X2), as a result of the VIF check, with and without interaction (Faraway J. Julian, 2004 and 2016; Pittavino Marta et al, 2017a and 2017b).

For the *deductors11* first sub-dataset, we have :

Y_i = deductions for donations, $i = 1, \dots, 5948$

$$Y_i = \beta_0 + \beta_{Inc}X_{i1} + \beta_{Wth}X_{i2} + \beta_{Int}X_{i1}X_{i2} + \varepsilon_i \quad (1)$$

Model 1), with interaction.

$$Y_i = \beta_0 + \beta_{Inc}X_{i1} + \beta_{Wth}X_{i2} + \varepsilon_i \quad (2)$$

Model 2), without interaction.

With $\varepsilon_i \sim N(0, \sigma^2)$, independent and identically distributed (iid).

β_{Inc} , β_{Wth} and β_{Int} are the regression coefficients for income, wealth, and their interaction.

For the *deductors11-ceiling* second sub-dataset, we have :

Y_j = deductions for donations, $j = 1, \dots, 297$

$$Y_j = \beta_0 + \beta_{Inc}X_{jInc} + \beta_{Wth}X_{jWth} + \beta_{Int}X_{j1}X_{j2} + \varepsilon_j \quad (3)$$

Model 3), with interaction.

$$Y_j = \beta_0 + \beta_{Inc}X_{jInc} + \beta_{2Wth}X_{jWth} + \varepsilon_j \quad (4)$$

Model 4), without interaction.

With $\varepsilon_j \sim N(0, \sigma^2)$, independent and identically distributed (iid).

Given the panel nature of our data set and the repetition over time for the frequency of deductions, bi-variable linear regression models with random effect: *Linear Mixed-Effects Models* (LME; *Pinheiro and Bates, 2000*), with and without interaction, have also been performed using the *lme4 R package* (*Bates et al., 2014*), to incorporate better the subject variability, with and without interaction for income and wealth. LME have been fitted to check if there was subject variability, that was impacting the related estimates.

Two types of LME models have been implemented, with a random intercept: b_{0i} , modelled as Gaussian distribution with mean 0 and variance σ_b^2 : $b_{0i} \sim N(0, \sigma_b^2)$ for each subject i and with random slope b_{1i} , modelled as a Gaussian distribution with mean 0 and variance σ_1^2 : $b_{1i} \sim N(0, \sigma_1^2)$ for each year (timepoint) of deductions.

We also performed *robust regression analysis* based on the Least Median of Squares (LMS) method: $\min_{\beta_0, \beta_1} \text{med } \varepsilon_i^2$, the median of the errors is minimized instead of the sum of the square errors. There is no analytic expression for the LMS, but search algorithms and the class of *M-estimators* is used: $\min_{\beta_0, \beta_1} \sum_{i=1}^n \rho\left(\frac{\varepsilon_i}{\sigma}\right)$, *Huber and Ronchetti, 2009*. An M-estimator is robust if the function ρ limits the extremes values $\frac{\varepsilon_i}{\sigma}$. The function Tukey's bisquare (or biweight), satisfying the previous criteria, is used:

$$\rho_c\left(\frac{\varepsilon_i}{\sigma}\right) = \begin{cases} \frac{6}{c} \left[\left(\frac{\varepsilon_i}{c\sigma}\right)^6 - 3\left(\frac{\varepsilon_i}{c\sigma}\right)^2 + 3\left(\frac{\varepsilon_i}{c\sigma}\right)^2 \right] & \text{if } \left|\frac{\varepsilon_i}{\sigma}\right| < c, \\ \frac{6}{c} & \text{if } \left|\frac{\varepsilon_i}{\sigma}\right| \geq c, \end{cases} \quad (5)$$

The robust regression is implemented using the *robust R package* (Wang et al. 2023), with and without interaction, for both the two datasets *deductors11* and *deductors11-ceiling* to further check our findings.

4. EMPIRICAL RESULTS

The descriptive statistics for the dataset of *deductors11* and *deductors11-ceiling* with the main features are summarized in Table 4 and Table 5, respectively. If we compare Table 4 to Table 5, which is a special case of Table 1 in *Lideikyte-Huber and Pittavino (2022)* for the subgroup of people donating who were interested in reaching the ceiling, we can find overall higher values.

In the subgroup dataset *deductors11*, the total amount of deductions is higher, and the median and mean age of taxpayers is higher including younger people and those in taxpayer households (married or single-sex registered partners, taxpayers with dependents, etc.). The median and mean values for the global income and gross wealth are also higher than the subgroup of deductors *deductors11-ceiling*. The only lower values are the median and the mean deductions, since they are not necessarily interested in reaching the ceiling, the *deductors11* donated, on average, less than the *deductors11-ceiling*.

The percentage of the amount of deductions for 11 years from *deductors11*, in blue, compared to the annual total amount of deductions, the entire bar, is represented in Figure 3. This group of

regular taxpayers contributed to almost half of the total deductions at the beginning of the study period. The relative percentage of *deductors11* compared to the entire deductor/donor population decreased over time, which is explained by the fact that, in absolute terms, the number of deductors increased during the study period (*Lideikyte-Huber and Pittavino, 2022*).

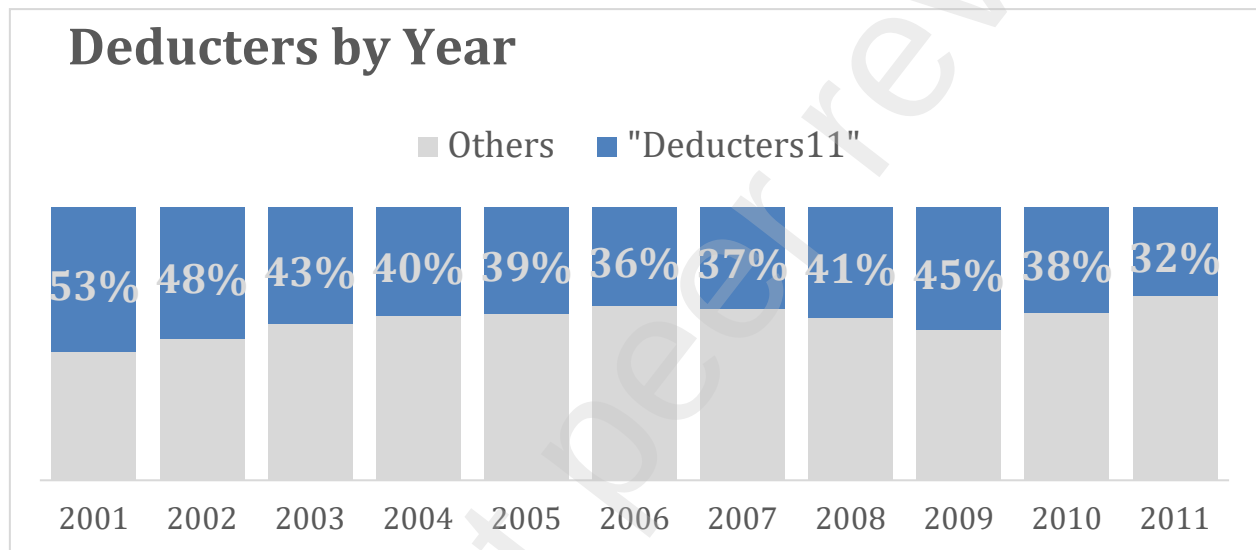


Figure 3. The total amount of deductions each year for all the subgroups of constant donors: *Deductors11*, represented by the blue line, versus all the other donors who did not deduct for the entire period.

Table 4. Summary statistics of the *deductors11* constant donors who deducted for the entire 11 years**of the time period under study, without taking into account the deduction ceiling (n= 5948).**

Year	Total deductions	Average deduction	Median deduction	Average net global income	Median net global income	Average gross-wealth	Median gross wealth	Average year of birth	Median year of birth	Single	Married ¹ , or single with dependents ²
2001	15,388,211	2587	736	211,194	88,552	2,126,201	431,338	1944	1943	2439	3509
2002	15,987,318	2687	860	187,188	90,846	2,087,835	454,395	1944	1943	2417	3531
2003	14,267,464	2399	950	178,421	90,233	2,230,951	483,034	1944	1943	2411	3537
2004	16,375,487	2753	1050	183,617	89,732	2,339,291	505,483	1944	1943	2416	3532
2005	18,466,780	3105	1150	189,970	89,314	2,582,534	548,907	1944	1943	2387	3561
2006	17,037,744	2864	1100	207,383	90,328	2,820,589	575,364	1944	1943	2383	3565
2007	18,895,196	3177	1176	241,464	92,284	3,085,099	588,272	1944	1943	2392	3556
2008	20,963,104	3524	1'215	236,625	93,282	2,870,672	591,562	1944	1943	2408	3540
2009	34,477,153	5796	1'270	192,308	92,600	3,112,107	624,118	1944	1943	2422	3526
2010	32,331,721	5436	1'310	186,050	82,861	3,277,245	639,482	1944	1943	2425	3523
2011	23,467,958	3946	1315	179,976	82,219	3,296,511	647,618	1944	1943	2441	3507

¹ The civil status « married » also includes registered same-sex partners under Swiss law.

² A single, widowed, divorced, separated person and those living with minor children, or children between the ages of 18 and 25 who are studying or doing an apprenticeship, or a relative for whom the taxpayer is essentially responsible financially.

Table 5. Summary statistics of the *deductors*11-ceiling constant donors who deducted for the entire 11 years of the time period under study, without taking into account the deduction ceiling (n= 297).

Year	Total deductions	Average deduction	Median deduction	Average net global income	Median net global income	Average gross-wealth	Median gross wealth	Average year of birth	Median year of birth	Single	Married ³ , or single with dependents ⁴
2001	2,461,132	8287	3977	156,574	74,863	2,820,897	411,509	1941	1939	139	158
2002	2,302,032	7751	3933	145,905	74,702	2,642,858	403,154	1941	1939	140	157
2003	2,170,172	7307	3924	137,537	74,099	2,689,108	417,519	1941	1939	140	157
2004	2,238,344	7536	3764	141,340	69,909	2,728,003	429,240	1941	1939	141	156
2005	2,261,060	7613	3826	143,281	71,719	2,977,176	472,066	1941	1939	141	156
2006	2,481,737	8356	3851	157,149	70,738	3,057,097	499,964	1941	1939	141	156
2007	2,487,059	8374	3909	157,296	72,951	3,920,514	496,051	1941	1939	140	157
2008	2,751,581	9265	3961	174,123	73,844	3,474,699	468,818	1941	1939	142	155
2009	4,465,830	15036	7658	142,201	69,127	3,566,142	511,085	1941	1939	145	152
2010	4,655,780	15676	8060	121,683	58,710	3,557,364	516,158	1941	1939	144	153
2011	6,113,253	20583	7300	123,151	60,539	3,503,996	515,717	1941	1939	145	152

³ The civil status « married » also includes registered same-sex partners under Swiss law.

⁴ A single, widowed, divorced, separated person and those living with minor children, or children between the ages of 18 and 25 who are studying or doing an apprenticeship, or a relative for whom the taxpayer is essentially responsible financially.

From Table 6 we can observe how the interaction between income and wealth is significant, even if smaller (i.e. all 11 years: $\beta_{\text{Int}} = 1.9 \times 10^{-11}$) on a global level than all the regular deductors, indicating that higher income and wealth positively influence charitable deductions and vice versa. The income variable per se has a negative effect on deduction, showing that wealth is the main variable influencing the deductions for regular deductors. These aggregated results for the entire 11-year time period have been granulated by each year to better understand the dynamics: for 5 years out of 11 (2001, 2005, 2008, 2009, 2010) the regression coefficients of the income were negative (i.e. 2001: $\beta_{\text{Inc}} = -2.2 \times 10^{-3}$) showing a negative relationship to the response variable charitable giving and highlighting how wealth has a positive effect on the outcome.

LME was fitted to check if there was subject variability, but they did not show an increase in variance and/or in the model coefficient, especially in the variance description. Even if the resulting standard error for each coefficient was slightly smaller, they did not give an added value to the results obtained with Model 1 and Model 2. This result is the consequence of the homogeneity characteristics of this population as seen in Table 4 and Table 5, which remain consistent all over the years and do not imply a drastic change in their behavior, for which the random effects bring advantages.

Three robust regression models with M-estimation technique, with 90%, 80%, and 70% efficiency and corresponding to the c constants: $c = 3.881, 3.116, 2.664$, for the function Tukey's bisquare (5), for an iterative estimation of the coefficients, were also fitted and the results for 90% efficiency are reported in Table 6 and 7. Also in this case there is a negative regression coefficient for income ($\beta_{\text{Inc}} = -9.9 \times 10^{-4}$) and a positive regression coefficient for wealth ($\beta_{\text{Wth}} = 1.7 \times 10^{-4}$) and a statistically significant interaction ($\beta_{\text{Int}} = 1.2 \times 10^{-10}$), further confirming the previous findings.

Since the corresponding R^2_{Adj} coefficients for the robust models were lower than the linear and LME ones, the linear regression results were the ones further analyzed and considered. Given the similar characteristics of the group of people in *deductors11*, not many outliers are present and so the robust technique does not show an advantage over classic ones. The robust regression showed an advantage of the classical linear for the specific case of *deductors11- ceiling*. Both the variable wealth and the interaction with wealth were not significant, highlighting how, in the specific subgroup of people interested in reaching the ceiling, income is the only variable driving donations as already explained in *Lideikyte-Huber and Pittavino (2022)*.

If we observe results from Table 7, referring to the subset *deductors11-ceiling*, the interaction between income and wealth is no longer significant, and only income is a statistically significant variable from the resulting p-value smaller than 0.05. These results confirm the findings from *Lideikyte-Huber and Pittavino (2022)*, where income was the only significant factor for deductors interested in reaching the ceiling. For regular deductors, income has a negative effect on deductions over time, while its interaction with wealth and wealth itself is significant and positive. For the robust regression analysis, similar results as the ones shown in Tables 6 and 7 were found. Moreover, given that there are taxpayers with similar characteristics in the group of regular deductors, there were not so many outliers. We preferred to privilege the efficiency of the ordinary least square method rather than the robustness, considering the reduced number of extreme values.

Table 6. Table with the beta estimates: β and the p-values: p for 'Net Income for deductible donations': Inc, 'Gross Wealth': Wth and their Interaction: 'Int', with the adjusted R^2 : R^2_{Adj} resulting from the standard bi-variable linear regression model with and without interaction fitted for the subset of deductors11 for all years and for each year under study.

Deductors11	Linear models with interaction							Linear models without interaction				
	β_{Inc}	pInc	β_{Wth}	pWth	β_{Int}	pInt	R2Adj	β_{Inc}	pInc	β_{Wth}	pWth	R2Adj
All 11 years	-4.3×10^{-3}	<0.05	9.2×10^{-4}	<0.05	1.9×10^{-11}	<0.05	0.31	-4.4×10^{-3}	<0.05	9.7×10^{-4}	<0.05	0.30
All 11 years ¹	-8.0×10^{-3}	<0.05	1.3×10^{-3}	<0.05	1.4×10^{-11}	<0.05	0.31	-1.4×10^{-3}	<0.05	1.4×10^{-3}	<0.05	0.30
All 11 years ²	-7.9×10^{-3}	<0.05	1.3×10^{-3}	<0.05	1.5×10^{-11}	<0.05	0.31	-2.9×10^{-3}	<0.05	1.5×10^{-3}	<0.05	0.30
All 11 years ³	-9.9×10^{-4}	<0.05	1.7×10^{-4}	<0.05	1.2×10^{-10}	<0.05	0.13	-7.4×10^{-4}	<0.05	1.4×10^{-4}	<0.05	0.35
2001	-2.2×10^{-3}	<0.05	4.7×10^{-4}	<0.05	2.5×10^{-11}	<0.05	0.56	6.5×10^{-3}	<0.05	5.5×10^{-4}	<0.05	0.51
2002	2.8×10^{-3}	<0.05	4.1×10^{-4}	<0.05	2.2×10^{-11}	<0.05	0.62	9.5×10^{-3}	<0.05	5.0×10^{-4}	<0.05	0.61
2003	5.3×10^{-3}	<0.05	3.2×10^{-4}	<0.05	-1.5×10^{-12}	<0.05	0.66	4.7×10^{-3}	<0.05	3.2×10^{-4}	<0.05	0.66
2004	4.4×10^{-3}	<0.05	2.9×10^{-4}	<0.05	1.2×10^{-11}	<0.05	0.69	8.6×10^{-3}	<0.05	3.3×10^{-4}	<0.05	0.68
2005	-2.8×10^{-3}	<0.05	2.7×10^{-4}	<0.05	3.7×10^{-11}	<0.05	0.74	1.1×10^{-2}	<0.05	3.8×10^{-4}	<0.05	0.65
2006	6.8×10^{-3}	<0.05	4.5×10^{-4}	<0.05	-9.7×10^{-12}	<0.05	0.62	2.3×10^{-3}	<0.05	4.2×10^{-4}	<0.05	0.59
2007	2.9×10^{-3}	<0.05	3.5×10^{-4}	<0.05	3.0×10^{-12}	<0.05	0.66	4.5×10^{-3}	<0.05	3.6×10^{-4}	<0.05	0.66
2008	-6.9×10^{-3}	<0.05	7.7×10^{-4}	<0.05	2.3×10^{-11}	<0.05	0.58	4.9×10^{-3}	<0.05	8.2×10^{-4}	<0.05	0.53
2009	-5.4×10^{-3}	0.02	7.5×10^{-4}	<0.05	8.3×10^{-11}	<0.05	0.48	3.8×10^{-2}	<0.05	9.8×10^{-4}	<0.05	0.43
2010	-1.9×10^{-2}	<0.05	1.9×10^{-3}	<0.05	3.7×10^{-11}	<0.05	0.40	3.0×10^{-4}	0.74	2.0×10^{-3}	<0.05	0.38
2011	1.3×10^{-2}	<0.05	5.3×10^{-4}	<0.05	-1.9×10^{-11}	<0.05	0.23	4.4×10^{-3}	<0.05	4.5×10^{-4}	<0.05	0.21

¹LME: Linear Mixed-Effects Model with a random intercept.

²LME: Linear Mixed-Effects Model with a random slope for the years.

³Robust: Robust regression with M-estimation and a 90% efficiency.

Table 7. Table with the beta estimates: β and the p-values: p for 'Net Income for deductible donations': Inc, 'Gross Wealth': Wth and their Interaction: 'Int', with the adjusted R²: R²_{Adj} resulting from the standard bi-variable linear regression model with and without interaction fitted for the subset of *deductors11-ceiling* globally (All) and for each year under study.

Deductors11	Linear models with interaction							Linear models without interaction				
	β Inc	pInc	β Wth	pWth	β Int	pInt	R ² Adj	β Inc	pInc	β Wth	pWth	R ² Adj
All 11 years-ceiling	5.1x10 ⁻³	<0.05	8.1x10 ⁻⁴	<0.05	1.4x10 ⁻¹⁰	<0.05	0.76	3.6x10 ⁻²	<0.05	3.6x10 ⁻²	<0.05	0.73
All 11 years-ceiling ¹	5.1x10 ⁻³	<0.05	8.1x10 ⁻⁴	<0.05	1.4x10 ⁻¹⁰	<0.05	0.76	3.6x10 ⁻²	<0.05	1.3x10 ⁻³	<0.05	0.73
All 11 years ceiling ²	5.1x10 ⁻³	<0.05	8.1x10 ⁻⁴	<0.05	1.4x10 ⁻¹⁰	<0.05	0.76	3.6x10 ⁻²	<0.05	1.3x10 ⁻³	<0.05	0.73
All 11 years ³	5.0x10 ⁻²	<0.05	2.0x10 ⁻⁹	0.49	-6.1x10 ⁻¹⁷	0.80	1	5.0x10 ⁻²	<0.05	1.7x10 ⁻⁹	0.17	1
2001-ceiling	5.0x10 ⁻²	<0.05	2.5x10 ⁻⁶	0.37	7.3x10 ⁻¹³	0.19	0.95	5.0x10 ⁻²	<0.05	1.6x10 ⁻⁶	0.55	0.97
2002-ceiling	4.9x10 ⁻²	<0.05	7.0x10 ⁻⁶	0.30	1.3x10 ⁻¹²	0.11	0.98	4.9x10 ⁻²	<0.05	8.7x10 ⁻⁶	0.19	0.99
2003-ceiling	5.0x10 ⁻²	<0.05	8.5x10 ⁻⁶	0.04	2.5x10 ⁻¹³	0.64	0.98	4.9x10 ⁻²	<0.05	9.0x10 ⁻⁶	0.02	0.99
2004-ceiling	4.9x10 ⁻²	<0.05	5.4x10 ⁻⁶	0.08	3.5x10 ⁻¹³	0.40	1	5.0x10 ⁻²	<0.05	5.9x10 ⁻⁶	0.06	1
2005-ceiling	4.9x10 ⁻²	<0.05	9.8x10 ⁻⁷	0.61	8.5x10 ⁻¹³	0.10	1	4.9x10 ⁻²	<0.05	1.8x10 ⁻⁶	0.33	1
2006-ceiling	4.9x10 ⁻²	<0.05	1.6x10 ⁻⁶	0.45	2.6x10 ⁻¹³	0.47	1	5.0x10 ⁻²	<0.05	1.7x10 ⁻⁶	0.38	1
2007-ceiling	5.0x10 ⁻²	<0.05	2.5x10 ⁻⁶	0.39	-1.3x10 ⁻¹³	0.45	1	4.9x10 ⁻²	<0.05	4.9x10 ⁻⁷	0.67	1
2008-ceiling	4.9x10 ⁻²	<0.05	2.1x10 ⁻⁵	<0.05	6.9x10 ⁻¹³	<0.05	1	4.9x10 ⁻²	<0.05	9.2x10 ⁻⁶	0.004	1
2009-ceiling	7.6x10 ⁻²	<0.05	1.3x10 ⁻³	<0.05	-9.1x10 ⁻¹¹	<0.05	0.99	3.5x10 ⁻²	<0.05	1.4x10 ⁻³	<0.05	0.99
2010-ceiling	9.8x10 ⁻²	<0.05	6.4x10 ⁻⁴	<0.05	-5.3x10 ⁻¹¹	<0.05	0.99	7.3x10 ⁻²	<0.05	7.0x10 ⁻⁴	<0.05	0.99
2011-ceiling	1.0x10 ⁻¹	<0.05	-1.4x10 ⁻⁴	0.04	2.5x10 ⁻¹⁰	<0.05	0.99	2.3x10 ⁻¹	<0.05	-9.3x10 ⁻⁴	<0.05	0.99

¹LME: Linear Mixed-Effects Model with a random intercept.

²LME: Linear Mixed-Effects Model with a random slope for the years.

³Robust: Robust regression with M-estimation and a 90% efficiency.

Given the small sample size of 297 regular deductors who reached the deduction threshold: “*deductors11-ceiling*” and the small set of variables, the models are a perfect fit ($R^2 = 1$). To better explain and illustrate the findings above, the univariate linear regressions over the entire 11 years of study for both the dataset *deductors11* and *deductors11-ceiling*, considering the income and wealth variables as explanatory variables separately, have been represented in Figures 4 to 7. From Figures 4 to 7 it is interesting to observe how the number of deductions diminishes considerably when considering the reduced subset *deductors11-ceiling* of people interested in reaching the ceiling, moving from a maximum of 7,912,630 CHF (approx. 8 million CHF), for *deductors11*, to a maximum of 2,663,594 CHF (approx. 2.5 million), for *deductors11-ceiling*. A similar reduction can be observed in the income range, while the *deductors11* reaches the value of 89,048,109 CHF (approx. 89 million CHF), while the *deductors11-ceiling* reaches the value of 17,106,874 CHF (approx. 17 million CHF). As already shown in the results in Table 7 and as illustrated in Figure 6 the regression lines for the years from 2001 to 2008 overlapped with the same slope of $\beta_{Inc} = 5.0 \times 10^{-2}$ and only the last one referring to the year 2008, represented in olive green, is visible. Figure 6 shows how the Income variable is clearly statistically representative, explaining the Deductions linked to the legal ceiling. While for the univariate case of the linear regression with Wealth as the explanatory variable, it is possible to see different slopes for each year, indicating that was already reported in Table 7: Wealth is not a statistically significant variable for the taxpayers interested in reaching the deduction ceiling. Table 6 shows, however, that Wealth is a statistically significant variable and explains the driver for donations for the taxpayers that consistently contribute to Charitable Deductions, without necessarily being

interested in the legal ceiling. Both in Figures 4 and 5, the regression line with the highest slope for the subset “*Deductors11*” is represented in light blue and corresponds to the year 2009, when the legal tax reform took effect. For Figures 6 and 7, the regression line with the highest slope for the subset “*Deductors11-ceiling*,” represented in olive green, corresponds to the year 2011 and is mainly driven by the biggest donation corresponding to 2,663,594 CHF.

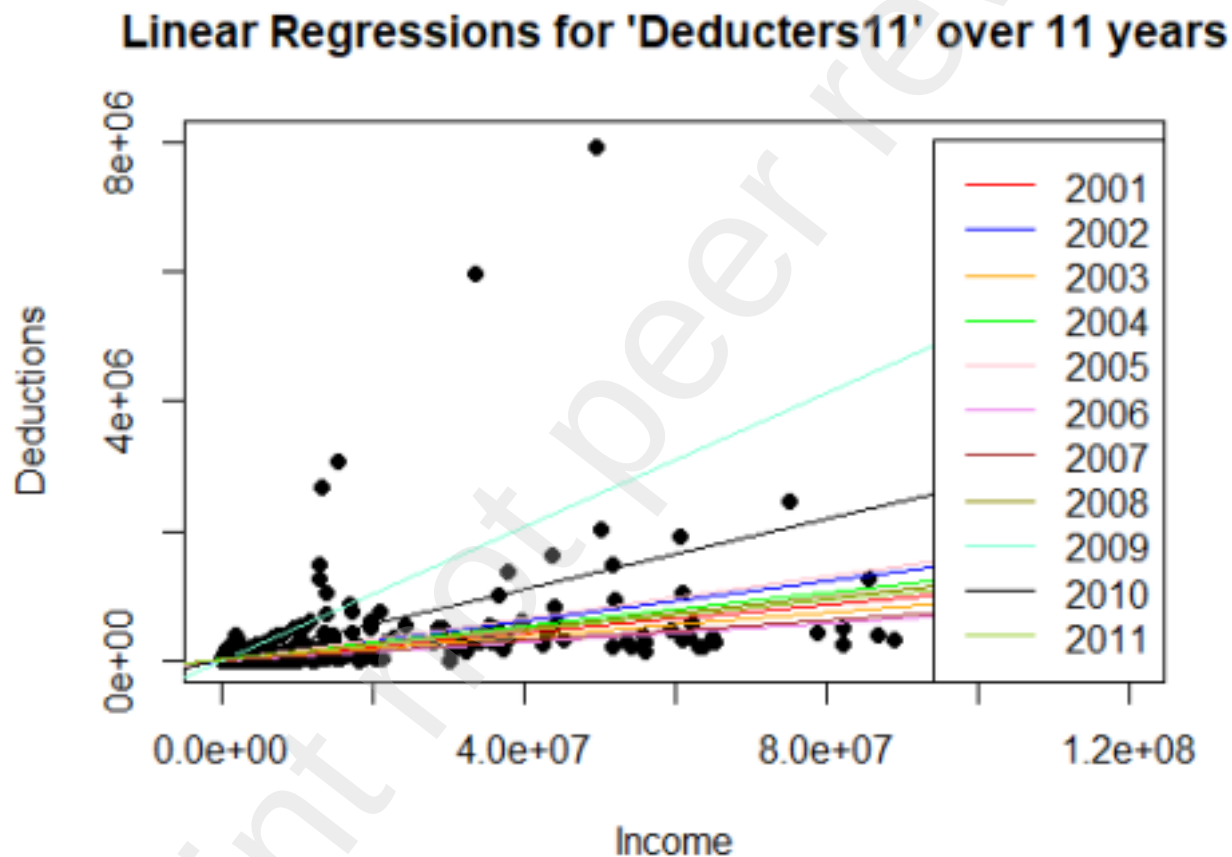


Figure 4. Figure represents the univariate linear regressions with “Deductions” as the outcome variable and “Income” as the explanatory variable, for the entire 11 years of study for the subgroup of consistent *Deductors11*. All 11 regression lines are clearly visible.

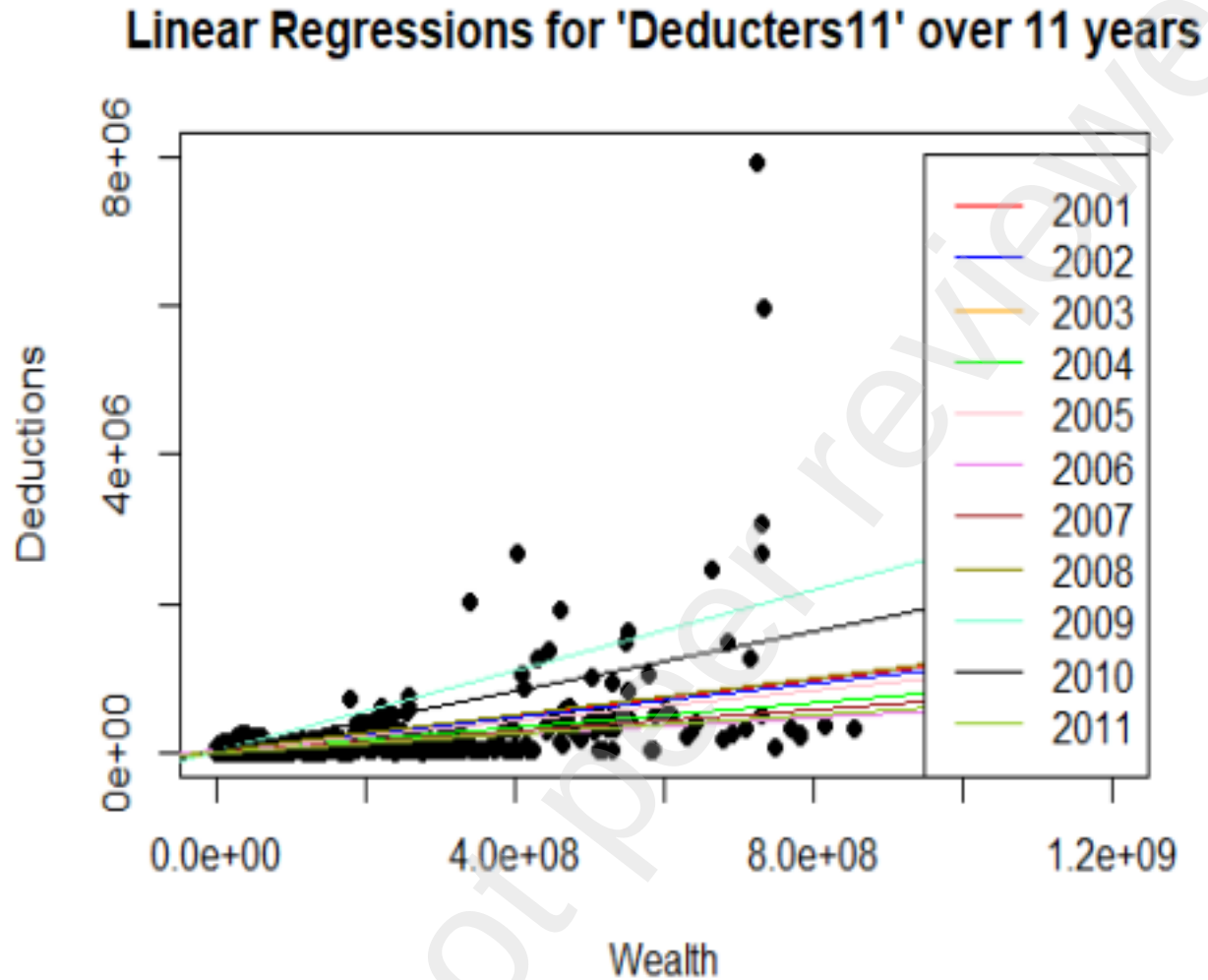


Figure 5. Figure represents the univariate linear regressions with “Deductions” as the outcome variable and “Wealth” as an explanatory variable, for the entire 11 years of study for the subgroup of consistent “*Deducters11*”. In this case, the scale for wealth is 1 million larger, considering the higher range of wealth in comparison to the income scale. All 11 regression lines are clearly visible.

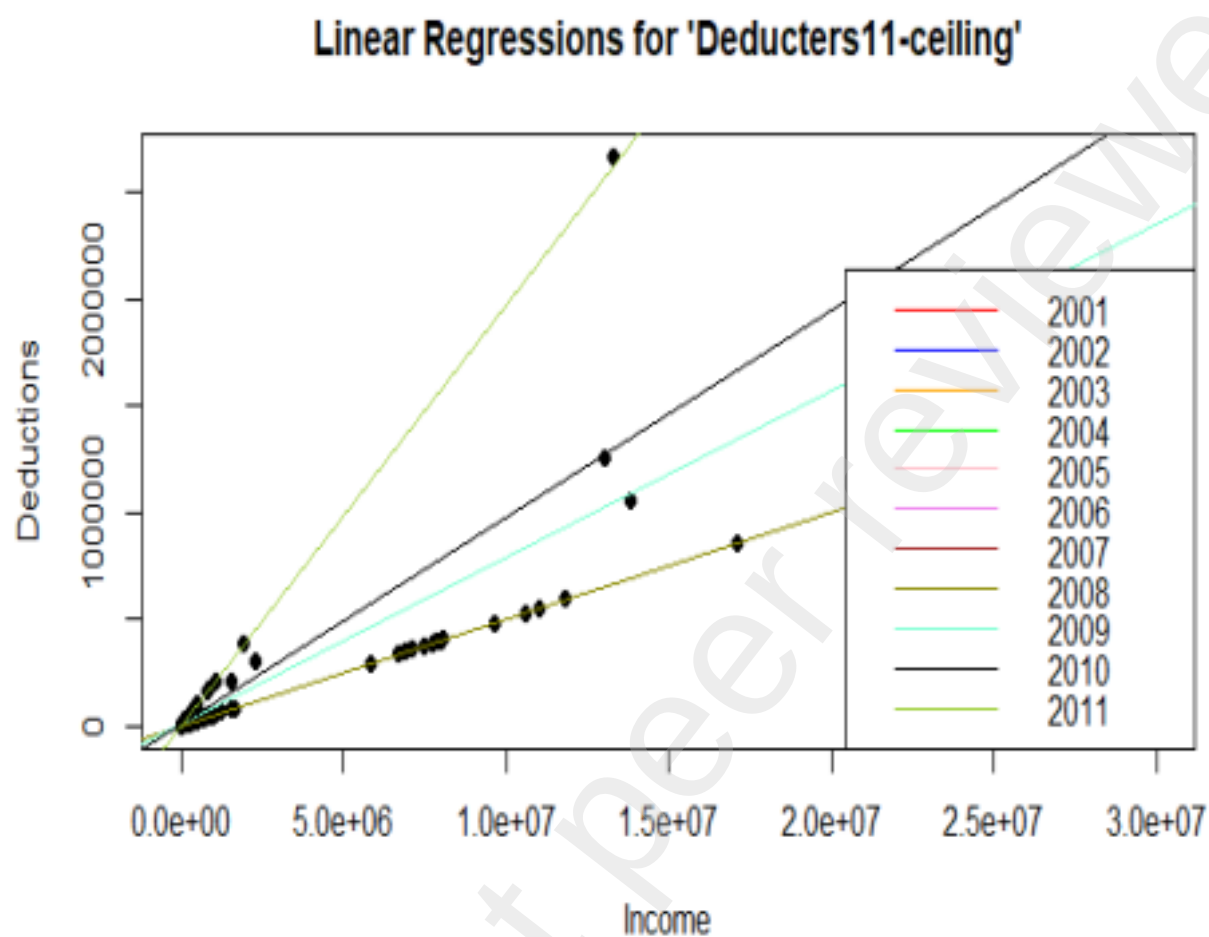


Figure 6. Figure represents the univariate linear regressions with “Deductions” as the outcome variable and “Income” as the explanatory variable, for the entire 11 years of study for the subgroup of consistent “*Deductors11-ceiling*”. For the years 2001 through 2008, the regression lines overlapped with the same slope, and only the models for the last four years are clearly visualized. This indicates the importance of the Income variable for this subset of deductors, interested in reaching the ceiling and consistently donating.

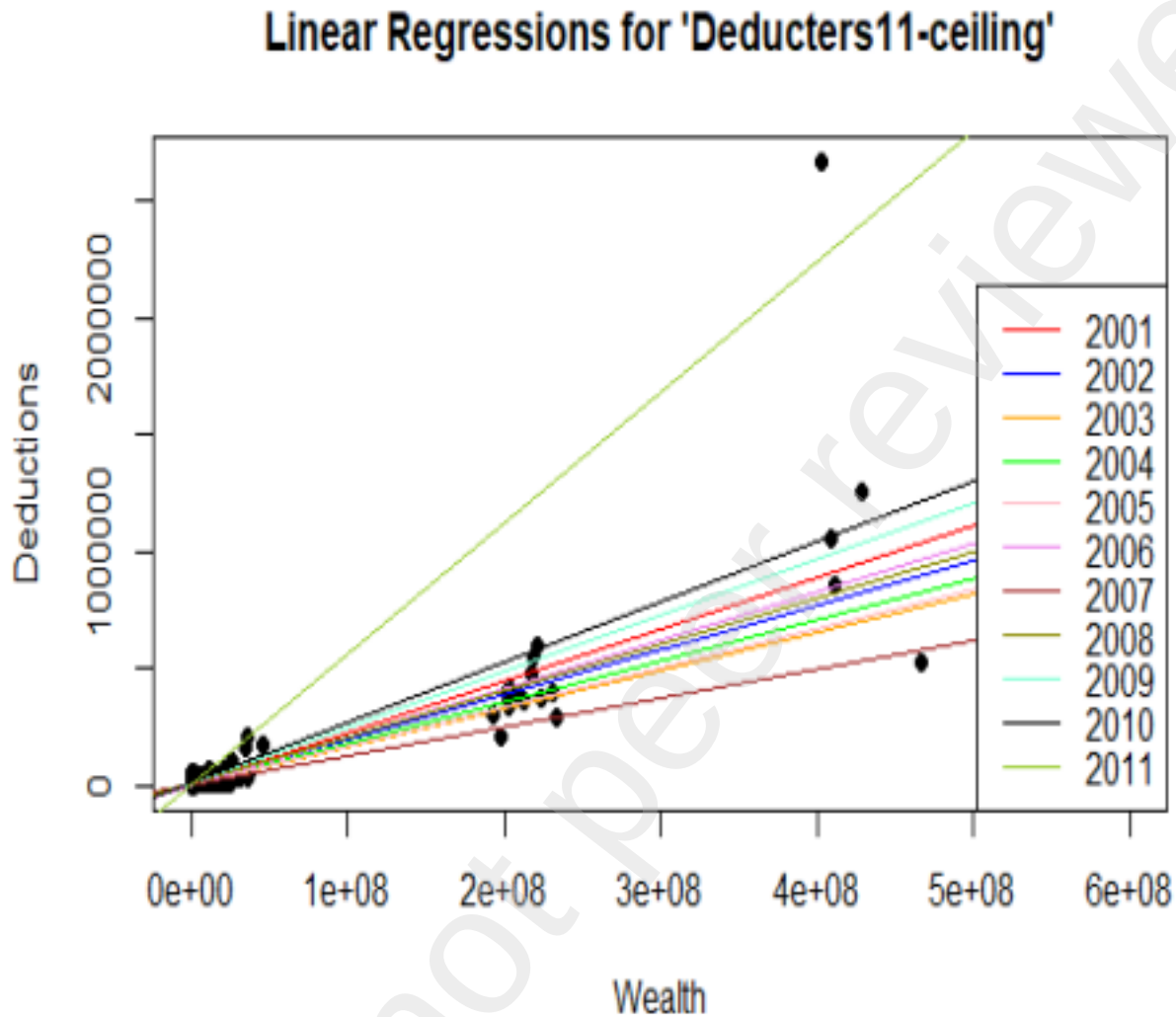


Figure 7. Figure represents the univariate linear regressions with “Deductions” as the outcome variable and “Wealth” as the explanatory variable, for the entire 11 years of study for the subgroup of constant “*Deductors11-ceiling*”. Also in this case the scale for wealth is larger by 1 million. All the different 11 models are clearly represented, indicating a different slope for each year and how wealth for this particular subset is not a significant variable driving donations.

5. CONCLUSION

The current work focuses on the regularity of deductions by donors who are motivated by tax incentives to make charitable donations. Building upon *Lideikyte-Huber and Pittavino (2022)*, where the focus was on the characteristics of all deductors in Geneva in relation to their income and wealth and the legal ceilings for charitable deductions, in the present work we seek to understand what the characteristics of very constant donors are. Such donors are very important for the funding of the charitable sector, and this research seeks to provide insights into tax incentives that could efficiently target them.

One of the conclusions of *Lideikyte-Huber and Pittavino (2022)* was identifying a subset of donors who were responsive to tax incentives for charitable donations - their deductions were close to the maximum legal threshold of the tax incentive. The main driver of deductions was their taxable income to which the tax incentives were related. This subset of donors made up a substantial part of annual deductions in Geneva. However, most of those donors were irregular (only 297 out of 5948 were deducting donations over the entire period).

In the present study, using a unique dataset, we focus on the subset of donors that we call “*deductors11*” who are extremely regular (giving and deducting donations every year) and “*deductors11-ceiling*”, who reached the ceiling of deductions. We compared the subgroup of deductors identified in *Lideikyte-Huber and Pittavino (2022)*. The *deductors11* group corresponds to 5948 taxpayers, who represent 2.54% of the entire Geneva taxpayer population from 2001. The fundamental finding of the present study is that this constancy is mainly influenced by wealth, and not income (to which the tax incentive is related). In fact, 95% of regular deductors did not

reach the deductible threshold for charitable deductions. Although they use the tax incentive (deduction), they do not structure their donations to reach the maximum available limit of it. Even though there was a peak in the amount of deductions by *deductors*¹¹ after the reform that increased the tax incentive, it was temporary. In addition, we observed several other criteria providing characteristics of consistent givers. In particular, the regularity of deductions is more typical in multiple-person taxpayer households rather than single taxpayers, as opposed to *Lideikyte-Huber and Pittavino (2022)* which analyzed deductions related to the income tax incentive. In addition, we observe that such givers are, on average and median, in their mid-50s and late 60s (around the legal retirement age in Switzerland).

Concerning the methodology, three types of regression methods have been used and since the population characteristics are similar with a few presences of outliers, the standard linear regression based on least squared efficient estimation gave better results than the mixed models, and the robust regression, based on M-estimation.

Wealth being an important factor for regular deductors, a parallel tax incentive linked to wealth, and not to income, could be envisaged to boost donations for this segment of donors. Such a solution, proposed in legal publications (*Lideikyte-Huber and Peter, 2022*) and which would be in line with the general goals of Swiss legislation that seeks to maximize total giving, is substantiated by the present empirical analysis. In addition to other criteria established by this study, such as the fact that very regular giving is typically enacted by multi-person households, the age of constant givers should be considered when structuring tax incentives.

The results of this study show that wealth is not a common variable considered by legislators and

polymakers when creating tax incentives. However, the findings clearly indicate that consistent donors tend to have higher wealth than average and make donations regardless of income tax incentives. Following this, implementing a dedicated wealth tax reform could potentially have several benefits, including increasing charitable donations and providing tax incentives for a broader segment of the population. In jurisdictions that do not have a wealth tax, such tax incentives could be linked to the taxation of wealth-related parts of income, such as investment income or capital gains.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to disclose.

AUTHOR CONTRIBUTIONS STATEMENT

M.P. conceived the experiment and the analysis. M.P. conducted the experiment by preparing and merging the data. M.P. analyzed the data. M.P. and G.L-H interpreted the results. M.P. and G.L-H. wrote and reviewed the manuscript.

ACKNOWLEDGEMENTS

This project is financed by the Swiss National Science Foundation (SNSF) (grant number 182839).

The authors greatly thank Professor Henry Peter, the Head of the Geneva Centre for Philanthropy (GCP), for his continuous support. The authors are also extremely grateful to the Tax Administration of the Canton of Geneva (TACG) for providing the data for this study.

Our sincere thanks also go to Professor Roy Welsch of the Massachusetts Institute of Technology (MIT), Boston for his advice on statistical modelling.

DATA AVAILABILITY STATEMENT

Data necessary to replicate the results of this article are available upon request from the corresponding author, subject to a written agreement to share such data by the Tax Administration of the Canton of Geneva.

REFERENCES

- Bates, D., Maechler, M., Bolker, B., Walker, S. (2014). Fitting Linear Mixed-Effects Models using lme4. URL: <http://arxiv.org/abs/1406.5823>
- Code civil suisse (Droit des fondations), Modification du 8 octobre 2004, RS 4545 (Swiss civil code - modifications)
- Code civil suisse (Droit des fondations), Modification du 8 octobre 2004, RS 4545 (Swiss civil code – modifications)
- Corporate Income Tax Act of September 23, 1994 (FR : Loi sur l'imposition des personnes morales du 23 septembre 1994, D 3 15 ; in force : 01.01.1995)
- Corporate Income Tax Act of September 23, 1994 (FR : Loi sur l'imposition des personnes morales du 23 septembre 1994, D 3 15 ; in force : 01.01.1995)
- Duquette, N. J. (2018). Inequality and philanthropy: High-income giving in the United

States 1917– 2012. *Explorations in Economic History* 70: 25-41.

- Duquette, N. J., and Mayo, J. (2021). Who gives and who gets? Tax policy and the long-run distribution of philanthropy in the United States. In *The Routledge Handbook of Taxation and Philanthropy*, pp. 268-284. Routledge. ISBN:9781003139201.
- Federal Act of 14 December 1990 on Direct Federal Taxation (DFTA), AS 1991 1184
- Faraway, J. Julian (2002). *Practical Regression and Anova using R*, Taylor&Francis
- Faraway, J. Julian (2004). *Linear Models with R*, Taylor&Francis
- Faraway, J. Julian (2016). *Extending the Linear Model with R, Generalized Linear, Mixed Effects and Nonparametric Regression Models*, Taylor&Francis
- Huber, P. J., & Ronchetti, E. M. (2009). *Robust statistics* (2nd ed.).
- Hoboken, N. J. Information provided by the Geneva Tax Administration (TACG) on data delivery.
- Lideikyte-Huber, Giedre, Pittavino, Marta, and Peter, Henry (2021). Tax incentives for charitable giving: 2006 Reform and Geneva-based evidence. In *The Routledge Handbook of Taxation and Philanthropy*, pp. 253-267. Routledge. ISBN:9781003139201.
- Lideikyte-Huber, G., and Pittavino, Marta (2022). Who donates and how? new evidence on the tax incentives in the canton of Geneva, Switzerland. *Journal of Empirical Legal Studies*, 19(3):758–797 Lideikyte-Huber, G. and Henry, P. (2022). Incitations fiscales pour les donateurs. Aperçu et recommandations pour la Suisse. *Steuer-Revue* 10: 722-742

- Loi sur l'imposition des personnes physiques (LIPP-V) Détermination du revenu net – Calcul de l'impôt et rabais d'impôt – Compensation des effets de la progression à froid du 22 septembre 2000, D3 16 ; in force: 01.01.2001 (« Personal Income Tax Act – V »)
- OCDE (2020), *Taxation and Philanthropy*, OECD Tax Policy Studies, n° 27, Éditions OCDE, Paris, <https://doi.org/10.1787/df434a77-en>
- Parliamentary Initiative No. 00.461 “Revision of the Law on Foundations of 14.12.2000” (“Schiesser initiative”) (FR : Initiative parlementaire No. “Révision de la législation régissant les fondations”). <https://www.parlament.ch/fr/ratsbetrieb/suche-curia-vista/geschaeft?AffairId=20000461> (Schiesser initiative)
- Personal Income Tax Act – V (FR : Loi sur l'imposition des personnes physiques (LIPP-V) Détermination du revenu net – Calcul de l'impôt et rabais d'impôt – Compensation des effets de la progression à froid du 22 septembre 2000, D3 16 ; in force: 01.01.2001 (« Personal Income Tax Act – V »)
- Personal Income Tax Act of September 27, 2009 (FR : Loi sur l'imposition des personnes physiques du 27 septembre 2009 ; LIPP ; D 3 08, in force : 01.01.2010)
- Piketty, T., and Saez, E. (2003). Income inequality in the United States, 1913-1998. *The Quarterly Journal of Economics*, 118(1), 1–39.
- Piketty, T. and Zucman, G. (2014). Capital is Back: Wealth-Income Ratios in Rich Countries 1700– 2010. *The Quarterly Journal of Economics*, Volume 129, Issue 3, August 2014, Pages 1255–1310, <https://doi.org/10.1093/qje/qju018>
- Pinheiro, J.C., Bates, D.M. (2000). *Mixed-Effects Models in S and S-PLUS*. Springer

- Pittavino, M., Dreyfus, A., Heuer, C., Benschop, J., Wilson, P., Collins-Emerson, J., Torgerson, P. R. & Furrer, R. (2017a). Comparison between generalized linear modelling and additive Bayesian network; identification of factors associated with the incidence of antibodies against *Leptospira interrogans* sv Pomona in meat workers in New Zealand. *Acta Tropica*, 173, 191-199
- Pittavino, M., Dreyfus, A., Heuer, C., Benschop, J., Wilson, P., Collins-Emerson, J., Torgerson, P. R. & Furrer, R. (2017b). Data on *Leptospira interrogans* sv Pomona infection in Meat Workers in New Zealand. *Data in Brief*, 13, 587-596.
- Reiser, D. B., and Steven A. Dean (2023). For-Profit Philanthropy: Elite Power and the Threat of Limited Liability Companies, Donor-Advised Funds, and Strategic Corporate Giving. Oxford University Press
- Report of the Economic Affairs and Taxation Committee on the Parliamentary initiative “Reform of the legislation governing foundations” of October 23, 2003), RS 00.461, (“Report 2003”)(FR: Rapport de la Commission de l’économie et des redevances du Conseil des Etats du 23 octobre 2003 Initiative parlementaire “ Révision de la législation régissant les fondations”). Report 2003, p. 7428, 7426-7427
- Ring, M. A. K. and Thoresen, T. O. (2021). Wealth Taxation and Charitable Giving. Available at SSRN: <https://ssrn.com/abstract=4057536> or <http://dx.doi.org/10.2139/ssrn.4057536>
- Ring, M. A. K.; Thoresen, T. O. (2022). Wealth Taxation and Charitable Giving. CESifo Working Paper, No. 9700, Center for Economic Studies and ifo Institute (CESifo), Munich

- Steven A. Dean (2023). For-Profit Philanthropy: Elite Power and the Threat of Limited Liability Companies, Donor-Advised Funds, and Strategic Corporate Giving. Oxford University Press The Federal Constitution of the Swiss Confederation of 18 April 1999, AS 1999 2556
- Wang A. J., Zamar R., Marazzi A., Yohai V., Salibian-Barrera M., Maronna R., Zivot E., Rocke D. , Martin D., Maechler M., Konis K. (2023). Methods for robust statistics, a state of the art in the early 2000s, notably for robust regression and robust multivariate analysis.
<https://cran.r-project.org/web/packages/robust/robust.pdf>