Tax Incentives or Political Motivations? Evidence from Corporate Contributions*

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Abstract

Corporate philanthropy has been increasing in Western democracies in recent decades, a rise often explained by the development of tax policies offering substantial incentives to donate to charities. Yet, corporate philanthropy is also increasingly perceived as a mean to influence politics. In this paper, we estimate the tax price elasticity of corporate donations, and investigate how it differs depending on the recipients' purposes. To do so, we use an exhaustive administrative panel data set on firms' tax returns in France from 2013 to 2022, including the identity of the charities that benefit from the donations. We exploit two reforms that affect the price of donations for firms. We document significant bunching around two major regulatory thresholds, and shows that there is heterogeneity depending on the identity of the beneficiary.

Keywords: charitable giving, philanthropy, tax incentives, corporations, nonprofits.

JEL No: H2, H32, L3.

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1 Introduction

Corporate philanthropy has been on the rise in Western democracies in recent decades, with firms increasingly engaging in charitable giving (Cha and Rajadhyaksha, 2021). In the US, corporate donations increased from 0.093% of GDP in 1982 to 0.12% in 2022; in France, they jumped from 0.05% of GDP in 2010 to nearly 0.10% in 2022 (Cagé, 2024).

Economic literature provides various explanations for this trend, suggesting that firms use philanthropy to influence politics (Bertrand et al., 2020), appeal to customers and employees through pro-social behavior (Fioretti, 2022), and finance private interests of the board (Bénabou and Tirole, 2010). Many countries incentivize charitable giving through a favourable tax treatment, aiming to support the private provision of beneficial goods and services. While these incentives may be crucial for underfunded nonprofit organizations, they raise questions about the effectiveness and efficiency of leaving significant financial decision-making in the hands of private actors rather than the state. Furthermore, these tax incentives represent a considerable expense to the government in terms of forgone income, making it essential to evaluate their effectiveness for public policy. Yet, while there is a large literature on the price elasticity of individual giving (see e.g. Fack and Landais, 2010; Bakija and Heim, 2011; Almunia et al., 2020; Cagé and Guillot, 2022), very little is known on the effects of tax incentives on corporate contributions. First, the existing public finance literature on corporate contributions is mostly inconclusive (Gautier and Pache, 2015). Further, the extent to which the tax elasticity of corporate donations may vary with the donor motivations – and the purposes supported – has been completely overlooked.

This paper aims at filling these gaps. Estimating the tax price elasticity of charitable donations by firms pose significant empirical challenges, particularly due to reverse causality. In order to address these issues, we leverage administrative firm-level panel tax data and proposes novel empirical strategies exploiting two tax reforms that took place in France in recent years. Then, using unique non-publicly available data on the identity of the recipients, we investigate the heterogeneity of the tax-price elasticity depending on the purposes of the charities. Our dataset is an exhaustive annual panel dataset of all the French firms filing tax returns between 2003 and 2022, and includes detailed information on the charitable donations they claimed to receive tax deductions.

In France, corporate charitable contributions has benefited from a favorable tax treatment since 1987. Since 2003, this tax treatment has taken the form of a non-refundable corporate income tax credit. Until 2018, the non-refundable tax reduction (equal to 60% at the time) was capped at 0.5% of the firms' annual turnover. We first exploit a 2018 reform aimed at encouraging smaller firms to donate, which allowed firms to deduct 60%

of their charitable contributions within the limit of 0.5% of their turnover or €10,000, whichever is higher. Second, we exploit a 2019 reform that further increased small firms' incentives to donate by increasing the donation ceiling from €10,000 to €20,000 (or 0.5% of the turnover, as before).

To identify the causal impact of these reform, we use two different empirical strategies. First, we investigate the responsiveness of the firms at the intensive and at the extensive margin to the change in the maximum donation amount using a continuous Difference-in-Differences approach, where the continuous treatment is the firm-specific increase in the amount it can give following the reform(s). For the sake of comparability, we only include in the control group the firms whose turnover is below €6 million. Importantly for the validity of our empirical strategy, we show that the firms that were and were not affected by the reforms were following parallel trends with respect to their charitable donations before the reform. We show that, while treated firms increase the average amount they give following the reform, there is no extensive margin response.

Second, following seminal work by Kleven and Waseem (2013), we estimate whether there is bunching at the donation ceilings and derive the elasticity of corporate giving to the tax rate. Beforehand, we document significant round-number bunching (e.g. at €10,000 and €20,000). Next, we show that over 2020-2022, treated firms at the €20,000 threshold have an elasticity of 0.28, from which we recover the "pure" effect of the tax-related bunching. According to our estimates, a 10% increase in the tax credit rate leads to a 2% increase in the average amount donated.

Finally, we exploit a unique feature of our data to investigate whether this tax elasticity varies with the purpose of the donations. For the years 2019-2022, we indeed have itimised donation data for the firms who make more than €10,000 in donations in a year. With this information, we are first able to characterize what types of firms give to which type of non-profit organizations (NPOs). To do so, we rely on the purpose of these NPOs to which we apply a machine learning algorithm (Ridge classifier). Second, we compute firms' elasticity depending on the charitable sector. We document in particular higher bunching for charities related to politics.

Literature review Despite the growing importance of corporate donations, the literature on charitable giving by firms is still relatively scarce. In particular, there is few evidence on the tax price elasticity of charitable giving for firms, and the existing literature is mostly inconclusive. In the UK context, Baker and Dawson (2020) find that the relationship between tax rates and corporate charitable giving is non-linear and non-monotonic, following an inverted U-shape, but their estimates rely on a small sample of 295 firms. In the US context, Carroll and Joulfaian (2005) find that corporate donations

decline when income tax increases. However, while they use administrative micro data, they only rely on a sample of corporate income tax returns. Overall, as highlighted by Gautier and Pache (2015) who survey 162 academic papers on corporate philanthropy, not only there are only a few studies that investigate for a corporation tax effect, but overall the existing literature is mostly inconclusive. Hence, our first contribution to the literature is to provide the first estimation of the tax price elasticity of corporate giving using a exhaustive administrative panel data of firms.

Compared to the large literature that estimates the tax-price elasticity of *individual* giving (see Feldstein and Taylor, 1976; Randolph, 1995; Bakija and Heim, 2011; Andreoni and Payne, 2013; Meer and Priday, 2020, among others), we contribute by providing the first elasticity of giving (of firms or individuals) depending on the recipients of giving. Furthermore, there is no reason to belief that firms and individuals will have similar giving behaviors and elasticities.

We also contribute to the recent literature that has shown that, at least in the U.S. context, corporations sometimes use giving as a means to influence politics (see in particular Bertrand et al., 2020, 2021), by providing evidence on the heterogeneity of bunching depending on the purposes of the recipients.

The rest of the paper is organized as follows. In Section 2 below, we provide historical background on tax deductions for corporate charitable contributions in France, and describe the tax reforms that took place during our period of interest. Section 3 describes the data and provides descriptive statistics, and we present our empirical strategy in Section 4. In Section 5, we present and discuss the results. Finally, Section 6 concludes.

2 Institutional Setting

Our is to identify the price elasticity of firms' charitable donations. To this end, we leverage two tax reforms implemented in 2018 and 2019 which changes the tax schedule of French firms differently depending on their sales revenues. We here start by describe the French regulatory background for corporate donations and then provide an overview of the reforms.

2.1 The tax treatment of corporate philanthropy before 2018

As of today, corporate charitable donations are highly incentivized in France. Over last decades, four major reforms have shaped the tax incentives of firms regarding charitable donations. As a result, the tax treatment of charitable giving is now among the most generous of OECD countries [REFXXX].

The French corporate income tax The French Corporate income tax (*"impôt sur les sociétés"*) was created in 1948, with an initial rate of 50%, which now stands at 25%. The statutory rate was 33.3% from 1993 to 2018, and has since been gradually lowered to reach 25% in 2022.[1]

The 1987 "Loi Léotard" The first major legislative reform regarding corporate donations was the 1987 *Loi Léotard*[2], which created the first tax incentives for charitable donations in France and laid the groundwork for the current tax framework. This law allowed firms to claim tax deductions for charitable contributions up to 0.2% of their taxable income for donations to public interest organizations (e.g., philanthropic, educational, environmental,etc). This cap was set at 0.3% for donations to a smaller set of higher education or artistic institutions. Firms donating more than the cap are allowed to carry the outstanding amount forward over five years.

Importantly, this law established the criteria for eligible charitable organizations, stipulating that beneficiary associations and foundations must be of general interest, with philanthropic, educational, scientific, artistic, or social purposes[3].

The 2003 "Loi Aillagon" In 2003, the *Loi Aillagon*[4] introduced a 60% non-refundable tax credit for corporate charitable contributions, capped at 0.5% of the firms' annual revenues. At a time when the statutory corporate income tax rate stood at 33.3%, it replaced a tax reduction by a tax credit whose rate was higher – 60% – and increased the maximum deductible amount from 0.2% of sales revenues to 0.05%.

2.2 The 2018 and 2019 reforms

In this paper, we use two reforms that changed the tax credit schedule to estimate the price elasticity of charitable contributions.

2018 – increase in the tax credit cap and reporting requirements In 2018, the *Cour des Comptes* – the French equivalent of the U.S. Government Accountability Office or the UK National Audit Office – issued a report on corporate philanthropy. This report emphasized the small share of SMEs making donations relative to larger firms and highlighting that is may be due to the 0.05% cap being too low for firms with low levels

[1]Since 2002, SMEs can further benefit from a reduced statutory rate on their profits up until a threshold. For more details, refer to **??**.

[2]Article 238 bis du Code Général des Impots, July 24, 1987

[3]The organisms in question must be based in France or the European Union.

[4]Law No. 2003-709 of August 1, 2003

of sales.[5]

In this context, the 2018 reform brought two important changes.[6] The first and most important one was the increase of the 0.5% cap for small firms. Specifically, the reform allowed firms to deduct charitable donations of an amount up to 0.5% of their annual revenue *or* €10,000, whichever is higher. The tax credit rate remained unchanged and equal to 60%.[7] Hence, this reform allowed all the firms with an annual revenue below €2 million to increase the amount of corporate donations they could itemize (this amount is unchanged for firms with an annual revenue of €2 million or above).[8]

Second, the law introduced additional reporting requirements for firms claiming tax deductions for charitable donations.[9] From January 1, 2019, any firm making more than €10,000 in donations eligible for tax reduction during a fiscal year is required to complete a detailed declaration form for their donations.[10] This form must include the name and address of the recipient organization, as well as the date and precise amount of each donation. Thanks to this form, since 2019, the fiscal administration compiles for each year each pair of donor and beneficiary, along with the associated amount, provided that the total exceeds the €10,000 threshold. This results in a unique opportunity to investigate the response of firms to tax incentives based on the characteristics of beneficiaries.

2019 – increase in the tax ceiling and decrease in the deduction rate The 2019 reform introduced further changes.[11] First, it raised the maximum threshold for smaller firms from €10,000 to €20,000 (or 0.5% of the turnover, whichever is higher, as before). This implies that firms with annual revenues below €4 million could claim up to twice as much tax credit starting in 2020.[12] Figure 1 summarizes the change in the tax credit base induced by the 2018 and the 2019 reforms.

Second, the reform changed the marginal tax credit rate for donations exceeding €2 million for firms with more than €40 million in sales (and for which the maximum amount

[5] "Faced with the pre-eminence of large companies, the more marginal role of SMEs and VSEs is the subject of regular questioning by actors in the voluntary and philanthropic sector. These questions mainly concern the potential obstacle posed by capping the tax reduction at 0.5% of pre-tax turnover [...]." *Le Soutien public au mécénat des entreprises: un dispositif à mieux encadrer*, Cour des Comptes, November 2018.

[6] Law No. 2018-1317 of December 28, 2018, on the Finance Act for 2019.

[7] Article 148.

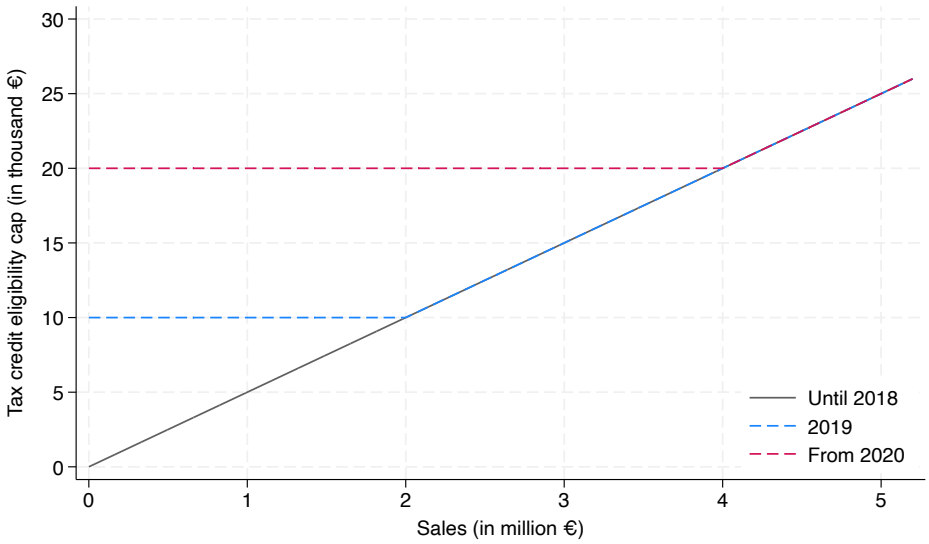
[8] As an illustration, one can consider a firms with sales equal to €1 million. Before the 2018 reform, this firm would have been able to claim up to €3,000 of tax credit (60% of 0.5% of €1 million). After the reform, this firm could claim up to €6,000 of tax credit (60% of €10,000).

[9] Articles 148 and 149.

[10] These donations can be made to several different institutions, or in multiple payments, as long as the annual sum exceeds €10,000.

[11] Law No. 2019-1479 of December 28, 2019 for 2020, Article 134.

[12] E.g., while under the pre-2019 framework, firms with an annual revenue below (or equal to) €2 million could claim up to €10,000 in tax reduction, post-reform, they could now claim up to €20,000.



Notes: The figure depicts the increase in the donation cap for smaller firms following the 2019 reform. The solid grey line represents the tax credit cap equal 0.5% of sales. The dashed blue line illustrates the 2019 increase in the tax credit cap for firms with sales below 2 million euros. The dashed pink line does the same for the 2020 increase in the tax credit cap for firms with sales below 4 million euros.

Figure 1: Change in the tax credit eligibility cap

eligible to the tax credit exceeds €2 million).[13] Up to €2 million of donation, the tax credit rate is 60%, as before, but drops to 40% past €2 million. Figure 2 illustrates the change in the price for large donations following this reform.

3 Data and descriptive statistics

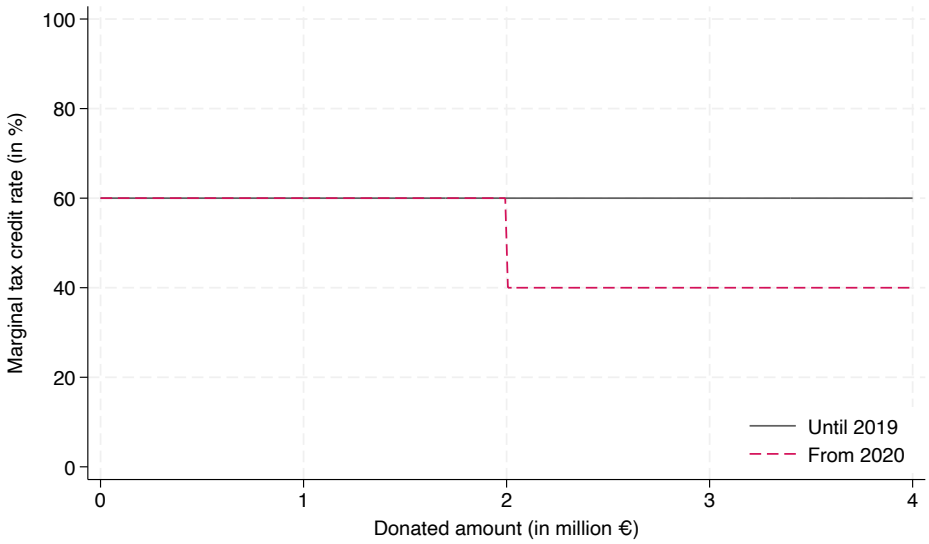
This paper uses confidential data sourced from the General Directorate of Public Finance, with access facilitated through the secure environment provided by the CASD ("Centre d'accès sécurisé aux données"). We rely on three different administrative datasets that we describe in turn in this section, and that we complement by adding information regarding the purpose of the recipient charities.

3.1 Administrative corporate tax data

Firms' donations (MVC Mécénat) We first rely on the MVC Mécénat dataset[14], which encompasses all movements related to corporate tax receivables as a result of charitable donations. The dataset provides detailed information about the company, such as the firm identifier, company name, as well as specifics regarding the tax receivables, including the amount, nature of the movement, year of initialization, year of settlement,

[13] Article n°238 of the General Tax Code

[14] MVC stands for *"Mouvements sur créances de crédit d'impôt"*, i.e. changes in tax credit receivable.



Notes: The figure plots the marginal tax credit rate as a function of the donated amount. The solid grey line represents the marginal tax credit rate schedule that existed until 2020. The dashed pink line represents the schedule that has existed since 2020.

Figure 2: Change in the marginal tax credit rate

and nature of the receivable. From this data, we are able to calculate the precise amount firms have given and deducted in each year.

Figure 3 plots the evolution of the share of firms declaring a charitable donation between 2003 and 2022. It steadily increases in recent years and reaches 14% in 2022.

Donors' characteristics (BIC IS-RN) We merge this dataset to the BIC IS-RN[15], i.e. an exhaustive dataset of firm corporate tax declarations from 2003 to 2022, using the firm identifier (SIREN).[16] This dataset contains annual detailed information on the firms (including their location, size, industry, profits, deficit, revenue and payroll).

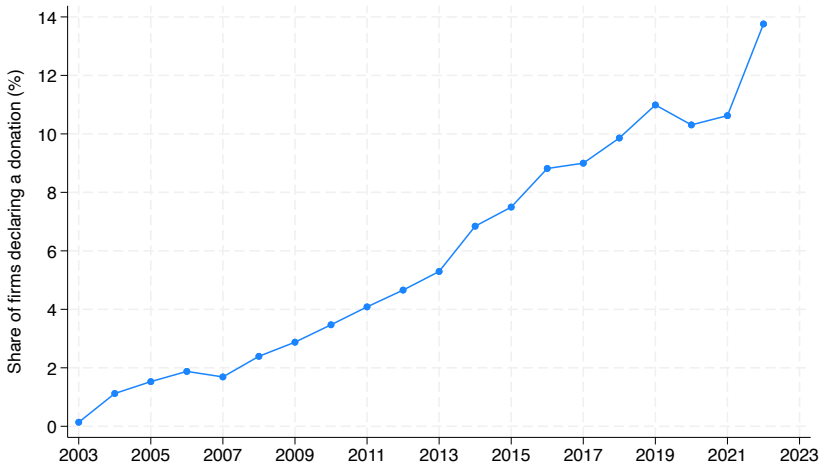
3.2 Recipients' characteristics (2069-RCI)

Following the 2018 reform, firms who claim a deduction on donations exceeding €10,000 have to fill out a complementary form – the 2069-RCI[17] –, in which they must specify information on each of the beneficiaries of their donations that year. The resulting dataset covers the years 2019 to 2022. The data includes the firm name, identifier (SIREN),

[15]BIC stands for *"Bénéfices industriels et commerciaux"*, i.e. Industrial and commercial profits. In France, firms are subject to one of two different tax regimes: income tax (*"impôt sur le revenu"*) or corporate tax (*"impôt sur les sociétés"*, where the name BIC IS (for *"impôt sur les sociétés"*) RN (for "régime normal"). The difference between the two does not matter in our context given that the laws regarding charitable giving are applied in the same manner to both tax regimes.

[16]The firm identifier or SIREN is unique to each firm, and common across all administrative datasets, allowing us to merge each dataset easily.

[17]Standing for "Réductions et crédits d'impôt", i.e. tax reductions and credits



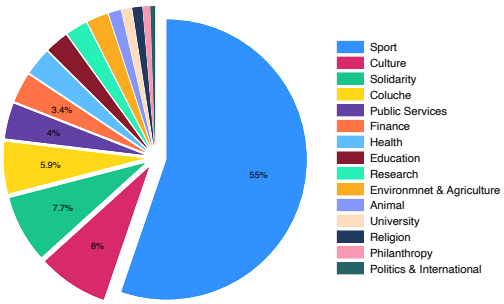
Notes: The figure plots the evolution of the share of firms who declare a charitable donation on their tax form from 2003 to 2022. The data on the number of firms giving comes from the MVC Mécénat dataset, and the share is computed by normalizing this number by the total number of firms filing corporate tax returns from the BIC IS-RN.

Figure 3: Evolution of the share of firms declaring a charitable donation on their tax form, 2003-2022

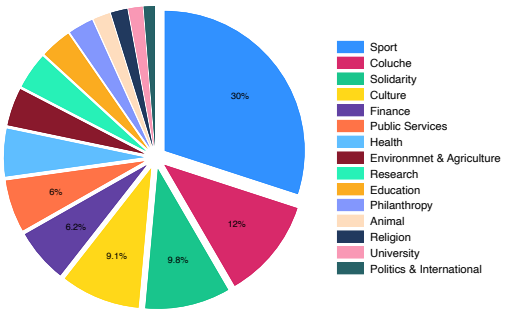
address, the amount donated, the date of the donation, the beneficiary name, address, and if available the beneficiary identifier.

Using the beneficiary names, we recover their declared purpose by matching their names to the French national directory of associations (*"Répertoire National des Associations"* – RNA), the repository of all the non-profit organizations, which contains the association's declared purpose (see e.g. Urvoy, 2020; Cagé et al., 2023). This allows us to categorize the associations into 15 different categories, broadly based on the categories from Reich (2018) and from observed latent categories. The categories are: (i) Sports, (ii) Coluche, (iii) Health, (iv) Solidarity, (v) Public Services, (vi) Education, (vii) Universities, (viii) Environmental, (ix) Culture, (x) Politics & International Relations, (xi) Research, (xii) Animal Welfare, (xiii) Religion, (xiv) Finance, and (xv) Philanthropy.

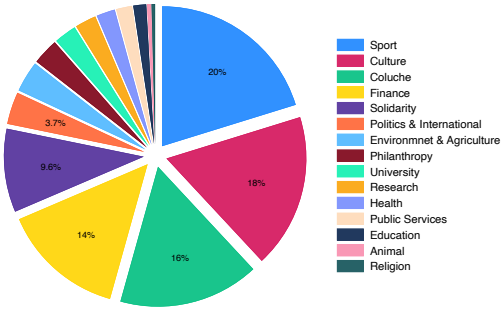
More precisely, to do so, we select a random subset of $2,000$ associations, which we manually classified into these 15 categories. We then use a machine learning algorithm (the Ridge classifier) to automatically classify the remaining associations. As appears clearly in Figure 4, while in terms of number of charities concerned, sport appears has the most supported sector, we see that on average sport charities tend to receive smaller amounts. Politically-involved charities represents in 2022 up to 3.7% of all the amount received (sub-Figure 4c).



(a) Share of number of recipient charities



(b) Share of number of donating firms



(c) Share of total amount received

Notes: The figure plots the relative importance of the differet kinds of charities in 2022, using the 2069-RCI data that we complement with the charity purposes.

Figure 4: Charity purposes, 2022

4 Empirical strategy

In this section, we present the novel empirical strategies we develop to estimate the tax price elasticity of corporate donations, using both the 2018 donation reform and the 2019 one.

4.1 Difference-in-Differences

In order to analyze the impact of the 2018 reform increasing the charitable donation ceiling, we employ a Difference-in-Differences (DiD) approach. We focus our analysis on the years 2015-2022, as the reforms increasing the donation ceiling were enacted in 2018 and 2019 (for the 2019 and 2020 fiscal years, respectively), and 2022 is the final year in our dataset.

In our Difference-in-Differences estimation, we employ a continuous treatment variable that reflects the cap imposed on firms' charitable donations at any given point. Using a continuous treatment intensity enables us to capture the varying levels of exposure to the policy change across firms while incorporating the two reforms and their differential effects. This approach allows for a more nuanced analysis of the reform's impact, recognizing that firms with higher revenues face larger caps and, consequently, have different

incentives to donate.

Specifically, the treatment intensity is determined by the firm's annual sales and the cap thresholds established in the tax reforms in the following manner:

$$\log(\text{cap}_{jt}) = \begin{cases} 0.5\% \times \text{sales}, & \text{if year} \leq 2018, \\ \max(10{,}000, 0.5\% \times \text{sales}), & \text{if year} = 2019, \\ \max(20{,}000, 0.5\% \times \text{sales}), & \text{if year} \geq 2020. \end{cases} \tag{1}$$

The sample used for the DiD estimation consists of a balanced panel of firms with 2018 sales below €6 million, excluding firms that are part of a corporate group (i.e., parent or subsidiary firms).[18] We can thus estimate the following model:

$$D_{j,t} = \pi_0 + \pi_1(\text{Treatment Intensity} \times \text{post}) + X'_{j,t}\beta_2 + \mu_j + \gamma_t + \epsilon_{j,t}, \tag{2}$$

where $D_{j,t}$ represents the dependent variable for firm j at time t. For our dependent variable, we use three different specifications: the log of the amount donated (encompassing both margins), an indicator variable equal to one if the firm declares a positive donation and zero otherwise (extensive margin), and the amount donated conditional on giving (intensive margin).

The variable Treatment Intensity is the cap-based measure of the treatment, and post is a binary variable indicating the post-reform period. The vector $X_{j,t}$ includes firm-level covariates, such as the log of average wages and the firm sector,[19] to control for firm-specific characteristics that may influence charitable giving behavior. The equation includes firm fixed effects (μ_j) and time fixed effects (γ_t) to control for unobserved heterogeneity across firms and over time. The error term is denoted by $\epsilon_{j,t}$ and is clustered at the firm level.

Our main independent variable of interest, Treatment Intensity$_j \times$ Post$_t$, is the interaction term capturing the treatment effect post-reform.

4.2 Instrumental Variable Approach

To address potential endogeneity in the treatment variable—the cap on deductible donations—we employ an instrumental variable approach. The estimation proceeds in two stages. In the first stage, predicted values of the donation ceiling are generated based on pre-reform firm sales. Lagged base-year sales serve as instruments to mitigate concerns of reverse causality, following a flexible spline specification to control for the non-linear

[18] The analysis is also robust to alternative sample definitions, including excluding firms with 2018 sales below €1 million.

[19] As determined by INSEE, the French National Institute for Statistics and Economic Studies.

relationship between firm size and donation behavior. In the second stage, we estimate the effect of the predicted ceiling on donation amounts, separately analyzing the probability of donating (extensive margin) and the log of donation amounts conditional on positive donations (intensive margin).

4.2.1 First Stage: Predicted Cap

The first stage uses predicted caps based on pre-reform sales (2017–2019) as instruments for the observed caps. The first-stage regression is specified as:

$$\log(\text{cap}_{j,t}) = \pi_0 + \pi_1 \log(\text{cap}_{j,t}^{2017}) + \pi_2 \log(\text{cap}_{j,t}^{2018}) + \pi_3 \log(\text{cap}_{j,t}^{2019}) + \mathbf{X}'_{j,t}\pi_4 + \mu_j + \gamma_t + \varepsilon_{j,t}, \tag{3}$$

where $\text{cap}_{j,t}^{\text{year}}$ are the predicted caps for each year prior to the reform, $\mathbf{X}'_{j,t}$ is a vector of firm-level controls, including the log of average wages, sector fixed effects, and a 5-spline function of 2018 log sales to flexibly control for firm size, μ_j and γ_t are firm and year fixed effects, respectively, and $\varepsilon_{j,t}$ is the error term.

4.2.2 Second Stage: Causal Effect on Donations

The second-stage regression estimates the effect of the cap on corporate donations, controlling for other firm-level characteristics:

$$y_{j,t} = \beta_0 + \beta_1 \log(\widehat{\text{cap}}_{j,t}) + \mathbf{X}'_{j,t}\beta_2 + \mu_j + \gamma_t + \varepsilon_{j,t}, \tag{4}$$

where $y_{j,t}$ is the outcome variable of interest, representing firms' donation behavior. The predicted cap, $\widehat{\text{cap}}_{j,t}$, serves as an instrument for the observed cap, ensuring identification of the causal effect of the reform. We incorporate lagged predicted caps (e.g., from 2017, 2018, and 2019) to account for baseline firm sales and pre-reform variations in donation behaviors.

4.3 Bunching Analysis

To further firm behavior in response to the charitable donation thresholds introduced by the French tax reforms, we employ a bunching estimation following the methodology of Kleven and Waseem (2013). Specifically, we focus on the two distinct thresholds set by the reforms: €10,000, implemented in 2019, and €20,000, implemented in 2020. For each threshold, we distinguish between treated firms—those whose donation caps are determined by the new threshold—and control firms, whose donation limits remain governed by pre-reform rules. For the €10,000 threshold, the treated firms are all firms

whose annual sales are below €2 million, while for the €20,000 threshold, the treated firms are those whose annual sales are below €4 million.

Bunching analysis enables us to identify behavioral responses to the reform by examining the distribution of donations near the specified thresholds. Firms facing a donation cap may exhibit excess mass at the threshold, reflecting an incentive to cluster donations at this limit to maximize the tax benefits associated with charitable giving. The presence and magnitude of this bunching serve as a proxy for the elasticity of donations with respect to the tax incentives created by the reform.

The estimation procedure begins with constructing the counterfactual donation distribution that would have prevailed in the absence of the threshold effects. This counterfactual is approximated by fitting a flexible polynomial to the observed donation distribution while excluding the region surrounding the threshold where bunching is anticipated. We exclude a window of €500 on either side of the threshold in question. Additionally, we bootstrap the standard errors using 100 replications. Excess mass is then calculated as the difference between the observed density of donations at the threshold and the predicted density from the counterfactual distribution.

To calculate the elasticity of donations with respect to the tax incentives, we use the following equation:

$$\text{Elasticity} = \frac{-b/z^*}{\log(1 - \frac{\Delta\tau}{1-\tau})} \tag{5}$$

where b is the excess mass (the observed density of donations at the threshold minus the predicted density), z^* is the threshold (€10,000 or €20,000), τ is the rebate rate (in this case 0.6). This formula captures the proportional response of donations to the change in the threshold, providing a direct measure of firms' sensitivity to tax incentives.

By separately analyzing the bunching behavior at €10,000 and €20,000 thresholds, we are able to assess firms' responsiveness to varying levels of tax incentives and explore heterogeneity across firms of different sizes. This approach provides insight into the extent to which donation decisions are sensitive to changes in tax policy, shedding light on the effectiveness of charitable tax incentives in stimulating firm-level giving.

5 Results

5.1 Change in Ceiling

In this section we report the results of the difference-in-difference analysis employed for the change in price ceiling.

Table 1 presents the results of our DiD analysis. We utilise a continuos measure of

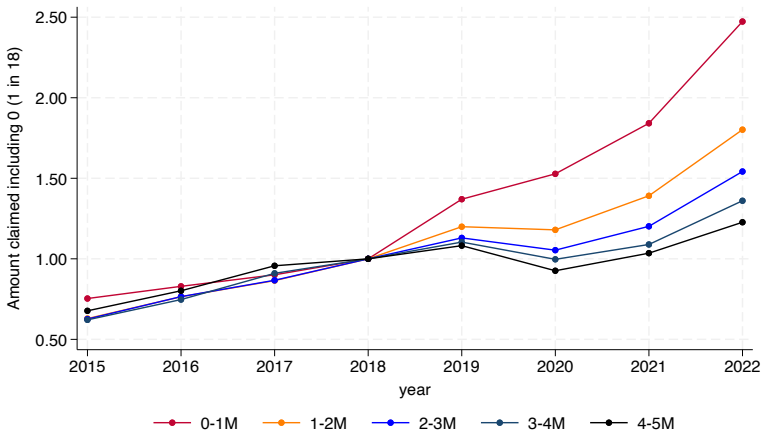


Figure 5: Pretrend Analysis for Difference-in-Difference

Notes: The Figure plots the average amount of charitable donations (normalized to one in 2018) separately for the "control" firms (in blue) who do not face an increase in the maximum amount deductible following the 2018 reform and the "treated" firms (in red) who, following the 2018 reform, faced a significant increase in the maximum amount deductible. The treated firms are all firms with an annual revenue in 2018 between €1-2 million, the control group is made up of all firms with an annual revenue in 2018 between €2-3 million. Charitable giving includes all the charitable donations declared on tax returns.

Table 1: Difference-in-Difference Change in Price Ceiling

	Donations/sales (with 0)		Donate		Donations/sales (excluding 0)	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment intensity	0.000470***	0.000429***	-0.00788	0.00508	0.00117***	0.00103***
$\times \mathbf{1}\{t \geq 2019\}$	(0.000)	(0.000)	(0.006)	(0.006)	(0.000)	(0.000)
Year FE	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓
Observations	530,282	530,282	530,684	530,684	195,373	195,373
Cluster(firms)	77,751	77,751	77,751	77,751	49,303	49,303
Mean Dep Var	0.001	0.001	0.415	0.415	0.002	0.002
Sd Dep Var	0.011	0.011	0.493	0.493	0.018	0.018

Notes: * p<10, ** p<0.05, *** p<0.01. The time period is 2015-2022. Observations are at the firm-year level. Our sample of analysis include all firms with an annual revenue between €1-3 million in 2018. The dependent variables are the sum of donations including 0 over annual sales, the probability of donation, and the sum of donations excluding zeros over annual sales. Columns (1) to (3) show the results of the difference in difference estimate. The vector of controls includes the logarithm of average wages, as well as the firm sector of activity. All specifications control for year and firm fixed effects. Standard errors are clustered at the firm level.

treatement intensity as defined in 1. Figures 5 and show the visual representations of the treated and control groups pre and post reform. The treatment and control groups follow closely prior to treatment, satisfying the parallel trends assumption.

The coefficients in Columns (1) and (2) indicate a significant positive relationship between treatment intensity and the ratio of donations to sales. Specifically, a 0.000470 (Column 1) and 0.000429 (Column 2) increase is observed in this ratio for treated firms after 2019. While this may seem like a relative small increase in charitable donations, it is important to note that for the firms in our treatment group the average ratio is equal to .001, and as such a coefficient of .000470 represents a 47% relative increase in the dependent variable, which is substantial in this context.

Columns (3) and (4) present the impact on the probability of a firm donating. These coefficients are not statistically significant, suggesting a weak effect on the extensive margin.

Columns (5) and (6) presents the intensive margin results. The coefficients (0.00117 and 0.00103) are larger than those in Columns (1) and (2). As before, the coefficients seem small at first glance, but in this case the value of .001 represents a 50% increase relative to the average dependent variable value of .002. The results indicate that treated firms responded strongly and positively on the intensive margin following the reform.

In order to better the heterogeneity of treatment effect over time we perform an event study on each of our dependent variables for our DiD estimation. The graph for the event study of the overall effect, is found in figure 6 while the graph for the intensive margin effect can be found in 7. We find that the effect increases steadily over time, indicating that firms may need time to adjust their giving behavior. However it is important to note that these results must be interpreted with caution: the reform in 2019 likely affected firms giving behavior further, in addition to the COVID-19 pandemic, which may also have pushed firms to give more.

5.2 Instrumental Variable Approach

We then proceed to our estimation of the the Instrumental Variable approach as described in 3 and 4. Table 2 presents the intensive margin results while 4 presents the extensive margin results.

Columns (4) through (6) of Table 2 present the results of the intensive margin estimates using the IV approach. Prior to accounting for the 5-spline in 2018 log sales, we find an an effect equivalent to a 3% increase in the amount donated. Once we add the income controls, this effect increases to an .11% increase in the amount donated for a 1% increase in the predicted cap.

Columns (4) through (6) of Table 4 present the results of the extendive margin es-

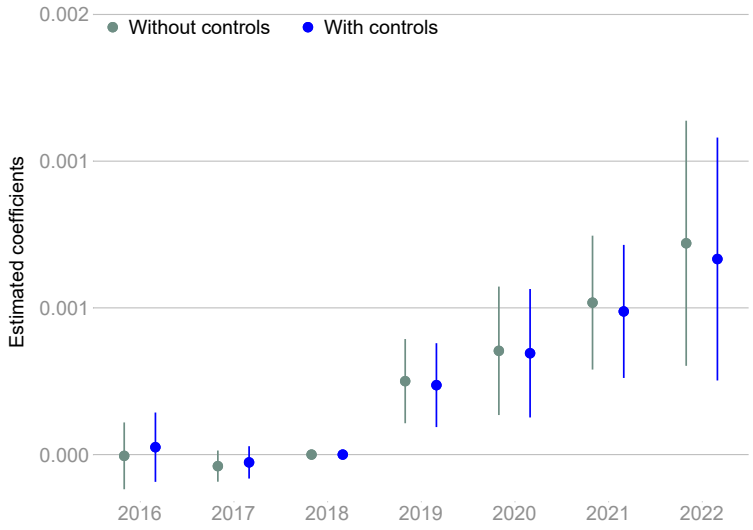


Figure 6: Event Study: DiD Overall Effect

Notes: The Figure plots the regression coefficients for the DiD analysis using binary treatment. The dependent variable is the inverse hyperbolic sine transformation of charitable donations by firms. The period treated is 2015-2022.

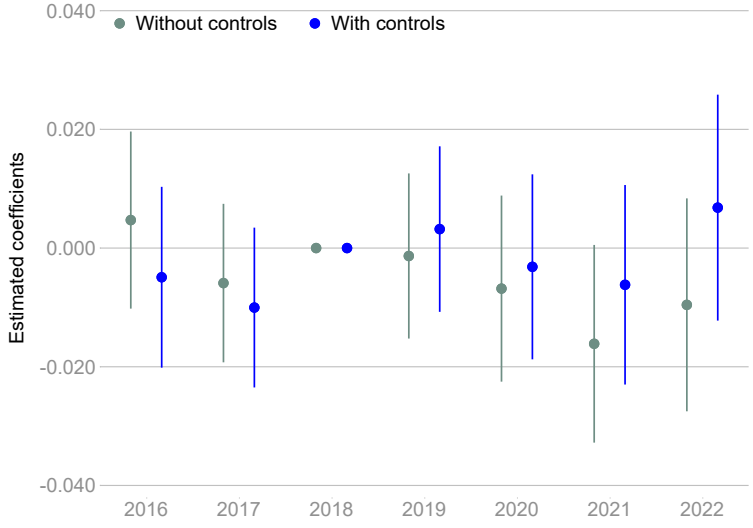


Figure 7: Event Study: DiD Intensive Margin Results

Notes: The Figure plots the regression coefficients for the DiD analysis using binary treatment. The dependent variable is the inverse hyperbolic sine transformation of charitable donations by firms. The period treated is 2015-2022.

Table 2: IV results: Intensive Margin

	OLS			2SLS		
	(1)	(2)	(3)	(4)	(5)	(6)
log(*cap*)	0.133***	0.107***	0.384***	0.046***	0.049***	0.152***
	(0.005)	(0.005)	(0.012)	(0.005)	(0.005)	(0.018)
Year FE	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓
Controls		✓	✓		✓	✓
Income controls			✓			✓
F-Stat	.	.	.	73	9073	7920
Observations	308,814	308,814	308,512	308,814	308,814	308,512
Cluster(households)	73,878	73,878	73,784	73,878	73,878	73,784
Mean Dep Var	7.101	7.101	7.101	7.101	7.101	7.101
Sd Dep Var	1.521	1.521	1.521	1.521	1.521	1.521

Table 3: **Notes:** * p<10, ** p<0.05, *** p<0.01. The time period is 2015-2022. Observations are at the firm-year level. Our sample of analysis include all firms with an annual revenue below 6 million euros. The dependent variable is the log of the amount claimed by firm j in year t (intensive margin). Columns (1) to (3) show the results of OLS estimate, columns (4) to (6) that of the IV. The vector of controls includes the logarithm of average wages, as well as the firm sector of activity. All specifications control for year and firm fixed effects. Standard errors are clustered at the firm level.

Table 4: IV Results: Extensive Margin

	OLS			2SLS		
	(1)	(2)	(3)	(4)	(5)	(6)
log(*cap*)	0.029***	0.016***	0.054***	0.006***	0.006***	0.037***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.004)
Year FE	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓
Controls		✓	✓		✓	✓
Income controls			✓			✓
F-Stat	.	.	.	32	256	231
Observations	1,106,377	1,106,377	1,105,012	1,106,377	1,106,377	1,105,012
Cluster(households)	144,035	144,035	143,824	144,035	144,035	143,824
Mean Dep Var	0.405	0.405	0.405	0.405	0.405	0.405
Sd Dep Var	0.491	0.491	0.491	0.491	0.491	0.491

Table 5: **Notes:** * p<10, ** p<0.05, *** p<0.01. The time period is 2015-2022. Observations are at the firm-year level. Our sample of analysis include all firms with an annual revenue below 6 million euros. The dependent variable is the probability that firm j gives in year t (extensive margin). Columns (1) to (3) show the results of OLS estimate, columns (4) to (6) that of the IV. The vector of controls includes the logarithm of average wages, as well as the firm sector of activity. All specifications control for year and firm fixed effects. Standard errors are clustered at the firm level.

timates using the IV approach, the dependent variable is probability of donating. Once accounting for the all the controls we find a coefficient of .037. This can be interpreted as a .037% increase the probability of donationg for every 1% increase in the predicted cap. Applied to the context of the reforms, increasing the cap from €10,000 to €20,000—equivalent to a 100% increase—would translate to a 2.56 percentage point increase in the probability of donating, or a 6.4% increase relative to the mean donation probability of 40%.

5.3 Bunching analysis

We further analyze whether firms respond to the increase in the tax credit eligibility cap by bunching at the kink point this cap creates. The underlying idea is that firms may be inclined to make a donation up to the cap as they will be able to claim 60% of the donated amount in tax credit, but no longer above this cap, as the tax credit rate falls to zero. To explore this, we start by plotting the distribution of donations between €5,000 and €30,000 for the pre-reform period (2016-2018) both for firms whose sales are below €4 million – i.e. firms that will benefit from a higher cap – and firms whose sales are above €4 million.

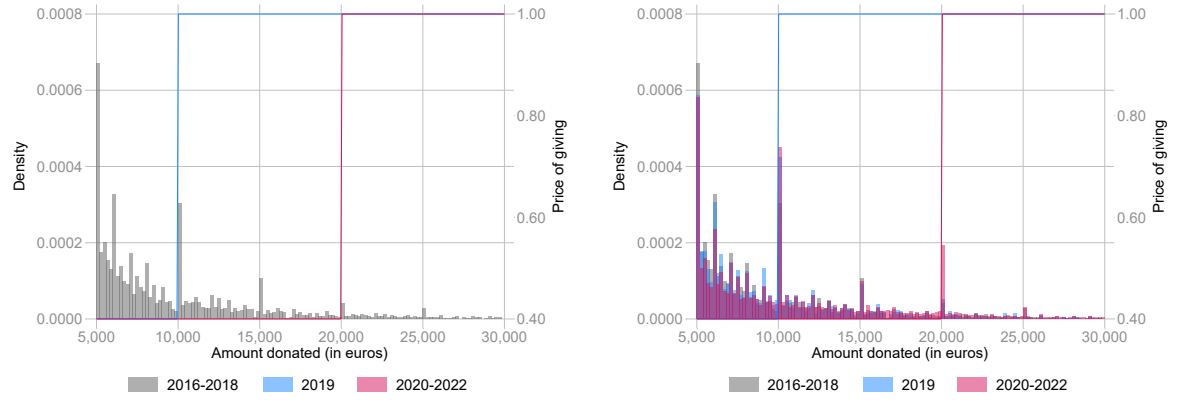
Figure 8 plots the histogram. First, in both cases, we observe bunching at round numbers (e.g. €10 thousand, €15 thousand, €20 thousand, etc.). This is reflective of firms' discretion regarding the amount they donate, as well as their image concerns when giving to the extent that giving a round number may be better perceived by beneficiaries and the general public.

Second, we note that while the mass at €20,000 grows only moderately following the 2019 reform for firms whose sales exceed €4 million (those unaffected by the change in ceiling), the increase in mass is much larger among firms below this threshold, suggesting that the increase in this latter group is largely due to the change in the tax reform.

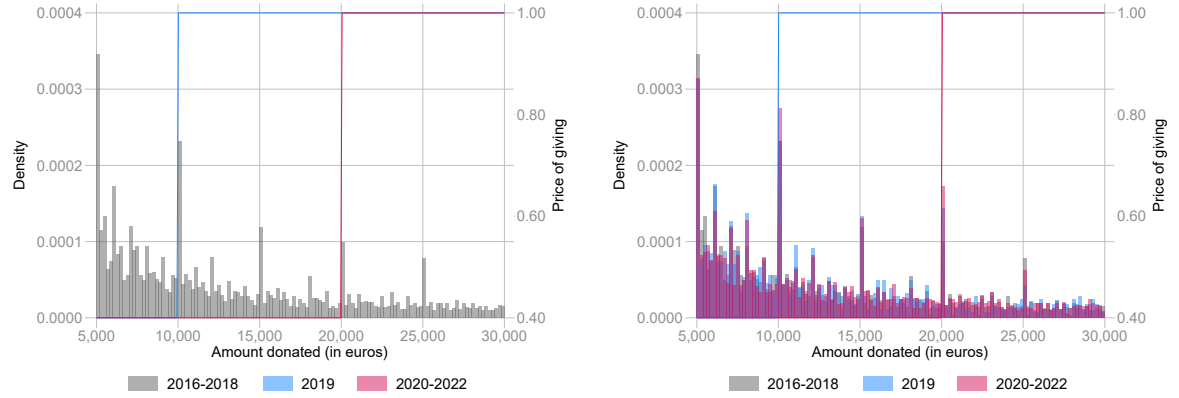
In the present context, our goal is to estimate the amount of bunching to recover the tax credit rate elasticity. To net out the bunching mass due to round-number bunching from the bunching mass driven by the response to the change in marginal tax credit rate, we systematically compare firms above and below the €4 million sales threshold, before and after the reform.

Figure 9 shows the bunching elasticities associated with the €20,000 cap, derived from Equation 5, over time for two subsamples of firms. In the pre-reform period, the estimated elasticities for the two subsamples are very similar, suggesting that round-number bunching is equally prevalent for the two sets of firms.

In contrast, the post reform period reveals notable differences. Among firms whose sales exceed €4 million, the elasticities remain stable over the time, even following the



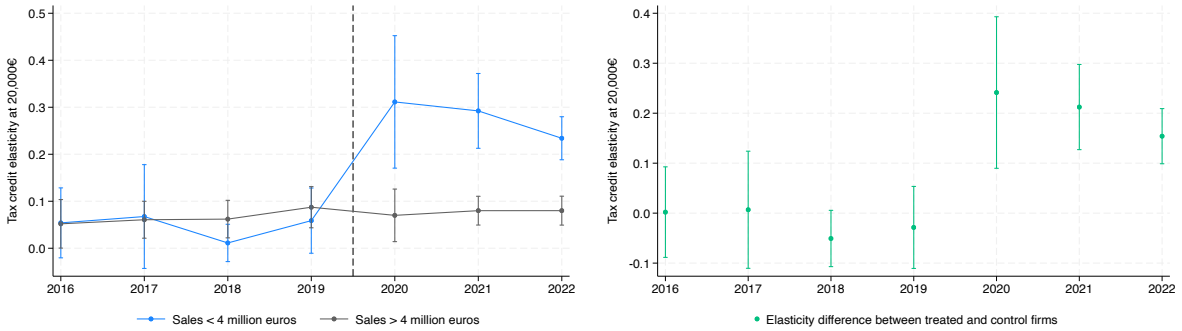
(a) Sales below 4 million euros



(b) Sales above 4 million euros

Figure 8: Bunching at tax credit eligibility caps

Notes: The Figure plots the distribution of donated amounts around the tax credit eligibility caps for different periods. In Panel 8a, the sample is restricted to firms with sales below €4 milllion. In Panel 8b only firms with sales above €4 milllion are considered.



(a) Bunching elasticities over time

(b) Difference in bunching elasticities over time

Figure 9: Bunching elasticities over time

Notes: The Figure plots the distribution of donated amounts around the tax credit eligibility caps for different periods. In Panel 8a, the sample is restricted to firms with sales below €4 milllion. In Panel 8b only firms with sales above €4 million are considered.

reform, implying that round number bunching is stable over time. However, for the firms with sales below €4 million, the estimated elasticity grows steadily over time. This is consistent with the idea that this increase is driven by the response to the reform.

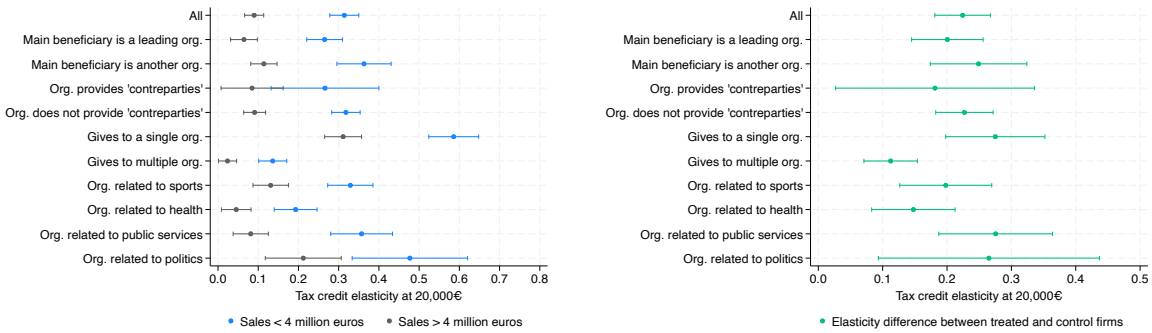
Panel B of Figure 9 highlights the yearly differences in elasticities between the two subsamples, with confidence intervals computed using the delta method. Before the reform, the difference in elasticities fluctuates around zero, suggesting no significant distinction between the two groups. In 2020, however, this difference jumps to approximately 0.25, demonstrating a clear divergence driven by the reform. While the magnitude of the difference decreases slightly over time—reaching 0.15 by 2022—it remains substantial and statistically significant. These findings illustrate that firms affected by the reform exhibit significantly greater bunching behavior relative to those that were not.

5.4 Bunching heterogeneity and firms' motives

To better understand the bunching behavior of firms, we extend our bunching analysis to explore how the observed patterns vary across types of beneficiaries targeted by their charitable contributions. Figure 10 presents the results.

We first consider whether firms give because they seek to promote their image. They may do so by siding with a renowned organization as a large share of the public knows of these organizations, and can immediately interpret firms' donation as doing good. We however do not find larger elasticities when considering firms giving to a leading organization – here defined as one of the top five beneficiary (Restos du Coeur, Secours Populaire, Croix Rouge, Emmaus, Secours Catholique).

Alternatively, firms may seek to tie closer relationships with organizations that are in a position to make the firm more visible. This could be the motive behind giving



(a) Bunching elasticities

(b) Differences in bunching elasticities

Figure 10: Bunchign elasticities, by type of beneficiary

Notes: Figure 10a reports the bunching elasticities measured at the €20,000 kink points in the years 2020 to 2022 for two sub-samples of firms: those with sales below €4 million, and those with sales above €4 million. Figure 10b report the difference in estimates for each group. Confidence intervals are computed using the delta method.

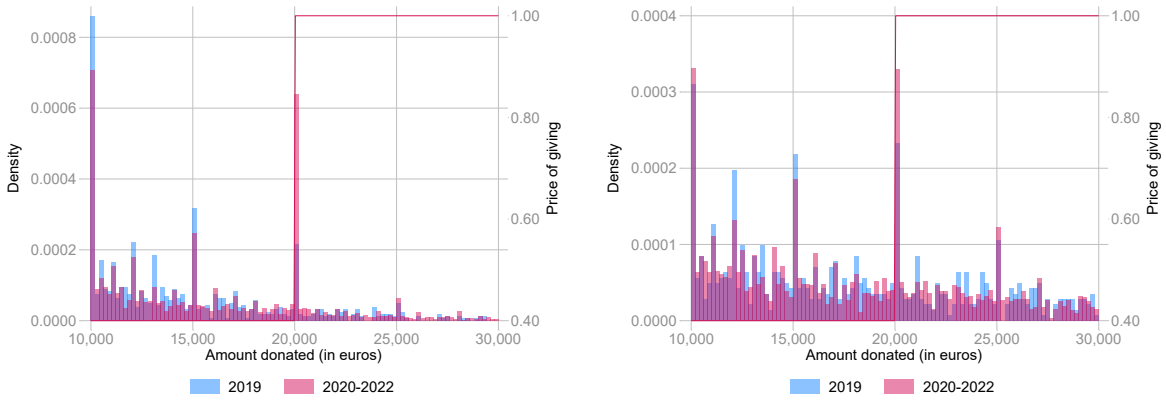
to organizations in charge of organizing large events, like sport organizations. Yet, the response of firms to tax incentives is only moderate regarding organizations related to sport activities.

Firms may also seek to give to organizations whose activity aligns with the interests of the firm. Donors may want to encourage organizations that, they think, will further their interests. We explore this possibility by creating a group of beneficiaries that engage with advocacy activities, and politics more broadly. In this case, we find elasticities that tend to be larger, suggesting that firms may value the political activity of beneficiaries.

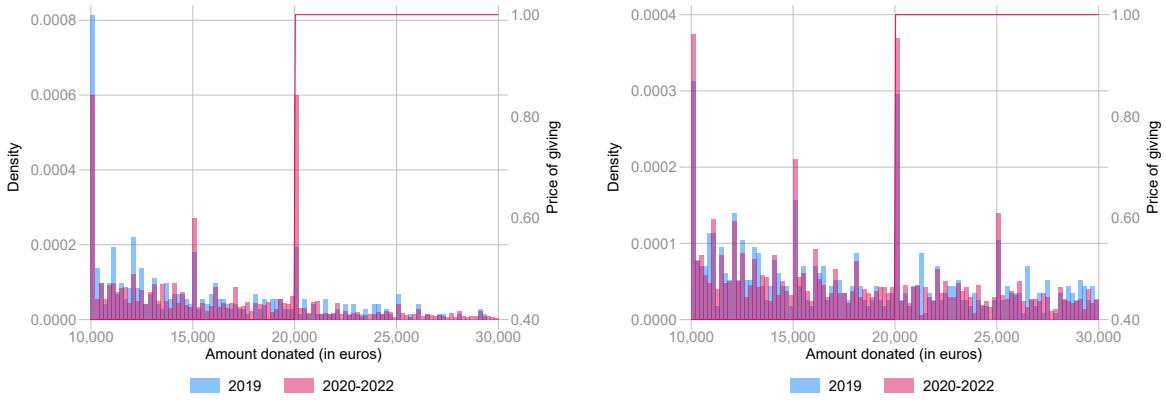
Finally, firms may only give to beneficiaries with which they have a closer relationship, meaning that they have a large degree of influence over the beneficiary, and can potentially use the funds as they see fit even after the donation. For example, firms may give to their own foundation. In the present setting, we explore whether firms respond to incentives by more when giving to a single beneficiary. They are more responsive when they give to a single entity, as potentially the firm and the beneficiary have closer ties.

Figure 11 illustrates the differences in bunching behavior when donations are limited according to the geographic reach of the beneficiaries. Specifically, Panel A displays the bunching behavior for donations made to local associations, defined as those operating exclusively within a single department. In this panel, we observe a pronounced bunching for treated firms. While bunching is also present for control firms, it is considerably smaller in magnitude—approximately half the size of the bunching observed for treated firms, and it remains relatively stable pre and post reform, pointing to the fact that it is largely due to round number bunching.

Panel B of Figure 11 presents similar graphs, but this time focusing on donations to beneficiaries with a broader geographic reach, operating across multiple departments. While the general patterns remain consistent with those observed for local associa-



(a) Beneficiary Operates in a Single Department



(b) Beneficiaty Operates in Multiple Departments

Figure 11: Bunching By Beneficiary Reach

Notes: The Figure plots the distribution of donated amounts around the tax credit eligibility caps for different beneficiary types according to their reach. In Panel 11a, the sample is restricted to donations to associations that only operate within one department, the left panel represents the treated firms while the right represents the control firms. In Panel 11b the sample is restricted to donations to associations that only operate within one department, again, the left panel represents the treated firms while the right represents the control firms.

tions—in particular, treated firms exhibit more pronounced bunching compared to control firms—it is noteworthy that the density of bunching at the threshold for treated firms appears slightly lower, whereas the opposite trend is observed for control firms.

6 Conclusion

In this paper we analyse the effects of the 2018 and 2019 reforms to the tax incentives for charitable donations by firms in France, using a comprehensive administrative tax data for the universe of French firms. We use several different methodologies to estimate the impact of the reforms, and how these may differ across firms and beneficiaireis. We first use a Difference-in-Difference approach, in which we find that the reforms had a significant effect, largely driven by the intensive margin. We find no significant evidence of an effect on the extensive margin.

We then proceed to an Instrumental Variable approach using as an instrument the predicted values of the donation ceiling. We find large intensive margin results–a 1% increase in the predicted cap would lead to a .11% increase in the amount donated. We also find relatively large effects on the extensive margin. In this case we estimate that a 1% increase would lead to a .037% increase in the probabilty of donation. In the case of the reforms this would imply that the transition from the the €10,000 threshold to the €20,000 threshold would lead to a 6.4% increase relative to the mean donation probability of 40%.

We then proceed to a bunching analysis, to estimate the tax credit rate elasticity. We show that the treated firms exhibit higher elasticities following the reforms, and that these higher elasticities persist over time. We further the analysis by estimating how the elasticity may change with beneficiary and firm charactersistics. We find that firms exhibit higher elasticities when giving to political and public service assocaitaitons, rather than to health and sports. We find that firms also show higher elasticities when they give to a single beneficiary, showing that firms are more responsive to the tax incentives in these cases, likely due to closer ties between the firms and the beneficiairies. We aslo explore the relationship between the beneficiary being a local association–meaning that it operates in a single department–or a broader association. We find that treated firms seem to show slightly higher levels of bunching for firms that act locally.

References

Almunia, M., Guceri, I., Lockwood, B., and Scharf, K. (2020). More giving or more givers? The effects of tax incentives on charitable donations in the UK. *Journal of Public Economics*, 183:104114.

Andreoni, J. and Payne, A. A. (2013). Charitable Giving. In Auerbach, A. J., Chetty, R., Feldstein, M., and Saez, E., editors, *Handbook of Public Economics*, volume 5 of *Handbook of Public Economics*, pages 1–50. Elsevier.

Baker, P. L. and Dawson, C. (2020). The corporation tax elasticity of charitable donations. *Journal of Economic Behavior & Organization*, 178:1–14.

Bakija, J. and Heim, B. T. (2011). How Does Charitable Giving Respond to Incentives and Income? New Estimates From Panel Data. *National Tax Journal*, 64(2):615–650.

Bertrand, M., Bombardini, M., Fisman, R., Hackinen, B., and Trebbi, F. (2021). Hall of Mirrors: Corporate Philanthropy and Strategic Advocacy. *The Quarterly Journal of Economics*, 136(4):2413–2465.

Bertrand, M., Bombardini, M., Fisman, R., and Trebbi, F. (2020). Tax-exempt lobbying: Corporate philanthropy as a tool for political influence. *American Economic Review*, 110(7):2065–2102.

Bénabou, R. and Tirole, J. (2010). Individual and corporate social responsibility. *Economica*, 77(305):1–19.

Cagé, J. (2024). Political Inequality. *Annual Review of Economics*, 16:455–490.

Cagé, J. and Guillot, M. (2022). Is Charitable Giving Political? Evidence from Wealth and Income Tax Returns. CEPR Discussion Papers 17597, C.E.P.R. Discussion Papers.

Cagé, J., Hengel, M., and Huang, Y. (2023). The Far-Right Donation Gap. techreport.

Carroll, R. and Joulfaian, D. (2005). Taxes and Corporate Giving to Charity. *Public Finance Review*, 33(3):300–317.

Cha, W. and Rajadhyaksha, U. (2021). What do we know about corporate philanthropy? A review and research directions. *Business Ethics, the Environment & Responsibility*, 30(3):262–286.

Fack, G. and Landais, C. (2010). Are Tax Incentives for Charitable Giving Efficient? Evidence from France. *American Economic Journal: Economic Policy*, 2(2):117–141.

Feldstein, M. and Taylor, A. (1976). The Income Tax and Charitable Contributions. *Econometrica*, 44(6):1201–1222.

Fioretti, M. (2022). Caring or Pretending to Care? Social Impact, Firms' Objectives, and Welfare. *Journal of Political Economy*, 130(11):2898–2942.

Gautier, A. and Pache, A.-C. (2015). Research on Corporate Philanthropy: A Review and Assessment. *Journal of Business Ethics*, 126(3):343–369.

Kleven, H. J. and Waseem, M. (2013). Using Notches to Uncover Optimization Frictions and Structural Elasticities: Theory and Evidence from Pakistan. *Quarterly Journal of Economics*, 128:669–723.

Meer, J. and Priday, B. A. (2020). Tax Prices and Charitable Giving: Projected Changes in Donations under the 2017 Tax Cuts and Jobs Act. *Tax Policy and the Economy*, 34:113–138.

Randolph, W. C. (1995). Dynamic Income, Progressive Taxes, and the Timing of Charitable Contributions. *Journal of Political Economy*, 103(4):709–738.

Reich, R. (2018). *Just Giving: Why Philanthropy Is Failing Democracy and How It Can Do Better*. Princeton University Press.

Urvoy, C. (2020). Political Profit from Nonprofits? Evidence from Governmental Transfers. Working paper.