Escape or Play Again? How Retiring Entrepreneurs Respond to the Wealth Tax*

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Abstract

We investigate the impact of wealth taxation on behaviors of entrepreneurs in France. Before 2018, business sales triggered the conversion of tax-exempt business assets into taxable wealth. Using personal tax data, we confirm that retirement of entrepreneurs leads to large annual wealth tax payments. There is no evidence of higher expatriation by entrepreneurs following retirement, but their take-up of tax-favored investments in SMEs increases. The elasticity of such investments to the tax increase is far higher than for charity donations. These investments fall after financial wealth becomes tax-exempt in 2018. This evidence suggests that a wealth tax, combined with tax-favored investment schemes, may have encouraged former entrepreneurs to reinvest their wealth in SMEs.

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1 Introduction

Taxing household wealth has gained in popularity among policy circles following evidence of rising wealth inequality. Piketty (2014) has argued in his international bestseller for a global comprehensive wealth tax. In the U.S., the 2020 Democratic Party presidential primaries have see Sen. Elizabeth Warren and Sen. Bernie Sanders propose introducing a wealth tax, thus enlarging the debate to a wider audience, while prompting serious rows between economists. Saez and Zucman (2019) have made the case for annual wealth taxation on high net wealth individuals, while Kopczuk (2019) has offered a rebuttal to these arguments. Recent analyses of the economics of wealth taxation have followed these debates, notably in the U.K. with the Wealth Tax Commission (Advani et al., 2020; Scheuer and Slemrod, 2020).

While wealth taxes are levied at the household or individual level, many of their critics focus on their potential deleterious effects on business performance. The reasons put forward range from the fiscal expatriation of entrepreneurs to the weakening of family businesses under the financial weight of the wealth tax burden imposed upon shareholders (Berzins et al., 2019). A typical case, cited as a major flaw of a comprehensive wealth tax, is a situation where entrepreneurs cannot sell part of their shares without weakening their control of the company.[1]

In France, the notion that taxing household wealth might impede entrepreneurial dynamism has led policy makers to exempt "professional" assets from taxable wealth since the very creation of the wealth tax in the 1980s. The main criterion for what constitutes a professional asset is that the taxpayer carries out a management activity as her main activity in the company of which she owns shares. This criterion implies that when a taxpayer ceases to be employed in her firm, her professional assets become liable to the wealth tax.

In this paper, we study how conversions of professional into non-professional wealth affect the tax burden faced by taxpayers as well as their behavior in terms of location of residence and asset allocation. To do so, we primarily focus on the retirement of owner-managers which triggers such a conversion. The sale of an SME indeed carries important consequences in terms of wealth taxation under the French wealth tax prevailing before 2018. Before the sale, the status of SME manager allows

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[1]For instance, in the recent debate over the desirability of a progressive wealth tax in the United-States, in his comment of Saez and Zucman (2019), Kopczuk (2019) writes: "A harder to evaluate, but potentially very important consideration is the ownership distortion. Their "radical scenario" would cut Bezos' wealth by a factor of more than 6, and his 2018 Amazon stake from 16% to 2.4% — that is likely to have a large effect on his ability to control the direction of the firm. If distortions to founder's ability to direct a business are important, then taxes that are based on realization or taxes that delay payment until a later date would be preferred."

for a full exemption of the shares owned in the company from taxable wealth. The sale turns these shares into liquid taxable assets and the entrepreneur typically retires from her managerial position simultaneously. The event thus leads to a potentially large increase in the fraction of personal wealth that is taxable, without affecting the overall market value of the entrepreneur's total wealth.

We are primarily interested in whether the conversion of professional assets leads to fiscal expatriation and stimulates the take-up of tax schemes allowing taxpayers to deduct particular investments—primarily in newly issued SME equity—from their taxable wealth. This array of outcomes allows us to assess the potential costs of the wealth tax in terms of expatriation for individuals whose wealth becomes suddenly taxable (Kleven et al., 2020). It also allows us to assess whether the wealth tax, combined with tax incentives, can be an effective tool to steer funds towards particular goals—here namely the consolidation of SMEs' equity. Assessing the effectiveness of programs aiming at boosting SMEs issuance of equity is important, given the importance of small and young firms in aggregate investment as well as the credit constraints they typically face (Fougère et al., 2019; Gonzalez-Uribe and Paravisini, 2019).

Our results are as follows. First, we confirm that selling one's own firm leads to a very substantial increase in the likelihood of paying the wealth tax (by 15 percentage points) and in the wealth tax bill (by about 5,000 euros a year).

Second, retiring entrepreneurs' propensity to expatriate is not more pronounced than that of other retirees with similar income and facing a much lower average wealth tax burden. This is consistent with a low elasticity of the location of residence decision with respect to the wealth tax rate.

Third, selling business owners are much more likely to take advantage of tax incentives allowing them to deduct part of their investment in newly issued SME shares from their wealth and income tax bills. The probability of investing into SME equity through tax incentives increases by +6 ppt from a 6 percent baseline—i.e. doubles on average. The average amount invested goes up by about +3,000 euros. These average effects are driven by firm owners who realized large capital gains.

Fourth, selling one's own firm does also lead to a noticeable increase in income-and-wealth-tax-deductible charity donations, but the increase (equal on average to little more than 100 euros per year) is of far lower magnitude than the registered increase in investments made in SMEs. This large difference in spending elasticity between these two types of awardees suggests that the investments in SMEs which are encouraged by wealth tax deductions are expected to yield substantial pecuniary benefits.

Fifth, taking advantage of the repeal of the overall wealth tax in France and its

conversion into a real estate wealth tax in 2018, we show that, rather unsurprisingly, retiring business owners become less likely to use the wealth tax SME deduction scheme. Yet, we also show that they do not compensate by using more intensively the income tax SME deduction scheme, suggesting that the reform may have overall decreased investment in SMEs among the population of retiring owners.

A small empirical literature investigates how taxable wealth reacts to variation in the marginal tax rate on wealth (Seim, 2017; Brülhart et al., 2019; Jakobsen et al., 2020). Our paper complements this literature by focusing on business owners and assessing how they react to the large increase in wealth tax burden associated with the conversion of their non-liable assets into taxable wealth. This allows to look at very large shocks in terms of effective (wealth) tax rates. Our empirical design is close to Smith et al. (2019)'s event studies estimating the impact of business-owners death or retirement on firm profitability. Rather than looking at firm-level outcomes, we instead exploit the richness of the household fiscal data in order to estimate the different margins of adjustment of retiring business owners when faced with a large increase in their wealth tax bill, with a special emphasis on the take-up of investment incentives geared toward SMEs equity. Investment in this type of firms has been shown to be highly sensitive to the cost of outside equity (Gonzalez-Uribe and Paravisini, 2019) implying together with our results that the tax incentives were likely to be effective at raising the investment rate by SMEs. Denes et al. (2020) study angel investment subsidies in the US and find that such tax deductions tend to favor investments in SMEs with non-pecuniary motives. We find that the wealth tax encourages far more investment in SMEs than in charities, which suggests there is instead a strong pecuniary motive to the tax-favored investments in SMEs we analyze. Overall, these results highlight the potential role of wealth tax in steering investment towards specific goals through targeted tax relief programs. Our results on the rate of expatriation of recent retirees speak to the literature on taxation and location choice with a focus on international mobility (Kleven et al., 2020).

The paper is structured as follows. In section 2, we present the institutional context, focusing on the treatment of equity assets under the French wealth tax. Exploiting newly available administrative data (compiled from matched income and wealth tax returns), we compute time series on effective wealth tax rates with a focus on equity-intensive wealth holders. Section 3 provides further details on the data used in our event-study approach. Section 4 presents our empirical approach. Results regarding retiring managers are presented and commented in section 5. In section 6, we present empirical results for similar events (i.e., the sale of an SME giving rise to both an income tax deduction and the conversion a tax-exempt business asset into taxable wealth) but affecting a different, somewhat younger, population of entrepreneurs. Section 7 concludes.

2 Institutional context

2.1 The French Wealth Tax

Annual household wealth taxation has been introduced in France in 1982 by François Mitterrand with *impôt sur les grandes fortunes* (IGF). The tax was abolished in 1986 by the center-right government of Jacques Chirac before being reintroduced in 1989 after the reelection of François Mitterrand under the name *impôt de solidarité sur la fortune* (ISF). In 2018, after the election of Emmanuel Macron, the ISF is abolished and replaced by a real estate tax called *impôt sur la fortune immobilière* (IFI).

The ISF tax has experienced many reforms over its existence (1989-2017) but the basics of the scheme have remained unchanged. The tax base is defined at the tax unit level (married couples, children and other dependent) by summing up all worldwide assets, net of debts, owned by French residents. As of 2017, households with net taxable assets above 1.3 million euros were liable to ISF with rates starting at 0.75% and increasing up to 1.5% for taxable wealth above 10 million euros.[2] While aimed to be a comprehensive wealth tax, a number of exceptions and rebate have been introduced, sometimes right from the introduction of the tax.

Exemptions. Some assets benefit from full or partial exemptions. Business asset have been exempted from the start (see below). Owner-occupiers could deduct 30% of the market value of their main residence.[3] Antiques, art or collectors' items, intellectual property rights, annuities, pensions and allowances are all exempted from ISF tax base. In addition, wood, forests and long-term leased rural property benefit are estimated at 75% of their market value.

Wealth tax cap. From the onset, a cap to the wealth tax was introduced to limit the total of income taxes and ISF to 70% of net taxable income. This cap has been reformed a few times, increasing to 85% in 1991, being removed in 2012, and reintroduced in 2013 at 75%. From 1996 to 2011 a cap to the cap was introduced to limit avoidance.

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[2]Details of the French wealth tax schedules can be found on the IPP tax and benefit tables available at `https://www.ipp.eu/en/ipp-tax-and-benefit-tables/capital-taxation/`, while details on the rules of current French wealth tax can be found in France Stratégie (2019), or in English in Dupas (2020).

[3]The rebate for the main residence was 20% from 1989 to 2006.

2.2 Treatment of equity ownership

We can distinguish three specific devices aimed at reducing the taxation of equity assets under ISF wealth tax: (i) the exemption of professional assets, (ii) a tax credit upon the subscription to a company's newly issued equity as long as this company qualifies as an SME (so-called ISF-PME), and (iii) an exemption for long-term shareholders (so-called Dutreil pact). The focus of this paper is on the first two schemes.

Exemption of professional/business assets. When the first version of the wealth tax, the IGF, was created in 1982, shares of companies whose management constitutes the taxpayer's main job were exempt, up to a ceiling that was abolished in 1984, including retrospectively for the two previous years. This exemption for "professional property" was applied throughout the existence of the IGF. This exemption was taken up again in 1989 with ISF. The definition of what constitutes a professional asset has changed little since then: they are, for the taxpayer, shares in a company (i) in which he carries out a management activity as his main activity (i.e., providing at least 50% of his professional income), and (ii) in which he holds at least 25% of the capital.[4]

ISF-PME scheme. The Dutreil Law of 2003 introduced a total exemption for shares held in an SME, provided that these shares have been acquired since 2003 through a subscription to the company's capital rather than on the secondary market. In 2008, the tax benefit of such subscriptions was substantially reinforced by offering the investor a tax credit equal to the value of her contribution upon the year of subscription, on top of the exemption of the shares invested (in the years following the subscription) from the wealth tax base.

Shareholder agreements. Since the Dutreil Law, there is also a 75% deduction from taxable wealth for shareholders (i) who have agreed to retain their shares for a sufficiently long period, (ii) who collectively hold at least 20% of the voting rights, and (iii) who include one of the company's managers among them. Since their creation, these tax-driven shareholders' agreements have been commonly referred to as "Dutreil agreements". Between 2004 and 2017, the provisions of the ISF-PME scheme and the Dutreil agreements were regularly amended, most often to reduce their eligibility requirements. The transformation of ISF into IFI in 2018 can be seen as a continuation of this recent history by exempting all equity ownership from the wealth tax.

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[4]This second condition is no longer necessary if these shares represent more than 50% of the gross value of his assets. Before 2004, the holding condition only expired when the shares represented more than 75% of the gross assets.

3 Data

3.1 Main administrative datasets

Our main analysis is based on a newly released administrative data, produced by the French tax authority *Direction générale des finances publiques* (DGFiP). They contain information from both the universe of income tax and wealth tax returns over the period 2006-2018.[5] The data include an encrypted identifier for each fiscal household and each taxpayer allowing to create a panel data merging information from both tax returns, called panel POTE-ISF/IFI.

Income tax returns. The income tax files—called POTE files by DGFiP—contain all the elements of the tax returns (the so-called 2042 forms), as well as various processing variables used for the calculation of the tax. POTE files are available since 2006 covering the universe of French residents. For each tax unit, information about demographics (age, children) and components of taxable income of each member are available.

Importantly for our empirical strategy, two types of sales of SME shares can be identified in the income tax data because they give right to specific deductions on the capital gains generated by the sales. First, since 2006, capital gains on share sales linked to the retirement of the manager of an SME benefit from a fixed allowance of 500,000 euros and an exemption of up to 85 % of the amount of what is remaining of the capital gain after the allowance is taken into account.[6] Second, since 2013, sales made by long-term investors in SMEs aged less than 10 years old benefit from a reinforced deduction on realized capital gains.[7]

Wealth tax returns. The wealth tax return—ISF/IFI panel—are made of the "2725" tax forms filed by households liable to the wealth tax. These files contain for each fiscal year the different components of the taxable assets declared by the taxpayers liable to the wealth tax. In 2011 and 2012, taxpayers with assets less than 3,000,000 euros were exempt from the obligation to provide a detailed decomposition of their wealth. In 2013 this threshold was lowered to 2,570,000 euros.

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[5]We were granted secured data access after the sessions of *comité du secret* ME581 of 11/10/2019 and ME1144 from 17/09/2020.

[6]These capital gains declared via box 3VA of the 2042 form thus allow us to observe these events.

[7]In 2013, following the removal of the flat-rate tax on capital gains, a collective action from entrepreneurs called themselves "pigeons" (i.e., foolish persons to pay such high level of taxes). We will subsequently designate these sales as "pigeon" managers' sales. We identify these specific capital gains via box 3SL of the 2042 form.

In addition to the panel POTE-ISF/IFI 2006-2018, we have access to the long ISF panel, which track all tax households liable to pay the wealth tax over the period 1993 to 2019.

3.2 Effective wealth tax rates

To establish the effective impact of reforms to wealth taxation on the tax actually paid, we use the long ISF panel. Based on the wealth tax returns, we compute in Figure 1 the effective tax rates on wealth, i.e. the ratio between the amount of wealth tax actually paid and total taxable wealth. This allows us to track the evolution of the wealth tax reforms on the tax burden of taxpayers over the period 1993-2019, and to isolate in particular those households whose wealth is invested in equities. It should be noted, however, that the assets, as measured in the tax returns, never include professional assets (involving a management role in the firm) since these do not have to be declared—as a result, the true effective rate in relation to total assets cannot be known.

Figure 1a shows the evolution of effective wealth tax rates considering two definitions of the taxable base. The red curve plots the average effective rate once income-based caps on the amount of taxes and the various deductions and credits have been applied, divided by taxable wealth without deductions. The blue curve shows a similar average wealth tax rate over the period, this time considering wealth after deductions, i.e., a lower denominator, and the tax due before the application of caps and credits, i.e., a mechanically higher numerator.

The blue curve, representing the tax rate before caps and tax credits applied to wealth after deductions, highlights the effect of successive reforms of the nominal tax rate and the composition of the wealth tax base. Thus, at the beginning of the period, all the curves increase with the 1995 tax increases (10% contribution and limitation of the wealth tax cap in 1995), as well as with the creation of an upper wealth tax bracket in 1999. In the 2000s, the gap between the blue curve and the red curve widened, representing the same average rate but retaining the wealth before deductions in the denominator, with the introduction of the "Dutreil agreements". A second drop-off occurred around the introduction of the SME tax credits in 2008, this time between the red and green curves, which retains the tax paid once the tax credits are applied in the numerator, as well as on the red curve compared to the other curves, which reflects the imposition of more stringent wealth tax caps. The introduction of an exceptional contribution on wealth (*contribution exceptionnelle sur la fortune*) in 2012, with no tax cap, leads to a sharp increase in the effective tax rate (red curve) without any change

in statutory rates or tax credits[8]. In 2013, all the curves fall as a result of the reduction in the nominal rates. Finally, the transition to the IFI in 2018 generates marked, but undifferentiated, declines in the average effective rates.

Figure 1b further illustrates the mechanism at work with the introduction of the ISF-PME scheme and the "Dutreil agreements" in 2003. By distinguishing the assets composed mainly of shares (in blue) from the others (in red), we can see that the effective rate for the first group decreased markedly after 2003, while that of the first group remained very stable over the period.

4   Empirical approach

We conduct two distinct empirical strategies to uncover the impact of the wealth tax on the behavior of business owners. First, our main empirical approach will rely on retirement of SME owner-managers, which prompt a large increase in their wealth tax liability, without any change to their wealth. Second, as a complementary analysis, we will exploit the sales of "pigeons owner-managers", which also generate a sudden increase in wealth tax liability.

4.1   Retirement of SME owner-managers

Between 2006 and 2017, about 31,000 tax households benefited from the income tax allowance for the retirement of SME managers. In order to distinguish the specific impact of the change in the nature of wealth from the impact of retirement on taxable wealth, tax paid, investment and residence choices, we compare these variables for newly retired executives with a large set of new retirees who did not benefit from the above-mentioned allowance, around the date of retirement. To form this group of new retirees, we consider as the year of retirement the year in which the retirement income of the main household tax filer exceeds 20% of the sum of the tax filer's salaries, pensions and dividends. In order to exclude retiring households whose incomes are much lower than the average income of retiring SME executives, and whose probability of being liable to pay the wealth tax is infinitesimal, we include in the control group of new retirees only those whose taxable income is above the first quartile of taxable income in the treatment group (the newly retired SME executives).

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[8]The sample being composed of tax households with assets in excess of 10 million euros, the impact of the temporary removal of the wealth tax cap is more marked than for the average rates for all taxpayers.

We then conduct standard difference-in-differences estimations, using the retiring SME managers as the treatment group and the large group of new retirees described above as the control group, and comparing these groups each year before and after retirement. In addition, we will conduct a "staggered event study" identification strategy, which only exploits the fact that the sellers sell their businesses at different dates.

We present in Table 1 some descriptive statistics for each group one year before the retirement and/or sales event. The control group of non-business-owning retirees is very similar to that of the selling managers in terms of age, but has a slightly lower amount of taxable wealth and income (one third lower). However, the common support between the two groups is broad enough not to, a priori, rule out the hypothesis of common trends underlying our difference-in-difference approach as implausible.

Estimating equation 1: difference-in-differences. We estimate a dynamic difference-in-differences specification which allows us to gauge the unfolding of the effect over-time and to detect potential differential pre-trends prior to the reforms. It writes as follows:

$$Y_{it} = \sum_{\substack{d=-5 \\ d \neq -1}}^{d=5} \beta_d \times \mathbb{1}\{d = t - t_{i0}\} \times T_i + \mathbf{x}_i' \sum_{t'} \mathbb{1}\{t' = t\}\delta_{t'} + \mu_i + \lambda_t + \varepsilon_{it} \qquad (1)$$

where Y_{it} is our variable of interest measured for household i and year t, T_i is a variable indicating household i is in the treatment group, $\mathbb{1}\{t' = t\}$ a variable indicating year equals t, λ_t is a year fixed-effect, μ_i a household fixed-effect, and $\mathbf{x}_i'\mathbb{1}\{t = d\}$ a set of time-invariant household characteristics set prior to the event (SME sales) and interacted with year indicators. In this specification, β_d capture the deviation between treatment and control group for a given year d relative to the baseline year $t_{i0} - 1$, where retirement occurs between $t_{i0} - 1$ and t_{i0}.

Estimating equation 2: event-study. We also estimate a pure event-study design where we only include ultimately treated individuals. It follows closely the previous dynamic DiD specification but does not rely on an explicit control group: all units included in the estimating sample are ultimately treated. This method is based on the assumption that the timing of the treatment is random. We then do not explicitly use a control group, but pseudo-controls which are the other individuals treated at different dates in order to disentangle the effects of the calendar year from the effects

of the year relative to the treatment.[9] It writes as follows:

$$Y_{it} = \sum_{\substack{d=-5 \\ d \neq -1}}^{5} \beta_d \times \mathbb{1}\{d = t - t_{i0}\} + \mathbf{x}_i' \sum_{t'} \mathbb{1}\{t' = t\}\delta_{t'} + \mu_i + \lambda_t + \varepsilon_{it} \qquad (2)$$

where notations are similar as in Equation (1). The sole difference is that here the time to treatment indicators are not interacted with a treatment group dummy anymore.

4.2 Pigeon tax-favored scheme

Regarding the so-called "pigeon" sales, approximately 35,000 tax households have benefited from the corresponding allowance between 2013 and 2017. However, in contrast to the case of "retirement" transfers, there is no identifiable group of taxpayers who would never have sold SMEs but who would otherwise resemble "pigeon sellers" all other things being equal. This is why we are conducting only a "staggered event study" identification strategy in this case, following equation (2). In other words, the behavior of a "pigeon" seller whose sale has already taken place is compared to that of "pigeon" sellers whose sale has not yet taken place. A disadvantage of this approach is that it does not make it possible to study the impact of the sale on the location of taxpayers, since a seller is by construction a tax resident in France before selling his business.

In Table 1, we compare characteristics of the "pigeon" sellers with the treatment and control groups of retiring SME owners. SME sellers are older than the general population, with an average age of 59 for retired sellers and 54 for "pigeon" sellers. Not surprisingly, the "pigeons" are a little younger, but less than 10% of them sell their shares before the age of 35. The two types of sellers are very similar in terms of income and taxable wealth. In particular, about 15% of them are liable to the wealth tax even before the sale of their business.

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[9]See notably Borusyak and Jaravel (2017) and Schmidheiny and Siegloch (2019) for applications.

5 Main results: retiring SME managers

5.1 Size of the realized capital gains around retirement

Before turning to the consequences of the sale of the firm in terms of tax paid and the associated behavioural responses in terms of asset allocation and choice of residence, we show in Figure 2 the evolution of the income of households in the treatment and control groups around retirement, which corresponds for the treatment group to the realisation of the capital gain on sale. This graph confirms the existence of common pre-retirement income trends between the treatment and control groups. It also shows a considerable increase in income in the year of the managers' departure, which corresponds to the sale of their shares in the SME, with an average taxable income increasing from €150,000 to €950,000 on average, a multiplication by more than 6. In the years following this sale, the managers' income falls significantly below its pre-retirement average while it is more stable in the control group, potentially reflecting a lower replacement rate among retired entrepreneurs than among retirees in the control group.

We verify in Figure 3 that the causal impact of share sales on tax revenue is also detectable using a staggered event study approach. We exclude the year $t-1$ preceding the year of treatment t and group (*bin*) the years less than $t-5$ and greater than $t+5$ (Schmidheiny and Siegloch, 2019). The impact on taxable income in the year of the sale is clearly visible and very similar to that estimated with the difference-in-differences approach, which lends support to hypothesis of random timing on which this approach relies. It thus shows a positive effect on the taxable income of managers' retirement decision of around €800,000 the year of the sale, a result very similar to that obtained with the difference-in-differences approach.

5.2 Effects on taxable assets and wealth tax paid

In this section we consider the implications of selling SME shares on the wealth tax paid by newly retired SME managers. As explained in section 4, the retiring SME managers are compared to a large group of fairly high income individuals retiring at the same time but who were not SME managers.

Difference-in-differences for retiring SME managers. The graph 4 shows the evolution of the probability of being liable to the wealth tax between the group of SME managers and the control group. It shows a slightly higher level among SME managers before retirement than among the control group, but very parallel evolutions

over this period. A sudden increase of about 15 percentage points then occurs among SME managers in the year of retirement relative to the control group, for whom the probability of being subject to the wealth tax remains very stable around the time of retirement. This difference then persists over the entire post-retirement period.

Figure 5 presents the average amount of wealth tax paid by households including an SME manager and by the control group, around the time of retirement. Similar to Figure 4, it shows a small growth in the average amount paid between the two groups before retirement, followed by a considerable increase in the year after retirement, leading to a threefold increase in the amount of wealth tax paid. This amount averages €6,000 the year after retirement, and persists in the following years.

Event-studies specification.   In Appendix, Figure A1a confirms based on the event-study specification the DiD results (Figure 4) showing the increase in the probability of being liable to the wealth tax at the time of retirement for SME managers of the order of 15 percentage points. Similarly, Figure A1b confirms the estimate given in Figure 5 of an average increase of €4,000 in the amount of wealth tax paid by executives the year following their departure.

Heterogeneity depending on the size of the capital gains.   We can break down the effects depending on the amount of the capital gain reported after the sale.[10] We set a threshold at 1 million euros, which is close to making retiring executives mechanically liable to the wealth tax. This approximation is imperfect, on the one hand because the capital gain does not necessarily reflect the amount of the sale, which is what makes taxable assets vary, and on the other hand because net assets can be very different from gross assets if the household is heavily in debt. Figure A2a nevertheless shows a much stronger increase, above 25 percentage points, in the probability of being liable to the wealth tax after the realization of the capital gain for large capital gains, compared with a more moderate increase, around 12 percentage points, in this probability for managers realizing a capital gain below the threshold.

While these differences in the increase in the probability of paying the wealth tax following the sale of SME shares are significant, the differences in the average amount paid are much larger, as shown in Figure A2b. Indeed, the share of households liable to the wealth tax among those who realize a capital gain above the threshold is very large, which explains why the average amount of wealth tax paid for these tax households increases by nearly €30,000 annually. The average increase for households

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[10]This information is unfortunately not available in the 2042 declaration for the "pigeon" sellers, so the analysis that follows only relates to the sales of shares by retirees.

whose capital gain is below the threshold is much more moderate, around €1500, which is due both to the fact that a large number of households still owe a zero amount, and to the fact that households that have to pay a positive amount are likely to have a lower wealth than those that have realized a very large capital gain. It should be noted that the difference in scale between the values obtained for the two groups implies that the standard deviations, if well represented, are no longer visible for the group with capital gains below the threshold.

5.3 Behavioral Responses

5.3.1 Departure out of France

A reaction to the sudden increase in taxation illustrated above could be to leave the French territory towards a country with a more advantageous tax system.

One difficulty in analysing this variable of departure abroad is that we do not really observe a pre-retirement period: with the exception of return trips during the five years preceding retirement, we observe retirements only for French tax residents, and the probability of leaving the country is, by construction, zero before retirement, whatever the group. The conditions necessary to conduct a difference-in-difference analysis are therefore not met. Nevertheless, an attempt can be made to interpret the differences between groups after retirement.

At first glance, Figure 6 seems to indicate a very strong divergence between executives and control group after retirement. Nevertheless, the absence of pre-retirement trends does not strictly allow such a comparison, and it seems likely that income level is an important determinant of the probability of leaving abroad. Indeed, simply restricting the control group to tax households with taxable income above the third quartile of among of executives at the time of retirement, rather than the first quartile as previously, produces almost identical curves between the manager group and the adjusted control group. While this does not rule out the possibility that a difference may exist between these groups, it nevertheless indicates that the level of income is indeed an important factor to be taken into consideration (and that the groups should at least be summarily matched on observable variables before they can be compared), and that this probability only reaches 1% among managers five years after retirement, i.e., about 30 households per year.

5.3.2 Investments in other SMEs through tax incentives

One other possibility offered to SME managers selling their shares upon retirement is to reinvest part of the proceeds from the sale in the capital of other SMEs. This allows

them to benefit from the income tax exemption known as *Madelin reduction* as well as the wealth tax reduction known as *ISF-PME*. In what follows, we measure these tax-exempt contributions by adding up the reported investment amounts corresponding to each SME-friendly tax incentive.

Figure 7b thus shows a significant reinvestment in SME capital among retiring managers relative to the control group. The effects are nevertheless of limited magnitude, since the average investment remains below €4,000 the year of departure, reflecting a moderate probability of using this tax scheme (about 12% of households treated in the year of departure, as shown in Figure 7a). In addition, the amounts of investment eligible for a reduction are limited to €90,000 for the wealth tax (€67,000 before 2012) and €50,000 per adult regarding the income tax (€20,000 before 2012). In the case of the income tax, it is possible to spread the tax benefit of the investment over five years if the ceiling is exceeded. Finally, it is not possible to benefit simultaneously from a reduction in wealth tax and income tax with a single subscription.

Event-study results. Figures 8a and 8b present event-study estimates of the impact of sales on the probability of making a tax-exempt investment in a SME. They show results similar to those obtained with the difference-of-difference approach. Most importantly, they show that the impact is particularly high for large sales, where the probability of investing in the SME increases by 20 percentage points following retirement, which can be linked to the also very high increase in taxable wealth, which makes investing in an SME particularly advantageous.

5.3.3 Tax-favored donations to charities

One last possibility offered to SME managers selling their shares upon retirement is to donate part of the proceeds to charities. This allows them to benefit from income and wealth tax credits. In what follows, we measure these tax-favored contributions by adding up the reported donations corresponding to each charity-friendly tax incentive.

Figure 9a shows a significant use of sales proceeds to donate to charities among retiring managers relative to the control group. The effects are nevertheless of limited magnitude, since the average donation remains below €500 the year of departure, even though the probability of making a donation is high (about 40% of households treated in the year of departure, as shown in Figure 9b). In addition, the amounts of charity donations eligible for a reduction are limited to €67,000 for the wealth tax (€50,000 before 2012). Regarding the income tax, the limit on the amounts of eligible charity donations is set to 30% of taxable income. It is not possible to benefit

simultaneously from a reduction in wealth tax and income tax with a single charity donation.

Event-study results. Figures 10a and 10b present event-study estimates of the impact of disposals on the probability of making a tax-favored donation to charities. They show results similar to those obtained with the difference-of-difference approach. Most importantly, they show that the impact is particularly high for large disposals, where the probability of donating to charities increases by 5 percentage points following retirement, which can be linked to the also very high increase in taxable wealth, which makes donating to charities particularly advantageous.

5.3.4 Behavior around the reform converting the comprehensive wealth tax into a tax on real estate wealth

Figure 11 focuses on investments in SMEs made by the 2016 and 2017 cohorts of sellers, i.e., managers who sold their shares in 2016 and 2017 respectively. These cohorts are interesting because they were affected by the transformation of the wealth tax into an IFI in the years directly following their retirement, and saw the cash from the disposal no longer being taxed on their assets very soon after their departure. Thus, it can be observed that the probability of investing in SMEs following the sale is very strongly affected by the transformation of the wealth tax into an IFI: in the case of the 2016 cohort, the managers selling their shares invest heavily in SMEs the year following the sale and then abruptly cease these investments the following year. Figure 12 reports the likelihood of donating to charities for the 2016 and 2017 cohorts of sellers. Compared with previous cohorts, we cannot detect an economically significant increase in the likelihood of donating to charities among entrepreneurs who sell their firm. However, we do not detect a strong decline in the propensity to give after the wealth tax is cancelled which further confirms the low elasticity of donations to wealth tax incentives.

6 Additional results: tax-favored sales of young SMEs

In this section, we investigate the effect of sales of shares held in SMEs and eligible for the allowance introduced following the movement of "pigeons" on the payment of the wealth tax and the associated behavioral responses in terms of new investments in SMEs. In 2014, following protests from groups of entrepreneurs regarding the tax treatment of capital gains, a reform introduced a reinforced allowance on capital gains

on the sale of shares held in SMEs aged less than 10 years old.[11] These reinforced allowances are documented in the income tax returns of the selling household. We can therefore observe the sales of SME shares for a set of business owners who are not at the same time entering into retirement. Analyzing the change in tax burden and ensuing behavioral responses for this population of entrepreneurs is interesting as they tend to be younger with a median age of 53 versus 60 among retirees (see Table 1). As these sales were made by a population that is still active, the effects we estimate could differ significantly from the effects obtained for retirees.

Insofar as we do not have an easily identifiable control group for the taxpayers selling their shares in SMEs, the results we present again use the method of staggered event studies. Because this phenomenon spans a shorter time period, we restrict the analysed time window between three years before and three years after the event.

Impact on income and wealth tax burden. Figure 13a shows the regression coefficients obtained in a study of the effect of events defined by the use of the SME allowance on the reference tax income of the ceding tax households each year before and after the cession. This figure shows a very strong increase in income in the year of the sale, with an average increase of around €250,000 of income. This increase is less strong than that observed during sales for retirement, but it does not reveal the whole of the increase in liquidity realized at the time of the sale, since only the amount minus the allowances is included in the taxable income. As shown in Figure 13b, this average also masks a very strong heterogeneity in the levels of increase in taxable income. In fact, households that benefited from a capital gains allowance on the sale of shares in SMEs of more than 1.3 million euros benefited from an average increase in their income of nearly 4 million euros in the year of sale.

Figures 14a and 14b confirm the fact that the probability of paying wealth tax and the amount of wealth tax paid by taxpayers selling their shares increases in the year following the realization of the capital gain. However, the average amount of wealth tax paid increases less here than in the case retirement, since the coefficient is about 2.5 times lower than that shown in Figure A1b, which can simply be explained by the fact that disposals of a small amount are more numerous. Similarly, the probability of being liable to pay ISF increases by only 3.5 points, compared with nearly 15 points in the case of executive retirements. The average increase in the amount of wealth tax paid is moreover very heterogeneous as a function of the amount of the capital gain realized, as shown in Figure 15, which breaks down the coefficients obtained according to the amount of the declared allowance.

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[11] Article 17 of the Finance Act 2013-1278 for 2014, dated December 29, 2013.

Behavioral responses. We study the behavioral responses induced by the sale of shares in a young SME, which had (until 2018) the effect of including in the wealth tax base assets that were previously tax exempt. In particular, we are interested, as before, in the subscription to the capital of new SMEs to which sellers can participate, allowing them to benefit from a reduction in income tax or wealth tax.

In terms of amounts invested, figures 18a and 18b also show that these investments are quite low on average but are highly concentrated among the households with the highest capital gains.

Figure A3a shows the effect of selling SME shares on the probability of donating to charities. The average effect is very close to zero, and in fact slightly negative, which differs markedly from what we observe for retiring managers. Figure A3b shows that there is in fact an increase in donations for large capital gains, with an increase in the probability of donating of about 2 percentage points, while those who realize small capital gains reduce their propensity to give by less than one percentage point. This may reflect the fact that among these younger sellers, the sale is generated by the need to reinvest in other personal projects (such as buying a house for example), which crowds out donations.

In terms of amounts donated, the figures A4a and A4b also show that these donations are quite low on average but are highly concentrated among the households with the highest capital gains, who donate as much as €20,000 on the year of the sale on average.

7 Conclusion

This paper exploits large changes in taxable wealth while keeping wealth constant, triggered by the decision of business owners to retire. Under the French comprehensive wealth tax system, which existed until 2018, the shares owned in a company where one had a managing position were completely exempt from the wealth tax base. The existence of a large rebate on capital gains on sales upon retirement for SME managers allows us to detect such events.

We first show that retirement decision did indeed lead these individuals to increased exposure to the wealth tax, both at the extensive and the intensive margins. The probability of being liable to the wealth tax for these individuals jumps by 15 percentage points in the year of retirement, while their annual wealth tax payment increases by €5,000 on average. The heterogeneity in the wealth tax increase is, however, considerable.

We then investigate behavioral response margins to the tax hike undergone by

these individuals. Our first finding is that the probability of expatriation is low (around 1 percent of a cohort), and very comparable to that of retirees belonging to similar income groups. Our second main finding is that SME managers become much more likely to invest into other SMEs after they retire, benefiting from a tax rebate while again excluding these shares from their taxable wealth. We then exploit the transformation of the wealth tax into a real estate wealth tax, which de facto aligns the status of all corporate shares, and show that these investments into SMEs are starkly reduced for cohorts retiring around the reform. We then show the robustness of our findings using another rebate mechanism on capital gains for SME managers.

Overall, these results highlight the responses which individuals faced with an increase in wealth tax may adopt. They suggest that a wealth tax with well-targeted rebates may be more efficient at stimulating investments into small firms than no wealth tax at all.

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Figure 1: Effective wealth tax rate (amount owed in relation to assets) and main reforms in the taxation of assets between 1993 and 2019

(a) Before vs after capping and reductions

(b) According to the share of equity within wealth
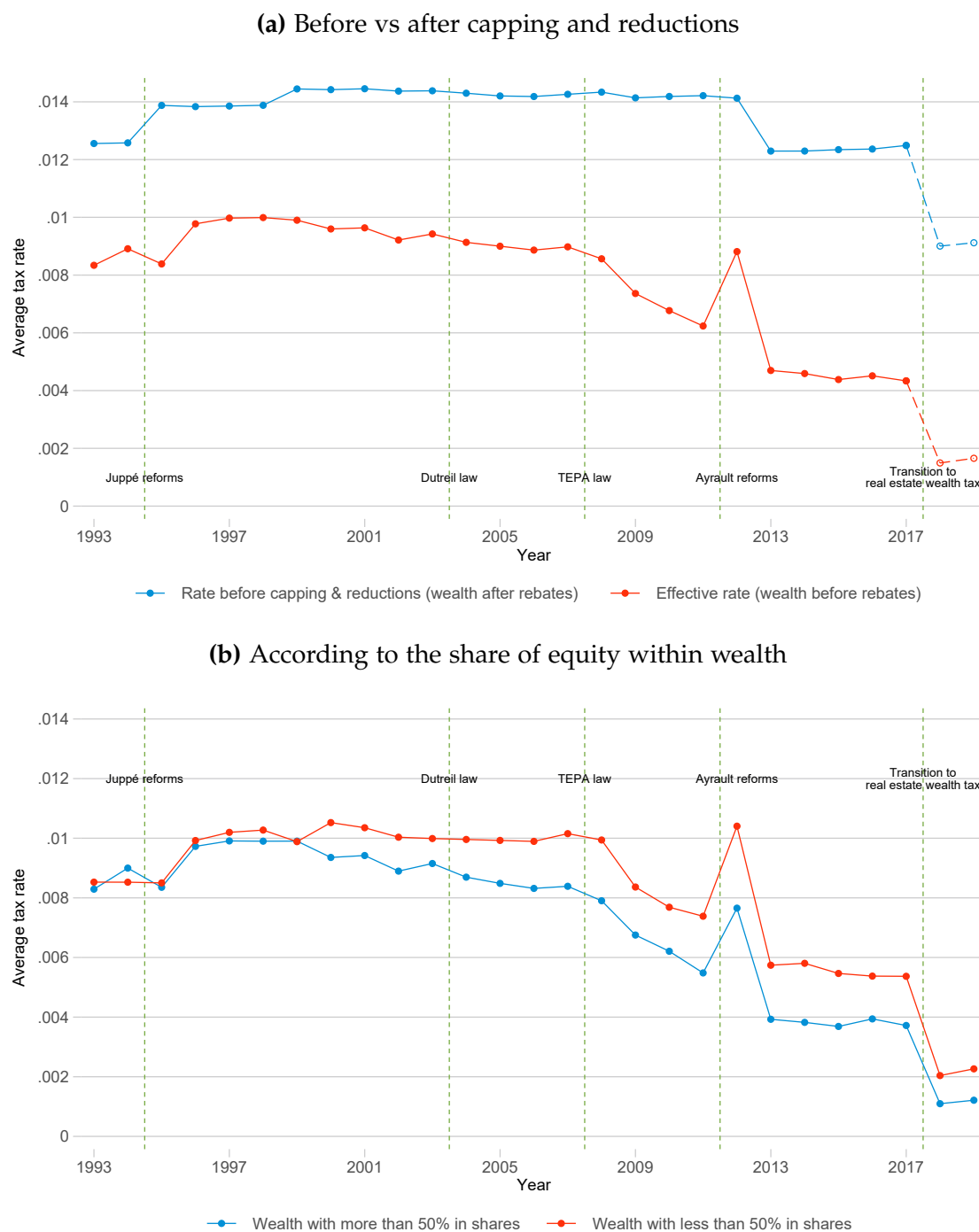
NOTES: Effective wealth tax rate are computed as the ratio of tax amounts owed over taxable assets before any allowances. Business assets categorized as "professional" are not included in the denominator. The sample is composed of assets before allowances in excess of 10 million euros (in constant euros of Dec. 2019), weighted by the size of the assets before allowances. For 2018 and 2019, only households already present in 2017 are included and the wealth before allowances is that measured in 2017.
SOURCE: Long ISF panel, DGFiP.

Figure 2: Average taxable income around the year of retirement –SME owners and control group
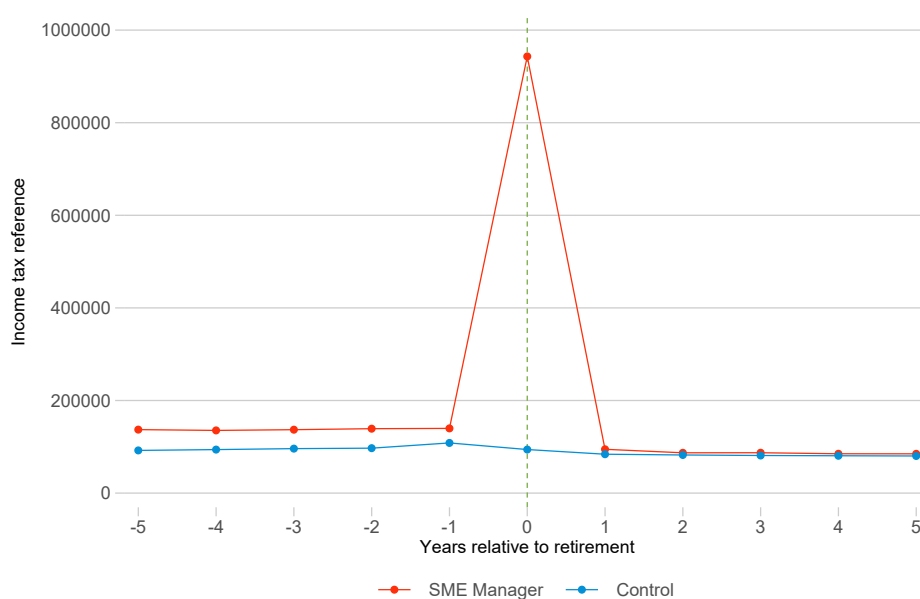
Figure 3: Taxable income around retirement – Event-study
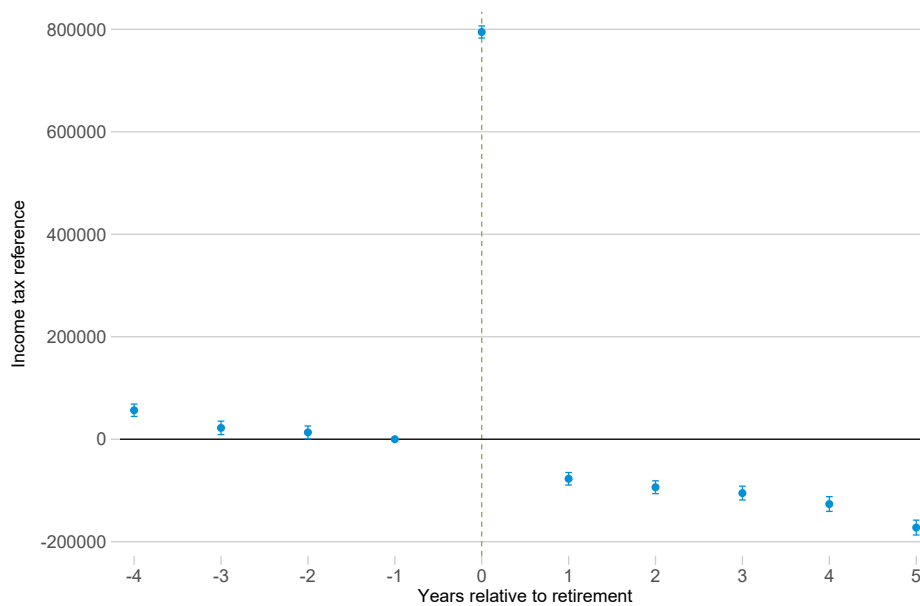
NOTE: This graph presents the effect on taxable income of the sale of an SME around the retirement of an SME manager, within a window of 5 years before to 5 years after retirement. The year -1 prior to the share disposal is taken as the reference year. The points represent the coefficients obtained in an event-study regression, the bounds the associated 95% confidence intervals.

SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 4: Probability of being liable to the wealth tax around the year of retirement
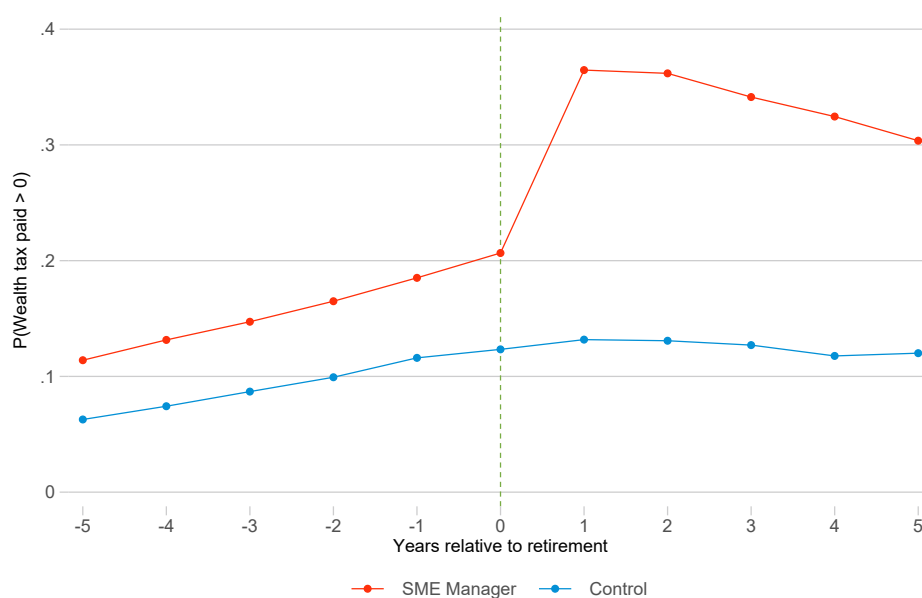
NOTE : This graph presents the probability of being liable to the wealth tax for households with a retiring SME manager (Manager, red line) and for newly retired tax households in the control group (Control, blue line), within a window of 5 years before to 5 years after retirement.
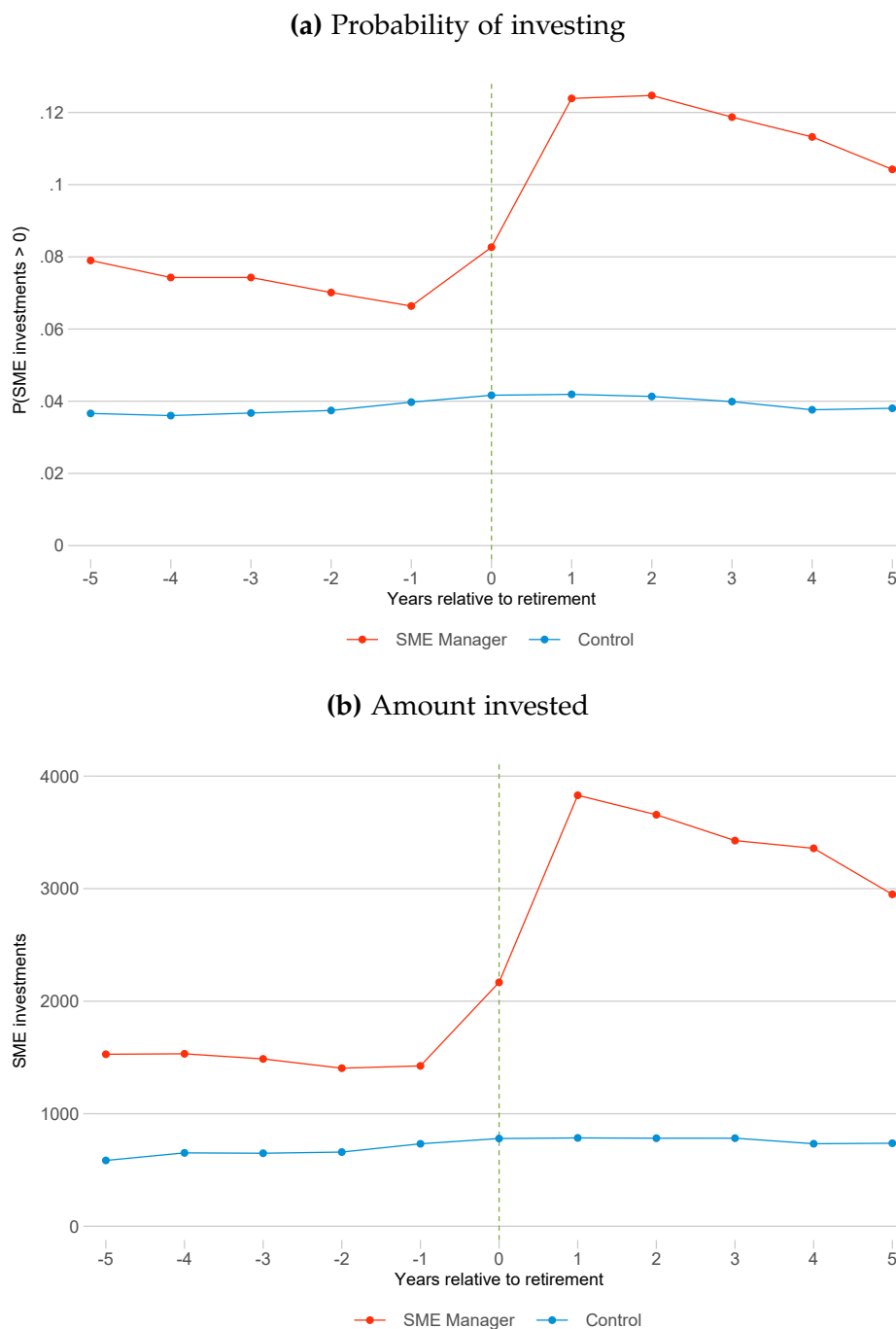SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 5: Average wealth tax paid around the year of retirement
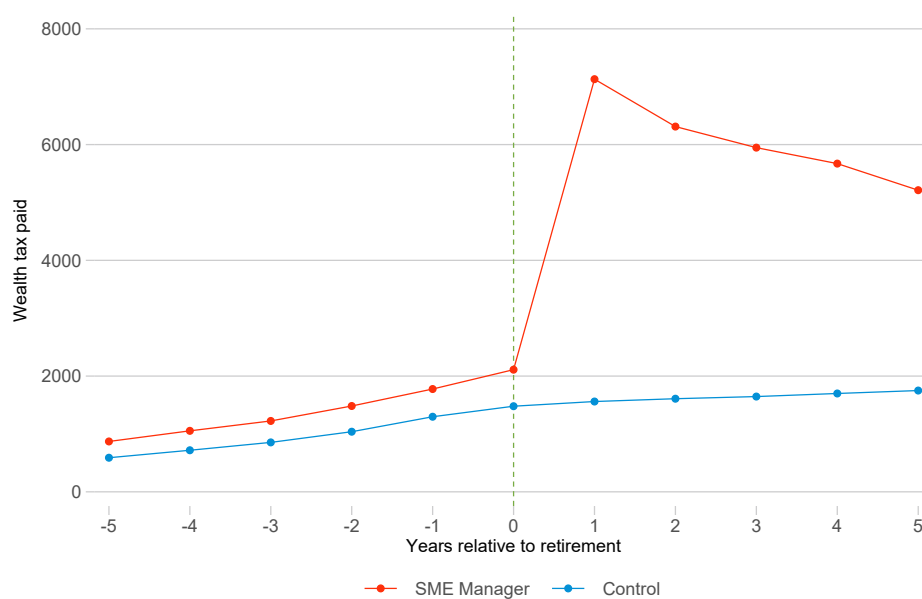
NOTE: This figure presents the amount of wealth tax paid by tax households including a retiring SME manager (Manager, red line), and by newly retired tax households in the control group (Control, blue line), within a window of 5 years before to 5 years after retirement.
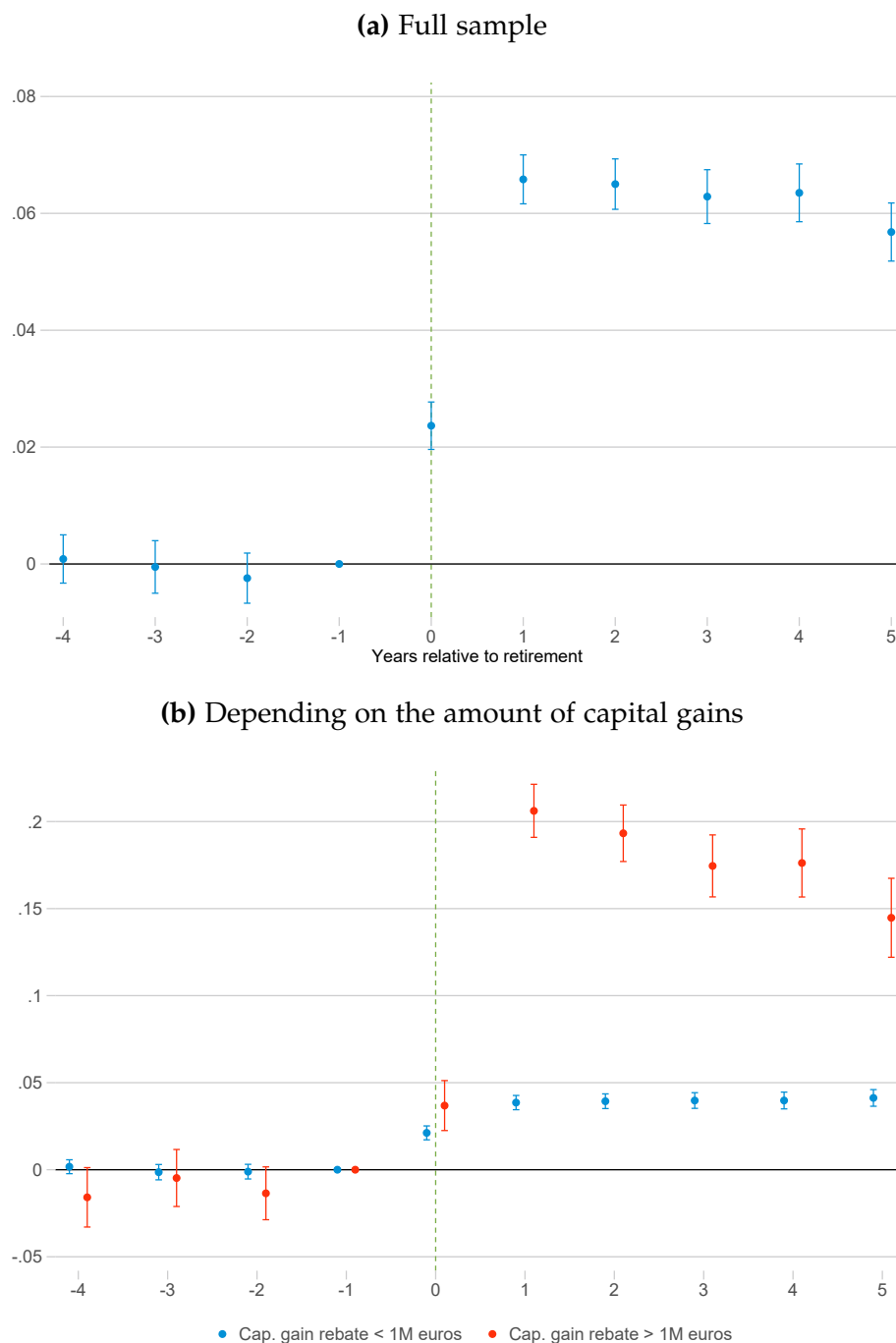SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 6: Probability of leaving France after retirement

Figure 7: Probability of investing and amount invested in other SMEs around the year of retirement

(a) Probability of investing

(b) Amount invested

NOTE : These graphs present the effect of retirement on (a) the probability of investing in the capital of other SMEs and (b) the average amount of SME capital subscriptions reported by households including a retiring SME manager (Manager, red line), and by newly retired households in the control group (Control, blue line), within a window of 5 years before to 5 years after retirement.
SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 8: Event-study results on the probability of investing in other SMEs around the year of retirement

(a) Full sample

(b) Depending on the amount of capital gains

• Cap. gain rebate < 1M euros   • Cap. gain rebate > 1M euros

NOTE : These graphs present the effect of retirement on the probability of investing in the capital of other SMEs (a) for the whole sample (b) distinguishing capital gains below and above €1 million, within a window of 5 years before to 5 years after retirement. The points represent the coefficients obtained in the event-study regression, the bounds the associated 95% confidence intervals.
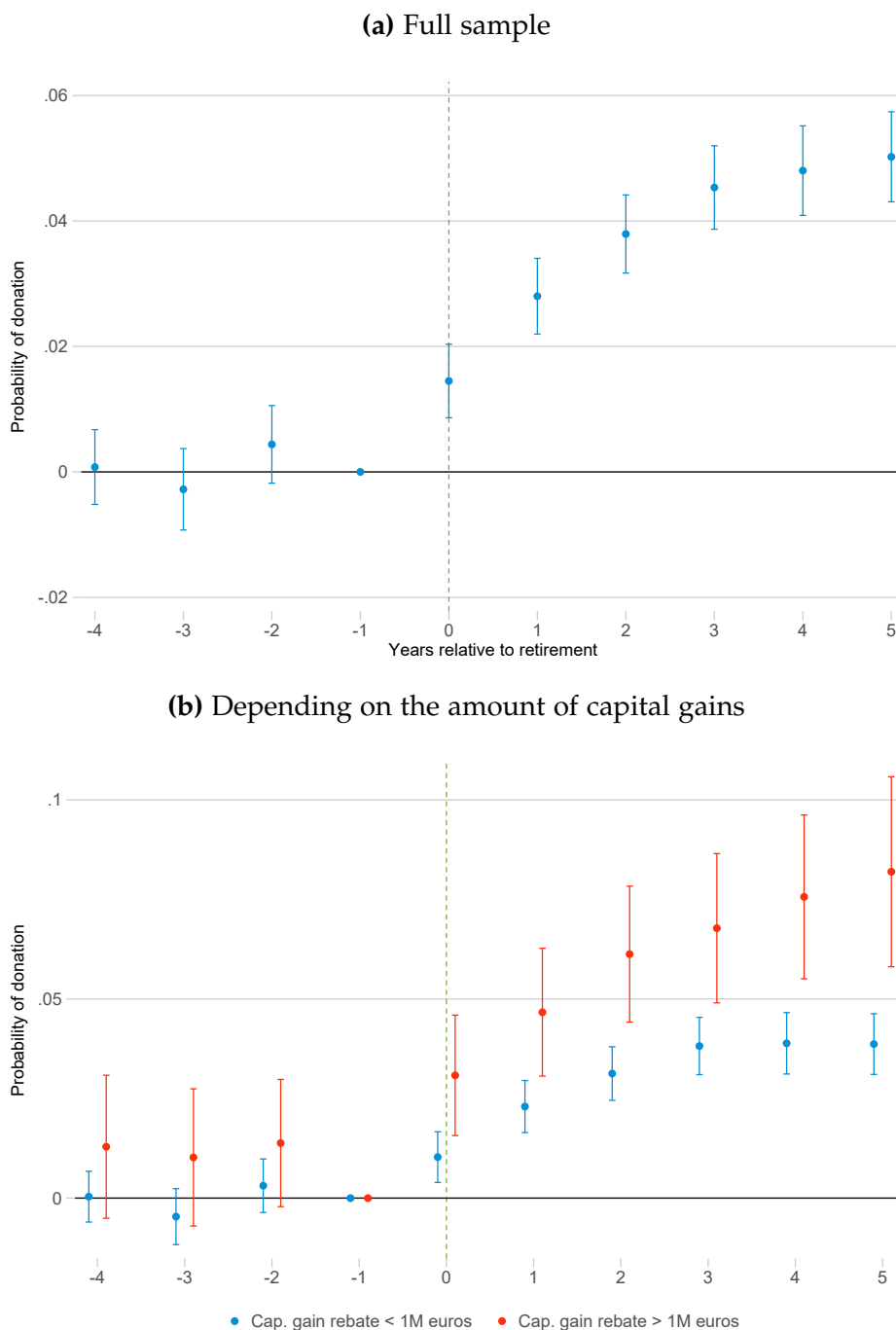SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 9: Probability of donating and amount donated to charities around the year of retirement
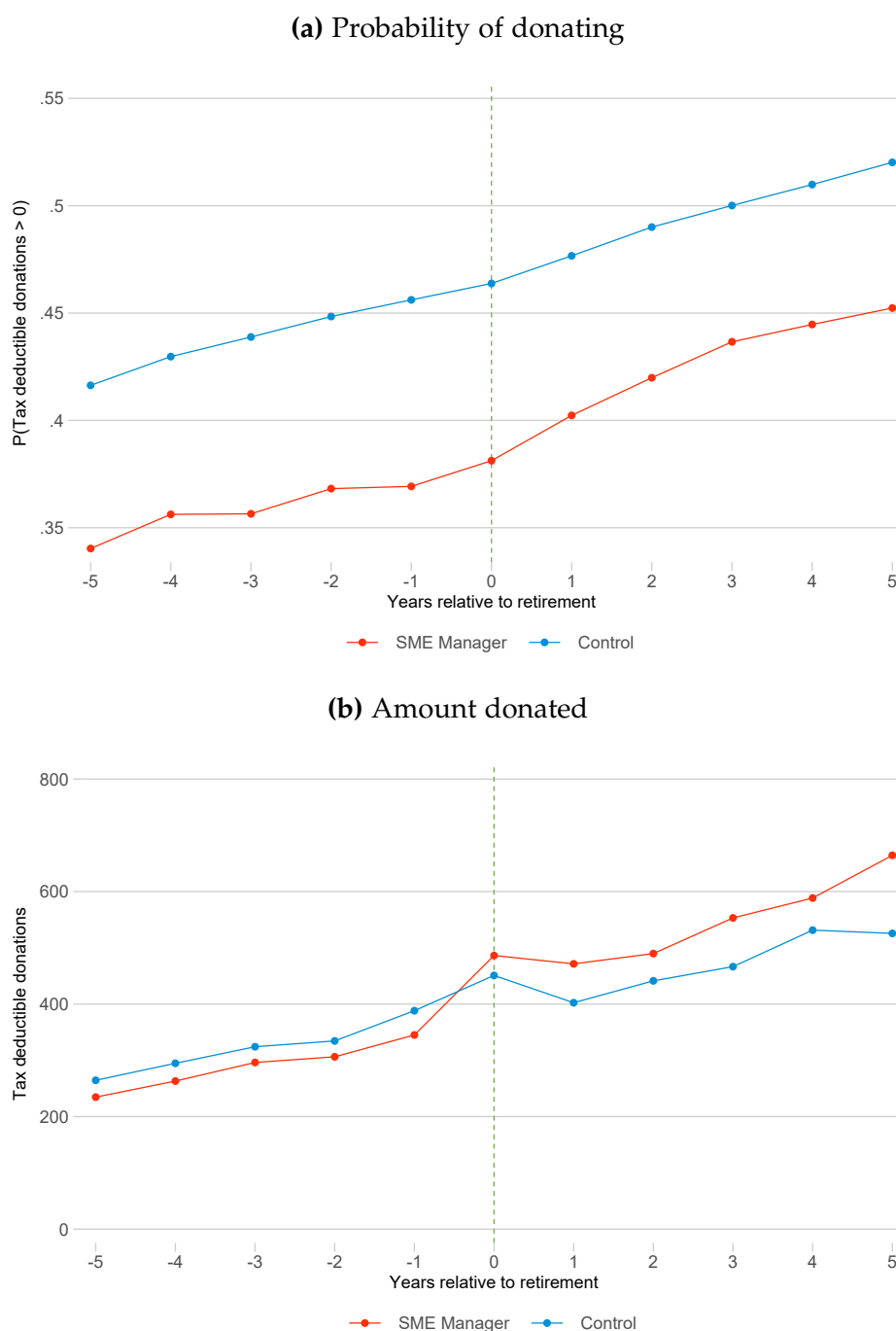
(a) Probability of donating

(b) Amount donated

Note : These graphs present the effect of retirement on (a) the probability of donating to charities (b) the average amount of charity donations reported by households including a retiring SME manager (Manager, red line), and by newly retired households in the control group (Control, blue line), within a window of 5 years before to 5 years after retirement.
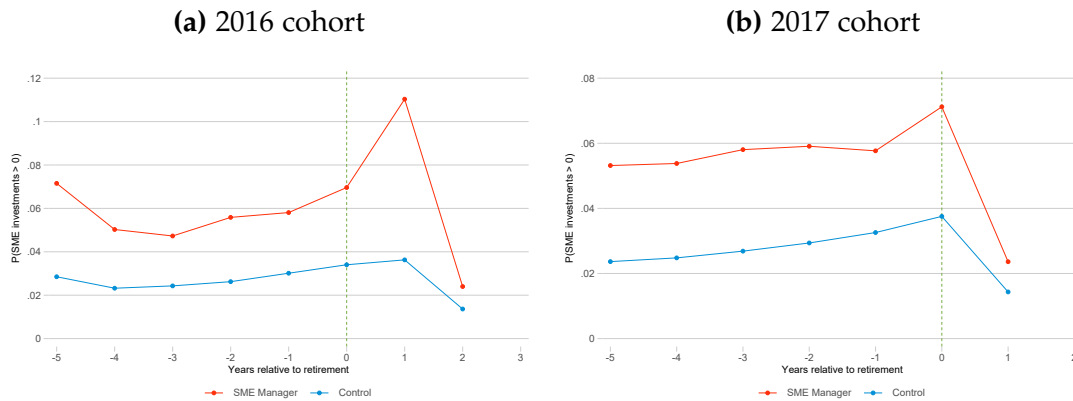Source: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

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Figure 10: Event-study results on the probability of donating to charities around the year of retirement

(a) Full sample

(b) Depending on the amount of capital gains

NOTE : These graphs present the effect of retirement on the probability of donating to charities around the year of retirement (a) for the whole sample (b) distinguishing capital gains below and above €1 million, within a window of 5 years before to 5 years after retirement. The points represent the coefficients obtained in the event-study regression, the bounds the associated 95% confidence intervals.

SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 11: 2016 and 2017 retiring cohorts: probability of investing in SME Capital

(a) 2016 cohort

(b) 2017 cohort

Note : This graph presents, for the 2016 and 2017 cohorts, the effect on investments in SMEs around the retirement of an SME manager within a window of 5 years before to 5 years after retirement. The last year before retirement is taken as the reference year (-1). The points represent the coefficients obtained in an event-study regression, the bounds the associated 95% confidence intervals.

Source: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 12: 2016 and 2017 retiring cohorts: probability of donating to charities

(a) 2016 cohort
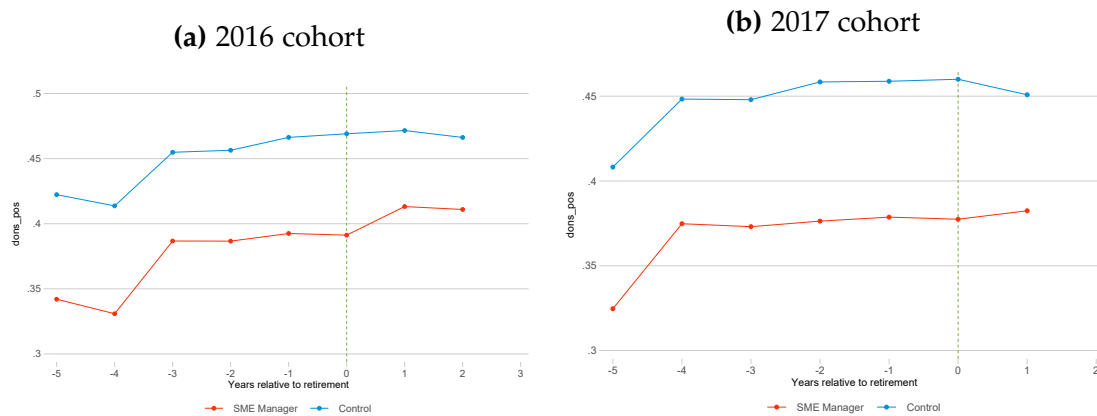
(b) 2017 cohort

Note : This graph presents, for the 2016 and 2017 cohorts, the effect on the probability of donating to charities around the retirement of an SME manager within a window of 5 years before to 5 years after retirement. The last year before retirement is taken as the reference year (-1). The points represent the coefficients obtained in an event-study regression, the bounds the associated 95% confidence intervals.

Source: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

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Figure 13: Event-study results on the use of the SME allowance on reference tax income

(a) Full sample

(b) Depending on the amount of capital gains
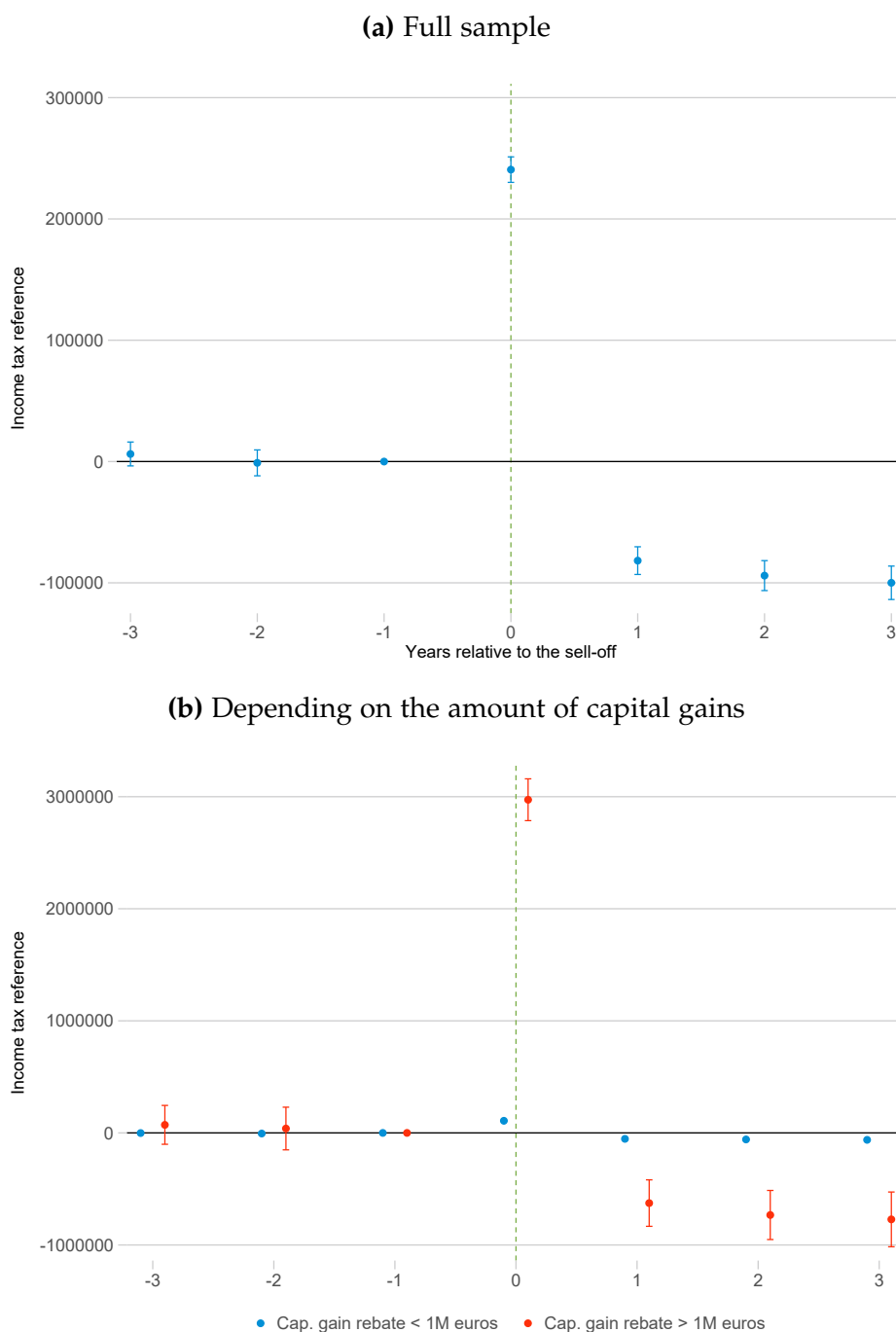
NOTE : These graphs present the effect of retirement on taxable income around the year of retirement (a) for the whole sample (b) distinguishing capital gains below and above €1 million, within a window of 3 years before to 3 years after retirement. The points represent the coefficients obtained in the event-study regression, the bounds the associated 95% confidence intervals.
SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 14: Event-study results on the probability of being liable to the wealth tax and the average wealth tax payment around the use of the SME allowance

(a) Probability of paying

(b) Amount paid
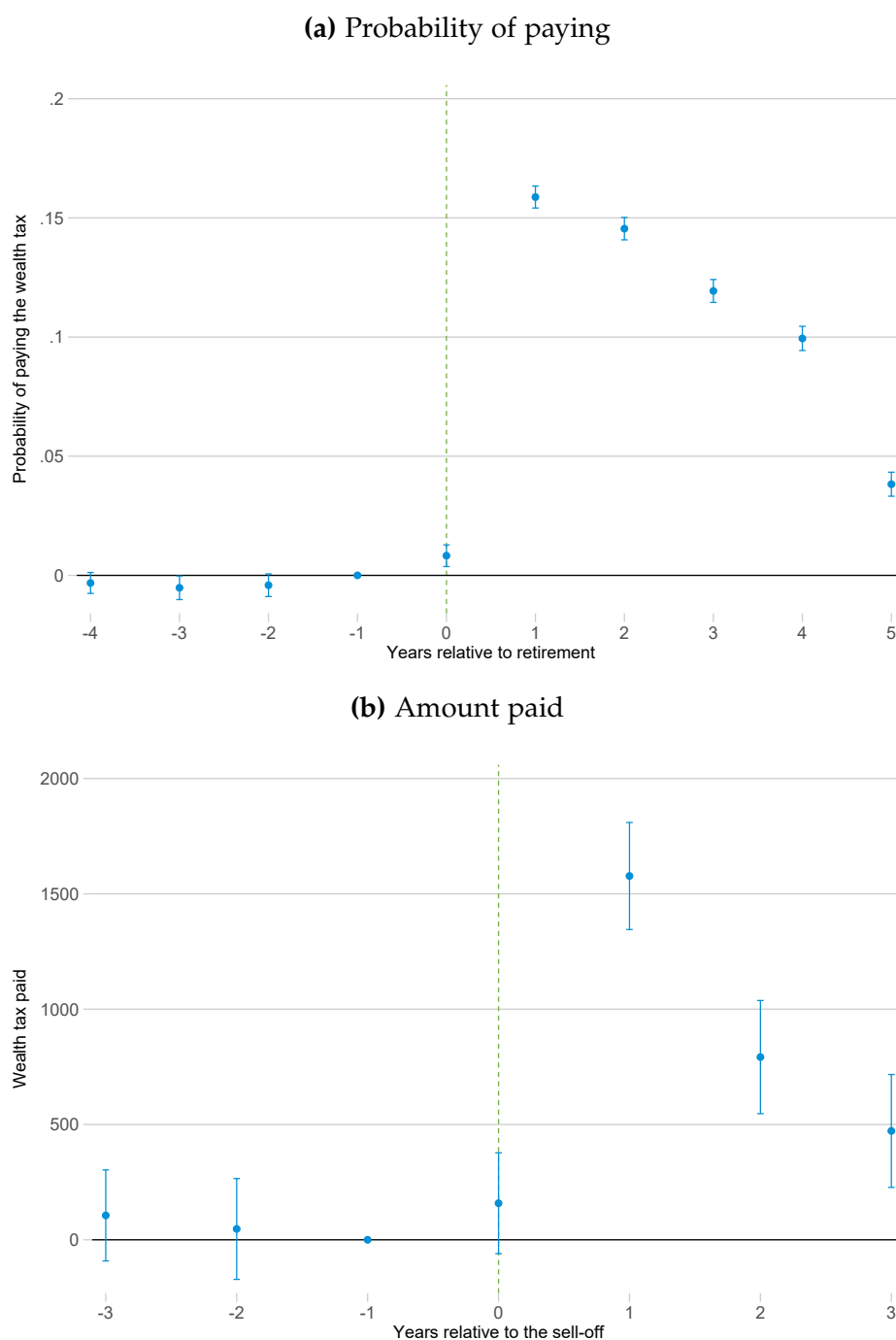
NOTE : These graphs present the effect associated with the use of the pigeon/SME tax deduction on (a) the probability of being liable to pay the wealth tax (b) the amount of wealth tax paid annually, within a window of 3 years before to 3 years after the event. The last year before the event is taken as the reference year (-1). The points represent the coefficients obtained in the event-study regression, the bounds the associated 95% confidence intervals.
SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 15: Effect of the use of the SME allowance on the wealth tax paid, broken down by amount of allowance on capital gains
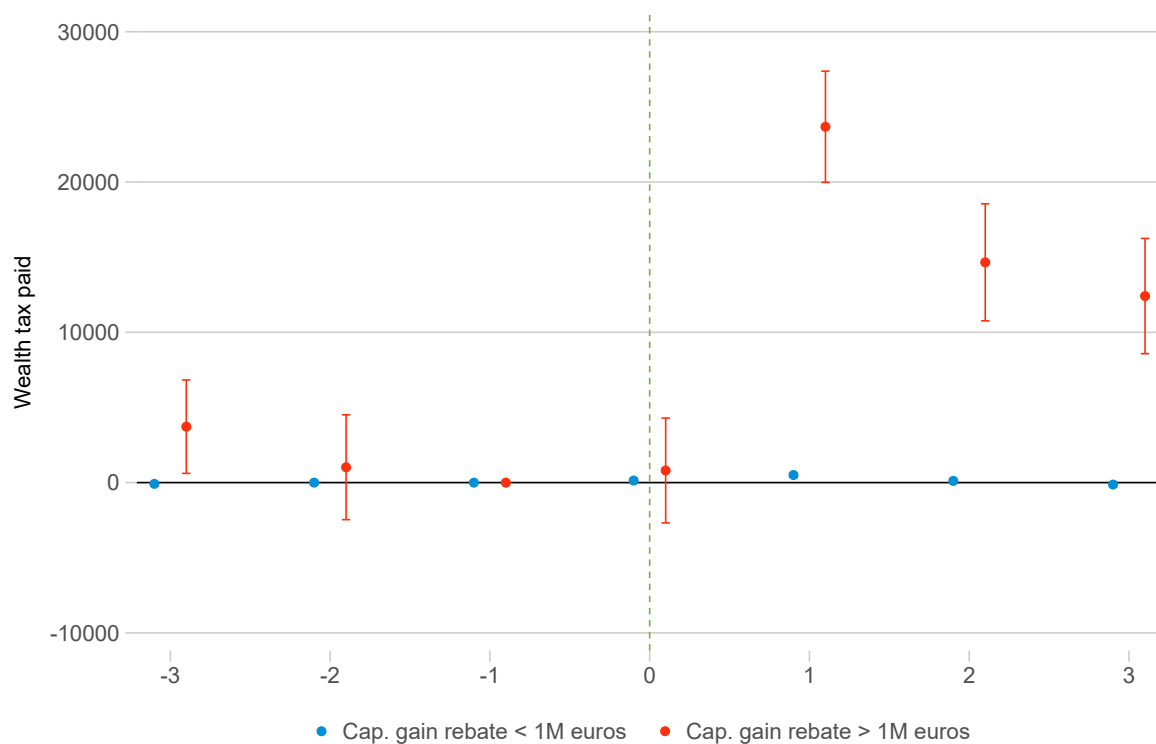
NOTE : This figure presents the coefficients associated with the use of the pigeon/SME tax deduction on taxable income, within a window of 3 years before to 3 years after the event. The last year before the disposal is taken as the reference year (-1). The points represent the coefficients obtained in an event-study regression, the bounds the associated 95 % confidence intervals.
SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 16: Event-study results on the probability of investing and amount invested in other SMEs around the sale of shares in a young SME

(a) Probability of investing

(b) Amount invested

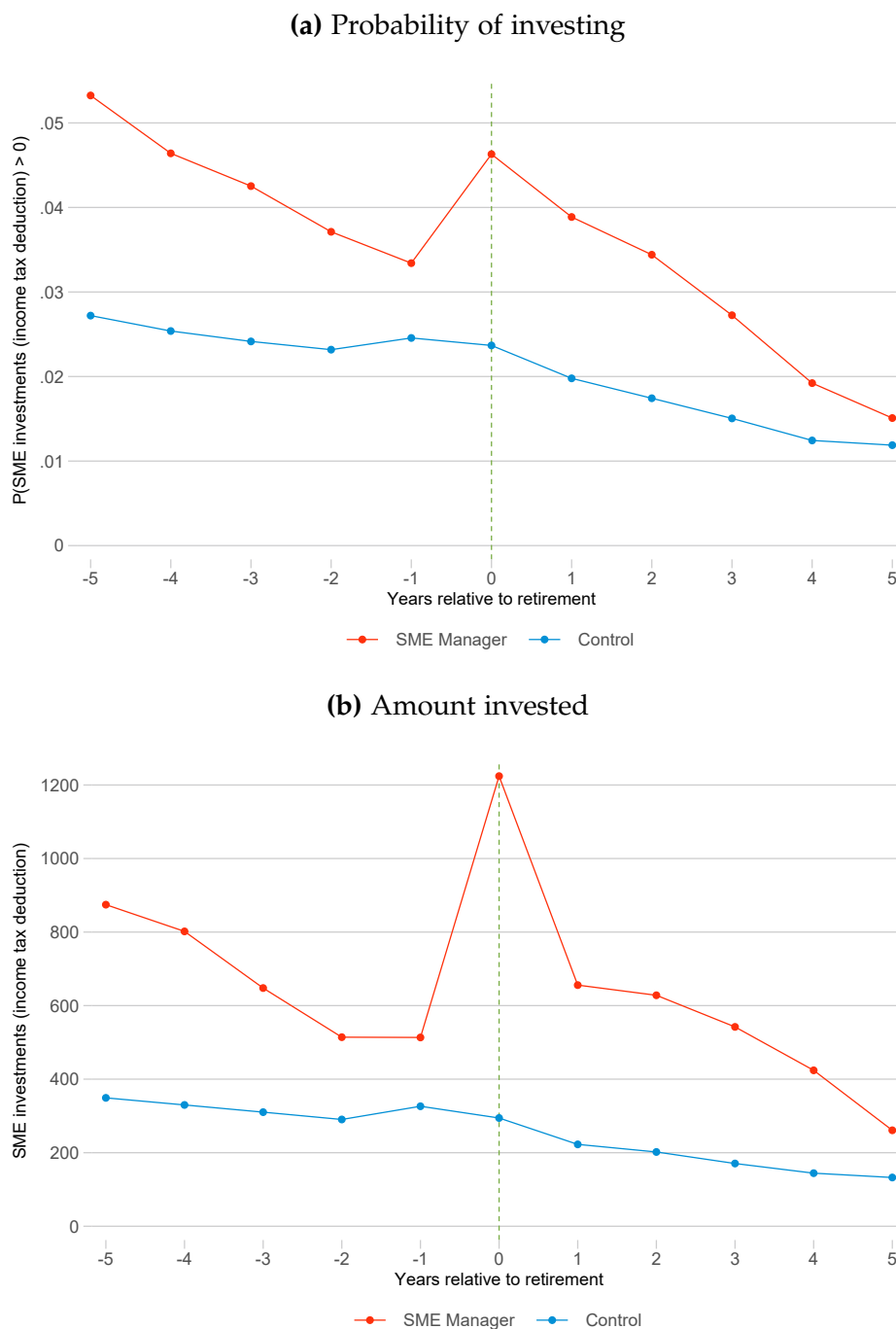● Cap. gain rebate < 1M euros   ● Cap. gain rebate > 1M euros
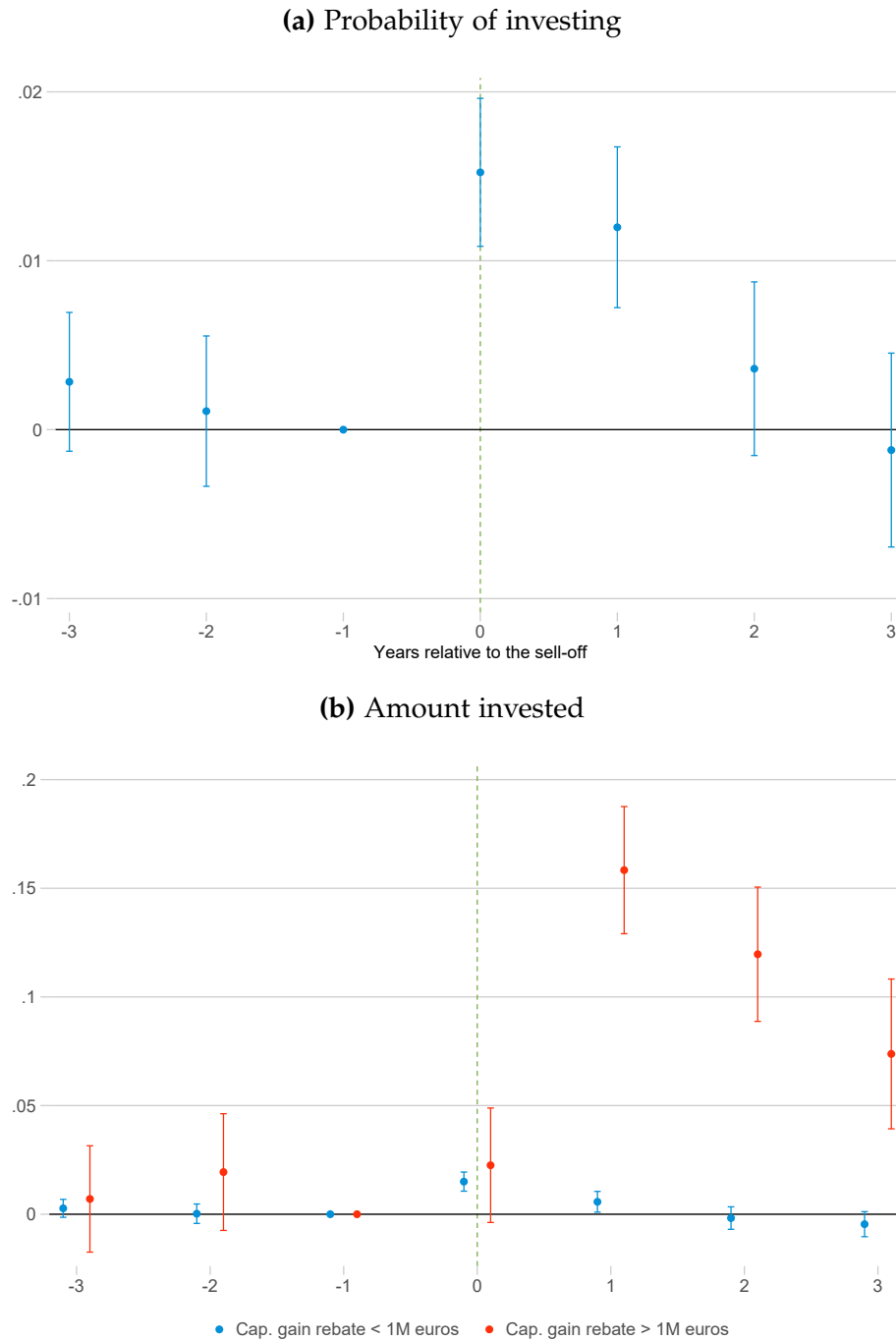
NOTE : These graphs present the effect of the sale of shares in a young SME on (a) the probability of investing in the capital of other SMEs and (b) the average amount of SME capital subscriptions reported by households using the SME allowance scheme, within a window of 3 years before to 3 years after retirement. The last year before the disposal is taken as the reference year (-1). The points represent the coefficients obtained in an event-study regression, the bounds the associated 95 % confidence intervals.
SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 17: Probability of investing and amount invested in other SMEs through the income tax deduction around the year of retirement

(a) Probability of investing

(b) Amount invested

NOTE : These graphs present the effect of retirement on (a) the probability of investing in the capital of other SMEs through the income tax deduction and (b) the average amount of SME capital subscriptions reported for the income tax by households including a retiring SME manager (Manager, red line), and by newly retired households in the control group (Control, blue line), within a window of 5 years before to 5 years after retirement.
SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure 18: Event-study results on the amounts invested in other SMEs around the sale of shares in a young SME

(a) Full sample

(b) Depending on the amount of capital gains
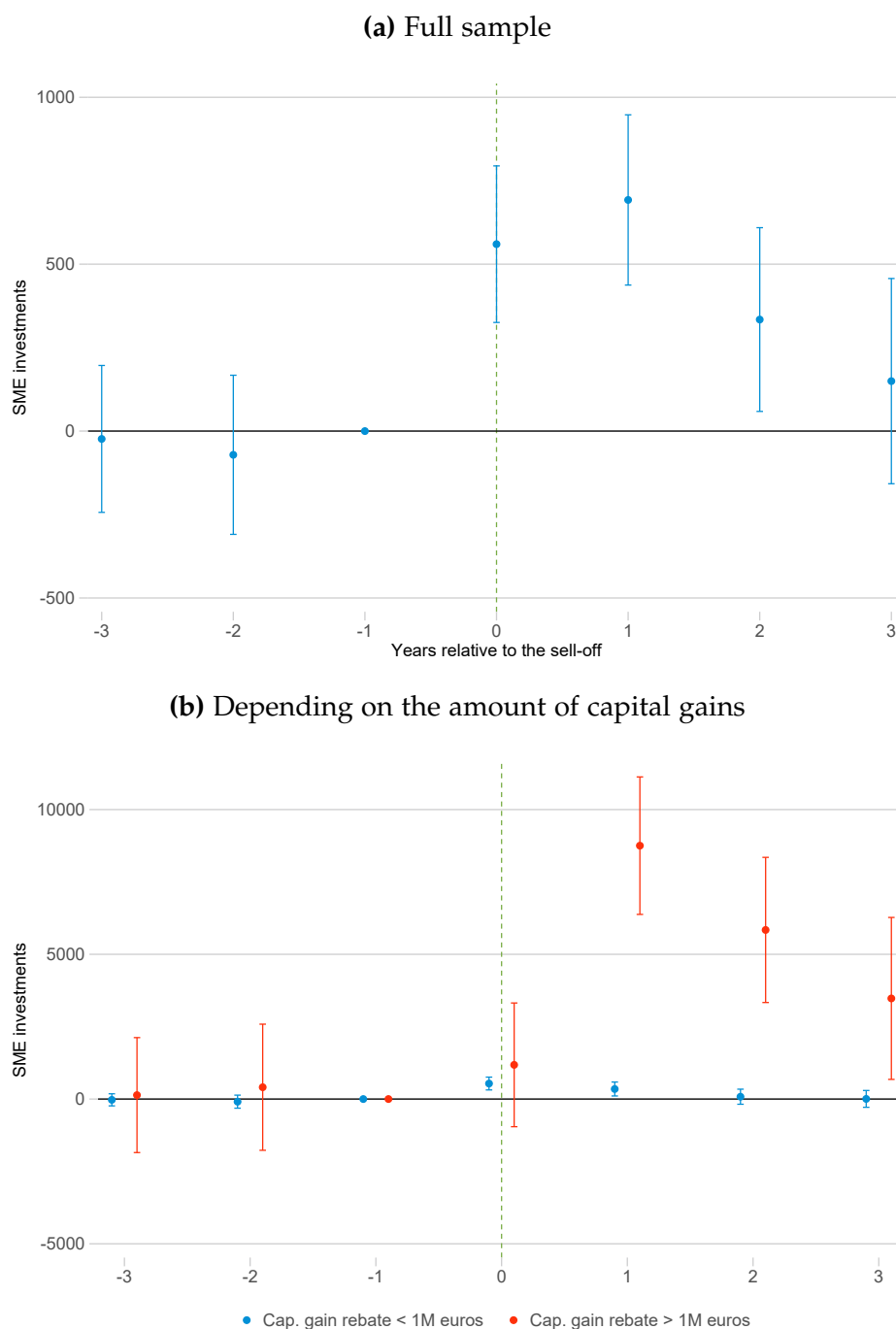
NOTE : These graphs present the effect of the sale of shares in a young SME on the amounts invested in the capital of other SMEs (a) for the whole sample (b) distinguishing capital gains below and above €1 million, within a window of 3 years before to 3 years after the sale. The points represent the coefficients obtained in the event-study regression, the bounds the associated 95% confidence intervals.

SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Table 1: Descriptives statistics – Business sellers and other young retirees

Variable	Retiring sellers				"Pigeons" sellers				Other retirees			
	Mean	P10	Median	P90	Mean	P10	Median	P90	Mean	P10	Median	P90
Age of the taxpayer	59.40	55.00	60.00	65.00	53.54	35.00	53.00	72.00	60.60	56.00	61.00	65.00
Taxable income (k €)	139.81	34.90	95.62	266.29	135.49	23.93	73.93	241.04	108.40	59.40	76.58	158.54
Net assets (k €)	440.02	0.00	0.00	1,691.51	483.77	0.00	0.00	1,800.00	284.42	0.00	0.00	1,101.34
Wealth tax paid (k €)	1.71	0.00	0.00	4.10	2.10	0.00	0.00	3.61	1.27	0.00	0.00	0.96
Wealth tax paid > 0	0.18	0.00	0.00	1.00	0.13	0.00	0.00	1.00	0.12	0.00	0.00	1.00
Tax favored investment in SMEs (k €)	1.42	0.00	0.00	0.00	1.68	0.00	0.00	0.00	0.73	0.00	0.00	0.00
Tax favored investment in SMEs>0	0.07	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.04	0.00	0.00	0.00
Number of households	30,815				35,024				599,715			

NOTE: This table presents descriptive statistics for the year prior to departure regarding the wealth and income of three groups of households: (1) Retired sellers: households that sell an SME on the occasion of their retirement as a manager, (2) "Pigeon" sellers: households that sell shares invested over a long period in an SME aged less than 10 years old, (3) Other retirees: households that retire without being managers but have a pre-retirement taxable income higher than the first quartile of the income distribution of retired SME sellers. All variables are reported in thousands of current euros.

SOURCES: Panel POTE-ISF/IFI, periods 2006-2017, DGFiP.

(For Online Publication)

Appendix to

Escape or Play Again? How Retiring Entrepreneurs Respond to the Wealth Tax
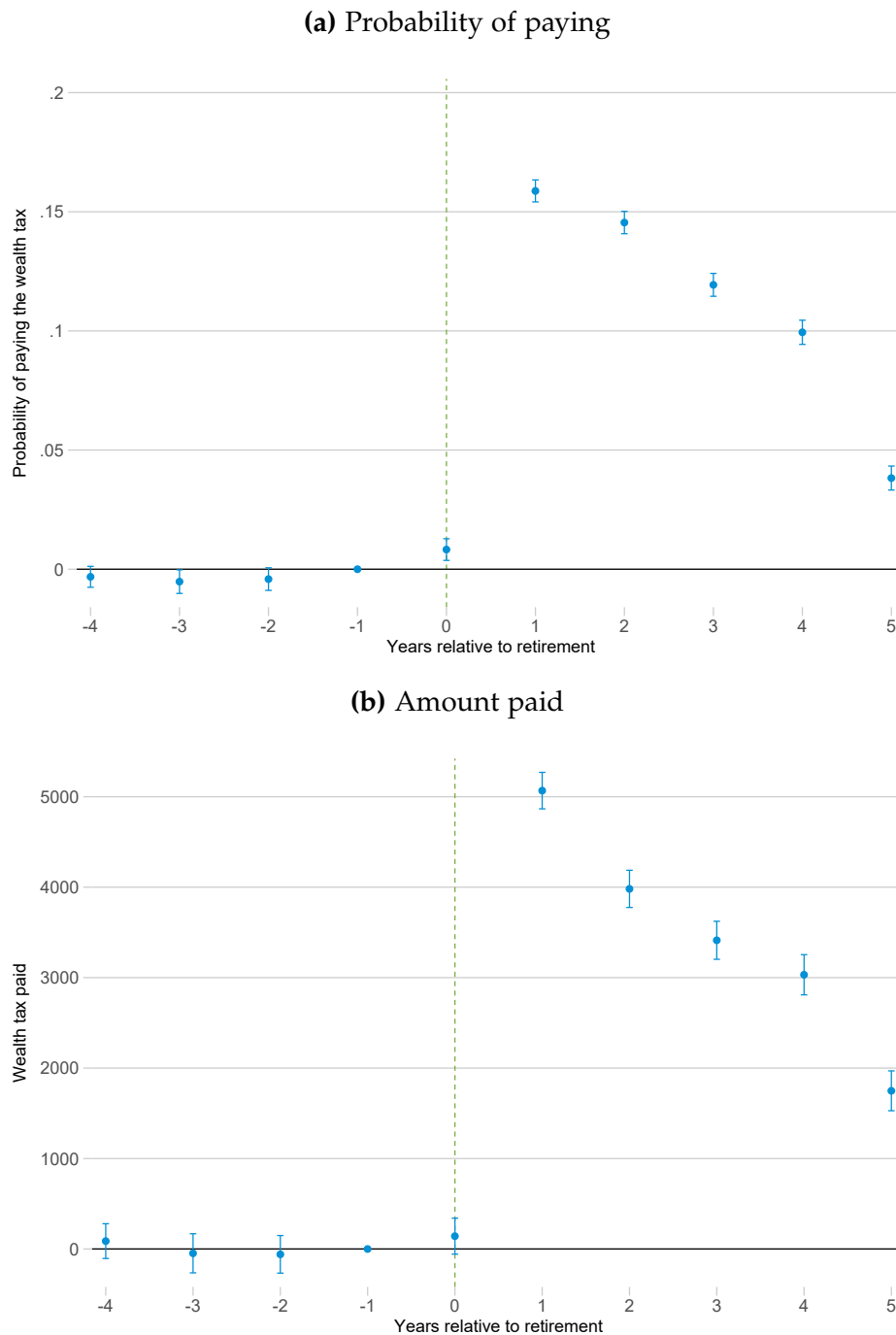
Laurent Bach   Antoine Bozio

Arthur Guillouzouic   Clément Malgouyres

December 2020

A Additional results

Figure A1: Event-study results on the probability of being liable to the wealth tax and the average wealth tax payment around the year of retirement

(a) Probability of paying

(b) Amount paid

NOTE : These graphs present the effect of retirement on (a) the probability of being liable to pay the wealth tax (b) the amount of wealth tax paid annually for tax households with a retiring SME manager, within a window of 5 years before to 5 years after retirement. The last year before retirement is taken as the reference year (-1). The points represent the coefficients obtained in the event-study regression, the bounds the associated 95% confidence intervals.
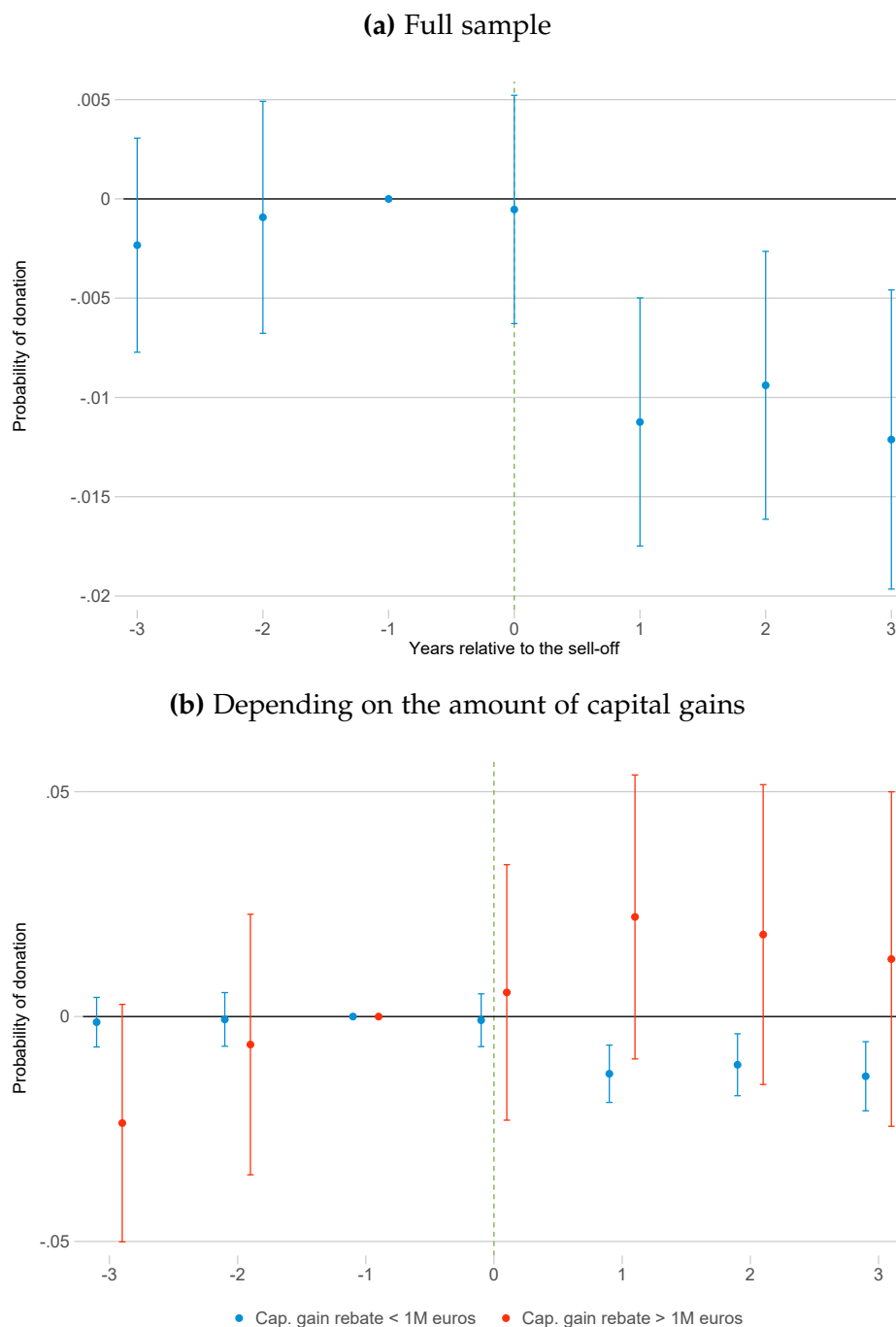SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure A2: Event-study results on the probability of being liable to the wealth tax and average amount of wealth tax paid around the year of retirement: heterogeneity depending on the amount of the capital gains
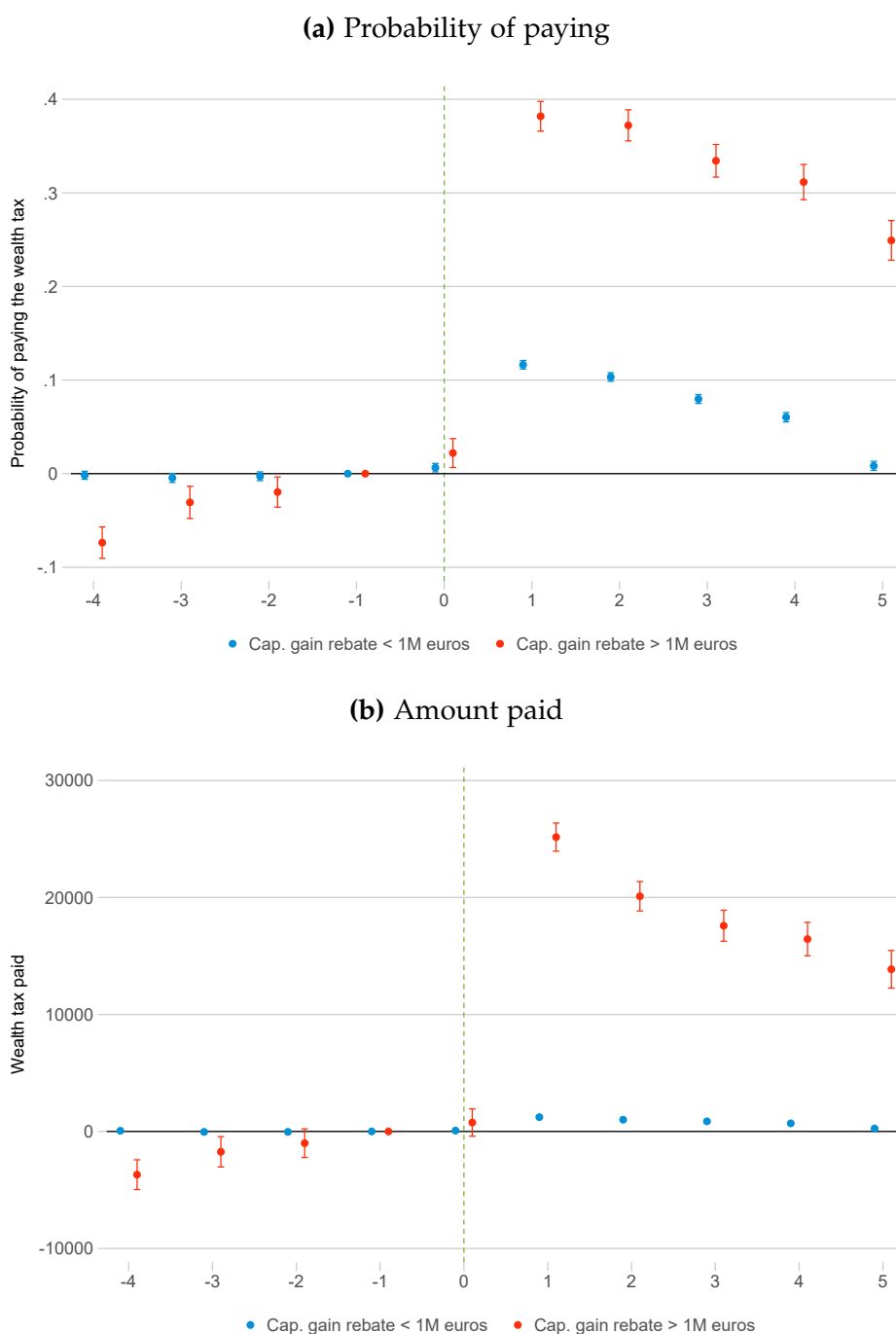
(a) Probability of paying

(b) Amount paid

NOTE : These graphs present the effect of retirement on (a) the probability of being liable to pay the wealth tax (b) the amount of wealth tax paid annually for tax households with a retiring SME manager, within a window of 5 years before to 5 years after retirement, distinguishing capital gains below and above €1 million. The last year before retirement is taken as the reference year (-1). The points represent the coefficients obtained in the event-study regression, the bounds the associated 95% confidence intervals.

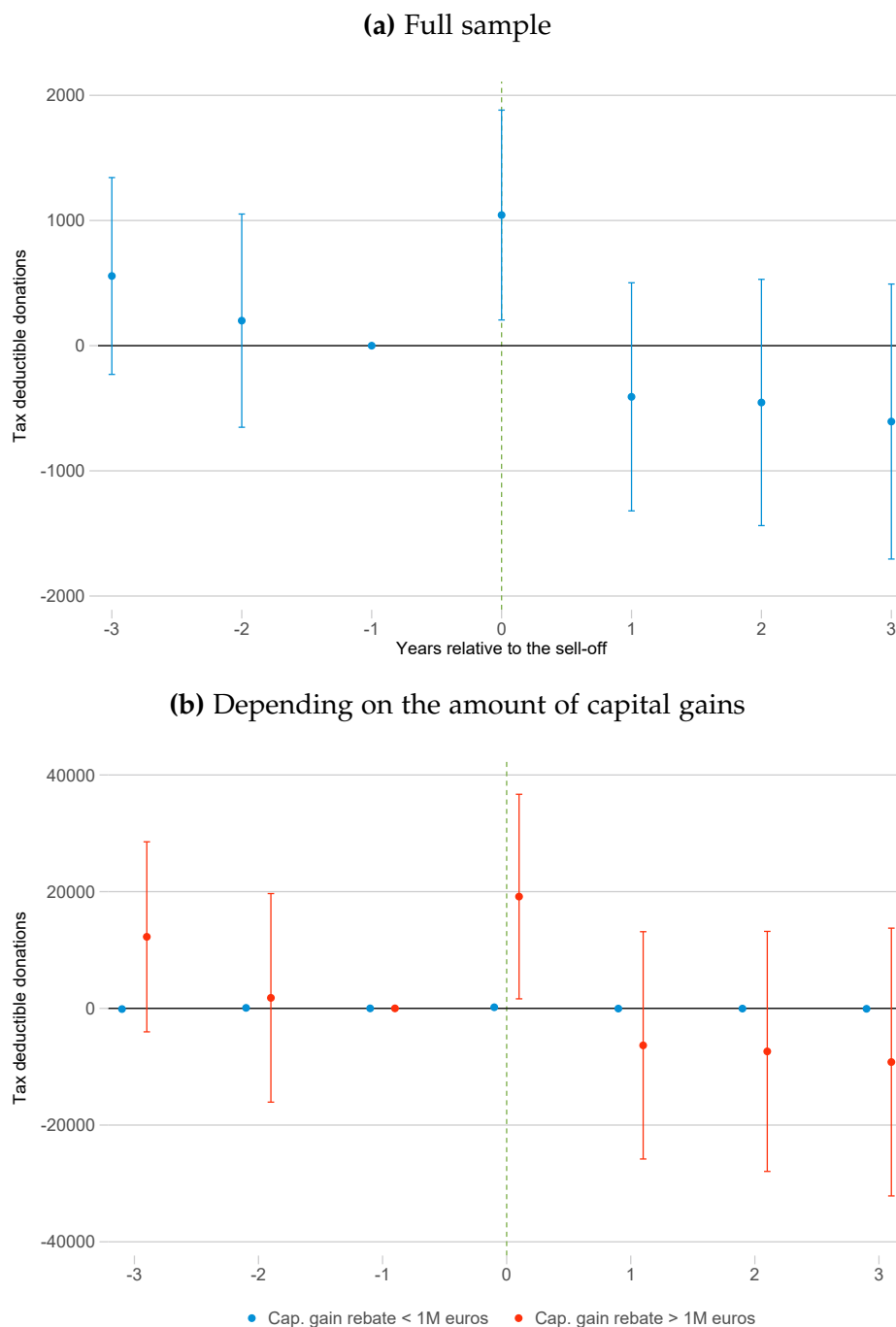SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

A-3

Figure A3: Event-study results on the probability of donating to charities around the sale of shares in a young SME

(a) Full sample

(b) Depending on the amount of capital gains

NOTE : These graphs present the effect of the sale of shares in a young SME on the probability of donating to charities around the year of the event (a) for the whole sample (b) distinguishing capital gains below and above €1 million, within a window of 3 years before to 3 years after the sale. The points represent the coefficients obtained in the event-study regression, the bounds the associated 95% confidence intervals.
SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.

Figure A4: Event-study results on the amounts donated to charities around the sale of shares in a young SME

(a) Full sample

(b) Depending on the amount of capital gains

● Cap. gain rebate < 1M euros   ● Cap. gain rebate > 1M euros

NOTE : These graphs present the effect of the sale of shares in a young SME on the average amounts donated to charities around the year of the event (a) for the whole sample (b) distinguishing capital gains below and above €1 million, within a window of 3 years before to 3 years after the sale. The points represent the coefficients obtained in the event-study regression, the bounds the associated 95% confidence intervals.
SOURCE: Panel POTE-ISF/IFI, period 2006-2017, DGFiP.