Inheritance Tax Avoidance Through The Family Firm

Isabel Micó-Millán*

Bank of Spain

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Abstract

This paper shows that family firms are used as vehicles for inheritance tax avoidance among the wealthy and assesses their implications for the effective taxation of wealth. Exploiting a major tax reform in Catalonia (Spain) that widened the tax gap between favored and non-favored assets, I document a shift in inherited wealth toward business assets, driven entirely by equity in family firms. This pattern is consistent with affluent testators transferring financial and non-productive assets to existing firms as capital contributions before death, with heirs unwinding their positions in privately held firms precisely when the mandatory holding period expires. Linking inheritance and wealth tax records, I estimate that this behavior reduces combined inheritance and wealth tax revenues by 10% annually, primarily through inheritance tax losses. The findings underscore that preferential tax treatment of business assets within broad wealth tax systems can result in substantial fiscal losses and undermine effective wealth taxation.

Keywords: inheritance tax, tax avoidance, tax reform, top wealth
JEL: H24, H26, O23

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1 Introduction

Recent trends in wealth inequality have reignited the debate over how inherited wealth should be taxed (OECD, 2021; Piketty et al., 2023). As with wealth taxes in many countries, inheritance tax systems often grant preferential treatment to specific asset classes, most notably the main residence and business assets[1]. These preferences are typically justified on liquidity grounds (Scheuer and Slemrod, 2021; Loutzenhiser and Mann, 2021). However, favoring certain assets create strong incentives for individuals to reallocate their portfolios toward tax-privileged assets, either to reduce their own liabilities or those of their heirs. The strategic use of tax-advantaged assets, particularly closely held businesses, as vehicles for tax planning among the wealthy has been linked to the political unpopularity of both inheritance (Henrekson and Waldenström, 2016) and wealth taxes (Perret, 2021). Yet, empirical evidence on the scale of this tax avoidance margin and its fiscal implications remains limited.

This paper provides comprehensive evidence on the use of family firms as vehicles for inheritance tax avoidance and examines its implications for the effective taxation of high-wealth individuals. The analysis exploits a major inheritance tax reform in Catalonia (Spain), which substantially and progressively increased the tax differential between privileged and non-privileged asset categories for heirs receiving inheritances above 800,000 €. The reform followed a period of exceptionally low inheritance tax rates, giving wealthy testators strong incentives to restructure their asset portfolios before death to minimize their heirs' tax liabilities. Using the universe of inheritance tax returns filed in Catalonia and the sharp variation generated by the reform, I document a pronounced reallocation of inherited wealth toward tax-advantaged assets, in particular equity in family firms. This behavioral response is entirely driven by heirs at the very top of the inheritance distribution. I then leverage a panel of wealth tax returns for these individuals to study portfolio dynamics at a finer level, providing evidence on the timing, persistence, and mechanisms underlying this reallocation. Finally, I quantify the resulting revenue losses, capturing both the direct erosion of the inheritance tax base and the indirect effects on wealth tax revenues.

The Spanish institutional context offers a compelling setting for studying asset-shifting responses to inheritance taxation and their implications for taxing top-wealth individuals. First, both inheritance and wealth taxes classify assets into two categories, *tax-favored* and *non-tax-favored*, based on the degree of preferential treatment. Tax-favored assets include the main residence, life insurance, agricultural and cultural property, and business assets (i.e., equity in family firms and real assets used for business), which often benefit from near-

[1] See OECD (2021) for a comprehensive overview of preferential tax regimes across OECD countries.

full exemptions typically subject to some maintenance rules.[2] In contrast, financial assets, secondary real estate, and household items do not receive tax benefits. Second, the 2014 Catalan inheritance tax reform increased the tax differential between favored and non-favored assets for descendants with taxable inheritances above 800,000 €, while leaving other heir groups largely unaffected. This asymmetry created strong incentives for wealthy individuals to reallocate portfolios when planning their testament for descendants relative to other heirs. The reform thus provides a natural experiment, allowing for a difference-in-differences design comparing descendants to spouses and distant heirs. Third, the reform followed a period of near zero inheritance taxation,[3] during which asset-type differentials were minimal. As a result, incentives for portfolio reallocation emerged only after the reform. Fourth, because largely the same assets that benefit from inheritance tax reliefs are also fully exempt from the wealth tax, the tax reform generates avoidance responses with spillovers across tax bases. I exploit this institutional overlap by complementing the inheritance tax analysis with a panel of wealth tax returns for very wealthy heirs, which allows me to quantify these spillovers and to examine how the reform reshapes portfolio composition at the top of the wealth distribution.

My first finding documents substantial heterogeneity in asset-shifting responses across the inheritance distribution. Although the tax reform raised tax rates for all descendants inheriting above 800,000 €, the magnitude of the tax increase was progressive along the distribution due to the design of the new tax credits, creating stronger incentives to reallocate portfolios for heirs set to receive larger inheritances. Consistent with this, heirs receiving taxable inheritances above 2M € account for the entire response, with a 38.8 percentage point increase in the share of tax-favored assets relative to the control group, implying tax savings exceeding 360,000 € per heir. By contrast, there is no significant effect for heirs inheriting between 800,000 € and 2M €, even after reweighting to align their pre-reform asset composition with that of the top bracket. Translating the reduced-form estimates into an elasticity, I find that a one percentage point increase in the inheritance tax differential is associated with a 15.9% increase in the share of tax-favored assets inherited. Importantly, the estimation sample is restricted to estates fully transferred to a single kinship category, allowing the results to reflect testators' portfolio reallocation rather than testamentary redistribution. The main identifying assumption required to interpret the post-reform difference between

[2] In Catalonia (Spain), inheritance tax reliefs included a 95% reduction for business assets, as well as full exemptions for the main residence (up to 500,000 €) and life insurance policies (up to 25,000 € per heir). To retain these tax benefits, heirs are required to maintain ownership of the business assets and the main residence for at least five years. Additionally, wealth tax provided a full exemption for business assets and a partial exemption for the main residence, up to 300,000 €.

[3] In 2011, the Catalan government introduced a 99% tax credit which acted as a quasi-abolishment of the tax for close heirs.

treated and control groups as a tax-motivated change in the composition of inheritances is that outcomes evolve similarly between groups absent the reform. The absence of differential pre-trends provides evidence lending credibility to this assumption. Results are similar when restricting the analysis to descendants and exploiting different exposure to the reform by inheritance size, alleviating concerns that the baseline difference-in-differences design relies on comparisons across fundamentally different estate types or family structures.

Using detailed linked data on the asset composition of inheritances and wealth portfolios of heirs, I show that the entire shift toward tax-favored assets is driven by equity in family firms. Following the reform, treated heirs significantly increase the share of inherited wealth held as equity in family firms, with no corresponding change in other tax-favored asset classes. This reallocation is mirrored by a decline in financial assets and, to a lesser extent, in nonproductive assets such as privately held vehicles and boats.

This pattern is consistent with a mechanism of private wealth relabeling, whereby affluent testators channel personal financial and non-productive assets into existing family firms through capital contributions, receiving newly issued shares in return. By converting private wealth into business wealth, this strategy qualifies the reclassified assets for preferential tax treatment under the inheritance tax at the time of transfer and subsequently under the wealth tax. Similar forms of reclassification have been documented in related contexts, including the accumulation of household assets within firms in response to dividend taxation (Alstadsæter et al., 2014).

Family firms provide a particularly flexible vehicle for this strategy. Under Spanish inheritance and wealth tax law, a family firm is defined as a firm engaged in economic activity in which the testator holds a minimum ownership stake and participates directly in management, irrespective of firm size or listing status. For testators, capital contributions to family firms are exempt from transfer taxes and generate no immediate corporate tax liability, unlike reallocations toward primary residences, which involve transaction costs and genuine portfolio adjustments. For heirs, the tax implications beyond the inheritance tax materialize at the time of eventual capital withdrawals. Privately held firms allow withdrawals up to equity basis without triggering taxation. By contrast, in publicly traded firms capital withdrawals are more likely to take the form of taxable dividends, triggering immediate taxation. Consistent with this institutional asymmetry, the reform-induced increase in business equity is mainly driven by privately held firms, where owners enjoy greater discretion over capital structure and the timing of distributions, while responses in publicly traded equity are substantially more muted.

Importantly, this relabeling need not be permanent. The inheritance tax requires busi-

ness assets to be held only for a minimum period to qualify for relief, after which heirs may unwind the strategy through capital reductions. Using linked administrative portfolio data from the wealth tax returns of heirs, I document a sharp decline, about 6 percentage points, in the share of private firm equity precisely when the mandatory holding period expires, corresponding to roughly 0.5M€ in levels, for the cohort of heirs exposed to the reform. This pattern is absent both for publicly traded equity and for pre-reform cohorts. Importantly, the decline in private firm equity is mirrored by a one-to-one increase in taxable wealth — comprising real estate, financial assets, and other taxable asset classes — precisely at expiration, providing a full balance-sheet decomposition that confirms the extracted capital migrates toward taxable assets. Overall, these findings are consistent with a tax avoidance strategy whereby private wealth is temporarily reclassified as business wealth to minimize inheritance tax liabilities, with heirs unwinding their positions as soon as the mandatory holding period expires. Extending the analysis to mixed estates confirms that relabeling, rather than within-estate redistribution, was the primary margin of response to the reform.

Finally, I use the causal estimates to quantify the fiscal impact of inheritance tax avoidance through family firms. A key strength of the data is the ability to link inheritance and wealth tax records, enabling an assessment of how the relabeling of inherited wealth into tax-exempted business assets affects both tax revenues. My estimates suggest that Catalonia forgoes on average approximately 10.26% of combined inheritance and wealth tax revenues annually (around 86M€) due to this reclassification, with the majority of this loss stemming from inheritance tax revenues (about 8.80%), while the impact on wealth tax is comparatively modest (around 1.46%). This disparity arises not from differences in the preferential treatment of business assets, which is broadly similar across both taxes, but from the sharper tax differentials under the inheritance tax between favored and non-favored assets. Crucially, the findings highlight that avoidance in one tax base can generate spillover effects on others, particularly in systems where business assets benefit from preferential treatment under multiple tax regimes, a feature common to many wealth taxation frameworks. As such, the use of business assets, particularly family firms, as tax avoidance vehicles can entail substantial fiscal costs that extend beyond a single tax instrument.

Related literature. This paper contributes to several strands of the literature. First, it relates to the expanding body of research on behavioral responses to inheritance taxation (Goupille-Lebret and Infante, 2018; Joulfaian, 2006; Erixson and Escobar, 2020; Glogowsky, 2021; Kopczuk, 2007; Brülhart and Parchet, 2014; Moretti and Wilson, 2023; Montserrat, 2019; Escobar et al., 2023). Much of this literature has focused on inter-vivos transfers as the primary margin of response, typically yielding modest elasticity estimates. Notable ex-

ceptions include Brülhart and Parchet (2014) and Moretti and Wilson (2023), who study whether high-income and high-wealth individuals respond to inheritance taxation by relocating to jurisdictions with more favorable tax regimes.

A smaller set of studies examines less conventional avoidance margins, primarily related to asset misreporting and misvaluation. For instance, Montserrat (2019) documents underreporting behavior in inheritance tax filings, while Kopczuk (2007) and Poterba and Weisbenner (2003) analyze how estates are structured to include hard-to-value assets with greater valuation discretion in the U.S. context.[4]

This paper focuses on a distinct margin of inheritance tax avoidance based on portfolio reallocation by wealthy testators in response to inheritance tax incentives. The analysis uncovers a relabeling channel operating through family firms, whereby personal wealth is converted into preferentially taxed business assets prior to death. Empirically identifying such behavior is challenging, as portfolio strategies are only relevant in institutional settings where tax codes grant preferential treatment to certain asset classes (Advani and Tarrant, 2021; Scheuer and Slemrod, 2021). Moreover, even when such provisions exist, empirical analysis is often hindered by the lack of comprehensive microdata.[5] This paper addresses this gap by leveraging administrative inheritance tax records from Catalonia (Spain), covering the universe of inheritances, together with linked wealth tax returns of top heirs, in a context where wealthy households have substantial incentives and scope to engage in asset-based tax planning. In doing so, it opens the black box of asset-based tax avoidance by tracing the timing, composition, and unwinding of portfolio reallocation strategies.

Second, this paper contributes to the broader literature on tax-induced asset shifting and cross-base behavioral responses among high-wealth individuals. Prior work has documented asset reallocation responses to wealth taxes (Alvaredo and Saez, 2009; Mas-Montserrat et al., 2025; Londoño-Vélez and Ávila-Mahecha, 2024; Alstadsæter et al., 2022), income taxes (Bergolo et al., 2022; Piketty et al., 2014), and dividend taxes (Alstadsæter and Jacob, 2016). In contrast, this study focuses on how inheritance tax incentives shape wealth portfolios prior to death, a margin that has received comparatively limited attention.

Third, this paper contributes to the literature on the use of closely held firms as tax avoidance vehicles. In Spain, Alvaredo and Saez (2009) and Mas-Montserrat et al. (2025)

[4]Specifically, Kopczuk (2007) finds that business assets, corporate stock, and household goods decline significantly in estates of individuals with prolonged illness, consistent with strategic estate planning. Poterba and Weisbenner (2003) highlights how valuation discounts and minority ownership structures substantially reduce effective estate tax rates for closely held businesses and real estate using SCF and estate tax return data.

[5]More than half of OECD countries offer inheritance tax reliefs for family businesses, housing, pensions, life insurance, or land (OECD, 2021), yet few provide access to detailed inheritance tax return data.

show that taxpayers reallocate non-business assets into tax-exempt business wealth in response to wealth taxation. More recently, Winter and Zental (2025) document highly elastic inter-vivos transfers of business assets in Germany around reforms to preferential inheritance tax regimes. Additional evidence highlights income shifting between personal and corporate tax bases (Romanov, 2006) and the sheltering of private consumption within corporate structures (Alstadsæter et al., 2014; Leite, 2024). This paper extends this literature by documenting the strategic use of family firms as a channel for inheritance tax avoidance and by quantifying its implications for the effective taxation of the wealthy in systems where preferential treatment applies to both inheritance and wealth taxes.

The closest related study is Montserrat (2019), which examines the quasi-repeal of the Catalan inheritance tax in 2011 to document misreporting of real estate assets. In contrast, this paper studies a subsequent reform in 2014 and focuses on portfolio reallocation strategies toward preferentially taxed assets. While Montserrat (2019) documents reporting responses, I find that behavioral responses to the later reform operate through asset relabeling rather than misreporting, consistent with recent evidence from the Catalan wealth tax literature (Mas-Montserrat et al., 2025) and with the institutional features of the Spanish tax assessment system.[6]

The rest of this paper proceeds as follows. Section 2 and 3 describe the institutional framework and the administrative tax data used. Section 4 lays out the empirical strategy and provides the main results before studying mechanisms in Section 5 while discusses additional results in Section 6. Section 7 assesses the tax revenue implications of the behavioral responses. Finally, Section 8 concludes.

2 Institutional Setting

2.1 The Spanish Inheritance Tax

The Spanish Inheritance tax was regulated in its current form back in 1987 (Law 29/1987). All regions are subject to this law except for the Basque Country and Navarre (the *Foral* regions) which, due to their special fiscal status, enjoy regulatory power to design most taxes, including the inheritance tax. The tax is levied on heirs and depends on their degree of kinship with the deceased or donor, respectively. The law distinguishes four groups of heirs: (i) descendants younger than 21, (ii) descendants older than 21, spouses and ascendants,

[6] Under the Spanish inheritance tax assessment system, heirs self-report asset values, but the tax authority applies the maximum between declared values and third-party assessments. As a result, administrative values effectively set a floor for real estate assessment, while no corresponding ceiling exists, limiting scope for undervaluation when tax rates increase. See Law 29/1987.

(iii) siblings, stepchildren, nephews/nieces, uncles/aunts, and (iv) more distant relatives and non-relatives.

Tax base. Heirs' tax base is defined as the sum of the individual portion inherited, life insurance benefits derived from the deceased's death as well as other assets transferred before death[7]. The net tax base is calculated after applying any eligible tax deductions. If the net tax base is positive, a progressive marginal tax schedule is applied to obtain the net tax liability.

Tax benefits. The Spanish inheritance tax law regulates a first set of tax deductions depending on the degree of kinship between the deceased person and heirs, which usually take the form of a fixed monetary amount. The law also includes a second set of tax benefits accruing certain types of assets - like the main residence of the deceased person, life insurance provisions, equity in family firms, business-related real assets, cultural property, or agricultural land. Most of these tax benefits take the form of unconditional 95% tax credits, meaning that only 5% of the asset value enters the net tax base, under some maintenance rules.

Tax schedule and tax liability. The tax schedule defines 16 brackets with tax rates ranging from 7.65% to 34%. The final tax liability to be paid is obtained after considering the corresponding scaling factor, which depends on the pre-inheritance gross wealth of the taxpayer and kinship group. Appendix A overviews all the general and asset-specific tax benefits applicable, the tax schedule, and the tax formula.

Assessment rules and tax enforcement. Heirs are asked to self-report the value of all the assets inherited at market prices and back up their assessment with third-party information. Financial asset value can be third-reported by banks and financial institutions. Real estate and closely-held business valuation at market prices is less straightforward. In this case, the tax administration will keep the highest value between the one self-reported and the one determined by some specific assessment rules[8]. Taxpayers can rely on balance sheet information[9] to value closely-held business assets while they can use the updated administrative value of the property to value the real estate assets[10]. The scope for under assessment is limited as the tax administration constantly supervises that assessment rules have been followed accordingly.

[7] The inheritance tax base also includes those assets transferred to the heirs by the deceased during the four years preceding the moment of death to avoid tax planning strategies.

[8] See Art 18 Law 29/1987 for assessment rules

[9] Taxpayers can use the assessment rules specified in the Spanish Wealth Tax law. See Law 19/1991

[10] The Catalan tax administration publishes the adjustment rules to measure real estate property at market prices given its administrative (cadastral) value. These adjustment rules are updated yearly and vary at the municipal level. See here

Decentralization of the inheritance tax and tax filing. The administration and regulation of the Spanish Inheritance Tax were decentralized in 1996. This meant that regions were awarded regulatory power to modify many aspects of the tax code, including the tax deductions or marginal tax rates, whenever these changes would not compromise the tax benefits already regulated in the national law. Heirs are required to file the inheritance tax within the next 6 months[11] after the death event in the region of residence of the deceased person, independently of the region where the assets being transferred are located.

Estate sharing rules. According to the Spanish Civil Code, testators are not entirely free to distribute their estate as they wish. Generally, 2/3 of the estate must go to descendants, with 1/2 of that portion required to be divided equally among them, known as the *forced share*. However, regions may modify these rules. In Catalonia, the forced share is limited to 25% of the total estate, which must be distributed equally among direct descendants. The remaining 75% can be freely allocated by the testator to any heir. If a surviving spouse exists, they are entitled either to the usufruct of the entire estate or, alternatively, to 25% of the estate plus the usufruct of the main residence.

2.2 The 2014 Inheritance Tax Reform in Catalonia

Since the early 2000s, most Spanish autonomous communities began exercising their regulatory power to modify the inheritance tax framework by introducing new tax benefits for close heirs (Micó-Millán, 2023). These benefits typically took the form of substantial increases in kinship-related deductions or the implementation of general tax credits applied to final tax liabilities. Importantly, these general credits were layered on top of pre-existing asset-specific tax reliefs.

In Catalonia, certain asset categories, namely the main residence of the deceased, life insurance, real assets used in business activity, equity in closely held firms, agricultural and rural land, and cultural property receive preferential tax treatment. These assets, collectively referred to as *tax-favored assets*, have been eligible for tax credits ranging from 95% to 100%, effectively resulting in near-complete exemption from inheritance taxation, subject to specific thresholds and conditions (see Appendix Table A.3). These reliefs are contingent upon compliance with maintenance requirements. For example, heirs claiming the tax credit on equity in family firms must retain ownership for a minimum of five years. A comprehensive overview of these conditions is provided in Table A.4. Assets not falling under this category, such as financial holdings, secondary real estate, and household goods, are classified as *non-*

[11] Still, they can ask for tax installment or tax moratorium for an extra 6 months but they become subject to interest on late payment.

tax-favored assets and are subject to standard tax treatment.

Catalonia undertook its first major inheritance tax reform between 2010 and 2011, which culminated with the introduction of a 99% tax credit for close heirs (i.e. direct descendants, ascendants, and spouses). The size of the tax credit, 99% of the resulting tax liabilities, acted as a quasi-repeal of the inheritance tax in this region (see Montserrat (2019)) and made negligible any differences in effective tax rates between privileged assets and non-privileged assets for close heirs. Distant heirs, however, were excluded from this reform and remained subject to the standard tax schedule, albeit with modest increases in kinship-related deductions.

In February 2014, the Catalan government implemented a substantial reform of the inheritance tax as part of a broader fiscal consolidation strategy. The reform introduced two tightly linked changes. First, it reduced kinship-related deductions across all heir categories. Second, it replaced the near-universal 99% general tax credit previously available to descendants and ascendants with a progressive schedule ranging from 99% to 20%, as a function of the gross tax base. Crucially, the redesigned general tax credit was made only partially compatible with asset-specific tax reliefs. With the exception of the main residence and life insurance, the use of any asset-specific tax relief of 95% reduces the general tax credit by 50%.[12] As a result, the increase in tax burden generated by the reform falls disproportionately on non-tax-favored assets, i.e., assets not eligible for asset-specific reliefs, even for inheritances of similar total value, as thse were the ones benefiting from the general tax credit.

To illustrate how these institutional features translate into differential exposure to the reform, Figure 1 reports simulated asset-specific tax rates by heir type and inheritance size, comparing the pre- and post-reform regimes. The simulations hold asset composition fixed at pre-reform levels, calibrated to match the observed portfolio composition along the inheritance distribution.[13] As shown in Figure 1a, the reform generates a sharp and highly progressive tax differential for direct descendants above approximately 800,000 €. Below this threshold, the tax differential remains negligible, reflecting the generosity of the general tax credit at low inheritance values and their pre-reform asset composition. Above it, two forces interact. First, higher inheritance values mechanically reduce the applicable general credit through its progressive schedule. Second, the pre-reform composition of inheritances shifts toward assets eligible for asset-specific reliefs, predominantly business assets, which in turn trigger a 50% reduction in the general credit. The combination of these two margins

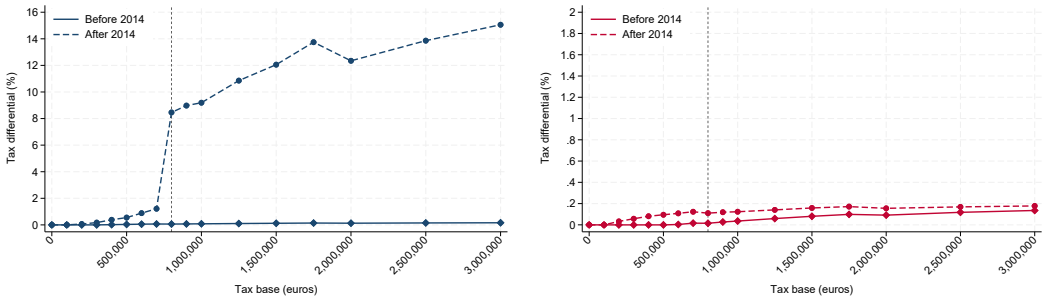
[12] Appendix Table A.1 details the post-reform parameters.

[13] Consistent with the data, assets eligible for the 95% relief (excluding main residence and life insurance) are assumed to be negligible below 800,000 €; see Appendix Figure D.3.

produces a pronounced jump in effective tax liability of non-tax-favored assets, driving up the tax differential. By contrast, Figures 1b and 1c show that tax differentials for surviving spouses and distant heirs remain largely unchanged, as the structure of the general tax credit for these groups was not materially altered by the reform.

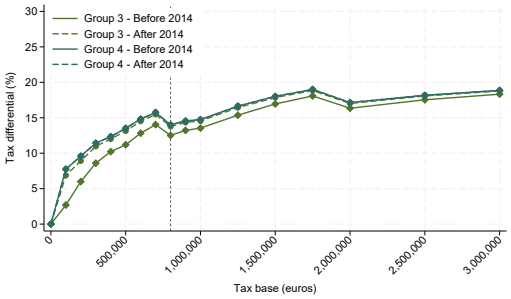
Importantly, this threshold identifies inheritances that become differentially exposed to the reform because of their size and asset composition. To assess the relevance of this exposure threshold, I implement a placebo test based on inheritance value in Section 4, examining ranges below the cutoff where the reform is not expected to be binding.

Figure 1: Tax Rate Differential Between Assets - Before and After the 2014 reform



(a) Direct descendants

(b) Spouses



(c) Distant heirs

This figure plots the tax rate differential between non-tax-favored and favored assets along the distribution of inheritances in Catalonia before and after the tax reform by heir group. The tax rate has been computed using a self-constructed tax simulator and a pre-reform asset composition calibrated by wealth bracket observed in the tax data. In Panel 1c, distant heirs in group 3 include second and third degree relatives (brothers, sisters, uncles, nephews, etc.). Distant heirs in group 4 include more distant relatives (like cousins) and non-relatives.

2.3 The Spanish Wealth Tax

The design and regulation of Spain's wealth tax closely resemble those of the inheritance tax. Formally established by Law 19/1991 and temporarily suspended between 2008 and 2010, it applies across all autonomous communities except the Basque Country and Navarre, and its regulation and administration were transferred to the regions in 1996. The tax is levied on the net value of an individual's taxable assets and follows a progressive schedule applied only

to the portion of the tax base exceeding a legally defined exemption threshold. Importantly, equity in family businesses and tangible assets actively used in business operations are fully exempt from the wealth tax, mirroring the preferential treatment they receive under the inheritance tax. After its reintroduction, the Catalan government set marginal rates ranging from 0.21% to 2.75% and an exemption threshold of 500,000€ (see Appendix B.1 for more details). These tax parameters remained unchanged throughout the sample period considered in this paper.

3 Administrative Data

The analysis builds on two different administrative datasets provided by the Catalan Tax Agency ("*Agència Tributària Catalana*").

Inheritance tax data. The primary dataset comprises the universe of anonymized inheritance tax returns filed in Catalonia between 2011 and 2019.[14] Heirs are required to submit two forms: the *650 form*, which details the individual share inherited, applicable asset-specific and general tax deductions and credits, as well as the heir's age and relationship to the deceased; and the *660 form*, which reports the total value and composition of the estate.I use the detailed information from the 650 form, combined with a self-constructed tax simulator for Catalonia, to recover the value of inherited assets by asset class for each heir. Importantly, the value of each tax-favored asset class deduction is directly observable in the 650 form, and the simulator simply converts these deductions into asset values using the corresponding relief rates. This is complemented with data from the 660 form, which enables the identification of heirs linked to the same estate (e.g., spouse and descendants, or other relatives), and, in some cases, provides additional detail on asset types, particularly for non-tax-favored assets not specified in the 650 form.

To cleanly identify the effects of the 2014 tax reform on the outcome variables, I focus on the sample period 2011-2019 as the Catalan government had already reformed the inheritance tax code in 2010-2011. Therefore, inheritance tax returns filed in the years prior to 2011 are excluded from the analysis to avoid confounding results. I further restrict the sample by excluding heirs who inherit under a usufruct arrangement. Usufruct splits the inheritance into two separate tax events: an initial transfer of use rights and a subsequent consolidation of full ownership upon the usufructuary's death. Since the data do not allow me to link initial filings to their subsequent consolidation events, the declared value of inherited assets for

[14] In Spain, only regional tax authorities can provide data on inheritance tax returns, as the administration and regulation of the tax were transferred to them in 1996. To date, only the Catalonian Tax Authority has compiled and anonymized the full universe of inheritance tax returns filed in the region since 2006.

usufruct heirs reflects only a fraction of the total estate value. Excluding these observations ensures that the declared inheritance value is comparable across all groups, as it always reflects a complete transfer of ownership.

Wealth tax returns. The second dataset consists of a panel of anonymized wealth tax returns between 2012 and 2019 filed by heirs in Catalonia who received taxable inheritances exceeding 2M€ over that period.[15] It contains most items reported on the annual wealth tax declaration, the year of the inheritance receipt, and whether estates were exclusively transferred to descendants or shared with the surviving spouse. Critically, it contains disaggregated information on wealth declared in the form of non-taxable business assets, that is, equity in family firms and real assets used in business activity, with a further breakdown between privately held and publicly traded firms that is unavailable in the inheritance tax data.

Descriptive statistics. Table D.1 reports summary statistics by kinship relationship. Around 87% of taxpayers are close heirs (ascendants, descendants, and spouses), with direct descendants representing 66% and spouses 20%. Table D.2 presents summary statistics for the tax base and liabilities. The average tax base for close heirs is 130,920€, with an average tax liability of 685€. After the tax reform, the proportion of close heirs subject to positive tax liabilities increased from 4% to 17%, driven entirely by wealthy descendants, with average liabilities rising from 53€ to 966€. Distant heirs also experienced an increase in tax liabilities after the reform, though more modest, with the share subject to positive liabilities rising from 33% to 69%. Figures D.1a and D.1b show that the share of tax-favored assets rises with inherited wealth, reaching 30% at the top 1%, with business assets becoming the dominant component above the 95th percentile.

Table D.4 presents summary statistics for the panel of wealth tax returns filed by heirs with tax base exceeding 2M €. Consistent with the receipt of a substantial wealth transfer, both the wealth of heirs and the share of tax-exempt assets increase following the inheritance year. Notably, these increases are significantly larger for heirs inheriting after 2014.

Complementary roles of the two datasets. The two datasets serve complementary roles in the analysis. The inheritance tax returns are the primary source of identification, providing the full population of taxable inheritances and detailed information on asset composition at the moment of the inheritance. The wealth tax panel complements this by tracking the asset portfolios of top heirs over time, enabling a more granular analysis of portfolio dynamics and a comprehensive tax revenue analysis that accounts for both inheritance and wealth tax

[15] The Spanish Wealth Tax was temporarily repealed between 2008 and 2011. As a result, wealth tax return data is only available from 2012 onward.

revenues jointly.

4 Behavioral Responses to the Inheritance Tax Reform

To provide causal evidence on tax minimizing strategies of wealthy testators, I leverage the differential exposure to the 2014 tax reform by kinship relationship (see Figure 1). Using a difference-and-difference design, I compare shifts in the asset composition received by wealthy descendants compared to other wealthy heirs.

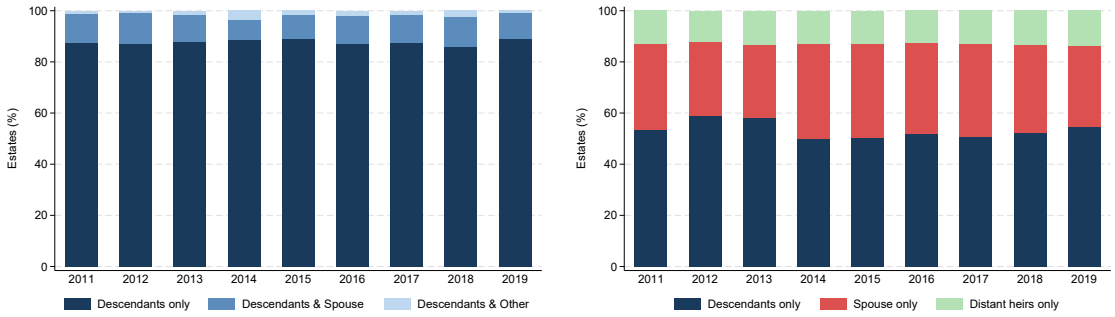
Treatment and Control Groups. The treatment group consists of direct descendants with taxable inheritances exceeding 800,000 €, representing the top 2% of the pre-reform inheritance distribution, while the control group includes spouses and distant heirs within the same inheritance bracket. Treatment status is defined by exposure to the tax differential increase generated by the reform, which is computed using pre-reform taxable inheritances, ensuring that the treatment threshold is predetermined with respect to any behavioral response.

I deliberately restrict the sample to estates fully transferred to a single kinship category: descendants, spouses, or distant heirs. This restriction allows me to interpret the behavioral responses as changes in asset portfolio composition rather than estate redistribution strategies across heirs. The design implicitly compares estates of testators with and without descendants, a comparison that arises mechanically from the Spanish *forced heirship* rule, which entitles direct descendants to at least one-fourth of the estate in Catalonia. However, testators retain discretion over the freely disposable portion of the estate, which has two potential implications for identification. First, testators may use this margin to include other heirs for tax minimization purposes, an alternative behavioral response that I analyze separately later in the paper. Second, the reform may have endogenously altered the composition of the treatment group: testators with greater access to asset-shifting strategies may have had stronger incentives to concentrate the freely disposable portion exclusively among descendants, inducing self-selection into the treatment group. This would introduce upward bias in the estimates, as the observed response would partly reflect the endogenous selection of more sophisticated testators into the treatment group rather than a causal effect of the reform.

Figure 2 presents the composition of estates with at least one heir above the inheritance threshold over time. Panel 2a disaggregates estates into descendants-only, descendants and spouse, and descendants and other heirs. Panel 2b focuses on single-kinship estates and plots the evolution of estates transferred exclusively to descendants, spouses, or distant heirs. The

shares of each category remain stable over time, both before and after the reform, mitigating concerns of such bias. Appendix Figure D.2 formalizes this evidence through an event study, confirming that the share of estates transmitted exclusively to descendants does not change significantly around the reform.

Figure 2: Summary Statistics on Estate Composition by Kinship

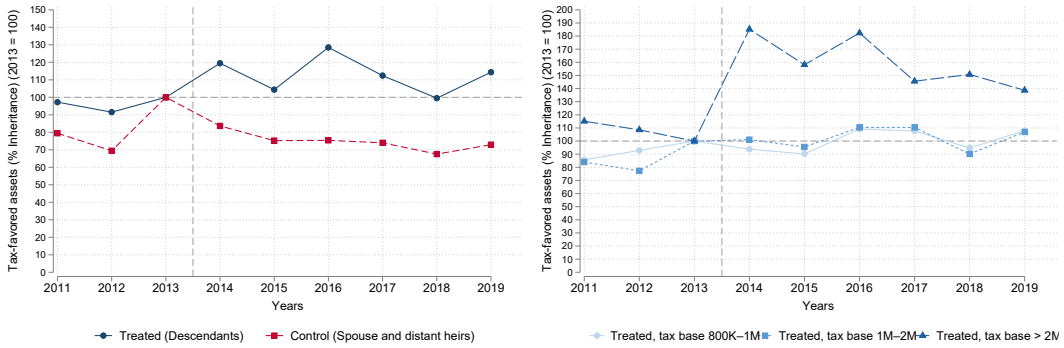


(a) At least one descendant > 800,000 € **(b)** Single-kinship - At least one heir > 800,000 €

Panel 2a presents the proportion of estates by type including at least one descendant with taxable inheritance above 800,000 euros. Panel 2a presents the proportion of single-kinship estates including at least one heir with taxable inheritance above 800,000 euros. Data from the universe of inheritance tax returns filed in Catalonia excluding usufructaries (Catalan Tax Agency).

Descriptive Statistics. Table D.3 presents descriptive statistics for the treatment and control groups before 2014, separately for heirs with tax base between 800,000 € and 2M € (Panel A) and above 2M € (Panel B). The share of tax-favored assets is 19.74% for the treated group and 21.87% for the control group in Panel A, and 30.98% and 28.68% in Panel B, indicating comparable portfolio compositions across groups prior to the reform. Figure 3 plots the time series of tax-favored assets as a share of inheritance for the treated and control groups (Panel 3a) and for the treated group disaggregated by inheritance bracket (Panel 3b), both normalized to 2013. The series evolve in parallel prior to the reform. Panel b shows that the post-reform increase in tax-favored assets observed in the treated group is driven exclusively by heirs above 2M €, with the 800,000 €–2M € bracket showing no discernible change.

Figure 3: Tax favored Assets (% Inheritance)



(a) Treated and Control Groups **(b)** Treated Group By Inheritance Bracket

Panel 3a plots the time series of the treated and control group (normalized to 2013). The treated (control) group are descendants (spouses and distant heirs) with taxable inheritances above 800,000 euros between 2011-2019. Panel 3b plots the time series of the treated group (normalized to 2013) by inheritance bracket (800,000 €-1M €, 1M €-2M €, > 2M €) between 2011-2019

Empirical Specification. The differences-in-differences specification is given by:

$$Y_{igt} = \sum_{\substack{j=2011 \\ j \neq 2013}}^{2019} \beta_j \mathbf{1}[t = j] \times T_i + \gamma_t + \lambda_g + \epsilon_{igt} \tag{1}$$

where Y_{igt} is the outcome variable of heir i of cohort g in fiscal year t, $\mathbf{1}[t = j]$ is an indicator for fiscal year j, and T_i is a treatment indicator that equals one for direct descendants and zero for spouses and other collateral heirs. γ_t denotes fiscal year fixed effects, λ_g cohort fixed effects, and ϵ_{igt} the idiosyncratic error term. Each fiscal year t runs from February of year t to January of year $t + 1$, as the reform was enacted on 1 February 2014[16]. The coefficients of interest are β_j which capture the average difference in the outcome between wealthy descendants and other wealthy heirs in year t with respect to the reference year.

The key identifying assumption is that the outcome of the wealthy descendants and other types of wealthy inheritors would have evolved similarly in the absence of the 2014 tax reform. While it is not possible to test this assumption empirically, the tax rate differential between privileged and non-privileged assets faced by spouses and distant heirs was barely affected by the reform and therefore, the incentives for them or their testators to engage in tax-minimizing strategies should at least be weaker. A key concern is that descendants might differ from other heirs in the asset composition or value of inheritances *per se*. This would translate into changes in the outcome variable not reflecting behavioral responses to the tax reform but rather differences in the composition of estates. The empirical specification allows me to detect some of these confounders by comparing trends in the outcomes across wealthy

[16]For example, fiscal year $t = 2013$ covers February 2013 through January 2014 and serves as the base year, as it is the last full fiscal year unaffected by the reform.

heirs in the years before tax reform: to the extent that confounding shocks occur in an earlier year than the tax reform, they will appear as a differential trend for wealthy descendants in the pre-reform period. Fiscal year fixed effects γ_t absorb any aggregate trends in inherited asset composition common to all groups, ensuring that the estimates are not confounded by economy-wide policy changes or macroeconomic shocks occurring during the sample period.

4.1 Results

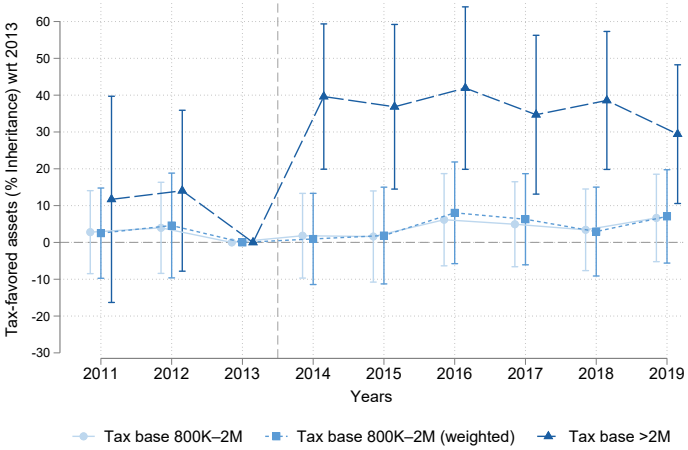
Asset-shifting responses. The descriptive evidence presented in Figure 3b suggests stronger responses among descendants who receive larger inheritances. First, although the Catalan tax reform raised tax rates for all descendants inheriting wealth above 800,000 euros, the magnitude of the tax increase was *progressive* along the inheritance distribution (see Figure 1a), creating stronger tax incentives to reallocate wealth when planning estates for heirs set to receive larger inheritances. Second, very wealthy individuals tend to have better access to tax-favored assets, particularly business assets[17], making asset reallocation a more feasible margin of response for very wealthy testators.

To explore this heterogeneity in asset-shifting responses by inheritance bracket in greater depth, I group heirs into bins based on their tax base. Figure 4 presents the results. Only descendants with taxable inheritances above 2M€ respond strongly to the reform: the share of tax-favored assets inherited by top-wealth descendants increases by 38.8 percentage points relative to the control group. Given the average pre-reform taxable inheritance for this group, this shift in asset composition implies a drop in effective tax rates of 3.83 percentage points (360,000€ in tax savings). By contrast, there is no significant effect of the tax reform on the asset composition of inheritances for heirs inheriting between 800,000€ and 2M€. This null result is robust to a reweighting exercise that aligns the pre-reform asset composition of this group with that of the top inheritance bracket, in an attempt to net out the differences in access to tax-favored assets from the estimated response[18]. Taken together, these results suggest that among wealthy descendants affected by the 2014 reform, only those facing the largest increase in tax rate differential responded strongly to the policy change.

[17] This pattern is not unique to Spain (Martínez-Toledano, 2023), and is also observed in other countries, including Norway (Fagereng et al., 2019), the United States (Kopczuk and Zwick, 2020), and the United Kingdom (Advani et al., 2021).

[18] The reweighting is implemented using inverse probability weighting (IPW). Specifically, I estimate a probit model for $P(\text{tax base} > 2\text{M€} \mid \%\text{ tax-favored assets})$ using pre-reform treated observations, and use the predicted probabilities to construct weights for the 800,000€–2M€ inheritance group. This procedure aligns the pre-reform distribution of tax-favored assets in the lower bracket with that of the top inheritance bracket.

Figure 4: Effects of the Tax Reform on the Asset Composition of Inheritances



This figure plots the estimated β_j coefficients from Equation 1 with 95% confidence intervals. The treated (control) group consists of descendants (spouses and distant heirs). The dependent variable is the share of inherited tax-favored assets. Inheritance brackets (in thousand euros) are 800–2,000 and above 2,000. For the 800–2,000 bracket, two regressions are estimated: one unweighted (solid light blue) and one weighted (dashed light blue). Weights are computed using inverse probability weighting (IPW) to align the pre-reform asset composition of this group with that of the top inheritance bracket. Standard errors are robust and clustered at the year–month level.

An alternative way of studying portfolio recomposition responses is to examine the levels of tax-favored and non-tax-favored assets inherited, rather than their shares. Appendix Figure E.1 presents this exercise for heirs with taxable inheritances above 2M €. The post-reform increase in tax-favored assets inherited by treated descendants is almost entirely offset by a decline in non-tax-favored assets, leaving the total taxable base unchanged relative to the control group[19]. In levels, the reallocation amounts to approximately 1.8 € million per heir, a near one-to-one shift from non-tax-favored to tax-favored assets.[20] This piece of evidence is consistent with Mas-Montserrat et al. (2025), who document that wealthy individuals responded to the reintroduction of the Catalan wealth tax through asset reallocation rather than changes in reported wealth.

Appendix E reports a series of robustness checks. First, the results are robust to alternative control group definitions. Appendix Figure E.2 presents two alternative specifications: Panel E.2a compares treated descendants (taxable inheritance above 2M €) to less wealthy descendants (taxable inheritance between 500,000 € and 800,000 €), ensuring that the comparison is within the same kinship category and estate type. Panel E.2b uses spouses and

[19] One might expect wealthy descendants to underreport total inheritances following the reform, particularly real estate wealth which falls under the category of non-tax favored assets, as in Montserrat (2019).The discrepancy of the results might be related to the Spanish tax assessment rules, which limit undervaluation of real assets: while taxpayers can overvalue real estate property when taxes are low, the scope for undervaluation when taxes rise is constrained by the administrative value floor.

[20] These results are obtained by estimating Equation 1 augmented with controls for the tax base and its interaction with kinship status, which account for systematic differences in inheritance size between treated and control groups.

distant heirs separately rather than pooled as the control group. Both specifications yield results qualitatively and quantitatively similar to the baseline, confirming that the findings are not driven by the comparison across different kinship categories or by the pooling of control groups. Second, the findings are insensitive to alternative clustering levels for the standard errors. Finally, I run a placebo test to provide direct evidence that the baseline results capture behavioral responses to the differential change in tax incentives introduced by the reform. I compare direct descendants to other heirs with taxable inheritances between 500,000 € and 800,000 €, a range where all groups faced a small and similar tax increase and therefore no significant asset-shifting response should emerge. Figure E.4 confirms this, showing no significant change in asset composition between the two groups.

Elasticity estimates. To benchmark my findings against behavioral responses to wealth taxation documented in the literature, I translate the observed asset-shifting behavior into an elasticity with respect to the tax differential. Building on the framework developed by (Bergolo et al., 2022; Waseem, 2018), I demonstrate that the reduced-form estimates can be decomposed into two components: a pure asset-shifting elasticity and an intensive margin elasticity that captures both asset reallocation and reporting responses (see Appendix C). Focusing on the former, I employ an instrumental variables (IV) strategy using two-stage least squares (2SLS) to address the endogeneity of the tax rate differential between favored and non-favored assets:

$$\ln(I^F_{igt}) = \nu_s(\tau^{NF}_{it} - \tau^F_{it}) + \gamma_t + \lambda_g + u_{igt} \tag{2}$$

where $\tau^{NF}_{it} - \tau^F_{it}$ is instrumented using the interaction $\text{Treat}_i \times Post_t$. The asset-specific tax rates $\tau^{NF}_{it}, \tau^F_{it}$ are computed by fixing the asset composition of treated descendants at its pre-reform distribution and applying the actual post-reform tax schedule. As specified in the baseline Equation 1, the treatment indicator Treat_i takes a value equal to 1 for direct descendants and 0 for spouses and other distant heirs, while the time dummy takes value equal to 1 in the post-reform period (i.e. after February 2014) and 0 otherwise. I focus on the same sample of heirs with taxable inheritances above 2M €.

Table 1 reports the elasticity estimates. Column (1) presents the baseline specification with time fixed effects only, while Column (2) additionally controls for cohort fixed effects. The estimated asset-shifting elasticity is 21.5 (s.e. 2.3) in Column (1) and 15.9 (s.e. 2.8) in Column (2), implying that a one percentage point increase in the inheritance tax differential is associated with a 15.9–21.5% increase in the share of tax-favored assets inherited. These findings are broadly consistent with the nascent empirical literature on asset-shifting responses to tax differentials. Alvaredo and Saez (2009) exploit the introduction of a tax

exemption for closely held stocks in Spain and document a 33% increase in the share of such assets among the top 1%, implying an elasticity of approximately 25. Mas-Montserrat et al. (2025) estimate an elasticity of 32.1 with respect to the average wealth tax rate following the 2011 reintroduction of the Spanish wealth tax; since they find no evidence of changes in total reported wealth, their estimate primarily reflects portfolio recomposition rather than evasion or real responses.

Table 1: Asset-shifting Elasticity Estimates

	(1)	(2)
Panel A: Second stage		
Elasticity wrt $(\tau^{NF} - \tau^{F})$	21.502***	15.921***
	(2.325)	(2.825)
Panel B: First stage		
Treat×Post	0.069***	0.068***
	(0.004)	(0.004)
F-stat	349.78	242.49
Time FE	Yes	Yes
Cohort FE	No	Yes
Observations	2,103	2,097

This table presents the 2SLS estimates of Equation 2. $(\tau^{NF} - \tau^{F})$ is instrumented by the interaction between $T_i \times Post_t$, where T_i takes the value 1 (0) for descendants (spouses and distant heirs). Standard errors are robust and clustered at year-month level. $***p < 0.01, **p < 0.05, *p < 0.1$

5 The anatomy of the asset-shifting

Shifting the form in which wealth is held is not a frictionless process. In Spain, the group of inheritance tax-privileged assets includes a wide variety of assets. Although it is not unreasonable to think that certain assets are more prone to be held in different forms than others (for instance, financial wealth can be held through a firm), the magnitude of the shifting responses as well as the vehicles used remains an empirical question (Advani and Tarrant, 2021). The richness of the inheritance and linked wealth tax data allows me to study the anatomy of these responses using two complementary identification strategies. First, I use detailed inheritance tax return data to break down the shift by asset category, exploiting the same kinship-based variation used above. Second, I draw on a panel of wealth tax returns to trace how asset portfolios evolve in the years following inheritance, using variation in the timing of inheritance events as an additional source of identification

Evidence from inheritance tax returns. Figure 5a breaks down the impact of the tax reform across different categories of tax-favored assets: equity in family firms, real assets used in business activity, primary residences, life insurance, and a residual group comprising

agricultural land, rural land, and cultural property. The estimates reveal that the increase in the share of tax-favored assets inherited by wealthy heirs relative to the control group is almost entirely explained by equity in family firms. Specifically, this share increased by an average of 28 percentage points in the post-reform period[21]. In contrast, the reform appears to have had minimal to no effect on the inheritance of other tax-privileged assets.

The uncovered shift toward tax-favored business assets necessarily implies a corresponding reduction in the share of non-tax-favored assets of the same size. To explore which specific categories of non-tax-favored assets explain this portfolio reallocation, I draw on detailed estate tax return data that provides a comprehensive breakdown of asset composition of the estate at the time of inheritance.[22] To this end, I compare the evolution of the asset composition of the estates transmitted to wealthy descendants compared to other wealthy heirs around the inheritance tax reform. Figure 5b presents estimates from a stacked specification of Equation 1 in which the dependent variable captures the share of various non-tax-favored asset categories and equity in family firms relative to the total estate. The results reveal that the reform-induced increase in the share of equity in family firms is primarily offset by a contraction in the share of financial assets, followed by a slight decline in non-productive assets, including vehicles, boats, and household items. This pattern is consistent with the strategic reclassification of private financial wealth as business wealth through family firm structures in response to the reform-induced tax incentives.

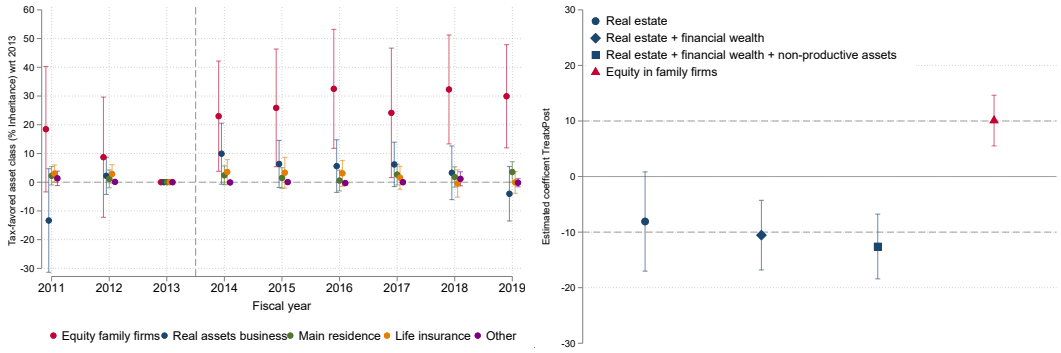
Appendix Figure E.6 replicates this analysis using level outcomes. At the estate level, equity in family firms increases by approximately 4.6 € million, while non-tax-favored assets decrease by approximately 5.7 € million, suggesting a near one-to-one reallocation between asset categories.[23].

[21] The pre-reform coefficient for the share of equity in family firms in 2011, although statistically insignificant is large. A formal sensitivity analysis following Rambachan and Roth (2023) is reported in Appendix Figure E.5.

[22] The value of each tax-favored asset is recovered by applying a self-constructed tax simulator to the asset-specific deductions reported in the inheritance tax return (650-form). All asset-specific deductions are directly observable in the 650-form, and the simulator simply converts them into asset values using the corresponding relief rates (95%) which are constant throughout the whole period. Next, the value of non-tax-favored assets is computed residually by subtracting the total value of tax-favored assets from each heir's taxable inheritance. However, to observe the precise composition of the estate one needs to rely on an additional tax return filed at the time of inheritance (660-form), which provides a detailed inventory of all assets comprising the decedent's estate. See Section 3 for more details.

[23] These results are obtained by estimating an stacked version of Equation 1 augmented with controls for the estate and its interaction with kinship status, which account for systematic differences in estate size between treated and control groups.

Figure 5: The Anatomy of The Asset-shifting Responses to The Tax Reform - Inheritance tax data



(a) Tax-favored asset classes (% Inheritance) **(b)** Non-tax favored asset classes (% Estate)

Panel 5a plots the estimated β_j coefficients from Equation 1 and 95% confidence intervals when the dependent variable is the fraction of declared (i) equity in family firms (ii) real assets used in business activity (iii) primary residence (iv) life insurance (v) other tax-favored assets (agricultural and rural land and cultural property) declared out of the total tax base. Panel 5a plots the estimated β_j coefficients from a stacked version of Equation 1 when the dependent variable is the fraction of the estate transmitted in the form of (i) non-tax favored real estate (ii) non-tax favored real estate and financial assets (iii) real estate, financial assets and non-productive assets (vehicles, boats, aircraft, household items) and (iv) equity in family firms. The treated (control) group are only-kinhsip estates including at least one descendant (spouse and distant heir) with taxable inheritances above 2M€. Standard errors are robust and clustered at the year-month level.

Evidence from wealth tax returns. In Spain, equity in family businesses and real assets used for business purposes benefit from favorable tax treatment not only under the inheritance tax but also under the wealth tax. Specifically, the exact same type of business assets are granted a full wealth tax exemption.

To provide additional causal evidence of the asset-shifting behavior uncovered in Figure 5, I exploit this feature of the Spanish wealth tax in combination with a panel of wealth tax returns filed by heirs whose taxable wealth exceeds 2M€. In particular, I leverage variation in the timing of inheritance events to identify the asset-shifting responses to the inheritance tax reform using the following difference-in-differences specification:

$$Y_{it} = \sum_j \beta_j \mathbf{1}\{j = t - I_i\} \times T_i + \alpha_i + \gamma_t + \epsilon_{it} \tag{3}$$

where Y_{it} denotes the outcome variable for taxpayer i in year t and I_i refers to the year in which taxpayer i received an inheritance. Thus, $\mathbf{1}\{j = t - I_i\}$ represents the number of years since the inheritance. The variable T_i is a treatment indicator equal to 1 for heirs who inherited after 2014, and 0 otherwise. The terms α_i, γ_t represent taxpayer and time fixed effects, respectively, while ϵ_{it} is the idiosyncratic error term. The standard errors are clustered at the inheritance year level. For consistency with the results based on inheritance tax data, the sample excludes wealth tax filers who inherited estates transferred exclusively to descendants.

The identification strategy rests on the assumption that, absent the inheritance tax reform, the wealth portfolios of taxpayers inheriting before and after 2014 would have followed parallel trends. To assess the plausibility of this assumption, I test for the presence of differential pre-reform trends in the outcome variable across the treatment and control taxpayers. Table D.5 reports summary statistics for these two groups of heirs prior to inheritance receipt and shows that both groups declared remarkably similar wealth portfolios.

Figure 6 presents the estimated coefficients from Equation 3, using the method developed by Callaway and Sant'Anna (2021), which accounts for treatment effect heterogeneity stemming from variation in inheritance timing across heirs. Consistent with the patterns documented in Figure 5, the results indicate a modest short-term increase in the share of business-related real assets, alongside a large and sustained rise in the share of family-firm equity reported by treated taxpayers relative to the control group in the years following inheritance. On average, heirs who inherited after the 2014 reform reported portfolios with a 5.3 percentage point higher share of family-firm equity than those who inherited prior to the reform. Appendix Figure E.7 shows that the results are robust to using the estimators of Sun and Abraham (2021) and de Chaisemartin and D'Haultfœuille (2020).

Figure 6: The Anatomy of The Asset-shifting Responses to The Tax Reform - Wealth tax data

This figure plots the estimated β_j coefficients from Equation 3 and 95% confidence intervals when the dependent variable is the fraction of (i) primary residence (Ii) equity in family firms (iii) real assets used for business operations out of total wealth declared. The treated (control) group are descendants with taxable inheritances above 2M€ who inherited after (before) 2014. Standard errors are clustered at the year of inheritance level.

Overall, these findings align with prior research highlighting the role of closely held businesses as vehicles for tax avoidance. For instance, Alstadsæter et al. (2014) document a substantial accumulation of assets such as company cars, planes, and boats within Norwegian firms following the introduction of dividend taxation for personal but not corporate owners. In terms of magnitude, the shift toward business assets observed here is comparable to the

estimates reported by Alvaredo and Saez (2009) and Mas-Montserrat et al. (2025), who examine the effects of tax exemptions under the Spanish Wealth Tax. Alvaredo and Saez (2009) exploit a 1993 reform to show that the share of exempted closely held business equity rose by 33 p.p. for the top 1%. Similarly, using administrative tax data and the 2011 reintroduction of the wealth tax, Mas-Montserrat et al. (2025) find that a one percentage point increase in the average wealth tax rate led to a 9.6 p.p. rise in the share of exempted business assets among the top 50% of taxpayers.

5.1 The relabeling of private wealth into business wealth

Under Spanish inheritance and wealth tax law, two categories of business-related assets are eligible for preferential treatment: equity holdings in family firms and business-related real assets used as operating capital. To qualify as a family firm, a company must be actively engaged in a trade or business, and the testator (wealth taxpayer) must both hold a minimum ownership stake and participate directly in its management. There is no restriction regarding the size or listing status of the firm, it may be publicly traded or privately held.[24] In contrast, business-related real assets such as vehicles, equipment, or buildings may qualify for tax exemptions when held personally but used within any firm structure, provided they are demonstrably used for business purposes. This distinction is critical for understanding the different channels through which private wealth can be strategically reclassified as business wealth.

Transfer of private assets to family firms. The observed increase in the share of family-firm equity inherited by treated taxpayers, along with a decline in transmitted financial and non-productive assets in treated estates, suggests a strategic reallocation of wealth by affluent testators prior to death. Specifically, the findings are consistent with a mechanism in which private wealth is injected into existing family firms as capital contributions, in exchange for newly issued company shares. This process effectively reclassifies private wealth as family-firm equity, thereby qualifying it for preferential tax treatment. A second, complementary mechanism involves the transfer of real assets, particularly vehicles and equipment, into firms as operative capital. However, the absence of a significant increase in business-related real assets is not surprising as this strategy is subject to stricter scrutiny: business owners must convincingly demonstrate to the tax authority that these assets are used exclusively for business purposes, limiting the scale of this relabeling channel relative to capital contributions.

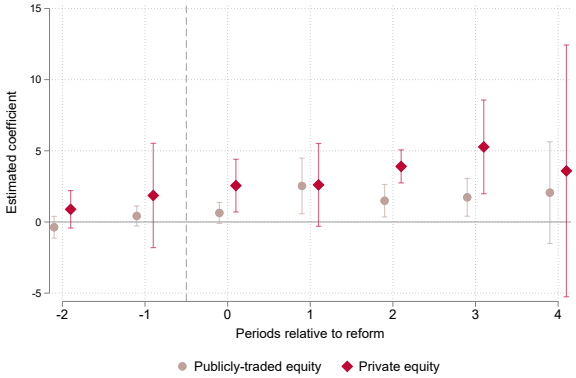
[24] See Law 29/1987 for Inheritance Tax and Law 19/1991 for Wealth Tax provisions on closely held businesses.

Wealthy individuals may also establish new firms as a means of converting financial assets into business wealth. In Spain, however, this is relatively challenging: companies must meet specific legal requirements to qualify as family firms, and holding companies are explicitly excluded from these tax advantages despite being a natural vehicle for relabeling personal wealth as business wealth. Using panel data from wealth tax returns, I can test whether the reform incentivized the creation of new family firm ownership. Table D.4 shows that 65% of heirs already reported ownership of family-firm equity prior to receiving an inheritance. Appendix Figure E.8 presents the estimated coefficients from Equation 3 when the dependent variable is a dummy indicating whether taxpayers declare any wealth in the form of family-firm equity. The results suggest that heirs who inherited after 2014 were not statistically more likely to declare such ownership than those who inherited before. While these results do not allow me to rule out asset injections into newly created firms, they suggest that the reform did not increase the proportion of heirs holding business equity.

An alternative motivation for channeling private wealth through family firms is to prevent conflicts among heirs by locking assets within the firm, functioning similarly to a trust. Appendix E.9 shows that the increase in family-firm equity is virtually identical for estates transmitted to a single descendant and those distributed among multiple descendants, suggesting that this mechanism is unlikely to be the primary driver of the observed relabeling.

The role of control over the firm. The extent to which testators can strategically reclassify private wealth as business wealth depends on the degree of control they exercise over the firm. In privately held firms, owners have greater discretion over asset allocation and firm valuation, facilitating the injection of private wealth as capital contributions. In contrast, publicly traded firms are subject to market pricing and regulatory oversight, which limits the scope for strategic reclassification. The panel of wealth tax returns of heirs allows me to explore this directly. Figure 7 breaks down the reform-induced increase in family-firm equity documented in Figure 6 by type of equity, and shows that it is almost entirely driven by a rise in privately held firm shares (3.8 p.p.), with a considerably smaller estimated response in publicly traded equity (1.9 p.p.). This pattern is consistent with the degree of control over the firm being a key determinant of the relabeling response.

Figure 7: Equity in Family Firms (% Wealth) by Type



This figure plots the estimated β_j coefficients from Equation 3 and 95% confidence intervals when the dependent variable is the fraction of (i) publicly-traded (ii) private equity in family firms out of total wealth declared. The treated (control) group are descendants with taxable inheritances above 2M€ who inherited after (before) 2014. Standard errors are clustered at the year of inheritance level.

Tax implications for testators. From a strictly tax-minimization perspective, all tax-favored assets provide comparable incentives for wealthy individuals to use them as vehicles for inheritance tax avoidance. However, reallocating wealth across asset classes is not frictionless, and closely held firms offer distinctive advantages at both stages of the intergenerational transfer. For testators, injecting private wealth into a closely held firm as a capital contribution has, since 2010, been fully exempt from property transfer taxation and does not require a genuine reallocation of the portfolio, unlike shifting financial wealth into a primary residence, which entails non-trivial transaction costs. Moreover, capital contributions are treated as equity operations and fall outside the scope of taxable income under corporate tax rules, generating no immediate corporate tax liability. Wealthy individuals are particularly well-positioned to exploit these advantages, as business wealth is highly concentrated at the top of the wealth distribution.

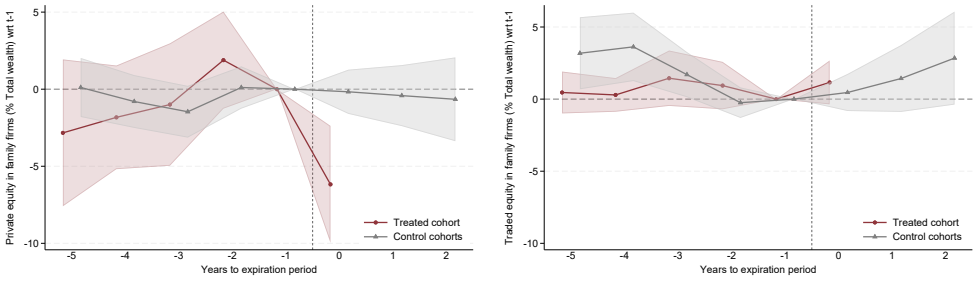
Tax implications for heirs and capital withdrawals. For heirs, the tax implications materialize primarily at the time of eventual capital withdrawals. Two features of the Spanish tax system are relevant here. First, the 95% inheritance tax deduction for business assets is subject to a mandatory holding period. Under the original framework of the Spanish Inheritance Tax Law, heirs were required to maintain ownership for a minimum of ten years, though regional governments have gradually relaxed this requirement; Catalonia, in particular, reduced the holding period from ten to five years in 2011.[25] Second, once the holding period has elapsed, the tax treatment of capital withdrawals differs sharply by firm type. In privately held firms, capital reductions with repayment of contributions operate primarily as a basis-recovery mechanism: amounts received reduce the shareholder's acquisi-

[25]During the holding period, heirs are required to retain ownership of the firm, but are not required to participate actively in its management. For more details, see Law 19/2010.

tion cost without triggering an immediate tax liability, as long as withdrawals do not exceed contributed capital.[26] In listed companies, by contrast, market traceability and the legal treatment of distributions sourced from undistributed earnings increase the likelihood that repayments are recharacterized as taxable dividends or capital gains, triggering immediate taxation even absent a sale. Taken together, these features imply that privately held firms minimize tax costs for heirs not only at the time of inheritance but also when extracting wealth in subsequent years.

I test this prediction using the panel of wealth tax returns by estimating event-study specifications around the expiration of the mandatory holding period, leveraging variation in the type of equity held and in reform exposure across cohorts of heirs. Figure 8 presents the results. For cohorts inheriting between 2012 and 2013, equity holdings in private family firms evolve smoothly around the expiration date, with no discrete change at event time zero (Figure 8a). In contrast, the 2014 cohort, the one exposed to the reform that I can track five years since the inheritance receipt, exhibits a sharp decline in private firm equity precisely in the year of expiration, amounting to approximately 6.2 percentage points relative to the pre-expiration baseline. Strikingly, this pattern is entirely absent for publicly traded equity, for which event-study profiles are flat across cohorts around the expiration period (Figure 8b), consistent with the higher tax costs of capital extractions from listed firms.

Figure 8: Equity in Family Firms around The Expiration of The Mandatory Holding Period



(a) Private Equity (% Wealth) **(b)** Publicly-traded Equity (% Wealth)

This figure plots the estimated coefficients from cohort-specific event-study specifications around the expiration of the mandatory holding period, normalized to one year prior to expiration, controlling for individual fixed effects and clustering standard errors at the heir level. The treated cohort comprises heirs who inherited in 2014 while control cohorts are heirs who inherited between 2012 and 2013.

Appendix Figure E.12 presents the corresponding results in levels and provides a full balance-sheet decomposition. The decline of approximately 0.5M€ in private firm equity for the treated cohort at the expiration of the holding period is mirrored by a comparable

[26] When the firm's equity value exceeds the shareholder's acquisition cost, the excess is recharacterized as a return on movable capital under Art. 25.1.e of Law 35/2006 (IRPF) and becomes taxable. This condition is more likely to hold when assets are injected at market value—as in the relabeling strategies documented here—since this establishes a high acquisition cost against which future capital reductions are measured.

increase in taxable wealth, including secondary real estate, financial assets, and other taxable asset classes. This one-to-one offset indicates that capital withdrawn from family firms is reallocated toward taxable assets rather than reflecting valuation timing or within-firm reclassification, providing direct evidence of inheritance tax avoidance through asset reallocation.

The panel structure allows me to observe balance-sheet adjustments for one treated cohort at the moment the statutory holding requirement lapses. Within this window, the evidence shows that withdrawals begin immediately upon expiration, with a substantial share of previously relabeled business wealth being extracted. While additional extraction may occur in subsequent years beyond the observable horizon, the rapid onset of withdrawals casts doubt on any meaningful long-run impact of these capital injections on firm-level outcomes.

6 Other margins of response

Redistribution of estate within the family. The baseline sample includes only estates transferred to a single kinship category to avoid intra-estate spillovers and enable a cleaner interpretation of asset-shifting behavior. However, the tax reform also created incentives for the strategic redistribution of estates between descendants and the surviving spouse, as it sharply increased the effective tax burden on the former but not on the latter. Around 27% of estates with at least one treated descendant are shared with the surviving spouse (Figure 2), making this an empirically relevant margin of response. I provide two pieces of evidence using mixed estates. First, I extend the baseline analysis to mixed estates (Appendix Figure E.10), defining the treated group as mixed estates with at least one or all descendants above 2M€ and using the baseline control group. Conditional on the share of the estate received,[27] descendants in mixed estates significantly increase their share of tax-favored assets and family-firm equity after the reform. Second, to assess whether this reflects within-estate redistribution or relabeling, I estimate the post-reform change in the share of tax-favored assets and family-firm equity accruing to descendants and to the spouse as a fraction of the total estate (Appendix Figure E.11). Both shares accruing to descendants increase significantly after the reform, while those accruing to spouses remain unchanged. These results suggest that relabeling, rather than within-estate redistribution, was the primary margin of response to the reform.

Changes in fiscal residence. Wealthy individuals may respond to increases in tax rates by relocating their fiscal residence to regions with lower effective taxation. Although the

[27] Since the reform may induce testators to shift the estate share away from descendants toward the spouse, I control for this share throughout, along with the number of heirs and cohort fixed effects.

empirical literature on inheritance tax-induced mobility remains limited, existing studies report mixed evidence (see Brülhart and Parchet (2014); Moretti and Wilson (2023)). In Spain, substantial regional disparities in effective inheritance tax rates can make this behavioral response particularly relevant. Two features of the Spanish inheritance tax limit the scope for such responses in the present setting. First, unlike the wealth tax, where Agrawal et al. (2023) document mobility responses following its 2011 reintroduction in all regions except Madrid, the inheritance tax has undergone frequent regional reforms, reducing the predictability of tax differentials across regions (Micó-Millán, 2023). Second, the inheritance tax applies a stringent five-year rule based on the deceased's region of residence, marginally more restrictive than the three-year rule governing the wealth tax. Importantly, the location of inherited assets is irrelevant for tax purposes: the applicable tax code is determined exclusively by the fiscal residence of the deceased, regardless of where assets are located or firms are incorporated. This rules out asset or firm relocation as a margin of response. Unfortunately, testator mobility itself cannot be directly investigated with the available data, as doing so would require tracking changes in fiscal residence prior to death.

7 Tax Revenue Analysis

This section evaluates the tax revenue implications of asset-shifting behaviors triggered by the inheritance tax reform. The analysis considers both the direct impact on inheritance tax revenues and the cross-base effects on wealth tax revenues. Estimating these cross-base effects provides a broader perspective on how the use of business assets as tax avoidance vehicles influences the overall taxation of wealthy individuals. Based on the results in Section 4, the focus is placed on treated heirs with taxable inheritances exceeding 2M€, as they account for the entire response to the reform[28]. On average, they represent only 0.15% of inheritance taxpayers, yet contribute 24% of total inheritance tax revenues since 2014. In the case of the wealth tax, these individuals make up 1.45% of taxpayers and generate 5% of total revenue in the region.

The revenue analysis is based on counterfactual simulations. To estimate inheritance tax revenues, I apply the causal estimates from Figure 5a to adjust the share of tax-favored equity in family firms inherited by treated heirs. This is done by randomly assigning a share of inherited equity to heirs in a way that matches both the average share of those inheriting

[28] Consistent with the sample definition in Section 3, the revenue simulations exclude inheritances under usufruct arrangements. In these cases, reported tax bases reflect only use rights and cannot be linked to subsequent consolidation events. As a result, the estimated revenue losses—which focus on full-ownership transfers—should be interpreted as a conservative lower bound of the total fiscal impact of the reform.

this asset type and the corresponding average portfolio share in the pre-reform period data.[29] This approach implicitly assumes that the wealth reallocated to business assets due to tax incentives is, in the counterfactual scenario, redistributed proportionally across all non-tax-favored asset categories. Notice that, while Figure 5b suggests that this reallocation could plausibly be concentrated in financial and non-productive assets, this distinction does not have any impact on the simulation results, as all non-tax-favored assets face the same effective tax burden. For wealth tax revenues, I use the estimates from Figure 6 to reduce the share of tax-exempt business assets reported in wealth tax filings, aligning it with the average levels observed among taxpayers who inherited before 2014. As in the previous exercise, I randomly assign business wealth in the post-inheritance period to match the average share of heirs declaring business assets in the control group as well as their portfolio composition.[30] Finally, I simulate inheritance and wealth tax revenues in the absence of tax-motivated asset reclassification using a self-constructed tax calculator that replicates the Catalan legislation.

Figure 9a compares the actual wealth and inheritance tax revenues collected from treated descendants with the counterfactual revenues that would have been collected in the absence of private wealth relabeling behavior. Figure 9b complements this analysis by illustrating the forgone tax revenue as a percentage of total tax revenue. The bulk of the forgone revenue stems from inheritance taxes. Forgone inheritance tax revenues fluctuate year to year, reflecting variation in the number and size of taxable inheritances in each period. In contrast, forgone wealth tax revenues exhibit a smooth and monotonically increasing pattern, growing from 1.65M€ in 2014 to 33.40M€ in 2019. This accumulation reflects the mechanics of the wealth tax panel: each post-reform cohort of treated heirs adds to the stock of reclassified wealth held under the mandatory holding period, so that forgone wealth tax revenues compound over time as successive cohorts enter the sample. This dynamic implies that the fiscal cost of the reform grows over time even in the absence of any change in individual behavior, simply due to the accumulation of cohorts within the holding period.

On average over the sample period, Catalonia forgoes approximately 10.26% of its combined wealth and inheritance tax revenue, around 86M€ annually , due to the strategic reclassification of private wealth as business wealth. This figure rises to 12.76% in 2019, equivalent to 128M€, as the cumulative effect of multiple post-reform cohorts reaches its peak within the sample period.[31] The wealth tax simulation assumes that the reform-induced portfolio shift persists throughout the mandatory holding period. To the extent that heirs

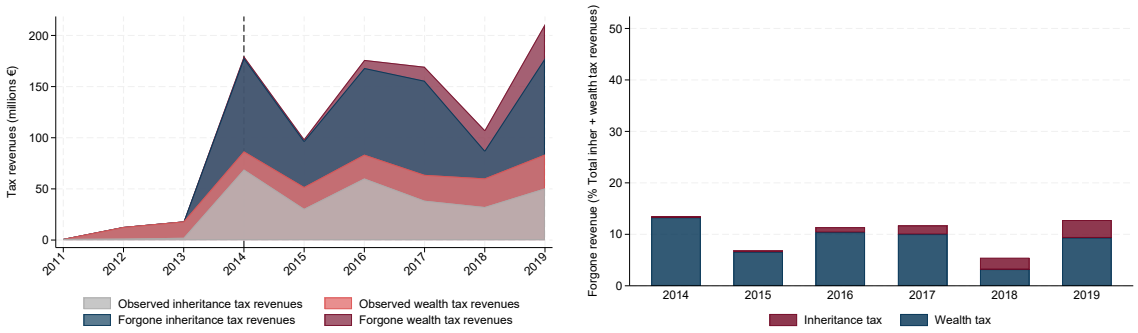
[29] Prior to the reform, 37.99% of treated heirs inherited equity in family firms. Among those receiving such assets, the average share was 60.13%.

[30] Among heirs inheriting prior to 2014, 55.32% report holding equity in family firms in their wealth tax returns after inheriting. For those declaring such assets, the average share is 52.98%.

[31] To put this figure in a broader context, the forgone revenue represents 0.88% of total regional tax revenues and 0.37% of total regional expenditures in Catalonia in 2019.

begin unwinding their positions at expiration, as documented in Section 5, the forgone wealth tax revenues reported here represent an upper bound for years beyond the expiration date, since partial unwinding would imply a wealth portfolio with a higher share of equity than the one assumed in the counterfactual.[32]

Figure 9: Tax Revenue Simulations



(a) Inheritance and wealth tax revenue simulations **(b)** Foregone tax revenue (% Total tax revenue)

Panel 9a depicts potential wealth tax and inheritance tax revenue from descendants with taxable inheritances above 2M € when shutting down the private wealth rebelling responses. Panel 9b presents forgone tax revenue as a percentage of total wealth plus inheritances tax revenue in Catalonia.

A closer look reveals that the bulk of this forgone revenue stems from inheritance taxes, which alone account for 8.80% of total tax revenue on average. In contrast, losses from the wealth tax represent a comparatively modest 1.46%. This disparity is primarily driven by the greater tax differential between favored and non-favored assets under the inheritance tax regime. While both taxes offer generous exemptions for business wealth, 95% for inheritance tax and 100% for wealth tax, the inheritance tax features lower exemption thresholds and substantially higher marginal rates (see Appendix A and B). As a result, any shift in the composition of inherited wealth toward tax-favored business assets has a disproportionately large effect on inheritance tax revenues, while the impact on wealth tax collections remains marginal.

These results capture only the direct revenue effects on inheritance and wealth taxes and should be interpreted as a partial estimate of the total fiscal cost. To the extent that reclassified business assets generate productive activity during and beyond the mandatory holding period, the reform may also have offsetting effects on other tax bases that are not captured in our estimates. At the same time, the evidence in Section 4 suggests that heirs tend to extract liquidity from these assets after the holding period expires, which may limit the scope of such spillovers. The net fiscal impact of the reform will ultimately depend on the balance between these revenue losses and any productive activity generated in the interim.

[32] In any case, this would only affect the tax revenue results for 2019 as only one treated cohort, the one inheriting in 2014, reached the mandatory expiration threshold within the sample period.

8 Conclusion

This paper uses comprehensive administrative data and a salient inheritance tax reform in Catalonia (Spain) to examine how wealthy individuals respond to tax incentives by reallocating their wealth. I document that the behavioral response to the reform is driven entirely by equity in family firms, with no corresponding change in other tax-favored asset classes. The evidence is consistent with affluent testators transferring financial and non-productive assets into existing family firms as capital contributions prior to death. Linked wealth tax return data further corroborate this interpretation: heirs unwind their holdings in privately held firms as soon as the mandatory holding period expires, suggesting that these capital injections are primarily motivated by tax avoidance. These findings are directly relevant to ongoing policy debates on the preferential treatment of business assets in inheritance tax systems. Such provisions are typically justified by concerns that inheritance taxation may jeopardize firm liquidity, continuity, or employment. Empirical evidence on this rationale, however, is limited and mixed. For example, Tsoutsoura (2015) shows that the repeal of inheritance taxation in Greece increased investment in transferred firms, consistent with the presence of liquidity constraints, while Brunetti (2006) finds only modest effects on business sales following estate taxation in the United States. In contrast, Holtz-Eakin et al. (2001) documents that entrepreneurs do not fully rely on life insurance to shield their firms from estate tax liabilities, casting doubt on the prevalence of liquidity-driven disruptions.

Against this backdrop, the evidence in this paper highlights an alternative margin of response: the strategic use of preferentially treated business assets to minimize tax liabilities. In the Catalan setting, this behavior reduces combined inheritance and wealth tax revenues by approximately 10 percent annually and weakens the progressivity of the tax system, particularly in environments where similar exemptions apply across multiple tax bases. Moreover, the rapid extraction of capital once the mandatory holding period expires is difficult to reconcile with the view that preferential treatment of business assets generates lasting effects on firm-level investment.

More broadly, the results underscore that generous exemptions for business assets can generate substantial fiscal spillovers across tax instruments, with limited evidence of enduring efficiency gains. A comprehensive assessment of the equity–efficiency trade-offs involved in taxing intergenerational transfers of business wealth therefore requires weighing these fiscal costs against any potential economic benefits. Future research should aim to quantify both margins more systematically to inform the optimal design of inheritance and wealth tax systems.

Appendix

A The Spanish Inheritance and Gift Tax

A.1 Institutional Background

The Spanish Inheritance and Gift Tax Law was first introduced in the tax system during the reign of Charles IV in the 18th century. It suffered several modifications during the 19th and 20th centuries until it became finally regulated in 1987 (Law 29/1987) as part of one the major tax system reforms undertaken after the arrival of democracy in Spain. All regions are subject to this law except for the Basque Country and Navarre (the *Foral* regions) which, due to their special fiscal status, enjoy regulatory power to design most taxes, including the inheritance and gift tax.[33]

Different from other countries, Spanish law regulates inheritances and gift taxes jointly. The tax is levied on heirs and donees and depends on their degree of kinship with the deceased or donor, respectively. The law distinguishes four groups of heirs/donees: (i) descendants younger than 21, (ii) descendants older than 21, spouses and ascendants, (iii) siblings, stepchildren, nephews/nieces, uncles/aunts, and (iv) more distant relatives and non-relatives. Heirs' tax base is defined as the sum of the individual portion inherited and life insurance benefits derived from the deceased's bequests[34] while donees' tax base is defined as the sum of assets transferred *inter vivos* by an alive donor. The net tax base of heir or donee i is calculated after applying any eligible tax deductions as follows

$$\text{Net Tax Base}^i = \min\Big\{0, \Big(\sum_r (\text{Tax-favored Assets}_r - k_r) \times (1 - tc^{r,i}) + \sum_s \text{Non tax-favored Assets}_s\Big) - td^i\Big\} \quad i \in \{\text{heir}, \text{donee}\}$$

where $tc^{r,i}$ denotes the tax credit specific to tax-favored assets up to some limit k and td^i denotes the corresponding exemption threshold. Next, if the net tax base is positive, the tax quota is computed as follows:

$$\text{Tax Quota}^i = (q_j + (\text{Net Tax Base}^i_j - b^{lb}_j) \times \tau_j) \times (1 - tc^i) \times \text{SF}$$

[33] Notwithstanding this special status, these two regions have regulated inheritance and gift tax rates similar to the rest of Spain

[34] The inheritance tax base also includes those assets transferred to the heirs by the deceased in a short period before her death. An illustrative example is gifts made by the deceased to heirs during the four years preceding the moment of death.

where q_j is the tax payment corresponding to the first X euros of the net tax base for bracket j and τ_j is the marginal tax rate applicable to the remaining amount (i.e. Net Tax Base$^i_j - b^{lb}_j$ where b^{lb}_j is the lower bound of tax bracket j). Finally, tc^i denotes any general tax credit, which usually takes the form of a tax credit expressed as a fraction of the net tax base, and SF refers to the scaling factor, which is increasing in heirs or donees' pre-inheritance or pre-gift wealth. Once the tax quota and the net tax base are computed, the effective tax rate can be obtained as:

$$\tau^{E,i} = \frac{\text{Tax Quota}^i}{\text{Net Tax Base}^i}$$

The administration and regulation of the inheritance and gift tax in Spain were decentralized in 1996. This meant that regions were awarded regulatory power to (i) introduce new general and asset-specific tax credits (ii) increase the generosity of default exemption thresholds and asset-specific tax benefits and (iii) modify the tax schedule or the scaling factors. Regional governments did not exercise this right until the beginning of the 2000s when they started to modify the inheritance and gift tax code rather frequently (see Micó-Millán (2023)).

The Spanish law establishes that inheritance taxes must be paid in the region of residence of the deceased person, independently of the region of the assets being transferred are located. By contrast, the region where gift taxes are paid depends on the type of assets transmitted. For example, inter-vivos transfers involving real assets are paid in the region where assets are located while taxes for gifts entailing any other type of asset are paid in the region of residence of the donee.

A.2 The Inheritance and Gift Tax in Catalonia

Similar to other Spanish regions, Catalonia started to exercise its right to modify the inheritance and gift tax code in the mid-2000s. The first time the regional government reformed the inheritance tax code was in 2002, when increased the exemption threshold for group I and II[35] and regulated a new tax schedule with marginal rates from 7.42% to 32.98%. In 2006, the Catalan government introduced tax benefits applicable to agricultural land for the first time. However, the two major reforms took place during the years 2010-2011 and 2014.

[35] The exemption threshold for group I and group II changed to $\max\{18k + 12K(21 - age), 114K\}$ and 18,000 euros, respectively with respect to the default law (See Law 19/1987)

A.2.1 Inheritances

Table A.1: Kinship-related tax deductions in Catalonia

	2003-2010	Jan-Jun 2010	Jun-Dec 2010	Jan 2011 - Jan 2014	Feb 2014- Dec 2019
Close heirs					
Direct Descendants					
Son or daughter < 21	$18k+$ $12k(21-\text{age})$ max. 114k	$69+$ $8k(21-\text{age})$ max. 134k	$171k+$ $20k(21-\text{age})$ max. 337k	$275k+$ $33k(21-\text{age})$ max. 539k	$100k+$ $12k(21-\text{age})$ max. 196
Son or daughter > 21	18k	68.75k	171.87k	275k	100k
Other descendants	18k	37.50k	93.75k	150k	50k
Spouse	18k	125k	312.50k	500k	100k
Ascendants	18k	25k	62.50k	100k	30k
Distant heirs					
Group III	9k	12.50k	31.25k	50k	8k
Group IV	-	-	-	-	-

Table A.2: Other tax deductions in Catalonia

	2003-2010	Jan-Jun 2010	Jun-Dec 2010	Jan 2011 - Jan 2014	Feb 2014- Dec 2019
Close heirs					
Direct Descendants					
Son; daughter < 21	-	125k	125k	125k	-
Son; daughter > 21	-	$\max\{32.5k,$	$\max\{78.13k,$	$\max\{125k,$	-
	-	$0.5 \times$ (net tax base)$\}$	$0.5 \times$ (net tax base)$\}$	$0.5 \times$ (net tax base)$\}$	-
Other descendants	-	$\max\{12.5k,$	$\max\{31.25k,$	$\max\{50k,$	-
	-	$0.5 \times$ (net tax base)$\}$	$0.5 \times$ (net tax base)$\}$	$0.5 \times$ (net tax base)$\}$	-
Spouse	-	$\max\{37.5k,$	$\max\{93.75k,$	$\max\{150k,$	-
	-	$0.5 \times$ (net tax base)$\}$	$0.5 \times$ (net tax base)$\}$	$0.5 \times$ (net tax base)$\}$	-
		275k if age>75	275k if age>75	275k if age>75	-
Ascendants	-	$\max\{6.25k,$	$\max\{15.63k,$	$\max\{25k,$	-
	-	$0.5 \times$ (net tax base)$\}$	$0.5 \times$ (net tax base)$\}$	$0.5 \times$ (net tax base)$\}$	-

A.3 Asset-specific tax credits

Table A.3: Asset-specific Tax Credits

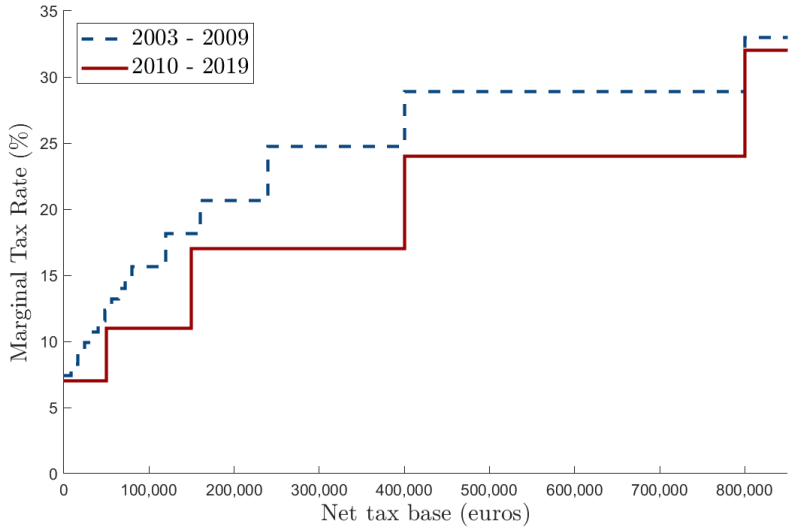
	2003-2007	2008-2009	2010-2019
Close heirs			
Primary residence	95% tax credit limit 125k per heir	95% tax credit limit 500k on property	95% tax credit limit 500k on property
Equity shares in family firms	95% tax credit	95% tax credit	95% tax credit
Real assets used for business activity	95% tax credit	95% tax credit	95% tax credit
Agricultural land	-	95% tax credit	95% tax credit
Rural land	95% tax credit	95% tax credit	95% tax credit
Cultural property	95% tax credit	95% tax credit	95% tax credit
Life insurance	100% tax credit; 9.4k	100% tax credit; 9.4k	100% tax credit; limit 25k

Table A.4: Maintenance Rules for Tax-favored Assets

Asset Type	**Maintenance Requirements**
Primary residence	Heirs must retain ownership for at least 5 years following the date of inheritance, unless exceptional circumstances apply (e.g., death, forced sale).
Equity shares in family firms	The heir must maintain ownership and the firm must continue its activity for at least 5 years.
Real assets used for business activity	The business must remain active and the inherited assets must be used for the same purpose for at least 5 years.
Agricultural land	The land must be used for agricultural purposes and not sold or re-purposed for at least 5 years.
Rural land	Same as agricultural land
Cultural property	Must remain in the heir's possession and be accessible to the public or registered with the cultural heritage authority for 5 years.
Life insurance	-

A.4 Tax schedule

Figure A.1: Inheritance Tax Schedule in Catalonia



A.5 Scaling factors by pre-inheritance/gift wealth

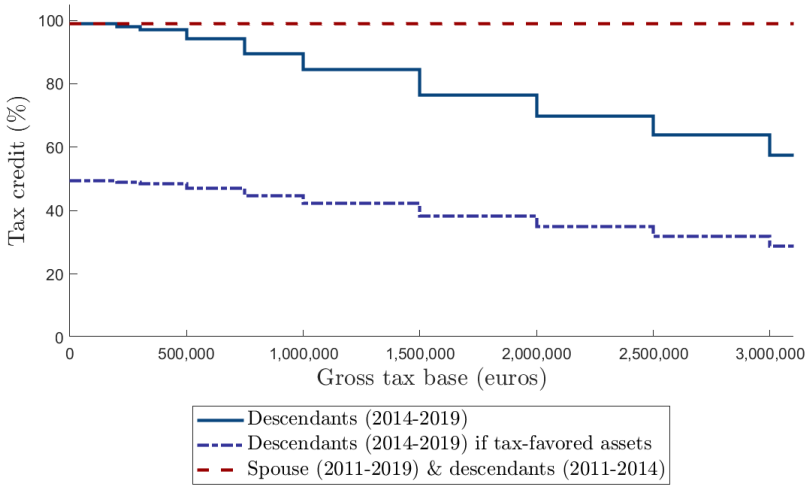
Table A.5: Scaling factors in Catalonia 2010-2019

Group	Scaling factor
Group I and II *Descendants,ascendants,spouses*	1.0000
Group III *Relatives 2nd degree*	1.5882
Group IV *More distant relatives; non-relatives*	2.0000

A.6 General tax credits applicable to net tax liabilities

In 2011, the Catalan government introduced a 99% tax credit for close heirs, namely direct descendants, ascendants, and surviving spouses, effectively amounting to a quasi-abolition of the inheritance tax for these groups. However, in 2014, this tax credit was replaced by a progressive tax credit schedule for descendants and ascendants, based on the gross tax base (as illustrated in Figure A.2). Notably, this credit is reduced by 50% if the heirs report ownership of any assets qualifying for specific tax credits (listed in Table A.3), with the exception of the deceased's primary residence and life insurance benefits.

Figure A.2: Tax credits for close heirs in Catalonia



B The Spanish Wealth Tax

The Spanish Wealth Tax is a direct, personal tax imposed annually on the net wealth of individuals as of December 31st. Following its effective suspension in 2008 through the ap-

plication of a 100% tax allowance, the tax was reactivated in 2011 (Law 13/2011). Since 1996, the authority to modify key parameters of the tax depends on the autonomous communities (Law 14/1996). This delegation of fiscal powers was subject to the condition that the regional governments maintain, at a minimum, the same lower and upper bounds of the national tax scale.

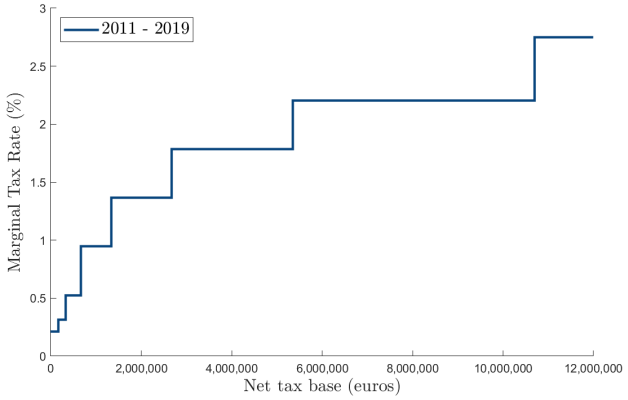
The tax applies to both residents and non-residents, albeit with different scopes of liability. Spanish residents are taxed on their worldwide assets, whereas non-residents are subject to taxation only on assets located within Spanish territory. In both cases, taxpayers are required to report annually the market value of their financial assets (such as cash, bank deposits, stocks, bonds, and foreign financial holdings), their non-financial assets (including real estate, land, consumer durables, and business assets), and their outstanding liabilities (such as mortgages and personal debts). Additionally, they must declare non-taxable business assets and the full value of their primary residence. Business assets, whether taxable or exempt, must be reported at book value.

The obligation to file a wealth tax return arises either when a positive tax liability exists or when the taxpayer's gross assets exceed €2,000,000, regardless of whether any tax is ultimately due. The tax is structured progressively, with marginal rates ranging from 0.2% to 2.5%, and a general exemption threshold of €700,000. However, due to Spain's decentralized fiscal structure, autonomous communities have the discretion to adjust these parameters, leading to substantial regional variation in the effective tax burden. This variation became particularly pronounced after the tax's reactivation in 2011, as several regions exercised their fiscal autonomy to tailor the tax to local policy objectives (see Agrawal et al. (2023) for more details).

B.1 Wealth Tax in Catalonia

Since the reintroduction of the wealth tax in 2011, the Catalan government established a regional exemption threshold of €500,000, lower than the national baseline of €700,000,and applied a statutory marginal rate schedule distinct from the national scale. These regionally determined rates and brackets, which are illustrated in Figure B.1.

Figure B.1: Wealth Tax Schedule in Catalonia



C Conceptual framework for estimating tax elasticities

C.1 A simple model of inheritance tax avoidance

I build on (Bergolo et al., 2022; Waseem, 2018) as well as on Kopczuk and Slemrod (2000) to develop a simple model of inheritance avoidance behavior. Consider for simplicity an economy with a continuum of individual pairs consisting of unmarried individuals (testators) and single heirs of measure one. Each unmarried individual cares about the well-being of her heir and would like to maximize her after-tax inheritance.[36].

Assume individual j transfers wealth $i = i^F + i^{NF}$ to her heir such that i^F denotes tax-favored assets (i.e. business assets) and i^{NF} refers to non-tax-favored assets (i.e. financial assets) which are taxed at $\tau_{NF} > \tau_F > 0$.[37]. She decides how much to consume c, how much wealth shifts from non-tax-favored to tax-favored assets x, and how much non-tax-favored wealth underreports z. For simplicity, I assume that testators are the ones engaging in underreporting, for example, through inflating tax deductible debt.[38] The utility costs of relabeling and underreporting assets are represented by two strictly increasing and convex functions, $\gamma_j(x)$ and $\psi_j(z)$, and normalized so that $\gamma_j'(0) = \psi_j'(0) = 0$.

Let's denote $\bar{i}$ as the true amount of wealth to be transferred absent any behavioral response to inheritance taxes.[39] Reported tax-favored and non-tax-favored assets can be

[36] Kopczuk and Slemrod (2000) model this by adding the after-tax inheritance in the utility function of testators

[37] I abstract from modeling avoidance behavior through inter-vivos gifts guided by the reduced-form results in Section 6

[38] In reality, changes in declared inheritances can arise from testators' or heirs' underreporting behavior. For instance, testators can create artificial debt which reduces reported inheritances, while heirs can simply underreport the value of inherited assets.

[39] One can think of this object as the amount of transferred wealth absent any tax differential between asset types. It could also reflect real saving decisions of testators that might depend on other taxes

expressed as $i^F = \bar{i}^F + x$ and $i_i^{NF} = \bar{i}^{NF} - x - z$, respectively. Following Piketty and Saez (2013), I assume that both types of assets are taxed at a linear rate τ with $\tau^F < \tau^{NF}$ and that individual's utility follows a quasi-linear functional form to simplify the derivations and eliminate cross-elasticity effects between saving and avoidance decisions.

$$\max_{c,x,z} c - \gamma_j(x) - \psi_j(z)$$
$$\text{s.t. } c = (1 - \tau_{NF})i^{NF} + (1 - \tau_F)i^F$$

Following Kopczuk and Slemrod (2000), I am implicitly assuming that transferring wealth gives utility to individual j as $c = i - T(i, \tau)$.[40] Using the definitions of reported inheritance, the above maximization problem can be rewritten as:

$$\max_{c,x,z} c - \gamma_j(x) - \psi_j(z)$$
$$\text{s.t. } c = y + (1 - \tau_{NF})\bar{i}^{NF} + (1 - \tau_F)\bar{i}^F + (\tau_{NF} - \tau_F)x - (1 - \tau_{NF})z$$

The first order conditions are:

$$x : (\tau^{NF} - \tau^F) = \gamma_j'(x)$$
$$z : \tau^{NF} = h_j'(z)$$

These two conditions can be interpreted as usual. First, in equilibrium, the marginal cost of relabeling an additional unit of non-tax-favored assets must be equal to the marginal benefit of asset shifting, which is the marginal increase in consumption from the increased inheritance: $\tau^{NF} - \tau^F$. Second, the marginal cost of underreporting non-tax-favored assets must be equal to the marginal benefit of evading taxes, that is, τ^{NF}. Notice that these conditions imply that the asset-shifting elasticity will heavily depend on the tax differential across asset types. However, the tax rate on non-tax-favored assets is the relevant parameter for deriving the corresponding asset-specific intensive margin elasticity.

C.2 Tax revenue impact of avoidance

Define taxable wealth of testator i to be transferred to her heir j as $I_i = I_i^{NF} + I_i^F$, where I_i^F denotes reported wealth in tax-favored assets and I_i^{NF} refers to reported wealth in non-tax-favored assets by heir j. Aggregating over all individuals and following Bergolo et al.

[40] Kopczuk and Slemrod (2000) develop a more general model of tax avoidance where the heir's utility, v, enters the individual's utility function as a function of his endowment and the after-tax inheritance. In this simple and static version, I am assuming this function v to be linear.

(2022); Waseem (2018), the revenue impact of a change with respect to the tax differential $d(\tau_{NF} - \tau_F)$ can be expressed as:

$$\frac{\partial B}{\partial(\tau_{NF} - \tau_F)} = -\tau_{NF} \times \frac{\partial I^{NF}}{\partial(\tau_{NF} - \tau_F)} + \tau_F \times \frac{\partial I^F}{\partial(\tau_{NF} - \tau_F)} \tag{4}$$

where $I^F = \int i_j^F d\theta j$ and $I^{NF} = \int i_j^F d\theta j$

The first term, $\tau_{NF} \times \frac{\partial I^{NF}}{\partial(\tau_{NF} - \tau_F)}$, refers to the intensive margin response of non-tax favored assets, that is, the revenue loss associated due to lower reported non tax-favored assets because of pure shifting towards tax-favored assets and misreporting. The second term, $\tau_F \times \frac{\partial I^F}{\partial(\tau_{NF} - \tau_F)}$, captures the pure asset-shifting margin response, that is, the revenue loss associated only with testators relabeling tax-favored assets into tax-favored assets. I choose to define elasticities with respect to the tax differential, $(\tau_{NF} - \tau_F)$, instead of the non-tax-favored assets tax rate, τ_{NF}, because the Catalan 2014 tax reform implied an increase in the tax differential.

Intensive margin response

$$-\tau_{NF} \times \frac{\partial I^{NF}}{\partial(\tau_{NF} - \tau_F)} = -\tau_{NF} \int \frac{\partial i_j^{NF}}{\partial(\tau_{NF} - \tau_F)} d\theta j = \tau_F \int \frac{\partial i_j^{NF}}{\partial(\tau_{NF} - \tau_F)} \times \frac{(\tau_{NF} - \tau_F)}{(\tau_{NF} - \tau_F)} \times \frac{i_j^{NF}}{i_j^{NF}} d\theta j =$$
$$\frac{-\tau_F}{(\tau_{NF} - \tau_F)} I^{NF} \times \int \underbrace{\frac{\partial i_j^{NF}}{\partial(\tau_{NF} - \tau_F)} \frac{(\tau_{NF} - \tau_F)}{i_j^{NF}}}_{\eta_{s,j}} \frac{i_j^F}{I^{NF}} d\theta j = \frac{\tau_F}{(\tau_{NF} - \tau_F)} I^{NF} \bar{\eta}_s$$

Pure asset-shifting response

$$\tau_F \times \frac{\partial I^F}{\partial(\tau_{NF} - \tau_F)} = \tau_F \int \frac{\partial i_j^F}{\partial(\tau_{NF} - \tau_F)} d\theta j = -\tau_{NF} \int \frac{\partial i_j^F}{\partial(\tau_{NF} - \tau_F)} \times \frac{(\tau_{NF} - \tau_F)}{(\tau_{NF} - \tau_F)} \times \frac{i_j^F}{i_j^F} d\theta j =$$
$$\frac{\tau_F}{(\tau_{NF} - \tau_F)} I^F \times \int \underbrace{\frac{\partial i_j^F}{\partial(\tau_{NF} - \tau_F)} \frac{(\tau_{NF} - \tau_F)}{i_j^F}}_{\nu_{s,j}} \frac{i_j^F}{I^F} d\theta j = \frac{-\tau_F}{(\tau_{NF} - \tau_F)} I^F \bar{\nu}_s$$

Hence we have that Equation 4 can be rewritten as:

$$\frac{\partial B}{\partial(\tau_{NF} - \tau_F)} = \frac{\partial I}{\partial(\tau_{NF} - \tau_F)} = \frac{1}{(\tau_{NF} - \tau_F)} \Big[-\tau_{NF} \cdot \eta_s \cdot I^{NF} + \tau_F \cdot \nu_s \cdot I^F \Big] \tag{5}$$

where η_s and ν_s are the wealth-weighted average intensive margin elasticity of the reported non-tax-favored assets and tax-favored assets, respectively, with respect to changes in the

tax differential.

In general, we have that $\eta_s \geq \nu_s$. Notice that η_s can capture other avoidance responses (i.e. misreporting of wealth, etc.) on top of pure relabeling of assets into tax-privileged assets, which is captured by ν_s. An increase in the tax differential will entail a revenue loss as long as $\tau_F < \tau_{NF}$ and $\eta_s \geq \nu_s$. Notice that even in the case where avoidance only takes place through asset-shifting, that is, $\eta_s = \nu_s$, we have by construction that:

$$\frac{\partial I}{\partial(\tau_{NF} - \tau_F)} = \frac{1}{(\tau_{NF} - \tau_F)}\left[(\tau_F - \tau_{NF}) \cdot \eta_s \cdot I^{NF}\right] = -\eta_c I^{NF} < 0$$

D Summary Statistics

Table D.1: Summary Statistics - Heirs by Kinship

Close heirs. Group 1	
Descendants < 21 age	2.3%
Close heirs. Group 2	
Son or daughter > 21 age	57.7%
Spouse	19.9%
Other direct descendants	5.8%
Ascendants	0.9%
Distant heirs. Groups 3 & 4	13.3%

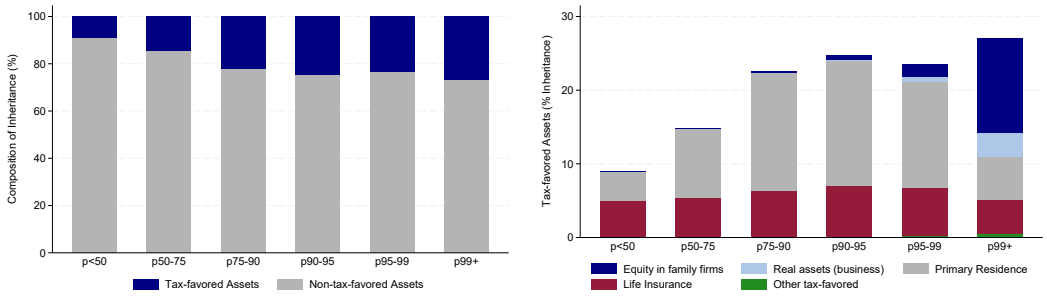
Data from the universe of inheritance tax returns filed in Catalonia between 2011-2019 (Catalan Tax Agency)

Table D.2: Summary Statistics

	Close heirs			Distant heirs		
	All	Before 2014	After 2014	All	Before 2014	After 2014
Taxpayers with tax liabilities > 0	0.13	0.04	0.17	0.57	0.33	0.69
Tax Base (1000 euros)						
Mean	130.92	143.20	125.46	103.10	118.79	95.89
p25	15.55	13.54	16.55	10.42	10.18	10.54
p50	48.22	43.41	50.38	33.65	32.97	33.97
p90	251.73	244.39	254.94	202.15	201.25	202.43
Tax Liabilities (euros)						
Mean	685.02	52.82	966.12	11,582.03	9,580.61	12,501.23
p25	0.00	0.00	0.00	0.00	0.00	0.00
p50	0.00	0.00	0.00	446.03	0.00	1,334.09
p90	21.37	0.00	58.45	19,034.88	11,492.69	21,572.66
Tax Liabilities (euros) > 0						
Mean	5,121.08	1,175.10	5,576.26	20,149.51	29,177.20	18,170.64
p25	21.01	17.34	21.56	1,177.30	1,347.64	1,142.48
p50	89.97	77.36	91.94	3,908.29	4,665.06	3,764.88
p90	2,759.00	1,973.13	2,887.69	35,214.56	46,360.16	32,844.47
Observations	807,346	248,491	558,855	140,540	44,232	96,308

Close heirs refer to surviving spouses and direct descendants. Distant heirs refer to distant relatives (2nd degree or more) and non-relatives. Data from the universe of inheritance tax returns filed in Catalonia (Catalan Tax Agency).

Figure D.1: Composition of Inheritances - All heirs



(a) Tax favored + non-tax-favored assets **(b)** Tax-favored assets

This figure plots the composition of inherited assets along the inheritance distribution. Panel D.1a disaggregates assets between tax-favored and non-tax-favored assets. Panel D.1b differentiates tax-favored assets by type. Data from the universe of inheritance tax returns filed in Catalonia between 2011-2019 excluding usufructuaries (Catalan Tax Agency)

Table D.3: Summary Statistics - Treatment and Control Group

	(1) Treated Group	(2) Control Group
Panel A: Tax base ∈ (800,000; 2,000,000]		
	Before 2014	Before 2014
Tax Base (1000 euros)	1,184.89	1,157.56
Tax-favored Assets (% Tax Base)	19.74	21.87
Business Assets (% Tax Base)	6.58	8.35
Equity in family firms	5.35	7.15
Real assets used for business activity	1.23	1.19
Primary Residence (% Tax Base)	8.49	7.70
Life Insurance (% Tax Base)	3.77	5.77
Other Tax-favored Assets (% Tax Base)	1.05	0.09
Inheritance Tax Rate (%)	0.08	5.53
Observations	1,961	1,165
Observations (full sample)	6,015	3,700
Panel B: Tax base > 2,000,000€		
	Before 2014	Before 2014
Tax Base (1000 euros)	9,430.97	7,695.21
Tax-favored Assets (% Tax Base)	30.98	28.68
Business Assets (% Tax Base)	27.13	22.53
Equity in family firms	22.45	13.48
Real assets used for business activity	4.57	9.02
Primary Residence (% Tax Base)	2.48	3.11
Life Insurance (% Tax Base)	1.31	3.03
Other Tax-favored Assets (% Tax Base)	0.49	0.00
Inheritance Tax Rate (%)	0.10	4.95
Observations	746	343
Observations (full sample)	1,694	1,126

This table presents summary statistics for the treatment and control group before February 2014. Data from the universe of inheritance tax returns filed in Catalonia between 2011-2019 excluding usufructuaries (Catalan Tax Agency).

Table D.4: Summary Statistics - Linked Wealth Tax Returns

	Before inheritance	After inheritance
Tax base (1000 euros)	2,244.33	3,417.80
Total wealth (1000 euros)	5,530.88	8,153.06
Exempted assets (% total wealth)	38.06	41.22
Equity in family firms	30.75	32.50
Real assets used for business	0.48	4.19
Main residence	5.09	3.26
% Family firm owners	67	59
% Heirs in only-descendant estates	84	82
Observations	2,070	6,425

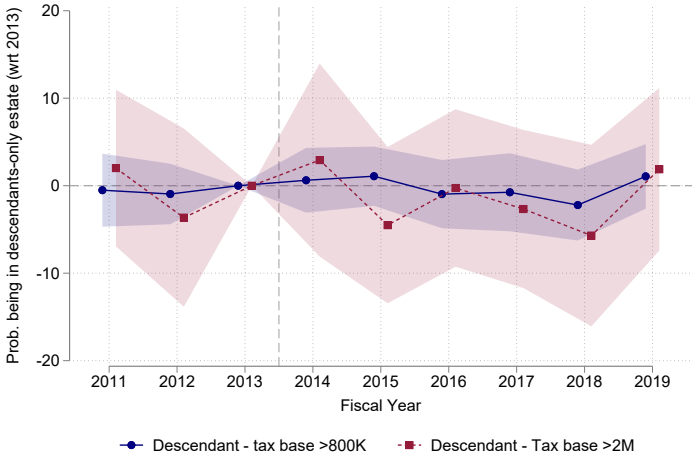
This table presents summary statistics of wealth tax returns linked to heirs with taxable inheritances above 2M€. Data from the Catalan Tax Agency.

Table D.5: Summary Statistics - Linked Wealth Tax Returns by Treatment Status

	Treated Group *Inherited after 2014*	Control Group *Inherited before 2014*
	Before inheritance	Before inheritance
Tax base (1000 euros)	2,312.23	2,514.03
Total wealth (1000 euros)	5,275.44	5,411.79
Exempted assets (% total wealth)	35.64	33.92
Equity in family firms	28.80	29.25
Real assets used for business	0.30	0.55
Main residence	5.09	3.47
% Family firm owners	65	63
Observations (before inheritance)	1,641	104
Observations (full panel)	4,128	2,874

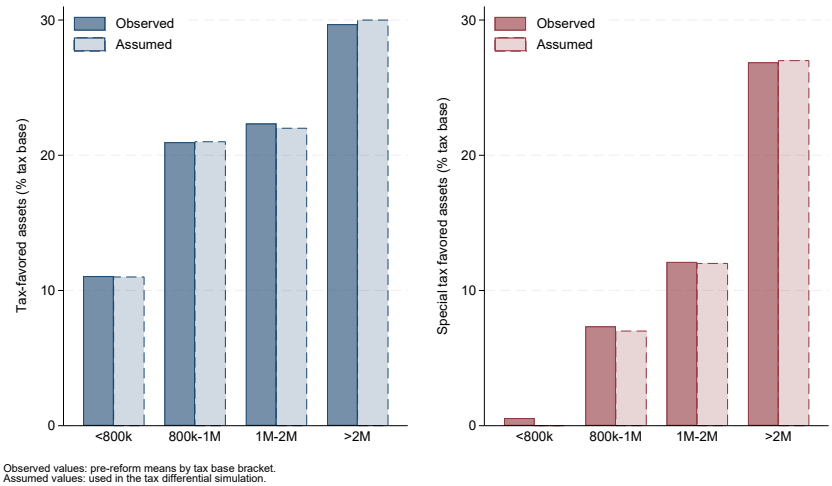
This table presents summary statistics of wealth declared in the wealth tax by heirs in only-descendant estates with taxable inheritances above 2M€, before the inheritance year. Treated group comprises heirs who inherited after February 2014; control group comprises heirs who inherited before 2014. Data from the Catalan Tax Agency.

Figure D.2: Probability that a descendant belongs to a descendants-only estate



This figure plots an event-study around the 2014 tax reform. The dependent variable is a dummy that takes value 100 if a descendant with taxable inheritance above 800,000€ or 2M€ belongs to an only-descendant estate and 0 if he belongs to a mixed estate. Standard errors are cluster at the heir level.

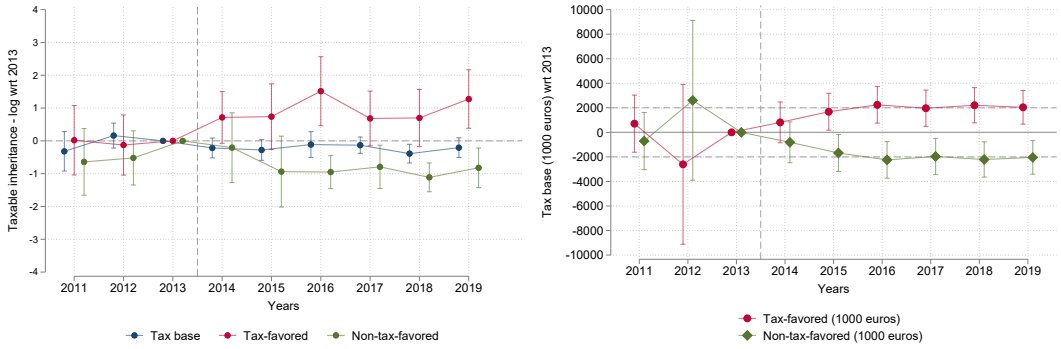
Figure D.3: Pre-reform asset composition along the inheritance distribution



This figure plots the composition of inherited assets along the inheritance distribution before the tax reform observed in the data and the one assumed in the simulations to obtain the tax differentials in Figure 1

E Additional results

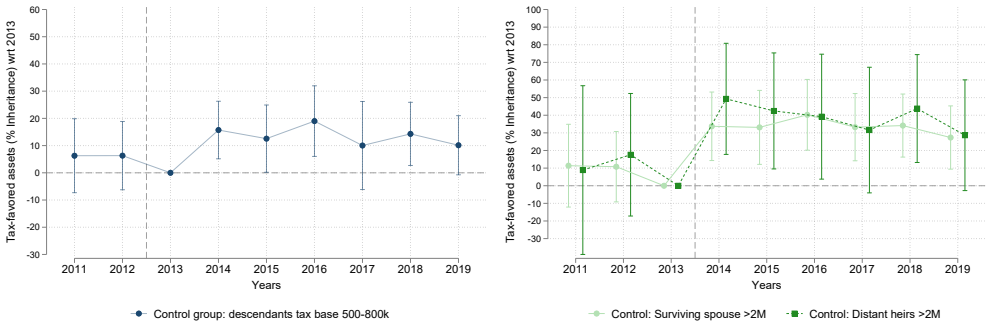
Figure E.1: Effect of the Tax Reform on Inherited Assets by Tax Treatment



(a) Log-levels **(b)** Levels (1000 euros)

This figure plots estimated β_j coefficients from Equation 1 and the corresponding 95% confidence intervals. The treated (control) group are descendants with taxable inheritances above 2M €. In Figure E.1a The dependent variable is the log of total tax base (ii) tax-favored assets and (iii) non-tax favored assets. In Figure E.1b the dependent variable is the total tax base (ii) tax-favored assets and (iii) non-tax favored assets in thousand euros. In this regression, I control for he level of the tax base and its interaction by kinship status. Standard errors are robust and clustered at the year-month level.

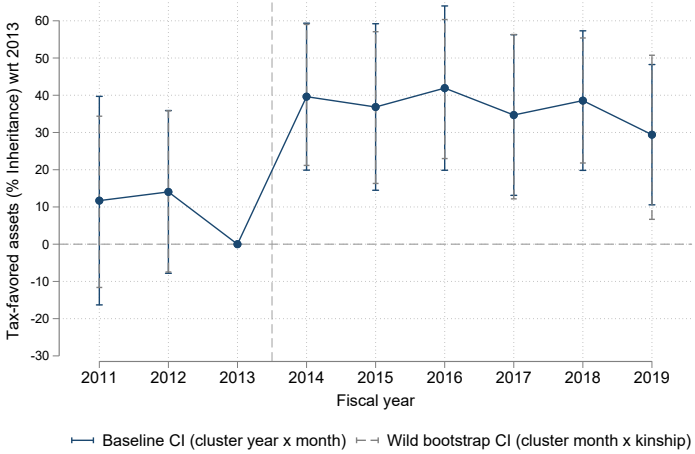
Figure E.2: Robustness - Control group



(a) Descendants with tax base 500-800K **(b)** Spouses vs Distant heirs

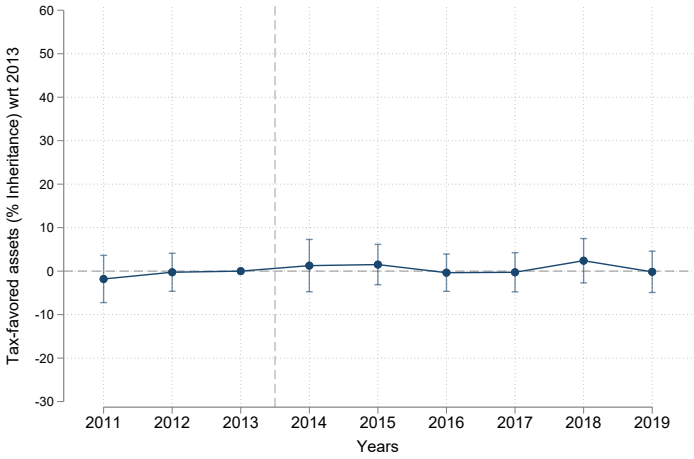
This figure plots estimated β_j coefficients from Equation 1 and the corresponding 95% confidence intervals. The treated group are descendants with taxable inheritances above 2M €. The control group in Panel E.2a are descendants with taxable base between 500,000 to 800,000 euros. The control group in Panel E.2b (i) surviving spouses and (ii) distant heirs with taxable inheritances above 2M €. The dependent variable is tax-favored assets (% inheritances). Standard errors are robust and clustered at the year-month level.

Figure E.3: Robustness - Clustering of the errors



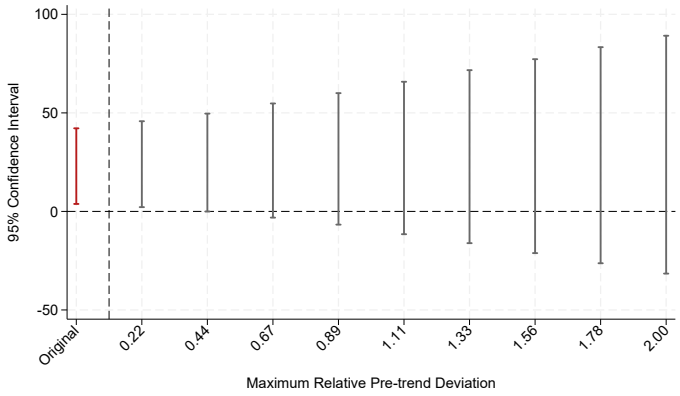
This figure reproduces Figure 4 by comparing the baseline specification, which clusters standard errors at the year-month level, with an alternative approach based on wild bootstrap inference at the month-of-death-kinship level.

Figure E.4: Placebo Exercise



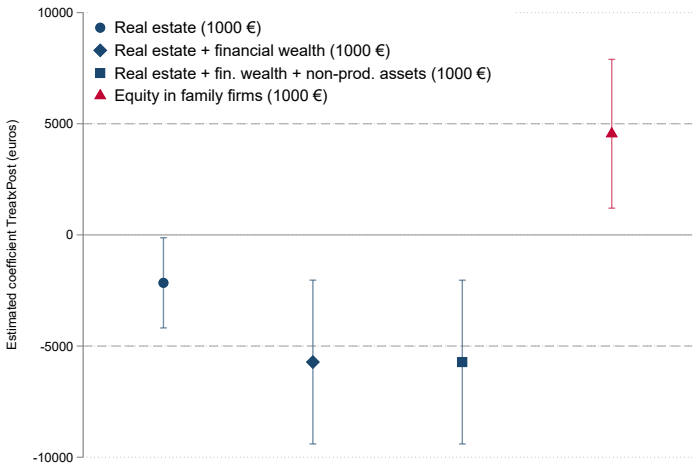
This figure plots estimated β_j coefficients from Equation 1 and the corresponding 95% confidence intervals. The placebo treated (control) group are descendants (surviving spouses and distant heirs) with taxable inheritances between 500,000-800,000 euros.The dependent variable is tax-favored assets (% inheritances). Standard errors are robust and clustered at the year-month level.

Figure E.5: Sensitivity to pre-trends assumption violation - Equity in family firms (% Inheritance)



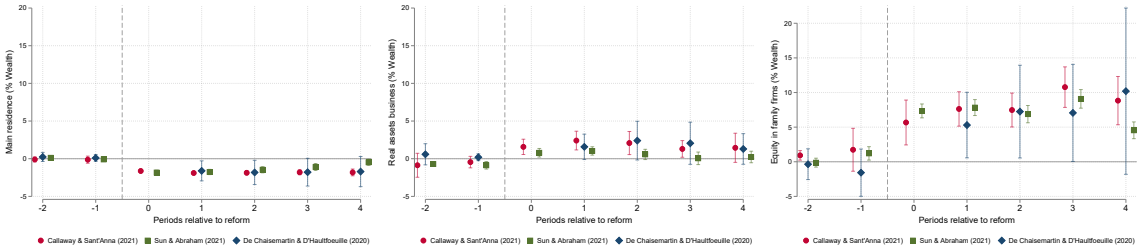
This figure plots the sensitivity analysis of Rambachan and Roth (2023). The red bar shows the original 95% confidence interval. Each grey bar shows the robust confidence interval allowing for different post-reform violations of the parallel trends assumption.

Figure E.6: Effects of the Tax Reform on Non-tax-favored Assets - Levels



This figure plots the estimated β_j coefficients from the stacked version of the Equation 1 and 95% confidence intervals when the dependent variable is (i) non-tax favored real estate (excluding main residence of the deceased and tax-favored agricultural/rural real estate) (ii) (i) + financial assets (iii) (ii) + non-productive assets (vehicles, aircraft, boats, household items) in thousand euros at the estate level. The treated (control) group are estates transmitted exclusively to descendants (spouse and distant heirs) where at least one heir has taxable inheritances above 2M €. Standard errors are robust and clustered at the year of inheritance level.

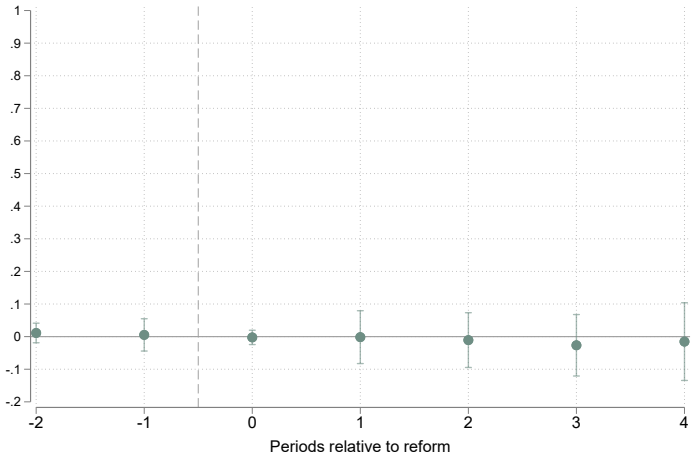
Figure E.7: Robustness - Heterogeneous Treatment Effects



(a) Main residence **(b)** Real assets used in business **(c)** Equity in family firms

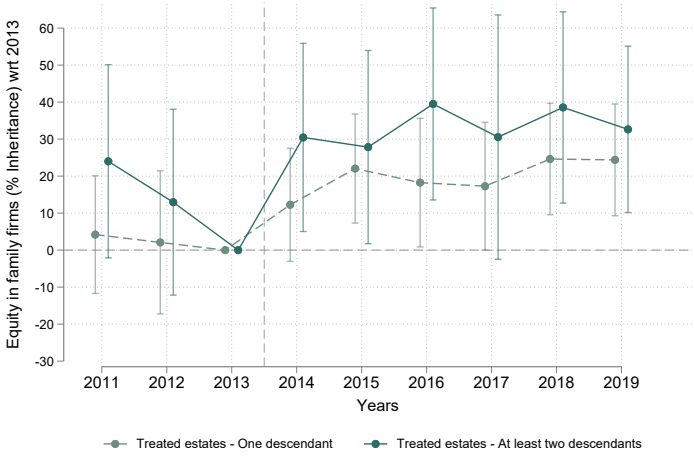
This figure compares the results in Figure 6, estimated using Callaway and Sant'Anna (2021) (CS) with other two alternative heterogeneity-robust estimators: Sun and Abraham (2021) (SA), and de Chaisemartin and D'Haultfœuille (2020) (DCDH). Standard errors are clustered at the inheritance year level.

Figure E.8: Effects of the Tax Reform on The Probability of Declaring Equity in Family Firm



This figure plots the estimated β_j coefficients from Equation 3 and 95% confidence intervals when the dependent variable is a dummy that takes value equal to 1 if the taxpayer reports equity in family firm in her tax declaration. The treated (control) group are descendants with taxable inheritances above 2M € who inherited after (before) 2014. Standard errors are robust and clustered at the year of inheritance level.

Figure E.9: Effects of the Tax Reform on Equity in Family Firm (% Inheritance) - Number of heirs



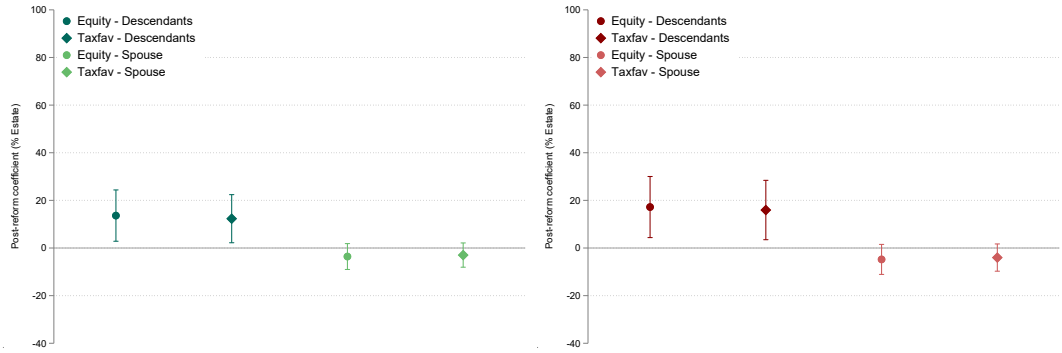
This figure plots the estimated β_j coefficients from Equation 1 and 95% confidence intervals when the dependent variable is the fraction of equity in family firm out of total inheritance. The treated group are descendants with taxable inheritances above 2M€ in one-descendant estates and multiple-descendant estates. The control group are spouse ann other heirs with taxable inheritance above 2M€. Standard errors are robust and clustered at the year-month level.

Figure E.10: Effects of the Tax Reform on Asset Composition - Mixed Estates

(a) At least one descendant > 2M€ **(b)** All descendants > 2M€

This figure plots the estimated β_j coefficients from Equation 1 and 95% confidence intervals when the dependent variable is the share of tax-favored assets and equity in family firms inherited by descendants as a fraction of the total estate.The treated group consists of mixed estates (descendants and surviving spouse) with at least one descendant (Panel E.10a) or all descendants (Panel E.10b) with a taxable inheritance above 2M€. The control group comprises spouse-only and distant-heir-only estates above 2M€. All specifications control for the share of the estate accruing to descendants. Standard errors are robust and clustered at the year-month level.

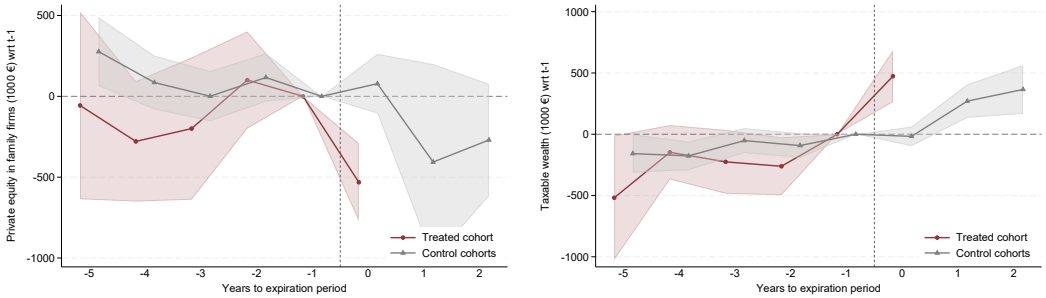
Figure E.11: Within-Estate Reallocation of Tax-Favored Assets Between Descendants and Spouses



(a) At least one descendant > 2M€ **(b)** All descendants > 2M€

This figure plots the estimated coefficient on *Post* from OLS regressions of the share of tax-favored assets and family-firm equity accruing to descendants and to the surviving spouse — each as a fraction of the total estate — controlling for the share of the estate received by each group, the number of heirs, and cohort fixed effects. The sample comprises mixed estates (descendants and surviving spouse), restricting to estates with at least one (Panel E.11a) or all (Panel E.11b) descendants above 2M€. Standard errors are clustered at the year-month level.

Figure E.12: Wealth portfolio around Inheritance Tax Benefit Expiration



(a) Private Equity in Family Firms **(b)** Taxable assets

This figure plots the estimated coefficients from cohort-specific event-study specifications around the expiration of the mandatory holding period, normalized to one year prior to expiration, controlling for individuals fixed effects. The estimation of Panel E.12a also control for total wealth. Taxable assets include secondary real estate, financial assets, household items and other minor asset categories. The treated cohort comprises heirs who inherited in 2014 while control cohorts are heirs who inherited between 2012 and 2013. The standard errors are clustered at the heir level

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