

Online Appendix

Inheritance Tax Avoidance Through the Family Firm

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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 bequests³⁴ 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

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

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

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

³⁴The 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.

quota is computed as follows:

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

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. $\text{Net Tax Base}_j^i - b_j^{lb}$ where b_j^{lb} 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 II³⁵ 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.

³⁵The 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					
<i>Direct Descendants</i>					
Son or daughter < 21	18k+ 12k(21 – age) max. 114k	69+ 8k(21 – age) max. 134k	171k+ 20k(21 – age) max. 337k	275k+ 33k(21 – age) max. 539k	100k+ 12k(21 – age) max. 196
Son or daughter > 21	18k	68.75k	171.87k	275k	100k
Other descendants	18k	37.50k	93.75k	150k	50k
<i>Spouse</i>	18k	125k	312.50k	500k	100k
<i>Ascendants</i>	18k	25k	62.50k	100k	30k
Distant heirs					
<i>Group III</i>	9k	12.50k	31.25k	50k	8k
<i>Group IV</i>	-	-	-	-	-

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					
<i>Direct Descendants</i>					
Son; daughter < 21	-	125k	125k	125k	-
Son; daughter > 21	-	max{32.5k, 0.5 × (net tax base)}	max{78.13k, 0.5 × (net tax base)}	max{125k, 0.5 × (net tax base)}	-
Other descendants	-	max{12.5k, 0.5 × (net tax base)}	max{31.25k, 0.5 × (net tax base)}	max{50k, 0.5 × (net tax base)}	-
<i>Spouse</i>	-	max{37.5k, 0.5 × (net tax base)}	max{93.75k, 0.5 × (net tax base)}	max{150k, 0.5 × (net tax base)}	-
	-	275k if age>75	275k if age>75	275k if age>75	-
<i>Ascendants</i>	-	max{6.25k, 0.5 × (net tax base)}	max{15.63k, 0.5 × (net tax base)}	max{25k, 0.5 × (net tax base)}	-

A.3 Asset-specific tax credits

Table A.3: Asset-specific Tax Credits

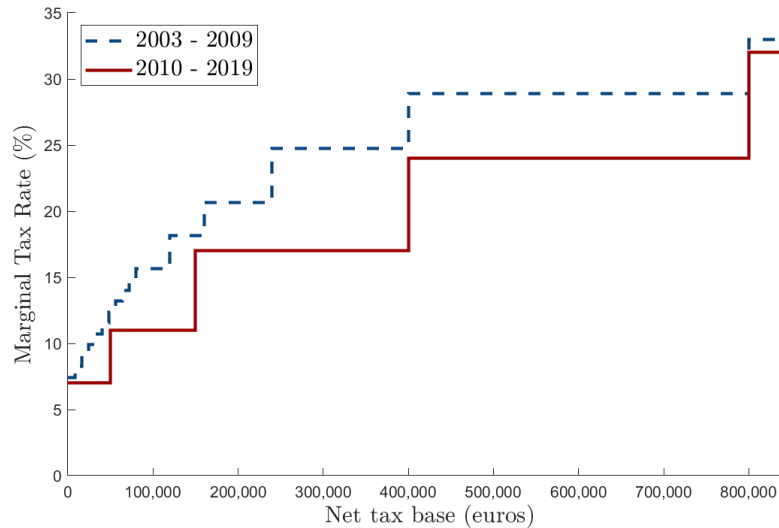
	2003-2007	2008-2009	2010-2019
Close heirs			
Primary residence	95% tax credit limit 125k per heir	95% tax credit limit 500k on property	95% tax credit limit 500k on property
Equity shares in family firms	95% tax credit	95% tax credit	95% tax credit
Real assets used for business activity	95% tax credit	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 repurposed 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

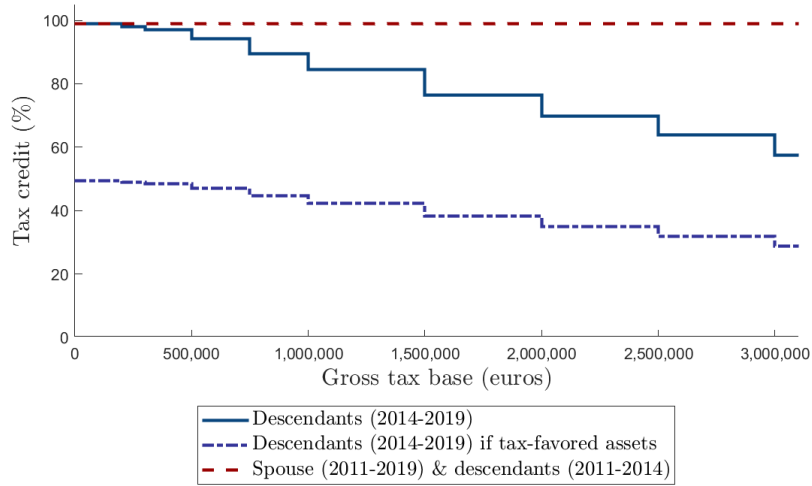
Table A.5: Scaling factors in Catalonia 2010-2019

Group	Scaling factor
Group I and II <i>Descendants, ascendants, spouses</i>	1.0000
Group III <i>Relatives 2nd degree</i>	1.5882
Group IV <i>More distant relatives; non-relatives</i>	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.

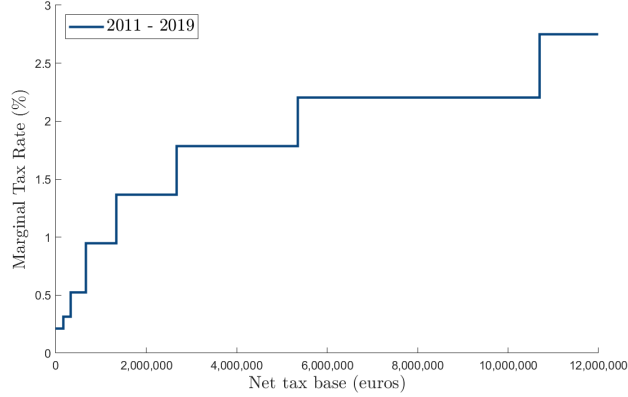
The tax applies to both residents and non-residents, albeit with different scopes of liability. Spanish residents are taxed on their worldwide assets, whereas non-residents are subject to taxation only on assets located within Spanish territory. In both cases, taxpayers are required to report annually 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

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

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

³⁸In 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.

³⁹One 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.

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

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:

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

The first order conditions are:

$$\begin{aligned} x : (\tau^{NF} - \tau^F) &= \gamma'_j(x) \\ z : \tau^{NF} &= h'_j(z) \end{aligned}$$

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:

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

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

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

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

Pure asset-shifting response

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

Hence we have that Equation 4 can be rewritten as:

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

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

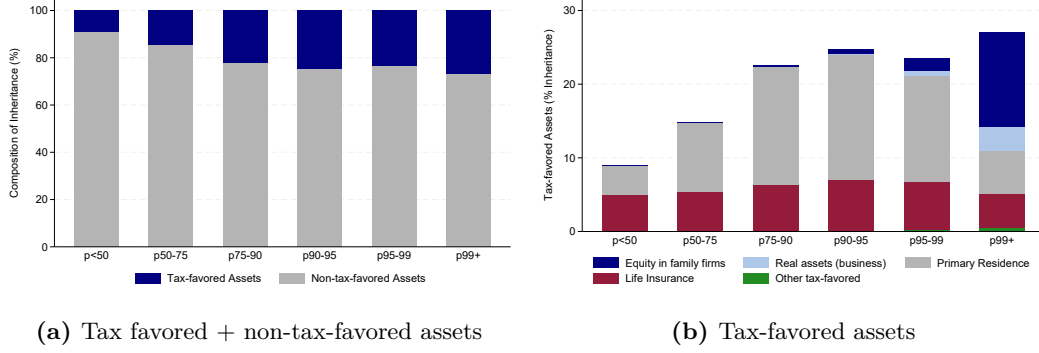
<i>Close heirs. Group 1</i>	
Descendants < 21 age	1.7%
<i>Close heirs. Group 2</i>	
Son or daughter > 21 age	54.6%
Spouse	22.4%
Other direct descendants	5.8%
Ascendants	1%
<i>Distant heirs. Groups 3 & 4</i>	
Data from the universe of inheritance tax returns filed in Catalonia between 2011-2019 excluding usufructaries (Catalan Tax Agency)	

Table D.2: Summary Statistics - Tax base and Tax liabilities

	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	130.91	143.19	125.45	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	251.72	244.39	254.94	202.15	201.25	202.43
Tax Liabilities (euros)						
mean	684.34	50.59	966.10	11582.03	9580.61	12501.23
p25	0.00	0.00	0.00	0.00	0.00	0.00
p50	0.00	0.00	0.00	446.03	0.00	1334.09
p90	21.36	0.00	58.45	19034.88	11492.69	21572.66
Tax Liabilities (euros) > 0						
mean	5116.19	1126.13	5576.21	20149.51	29177.20	18170.64
p25	21.01	17.33	21.56	1177.30	1347.64	1142.48
p50	89.96	77.34	91.94	3908.29	4665.06	3764.88
p90	2756.77	1954.23	2887.69	35214.56	46360.16	32844.47
Observations	807,336	248,470	558,866	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 excluding usufructaries (Catalan Tax Agency).

Figure D.1: Composition of Inheritances - All heirs



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
<i>Panel A: Tax base $\in (800,000; 2,000,000]$</i>		
	Before 2014	Before 2014
Tax Base (1000 euros)	3,459.26	2,645.50
Tax-favored Assets (% Tax Base)	22.79	23.42
Business Assets (% Tax Base)	12.22	11.33
<i>Equity in family firms</i>	10.02	8.60
<i>Real assets used for business activity</i>	2.15	2.98
Primary Residence (% Tax Base)	6.84	6.65
Life Insurance (% Tax Base)	3.10	5.15
Other Tax-favored Assets (% Tax Base)	0.90	0.07
Inheritance Tax Rate (%)	0.08	5.38
Observations	2,705	1,507
Observations (full sample)	7,707	4,825
<i>Panel B: Tax base $> 2,000,000$ €</i>		
	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
<i>Equity in family firms</i>	22.45	13.48
<i>Real assets used for business activity</i>	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

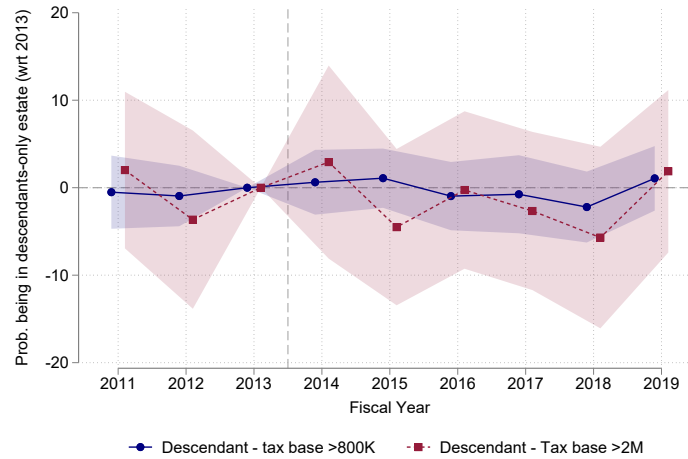
	Before inheritance	After inheritance
Tax base (1000 euros)	2,244.33	3,417.80
Total wealth (1000 euros)	5,530.88	8,153.06
Exempted assets (% total wealth)	38.06	41.22
Equity in family firms	30.75	32.50
Real assets used for business	0.48	4.19
Main residence	5.09	3.26
% Family firm owners	67	59
% Heirs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

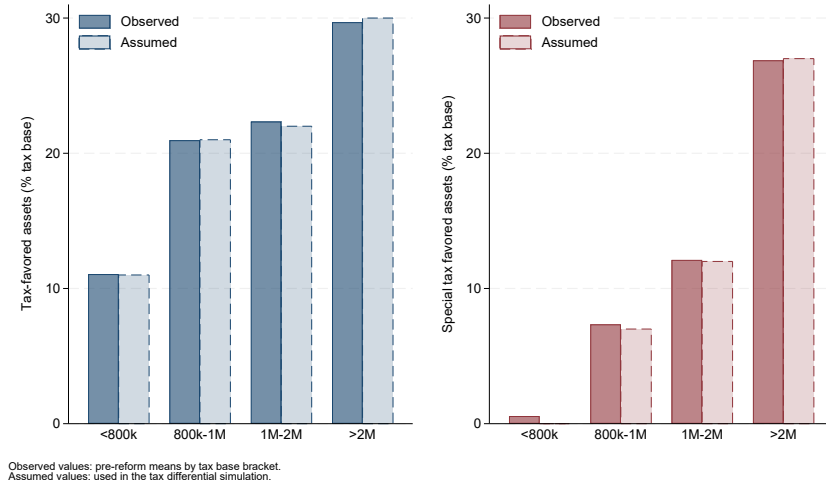
	Treated Group <i>Inherited after 2014</i>	Control Group <i>Inherited before 2014</i>
	Before inheritance	Before inheritance
Tax base (1000 euros)	2,312.23	2,514.03
Total wealth (1000 euros)	5,275.44	5,411.79
Exempted assets (% total wealth)	35.64	33.92
Equity in family firms	28.80	29.25
Real assets used 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.

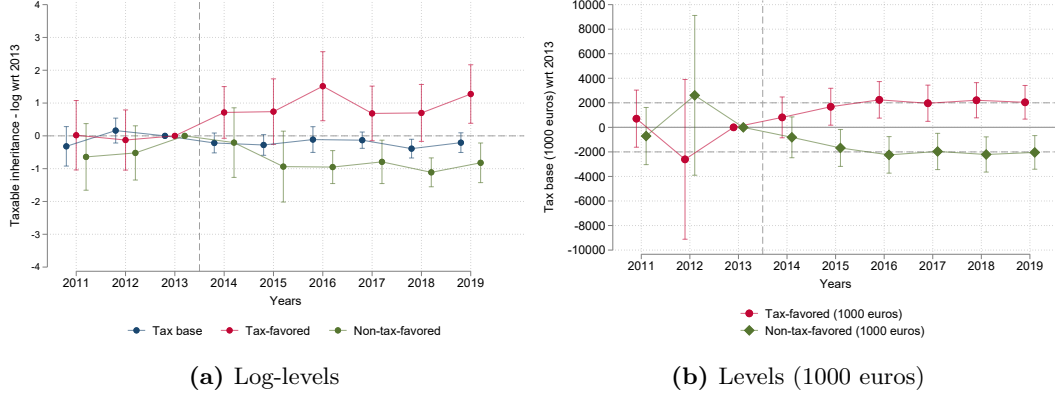
Figure D.3: Pre-reform asset composition along the inheritance distribution



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](#)

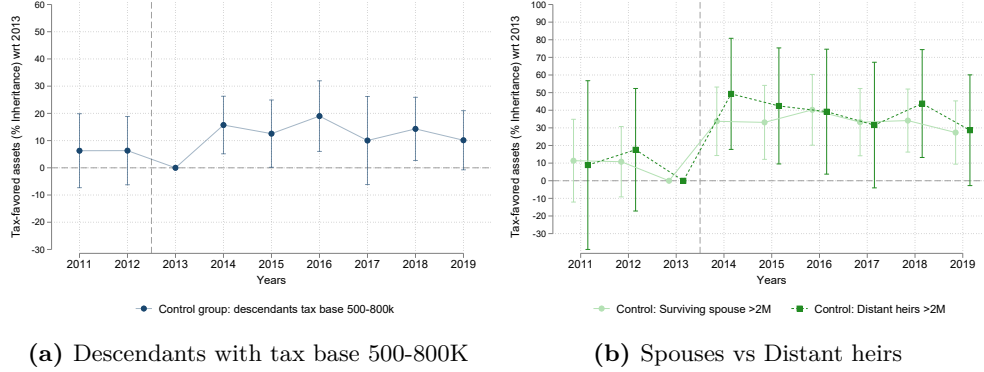
E Additional results

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



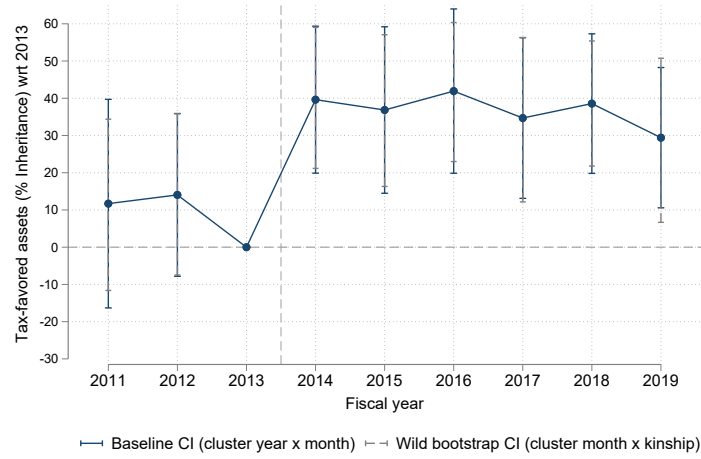
This figure plots estimated β_j coefficients from Equation 1 and the corresponding 95% confidence intervals. The treated (control) group are descendants with taxable inheritances above 2M€. In Figure E.1a the dependent variable is the log of total tax base (ii) tax-favored assets and (iii) non-tax favored 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 the 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



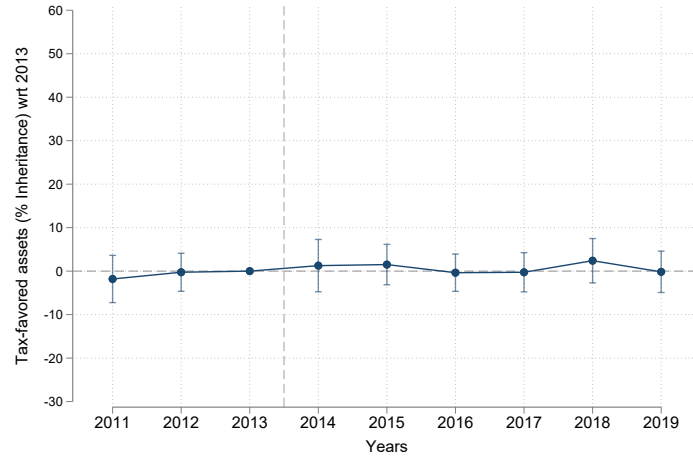
This figure plots estimated β_j coefficients from Equation 1 and the corresponding 95% confidence intervals. The treated group are descendants with taxable inheritances above 2M€. The control group in Panel E.2a are descendants with taxable base between 500,000 to 800,000 euros. The control group in 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



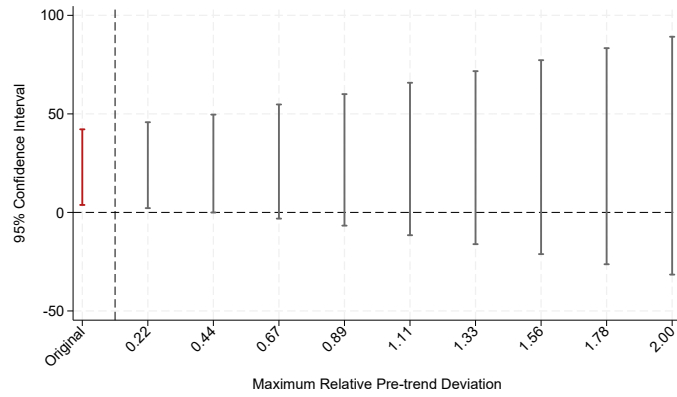
This figure reproduces Figure 4 by comparing the baseline specification, which clusters standard errors at the year-month level, with an alternative approach based on wild bootstrap inference at the month-of-death-kinship level.

Figure E.4: Placebo Exercise



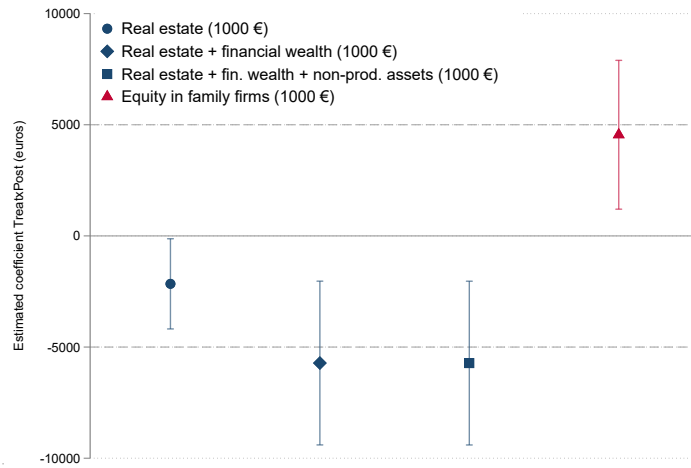
This figure plots estimated β_j coefficients from Equation 1 and the corresponding 95% confidence intervals. The placebo treated (control) group are descendants (surviving spouses and distant heirs) with taxable inheritances between 500,000-800,000 euros. The dependent variable is tax-favored assets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



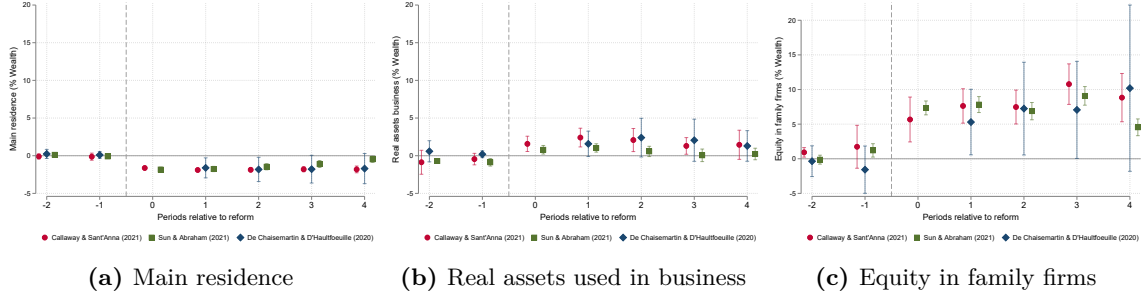
This figure plots the sensitivity analysis of [Rambachan and Roth \(2023\)](#). The red bar shows the original 95% confidence interval. Each grey bar shows the robust confidence interval allowing for different post-reform violations of the parallel trends assumption.

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



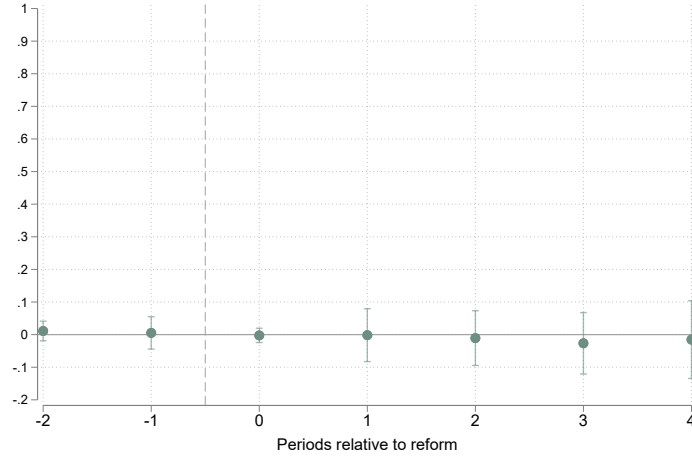
This figure plots the estimated β_j coefficients from the stacked version of the Equation 1 and 95% confidence intervals when the dependent variable is (i) non-tax favored real estate (excluding main residence of the deceased and tax-favored agricultural/rural real estate) (ii) (i) + financial assets (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



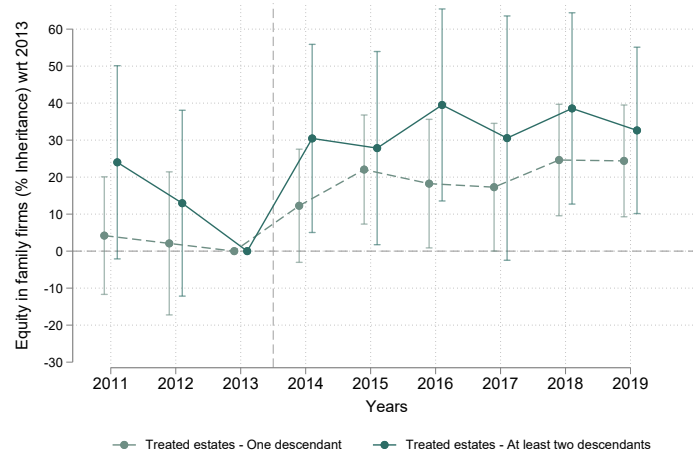
This figure compares the results in Figure 6, estimated using Callaway and Sant'Anna (2021) (CS) with other two alternative heterogeneity-robust estimators: Sun and Abraham (2021) (SA), and de Chaisemartin and D'Haultfoeulle (2020) (DCDH). Standard errors are clustered at the inheritance year level.

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



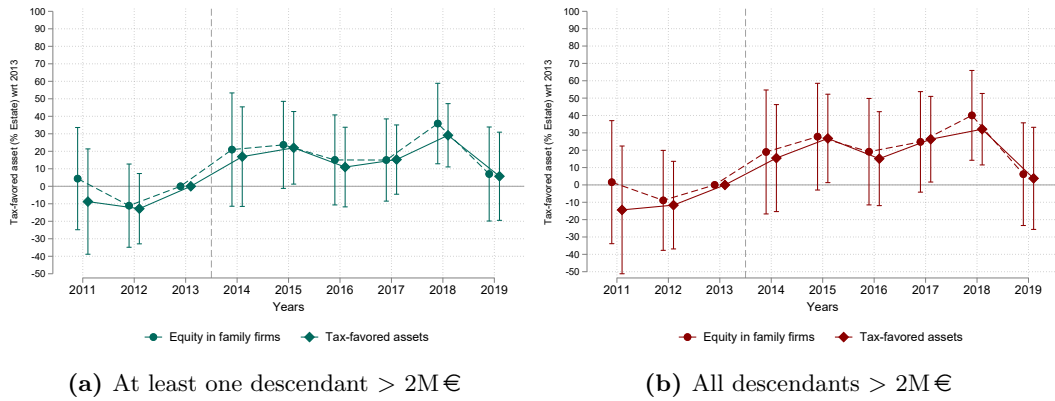
This figure plots the estimated β_j coefficients from Equation 3 and 95% confidence intervals when the dependent variable is a dummy that takes value equal to 1 if the taxpayer reports equity in family firm in her tax declaration. The treated (control) group are descendants with taxable inheritances 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



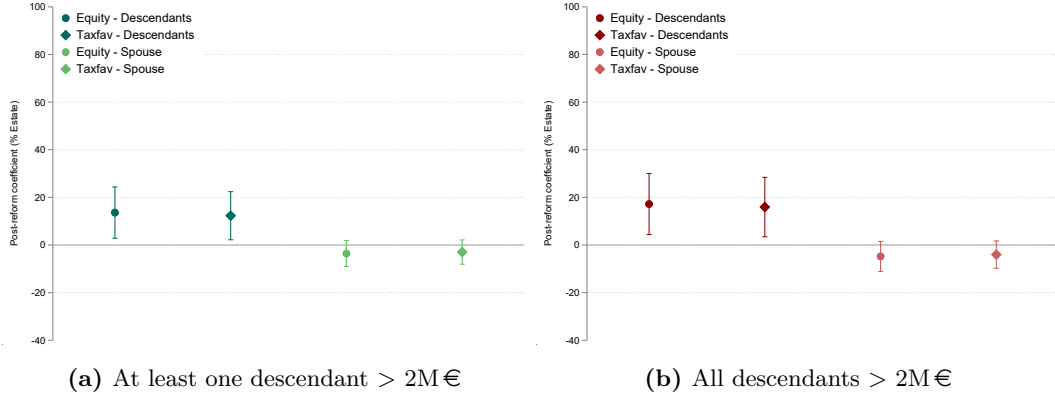
This figure plots the estimated β_j coefficients from Equation 1 and 95% confidence intervals when the dependent variable is the fraction of equity in family firm out of total inheritance. The treated group are descendants with taxable inheritances above 2M € in one-descendant estates and multiple-descendant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



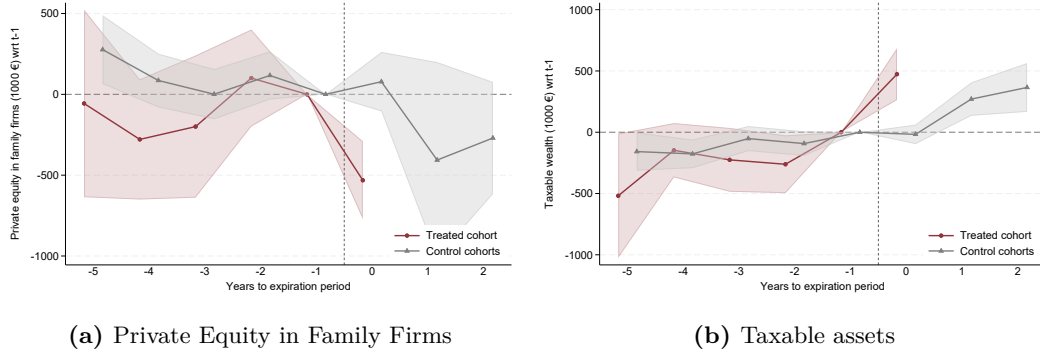
This figure plots the estimated β_j coefficients from Equation 1 and 95% confidence intervals when the dependent variable is the share of tax-favored assets and equity in family firms inherited by descendants as a fraction of the total estate. The treated group consists of mixed estates (descendants 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



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



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