

The Effects of Inheritance and Gift Taxation on Upward Mobility at the Bottom of the Wealth Distribution: Lessons from Spain

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Job Market Paper

December 15, 2022

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Abstract

This paper studies the impact of inheritance and gift (IG) taxation on intragenerational wealth mobility by exploiting rich regional variation in tax rates in Spain. The regulation of the Spanish IG tax was decentralized to regional governments in 1996, resulting in substantial variation in effective tax rates across regions since the mid-2000s. Relying on official tax data, I construct a novel inheritance and gift tax calculator for all Spanish regions between 2002-2018. By applying this tax calculator to household panel data from the Spanish Survey of Household Finances, I document that higher inheritance taxes significantly and persistently reduce wealth mobility at the lower part of the net wealth distribution. These wealth mobility patterns are explained by households at the bottom accumulating lower financial wealth and higher non-mortgage debt when subject to higher levels of taxation. Liquidity constraints and restricted access to financial instruments help rationalize the rise in non-mortgage debt at the time of the tax payment. Illiquidity of inheritances and delays in selling real estate property help explain the long-lasting negative effect of inheritance taxes on bottom-wealth mobility, as they seem to prevent liquidity-constrained households from deleveraging sooner.

Keywords: inheritance and gift taxation, net wealth, wealth mobility

JEL codes: G51, H24, H73, D63

[§]Universidad Carlos III de Madrid, imico@eco.uc3m.es; I am grateful to my advisors Evi Pappa and Juanjo Dolado for their excellent guidance in this paper. I thank Luigi Minale, Luis Bauluz, Philippe Weil as well as seminar participants at UC3M for useful comments and discussions. I am grateful to the Consejo General de Economistas for granting me access to their regional fiscal reports. I am also particularly indebted to Ángel de La Fuente for his advice on the construction of the effective tax rates, and to Cristina Barceló for helping me with some confidential codes of the EFF database at the Bank of Spain. I thank public notary Paz Juárez Olmos for enriching discussions that help me go through the complex details of the Spanish Inheritance and Gift Tax System. All errors are mine.

1 Introduction

At the heart of the ongoing debate on the sharp rise in wealth inequality is the use of inheritance and inter-vivos gift (IG, hereafter) taxation as one of the main available policy tools to redistribute wealth and guarantee equal opportunities (OECD, 2021; Piketty et al., 2013). This is an important issue since, by 2021, IG taxes are still levied in 24 out of the 36 OECD countries.¹ Yet, empirical research on this topic is still very limited since isolating the causal impact of IG taxation from other factors affecting wealth distributional outcomes is rather challenging due to identification and measurement issues. First, inheritance and gift tax reforms that could be used in a quasi-experimental setting are rare. Second, even if they have occurred, rich administrative or survey data containing detailed information on heirs' and donees' wealth has often been unavailable to researchers. These empirical challenges are also aggravated by a stark theoretical ambiguity about the impact of wealth transfer taxation on wealth distributional outcomes. For example, the quantitative macroeconomic literature examining the distributional effects of estate taxation in the U.S. finds that the effects of suppressing this form of bequest taxation range from mild to substantial, depending on specific modeling assumptions. For instance, Cagetti and De Nardi (2009); Castaneda et al. (2003) find negligible effects of abolishing estate taxation on wealth inequality and mobility, while Benhabib et al. (2011) finds rather sizable effects. In addition, recent developments in the theoretical literature on optimal bequest taxation also argue in favor of a positive optimal inheritance tax rates but again its magnitude depends explicitly on the modeling assumptions (Brunner and Pech, 2012; Piketty and Saez, 2013).²

In this paper, I study the wealth mobility consequences of the Spanish IG taxation through heirs' and donees' net wealth accumulation responses. The Spanish setting serves as an ideal testing ground as it allows me to tackle the above-mentioned identification and measurement challenges. First, it provides rich survey household panel data on wealth from 2002 to 2018. The Spanish Survey of Household Finances (or EFF for its acronym in Spanish) contains detailed information on the wealth and debt of Spanish households, including information on pre-tax inheritances and inter-vivos gifts amounts and their asset composition. Second, Spain offers promising quasi-experimental variation in effective IG tax rates among its regions for any tax bracket.

¹See data: https://www.oecd-ilibrary.org/taxation/inheritance-taxation-in-oecd-countries_e2879a7d-en

²Piketty and Saez (2013) show that the optimal inheritance tax rate should be positive and large if the elasticity of bequests to the tax rate is low, bequest concentration is high, and society cares mostly about those receiving small bequests. Brunner and Pech (2012) show the introduction of the inheritance tax can have an ambiguous effect on welfare depending on whether the external effect related to altruism is accounted for in the social objective.

The Spanish IG tax is designed at the national level. The law contemplates a progressive tax schedule with 16 brackets and tax rates ranging from 7.65% to 34%. In 1996 the administration and regulation of this tax were decentralized to regional governments, which were awarded regulatory power to introduce tax credits and deductions for any tax bracket as well as to modify the marginal tax schedule at their will. Regions started to exercise this right in the mid-2000s resulting in large regional cross-bracket variation in the effective tax rates due to differences in (i) the timing of the tax reforms, (ii) the number of tax brackets affected and (iii) the magnitude of the tax discounts introduced. I collect information on all regional IG tax reforms between 2002-2018 relying on different official data sources. Most of these tax reforms took the form of tax credits and deductions that targeted a tax burden relief for close heirs and donees (i.e., spouses, descendants older than 21, and ascendants) and were applicable to any asset included in the tax base. With this novel information, I construct a tax simulator for inheritance and gift taxes for all Spanish regions which was previously unavailable. Then, I apply this tax simulator to the inheritance and gifts reported by households in the EFF survey and leverage the regional variation in tax payments across tax brackets and time to estimate the effects of IG taxation on wealth mobility and net wealth accumulation in a panel of close heirs and donees.

I estimate average treatment effect of IG tax changes, as well as their dynamics, using an event-study specification. For my empirical strategy, I compare changes in wealth mobility outcomes of people that receive an inheritance or gift (before and after they receive it) across different regions (i.e., different tax rates). In the absence of a pre-trend, the identifying assumption is that there is no systematic regional factor driving both IG tax rates and outcome variables. The most relevant threat to identification is that local economic shocks at the regional level simultaneously determine the IG tax setting and household wealth accumulation and mobility outcomes. In this respect, I show that IG tax changes do not react to past regional economic conditions or the state of regional public finances but only to the political orientation of the regional government. Further, the ideology of the party in power happens to be uncorrelated with systematic differences in economic and fiscal performance across regions. This mitigates the concerns about biases in the estimates of the treatment effects due to these confounding factors. In addition, I argue that IG tax-induced regional mobility should not play a major role in this setting due to the specific design of the tax, as inheritance taxes are paid in the region of residence of the deceased person during the last 5 years and gift taxes are paid where the assets being transferred are located.

By comparing heirs and donees who pay IG taxes in different regions, I find that higher inheritance taxes have a negative impact on net wealth mobility, but only at the bottom of

the wealth distribution. Households placed between the 10th and 50th net wealth deciles who are subject to higher inheritance taxes are between 10 to 20% less likely to improve their position in the net wealth distribution than those subject to lower taxes. Interestingly, this negative effect is persistent, remaining statistically significant during 3 to 6 years after the inheritance receipt for households placed in the two first deciles. Instead, gift taxes on cash transfers do not seem to affect differently wealth mobility at any part of the wealth distribution.

I argue that liquidity constraints at the time of the inheritance receipt are a relevant factor in explaining the negative effect of this type of taxation on wealth mobility at the lower part of the net wealth distribution. Despite getting smaller inheritances in absolute terms, less-wealthy heirs in Spain receive larger bequests relative to their stock of wealth than wealthier ones. More concretely, households below the 40th net wealth percentile in Spain receive on average wealth transfers as large as 6 times their gross wealth (or 86 times their liquid assets) at the time of their receipt.³ The higher relative size of the inheritances with respect to households' stock of liquid wealth at the left tail of the distribution is explained by bottom-wealth households inheriting a large proportion of illiquid assets in form of real estate property. This particular feature of Spain⁴ increases the tax burden of the bottom-wealth households disproportionately, even after taking into account the corresponding tax discounts for real estate assets contemplated in the law.

Next, I investigate more in deep the empirical drivers behind these wealth mobility dynamics by studying debt and gross wealth responses to IG taxation at the household level in the presence of liquidity constraints. I provide evidence that bottom-wealth households subject to higher tax liabilities with respect to their stock of liquid wealth accumulate on average 26% less gross wealth relative to similar households being subject to lower levels of IG taxation. Specifically, it is shown that the negative effect of IG taxes on gross wealth accumulation for these households is mostly driven by a reduction in their financial wealth, particularly in liquid assets, such as bank deposits and savings accounts. This reduction in liquid financial wealth goes in parallel with a rise in the non-mortgage debt-to-wealth ratio by 0.66 p.p. In contrast, higher taxes do not seem to affect differently gross wealth and debt accumulation of heirs and donees placed above the 50th net wealth decile, besides a short-lived negative effect on financial wealth for middle-wealth households with no further consequences on gross wealth accumulation. Accordingly, this mechanism uncovers an

³These averages are computed using a sample of EFF households with positive net wealth.

⁴Home ownership rate for households below the 20th net wealth percentile in Spain amounts to almost 30%. This is a sizable rate compared to the one in France or Germany for bottom-wealth households, which is around 2% and 7% respectively. These averages have been obtained from the 2014 wave of Household Finance Consumer Survey of the Euro area.

important link between inheritance and gift taxes and household debt accumulation in the presence of liquidity constraints which the literature has so far overlooked, and connects it with wealth mobility outcomes.

These results altogether suggest that the negative effects of IG taxes on bottom-wealth mobility are mostly explained by lower financial wealth accumulation and higher debt accumulation of liquidity-constrained households. I argue that limited access to financial instruments helps rationalize this increase in personal credit debt for these households at the time of the tax payment, which stems directly from Spanish IG law regulation frictions. First, heirs are required to pay taxes in the next 6 months following the death event to obtain access to the deceased person's estate, which becomes frozen by the bank system and public registry on the same day of the death (including bank accounts and deposits). Relying on personal credit might be the only option for households with low liquid wealth to pay the corresponding tax liabilities, as the Spanish bank system does not allow heirs to put the yet-to-be inherited assets as collateral for loans. Next, I provide evidence that the illiquidity of inheritance and delays in selling real estate property help explain the persistence of the effect of taxes on debt accumulation and its detrimental implications for bottom-wealth mobility. These delays in selling inherited real estate assets might arise from market conditions, but they can also be tax-induced: the Spanish inheritance tax allows heirs to benefit from generous tax credits applicable to the deceased's main dwelling under the condition that inherited property must not be sold during a certain amount of years. Heirs can sell the property before but they would lose these fiscal benefits in favor of the Treasury. I exploit regional differences in the regulation of time restrictions to sell inherited property to show that delays in selling real estate property amplify the effects of IG taxes on non-mortgage debt accumulation, thereby preventing households from deleveraging and improving their net wealth position sooner.

Related literature. This paper contributes to several strands of the literature. First, it speaks to the scant literature exploring the empirical effects of inheritances on wealth inequality using rich individual data ([Elinder et al., 2018](#); [Nekoei and Seim, 2022](#)). These two studies find that inheritances reduce wealth inequality upon receipt as heirs at the bottom of the wealth distribution receive larger inheritances relative to their pre-inheritance wealth than wealthier heirs do. In light of this empirical evidence, [Elinder et al. \(2018\)](#) also study the role of inheritance taxation by exploiting the Swedish tax repeal in 2005 finding that taxing inheritances dampens the equalizing effect that inheritances have at the baseline. In turn, [Nekoei and Seim \(2022\)](#) discuss the potential role of inheritance taxation in Sweden by simulating different tax changes (expected vs unexpected) and tax

revenues redistribution schemes. These authors highlight that the direct mechanical effect of inheritance taxation, which increases wealth inequality, is of first order compared to the behavioral effects. Their results suggest that taxation can play a role in mitigating rising wealth inequality by taxing only wealthy heirs who deplete their bequests at a slower pace due to higher returns on inherited wealth. My contribution to this empirical literature is to use Spain as an alternative laboratory to estimate the causal effects of IG taxes on wealth mobility. As already mentioned, this country provides a novel and more compelling source of variation in IG rates across regions and a more unequal distribution of bequests with respect to households' initial stock of wealth than other countries, including Sweden (see [OECD \(2021\)](#)). Different from these studies whose primary focus is to investigate the role of inheritances in shaping wealth inequality, I provide direct evidence on the effects of IG taxation on wealth and debt responses at the individual level. By doing so, I shed light on a yet unexplored empirical channel that associates debt accumulation of less wealthy heirs with higher IG taxation, highlighting the importance of the liquidity constraints in deterring net wealth mobility at the bottom. In line with previous results, my findings also underscore the distribution of wealth among the descendants as a key factor in explaining the negative effect of the IG taxes on bottom-wealth mobility.

Next, this paper is also related to the empirical research exploring the effects of wealth taxation on wealth accumulation ([Jakobsen et al., 2020](#); [Ring, 2020](#)) and reported wealth ([Agrawal et al., 2020](#); [Brülhart et al., 2019](#); [Seim, 2017](#)). In a similar spirit as [Agrawal et al. \(2020\)](#); [Brülhart et al. \(2019\)](#) who leverage regional variation in wealth taxes in Spain and Switzerland to study how reported wealth responds to changes in wealth tax rates, this paper also exploits regional cross-bracket differences in effective IG tax rates in Spain. However, rather than looking at wealth taxation which affects a very small share of households concentrated at the right tail of the wealth distribution (0.5% of the adult population in 2015), my contribution here is to pay attention to the effect of IG taxes, which is another form of wealth taxation that affects a broader group of the population (25% of the adult population in 2015), which is evenly distributed along the wealth distribution. Finally, this paper is further related to the empirical work studying the effects of taxation on household debt ([Gruber et al., 2021](#); [Poterba and Sinai, 2008](#)). These studies have mainly explored the effects of property taxes or housing-related fiscal policy changes on household debt. Unlike them, I study the effects of IG taxation rather than property taxation and relate household debt accumulation to wealth mobility patterns across the wealth distribution.

The rest of the paper is organized as follows. Section 2 introduces the Spanish inheritance and gift tax system and describes the methodology used to construct effective regional

tax schedules. Section 3 describes the household survey data used in the paper. Section 4 presents the empirical strategy used to study the effects of inheritance and gift taxes on wealth mobility and net wealth accumulation of heirs and donees. Section 5 presents the empirical results and discusses them. Section 6 presents additional robustness checks exercises and Section 7 concludes. An Appendix gathers further Tables and Figures briefly discussed throughout the paper.

2 Institutional Setting

The Spanish IG tax dates back to the 18th century when it was first introduced in the tax system during the reign of Charles IV. 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 IG tax.⁵

Differently from other countries, Spanish law regulates jointly inheritances and gift taxes. The Spanish IG 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 bequests⁶ while donees' tax base is defined as the sum of assets transferred *inter vivos* by an alive donor. The net tax base is calculated after applying any eligible tax deductions. These depend on the degree of kinship with the deceased or donor as well as on the type of assets being inherited. If the net tax base is positive, a progressive marginal tax schedule is applied to obtain the net 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 any tax credit and the corresponding scaling factor, which depends on the pre-bequest wealth of the taxpayer and group.

The Spanish IG tax system establishes that inheritance taxes must be paid in the region of residence of the deceased person. By contrast, the region where gift taxes are paid depend

⁵Notwithstanding this special status, these two regions have regulated IG tax rates similar to the rest of Spain. Appendix A provides a more detailed description of the institutional setting of these two regions.

⁶The inheritance tax base also includes those assets transferred to the heirs by the deceased in a short period before her death. An illustrative example are gifts made by the deceased to heirs during the four years preceding the moment of death.

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 grantee.

In terms of tax revenues, the IG tax represented 3.78%⁷ of annual total revenues at the regional level between 2002-2019. This percentage increases to 19.7% if only tax revenues directly controlled by the regions are considered (i.e those coming from decentralized taxes).⁸

2.1 Regional Inheritance and Gift Tax Credits and Deductions

The administration and regulation of the IG tax in Spain were decentralized in 1996. This meant that regions were awarded regulatory power to introduce tax credits and tax deductions as well as to modify the tax schedule or the scaling factors at their will. I collect information on the inheritance and gift tax reforms introduced by regional governments contained in the regional tax books (*Libros de Tributación Autonómica*) published by the Spanish Ministry of Finance and the regional fiscal reports from the Spanish General Council of Economists (*Consejo General de Economistas de España*). I complement this data with the official tax codes and their successive modification of the Basque Country and Navarre.

It is worth noticing that, though IG taxes were decentralized to the regions since 1996, regional governments did not exercise this right until the beginning of the 2000s when they started to modify the IG tax code rather frequently. Most of these tax reforms take the form of tax credits and deductions, although some regions introduced their own marginal tax schedule or changed scaling factors which turned out to work as implicit tax credits. Interestingly, almost all of these tax discounts were designed to apply to *any asset* included in the tax base.⁹

2.1.1 Close heirs and donees

The majority of these tax reforms were introduced to reduce the tax liability of close heirs and, to a lesser extent, of close donees with respect to the default. I refer to close heirs and donees as descendants older than 21, ascendants and spouses (group (ii)), and descendants younger than 21 (group (i)). Group (ii) is the largest group of taxpayers as it concentrates

⁷This percentage has been computed using homogeneous data series of regional tax revenues available at Fundacion de Estudios de Economia Aplicada (FEDEA) [See here](#)

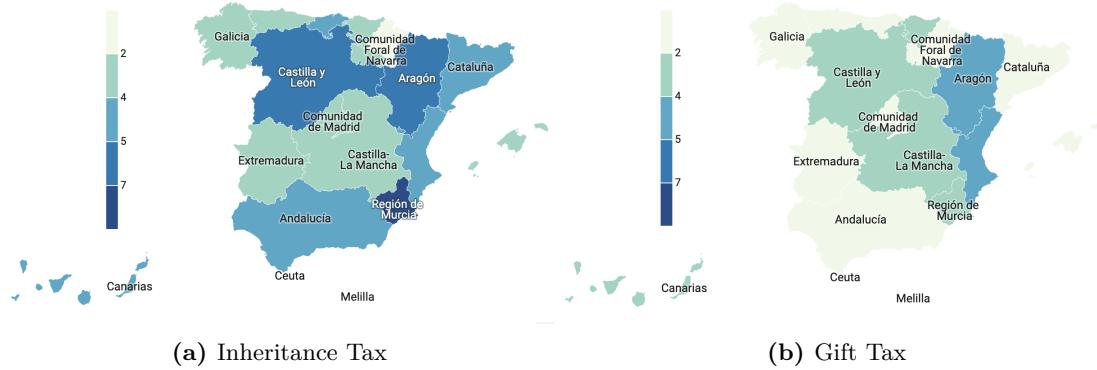
⁸The taxes decentralized to regions are: wealth tax, real estate transfer tax, and tax on gambling machines. Regional government have limited regulatory power regarding the labor income tax, the vehicle registration tax and the tax on gambling activities

⁹The rationale behind this legislative action is that the default rule already includes generous tax deductions for the most common inherited assets, such as family business or main dwelling, and thus regions did not have much room to reduce these asset-specific tax liabilities for close heirs and donees.

86% and 93% of the total inheritance and gift taxpayers in Spain, respectively.

To illustrate how frequently regions have modified the regional tax schedule, the regional maps displayed in Figure 1 depict the number of tax reforms for heirs and donees of group (ii) introduced by each Spanish region. Both maps reveal substantial heterogeneity in the regional tax reform activity, with Murcia, Castile and Leon, and Aragon as the regions which have modified their tax code more frequently. All regions, except Ceuta and Melilla, have reformed the IG tax code at least once over the time period considered.¹⁰

Figure 1: Number of Inheritance and Gift Tax Reforms 2002-2019 - Group (ii)



This Figure depicts the number of tax reforms for close heirs and donees (group (ii)) introduced by Spanish regions. Panel 1a refers to the inheritance tax while Panel 1b refers to the gift tax. These figures have been constructed using the inheritance tax regulation contained in the regional tax books published by the Spanish Ministry of Finance, as well as in the regional fiscal reports produced by the General Council of Spanish Economists.

Even though most tax changes introduced by regional governments were aimed to reduce the tax liabilities of close heirs and donees, some of them implied a considerable reduction in the tax discounts previously introduced if not their repeal. For instance, Murcia abolished a tax credit of 99%¹¹ for heirs of group (ii) in 2013. Likewise, Canary Islands also revoked the tax credit of 99.9% for this group in 2012 and replaced it by a 0% tax credit plus a tax base deduction of just 40,000 euros. Appendix Figures C.2 - C.3 distinguish between changes in IG tax regulation for close heirs and donees that implied a proper introduction of a tax discount from those that involved a repeal or a significant reduction in those previously legislated. Both figures reveal that most of these tax reforms led to the introduction of tax discounts or their expansion, while only very few regions actually limited or abrogated them at the end of 2000s.¹²

¹⁰Figure OA.1 reproduces the same maps focusing on heirs and donees from group (i) and shows that young descendants' tax liabilities have also been subject to several reforms.

¹¹A tax credit of 99% with a limit of 300,000 euros of the tax base

¹²Regional governments introduced very few tax reforms for more distant relatives and non-relatives (i.e. those belonging to group (iii) and (iv)). Figure OA.2 shows that only very four regions introduced tax reforms for heirs of group (iii) and only one for heirs of group (iv), while donees in either group did not experience any tax reform over this period. Online Appendix Figures OA.5 and OA.6 show that the few tax reforms for

2.2 Inheritance and Gift Tax Calculator

Using the information on tax reforms, I construct a tax calculator for heirs and donees belonging to group (ii). The net tax base for an inheritance or gift amount in tax bracket j , region r , and year t is computed as follows:

$$\text{Net Tax Base}_{jrt}^i = ((\text{Main Dwelling} - k) \times tc_{rt}^{h,i} + \text{Business Assets} \times tc_{rt}^{b,i} + \text{Other Assets}) - td_{rt}^i$$

where $tc_{rt}^{h,i}$ and $tc_{rt}^{b,i}$ are tax credits specific to the main dwelling up to some limit and business assets¹³ and td_{rt}^i denotes any general tax deduction applicable to the gross tax base bracket.

Next, the tax quota is computed as follows:

$$\text{Tax Quota}_{jrt}^i = (q_{jr} + (\text{Net Tax Base}_{jrt}^i - b_j^{lb}) \times \tau_{jrt}) \times tc_{rt}^i \times SF_{rt} \quad i \in \{\text{Inheritance}, \text{Gift}\}$$

where q_{jr} is the tax payment corresponding to the first X euros of the net tax base for bracket j and τ_{jrt} is the marginal tax rate applicable to the remaining amount (i.e. $\text{Net Tax Base}_{jrt}^i - b_j^{lb}$ where b_j^{lb} is the lower bound of tax bracket j). Finally, tc_{rt}^i denotes any general tax credit, and SF_{rt} refers to the scaling factor, which is increasing in heirs or donees' pre-inheritance or pre-gift¹⁴. Once the tax quota and the net tax base are computed, the effective tax rate can be obtained as:

$$\tau_{jrt}^{E,i} = \frac{\text{Tax Quota}_{jrt}^i}{\text{Net Tax Base}_{jrt}^i} \quad i \in \{\text{Inheritance}, \text{Gift}\}$$

Notice that the effective tax rate is allowed to vary across regions and time as local governments introduced different tax deductions (td_{rt}^i) and credits (tc_{rt}^i) as well as modified the marginal tax schedule (τ_{jrt}) at various points in time. Regions have also increased the generosity of the tax credit specific to inherited main dwellings over time. Appendix B provides a more detailed description of the construction of the effective tax rates for each bracket.

Figure 2 presents the inheritance tax quota to be paid in each Spanish region by an heir inheriting the main dwelling of the deceased person valued at 150,000 euros and 50,000 euros cash in 2006 and 2014, as an illustrative example. As can be inspected, the difference

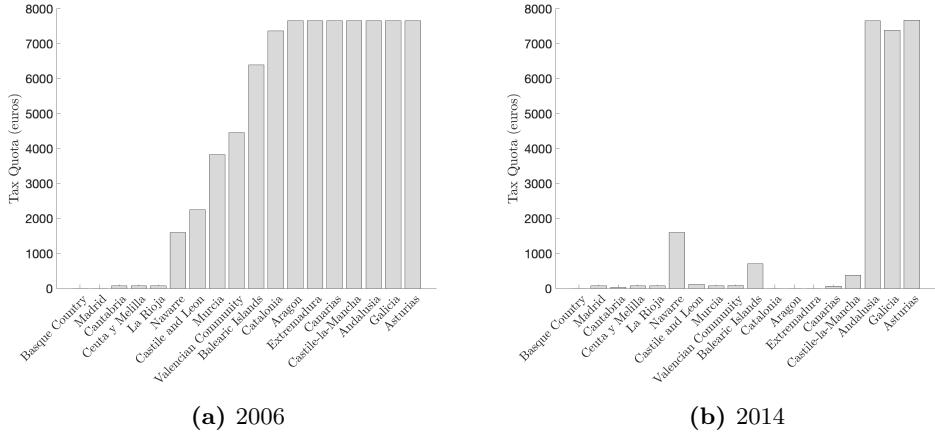
heirs of group (iii) and (iv) also targeted tax relief for this group in line with the tax reforms introduced for close heirs and donees.

¹³The default law contemplates a 95% tax credit for the main dwelling of the deceased person up to a 120,000 euros limit. Inherited business-related assets enjoy a 95% tax credit with no limit.

¹⁴The scaling factor takes value equal to 1 for close heirs and donees under the default law. Some regions changed the scaling factor to a number close to 0, which worked as an implicit tax credit. See Appendix B for more details

in tax quotas paid for the same inheritance across regions could be as high as 8000 euros.

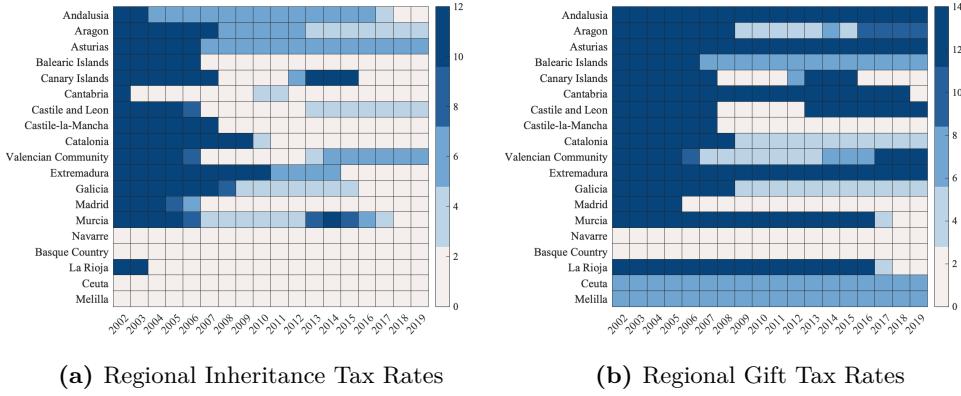
Figure 2: Regional Differences in Inheritance Tax Quota - Group (ii)



This figure depicts the inheritance tax quota to be paid by an heir (ascendant or descendant) inheriting the main dwelling valued at 150,000 euros and 50,000 euros cash by region in 2006 and 2014, respectively. The tax quota has been obtained by applying the inheritance tax calculator, which has been constructed using the information on tax reforms contained in the regional tax books published by the Spanish Ministry of Finance, as well as in the regional fiscal reports produced by the General Council of Spanish Economists.

Figure 3 presents the average effective inheritance and gift tax rate for heirs and donees of group (ii) by region and year. These average effective rates have been constructed by taking the average gross tax base value for each bracket and applying the corresponding general tax deductions and credits regulated at the regional level to obtain the corresponding tax quota and net tax base. The depicted average effective tax rates vary from 0.0% (0.0%) to 11.46% (12.8%) for inheritance (gift) tax showing substantial regional variation induced by the tax reforms regulated. As can be seen, the average trend in all Spanish regions has been to reduce the tax liabilities of this group. The cumulative reduction in both average effective tax rates has been sizable: the effective average inheritance and gift tax rates fell by 85% and 50% in 2019, respectively.

Figure 3: Average Effective Inheritance and Gift Tax Rate - Group (ii)



This figure depicts the average effective inheritance tax rate (Panel 3a) and gift tax rate (Panel 3b) for group (ii) for each of the 19 Spanish regions and year

This downward pattern in IG tax rates also masks important heterogeneity along the tax schedule. Figures C.4 and C.5 in the Appendix display average bracket-specific IG tax rates for each region and year. The heatmaps reveal a considerable degree of regional heterogeneity for middle-top and top tax brackets. As can be inspected, regional dispersion in the bottom brackets rates is lower than in the top brackets, being mainly due to the timing of the introduction of the tax discounts, whereas differences between middle and top bracket rates are accounted by both the degree of generosity of the tax discounts and the timing of their introduction.

3 Household Data

I use household-level data from the EFF survey between 2002 and 2018. This survey is conducted every two years by the Bank of Spain and provides rich information on households' wealth, income, consumption and demographics. Note that, although the survey is actually conducted at triennial frequency, every wave contains household observations in two consecutive years leading to biannual information¹⁵. To identify households in the survey who receive an inheritance, I exploit information on two survey questions. First, I use information on the form and year of acquisition of real estate assets and business-related assets, which includes *inheritance* as a possible answer, as well as the percentage of the property owned by the household and their value at the time of the acquisition. Second, I use information on the reception of an inheritance or gift from someone who does not currently form part of the

¹⁵For example, the 2002 wave contains information of households surveyed in years 2002 and 2003

household.¹⁶ In case of a positive answer, households are additionally requested to report the actual pre-tax amount, the year of its reception as well as the type of assets involved (i.e. cash, land, real estate, etc.). I classify households as heirs whenever they report (i) the inheritance of real estate assets or/and business assets (ii) a cash transfer in form of inheritance or gift from someone who does not currently form part of the household in the same year. Next, I classify households as donees whenever they only report a cash transfer in form of inheritance or gift from someone who does not currently form part of the household. This disaggregated information allows me to better approximate the net tax base of each household for both inheritances and gifts, as inherited real estate and business assets have enjoyed generous tax discounts.¹⁷

The EFF has a panel dimension in which households might be included at most for four consecutive waves. This implies that heirs and donees are observed up to a maximum of 12 years with gaps. Since households are asked retrospectively, I construct an unbalanced panel of households that can be tracked for at least two consecutive waves and report the reception of one inheritance/gift within that period. Households reporting more than one inheritance or gift are excluded. Table 1 presents summary statistics for all inheritances and gifts. Spanish households receive around 58,000 euros on average in form of inheritances or gifts. This average goes up to almost 100,000 when considering only bequests in form of cash, real estate, and other assets. Table D.1 provides net wealth descriptive statistics of heirs and donees at the year of the wealth transfer receipt along the wealth distribution.

Table 1: Summary Statistics Inheritance and Gift Receipts

All Inheritance and Gifts						
	Mean	sd	Min.	Max.	N	# Obs
Bequest value	58.26	135.94	1.24	9979.74	530	1759
Bequest year	2009	4.29	2002	2018	530	1759
Gifts (cash transfers)						
Gift value	29.04	57.00	1.29	1038.82	270	887
Gift year	2009	4.30	2002	2018	270	887
Inheritance						
Inheritance value	99.76	193.00	1.24	9979.74	260	872
Inheritance year	2009	4.26	2002	2017	260	872

Bequest value is expressed in thousand euros and is CPI-adjusted to the year 2016. EFF survey weights are applied such that averages are representative of the Spanish population

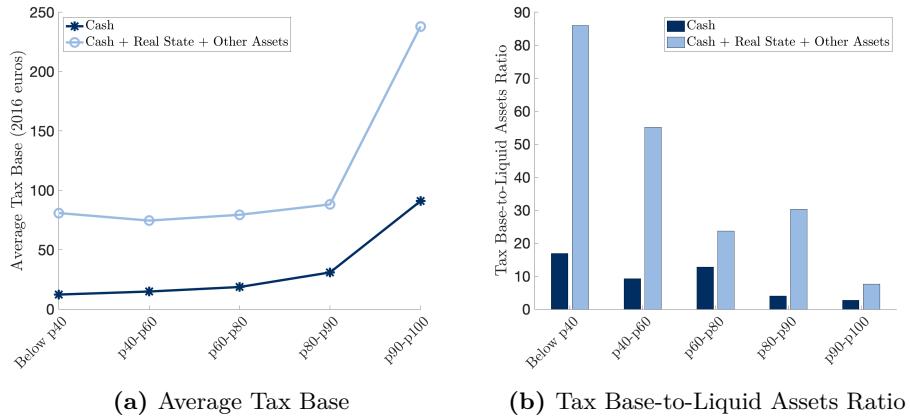
To examine how the absolute and relative size of the tax base varies along the wealth

¹⁶Households have been asked retrospectively this question in the last 4 EFF waves. In the way the question is formulated, it does not differentiate between inheritances and gifts.

¹⁷The default law contemplates a 95% tax credit for the main dwelling of the deceased person up to a 120,000 euros limit. Inherited business-related assets enjoy a 95% tax credit with no limit

distribution, Figure 4 plots the average tax base and its share out of households' liquid assets in the year of the bequest receipt for different net wealth percentiles. The tax base is constructed after applying the tax deductions applicable to housing and business-related assets, which have been roughly constant for all regions since the beginning of the period. For the sake of comparability with the Swedish study by Elinder et al. (2018), I include only heirs and donees with positive net wealth. Panel 4a depicts the average tax base along the wealth distribution. As expected, the average value of bequests increases as we move up in the net wealth distribution, particularly at the top. Conversely, the relative size of the tax burden with respect to household stock of liquid wealth follows the opposite pattern and becomes particularly large at the bottom of wealth distribution for inheritances (i.e. it amounts to 86 times households' stock of liquid wealth).¹⁸

Figure 4: Absolute and Relative Size of the Tax Base by Wealth Percentile



Wealth percentiles are constructed using net wealth. Panel 4a shows the average tax base (net of real assets and business assets tax deductions) in 2016 euros. Panel 4b shows the ratio of the tax base (net of real assets and business assets tax deductions) with respect to household stock liquid financial wealth in the year of the bequest receipt. Liquid assets include checking, savings accounts, and stocks. Only households with positive net wealth are considered. EFF survey weights are applied such that the reported values are representative of the Spanish population

3.1 Sample Selection

The survey is uninformative about the degree of kinship between the heirs/ donees and the deceased person/donor and thus, about the specific group of taxpayers to which heirs and donees belong to. By looking at heirs' and donees' characteristics, it can be ensured that no taxpayer belongs to group (i) in the sample as there is no one-person household reporting an inheritance or gift who is younger than 21. For the main analysis, I will assume that heirs

¹⁸ Although the negative relationship between tax liabilities and the distribution of wealth of recipients is also present in Sweden (Elinder et al., 2018; Nekoei and Seim, 2022), the relative size of the tax liabilities with respect to household stock of gross wealth at the bottom in Spain is 6 which more than doubles the one in Sweden where it takes a value of 0.9.

and donees belong to group (ii) (i.e spouses, descendants, and descendants older than 21) as this group represented around 86% and 93% of the total inheritance and gift taxpayers in 2015, respectively.¹⁹.

Inheritance taxes are paid in the region of residence of the deceased person while taxes on gifts involving only cash are paid in the donees' region of residence. Therefore, for households receiving only cash transfers, I will input the gift effective tax rate in their region of residence while for households receiving inheritances I will use the effective tax rate in their region of birth as a proxy for the region of residence of the deceased person. If households consist of couples at the time of the inheritance receipt, I only consider those households where both spouses were born in the same region. At any rate, this could pose a threat to the identification strategy if cash transfers are not gifts, given that inheritance and gifts are subject to different effective tax schedules for any group. To overcome this caveat, I will restrict the sample to those inheritances and gifts that received equal tax treatment for group (ii) in each region, year, and tax bracket in the robustness check section.

4 Empirical Analysis

4.1 Identification Strategy

The variation in inheritance or gift tax rates paid by heirs and donees stems from the regional differences in bracket-specific tax reforms undertaken by local governments after the decentralization of the tax. To interpret the coefficient on the regional effective IG tax rate as the causal effect of the tax change on wealth mobility and net wealth accumulation, there should not be other systematic regional factor driving both IG tax rates and outcome variables.

A concern when studying the effect of geographical differences in taxation is whether these regional tax changes are correlated with macroeconomic aggregates or regional government finances that could affect household outcomes (Cloyne and Surico, 2017). Appendix Table C.2 presents the estimation results of separately regressing the average inheritance tax rate and gift tax rate on lags of unemployment, CPI and GDP per capita controlling for year and region-fixed effects. Appendix Table C.3 presents the estimation results of regressing the public expenditure per capita²⁰ and debt-to-GDP ratio on the average inheritance tax rate and gift tax rate. As can be inspected, changes in the inheritance and gift tax rates do

¹⁹Unfortunately, there is very scarce information about the distribution of taxpayers according to their group of kinship. The most updated official information on this matter can be found in [Libro blanco sobre la reforma tributaria, 2022](#)

²⁰Public expenditures in health, schooling, and social protection programs.

not seem to be correlated with past macroeconomic aggregate conditions or local finances at the regional level. They are, however, correlated with the political orientation of the regional government. Appendix Table C.4 reveals that there is a negative and significant statistical correlation between having a right-wing party in power and IG tax rates. Instead, Appendix Table C.5 shows there is not a systematic difference in terms of economic performance or government spending between right-wing and left-wing regional governments. These results altogether suggest that while there seems to be politically-driven variation in IG taxes, they could be taken as exogenous to regional macroeconomic conditions influencing household wealth accumulation decisions and wealth mobility.

In contrast to wealth taxation, for which there is evidence of wealth-tax induced regional mobility of taxpayers (Agrawal et al., 2020; Brülhart et al., 2019), selection into regional inheritance tax treatment does not represent a concern in this setting given the nature of death itself and the fact that inheritors in Spain pay taxes in the region of residence of the deceased person during the last 5 years prior to death. Moreover, gift-tax-induced regional mobility seems even less of a concern as gift taxes are paid in the regions of the assets are located except for cash.

Finally, the last concern is whether other types of wealth taxation may confound the inference drawn about the effect of IG taxes on household wealth accumulation and wealth mobility. Although there is also substantial regional variation in wealth tax rates across Spanish regions as the regulation of this tax was also decentralized in 1998, wealth tax filers in Spain belong to the top 1% of the wealth distribution.²¹ Therefore, the average impact of the wealth tax on the whole wealth distribution would thus be too small to become a meaningful confounder. In contrast, I cannot rule out that the capital gains tax (*Impuesto de Plusvalía*) can represent a relevant confounder in this setting. In Spain, real assets received as inheritance or gifts must pay a capital gain tax which varies at the municipality level. If any, the estimated effects for IG taxes could be overestimating the total effects of wealth transfer taxation as these estimates can be reflecting the effect of this additional tax.

²¹(Agrawal et al., 2020) report that wealth tax filers amounted to 2.7% of the total Spanish adult population in 2007. This percentage decreased to approximately 0.5% in 2015 adult population.

4.2 Empirical Specification

To estimate the effect of inheritance taxation on heirs' wealth mobility and wealth accumulation, I rely on an event-study strategy:

$$y_{irt} = \sum_{\substack{k=-3 \\ k \neq -1}}^2 \beta_k \cdot \mathbf{1}(k = t - t_{w^i}) \times T_{ijrt} + \zeta_i + \zeta_t + \nu_{irt} \quad (1)$$

where y_{irt} denotes the outcome variable of household i who pay taxes in region r in year t , $\mathbf{1}(k = t - t_{w^i})$ are indicators for each event year k before and after the year of the inheritance/gift receipt, t_{w^i} , and T_{ijrt} refers to the treatment variable for household i receiving an inheritance or gift in tax bracket j who pays taxes in region r at time $t = t_{w^i}$.

I use two alternative definitions of treatment T_{ijrt} . Treatment is either defined as the tax rate or the size of the tax liabilities with respect to the household's stock of liquid wealth upon receipt:

$$\begin{cases} T_{ijrt} = \bar{\tau}_{ijrt=t_{w^i}} \\ T_{ijrt} = \bar{\tau}_{ijrt=t_{w^i}} \times \frac{B}{W_{it=t_{w^i}}} \end{cases}$$

where $\tau_{ijrt=t_{w^i}}$ is the average effective tax rate for household i with tax base corresponding to tax bracket j and paying taxes in region r at time $t = t_{w^i}$ and $\frac{B}{W_{it=t_{w^i}}}$ is the ratio of the tax base with respect to household stock of liquid wealth upon receipt. The reference period is the year before each household receives the inheritance or gift, $y = -1$, which is omitted. Bequests in form of cash are assumed to be gifts while bequests in form of cash and other assets, such as real estate, land, stocks, etc., are inheritances.

Notice that since the inheritance tax system is progressive, the average effective tax rate will vary across individuals within a region-year. Household-fixed effects (ζ_i), as well as year-fixed effects (ζ_t), are included to account for any individual-specific and time-varying shocks that might influence heirs and donees' wealth mobility and wealth accumulation. The event-study coefficients of interest are $\sum_{k=0}^3 \beta_k$, which recover the difference in wealth accumulation or mobility between those heirs and donees subject to a higher bracket-specific average tax and those subject to a lower one. Standard errors are robust and clustered at the household level since gift taxes vary at the region-of-residence-bracket level while inheritance taxes vary at the region-of-birth-bracket level.

5 Results

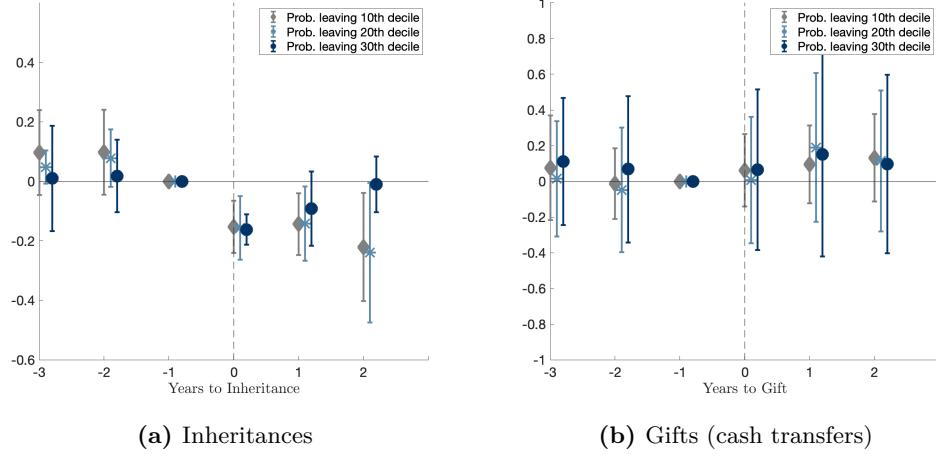
5.1 Wealth Mobility

I start by studying how Spanish IG taxation affects the wealth mobility of heirs and donees. To that end, I follow one of the most standard approaches to measure intragenerational wealth mobility (Bayaz et al., 2010; Elinder et al., 2018; Jäntti and Jenkins, 2015), which consists in comparing transition probabilities in the wealth distribution for heirs and donees before and after receiving an inheritance/gift. I partition the net wealth distribution into 10 deciles and define nine transition probabilities, each of them as the probability of moving upwards from the th decile of the net wealth distribution within the Spanish population²².

Figure 5-7 plot the estimated β_k coefficients from Equation 1 when the dependent variable is the probability of moving upwards at different parts of the wealth distribution for inheritances and gifts, respectively. The estimated coefficients in the previous periods to receive the inheritance or gift are not significant, supporting the existence of parallel trends in wealth mobility between households paying high and low IG taxes before receiving the wealth transfer. The first thing to notice is that higher gift taxes do not affect significantly wealth mobility at any part of the net wealth distribution (see Panels 5b-7b). Instead, the effect of higher inheritance taxes displays a hump-shaped response along the net wealth distribution: a 1 p.p. increase in inheritance taxes significantly reduces the probability of households placed at the 10th decile moving upwards the net wealth distribution by 15% to 21% in the years following the wealth transfer receipt (see Panel 5a). Similar effects are found for households placed at the 20th decile. Panel 6 also shows that higher inheritance taxes reduce the probability of households at the 40th and 50th decile moving upwards, although the coefficients are less precisely estimated. In contrast, higher inheritance taxes do not seem to affect top-wealth mobility (see Panel 7).

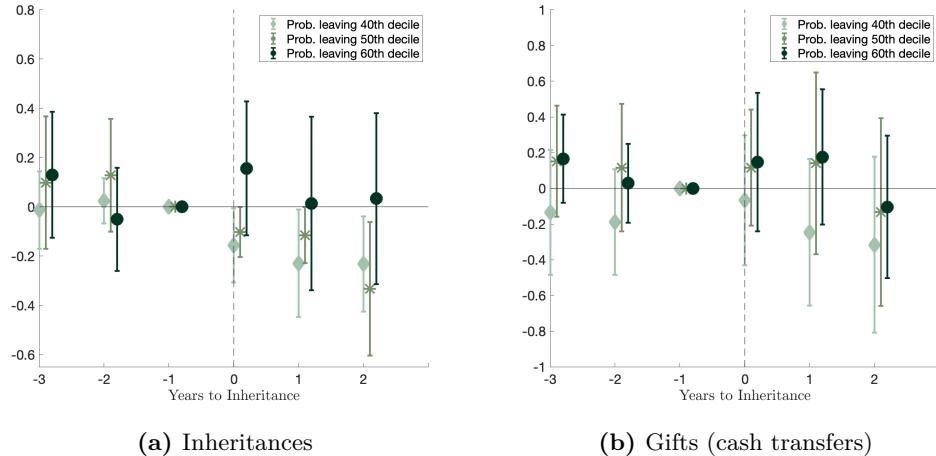
²²I use survey weights provided in the EFF to ensure households' rank position is representative of the Spanish population

Figure 5: Effect of Inheritance and Gift Taxes on Bottom-Wealth Mobility



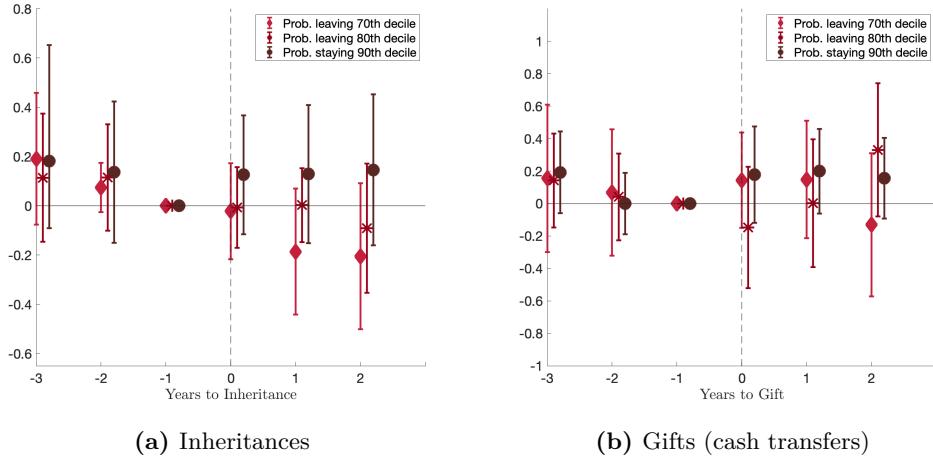
This figure plots the event study estimates ($\hat{\beta}_k$) and corresponding 90 percent confidence bands of the specification of Equation 1 when the dependent variable is the probability of moving upwards in the net wealth distribution for households placed at the 10th-30th net wealth percentile. The treatment variable is the average effective tax rate. Wealth transfers in form of only cash are considered gifts while those in form of real estate assets or a combination of real estate assets with other assets (cash, stocks, life insurance, etc.) are inheritances.

Figure 6: Effect of Inheritance and Gift Taxes on Middle-Wealth Mobility



This figure plots the event study estimates ($\hat{\beta}_k$) and corresponding 90 percent confidence bands of the specification of Equation 1 when the dependent variable is the probability of moving upwards in the net wealth distribution for households placed at the 40th-60th net wealth percentile. The treatment variable is the average effective tax rate. Wealth transfers in form of only cash are considered gifts while those in form of real estate assets or a combination of real estate assets with other assets (cash, stocks, life insurance, etc.) are considered inheritances.

Figure 7: Effect of Inheritance and Gift Taxes on Top-Wealth Mobility



This figure plots the event study estimates ($\hat{\beta}_k$) and corresponding 90 percent confidence bands of the specification of Equation 1 when the dependent variable is the probability of moving upwards in the net wealth distribution for households placed at the 70th-80th net wealth percentile and the probability of staying for households placed at the top. The treatment variable is the average effective tax rate. Wealth transfers in form of only cash are considered gifts while those in form of real estate assets or a combination of real estate assets with other assets (cash, stocks, life insurance, etc.) are considered inheritances.

5.2 Understanding The Effects of IG Taxes on Bottom-wealth Mobility

To better understand the empirical drivers behind these bottom-wealth mobility patterns in the presence of liquidity constraints, I investigate how IG taxes affect households' gross wealth and debt accumulation separately. The EFF survey distinguishes between households' types of wealth, such as financial or housing wealth. Financial wealth includes bank deposits, stocks, mutual funds as well as fixed-income securities, and private pension plans. The survey also disaggregates debt between mortgage-related debt and non-mortgage-related debt. The latter includes personal loans, credit lines, current account overdrafts, advances as well as loans from friends or family.

Figure 8 presents the estimated β_k coefficients when the dependent variables are (logged) gross wealth and their components (Panel 8a-10a) or debt-to-wealth ratios (Panel 8b-10b) for different groups of households depending on their net wealth position before the inheritance or gift receipt.²³ The treatment variable used is tax liabilities scaled by the household stock of liquid wealth. First, the estimated coefficients in the previous periods to receiving the inheritance or gift and thus paying IG taxes are not significant, supporting the existence of parallel trends in household wealth and debt before the change in taxes. Panel 8a shows that a 1 p.p. increase in tax liabilities relative to their liquid wealth reduces gross wealth by

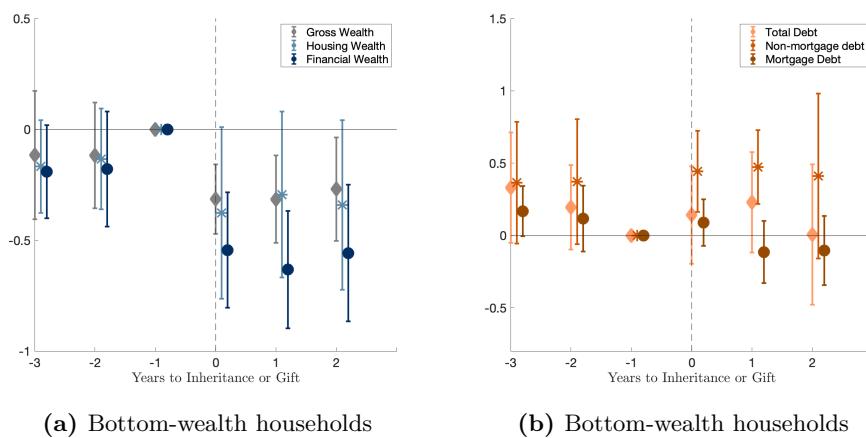
²³Ideally, I would like to concentrate only on the sub-sample of heirs as results in Section 5 suggest that inheritance taxation dampens wealth mobility at the left tail of the distribution. However, the sample size would be too small.

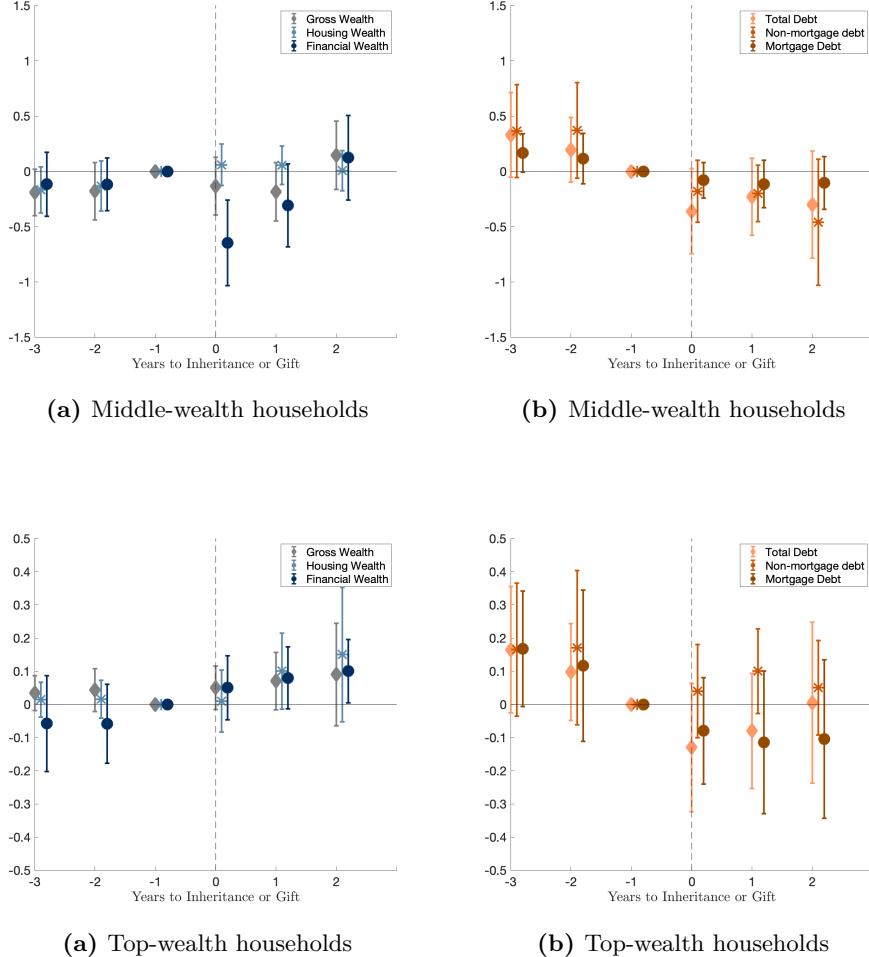
26.9-30% in the following years to the reception of the bequest for bottom-wealth households (i.e. those below the 40th decile of the net wealth distribution). It is clear from this figure that the negative effect of IG taxation on gross wealth accumulation is mainly explained by their negative impact on financial wealth rather than housing wealth. Heirs and donees when they have to bear with relatively large tax liabilities, experience a reduction in financial wealth equal to 50-54% in the years following the reception of the bequest in comparison to those subject to lower tax rates.

Interestingly, this negative effect of IG taxes on gross wealth accumulation goes in parallel with a positive effect of IG taxation on debt accumulation. Panel 8b shows that less-wealthy heirs and donees subject to higher taxation increase their non-mortgage debt-to-wealth ratio between 0.48 and 0.52 p.p. in the years following the reception of the wealth transfer in comparison to those subject to lower tax rates. The effect is statistically significant up to 1 period after the wealth transfer receipt (i.e up to 3 years after). Appendix Figure ?? corroborates that this increase in the non-mortgage-to-wealth ratio is explained mostly by a rise in personal credit debt.

Panel 9a shows that middle-wealth households (i.e. those between the 50th and 70th deciles of the net wealth distribution) subject to higher tax liabilities relative to their liquid wealth decrease their financial wealth on impact in comparison to those subject to lower tax rates. However, this negative effect on financial wealth dissipates after one period and has no significant impact on gross wealth accumulation. In contrast to bottom-wealth households' rise in non-mortgage debt, middle-wealth households' debt does not react significantly to higher relative levels of taxation as shown in Panel 9b. Finally, results in Panel 10a and 10b suggest that an increase in tax liabilities does not seem to affect significantly top-wealth households' gross wealth or debt accumulation at any point in time.

Figure 8: Effect of Relative Size of IG Tax Liabilities on Household Wealth and Debt





This figure plots the event study estimates ($\hat{\beta}_k$) and corresponding 90 percent confidence bands of the specification of Equation 1. The treatment variable is the ratio of tax liabilities with respect to household stock of liquid wealth. Bottom-wealth households are those placed below the 40th decile of the net wealth distribution, middle-wealth are those placed between the 50th-70th deciles and top-wealth are those placed above 80th decile upon receipt. The dependent variable in Panels 8a-10a is (logged) gross wealth, financial wealth, or housing wealth. The dependent variable in Panels 8b-10b total debt-to-wealth ratio, mortgage-related debt-to-wealth ratio or non-mortgage-related debt-to-wealth ratio. Financial wealth includes bank deposits, stocks, mutual funds, pension plans, and life insurance. Housing wealth includes real state property. Wealth transfers in form of only cash are considered gifts while those in form of real estate assets or a combination of real estate assets with other assets (cash, stocks, life insurance, etc.) are considered inheritances.

The results so far suggest that in the presence of liquidity constraints and higher levels of taxation, bottom-wealth households decrease their financial wealth and increase their non-mortgage debt accumulation, which translates into serious detrimental effects in terms of wealth mobility for these households. However, it is not straightforward that liquidity constraints necessarily induce an increase in personal credit debt at the time of the tax payment. One reasonable explanation for this is that the Spanish IG tax law restricts access to several financial instruments leaving households with low liquid wealth with few options besides relying on personal credit debt to pay the corresponding tax liabilities. First, the Spanish IG tax law makes the bank system liable for the tax liabilities corresponding to

the bank accounts and other assets of the deceased person in case heirs do not make the tax payment on time.²⁴ As a result of this law mandate, the bank system freezes all assets of the deceased person on the same day of her death until heirs give proof of tax payment. Second, the Spanish bank system does not allow heirs to put the yet-to-be inherited assets as collateral for loans. Moreover, the Spanish IG tax law requires heirs to pay taxes in the next 6 months following the death event to obtain access to the deceased person's estate, further restricting their possibilities to smooth savings. Heirs can ask for an extra 6 months to file the corresponding taxes, but this comes with interest on late payment as the Treasury considers this as tax debt. There is also an option for tax installment in a maximum of 5 quotas but again heirs must pay interests on late payment and have to fulfill a collateral requirement with the Treasury.²⁵ All these law frictions leave liquidity-constrained households with few options besides resorting to personal debt to pay the corresponding tax liabilities when being subject to higher levels of IG taxation.

5.2.1 Illiquidity of Inheritances and Delays in Selling Inherited Property

Although the above-mentioned singularities of the Spanish IG tax system might translate into higher debt accumulation on impact due to restricted access to financial instruments, it is less obvious why the detrimental effects of IG taxes on bottom-wealth mobility and personal credit debt persist over time (i.e. between 3 to 6 years after the bequest receipt). In combination with this channel, illiquidity of inheritance and delays in selling real estate property could help explain the lasting negative effect of taxes on bottom-wealth mobility. First, a large proportion of households at the bottom tend to inherit real estate property as Spain has one of the highest homeownership rates at the bottom of the wealth distribution among OECD countries. In 2014, this rate was almost 30% for households below the 20th net wealth percentile compared to the 2% and 7% rates in France and Germany.²⁶ This higher homeownership rate at the left tail of the wealth distribution is also reflected in the composition of bequests for bottom-wealth households: 44% of the total bequests received by households below the 40th net wealth percentile include some form of real estate asset.²⁷

Having received real estate property as inheritances, delays in selling this property might help sustain in time the liquidity constraints of bottom-wealth who take on debt at the time of the tax payment. These delays in selling inherited property might arise from market conditions, but also can be tax-induced. The Spanish IG tax system offers generous tax

²⁴See: Ley 29/1987, de 18 de diciembre, del Impuesto sobre Sucesiones y Donaciones.

²⁵See Ley General Tributaria

²⁶Data from 2014 Household Survey of Consumer Finance (HCF) wave conducted by the ECB

²⁷See Appendix Table D.2

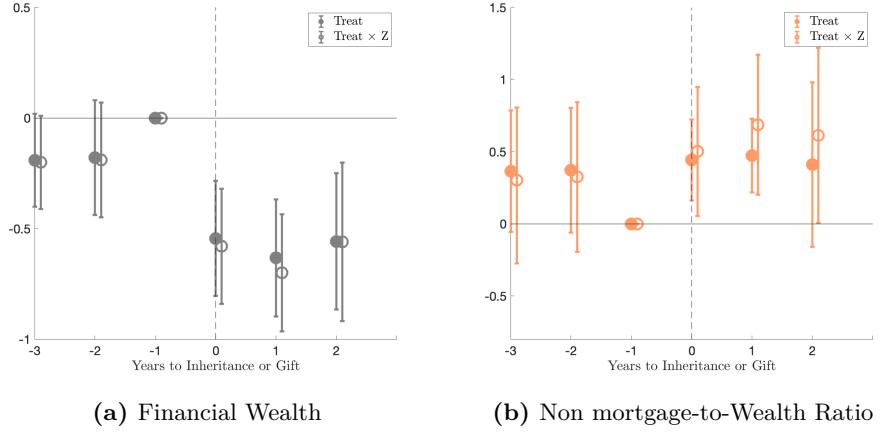
discounts for the main dwelling of the deceased person (i.e. 95% tax credit up to a limit of 120,000 euros) with the condition the heirs must keep this property for a certain amount of years. Heirs can sell the property before but they will have to give back the corresponding fiscal benefits to the Treasury and pay interest on late payments. The default law establishes a period of 10 years although regions have reduced these time restrictions since the mid-2000s. Appendix Figure C.7 shows the regional heterogeneity in tax-induced time restrictions to sell inherited housing. As can be inspected, this heterogeneity arises from regional governments reducing these time restrictions at different years and with different magnitudes. To study how delays in selling real estate property help explain the persistence of the negative effects of taxes on bottom-wealth mobility, I exploit this regional heterogeneity in tax-induced time restrictions to sell the inherited property in an event-study specification as follows:

$$y_{irt} = \sum_{\substack{k=-3 \\ k \neq -1}}^2 \gamma_k \cdot \mathbf{1}(k = t - t_{w^i}) \times T_{ijrt} \times Z_{rt} + \zeta_i + \zeta_t + \nu_{irt} \quad (2)$$

where Z_{rt} is the time restriction to sell inherited housing in region r in year t .

Figure 11 compares the baseline results in Figures 8a and 8b with the estimated $\hat{\gamma}$ coefficients in Equation 2 for both financial wealth and non-mortgage-to-debt ratio. I use the ratio of tax liabilities with respect to households' stock of liquid wealth as the treatment variable for comparability reasons. Although giving a specific interpretation in terms of change in the outcome variables is difficult, it is clear from Panel 11b that tax-induced time restrictions to sell inherited housing can amplify the negative effects of taxes on non-mortgage debt, thereby preventing households from deleveraging and improving their net wealth position sooner.

Figure 11: Effects of Restrictions To Sell Inherited Housing on Household Wealth and Debt at the Bottom



This figure plots the event study estimates ($\hat{\gamma}_k$) and corresponding 90 percent confidence bands of the specification of Equation 1. The treatment variable is the ratio of tax liabilities with respect to household stock of liquid wealth interacted with the tax-induced time restrictions to sell the inherited property. Bottom-wealth households are those placed below the 40th decile of the net wealth distribution. The dependent variable in Panels is either (logged) financial wealth or non-mortgage-related debt-to-wealth ratio. Financial wealth includes bank deposits, stocks, mutual funds, pension plans, and life insurance. Wealth transfers in form of only cash are considered gifts while those in form of real estate assets or a combination of real estate assets with other assets (cash, stocks, life insurance, etc.) are inheritances.

6 Robustness

6.1 Inherited debt

In Spain, the deceased person's estate includes all assets and their associated liabilities. This implies that heirs become liable for all debts of the deceased person once they accept the inheritance and pay the corresponding taxes. Therefore, it could be that the effect of an increase in IG taxes on bottom-wealth heirs' non-mortgage debt is driven to bottom-wealth heirs inheriting systematically more non-mortgage debt in regions with higher taxation. Although the survey does not provide information on the financial liabilities inherited, I explore this mechanism by checking whether the personal credit debt of bottom-wealth households above 70 years old is systematically higher in regions with higher IG taxation. Table F.1 suggests that personal credit debt holdings of old bottom-wealth households are not significantly higher in regions with higher levels of IG taxation.

6.2 Age profile of heirs and donees

One possible concern is that the negative effect of IG taxes on bottom-wealth mobility is driven by a small group of young heirs who, for standard life-cycle reasons, have almost no

wealth at the time of paying the tax liabilities and are forced to take on debt (Elinder et al., 2018). Tables F.2 present the average age of heirs and donees and the proportion of those younger than 40 along the wealth distribution. First, the average age for different net wealth percentiles clearly suggests that less wealthy heirs and donees are not on average younger than wealthier ones. Second, although the proportion of younger heirs and donees at the bottom of the wealth distribution is higher, the concentration of younger heirs and donees at the upper parts of the distribution is non-negligible (i.e 40% of total young heirs are above between the p60 and p90). This evidence suggest that young heirs do not seem to be an important driver of the estimated IG tax effects.

6.3 Inheritances and gifts subject to equal effective tax rates

So far I have assumed that households receiving bequests in form of cash are assumed to be donees and hence they file their region of residence which is observed in the survey. If these cash transfers turn out to be inheritances, this could pose a threat to the identification strategy as households should be paying taxes in the region of residence of the deceased person, which I proxy through heirs' region of birth. To overcome this caveat, I restrict the sample to those years, regions, and tax brackets for which inheritances and gifts received equal tax treatment. Appendix Figure C.6 depicts the years for which regions applied the same general tax discounts for heirs and donees of group (ii) for all tax brackets and for at least half of them, respectively. This coincidence in the tax liabilities of close heirs and donees was mostly due to the introduction of generous tax credits or tax deductions targeting specific tax brackets. Figure F.1 presents the wealth mobility results using this particular identification scheme. The results are very similar to the baseline estimates in Figure 5, suggesting that the effects of inheritance and gift taxes on wealth mobility are robust to this alternative identification scheme.

7 Conclusion

Understanding the empirical effects of inheritance and gift taxation on wealth mobility is at the heart of the current of debate about how taxing transferred wealth could improve equality of opportunity. Although wealth mobility is not equivalent to wealth inequality, there are strong reasons why we should care about how wealth transfer taxation influences the wealth position of households within the wealth distribution. Using Spain as a laboratory, I document that higher IG taxes reduce upward wealth mobility at the lower part of wealth distribution through lower financial wealth and higher non-mortgage debt accu-

mulation of bottom-wealth recipients. While liquidity constraints and restricted access to financial instruments help explain this negative impact effect at the time of the bequest receipt, illiquidity of inheritances and delays in selling real estate property help rationalize the persistence of the negative effects as the latter prevents bottom-wealth households from deleveraging sooner, and therefore, improve their net wealth position sooner. The Spanish Inheritance and Gift Tax law contemplates the use of scaling factors depending on the pre-inheritance wealth of heirs. However, these scaling factors have almost always been equal to 1 for close heirs and donees, who represent the majority of taxpayers, and have been barely changed by regional governments. From a more policy-oriented perspective, investigating how the design of the tax could release the tax burden of liquidity-constraint households by taking into account the pre-inheritance wealth of recipients is very high is in my current research agenda.

Appendix

A Inheritance and Gift Tax in Navarre and Basque Country

The Spanish Constitution passed in 1987 conceded complete fiscal autonomy to Navarre and Basque Country (the *Foral* territories), that is, recognized the legal capacity of these regions to regulate and manage their taxes independently.

Basque Country's fiscal system is composed by three different and independent fiscal authorities, each of them belonging to each provincial government (known as *diputaciones forales*). The *Foral* treasuries of Álava, Bizkaia and Gipuzkoa enjoy a high degree of fiscal regulatory power and are in charge of the collection of their own taxes. The first law regulating the general aspects of the inheritance and gift tax system in Gipuzkoa was introduced in 1987 (Foral norm 5/1987) while Alava and Bizkaia introduced theirs two years later in 1989 (Foral Norm 25/1989 and Foral Norm 2/1989). Navarre's first inheritance and gift tax framework was properly introduced in 2002 (Foral Law 3/2002)

Differently from the rest of regions, the information about the tax reforms undertaken in Navarre and Basque Country is not included in the regional tax books from the Spanish Ministry of Finance. Therefore, I have relied on the regional fiscal reports provided by the Spanish General Council of Economists and the official tax codes published by the regional governments to collect this information. Table 2 summarizes the years in which the *Foral* territories legislated a tax reform and the corresponding information sources.

Table 2: Tax reforms and data sources

	Year of Implementation	Data Source
Basque Country		
Alava	2012,2014	Spanish Council of General Economists, Foral Norm 18/2011
Bizkaia	2012,2014	Spanish Council of General Economists, Foral Norm 1/2012
Gipuzkoa	2012, 2014	Spanish Council of General Economists Foral Norm 5/2011, Foral Norm 1/2014
Navarra	2018	Spanish Council of General Economists, Foral Norm 16/2017

The inheritance and gift tax legal framework in the Foral territories shares common features with the one in force for the rest of Spanish regions. The tax systems designed by the Basque and Navarre treasuries established 9 and 13 tax brackets²⁸, respectively, which is a smaller number compared to the national rule, and a different progressive tax schedule depending on the degree of kinship between the heir (grantee) and the deceased

²⁸ Alava and Bizkaia have the same tax bracket bounds, which slightly differ from the ones regulated in Gipuzkoa

person (donor)²⁹. In general, the progressivity of the tax schedule for more distant heirs in these regions has been higher than the default for rest of Spain. In contrast, gifts and inheritances of close heirs and donees (spouses and direct ascendants and descendants) have been traditionally subject to a very low tax rate in these regions: they were exempted in the whole Basque country until mid 2012 and subject to a flat rate of 0.8% in Navarre until 2017. In terms of tax deductions and credits, the fiscal authorities in Basque Country have regulated various tax discounts for different groups of heirs and donees. These have been traditionally more generous on average in Gipuzkoa compared to Alava and Bizkaia for more distant heirs (i.e. Gipuzkoa has had in force a tax deduction of 8000 for heirs of group (iv)) but less so for close heirs. Navarre introduced a tax deduction of 250,000 euros for close heirs for the first time in 2018.

B Constructing Regional Average Effective Tax Rates

Using the information on tax regulation changes contained in Tables B.5-B.8, I construct the net tax base of household i in bracket j , that is, b_j , by applying the corresponding business-assets and main-dwelling specific tax credits to the pre-tax amount reported in the survey. With this specific net tax base, I construct the average effective tax rate for bracket j in the region r at time t

$$\bar{\tau}_{jrt}^{E,i} = \left(\frac{q_{jr} + (\bar{b}_j - td_{jrt}^i - c_j^{lb}) \times \tau_{jrt}}{\bar{b}_j - td_{jrt}^i} \right) \times tc_{jrt}^i \times SF_{rt} \quad i \in \{H, G\} \quad j \in \{1, \dots, 16\}$$

where \bar{b}_j refers to the average tax base in bracket j instead of b_j and SF_{rt} refers to the scaling factor which depends on heirs or donees' pre-bequest wealth.

Whenever there is a change in tax regulation in the middle of the year, the average effective tax schedule is computed as a monthly weighted mean. For instance, Galicia introduced a tax credit of 100% for tax bases lower than 125,000 euros as well as simplified the marginal tax for heirs of group (ii) in June 2008. Therefore, the average effective tax rate for heirs of group (ii) in Galicia in the year 2008 is computed as:

$$\bar{\tau}_{i,2008}^H = \bar{\tau}_{i,2007}^H \times \frac{5}{12} + \tilde{\bar{\tau}}_{i,2008}^H \times \frac{7}{12} \quad i \in \{1, \dots, 16\}$$

where $\tilde{\bar{\tau}}_{i,2008}^H$ is the average effective tax rate for each bracket i that considers the tax discounts

²⁹The definition of groups of heirs and donees by degree of kinship in these regions also varies with respect to the national law. In Basque Country, group (i) and (ii) include taxpayers qualified as belonging to group (iii) in the national law. The same applies to group (iii) in this region with respect to group (iv) in the national law. Navarre's inheritance and gift tax system does not define groups but directly refers to degrees of kinship

and new tax schedule introduced in June 2008.

A group of regions introduced implicit tax credits by reducing the scaling factors with respect to the default rule. For example, Cantabria reduced the scaling factor (ϕ) for heirs of group (i) and (ii) in 2003 from 1-1.4 to 0.02-0.04, which implied a tax credit ranging between 97% and 99% as computed in [de La Fuente et al. \(2018\)](#). The regions that used the scaling factors as a tool to diminish the tax liabilities of close heirs are gathered in Table [B.1](#) and the corresponding implicit tax credits in Table [B.2](#), respectively. For the regions and years that reduced the scaling factor with respect to the national rule, I use the average implicit tax credit.

Table B.1: Reduction in the scaling factor - Regions

Region	Group	Default ϕ	New ϕ	Years in force
Cantabria	(i),(ii)	1-1.2	0.01-0.04	2003-2009
Asturias	(i)	1-1.2	0.01-0.04	2004-2018
Galicia	(i)	1-1.2	0.01-0.04	2004-2008

Table B.2: Reduction in the scaling factor and Implicit Tax Credit - Groups (i) and (ii)

Pre-inheritance wealth	Change SF	Default SF	Implicit tax credit
0-400k	0.01	1	99.00%
400k-2M	0.02	1.05	98.10%
2M-4M	0.03	1.10	97.27%
> 4M	0.04	1.20	96.67%
Average			97.76%

Finally, some regions introduced tax credits that applied to a specific group of taxpayers within a group. In these particular cases, I follow [de La Fuente et al. \(2018\)](#) and compute the average tax credit taking into account the weight of each group of taxpayers in the tax base of the region. For example, Catalonia in 2014 regulated an unconditional tax credit of 99% for spouses while introducing a progressive tax credit for ascendants and descendants:

Table B.3: Tax Credit for Ascendants and Descendants - Catalonia 2014

	Tax credit	Weight Taxpayers*	Average Tax Credit
< 100k	99%	16.91%	16.74%
100-200k	98%	16.33%	16.00%
200-300k	97%	9.73%	9.44%
300-500k	94.20%	12.19%	11.49%
500-750k	89.47%	10.81%	9.67%
750k-1M	84.60%	8.33%	7.05%
1-1.5M	76.40%	6.17%	4.72%
1.5-2M	69.8%	6.17%	4.31%
2-2.5M	63.84%	6.17%	3.94%
2.5-3M	55.37%	6.17%	3.54%
> 3M	30%	1%	0.30%
Average			70.46%

*These weights are taken from a report of Grupo de Trabajo sobre Imposición Patrimonial de la Comisión Mixta de Coordinación de la Gestión Tributaria (CMCGT, 2007). See [de La Fuente et al. \(2018\)](#) for more details

Table B.4: Taxpayers weights, heirs group (ii) - Catalonia 2014

Weight Tax Payers*	
Spouses	23.42%
Ascendants, descendants	76.58%

*These weights are taken from a report of Grupo de Trabajo sobre Imposición Patrimonial de la Comisión Mixta de Coordinación de la Gestión Tributaria (CMCGT, 2007). See [de La Fuente et al. \(2018\)](#) for more details

The average net tax rate for heirs of group (ii) would be computed as:

$$\bar{\tau}_{i,2,2014}^H = \bar{\tau}_{i,2,2014}^{H,Default} \times \underbrace{(1 - 0.99)}_{\text{spouses' tax credit}} \times \underbrace{0.2342}_{\text{spouses' weight}} + \bar{\tau}_{i,2,2014}^{H,Default} \times \underbrace{(1 - 0.7046)}_{\text{others' tax credit}} \times \underbrace{0.7658}_{\text{others' weight}} \quad \forall i$$

Table B.5: Tax Credits and Deductions for Heirs - Group (ii)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Andalucia		td 100% if tb<125k				td 100% if tb<175k			
Aragon						td 100% max 150k			tc 100% if tb<150k
Asturias						tc 100% if tb<125k			
Balearic Islands				td 25k		tc such that $\tau = 1\%$			
Canary Islands				td 18.5k	tc 99.9%				
Cantabria		tc 97.99%*							
Castile and Leon				td 30k	td 60k	tc 99%			
Castile la Mancha									
Catalonia		td 18k							
Valencian Community					td 25k	td 40k	tc 99%		
Extremadure							0/ tc 100% if tb<125k + own τ	tc 100% if tb<125k + own τ	
Galicia									
Madrid				td 50k	td 100k	tc 99%			
Murcia				tc 25% if tb<300k	tc 50% if tb<300k	tc 99% if tb<450k	tc 99% max 450k		
Navarre									
Basque Country									
La Rioja					tc 99%				
Ceuta and Melilla									

td = tax deduction; tc = tax credit; tb = tax base; own τ = regional tax schedule; *Implicit tax credit. The information on tax reforms has been retrieved from the regional tax books from the Spanish Ministry of Finance and from the regional fiscal reports produced by the General Council of Spanish Economists

Table B.6: Tax Credits and Deductions for Heirs - Group (ii)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Andalucia							td 100% if tb<250k max 200K if 250k<tb<350k	td 100% max 1M	td 100% max 1M / tc 99%
Aragon	tc 20% or td 100% max 150k	tc 33% or td 100% max 150k	tc 50% or td 100% max 150k	tc 65% or td 100% max 150k	td 100% max 150k	td 100% max 150k	td 100% if tb<200k / tb<300k + own τ	td 100% max 500k	td 100% max 500k
Asturias							tc 100% if tb<200k / tb<300k + own τ	tb<300k + own τ	
Balearic Islands				td 25k + own τ					
Canary Islands	tc 99% / td 20-40k	tc 99% / td 20-40k	tc 99%		tc 99%		td 50k	td 100% if tb<100k tc 90% if tb>100k	tc 100% / tc 90%
Cantabria								td 175k / td 250k	td 175k / td 250k / tc 95% / tc 80-100%
Castile and Leon			td 175k					td 250k / td 300k	td 400k
Castile la Mancha					tc 99% / td 50-100k + tc 20-99%; 99% if spouse + own τ	td 50-100k + tc 20-99%; 99% if spouse + own τ	td 50-100k + tc 99% + own τ	td 100k + tc 50%	td 100k + tc 50%
Catalonia	tc 99% + own τ				tc 99% / td 100k + tc 75%				
Valencian Community						tc 90-99% if tb<600k			
Extremadure			td 100% max 175k if inher<600k				td 400k + own τ		
Galicia									
Madrid					tc 99% / tc 99% if tb <300k				
Murcia						tc 50%	tc 60%	tc 90%	tc 98%-99%
Navarre								td 250k spouse + own τ	
Basque Country	exempt / td 400k, 220k + own τ	td 400k, 220k + own τ *					td 400k	td 400k + own τ	
L.a Rioja									
Ceuta and Melilla									

Table B.7: Tax Credits and Deductions for donees - Group (i) and (ii)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Andalucia									
Aragon								tc 100% if tb<300k	
Asturias					td such that net $\tau = 7\%$				
Balearic Islands						tc 99.9%			
Canary Islands									
Cantabria									
Castile and Leon					tc 99%				
Castile la Mancha						tc 95%			
Catalonia					td 40k g (ii)				
Valencian Community					tc 99%		tc 99%		
Extremadure					if tb<420k g (i)		if tb<420k g (ii)		
Galicia						own τ			
Madrid					tc 99%				
Murcia									
Navarre									
Basque Country									
La Rioja									
Ceuta and Melilla									

td = tax deduction; tc = tax credit; tb = tax base; own τ = regional tax schedule. The tax discounts in bold are the ones that coincided with the ones introduced for heirs of group (ii). The information on tax reforms has been retrieved from the regional tax books from the Spanish Ministry of Finance and from the regional fiscal reports produced by the General Council of Spanish Economists

Table B.8: Tax Credits and Deductions for donees - Group (i) and (ii)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Andalucia									
Aragon				tc 50%	tc 65%	tc 65%	tc 65%	tc 65%	tc 65%
Asturias									if tb<75k
Baleares Islands									
Canary Islands				default					
Cantabria									tc 99.9%
Castile and Leon				default					
Castile la Mancha									tc 95% if tb<120k
Catalonia									tc 90% if tb 120-240k
Valencian Community									tc 85% if tb>240k
Extremadure									
Galicia									
Madrid									
Murcia									
Navarre									
Basque Country				exempt/ td 400k, 220k + own τ	td 400k, 220k + own τ	td 400k + own τ	td 400k + own τ	td 250k spouse + own τ	tc 60%
La Rioja									tc 99% if tb<500k
Ceuta and Melilla									tc 98% if tb>500k

td = tax deduction; tc = tax credit; tb = tax base; own τ = regional tax schedule. The tax discounts in bold are the same ones for heirs of group (ii). The information on tax reforms has been retrieved from the regional tax books from the Spanish Ministry of Finance and from the regional fiscal reports produced by the General Council of Spanish Economists

C Additional Figures and Tables

Figure C.1: Number of Inheritance and Gift Tax Reforms by Year - Group (ii)

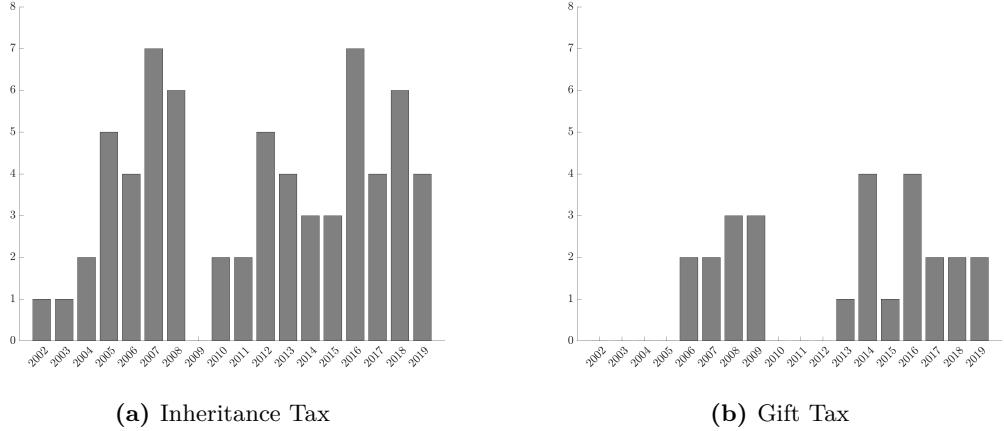
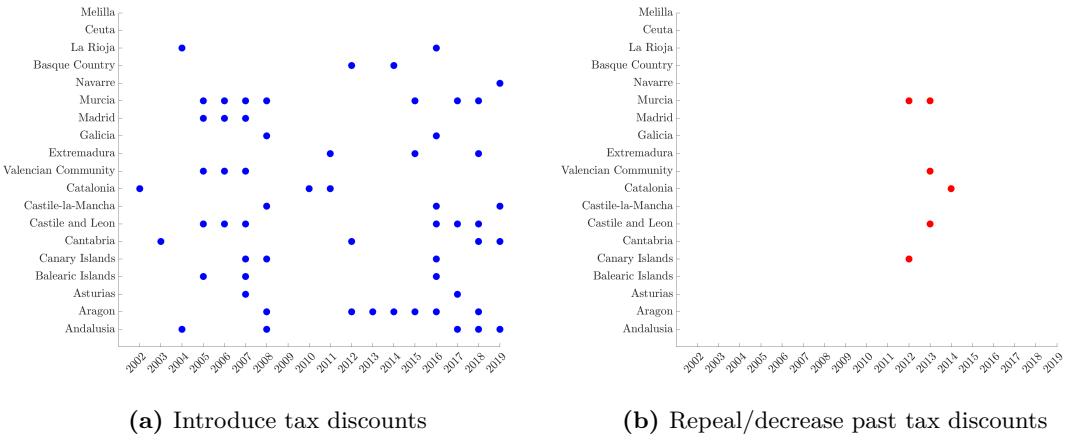
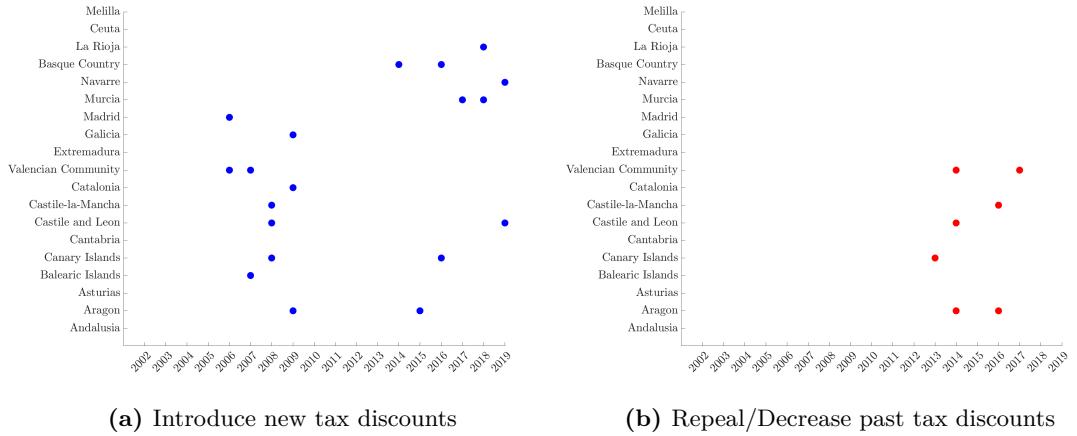


Figure C.2: Regional Inheritance Tax Reforms by Type - Group (ii)



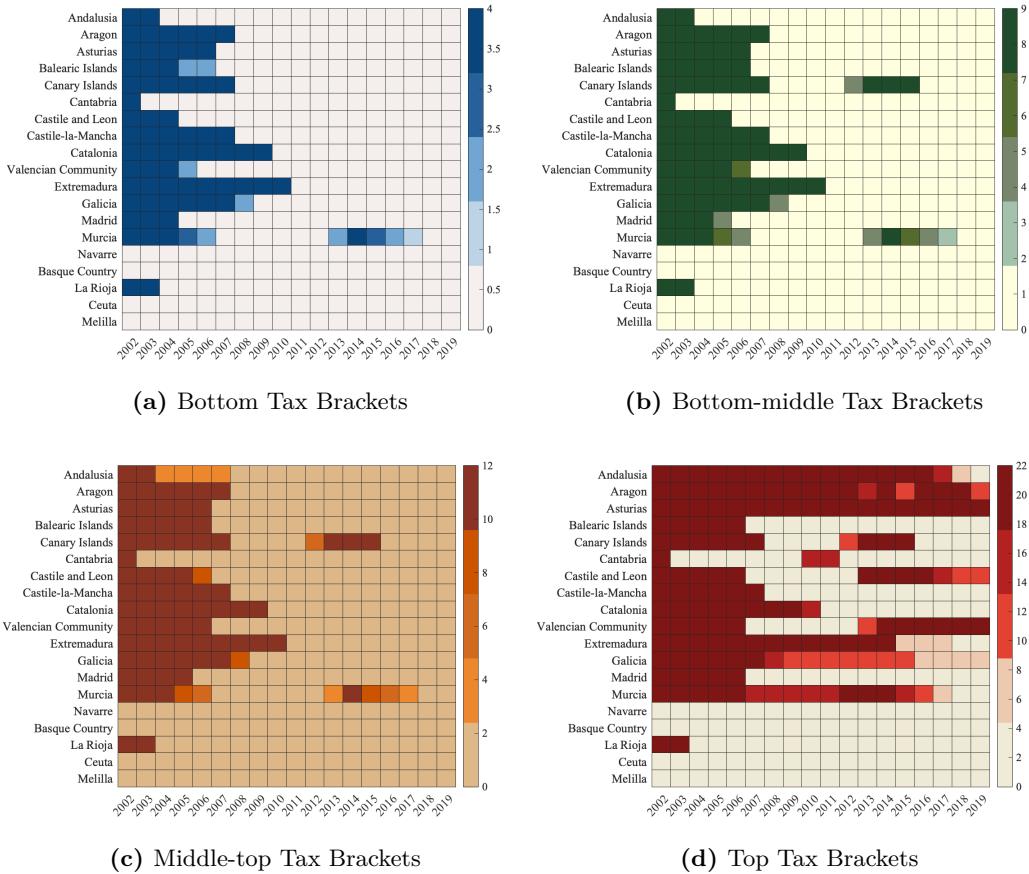
This figure depicts the years for which each Spanish region introduced a different inheritance tax credit or/and tax deduction for heirs of group (ii) (i.e descendants older than 21, ascendants and spouses). Panel C.2a presents those tax changes that implied the introduction of an actual tax credit/deduction by region and year while Panel C.2a shows those changes that involved a large reduction in past tax discounts or their repeal. These figures have been constructed using the inheritance tax regulation contained in the regional tax books published by the Spanish Ministry of Finance and in the regional fiscal reports produced by the General Council of Spanish Economists.

Figure C.3: Regional Gift Tax Reforms by Type - Group (ii)



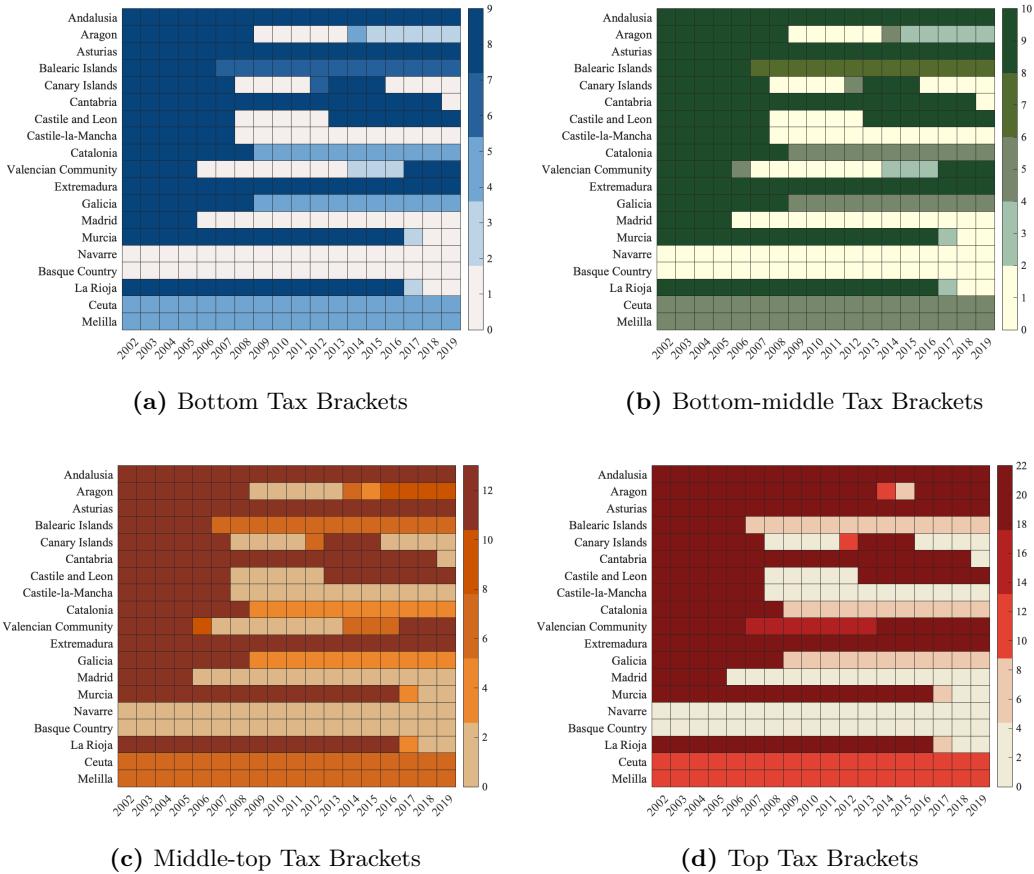
This figure depicts the years for which each Spanish region introduced a different inheritance tax credit or/and tax deduction for donees of (ii) (i.e. ascendants, descendants older than 21 and spouses). Panel C.3a presents those tax changes that implied the introduction of an actual tax credit/deduction by region and year while Panel C.3a shows those changes that involved a large reduction in past tax discounts or their repeal. These figures have been constructed using the inheritance tax regulation contained in the regional tax books published by the Spanish Ministry of Finance and in the regional fiscal reports produced by the General Council of Spanish Economists.

Figure C.4: Average Effective Inheritance Tax Rate across Regions - Group (ii)



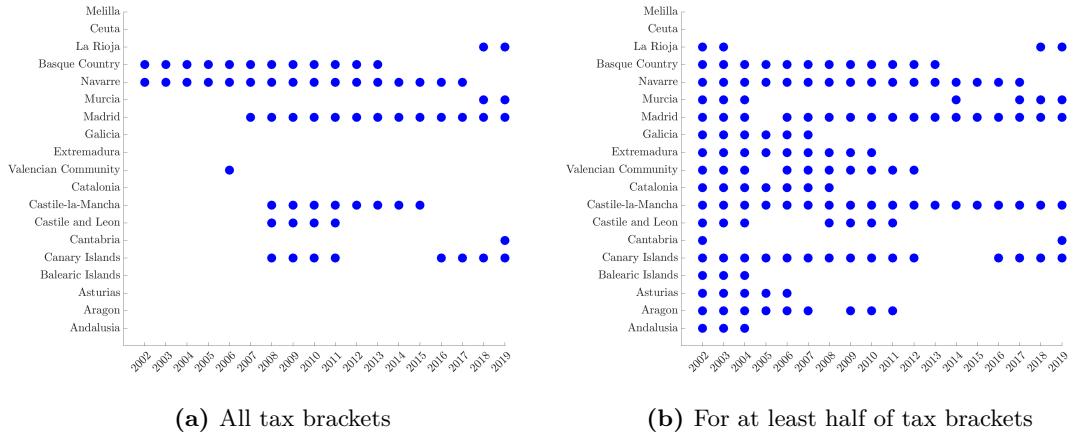
This figure depicts the average effective inheritance tax rate by bracket for group (ii) in all Spanish regions in 2013. *Bottom brackets* range from 0 to 32,000 euros, *bottom-middle brackets* from 32000 to 64000 euros, *middle-top brackets* from 64000 to 160,000 euros and *top brackets* from 160,000 euros on

Figure C.5: Average Effective Gift Tax Rate across Regions - Group (ii)



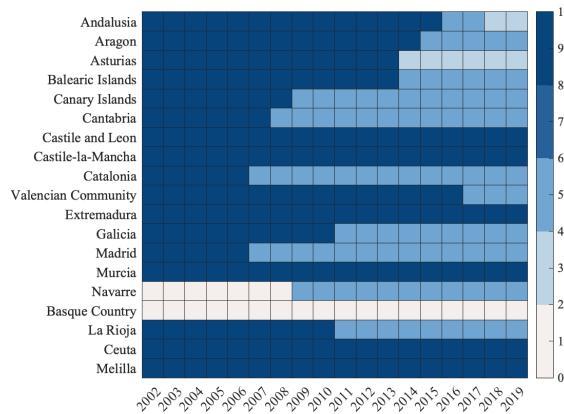
This figure depicts the average effective gift tax rate by bracket for group (ii) in all Spanish regions. *Bottom brackets* range from 0 to 32,000 euros, *bottom-middle brackets* from 32000 to 64000 euros, *middle-top brackets* from 64000 to 160,000 euros and *top brackets* from 160,000 euros on

Figure C.6: Regions with Equal Tax Treatment for Heirs and donees - Group (ii)



This figure depicts the years for which each Spanish region had the same average effective tax schedule for heirs and donees of group (ii). Panel C.6a shows the regions and years for which heirs and donees faced the same average tax rate for any bracket while Panel C.6b reports the regions and years for which heirs and donees faced the same average tax rate for at least 8 of the 16 tax brackets. These figures have been constructed using the inheritance tax regulation contained in the regional tax books published by the Spanish Ministry of Finance and in the regional fiscal reports produced by the General Council of Spanish Economists.

Figure C.7: Regional Heterogeneity in Tax-induced Time Restrictions to Sell The Inherited Main Dwelling



This heatmap shows the heterogeneity in the number of mandatory years that heirs need to keep the inherited main dwelling of the deceased person to avoid giving back to the Treasury the fiscal benefits applicable to this asset.

Table C.1: Average Variation in Inheritance and Gift Tax - Group (ii)

	Avg. Var.	Median Var.	Std. Dev	Average Rate in 2002
Inheritance Tax	-0.46	-0.59	0.02	9.10%
Bottom Tax Brackets	-0.18	-0.23	0.01	3.12%
Bottom-middle Tax Brackets	-0.41	-0.52	0.02	7.11%
Middle-top Tax Brackets	-0.51	-0.66	0.02	9.00%
Top Tax Brackets	-0.76	-1.05	0.04	17.15%
Gift Tax	-0.32	0.00	0.02	10.98%
Bottom Tax Brackets	-0.20	0.00	0.02	6.92%
Bottom-middle Tax Brackets	-0.27	0.00	0.02	8.64%
Middle-top Tax Brackets	-0.30	0.00	0.02	10.23%
Top Tax Brackets	-0.53	0.00	0.04	18.49%

Table C.2: Regional Inheritance and Gift Taxation and Macroeconomic Aggregates

	(1) ATR Inheritance	(2) ATR Gift
GDP pc _{t-1}	-0.000 (0.000)	0.000 (0.000)
UR _{t-1}	-0.003 (0.003)	-0.001 (0.001)
CPI _{t-1}	-0.015 (0.014)	-0.006 (0.009)
GDP pc _{t-2}	0.000 (0.000)	-0.000 (0.000)
UR _{t-2}	0.001 (0.001)	0.000 (0.001)
CPI _{t-2}	0.015 (0.009)	0.005 (0.009)
Region FE	Yes	Yes
Year FE	Yes	Yes
Observations	272	272

Table C.3: Regional Inheritance and Gift Taxation and Regional Public Finances

	(1) Public Expenditure pc	(2) Public Expenditure pc	(1) Debt-to-GDP	(2) Debt-to-GDP
ATR Inheritance	0.183 (0.124)		-6.435 (10.836)	
ATR Gift		0.204 (0.151)		-1.829 (14.074)
Region FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	170	170	272	272

Public Expenditure pc refers to regional public expenditure in health, education and social protection per capita. Data series have been retrieved from IVIE.

Table C.4: Regional Inheritance and Gift Taxation and Political Orientation

	ATR Inheritance	ATR Gift	ATR Inheritance	ATR Gift
Right-wing party (dummy)	-0.020* (0.011)	-0.022*** (0.007)	-0.024** (0.011)	-0.024*** (0.008)
Region FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Macroeconomic Controls	No	No	Yes	Yes
Observations	323	323	255	255

Right-wing government takes value equal to 1 if regional government is conformed by a right-win party or a right-win coalition. Macroeconomic controls are one-year lagged values of unemployment rate, GDP per capita and debt-to-GDP ratios.

Table C.5: Regional Macroeconomic Aggregates and Political Orientation

	GDP pc	Unemployment Rate	Debt (% GDP)
Right-wing party (dummy)	0.006 (0.008)	0.840 (0.592)	-0.278 (1.658)
Region FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	323	323	289

Right-wing government takes value equal to 1 if regional government is conformed by a right-win party or a right-win coalition.

D Summary Statistics

Table D.1: Household Summary Statistics at the time of the Inheritance or Gift

	Mean	sd	Min	Max	N
Households below p40					
Net Wealth	54.71	54.23	-71.60	169.59	98
Mortgage Debt (%Wealth)	0.33	0.44	0.00	1.58	95
Non-mortgage Debt (%Wealth)	0.06	0.14	0.00	0.95	95
Personal Credit Debt (%Wealth)	0.06	0.13	0.00	0.95	95
Households p40-p60					
Net Wealth	160.15	47.24	91.84	276.47	63.00
Mortgage Debt (% Wealth)	14.00	0.17	0.00	58.00	63.00
Non-mortgage Debt (% Wealth)	1.00	0.02	0.00	13.00	63.00
Personal Credit Debt (% Wealth)	1.00	0.02	0.00	13.00	63.00
Households p60-p80					
Net Wealth	271.96	60.40	155.52	407.41	106
Mortgage Debt (% Wealth)	5.00	0.10	0.00	53.00	106
Non-mortgage Debt (% Wealth)	1.00	0.03	0.00	17.00	106
Personal Credit Debt (% Wealth)	1.00	0.03	0.00	17.00	106
Households p80-p90					
Net Wealth	471.67	74.46	306.99	660.02	66
Mortgage Debt (% Wealth)	6.00	0.10	0.00	41.00	66
Non-mortgage Debt (% Wealth)	0.00	0.01	0.00	5.00	66
Personal Credit Debt (% Wealth)	0.00	0.01	0.00	5.00	66
Households p90-p100					
Net Wealth	1218.76	3317.51	518.97	194519.11	223
Mortgage Debt (% Wealth)	4.00	0.07	0.00	43.00	223
Non-mortgage Debt (% Wealth)	0.00	0.02	0.00	15.00	223
Personal Credit Debt (% Wealth)	0.00	0.02	0.00	15.00	223

Monetary amounts are expressed in thousands and have been CPI-adjusted to the year 2016. EFF survey weights are applied to obtain representative averages of the Spanish population.

Table D.2: Share of Inheritance and Gifts by Net Wealth Percentiles

	% Gifts (cash transfers)	% Inheritances	Total
Households < p40	56%	44%	100%
Households p40-p60	52%	45%	100%
Households p60-p80	53%	47%	100%
Households p80-p90	45%	55%	100%
Households p90-p100	43%	57%	100%

E Results

F Robustness

Table F.1: Inheritance Taxes and Personal Credit Debt of Old Households

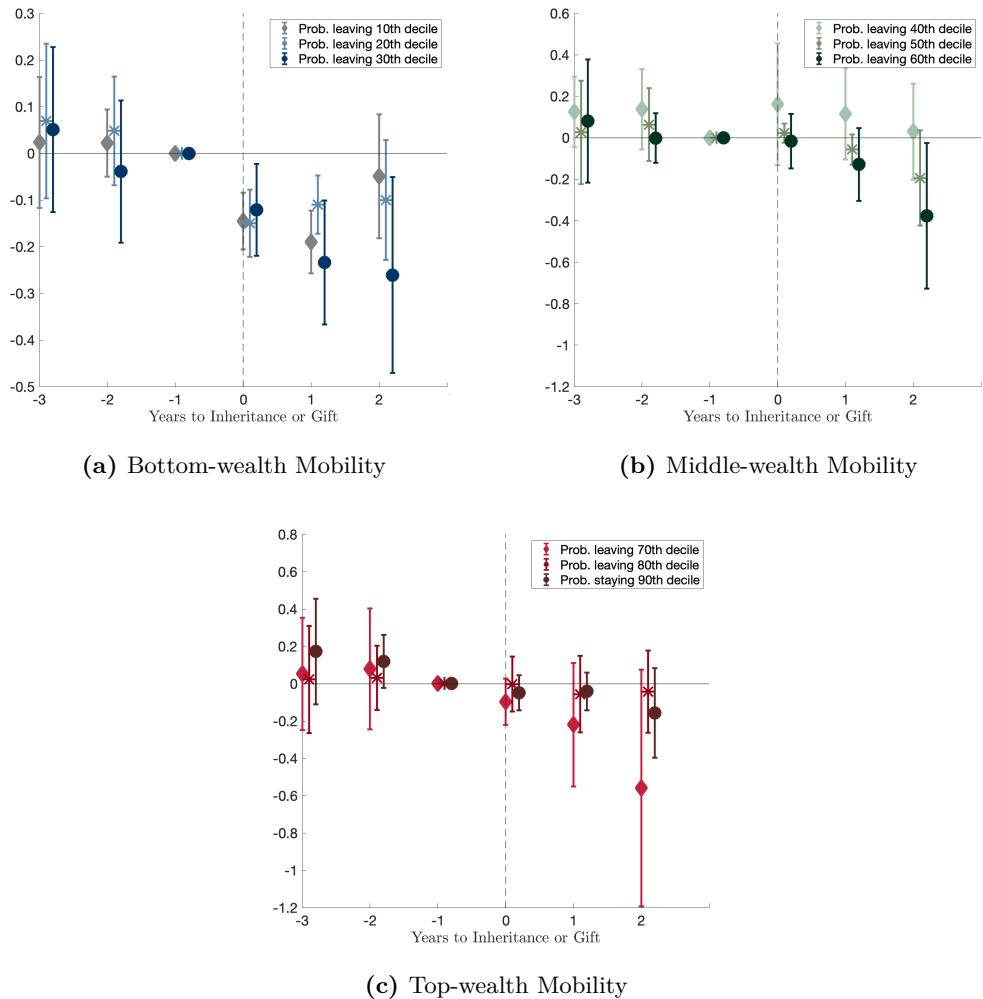
	Personal Credit debt Age ≥ 70 , All	Personal Credit debt Age ≥ 70 , Below p40
ATR Inheritance	-0.950 0.720	-1.615 2.012
Time FE	Yes	Yes
Region FE	Yes	Yes
Observations	7362	1626

The dependent variable is logged personal credit. The sample includes households that have not reported any inheritance or gift in any survey wave between 2002 and 2018.

Table F.2: Age profile of heirs and donees

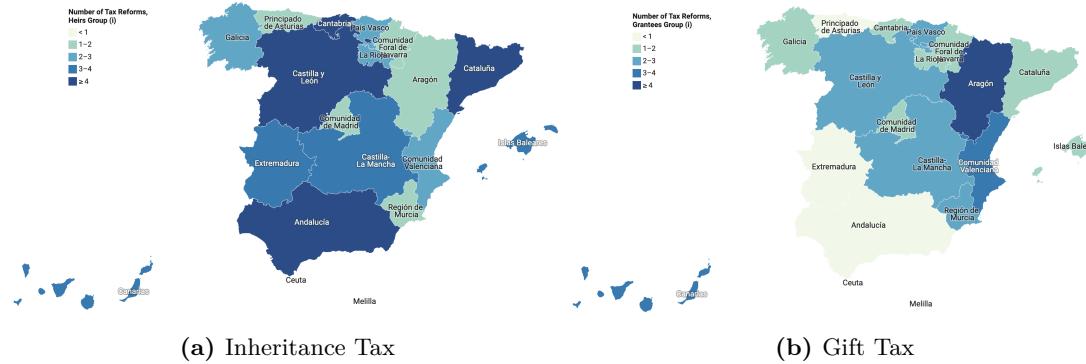
	Average Age	% Heirs or donees < 40 years old
Below p40	47	40.2%
p40-p60	51	25.3%
p60-p80	55	20.2%
p80-p90	57	13.3%
p90-p100	59	0.5%

Figure F.1: Effect of IG Taxes on Wealth Mobility - Restricted sample to gifts and inheritances subject to same tax rates



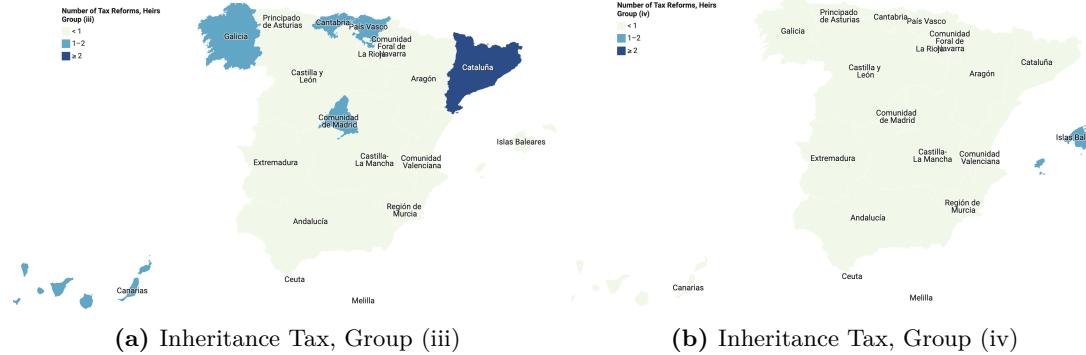
A Online Appendix

Figure OA.1: Regional Inheritance and Gift Tax Reforms - Group (i)



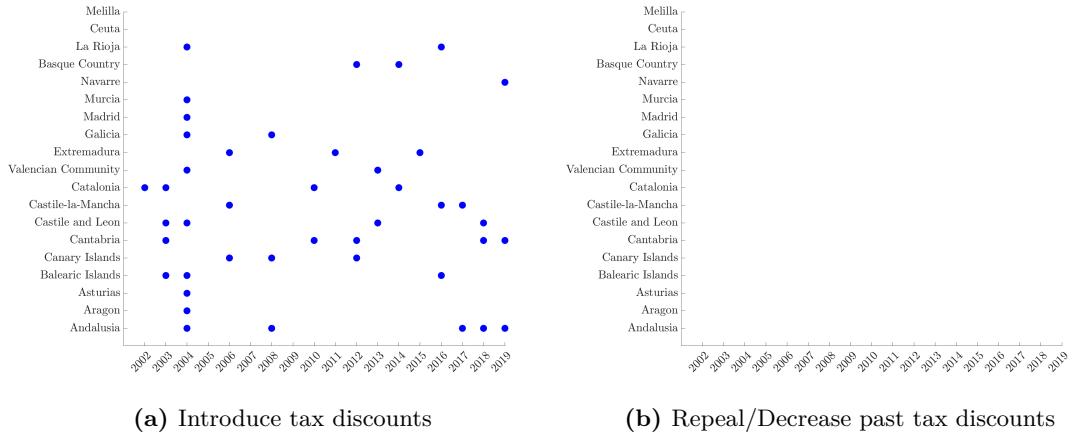
This figure depicts the number of different tax reforms for heirs and donees of group (i) (i.e. descendant younger than 21) introduced by each Spanish regions. Panel OA.1a refers to the inheritance tax while Panel OA.1b refers to the gift tax. These figures have been constructed using the inheritance tax regulation contained in the regional tax books published by the Spanish Ministry of Finance and in the regional fiscal reports produced by the General Council of Spanish Economists.

Figure OA.2: Regional Inheritance Tax Reforms - Group (iii)-(iv)



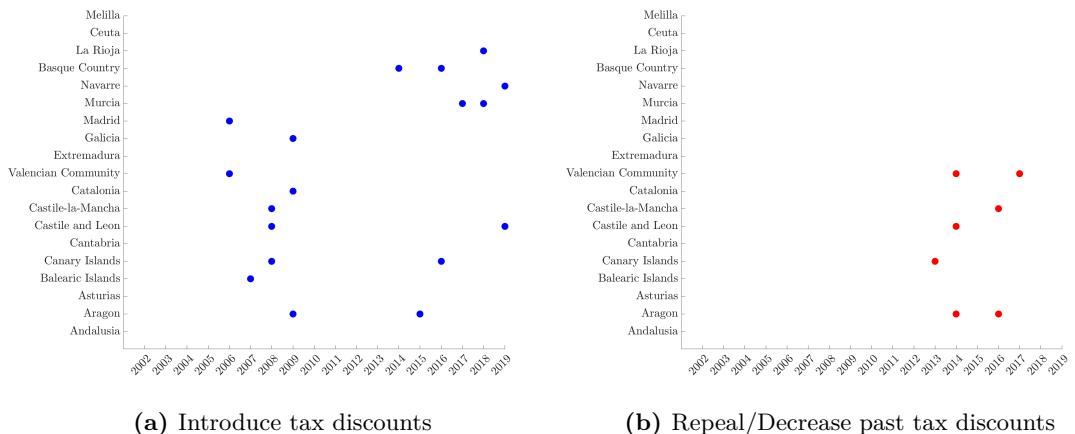
This figure depicts the number of different tax reforms for heirs of group (iii) (i.e. siblings, stepchildren, aunts/uncles and nephews/nieces) and (iv) (i.e. other distant relatives and non-relatives) introduced by each Spanish region. The change in tax regulation in Basque Country refers only to Bizkaia. This figure has been constructed using the inheritance tax regulation contained in the regional tax books published by the Spanish Ministry of Finance and in the regional fiscal reports produced by the General Council of Spanish Economists.

Figure OA.3: Regional Inheritance Tax Reforms by Type - Group (i)



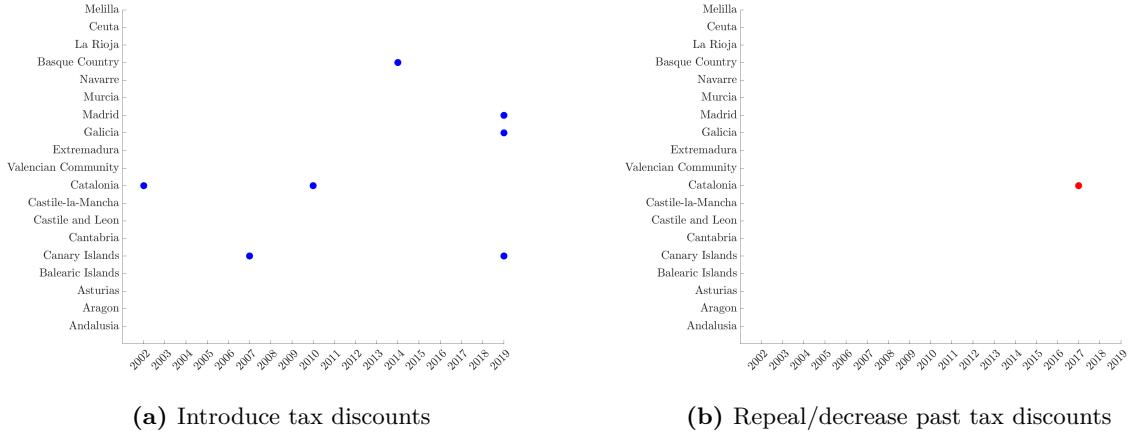
This figure depicts the years for which each Spanish region introduced a different inheritance tax credit or/and tax deduction for donees of group (i) (i.e descendants younger than 21). Panel OA.3a presents those tax changes that implied the introduction of an actual tax credit/deduction by region and year while Panel OA.3a shows those changes that involved a large reduction in past tax discounts or their repeal. These figures have been constructed using the inheritance tax regulation contained in the regional tax books published by the Spanish Ministry of Finance and in the regional fiscal reports produced by the General Council of Spanish Economists.

Figure OA.4: Regional Gift Tax Reforms by Type - Group (i)



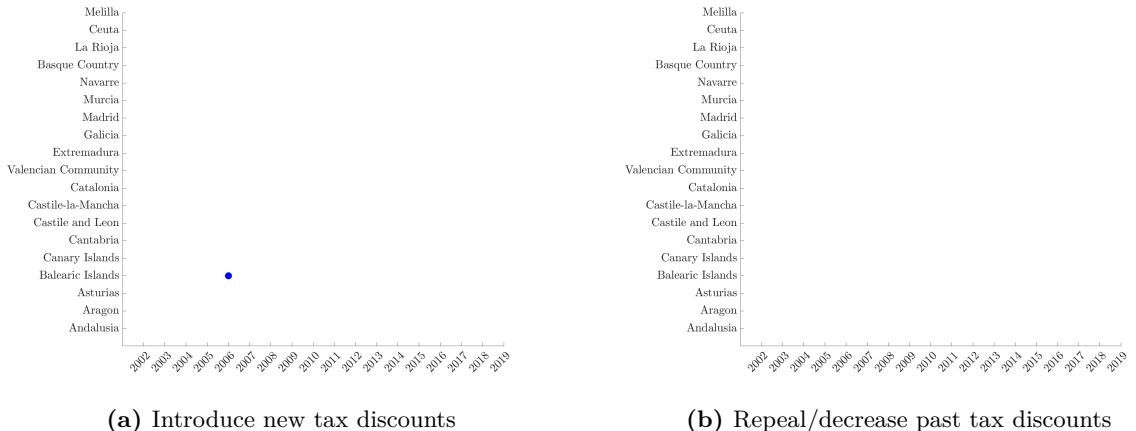
This figure depicts the years for which each Spanish region introduced a different inheritance tax credit or/and tax deduction for donees of group (i) (i.e descendants younger than 21). Panel OA.4a presents those tax changes that implied the introduction of an actual tax credit/deduction by region and year while Panel OA.4a shows those changes that involved a large reduction in past tax discounts or their repeal. These figures have been constructed using the inheritance tax regulation contained in the regional tax books published by the Spanish Ministry of Finance and in the regional fiscal reports produced by the General Council of Spanish Economists.

Figure OA.5: Regional Inheritance Tax Reforms by Type - Group (iii)



This figure depicts the years for which each Spanish region introduced a different inheritance tax credit or/and tax deduction for heirs of group (iii) (i.e. siblings, stepchildren, nephews/nieces, uncles/aunts). Panel OA.5a presents those tax changes that implied the introduction of an actual tax credit/deduction by region and year while Panel OA.5b shows those changes that involved a large reduction in past tax discounts or their repeal. These figures have been constructed using the inheritance tax regulation contained in the regional tax books published by the Spanish Ministry of Finance and in the regional fiscal reports produced by the General Council of Spanish Economists.

Figure OA.6: Regional Tax Reforms by Type - Group (iii)



This figure depicts the years for which each Spanish region introduced a different inheritance tax credit or/and tax deduction for heirs of group (iv) (i.e. cousins, grand nephews/nieces, more distant relatives and non-relatives). Panel OA.6a presents those tax changes that implied the introduction of an actual tax credit/deduction by region and year while Panel OA.6b shows those changes that involved a large reduction in past tax discounts or their repeal. These figures have been constructed using the inheritance tax regulation contained in the regional tax books published by the Spanish Ministry of Finance and in the regional fiscal reports produced by the General Council of Spanish Economists.

Figure OA.7: Number of Inheritance and Gift Tax Reforms by Year - Group (i)

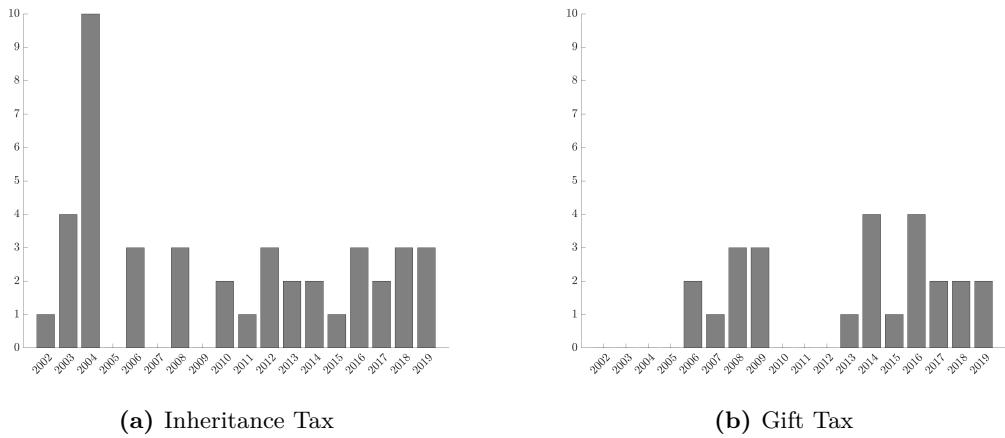


Figure OA.8: Number of Inheritance Tax Reforms by Year - Group (iii) and (iv)

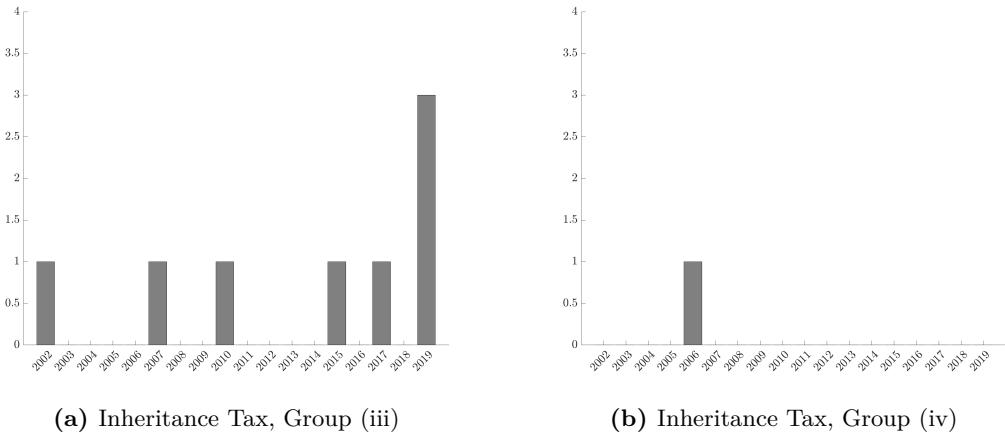


Table OA.1: Tax Deductions and Credits for Heirs - Group (i)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Andalucia		td 100% if tb<125k					td 100% if tb<175k		
Aragon		td 100% max 3M tc 97-99%*							
Asturias		td 3k tc 99%							
Balearic Islands							td 100% max 1 M		
Canary Islands		tc 97-99%*					tc 99.9%		
Cantabria								tc 90-99%	
Castile and Leon		td 6-120k age tc 99%							
Castile la Mancha					tc 95%				
Catalonia	td 18-54k age	td 18-114k age							
Valencian Community			tc 99%						
Extremadure				td 18-70k					
Galicia				tc 97-99%*/ tc 99% + own τ			tc 99% + own τ		
Madrid				tc 99%					
Murcia				tc 99%					
Navarre									
Basque Country									
La Rioja				tc 99%					
Ceuta and Melilla									

td = tax deduction; tc = tax credit; tb = tax base; own τ = regional tax schedule; *Implicit tax credit. The information on tax reforms has been retrieved from the regional tax books from the Spanish Ministry of Finance and from the regional fiscal reports produced by the General Council of Spanish Economists

Table OA.2: Tax Deductions and Credits for Heirs - Group (i)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Andalucia					td 100% if tb<250k max 200K if 250k<tb<350k		td 100% max 1M		td 100% max 1M / tc 99%
Aragon							tc 97-99% + own τ		
Asturias							tc 99% + own τ		
Balearic Islands							tc 99.9%		
Canary Islands					tc 99.9%/ td 100% max 40k-140k age		td 50-150k age tc 100% if tb<100k tc 90% if tb>100k		tc 100%
Cantabria					tc 99%		td 175k/ td 250k/ tc 95%/ tc 80-100%		td 250k/ td 300k
Castile and Leon					td 175k		td 250k/ td 400k		
Castile la Mancha							tc 99% / td 100-196k age + tc 20-99% 99% if spouse + own τ		
Catalonia					tc 99% + own τ		tc 99%/ td 100-156k + tc 75%		
Extremadure						td 100% max 175k if inher<600k		tc 99%	
Galicia									td 400k + own τ *
Madrid									+ own τ
Murcia									
Navarre									
Basque Country						exempt/ td 400k, 220k + own τ	td 400k + own τ *		
Centa and Melilla									

td = tax deduction; tc = tax credit; tb = tax base; own τ = regional tax schedule; *440k in Alava, Bizkaia, 220k in Gipuzkoa. he information on tax reforms has been retrieved from the regional tax books from the Spanish Ministry of Finance and from the regional fiscal reports produced by the General Council of Spanish Economists

Table OA.3: Tax Reforms for Heirs - Group (iii) and (iv)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Andalucia																		
Aragon																		
Asturias																		
Balearic Islands																		
Canary Islands																		
Cantabria																		
Castile and Leon																		
Castile la Mancha																		
Catalonia																		
Valencian Community																		
Extremadure																		
Galicia																		
Madrid																		
Murcia																		
Navarre																		
Basque Country																		
La Rioja																		
Ceuta and Melilla																		

td = tax deduction; tc = tax credit; tb = tax base; own τ = regional tax schedule.

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