Inheritance Taxation and Capital Misallocation*

Kristoffer Berg† Luigi Dante Gaviano‡

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Abstract

Inheritance taxation creates a liquidity obligation when wealth is transferred to the next generation. However, entrepreneurial wealth frequently takes the form of illiquid shares in private firms. We study how this liquidity mismatch distorts capital allocation using Norway's 2014 abolition of its inheritance and gift tax. Linking the universe of Norwegian private limited liability companies to their majority owners via a shareholder registry, we exploit whether the owner had children as a shifter of their firm's inheritance tax exposure in a difference-in-differences design. We document two margins of misallocation. First, the tax induced a within-firm precautionary liquidity distortion: owners anticipating succession-related obligations tilted firm portfolios toward liquid assets, crowding out productive investment, particularly where firms were financially constrained. Second, across firms, the tax fell disproportionately on large and tangible-asset-intensive firms, which faced higher effective rates because of valuation differences; its removal reallocated investment toward higher-return firms and away from lower-return ones.

Keywords: inheritance taxation, capital misallocation, firm investment, family firms

JEL: H25, G31, D24, L26

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†Trinity College, University of Cambridge; Norwegian Fiscal Studies, University of Oslo; Centre for Business Taxation, University of Oxford. Email: kb878@cam.ac.uk.

‡Trinity College, University of Cambridge. Email: ldg26@cam.ac.uk.

1 Introduction

Does inheritance taxation create capital misallocation? While inheritance taxes are levied on individuals, the majority of wealth held by private-firm owners is illiquid – locked inside the firm in the form of unlisted equity, fixed assets, and retained earnings. When capital markets are imperfect, this illiquidity creates a financial spillover from the household to the firm: policies that create cash obligations for the owner propagate into the balance sheets of closely held businesses.

This paper studies how inheritance taxation distorts firm-level capital allocation using Norway's complete abolition of its inheritance and gift tax on 1 January 2014. We link the universe of Norwegian private limited liability companies to their majority owners' demographics, wealth, and tax returns through the shareholder registry. Our identification strategy exploits whether the firm's majority owner has children as a shifter of inheritance tax exposure in a difference-in-differences framework. The identifying assumption is that the payment of inheritance taxation is a larger concern when the owner has children as their heirs to whom firm wealth would eventually be transferred. Because private firms have no public equity and lack liquid markets for shares, the owner's personal tax position and the firm's internal liquidity are not separable.

Empirical evidence on intergenerational transfers supports the use of parental status as a shifter of inheritance-tax exposure. Kvaerner (2023) uses Norwegian register data and shows that negative life-expectancy news induces parents to transfer wealth to the next generation: following a cancer diagnosis, children's wealth rises while combined parent–child wealth is largely unchanged, with stronger responses among wealthier parents. Sturrock et al. (2025) find that single individuals with children transfer around 9 percent of their wealth to their children as death approaches, that this behaviour is responsive to inheritance- and gift-tax incentives, and that the pre-death wealth decline among singles is around three times larger for those with children than for those without. Survey evidence from the UK also shows that individuals with children are more likely to make lifetime gifts than those without children, and that adult children are the most common recipients of such gifts (Dolton et al., 2019).

This does not require assuming that individuals without children have no residual-wealth or bequest motive. Indeed, Fella et al. (2024) estimate preferences for residual wealth among Norwegian retirees both with and without offspring finding preferences for residual wealth also among the childless, which is consistent with Kopczuk (2013), who emphasizes that intergenerational-transfer behaviour may reflect mixed motives. Our identifying variation should therefore be interpreted as *differential* exposure to child-related succession and transfer incentives. The key assumption is that, absent the abolition, firms owned by individuals with and without children would have followed parallel investment trends, while the abolition differentially affected firms where owners have

children.

Using this identification approach, we document two margins of misallocation. Before turning to them, we establish that the abolition left a clear imprint on owners' own balance sheets: treated owners - those with children - accumulate more wealth, take on more debt, and draw persistently higher dividends from their firms after 2014, confirming that the inheritance tax had materially constrained owners with heirs.

The first margin operates *within* firms. Owners anticipating a tax-induced liquidity shock at succession tilted the joint owner–firm portfolio toward liquid assets, crowding out productive assets, consistently with the existence of a distortion from a 'dynastic precautionary liquidity motive'.[1] Post-abolition, treated firms accumulate roughly 10–15 percent more fixed capital - and at least as much tangible productive capital - relative to controls, while the liquid share of the owner's personal wealth falls: the joint owner–firm unit rebalances away from precautionary liquidity and toward productive capital. Consistent with the mechanism, this response is concentrated among owners with low personal liquidity, for whom the firm's balance sheet was the binding source of succession liquidity.

The second margin operates *across* firms. The effective tax burden varied with firm characteristics, generating dispersion in the marginal revenue product of capital of the kind studied by Hsieh and Klenow (2009). The burden rose with firm size (larger firms exceeded the valuation discount and faced higher marginal rates) and with asset tangibility (tangible assets were assessed close to market value, while self-developed intangibles carried zero tax value), and the distortion bound most tightly on financially constrained firms. Our heterogeneity tests confirm that the investment response concentrates among large, tangible-intensive, and younger (more financially constrained) firms whose owners have children. Splitting firms by profitability reveals the allocative consequence most directly: high-return firms expand sharply after the abolition while low-return firms contract, so capital flows toward its most productive uses and the dispersion in returns that the tax had sustained narrows.

This paper contributes to three main literatures. First, we identify a new source of firm-level distortionary wedges in the capital misallocation literature (Hsieh and Klenow, 2009; Restuccia and Rogerson, 2008; Buera and Shin, 2013; Midrigan and Xu, 2014): the interaction of owner-level tax policy with illiquid firm wealth. Most of this literature studies distortions that operate directly at the firm level, such as financial frictions, regulatory barriers, or taxes on production and investment. Our results show that capital misallocation can also arise from policies formally levied on households when ownership is concentrated and firm equity is illiquid. In this setting, the relevant economic unit is not

[1]The dynastic precautionary liquidity motive we document is in some ways similar to other altruistic savings behaviour from parents to children, such as 'dynastic precautionary savings' (Boar, 2021), which is that parents save to insure their children from income shocks.

the firm in isolation, but the joint owner–firm balance sheet. Inheritance taxation creates heterogeneous wedges across firms because the liquidity cost of meeting the tax liability depends on owner wealth, the tax valuation of different asset classes, and on firm size.[2] This mechanism links private wealth taxation to firm investment and productivity, and suggests that household tax policy can have allocative consequences normally associated with firm-level distortions.

Second, we contribute to the literature on financial spillovers from households to firms (Chaney et al., 2012; Schmalz et al., 2017), identifying a new channel: the owner's *tax position* distorts the firm's balance sheet through a precautionary liquidity motive. Existing work shows that shocks to household balance sheets, especially through housing collateral and personal wealth, affect entrepreneurship and corporate investment by relaxing or tightening financing constraints, which connects to the broader literature on financing constraints and investment (Fazzari et al., 1988). We show that a similar spillover can arise from the anticipation of a future tax liability, which changes how owner-managers allocate capital inside the firm. Because firm owners and their successors face financial frictions, they respond to inheritance tax exposure by preserving liquid resources within the firm. This household–firm link is especially salient in family firms, where ownership, control, and succession decisions are closely intertwined, and where the literature on family firms shows how inherited control and within-family succession matter for firm outcomes (Bennedsen et al., 2007; Pérez-González, 2006; Villalonga & Amit, 2006).

Third, within the empirical literature on inheritance taxation and firm behaviour, Ellul et al. (2010) examine how inheritance law and governance across countries affect firms while Holtz-Eakin et al. (2001) show that American business owners respond to estate tax exposure by buying more life insurance and Brunetti (2006) finds that estate taxation increases sales of family businesses in the US.[3] Importantly, Tsoutsoura (2015) finds large effects on investment of a tax reduction for intrafamily business transfers in Greece. While Tsoutsoura (2015) studies the distortion *at the moment of transfer* between generations, our focus is on the precautionary distortion while planning for succession. By not conditioning on the firm being transferred to a family member, we avoid the endogeneity problem that firm owners self-select into family succession. Most closely related to our empirical identification approach is Andric et al. (2026), who study a similar Swedish setting using whether the owner has children as a treatment indicator. Our shareholder registry linkage and owner-level wealth data enable us to identify channels of distortions beyond the growth effects they study and to pinpoint the liquidity mechanism.

Finally, we connect to the literature on intergenerational transfers and household

[2]Cagetti and De Nardi (2009) show that in a quantitative model, estate taxation creates larger distortions for larger firms.

[3]There is also a significant literature studying individual-level saving and tax revenue effects of inheritance taxes, where recent contributions include Goupille-Lebret and Infante (2018), Glogowsky (2021), Micó-Millán (2024), and Wu and Yang (2025). See Schratzenstaller (2025) for a survey of the literature.

finance using Norwegian data (Bø et al., 2019; Fagereng et al., 2019; Fagereng et al., 2021; Ring, 2025), tracing how the bequest motive and its interaction with the tax system propagate from owner portfolios into firm-investment decisions. The Norwegian data allows us to zoom in on mechanisms for how inheritance taxation affects firm investment, such as the share of liquid wealth, by observing both sides of the owner–firm balance sheet, including wealth by asset type held by the individual and the size of their investment in every Norwegian private company.

The paper proceeds as follows. Section 2 describes the institutional background. Section 3 describes the data. Section 4 sets out the identification approach. Section 5 presents the main results. Section 6 discusses the main results and implications. Section 7 concludes.

2 Institutional Background

2.1 Description of the Tax System

Norway levied an inheritance and gift tax on intergenerational transfers of wealth from 1792 (at the time Denmark-Norway) until its abolition on 1 January 2014.[4] The tax applied to cumulated inheritance at death and inter vivos gifts, so we study the succession margin broadly defined. Table 1 presents the rate schedule in the final years (2009–2013). The tax was levied per beneficiary for cumulated gifts and inheritances within each donor-recipient pair. There was a tax-free threshold of NOK 470,000, marginal rates of 6–8 percent in the middle bracket, and top marginal rates of 10 percent (children) or 15 percent (other heirs). For gifts, there was in addition a separate yearly tax-free threshold in the donor-recipient pair. In 2013, this threshold was $G/2$, where G is a standard amount used for calculating government support, and in 2013 G amounted to NOK 82,122 ($\approx$ USD 14,750 in 2013).

Table 1: Inheritance Tax Rate Schedule, 2009–2013

Taxable amount	**Children/ parents**	**Other heirs**
$\leq$ NOK 470,000	0%	0%
470,000 – 800,000	6%	8%
$>$ NOK 800,000	10%	15%

Notes: The schedule applied per beneficiary to cumulative inheritances and gifts per beneficiary before abolition from 1 January 2014. NOK 470,000 was approximately USD 77,500 in this period.

Several design features are important for our analysis. Transfers between spouses were fully exempt, so the relevant burden fell exclusively on transfers to children and

[4]See NOU 2000: 8 (2000) and Zimmer (2014) for more on the historical background.

other non-spousal heirs. The tax base for unlisted shares was the firm's tax-assessed value, typically the book value of the firm, subject to a statutory 40 percent discount up to NOK 10 million. Crucially, tangible fixed assets were assessed closer to market value, while self-developed intangibles carried zero tax value, creating systematic cross-firm variation in the effective tax burden. Norwegian succession law reserves two-thirds of the estate for descendants, such that owners with children faced a binding obligation to transfer wealth to the next generation, but the transfer to the next generation can be postponed while there is a living spouse. In addition, for the transfer of family businesses, the inheritance tax could be paid over twelve years in equally large yearly installments rather than immediately. This required that the owner and their spouse owned at least 25 percent of the company prior to the transfer. The gradual tax payment also required that the inheritor did not give away the shares nor sold more than 50 percent of the shares. Hence, with an inheritance tax rate of 10 percent and a valuation discount of maximally 40 percent, the installment regime implied that inheritor would pay between 0.5 and 0.83 percent tax on the tax-assessed value of the firm each year, which is similar to the new owner facing a 'double wealth tax burden' on firm assets for 12 years after succession. This special regime for closely held private firms indicates that Norwegian policy makers were concerned about liquidity among firm owners during dynastic firm transitions, but the installment opportunity did not alleviate the full burden.

Norway also imposed a yearly tax on net tax-assessed wealth, reaching 1.1 percent for the highest threshold in 2013. The wealth tax rate has varied over time, and was at its lowest rate of 0.85 percent in 2015. The tax-threshold increased over time and was NOK 870,000 ($\approx$ USD 156,000 in 2013) for a single taxpayer in 2013, such that most business owners would be liable to the wealth tax. Like the inheritance tax, the wealth tax is based on tax-assessed values and levied on asset values rather than realised income, creating similar liquidity burdens for owners of illiquid private-firm wealth.

In 2006, Norway introduced a significant reform to the taxation of shareholders. Included in this reform was a change in the capital gains tax treatment when inheriting company shares. Prior to 2006, Norway allowed for a stepped-up basis, such that the recipient would only be taxed on price increases from the moment of receiving the share. From 2006, Norway replaced step-up basis with carryover basis, such that capital gains tax is due on the full price changes from when the share was initially purchased. Since carryover basis shares features with inheritance taxation paid when the asset is sold rather than when it is inherited, a 20 percent deduction for latent capital gains was introduced in the inheritance tax.[5]

In 2013, the corporate income tax rate was 28 percent, and it was gradually reduced to 22 percent by 2019. This change was partly compensated by an increase in the tax

[5]See Msall and Næss (2025) for a study of the effects of going from stepped-up basis to carryover basis.

rates on dividends and capital gains from shares from 28 percent to 31.68 percent over the same period (on dividends and gains beyond a rate-of-return allowance). For owners with limited personal liquidity, wealth and inheritance tax payments may require withdrawal of funds from the company, which incurred capital gains taxation on total gains from the time the share was created or purchased.

2.2 Timeline for the Inheritance Tax Abolition

In 2009, the government reformed inheritance tax rates and thresholds. The inheritance tax thresholds were raised somewhat and rates were cut for inheritances and gifts to all types of recipients. At the same time, tax-valuation rules were tightened for unlisted companies. The valuation discount was reduced from 70 to 40 percent and capped at an inheritance-tax base of NOK 10 million per recipient, such that any amount beyond NOK 10 million had no valuation discount. Hence, the reform cut inheritance taxes for most people, but increased inheritance taxation for certain business owners. To focus our study on the reform in 2014, we consider 2011 as the base-year in our analysis. If the 2009 cuts to inheritance tax rates already increased investment among firms whose owners had children relative to firms whose owners did not, then our estimated effect of the 2014 abolition would be smaller than it would have been absent the 2009 reform.

In 2012, right-wing opposition parties campaigned on abolition of inheritance taxation. A centre-right coalition won the 9 September 2013 election with 96 out of 169 seats. The amended budget by the new government was presented on the 8th of November 2013. The inheritance tax abolition was effective 1 January 2014. Due to this, we allow for an anticipation window in our event study in 2012–2013, with 2011 — the last year before abolition became politically salient — as the base year.

The combination of a reduced valuation deduction in the inheritance tax, carryover basis in the capital gains tax, and a wealth tax meant that new business owners faced a significant total tax burden in the period after inheriting a firm until the inheritance tax abolition.

Figure 1 shows Google searches for 'inheritance tax' ('arveavgift') and 'wealth tax' ('formuesskatt') from 1 January 2012 to 1 January 2016 in Norway. There is a clear spike in 'inheritance tax' searches around the election victory for the right-wing coalition on 9 September 2013, on their revised budget announcement on 8 November 2013, and on 1 January 2014, when the tax was abolished. This suggests that there was significant interest in the inheritance tax change and some anticipation, especially towards the end of 2013. The spike in wealth tax and to some extent inheritance tax searches around 1 January 2013 likely reflects wealth tax valuation changes for property and a common spike around the new year with new tax rules rather than news specific to the inheritance tax.

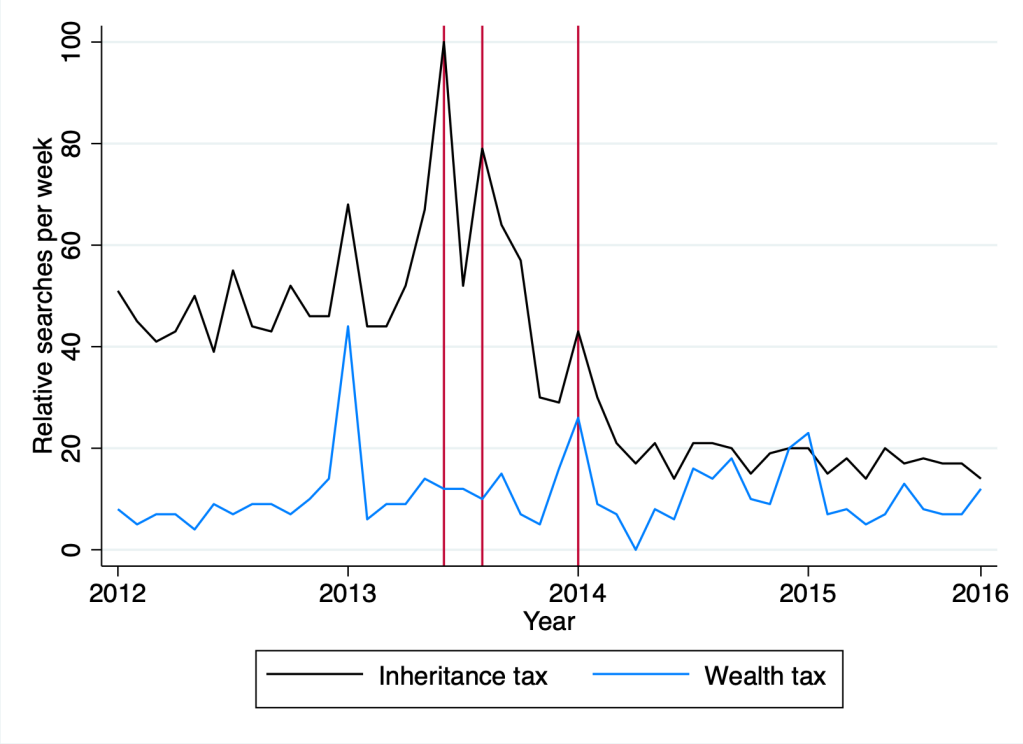


Figure 1: Relative Google searches for inheritance tax (*arveavgift*) and wealth tax (*formuesskatt*) in Norway, 1 January 2012 to 1 January 2016. The three vertical lines mark 9 September 2013 (the centre-right election victory), 8 November 2013 (the revised budget announcing abolition), and 1 January 2014 (the abolition taking effect). Searches are normalised so that the highest weekly volume equals 100.

3 Data and Sample Construction

Data Sources. We construct our dataset from five linked Norwegian administrative registers covering 2006–2022. The shareholder registry records the identity and ownership stake of every shareholder in every corporation at annual frequency, enabling the firm-to-owner linkage central to our design. We link this to firm-level financial statements, individual tax returns, the population registry (including whether the owner has children), and matched employer–employee data. Table 2 explains the different data sources.

Table 2: Data Sources

Register	**Key variables**	**Level**
Aksjonærregisteret	Ownership stakes, owner identity	Owner × firm × year
Regnskapsregisteret	Balance sheet, income statement	Firm × year
Skattemeldingen	Individual income and wealth	Individual × year
Befolkningsregisteret	Age, gender, family links, children	Individual
LTO / A-meldingen	Occupation, wages, establishment	Worker × firm × year

Sample. Starting from the universe of unlisted corporations with at least one 1 percent owner ($\approx$ 3.9 million firm-years), we require a single majority owner ($>$ 50% equity), that the owner be observed in 2010/2011, that the owner be aged $\geq$ 40 at 2011, positive labour costs (excluding holding companies), and drop the financial sector (NACE 64–66). The age restriction ensures that childlessness in the control group reflects a permanent state rather than delayed fertility: in our data, 90 percent of owners who will ever have children have done so by age 40. The resulting analysis sample contains 632,327 firm-year observations. Table 3 summarises our sample restrictions. Figures 2 and 3 describe the ownership structure that motivates our focus on a single majority owner. Figure 2 plots the number of owners per firm: single- and two-owner firms together account for roughly 70 percent of corporations and over half of aggregate sales, so closely held ownership is the norm rather than a small-firm phenomenon. Figure 3 turns to the size of ownership stakes. The firm-level distribution of the largest owner's share (red) has pronounced mass points at 100 percent - sole ownership - and at 50 percent, the focal split for two equal partners, while the owner-level distribution of all individual stakes (grey) adds a long tail of small minority holdings. Because the largest owner so frequently holds an outright or near-outright majority, requiring a single majority owner retains the bulk of economically meaningful firms while keeping the firm-to-owner linkage unambiguous.

Table 3: Sample Restrictions

Restriction	**Firm-year observations**
Norwegian corporations with at least one 1% owner	3,884,575
Require single majority owner (>50% equity)	2,460,669
Treatment assignable (owner observed 2010/2011)	1,433,065
Owner age $\geq$ 40 at baseline	1,224,577
Positive labour costs (no holding companies)	636,242
Drop financial sector (NACE 64–66)	632,327
Analysis sample	**632,327**

Variable Definitions. Our main variables of interest at the firm level are total assets (*eiendeler*), which are the book value of all assets held by the firm; fixed assets (*anleggsmidler*), which are assets intended for long-term ownership or use in the business rather than for sale or short-term conversion into cash; tangible fixed assets (*varige driftsmidler*), which are a subset of fixed assets and include physical operating assets such as machinery, equipment, vehicles, buildings, and land; current assets (*omløpsmidler*), which are assets intended for short-term use, sale, or conversion into cash, including cash, receivables, inventories, and other liquid assets; operating profit (*driftsresultat*), which is earnings from ordinary business operations before financial income, financial expenses, and taxes; and

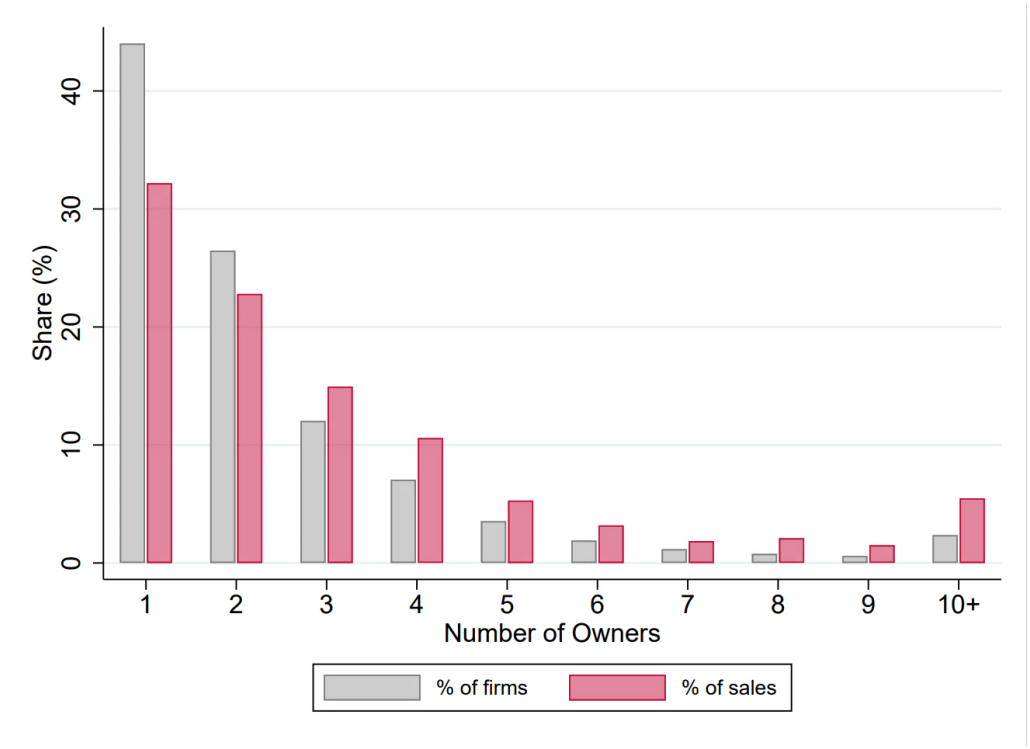


Figure 2: Distribution of the number of owners across Norwegian unlisted corporations. Grey bars show the share of firms; red bars show the share of aggregate sales.

labour costs (*lønnskostnader*), which are total wage and employment-related expenses reported in the firm's accounts.

Our main variables of interest at the individual level are debt (*gjeld*), which is total personal liabilities held at the individual level; gross wealth (*bruttoformue*), which is the total tax-assessed value of an individual's assets before deducting debt; net wealth (*nettoformue*), which is gross wealth minus debt; and ownership share, which is the majority owner's equity stake in the firm measured in the shareholder registry.

Descriptive Statistics. Table 4 presents baseline characteristics at 2011 for treated and control. The treated group ($D_i = 1$, owner has children) comprises 43,594 firms; the control group ($D_i = 0$) comprises 4,151 firms. The two groups are broadly comparable in firm observables and owner characteristics. The treated are of similar age and have similar ownership shares to the control group. Labour costs are somewhat higher among the treated group, which is mainly driven by larger firms. Individual wealth levels are higher among the control group than the treated group.

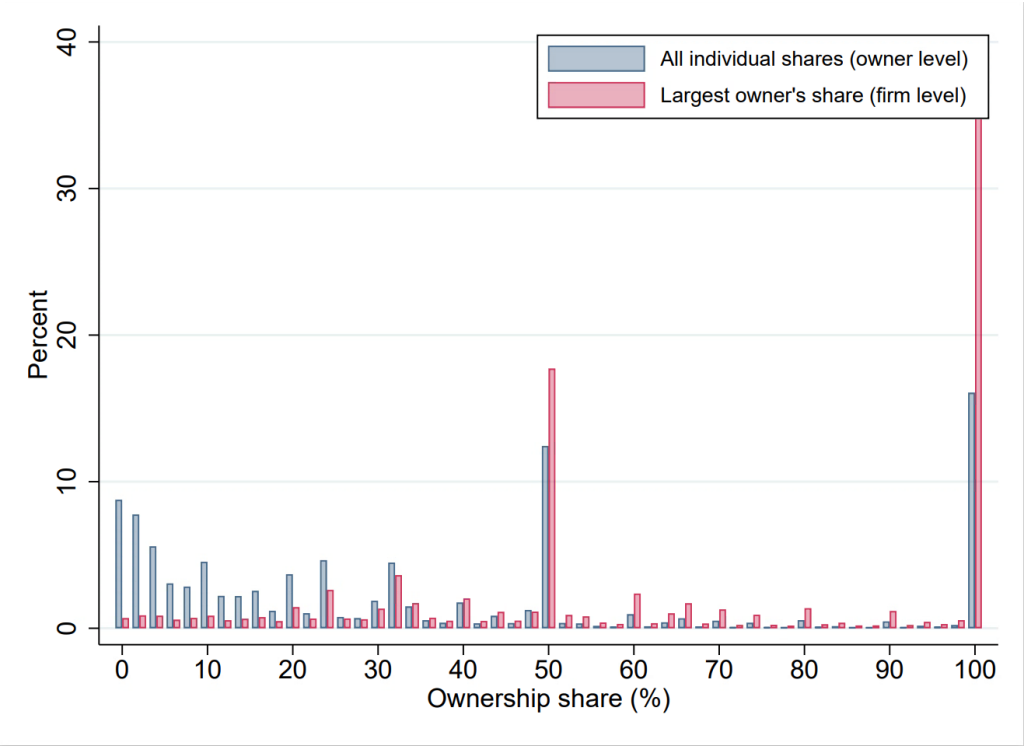


Figure 3: Distribution of ownership stakes in Norwegian unlisted corporations. Grey bars show the share of all individual ownership stakes (owner level); red bars show the share of the largest owner's stake in each firm (firm level). Both distributions concentrate at 50 and 100 percent, the focal points for equal partnerships and sole ownership.

4 Empirical Strategy

4.1 Treatment and Identification

Our identification exploits a simple insight: the inheritance tax binds most strongly when the firm's majority owner has heirs to whom wealth would be transferred. We define treatment as $D_i = 1$ if the owner has children, fixed at 2011 values. Childless owners constitute a plausible low-exposure control: spousal transfers were fully exempt, childless owners have no forced heirs under Norwegian succession law, and the anticipatory precautionary distortion requires a salient bequest motive. Any residual tax exposure among childless owners attenuates our estimates toward zero.

The identifying assumption is that firms owned by parents and non-parents would have followed parallel investment paths absent the abolition. Treatment is determined well before the reform and fixed at 2011 for owners aged ≥ 40, a group for whom fertility decisions are largely complete. The abolition was a federal policy shock, orthogonal to individual fertility. Age-by-year and industry-by-year fixed effects absorb lifecycle and sectoral confounders, and pre-period coefficients are flat across our main outcomes. We are not aware of any concurrent policy differentially targeting parents.

Table 4: Balance Table: Treated vs. Control Groups at Baseline (2011)

	Control ($N = 4{,}151$)				Treated ($N = 43{,}594$)			
	Mean	p25	p50	p75	Mean	p25	p50	p75
Owner characteristics								
Age	52.4	45	51	58	53.9	47	53	60
Ownership share (%)	91.9	91	100	100	89.7	80	100	100
Firm characteristics (1000 NOK)								
Total assets	10,950	645	1,686	4,120	9,652	877	2,247	5,879
Fixed assets	5,885	28	234	1,040	5,049	57	350	1,666
Labour costs	1,516	262	657	1,521	2,145	325	871	2,139
Operating profit	500	−48	100	449	550	−34	155	622
Owner wealth (1000 NOK)								
Gross wealth	14,898	1,085	2,374	5,333	9,588	1,259	2,651	6,069
Net wealth	12,328	−278	989	3,845	7,045	−421	1,085	4,079
Equity wealth	9,793	97	530	2,180	5,686	109	685	2,645

Notes: 1 NOK from 2011 ≈ 0.11 GBP from 2025.

4.2 Owner-Level Event Study

We begin at the level of the owner. Because owners of private firms cannot separate their personal tax position from the firm's balance sheet, the abolition should leave a footprint on owners' own wealth and portfolios. We trace this with an event study estimated at the level of the majority owner:

$$w_{jt} = \alpha_j + \gamma_t + \delta_{s(j)t} + \sum_{\substack{k=2006 \\ k\neq 2011}}^{2022} \beta_k \, D_j \cdot \mathbf{1}[t = k] + g(\mathbf{X}_j, t) + \varepsilon_{jt}, \tag{1}$$

where j indexes majority owners; w_{jt} is an owner wealth or portfolio outcome; and α_j, γ_t, and $\delta_{s(j)t}$ are owner, year, and industry-by-year fixed effects, the last defined by the owner's primary firm. Treatment is $D_j = 1$ if the owner has children, fixed at 2011, and $g(\mathbf{X}_j, t)$ contains pre-determined owner age × year interactions. The coefficients β_k trace the treatment effect relative to the omitted reference year 2011: the pre-period $\{2006, \ldots, 2011\}$ tests parallel trends, $\{2012, 2013\}$ captures anticipation, and $\{2014, \ldots, 2022\}$ captures the abolition. The panel is collapsed to unique owner × year observations, so that owners holding majority stakes in more than one firm enter once. Outcomes include gross wealth, total liabilities, the equity share and the liquid-asset share of the owner's portfolio, and dividends received from the firm. Standard errors are clustered at the owner level. For compactness, several owner-level results are reported in a pooled form of Equation (1) that collapses the post-2011 indicators into an anticipation term (2012–13) and a post-abolition term (≥ 2014), analogous to Equation (3) below.

4.3 Firm-Level Event Study

Our main investment results come from a firm-level event study with the same event-time structure as Equation (1), estimated at the level of the firm:

$$y_{it} = \alpha_i + \gamma_t + \delta_{s(i)t} + \sum_{\substack{k=2006 \\ k \neq 2011}}^{2022} \beta_k \, D_i \cdot \mathbf{1}[t = k] + f(\mathbf{X}_i, t) + \varepsilon_{it} \tag{2}$$

where y_{it} is a firm outcome; α_i, γ_t, and $\delta_{s(i)t}$ are firm, year, and industry-by-year fixed effects; $D_i = 1$ if the majority owner has children (fixed at 2011); and β_k traces the treatment effect relative to the omitted reference year 2011. The function $f(\mathbf{X}_i, t)$ includes pre-determined owner age $\times$ year and ownership share $\times$ year interactions. Standard errors are clustered at the firm level. As in the owner-level design, the pre-period $\{2006, \ldots, 2011\}$ tests parallel trends, $\{2012, 2013\}$ captures anticipation, and $\{2014, \ldots, 2022\}$ captures the abolition.

4.4 Heterogeneity Specification

To test which firms and owners drive the investment response, we estimate subgroup-specific treatment effects:

$$y_{it} = \alpha_i + \gamma_t + \delta_{s(i)t} + \beta_1^g \cdot \mathit{Antic}_t + \beta_2^g \cdot \mathit{Post}_t + f(\mathbf{X}_i, t) + \varepsilon_{it} \qquad \text{for } i \in g \tag{3}$$

where g indexes mutually exclusive subgroups of treated firms defined by pre-determined characteristics (e.g., terciles of firm size, capital intensity, owner liquidity, firm age, or return on assets); Antic_t is an indicator for the anticipation period (2012–2013) and Post_t for the post-abolition period (≥ 2014). The control group ($D_i = 0$) is the omitted reference. β_2^g gives the post-abolition effect for subgroup g; pre-trends are tested in the pooled sample.

5 Results

5.1 Owner-Level Responses

We begin with the owners themselves. These owner-level responses are not the misallocation margins that are the focus of the paper; they establish that the inheritance tax materially shaped the joint owner–firm balance sheet, and set the stage for the within- and across-firm distortions analysed below. Table 5 reports pooled pre- and post-abolition effects from the owner-level specification in Equation (1).

Treated owners - those with children - accumulate more gross wealth after abolition, around 2.5 percent relative to controls. Because the tax fell specifically on transfers

Table 5: Owner-level pre/post effects

	log(Wealth)	log(Debt)	Equity	log(Dividends)
Pre (2006–10)	0.011	-0.011	-0.006	-0.037
	(0.010)	(0.028)	(0.004)	(0.059)
Post (≥2014)	0.025**	0.091**	0.015***	0.180***
	(0.013)	(0.036)	(0.005)	(0.069)
Observations	506,403	452,772	506,347	230,400

Treatment: owner has children, fixed at 2011. Reference period: 2011
Equity as share of gross wealth. Wealth refers to gross wealth.
Owner and year fixed effects; owner age-by-year controls.
Standard errors clustered at the owner level.
$*p < 0.10, **p < 0.05, ***p < 0.01$

to heirs, its removal raised the after-tax return to dynastic saving and let owners with children rebuild the wealth that the prospect of the levy had previously discouraged. They simultaneously take on more debt, around 9 percent, and raise the equity share of their personal portfolios by roughly 1.5 percentage points. Both movements point the same way: with the anticipated succession liability gone, owners no longer needed to hold their wealth in liquid, unlevered form as a precautionary buffer, and could instead lever up and tilt their portfolios toward illiquid firm equity. Finally, dividends received from their firms rise substantially and persistently, by around 18 percent. The persistence is informative, as a durable increase is consistent with the abolition lastingly improving the returns owners draw from their firms.

The pre-abolition coefficients are small and statistically insignificant throughout, consistent with parallel trends at the owner level. Together these results confirm that the inheritance tax had a first-order effect on owner wealth, leverage, and payouts - the household-side counterpart to the firm-level reallocation we turn to next.

5.2 Within-Firm Investment and the Joint Owner–Firm Portfolio

Our central firm-level result concerns a within-firm precautionary liquidity distortion, which we read as one side of a reallocation in the *joint* owner–firm portfolio. Figure 4 presents the event-study coefficients from Equation (2) with log fixed assets as the dependent variable. The pre-reform coefficients are flat and close to zero throughout 2006–2011, supporting the parallel-trends assumption. Beginning in 2014 the coefficients diverge sharply: treated firms accumulate substantially more fixed capital than controls, with the effect building over the post-period and reaching roughly 10–15 percent by the late 2010s. The pattern is consistent with the removal of a binding precautionary liquidity

constraint - once the anticipated succession liability was eliminated, owners redirected firm resources from liquid holdings toward long-horizon productive investment.



Figure 4: Event study: Log(Fixed Assets). The figure plots $\hat{\beta}_k$ coefficients from Equation (2) with log fixed assets as the dependent variable. The reference year is 2011 (dotted vertical line). The dashed vertical line marks the abolition date (January 2014). Shaded areas denote 95 percent confidence intervals based on firm-clustered standard errors.

The same pattern holds, if anything more sharply, for the narrower category of tangible productive fixed assets - machinery, equipment, vehicles, and buildings - which most directly capture operating capacity (Figure 5). Pre-trends are again flat, and treated firms diverge upward after 2014, reaching an increase of around 15 percent. That the effect is at least as large for tangible productive capital as for fixed assets as a whole indicates that the released resources flowed into genuine productive capacity rather than into financial or other balance-sheet items.

The owner side of the joint portfolio moves in mirror image. Figure 6 plots the owner-level event study (Equation (1)) for the liquid-asset share of the owner's personal wealth. After 2014 it declines persistently, by around two percentage points - the counterpart to the rise in the owner's equity share documented in Section 5.1. Treating the owner and the firm as a single balance sheet, the abolition triggers a reallocation away from low-return liquidity and toward productive capital on *both* sides: more fixed capital inside the firm, and less liquid wealth (more firm equity) in the owner's personal portfolio. The firm did not simply grow; the owner–firm unit rebalanced away from the precautionary liquidity that the anticipated tax had made prudent.



Figure 5: Event study: Log(Tangible Productive Fixed Assets). The figure plots $\hat{\beta}_k$ coefficients from Equation (2) with log tangible productive fixed assets as the dependent variable. The reference year is 2011 (dotted vertical line). The dashed vertical line marks the abolition date (January 2014). Shaded areas denote 95 percent confidence intervals based on firm-clustered standard errors.

The precautionary interpretation makes a sharp prediction about heterogeneity by owner liquidity. If the mechanism operates through the anticipated cash obligation at succession, then owners who already held ample liquid assets outside the firm had no need to distort the firm's balance sheet toward cash, and should show little differential response; owners with low personal liquidity were most constrained by the precautionary motive and should respond most. Figure 7 plots post-abolition coefficients from Equation (3) for treated firms stratified into terciles by pre-reform owner liquidity. The results confirm the prediction in its essential form: owners in the lower two liquidity terciles show clear positive investment effects after the abolition, whereas the response of high-liquidity owners is economically small and statistically indistinguishable from zero. The investment response is thus concentrated among precisely the owners for whom the firm's balance sheet was the binding source of succession liquidity. This pattern is difficult to reconcile with alternatives such as general optimism among parents or differential macroeconomic exposure, and it supports the precautionary liquidity channel as the operative mechanism.

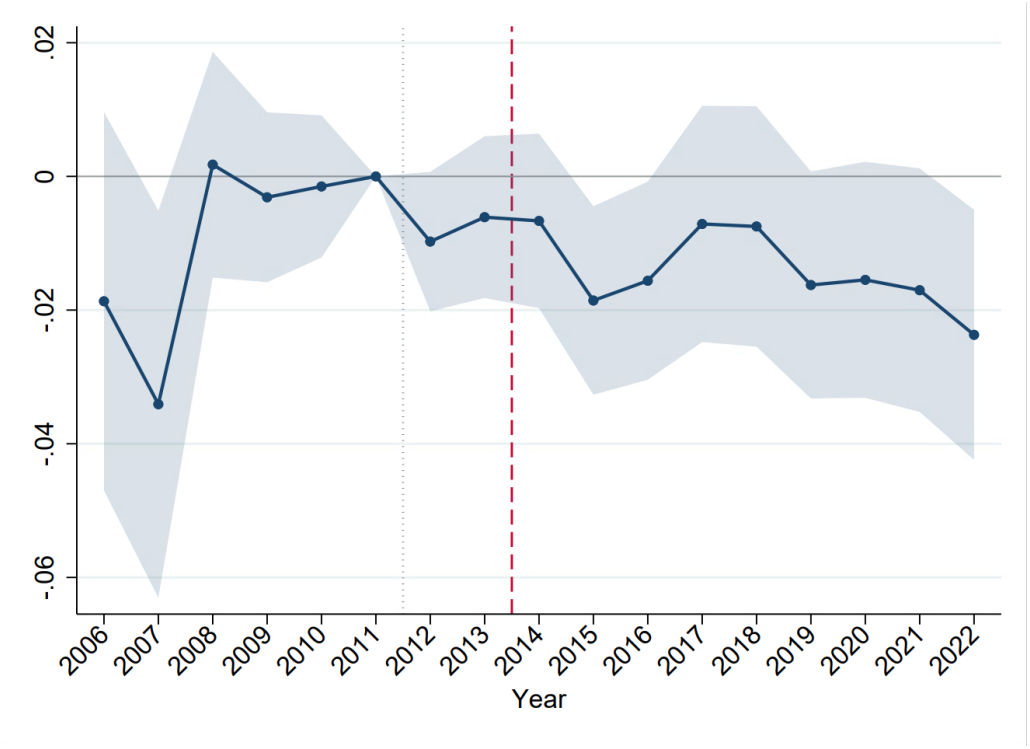


Figure 6: Event study: owner liquid-asset share. The figure plots $\hat{\beta}_k$ coefficients from the owner-level specification in Equation (1) with the share of liquid assets in the owner's personal portfolio as the dependent variable. The reference year is 2011 (dotted vertical line). The dashed vertical line marks the abolition date (January 2014). Shaded areas denote 95 percent confidence intervals based on owner-clustered standard errors.

5.3 Cross-Firm Misallocation

The positive investment effects do not arise uniformly across treated firms. They concentrate in the firms the tax penalised most heavily and, ultimately, show up as a reallocation of capital toward the most productive firms - the dispersion in marginal revenue products of capital emphasised by Hsieh and Klenow (2009).

Firm size. Figure 8 stratifies treated firms by pre-reform size (total assets). The investment response is driven entirely by large firms; small treated firms show an effect close to zero. This tracks the structure of the tax: the 40 percent valuation discount applied only to the first NOK 10 million of assessed value, and value above that threshold entered the tax base in full, so the effective inheritance-tax rate rose with firm size. Larger firms therefore stood to gain most from abolition and responded with the strongest investment increases.

Asset tangibility. Figure 9 stratifies treated firms by capital intensity. The response concentrates in capital-intensive firms, while low-intensity firms show a weak or slightly negative response. The valuation structure of the tax again supplies the mechanism: tan-

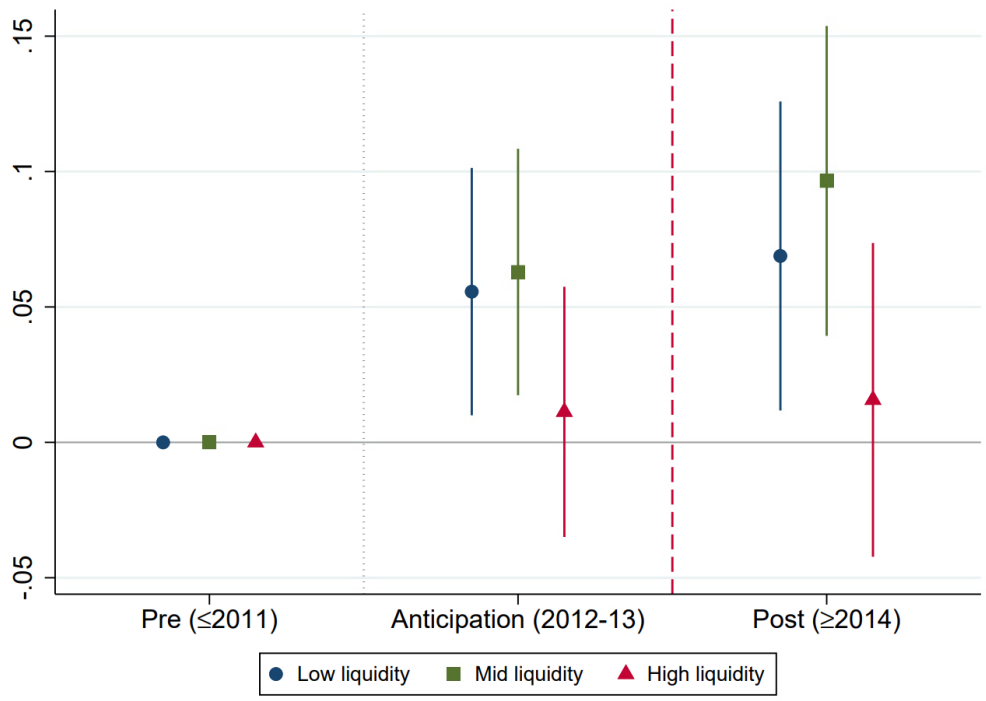


Figure 7: Firm investment event study - by owner personal liquidity. The figure plots coefficients from Equation (3) for treated firms stratified into terciles by pre-reform owner personal liquidity (the share of liquid assets in the owner's portfolio). Circles: low liquidity; squares: mid liquidity; triangles: high liquidity. Error bars denote 95 percent confidence intervals. The dashed vertical line marks the abolition date.

gible fixed assets were assessed close to market value, whereas self-developed intangibles carried zero tax value, so a firm of given market worth whose value resided in tangible assets faced a higher taxable value, a higher effective burden, and a larger distortion than an otherwise-identical intangible-intensive firm.

A direct balance-sheet measure of tangibility is unreliable in this setting. Under Norwegian accounting rules, self-developed intangibles are expensed rather than capitalised and never enter the balance sheet, so a ratio of tangible fixed assets to reported total assets would misclassify intangible-intensive firms, whose intangible capital is simply absent from the accounts. We therefore proxy capital intensity by workforce composition - the share of the firm's wage bill paid to workers in capital-operating, "CAPX-compatible" occupations, which we define as the construction and installation craft trades that carry out capital-expenditure work. Firms whose labour is concentrated in capital-operating roles run tangible-intensive operations and bore the heavier tax burden; firms whose labour is concentrated in knowledge and service roles embody their value in untaxed, off-balance-sheet intangibles.

Firm age. Firm age is a standard proxy for financial constraints: younger firms have shorter track records, less collateral, and more limited access to external finance. Fig-

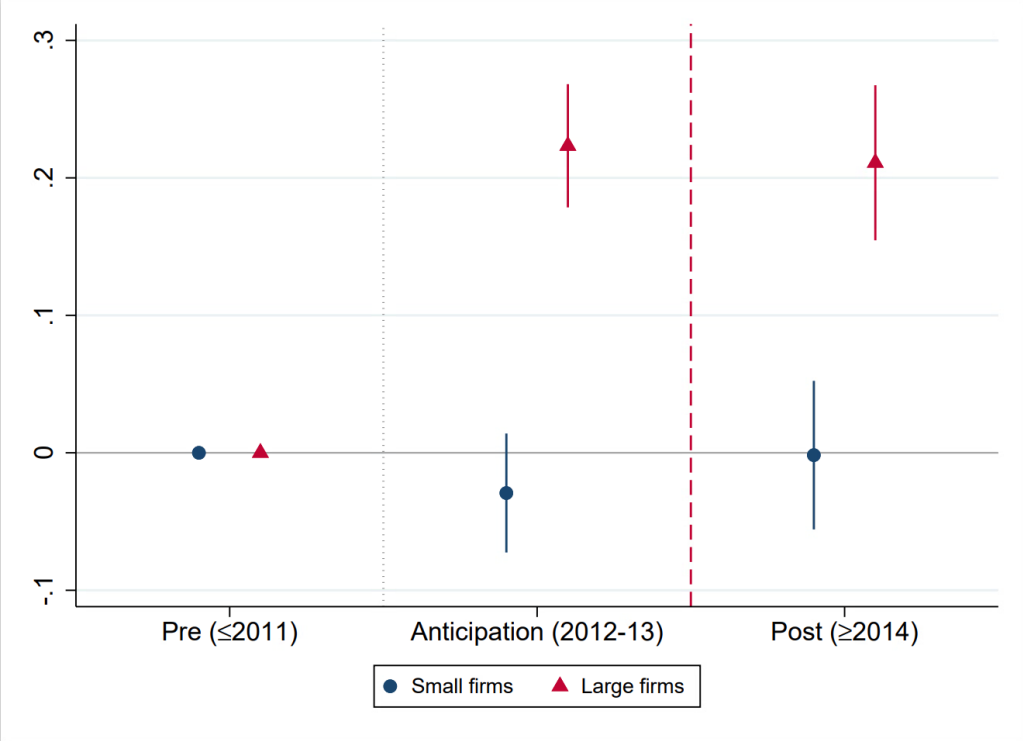


Figure 8: Firm investment event study - by firm size. The figure plots coefficients from Equation (3) for treated firms stratified by pre-reform firm size (total assets). Circles: small firms; triangles: large firms. Error bars denote 95 percent confidence intervals. The dashed vertical line marks the abolition date.

ure 10 stratifies treated firms into age terciles - youngest ($\leq$ 5 years at 2011), middle (6–14 years), and oldest ($\geq$ 15 years). The post-abolition response is monotonic in youth: largest for the youngest firms, at around 19 percent, smaller for the middle group, and smallest for the oldest. This is what the precautionary mechanism predicts once it interacts with financial constraints. When the owner diverts internal funds toward precautionary liquidity, a financially unconstrained (older) firm can partly offset the diversion by raising external finance, so the distortion bites little; a constrained (younger) firm cannot, so it under-invested more while the tax was in force and had correspondingly more room to expand once the tax was removed. Firm age thus marks out another cross-firm dimension along which the tax generated dispersion in investment.

Firm profitability. The preceding cuts identify which firms were most distorted; the split by return on assets shows where capital ultimately went. Figure 11 stratifies treated firms by pre-reform return on assets, a proxy for the marginal return to capital. The contrast is stark: high-ROA firms raise fixed assets by around 18 percent after the abolition, while low-ROA firms show a *significantly negative* response of around -7 percent. The reform does not merely raise investment in high-return firms; it is associated with an outright contraction in low-return ones. This is the signature of reallocation. A tax

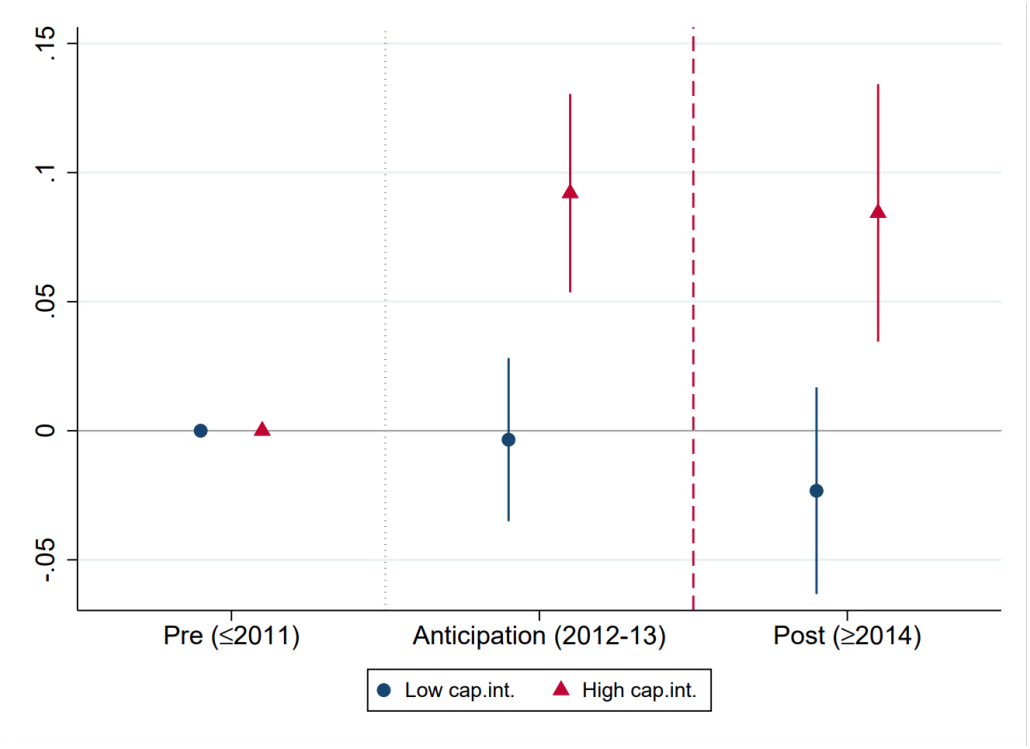


Figure 9: Firm investment event study - by capital intensity. The figure plots coefficients from Equation (3) for treated firms stratified by pre-reform capital intensity, proxied by the share of the firm's wage bill paid to workers in capital-operating ("CAPX-compatible") occupations (see text). Circles: low capital intensity; triangles: high capital intensity. Error bars denote 95 percent confidence intervals. The dashed vertical line marks the abolition date.

whose burden was uncorrelated with productivity had propped up capital in low-return firms and starved high-return ones; its removal let capital flow toward its most productive uses, compressing the dispersion in marginal returns the tax had helped sustain. This across-firm reallocation is the counterpart to the within-firm result of Section 5.2: together they describe a tax that both lowered the level of productive investment and steered it toward the wrong firms.

6 Discussion

6.1 The Joint Owner-Firm Portfolio as Transmission Mechanism

The results point to a general mechanism by which a tax levied on households distorts firm-level outcomes. Because owners of private firms face credit-market frictions and hold their wealth in illiquid shares, they cannot separate their personal tax position from the firm's balance sheet, so the relevant economic unit is the joint owner-firm portfolio rather than the firm in isolation. The inheritance tax attached a contingent cash obligation

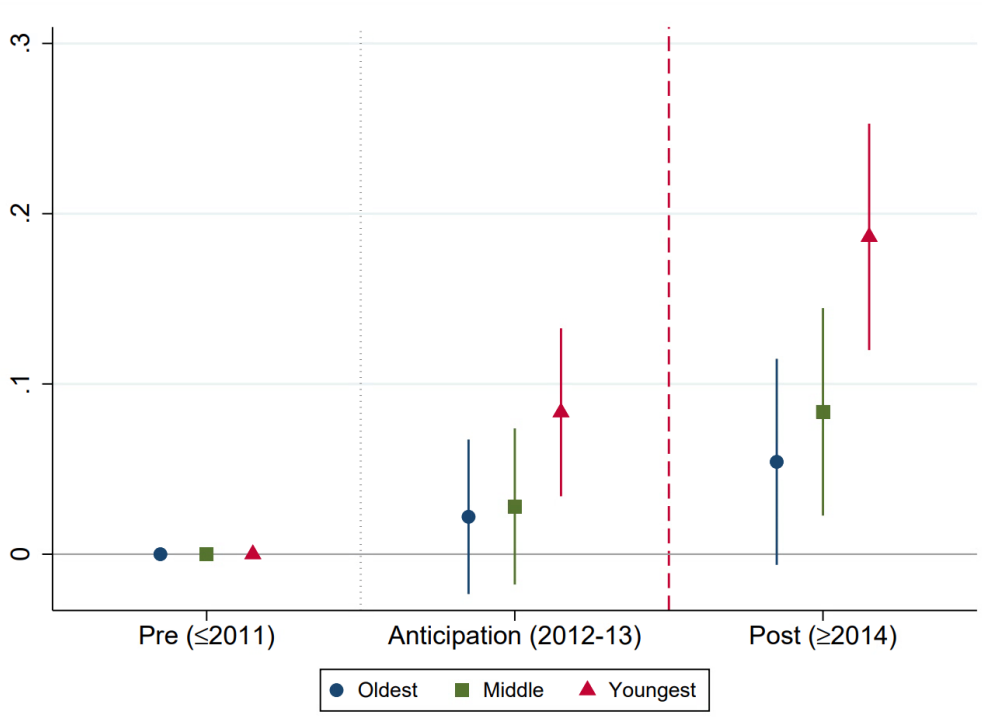


Figure 10: Firm investment event study - by firm age. The figure plots coefficients from Equation (3) for treated firms stratified into terciles by firm age at baseline (2011). Circles: oldest ($\geq$ 15 years); squares: middle (6–14 years); triangles: youngest ($\leq$ 5 years). Error bars denote 95 percent confidence intervals. The dashed vertical line marks the abolition date.

to this portfolio, tied to the owner's demographic circumstances - whether there were children to whom firm wealth would eventually pass. Owners internalised the obligation on both sides of the portfolio at once, holding more liquid wealth personally and steering the firm's balance sheet toward liquid, low-return assets. The abolition unwound both, and the symmetry of the response - the owner's liquid share falling as the firm's productive capital rises - is direct evidence that the two balance sheets were managed as one.

The distortion lies in the anticipation of the tax rather than in its payment. Because the tax shaped investment in the years before any transfer occurred, its effective incidence extended far beyond its statutory base: it fell on firm capital accumulation and on its allocation across the private-firm sector, not merely on the transfers it nominally taxed.

6.2 Efficiency Costs

The tax imposed efficiency costs through two reinforcing channels. First, it lowered the level of productive investment: owners diverted firm resources into precautionary liquidity, so treated firms held less physical capital than they otherwise would have. Second, it misallocated capital across firms. Because the effective burden rose with firm size and asset tangibility but bore no relation to productivity, the tax fell heavily on firms

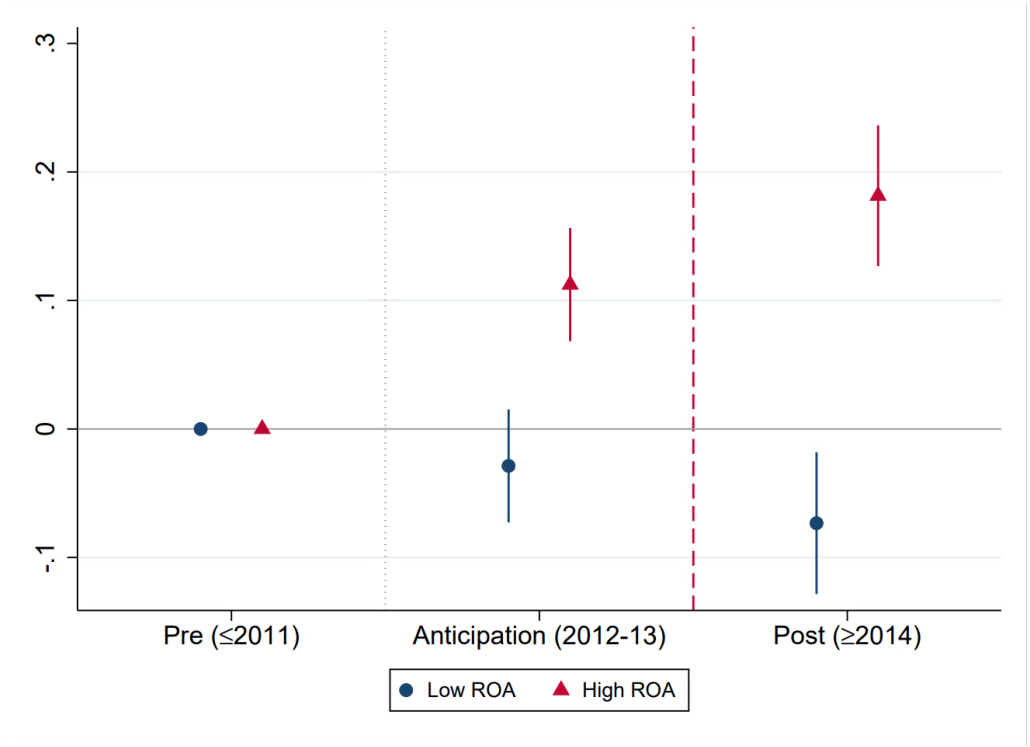


Figure 11: Firm investment event study - by return on assets. The figure plots coefficients from Equation (3) for treated firms stratified by pre-reform return on assets. Circles: low ROA; triangles: high ROA. Error bars denote 95 percent confidence intervals. The dashed vertical line marks the abolition date.

that were not systematically the least productive - and our split by return on assets shows the consequence directly: capital was held up in low-return firms and starved from high-return ones, so abolition compressed the dispersion in marginal returns. This across-firm reallocation, and not only the lower level of investment, is what links the tax to aggregate productivity in the spirit of Hsieh and Klenow (2009). Together the two channels suggest the tax made the private-firm sector less dynamic, dampening exactly the long-horizon, high-return investment that drives productivity growth in a small open economy.

6.3 Implications for Tax Policy

Inheritance-tax debates across Europe - including live discussions in Germany, Austria, and the United Kingdom - have largely turned on the household side of the redistribution-efficiency trade-off: the equity gains from reducing wealth concentration set against the disincentive to accumulate wealth. Our findings point to a dimension that is largely missing from this framing. The costs we document arise not from any disincentive to save per se, but from the interaction of a tax on illiquid wealth with capital-market frictions that prevent owners from separating their tax position from the firm; they would be absent if private-firm equity were liquid or external finance frictionless. Because these costs fall on firm investment and on the allocation of capital across the economy, they

are borne well beyond the taxed households and are understated by analyses that look only at the household balance sheet.

The same logic extends to other taxes levied on assessed wealth in the absence of a liquid income stream. The wealth tax is the clearest parallel: like the inheritance tax, it is assessed on illiquid asset values rather than realised income and creates a liquidity need for holders of private-firm wealth. Our parent-based design isolates the inheritance-tax channel, but the mechanism it uncovers - taxation without liquidity distorting how capital is held and allocated - is more general.

7 Conclusion

This paper exploits Norway's 2014 abolition of the inheritance tax to study how inheritance taxation distorts firm-level capital allocation. Using whether the majority owner has children as a shifter of inheritance-tax exposure, we first show that the abolition materially loosened owners' own balance sheets - treated owners accumulate more wealth, borrow more, and draw persistently higher dividends - and then document two margins of misallocation in the firms they control.

Within firms, the tax induced a precautionary liquidity distortion: owners anticipating a succession-related cash obligation tilted the joint owner-firm portfolio toward liquid assets, crowding out productive investment. After abolition, treated firms accumulate persistently more fixed and tangible productive capital while owners draw down the liquid share of their personal wealth, and the response concentrates among owners with low personal liquidity - precisely those for whom the firm was the binding source of succession cash. Across firms, the tax penalised firms unevenly, with the effective burden rising with firm size and asset tangibility and biting hardest on younger, more financially constrained firms. The allocative consequence is clearest in the split by profitability: after abolition, high-return firms expand while low-return firms contract, so capital flows toward its most productive uses and the dispersion in returns that the tax had sustained narrows.

Taken together, these results show that the reach of inheritance taxation extends well beyond the wealth transfers it formally taxes: it shaped how an entire sector of closely held firms invested and allocated capital. Alongside the equity arguments and individual-level efficiency concerns that dominate inheritance-tax debates Piketty and Saez, 2013, these firm-level allocative costs merit consideration in current policy discussions.

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