Inheritance Taxation and Capital Misallocation*

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Preliminary draft

Abstract

Inheritance taxation creates a liquidity obligation when wealth is transferred to the next generation. At the same time, entrepreneurial wealth takes the form of illiquid shares in private firms. We study how this liquidity mismatch distorts capital allocation using Norway's 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 differences in exposure to the inheritance tax in a difference-in-differences design. Exposure varies with whether firm owners had a son or a daughter as their first-born child, shifting the probability of within-family succession. We document two margins of distortion. First, the tax induced a within-firm precautionary liquidity distortion: owners anticipating succession-related tax obligations tilted their portfolios toward liquid assets, crowding out productive investment, particularly for financially constrained firms. Second, across firms, the tax fell disproportionately on larger and less tangible-asset-intensive firms, which faced tighter financial frictions. The post-abolition expansion is concentrated among high-return firms, consistent with the tax also having distorted the allocation of capital across firms.

Keywords: inheritance taxation, investment distortions, misallocation, private firms

JEL: D24, G31, H25, L26

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1 Introduction

Can inheritance taxation create capital misallocation? While inheritance taxes are levied on individuals, the majority of wealth held by private-firm owners is illiquid and locked inside the firm in the form of unlisted equity, fixed assets, and retained earnings. In the United States, for instance, private business wealth is the largest component of wealth at the top of the distribution (Smith et al., 2023), and most of it belongs to active owner-managers, whose income is inseparable from the firm they run (Smith et al., 2019). When capital markets are imperfect, this illiquidity creates a financial spillover from the household to the firm. Thus, policies that create cash obligations for the owner propagate into the balance sheets of closely held businesses.

This paper studies how inheritance taxation distorts the firm-level capital allocation using Norway's complete abolition of its inheritance and gift tax on 1 January 2014.[1] 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 builds on Bennedsen et al. (2007) and exploits whether the firm's majority owner had a first-born son or daughter as a shifter of within-family succession, and thereby inheritance tax exposure of the firm. Together with comparing firm owners with first-born sons and daughters, we exploit the tax abolition in a difference-in-differences design. The identifying assumption is that the two groups would have followed similar trends absent the tax abolition. For the tax reform to explain differential trends after the abolition, we require that the inheritance tax payment is a larger concern when the owner is more likely to keep the firm in the family. Since private firms have no public equity and lack a liquid markets for shares, the owner's personal tax position and the firm's internal liquidity are not separable, resulting in firm-level adjustments to owner-level liquidity needs.

Empirical evidence, including what we present in this paper, supports the use of the gender of the first-born child as a shifter of the propensity for within-family succession and, consequently, exposure to inheritance-tax-related liquidity needs at the firm level. This builds on Bennedsen et al. (2007), who exploit first-born gender as an instrument for family succession, and Tsoutsoura (2015), who uses this instrument alongside a tax reform to identify the effects of succession taxes. Unlike Bennedsen et al. (2007), we do not require first-born gender to affect firm outcomes only through family succession: our identifying assumption is that outcomes for firms whose owners have first-born sons and daughters would have followed parallel trends in the absence of the tax abolition. This allows for level differences between the two groups and reflects that our research question is about the differential effect of tax abolition rather than the effect of family succession

[1] We denote the tax on both inheritances and gift as the inheritance tax.

itself.[2]

Our approach also does not require firm owners with first-born daughters to be less concerned about the inheritance they leave to their children.[3] Rather, the mechanism relies on liquidity needs associated with inheritance and gift taxes being more relevant for firm decisions when within-family succession is more likely. Transferring the firm within the family requires financing the tax payment while retaining ownership, whereas selling the firm generates liquid funds. Among Norwegian closely held firms whose majority owner exits during our sample period, and where the owner has both a son and a daughter, the son takes majority control in 15.8 percent of cases, compared with 3.8 percent for the daughter. For the same reasons as Bennedsen et al. (2007), we exploit the gender of the first-born child, as it is plausibly randomly assigned and predicts within-family succession. Among these exits, the probability that a child owns more than 50 percent of the firm after the owner leaves is 18.3 percent when the first-born child is a son, compared with 13.6 percent when the first-born is a daughter (Section 5).

Using this identification approach, we document two margins of misallocation. We first establish that the abolition affected owners' own balance sheets: treated owners accumulate less liquid wealth after 2014, confirming that the inheritance tax had constrained owners who are more concerned about succession. The first misallocation margin operates *within* firms. Owners anticipating a tax-induced liquidity shock at succession tilted the joint owner–firm portfolio away from productive assets, consistently with the existence of a distortion from a 'dynastic precautionary liquidity motive'.[4] Post-abolition, treated firms accumulate on average around 7 percent more tangible fixed capital than controls, with the gap reaching 10–15 percent by the late 2010s, while 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.

The second margin operates *across* firms. The effective tax burden varied with firm and owner characteristics, generating dispersion in the marginal revenue product of cap-

[2]For example, Ronchi and Smith (2026) show that having a daughter affects managers' employment decisions. Such effects do not invalidate our design provided that, absent the tax abolition, they would not have generated differential trends in outcomes between firms whose owners have first-born sons and daughters around 2014.

[3]Kopczuk (2013) argues that bequests may reflect a mixture of altruism, joy of giving, exchange motives, precautionary saving, and preferences for holding wealth. Recent evidence supports an intentional component to intergenerational transfers: Kvaerner (2023) finds that adverse life-expectancy news increases transfers to children, particularly among wealthier parents, while Sturrock et al. (2025) document substantial, tax-responsive gifts in anticipation of death. However, Fella et al. (2024) estimate similarly strong preferences for residual wealth among Norwegian retirees with and without children, suggesting that wealth retention reflects more than altruism towards descendants. Our identification does not rely on one particular underlying bequest motive.

[4]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.

ital of the kind studied by Hsieh and Klenow (2009). The burden rose with firm size, as larger firms exceeded the cap on the valuation discount in the inheritance tax, and as a result faced higher effective tax rates. Consistent with this, the investment response concentrates among larger firms, and among younger and less tangible-asset-intensive firms, which face tighter financial constraints. We then provide suggestive evidence that these wedges distorted the allocation of capital across firms, since the post-abolition expansion is concentrated among high-return firms, while low-return firms do not respond. This pattern is consistent with the tax having held back capital where its marginal return was highest. Given that return on equity is an imperfect proxy for the marginal product of capital, and that we do not observe capital moving out of low-return firms, we read this evidence as indicative of misallocation, rather than as a quantification of its aggregate cost.

This paper contributes to four main strands of the literature. First, 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.[5] While Tsoutsoura (2015) studies the distortion *at the moment of transfer* between generations, finding large effects on investment of a tax reduction for intrafamily business transfers in Greece, our focus is on the precautionary distortion when *planning* for succession. By not conditioning on the firm being transferred to a family member, we avoid the endogeneity problem that owners and their family self-select into family succession. Also related is Andric et al. (2026), who study a similar Swedish setting using whether the owner has children as a treatment indicator. Our design relies on a variation that is harder to manipulate than whether to have children or not. In addition, 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.

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). Tax policy interacts with these constraints: Zwick and Mahon (2017) show that investment responses to bonus

[5]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.

depreciation concentrate among small, cash-poor firms and are strongest when the incentive generates immediate cash flows, pointing to internal liquidity as the margin through which taxes move investment. We show that the same margin transmits a tax levied on the owner rather than on the firm: the anticipation of a future tax liability at succession 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 (Pérez-González, 2006; Villalonga and Amit, 2006; Bennedsen et al., 2007).

Third, 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. The public finance literature on business taxation, in turn, stresses that the real effects of tax changes depend on heterogeneity across firms (Chodorow-Reich et al., 2025) and across the households that ultimately bear them (Zidar, 2019), and that firm owners carry a substantial share of the incidence of corporate taxes (Suárez Serrato and Zidar, 2016). We connect the two, showing that when ownership is concentrated and firm equity is illiquid, a policy formally levied on households generates firm-level wedges. Inheritance taxation creates heterogeneous wedges across firms because the liquidity cost of meeting the tax liability depends on owner wealth and liquidity, the likelihood of family succession, the tax valuation of different asset classes, and firm size.[6] 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.

Finally, we connect to and build on the literature on intergenerational transfers, household finance and family firms using Norwegian data (Bø et al., 2019; Fagereng et al., 2019; Fagereng et al., 2021; Ring, 2025; Berzins et al., 2026), 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 sets out our theoretical prediction. Section 4 describes the data. Section 5

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

presents the identification approach. Section 6 presents the main results, and section 7 discusses them further. Section 8 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.[7] 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 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 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. Tangible fixed assets were assessed closer to market value than self-developed intangibles. 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

[7] See NOU 2000: 8 (2000) for more on the historical background.

than immediately.[8] 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, while our results imply that 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 additional 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 (although the recipient's basis could not exceed the value used for inheritance tax purposes). From 2006, Norway replaced step-up basis with carryover basis for shares, such that the recipient generally inherited the previous owner's tax basis and thus the liability for capital gains accrued before the transfer.[9] To account for this latent capital gains tax liability being carried over in the case of a gift or inheritance, a deduction equal to 20 percent of the latent gain was introduced in the gift- and inheritance-tax base. For unlisted shares, the latent gain was calculated as the positive difference between the tax-assessed value of the shares and the inherited tax basis.

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

[8]For an ordinary inheritance, the inheritance tax payment was due twelve months after the heir was deemed to have obtained control of the inherited assets. For an inter-vivo gift, the ordinary deadline was 3 months after control passed.

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

of funds from the company through taxable dividends or the sale of shares subject to capital gains taxation.

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 larger and one-directional reform in 2014, we consider 2011 as the base-year in our analysis.

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 process, we allow for an anticipation window in our event study in 2012–2013, with 2011 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.

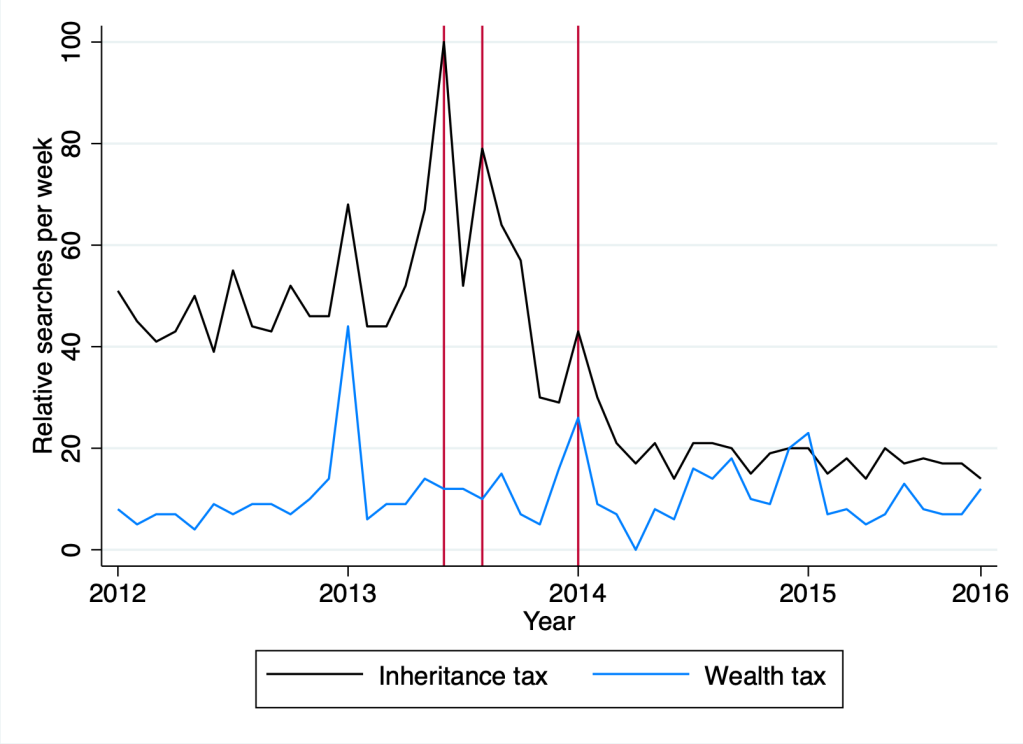


Figure 1: Relative Google searches for inheritance tax

Notes: 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.

2.3 Example of tax burdens

To illustrate the potential burden of within-family ownership transfers before the abolition, we calculate the tax on a gift of an unlisted firm and express it relative to the owner's net wealth, the firm's book equity and the recipient's pre-transfer net wealth. In the benchmark, the firm has book equity of NOK 10 million, the owner has net wealth of NOK 13 million and the recipient has net wealth of NOK 1 million. Under the 2013 rules and with a zero acquisition basis, gifting the entire firm to one child generates tax of NOK 339,800: 2.6% of the owner's wealth, 3.4% of firm book equity and 34.0% of the recipient's wealth. Figure 2 varies firm size and compares a gift to one child with equal gifts to two children. Recipient wealth is held fixed, so the burden relative to recipient wealth increases linearly between tax thresholds. The burdens relative to firm equity and owner wealth instead rise at a decreasing rate between thresholds because their denominators also increase with firm size. The kink at NOK 10 million reflects the cap on the share-valuation discount per recipient. With equal gifts to two children, this cap is reached at firm equity of NOK 20 million, and total tax is also reduced by using both children's tax-free thresholds and lower tax brackets. These examples illustrate why an anticipated ownership transfer may generate financing needs even when the tax is modest

relative to the owner's wealth.

3 Theoretical Predictions

Inheritance tax abolition can affect firm investment through saving and portfolio allocation.

Saving responses. First, abolition raises the return to saving for bequests, generating a *substitution effect* that can increase wealth accumulation and firm investment. Second, an opposing *wealth effect* allows owners to leave the same net bequest with less saving, potentially reducing both. Neither mechanism necessarily differs by first-born gender: a differential response requires differences in the value attached to transferring the firm or in the effective tax exposure associated with that transfer.[10]

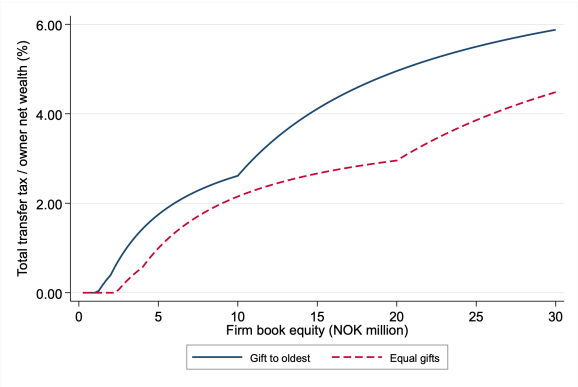
Tax avoidance through the firm. Third, preferential valuation of unlisted shares can encourage owners to hold wealth through the firm. Removing this advantage predicts lower investment after abolition, particularly among owners previously using the firm to shelter bequests. This channel can generate a differential response if anticipated family succession makes the preference more relevant for owners with first-born sons, but its predicted sign is opposite to a relative increase in their firms' investment.

Precautionary liquidity and family continuation. Fourth, owners who wish to pass the business to their children must finance the anticipated tax liability while preserving family ownership. Selling the firm provides liquidity but sacrifices family control. With costly external finance, owners may instead accumulate liquid assets personally or within the firm, crowding out productive investment. Abolition relaxes this trade-off, and predicts a larger response where within-family succession is more likely.

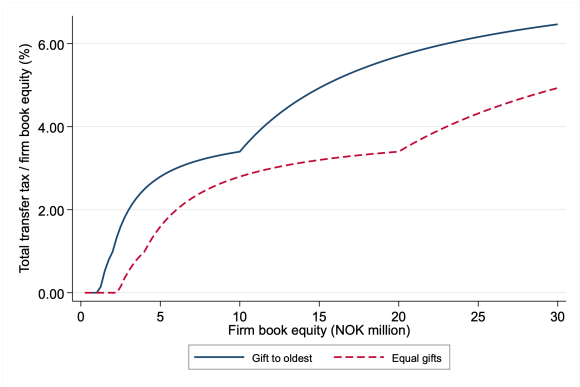
The empirical distinction is whether the firm-investment increase accompanies greater wealth accumulation or a change in portfolio composition. A saving explanation predicts an increase in the resources accumulated by the owner–firm unit while higher investment with unchanged owner wealth and a lower liquid-asset share instead points toward portfolio reallocation.

The precautionary liquidity motive implies three empirical predictions. First, productive investment should rise relative to liquid holdings in the joint owner–firm portfolio, without necessarily increasing total owner wealth. Second, the response should be

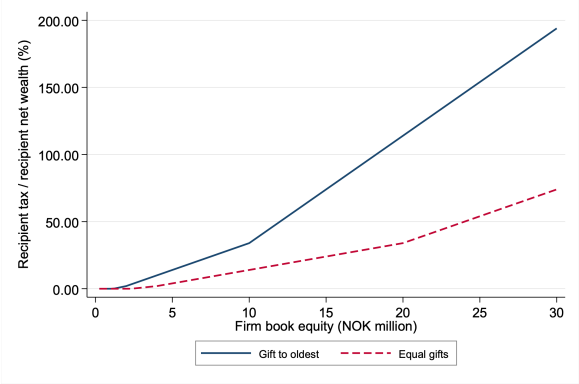
[10] Entrepreneurial effort provides a related explanation. Abolition may increase the reward to building a business for the next generation, particularly for owners who value its continuation within the family. This predicts changes in productive activity and wealth accumulation, although the resulting investment need not be financed by additional saving. An opposing wealth effect may reduce effort.



(a) Owner net wealth



(b) Firm book equity



(c) Recipient net wealth

Figure 2: Tax burdens from gifts of firm ownership

Notes: The 2013 rules apply. Firm book equity varies from NOK 0.25 million to NOK 30 million. The owner has NOK 3 million of other net assets, so owner net wealth equals firm book equity plus NOK 3 million. Recipient net wealth is fixed at NOK 1 million throughout and excludes the shares received. The solid line gives the entire firm to the oldest child; the dashed line divides it equally between two children. Panels (a) and (b) use total tax across recipients; panel (c) uses the oldest child's own liability. Only company shares are gifted; other assets are retained by the owner. These are illustrative calculations, not estimates of typical firms or families. Amounts are nominal NOK. The owner holds 100% of one domestic unlisted company; company tax wealth before valuation discounts is assumed equal to book equity. The acquisition basis is zero unless varied. Children are aged at least 21, with no prior taxable transfers from this donor or previous use of the recipient's valuation allowance. Personal net wealth is measured before the transfer. The calculations include the share-valuation discount, latent-gains deduction, tax-free threshold and progressive rates. Liabilities are total nominal amounts, not annual installments or present values, and future capital-gains tax is excluded.

stronger when owners have little personal liquidity and firms face tighter financing constraints. Third, investment should respond more strongly among firms with profitable opportunities previously constrained by succession-related liquidity needs.

Summary. Our identification strategy concerns differential responses between owners with first-born sons and daughters. A general response to lower bequest taxation does not by itself predict such a difference, while a relevant distinction is the greater propensity for within-family succession among owners with first-born sons. This motivates a mechanism in which owners value passing on the business under family ownership, rather than being concerned only with the size of the bequest.

4 Data and Sample Construction

Firm type. We focus on firms that keep detailed accounts and where the owners' personal finances may play a role, namely unlisted corporations with a certain ownership concentration. These private corporations are an important part of the economy in most countries, including in Norway: private limited liability companies accounted for 77% of turnover among enterprises outside public administration and turnover in private corporations was 7.5 times higher than turnover in public corporations in 2011 (Statistics Norway, 2013).[11]

Data Sources. We construct our dataset from five linked Norwegian administrative registers covering 2006–2022.[12] 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 the gender of owners' children), and matched employer–employee data. Table 2 explains the different data sources.

[11] For the U.S., Asker et al. (2015) write: "We estimate that in 2010, private U.S. firms accounted for 52.8% of aggregate nonresidential fixed investment, 68.7% of private-sector employment, 58.7% of sales, and 48.9% of aggregate pretax profits.". While pass-throughs play an important part in the U.S., Norwegian firms with pass-through treatment are sole proprietorships. These form a small share of the economy and keep less detailed accounts, such that we exclude them from our sample. In 2011, operating revenue among Norwegian self-employed pass-through entities was around 4% of operating revenue among corporations (Statistics Norway, 2013).

[12] While the financial crisis reduced private investment in 2008 and 2009 and Covid lockdowns in 2020 and 2021 reduced economic activity, our identification approach will account for macroeconomic shocks.

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 ($\approx$ 480,000 firms), we require a single majority owner ($>$ 50% equity), that the owner stays the same from 2006 to 2022 and has a child, that the owner be aged $\geq$ 50 at 2011, positive labour costs (excluding pure holding companies), and drop the financial sector (NACE 64–66). The resulting analysis sample contains 21,936 firms. Table 3 summarises our sample restrictions. Figures 3 and 4 describe the ownership structure that motivates our focus on a single majority owner. Figure 3 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 4 turns to the size of ownership stakes. The firm-level distribution of the largest owner's share 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 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 relevant firms while preserving an unambiguous firm–owner linkage.

Table 3: Sample Restrictions

Restriction	**Number of firms**
Norwegian firms with at least one 1% owner	479,918
AS firms on the employment register	225,267
Require single majority owner (>50% equity)	151,235
Treatment assignable (owner, child at baseline)	39,446
Fixed owner identity	39,446
Owner age $\geq$ 50 at baseline	21,982
Drop financial sector (NACE 64–66)	21,936
Analysis sample	**21,936**

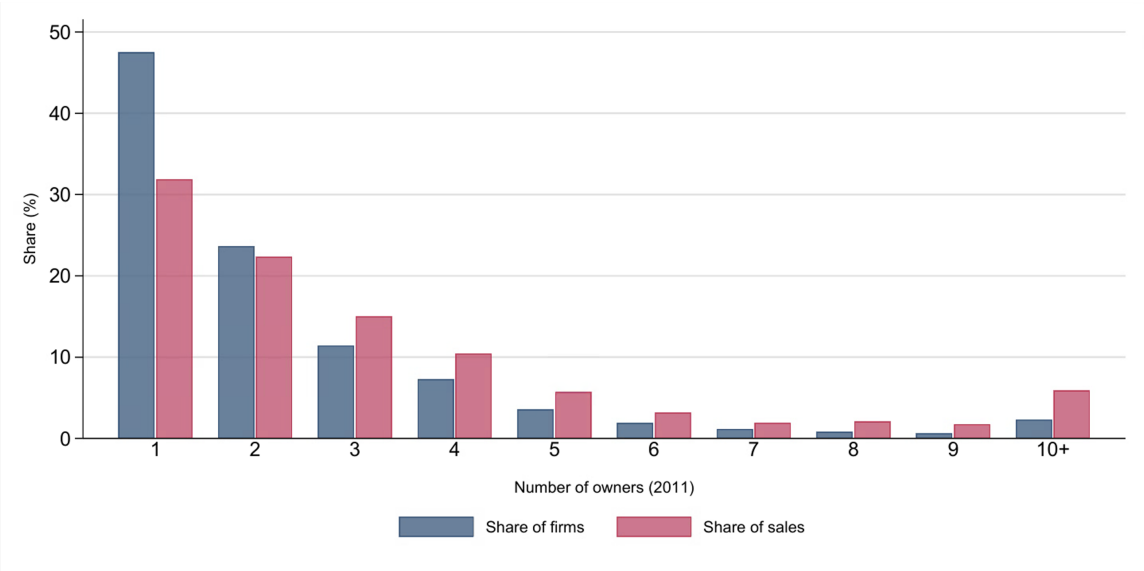


Figure 3: Distribution of the number of owners across Norwegian unlisted corporations. *Notes:* Blue bars show the share of firms; red bars show the share of aggregate sales. Owners with stakes below 1 percent are excluded.

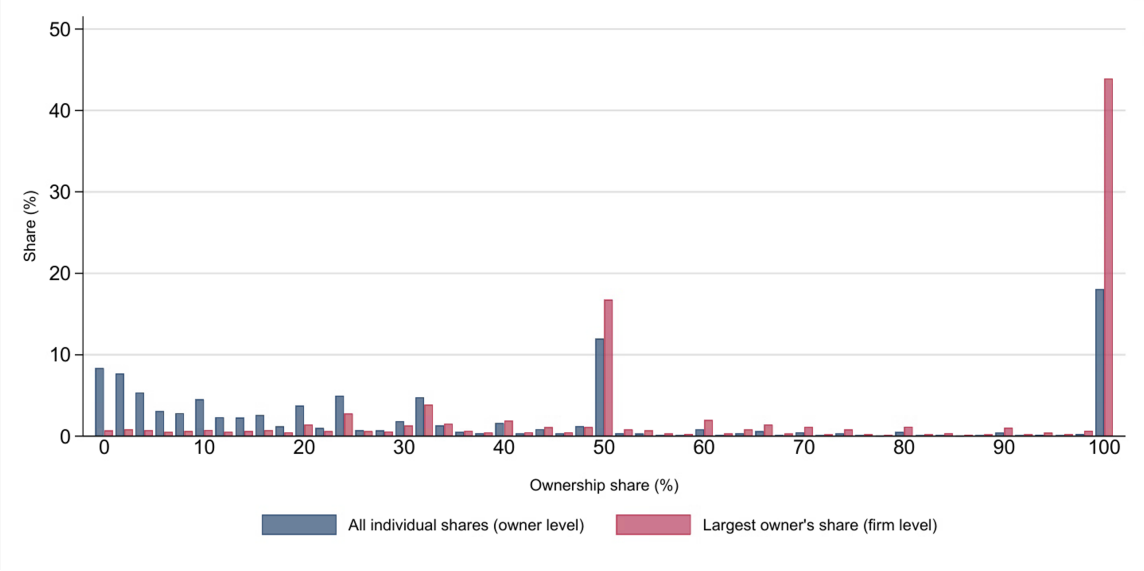


Figure 4: Distribution of ownership stakes in Norwegian unlisted corporations. *Notes:* Blue bars show the share of all individual ownership stakes (owner level); red bars show the share of the largest owner's stake in each firm (firm level). Both distributions concentrate at 50 and 100 percent, the focal points for equal partnerships and sole ownership. Owners with stakes below 1 percent are excluded.

Figure 5 shows that industry (by NACE code) shares are overall quite similar for corporations in our sample compared to all Norwegian corporations, in terms of both overall distribution and concentration in specific industries. In particular, the five top NACE codes are the same (in ranked order): retail trade, specialised construction, wholesale trade, architecture and engineering, and building construction.

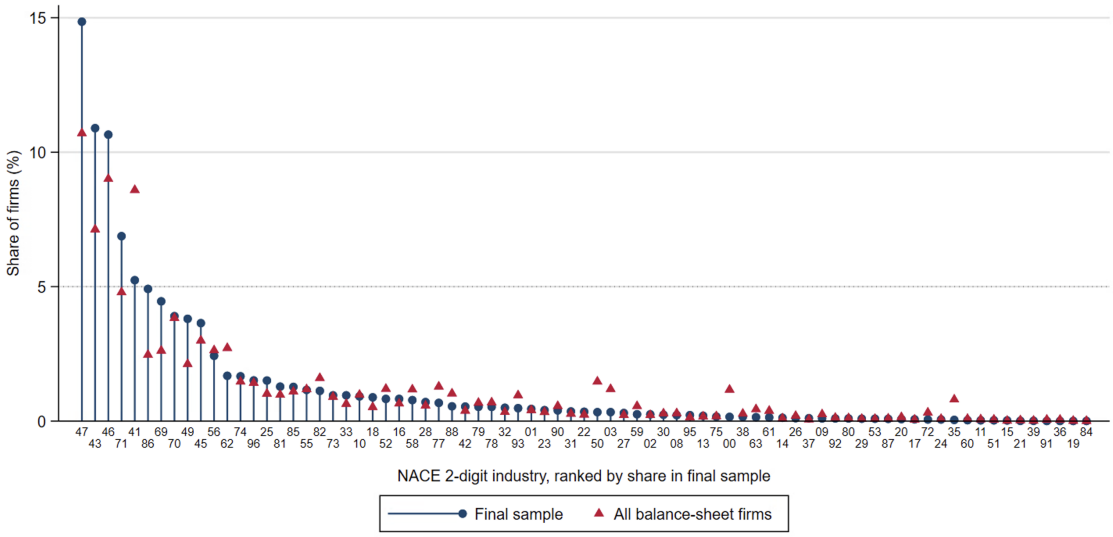


Figure 5: Industry Composition: Final Sample vs. All Firms.

Notes: Circles denote share of the industry in analysis sample, triangles denote share of the industry in all corporations.

Variable Definitions. 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.

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

Descriptive Statistics. Table 4 presents baseline characteristics at 2011 for treated and control. The treated group ($D_i = 1$, owner has a first-born son) comprises 11,016 firms; the control group ($D_i = 0$) comprises 10,729 firms. Medians of firm and owner characteristics are nearly identical across groups. Means of owner wealth are higher for the treated group, which, given the near-identical medians, reflects a small number of

very wealthy owners; such level differences are absorbed by the owner and firm fixed effects in our designs. The treated are of similar age and have similar ownership shares to the control group.

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

	Control ($N = 10{,}729$)				Treated ($N = 11{,}016$)			
	Mean	p25	p50	p75	Mean	p25	p50	p75
Owner characteristics								
Age	58.6	54	58	63	58.7	54	58	63
Ownership share (%)	88.6	75	100	100	87.9	70	100	100
Firm characteristics (1000 NOK)								
Total assets	9,369	974	2,422	6,067	10,142	1,005	2,472	6,192
Fixed assets	4,398	58	333	1,458	5,137	63	357	1,588
Labour costs	2,656	505	1,098	2,533	2,587	511	1,095	2,616
Employees (count)	6.5	1	3	7	6.4	1	3	7
Operating profit	605	−13	186	690	601	−18	183	692
Owner wealth (1000 NOK)								
Gross wealth	9,456	1,507	3,083	6,776	11,498	1,458	2,976	6,575
Net wealth	7,045	67	1,706	4,971	9,214	56	1,591	4,827
Equity wealth	5,268	156	839	2,948	7,074	145	825	2,893

Notes: NOK 1 from 2011 ≈ USD 0.13 in 2025.

5 Empirical Strategy

5.1 Treatment and Identification

Our identification exploits a simple fact: within-family succession is more likely for owners who have sons relative to daughters. We define treatment as $D_i = 1$ if the owner has a first-born son, fixed at 2011 values. Owners with first-born daughters constitute a plausible lower-exposure control, $D_i = 0$, as these owners are less likely to transfer the firm to the next generation. Any firm-level tax exposure among owners with first-born daughters attenuates our estimates toward zero.

The identifying assumption is that firms with owners with first-born sons and with first-born daughters would have followed parallel investment paths absent the abolition. Treatment is determined well before the reform and fixed at 2011 for owners aged $\geq$ 50, a group for whom succession decisions may become relevant. The abolition was a nationwide policy shock, orthogonal to the genders of owners' children. Age-by-year and industry-by-year fixed effects absorb lifecycle and sectoral confounders, and pre-period coefficients are flat across our main outcomes.

Our difference-in-differences design eliminates level differences between the two groups. The instrumental variable strategy of Bennedsen et al. (2007) to study effects of family succession requires a specific exclusion restriction: having a first-born son rather than a daughter affects firm outcomes only through family succession. Our design instead allows for other effects of the gender of the first-born child, provided that these would not have generated differential trends in firm and owner outcomes around 2014 in the absence of inheritance tax abolition.

5.2 Evidence on within-family ownership transitions

To motivate our identification approach, we compare firm ownership transitions across families with different gender compositions. These firms are outside our main sample, where we condition on firms having the same owner throughout the sample period. In this section, we instead condition on an ownership transition during the sample period. This leaves us with 8,508 exit events in which an owner's shareholding falls from above 50% to 50% or below.

Table 5 shows who holds equity after these events and who becomes the majority owner when there is a single majority successor. The probability of any child holding equity after an exit is 26.9% for owners with only sons, compared with 14.5% for owners with only daughters. Conditional on there being a single majority successor, the probability that this successor is a child is 24.9% for owners with only sons and 12.9% for owners with only daughters.

Table 5: Equity ownership following parental exit

	No living children	Sons only	Daughters only	Sons and daughters	All
Exit events	899	1,882	1,590	4,137	8,508
Panel A: Who holds equity after exit (% of events)					
Any child holds	0.0	26.9	14.5	29.8	23.2
Spouse holds	5.1	10.5	8.7	10.3	9.5
Core family jointly >50%	4.6	30.7	18.6	33.3	26.9
Panel B: Majority-to-majority successions					
Single majority successor (% of events)	69.1	66.0	63.1	65.8	65.7
Successor is (% of majority successions):					
Child	0.0	24.9	12.9	29.8	22.4
Spouse	6.6	13.5	12.2	13.1	12.3
Non-core-family individual	93.4	61.5	74.9	57.1	65.3

Notes: Share of each group that owns equity depending on the characteristics of the owner which has an exit event.

However, parents with only sons may differ from parents with only daughters if fertility decisions depend on children's gender. Panel A of Table 6 therefore compares sons and daughters within families that have both. Following an owner exit, a son holds more than 50% of the firm in 15.8% of events, compared with 3.8% for a daughter. Panel B focuses on the gender of the first-born child, which is less subject to parental choice than the gender composition of all children. When the owner's first-born child is a son, the probability that one child holds more than 50% of the firm after exit is 18.3%, compared with 13.6% when the first-born child is a daughter. The difference of 4.7 percentage points is statistically significant at the 1% level. This motivates our choice of a treatment and control group.

Table 6: Gender differences in equity ownership following parental exit

Panel A: Families with a son and a daughter

	Son	Daughter	Ratio
Holds equity (%)	25.4	11.5	2.20
Holds >50% (%)	15.8	3.8	4.13
Father exits (3,217 events)	17.4	3.2	5.38
Mother exits (920 events)	10.1	5.9	1.72
Equity held (mean %)	18.8	6.2	3.01

Panel B: By first child's gender

	Son first	Daughter first	Difference
Exit events	4,031	3,775	256
Any child holds (%)	28.6	21.7	6.8^{***} (1.0)
One child >50% (%)	18.3	13.6	4.7^{***} (0.9)
Son >50%	16.5	7.9	8.6^{***} (0.8)
Daughter >50%	1.8	5.7	-3.8^{***} (0.4)
First child >50%	11.2	3.6	7.6^{***} (0.6)
Later-born child >50%	7.1	10.0	-2.9^{***} (0.7)

Notes: Panel A compares sons' and daughters' ownership following parental exit; ratios are calculated as the son outcome divided by the daughter outcome. Panel B groups exit events by the gender of the exiting owner's first-born child. Differences are calculated as son first minus daughter first; differences in ownership probabilities are in percentage points. Standard errors are in parentheses. $^{***}p < 0.01$.

5.3 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 may lead to a reallocation of owners' own wealth and portfolios. We trace this with an event study estimated at the level of the majority owner:

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

where j indexes majority owners; w_{jt} is an owner wealth or portfolio outcome; and

α_j, $\gamma_{c(j)t}$, and $\delta_{s(j)t}$ are owner, owner's county-by-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 a first-born son, fixed at 2011, and $g(\mathbf{X}_j, t)$ contains pre-determined owner age $\times$ year and ownership share $\times$ year interactions. The coefficients β_k trace the treatment effect relative to the omitted reference year 2011: the pre-period $\{2006, \ldots, 2010\}$ tests parallel trends, $\{2012, 2013\}$ captures anticipation, and $\{2014, \ldots, 2022\}$ captures the abolition. The panel is collapsed to unique owner $\times$ 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.

5.4 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:

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

where y_{it} is a firm outcome; α_i, $\gamma_{c(j)t}$, and $\delta_{s(i)t}$ are firm, owner's county-by-year, and firm industry-by-year fixed effects; $D_i = 1$ if the majority owner has a first-born son (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 $\{2006, \ldots, 2010\}$ tests parallel trends, $\{2012, 2013\}$ captures anticipation, and $\{2014, \ldots, 2022\}$ captures the abolition.

5.5 Heterogeneity Specification

To test which firms and owners drive the investment response, we estimate triple-differences:

$$y_{it} = \alpha_i + \lambda_{g(i)t} + \gamma_{c(i)t} + \delta_{s(i)t} + f(\mathbf{X}_i, t) \tag{3}$$

$$+ \sum_{g \in \{L,H\}} \mathbf{1}[g(i) = g] \cdot D_i \cdot (\beta_0^g \, Pre_t + \beta_1^g \, Antic_t + \beta_2^g \, Post_t) + \varepsilon_{it}, \tag{4}$$

where $g(i) \in \{L, H\}$ denotes firms in bottom ($<$ P25) or top ($>$ P75) quartile of the 2011 covariate, $\lambda_{g(i)t}$ denotes group $\times$ year fixed-effects, such that treated firms are compared with controls within same group, β_2^g denotes the post-abolition effect within

group g, relative to 2011 (omitted).

6 Results

6.1 Owner-Level Responses

We begin with the owners. Table 7 shows effects on liquidity (measured by listed shares, bank deposits and cash that the owner holds personally or in a holding company), firm portfolio for the owner (majority equity shares in firms), dividends, gross wealth and debt of the tax abolition for the treated (owners with first-born sons) relative to control (owners with first-born daughters). The first row shows no significant pre-trends for either outcome, while the second row shows a significant reduction in liquid assets together with a significant increase in firm portfolio. This is in line with the precautionary liquidity motive: treated owners kept more of their wealth in liquid form before the tax abolition, and this can be channeled into firm investment after 2014. Treated owners do not change their gross wealth, which could reflect a similar overall bequest motive irrespective of the gender of the first-born child. Effects on dividends and debts have larger standard errors and are thereby statistically insignificant.[13]

Table 7: Owner-level pre/post effects

	Liquidity	Firm Portfolio	Dividends	Gross Wealth	Debt
$\beta \times$ Pre (2006–10)	0.003	0.002	-0.014	0.009	0.020
	(0.015)	(0.008)	(0.025)	(0.007)	(0.024)
$\beta \times$ Post ($\geq$2014)	-0.035*	0.019*	0.017	0.003	-0.042
	(0.019)	(0.011)	(0.028)	(0.010)	(0.032)
Observations	215,936	215,908	60,955	215,936	189,098

Notes: All outcomes in logs. Liquidity is measured by listed shares, bank deposits and cash that the owner holds personally or in a holding company. Firm portfolio is the owner's majority equity shares in firms multiplied by firm total assets. Treatment: owner has a first-born son. Reference period: 2011. Fixed effects and controls as in equation 1. Standard errors clustered at the owner level. $*p < 0.10, **p < 0.05, ***p < 0.01$.

Figures 6 and 7 show how gross and net wealth evolve for owners with a first-born son relative to owners with a first-born daughter. Gross wealth shows little differential change after the abolition. The estimates for net wealth are somewhat positive, but imprecise.

[13]One may be concerned about the extensive margin of dividends since most owners do not receive dividends in a given year. However, the effect on the probability of receiving dividends is also statistically insignificant.

These results provide limited evidence that greater wealth accumulation explains the firm-level investment response documented below.

Figure 8 instead shows a decline in owners' liquid assets, measured by listed shares, bank deposits and cash held personally or through a holding company, defined as a firm fully owned by one owner and which reports zero sales. The decline develops gradually and is most apparent toward the end of the sample. Together, these results suggest that the response involves a change in the composition of owners' wealth, rather than a substantial increase in total wealth.

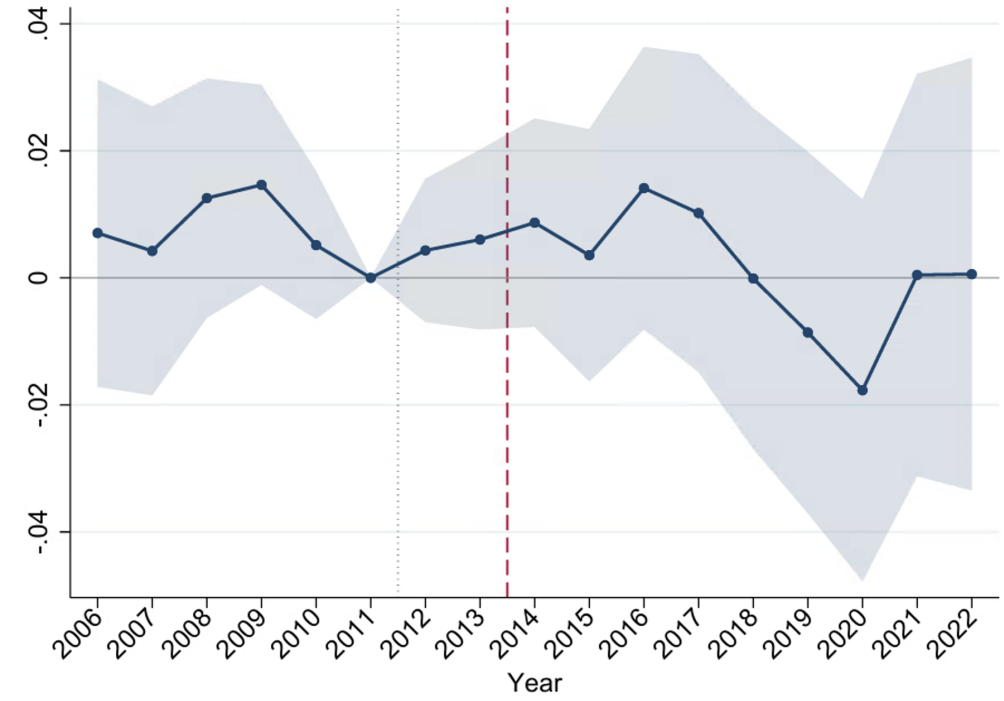


Figure 6: Event study: Log(Owner Gross Wealth).

Notes: The figure plots $\hat{\beta}_k$ coefficients from Equation (1) with log owner gross wealth 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 owner-clustered standard errors.

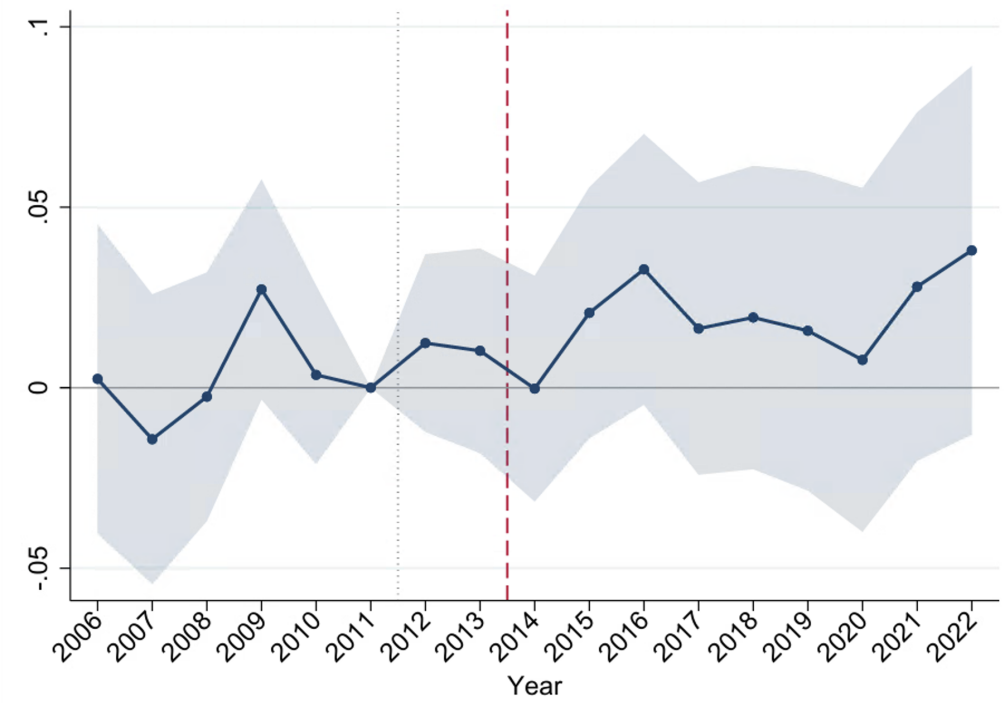


Figure 7: Event study: Log(Owner Net Wealth).

Notes: The figure plots $\hat{\beta}_k$ coefficients from Equation (1) with log owner net wealth 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 owner-clustered standard errors.

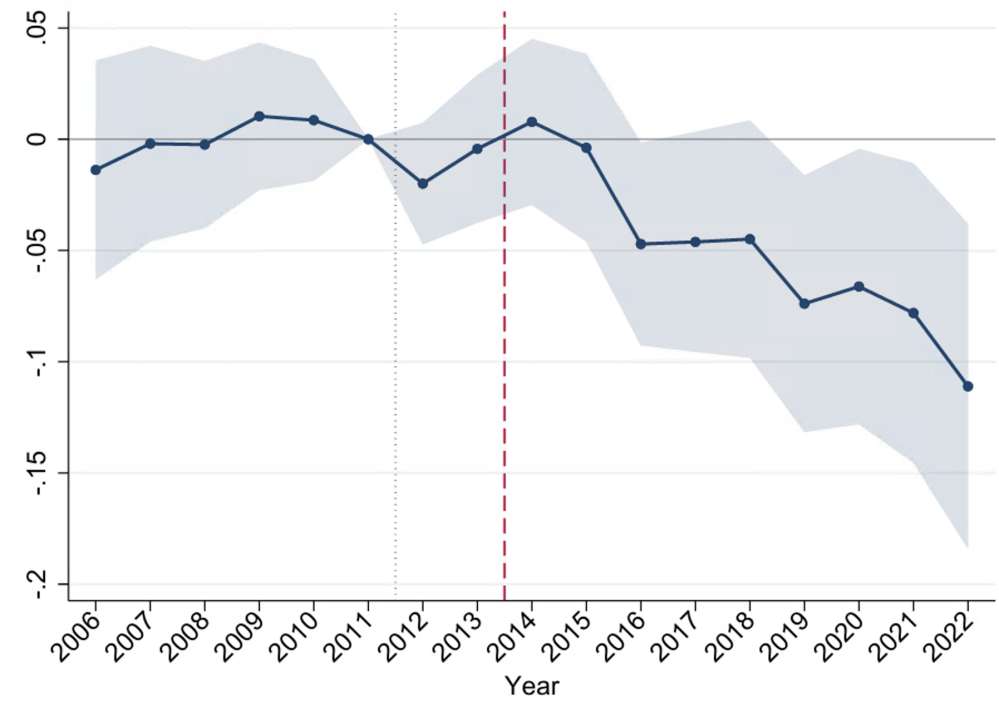


Figure 8: Event study: Log(Owner Liquid Assets).

Notes: The figure plots $\hat{\beta}_k$ coefficients from Equation (1) with of owner liquid assets as the dependent variable. Liquidity is measured as listed shares, bank deposits and cash that the owner holds personally or in a holding company. 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.

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

Table 8 shows firm-level effects on sales, return on equity (ROE), number of employees, liabilities and fixed assets of the tax abolition for the treated (firms with owners with first-born sons) relative to control (firms with owners with first-born daughters). The first row shows no significant pre-trends for either outcome, while the second row shows that firm-effects are statistically significant with magnitudes between 2.3% for employees and 7.1% for tangible fixed assets, and a rise in ROE of 0.044 (in levels)

Table 8: Firm-level pre/post effects

	Sales	ROE	Employees	Liabilities	Fixed Assets
$\beta \times$ Pre (2006–10)	-0.000	0.009	-0.008	0.002	0.012
	(0.009)	(0.016)	(0.005)	(0.008)	(0.019)
$\beta \times$ Post ($\geq$2014)	0.040***	0.044**	0.023***	0.041***	0.071**
	(0.013)	(0.019)	(0.009)	(0.012)	(0.028)
Observations	220,435	208,516	227,379	229,316	182,282

Notes: All outcomes in logs except for ROE. Fixed Assets refers to tangible fixed assets in the firm. Treatment: owner has a first-born son. Reference period: 2011. Fixed effects and controls as in equation 2. Standard errors clustered at the firm level. $*p < 0.10, **p < 0.05, ***p < 0.01$.

Figure 9 presents the event-study estimates from Equation (2) with log fixed assets as the dependent variable. The pre-reform coefficients are close to zero and broadly consistent with parallel trends. Following the abolition, firms owned by parents with a first-born son accumulate more fixed assets relative to firms owned by parents with a first-born daughter. The response builds gradually and is most pronounced in the late 2010s, reaching around 0.11 log points in 2019. This pattern is consistent with the removal of an anticipated succession liability encouraging investment in firms more likely to remain in the family. Our firm-level result may derive from a within-firm precautionary liquidity distortion, which is one side of a reallocation in the *joint* owner–firm portfolio.

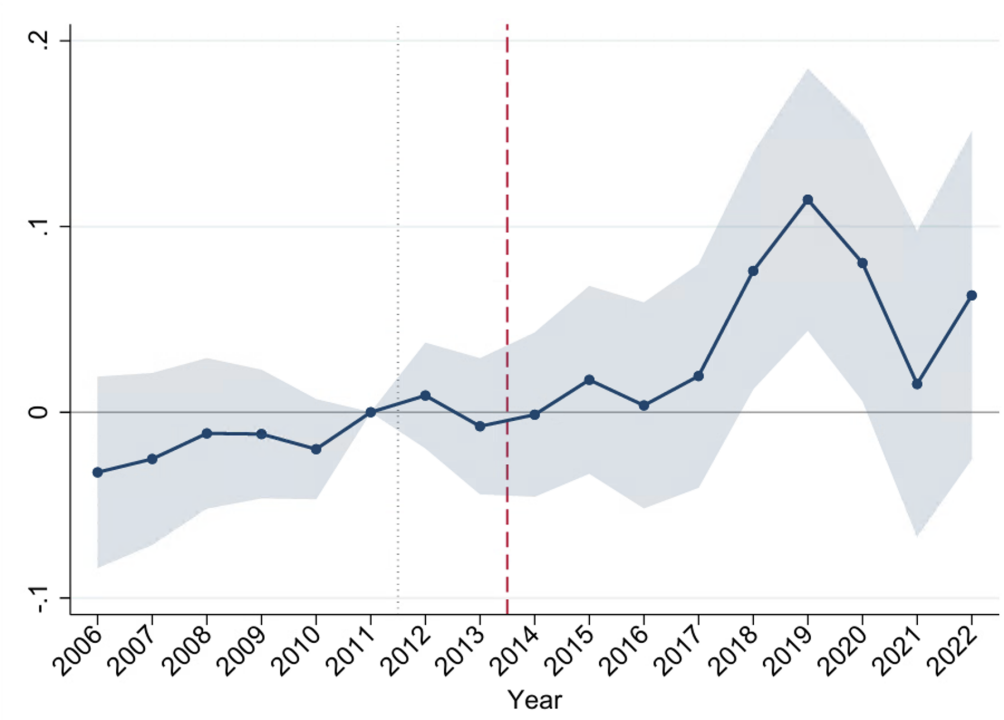


Figure 9: Event study: Log(Fixed Assets).

Notes: 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 for tangible productive fixed assets, including machinery, equipment, vehicles and buildings (Figure 10). The estimates rise after 2014 and reach around 15 percent in the late 2010s. The increase therefore extends to productive capacity rather than being confined to financial assets or other balance-sheet items.

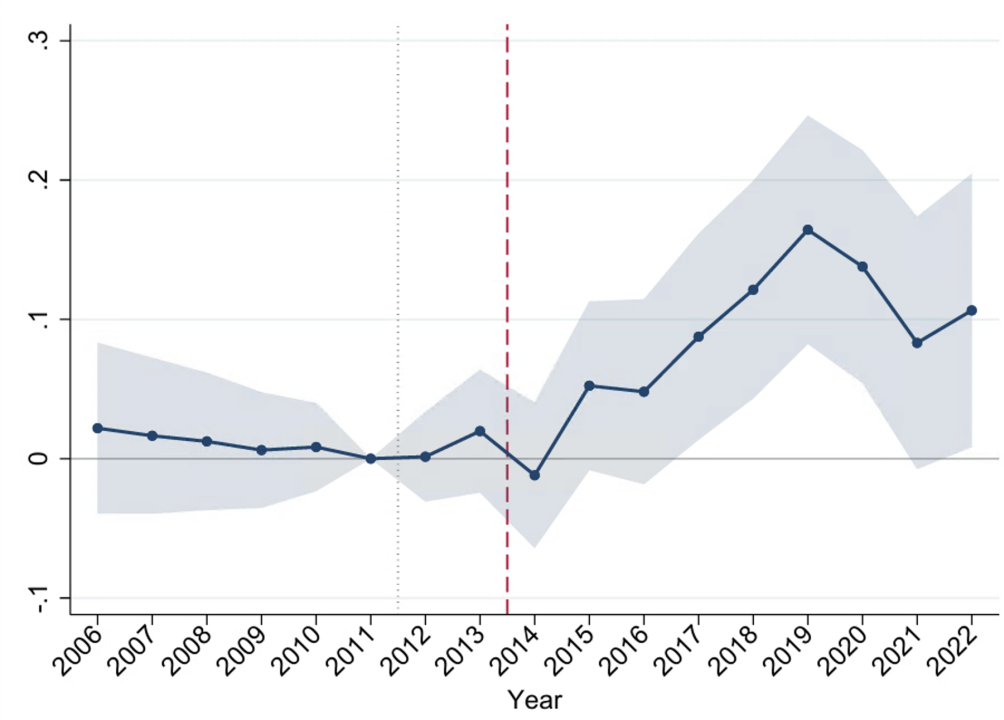


Figure 10: Event study: Log(Tangible Productive Fixed Assets).

Notes: 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.

Figure 11 shows no clear differential change in the firm's liquid-asset share after the reform. This could be because the owner owners commit more of their personal liquid wealth to the firm, while the firm maintains its liquid-asset share to support its larger scale. Combined with the decline in owners' liquid assets, this suggests that the adjustment occurs through the owner's portfolio. Owners may commit more personal resources to the firm while the firm maintains liquidity to support its larger scale. The results are consistent with a shift toward productive capital in the joint owner–firm portfolio. 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: more fixed capital inside the firm, and less liquid wealth in the owner's personal portfolio.

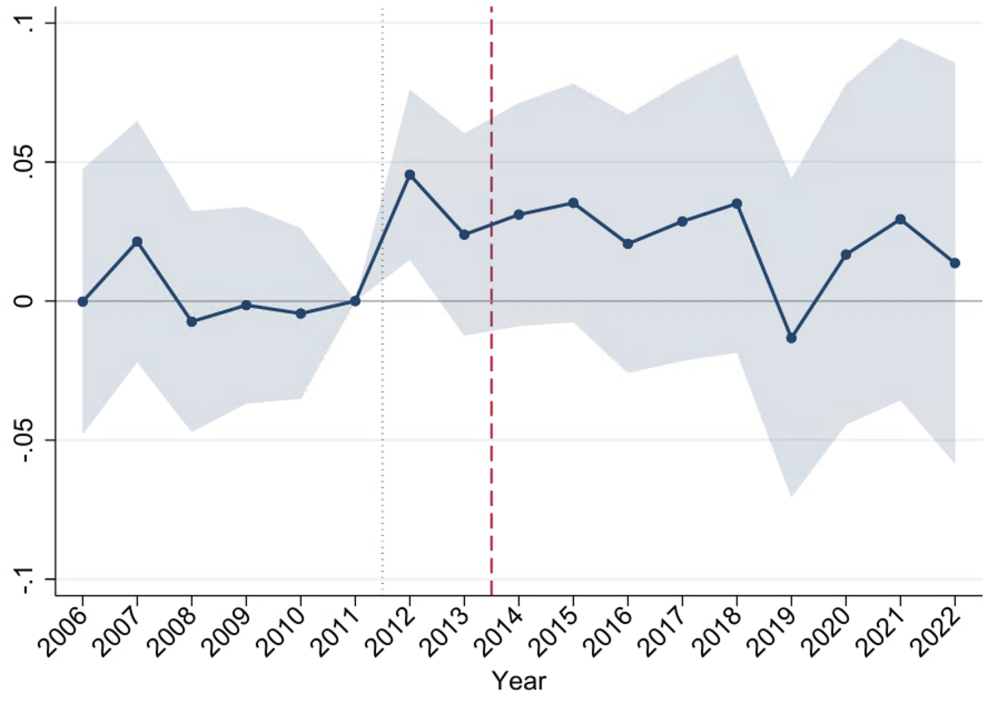


Figure 11: Event study: firm liquid-asset share.

Notes: The figure plots $\hat{\beta}_k$ coefficients from Equation (2) with the share of liquid assets in the firm's total 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 liquid assets, and should show little differential response. Owners with low personal liquidity, on the other hand, were most constrained by the precautionary motive and should respond most. These owners have fewer resources available outside the firm to meet a future succession liability. Figure 12 reports estimates by pre-reform owner liquidity. The low-liquidity group shows a clear positive investment response, while the estimate for the high-liquidity group is smaller and imprecise. 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 alternative explanations such as differential macroeconomic exposure, and supports the precautionary liquidity channel as an operative mechanism.

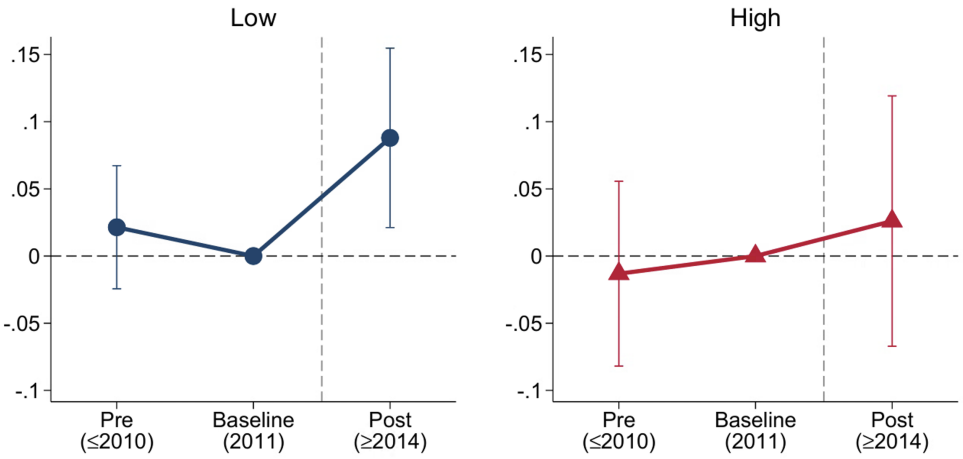


Figure 12: Firm investment event study - by owner personal liquidity.

Notes: The figure plots coefficients from Equation (3) for treated firms grouped into bottom 25 percent and top 25 percent by pre-reform owner personal liquidity (the share of liquid assets in the owner's portfolio). Error bars denote 95 percent confidence intervals.

Firm scale. A higher requirement of liquid assets may also affect firm scale by limiting investment in productive capacity. Figure 13 shows that sales also increase following the tax abolition. The expansion in fixed assets is thereby accompanied by an increase in firm activity.

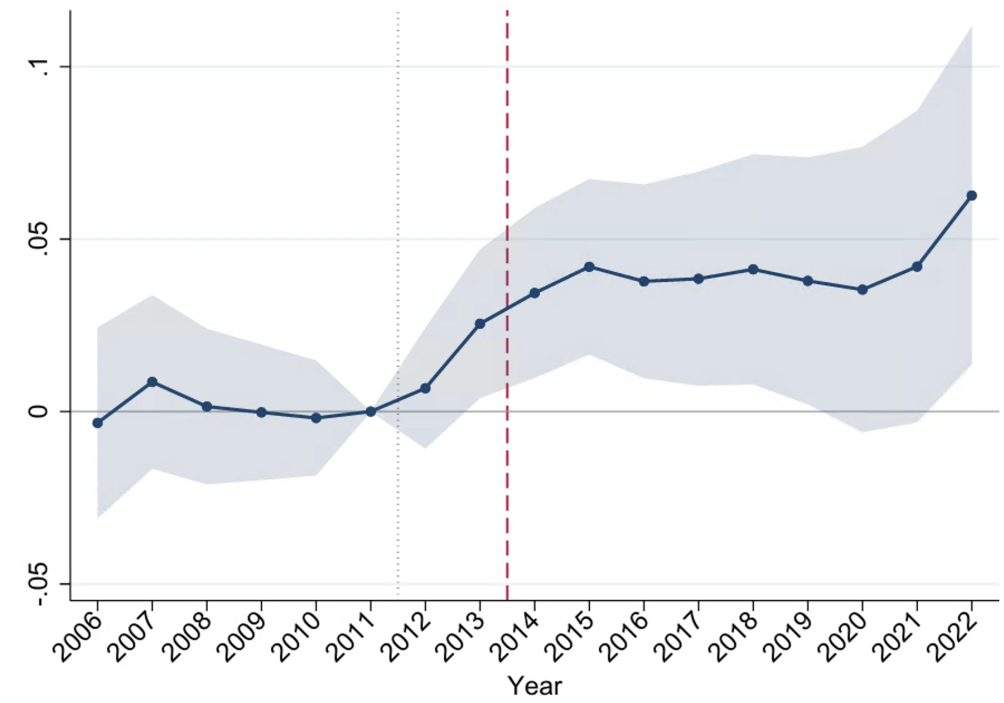


Figure 13: Firm sales event study.

Notes: The figure plots $\hat{\beta}_k$ coefficients from Equation (2) with log sales 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.

Employees. As firms expand and investment increases, they may also hire more employees. Figures 14 and 15 show increases in the wage bill and the number of employees. Together with the sales results, these estimates suggest a general expansion of firm activity alongside the increase in productive capital.

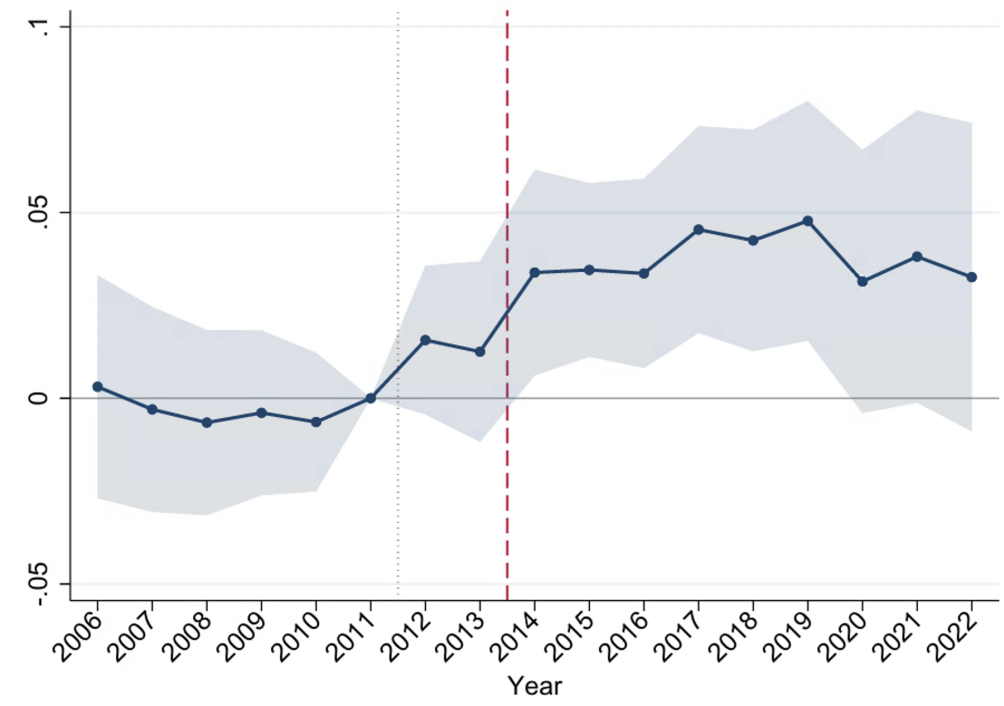


Figure 14: Firm salaries event study.

Notes: The figure plots $\hat{\beta}_k$ coefficients from Equation (2) with log salaries 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.

Figure 15: Firm employees event study.

Notes: The figure plots $\hat{\beta}_k$ coefficients from Equation (2) with log employees 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.

6.3 Cross-Firm Misallocation

The positive investment effects do not arise uniformly across treated firms. They concentrate among larger, younger, less tangible-asset-intensive and more profitable firms. This is suggestive of a dispersion in marginal revenue products of capital, as emphasised by Hsieh and Klenow (2009).

Firm size. Figure 16 reports estimates by pre-reform firm size, measured by the number of employees. The investment response is concentrated among larger firms, while the estimate for smaller firms is close to zero. This is consistent with larger firms facing greater potential succession liabilities, as 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.

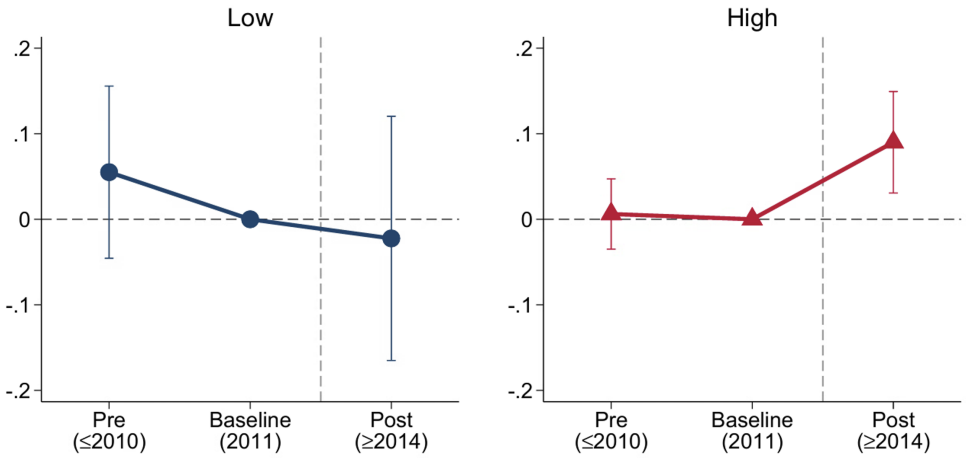


Figure 16: Firm investment event study - by firm size.

Notes: The figure plots coefficients from Equation (3) for treated firms grouped into bottom 25 percent and top 25 percent by pre-reform firm size (number of employees). Error bars denote 95 percent confidence intervals. The dashed vertical line marks the abolition date.

Asset tangibility. On the one hand, firms with more intangible capital may face lower effective tax rates, as such forms of capital are only partly included in firms' balance sheets and thereby the inheritance tax base. On the other hand, firms with more intangible capital may face larger financial constraints, as it is also harder to value these firms for potential lenders and investors. Due to limited balance sheet information on intangible capital, we proxy tangible capital intensity using the share of the firm's wage bill paid to workers in construction and installation occupations associated with capital-expenditure work. This measure captures differences in workforce composition that may not be fully reflected in reported balance-sheet assets. Figure 17 shows a stronger investment response among firms with a low value of this proxy. The estimate for the high-intensity group is close to zero. This pattern is consistent with the effect from financial constraints among firms with less tangible collateral dominating differences in effective tax rates.

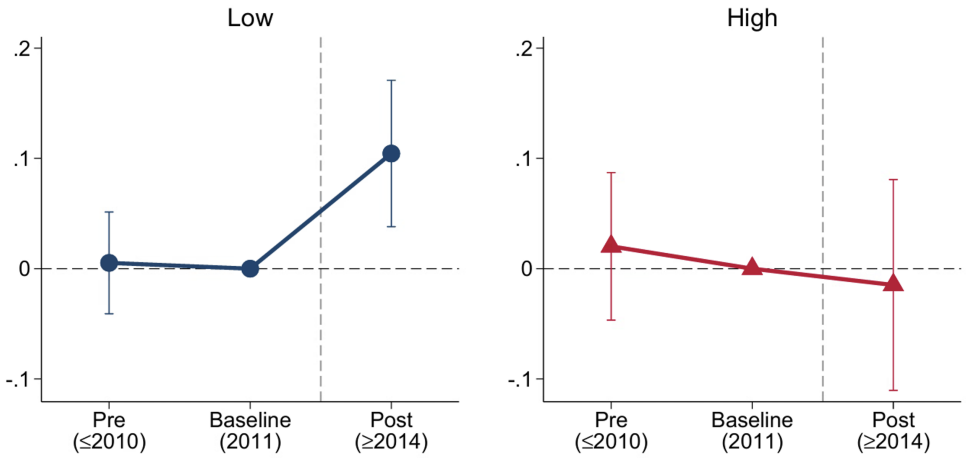


Figure 17: Firm investment event study - by asset tangibility.

Notes: The figure plots coefficients from Equation (3) for treated firms grouped into bottom 25 percent and top 25 percent by pre-reform tangible capital intensity, proxied by the share of the firm's wage bill paid to workers in capital-operating ("CAPX-compatible") occupations (see text). Error bars denote 95 percent confidence intervals. The dashed vertical line marks the abolition date.

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. Figure 18 groups firms based on their year of establishment. The post-abolition response is increasing in youth, being largest for younger firms. This is what the precautionary mechanism predicts once it interacts with financial constraints. When the owner diverts internal funds toward precautionary liquidity, a less financially constrained (older) firm can partly offset the diversion by raising external finance, while a more constrained (younger) firm cannot, so it under-invested more while the tax was in force.

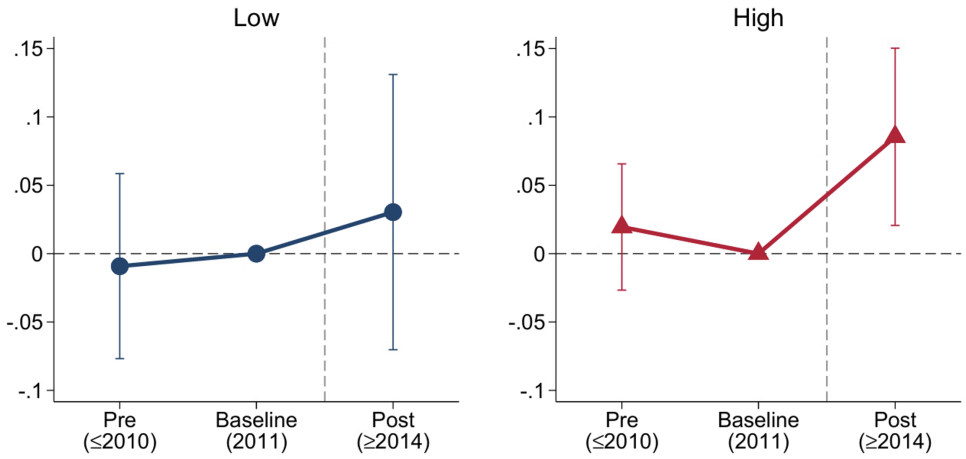


Figure 18: Firm investment event study - by firm establishment year

Notes: The figure plots coefficients from Equation (3) for treated firms grouped into bottom 25 percent and top 75 percent by firm establishment year. Young firms are the group with the greater establishment year (i.e. occurring later in time). Error bars denote 95 percent confidence intervals.

Firm profitability. Figure 19 reports estimates by pre-reform profitability (return on equity). Firms in the high-profitability group show a larger positive investment response. The estimate for the low-profitability group is also positive, but smaller and statistically indistinguishable from zero. The results are consistent with the tax constraining investment in firms with profitable investment opportunities, which would point to the abolition improving capital allocation. This cross-firm pattern is the counterpart to the within-firm result of Section 6.2, as together they describe a tax that both lowered the level of productive investment and steered it away from higher return firms.

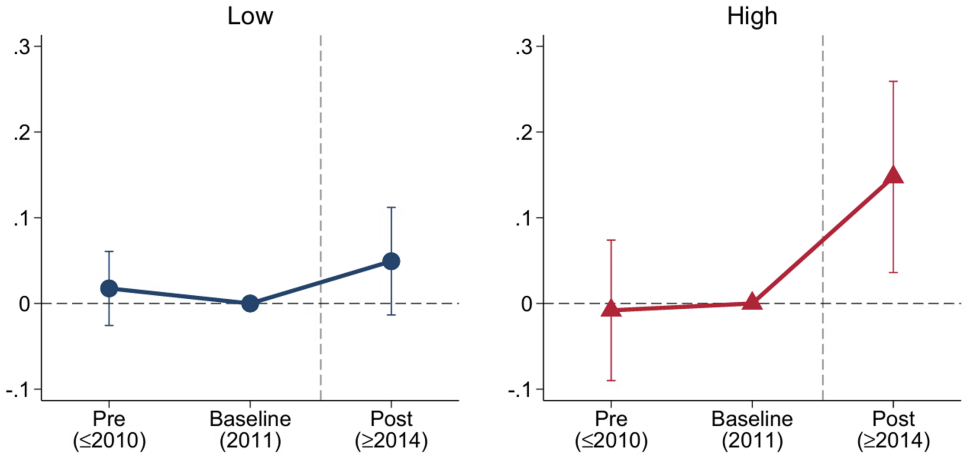


Figure 19: Firm investment event study - by return on equity.

Notes: The figure plots coefficients from Equation (3) for treated firms grouped into bottom 25 percent and top 25 percent by pre-reform return on equity. Error bars denote 95 percent confidence intervals.

7 Implications

7.1 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 to this portfolio, tied to the owner's demographic circumstances, which affected within-family succession probabilities. Owners internalised the obligation on both sides of the portfolio, holding more liquid wealth personally and investing less in the firm's productive capital.

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

7.2 Investment Distortions and Capital Misallocation

The tax imposed efficiency costs of two distinct kinds. First, by diverting the joint owner–firm portfolio toward precautionary liquidity, the tax lowered the capital stock of firms whose owners anticipated within-family succession. Indeed, after abolition, treated firms accumulate more fixed and tangible productive capital, alongside higher sales and employment. This wedge across owners planning succession acts as a level effect, lowering output; if it were uniform, it would not misallocate capital between firms.

However, our heterogeneity results indicate that this wedge was not uniform, since firms with different tax burden and financial constraints faced systematically different capital wedges. In the spirit of Hsieh and Klenow (2009), this translates into greater dispersion of marginal revenue products of capital, and thus into lower aggregate productivity.

Distortions were larger for bigger firms, which exceeded the cap on the valuation discount, and for younger and less tangible-asset-intensive firms, whose tighter financial constraints made internal liquidity harder to replace with external finance. The post-abolition expansion is also concentrated among firms with high pre-reform returns, consistent with the tax having bound most tightly where investment opportunities were most profitable. Restuccia and Rogerson (2008) show that distortions bearing more heavily on more productive producers are particularly costly.

Our results therefore characterise the nature of the wedges that inheritance taxation induced in capital allocation, identifying differences in these wedges across firms rather than their common level.

8 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 firm majority owner has a first-born son instead of a daughter as a shifter in the chance of within-family succession, and thereby inheritance-tax exposure in owner succession, we first show that the abolition redirected owners' own balance sheets - treated owners reduce their liquidity - 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, thereby 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, with the response concentrating among owners with low personal liquidity, i.e. 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 hitting hardest the younger, more financially constrained firms. The allocative consequence of the tax is clearest in the split by firm profitability: after abolition, the expansion is concentrated among high-return firms, consistent with the tax having held back investment where returns were highest.

Overall, these results show that the reach of inheritance taxation extends beyond the wealth transfers it is formally levied on: it shaped how closely held firms invested and allocated capital. We note that while owners' wealth effects are limited, firm-level effects are important. This means that evaluations of personal taxes that affect closely held firms may underestimate efficiency effects if firm outcomes are ignored. Alongside the equity arguments and individual-level efficiency effects that dominate inheritance tax debates (Piketty and Saez, 2013), firm-level distortions merit consideration in policy discussions.

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