Taxing Entrepreneurial Wealth: Evidence from Norway, 2021–2025

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Abstract

Whether wealth taxation adversely affects business activity by constraining investment and inducing capitalist flight is a central question in the ongoing debate on how to tax the ultra wealthy. To shed new light, I exploit a series of Norwegian reforms during 2021–2023 that increased dividend tax rates and nearly doubled the amount that wealthy business owners pay in wealth taxes. These reforms spurred considerable public debate and, allegedly, an "exodus" of Norwegian billionaires (Financial Times, 2023). While I document clear effects on migration, these effects are modest in magnitude. Among the top 1% of business owners, outmigration rates increased by about 1 percentage point during 2022 and 2023 but reverted to the pre-period mean in 2024–2025. Despite the effective tax rate on wealth nearly doubled, the cumulative loss in revenue due to outmigration is only 2.19%. I also evaluate whether the increased tax burden on business owners affected firm outcomes by comparing size-and-industry-matched Norwegian and foreign-owned firms. By merging historical ownership data from Orbis with the Norwegian shareholder register, I perform these analyses on both Norwegian and foreign-domiciled firms. I find no evidence that Norwegian firms pay out more dividends or invest less during 2022–2024. I find a modest increase (0.2 percentage points) in the probability of bankruptcy but otherwise no effect on firm dissolution. These findings indicate that the short-run economic costs of wealth taxation, in terms of migration and firm investment, are more limited than the public debate implies.

In progress: data validation, sample extension, start-up financing, patenting.

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1 Introduction

The past decade has seen renewed interest in wealth taxation as a tool to raise tax revenues and address economic inequality. The motivation for more aggressive taxation of wealthy individuals is partly driven by the modest personal tax burdens faced by billionaires. A handful of recent studies show that once undistributed profits are accounted for, there is significant tax *regressivity* at the very top of the income distribution (Bruil, Van Essen, Leenders, Lejour, Möhlmann, and Rabaté 2022; Aaberge, Francesconi, Modalsli, and Vestad 2024; Balkir, Saez, Yagan, and Zucman 2025; Bach, Bozio, Guillouzouic, and Malgouyres 2025; Ring, Seim, and Zucman 2026). The wealthiest individuals tend to be business owners that retain most of their profits inside closely-held corporations, thereby paying virtually no personal income taxes. A wealth tax (or similarly, a tax on unrealized capital gains) would remedy this regressivity in that it does not condition on corporate distributions. However, the fact that wealthy individuals retain earnings in their firms also fuels the vocal opposition to wealth taxation. Imposing large personal tax bills on billionaire entrepreneurs may force them to deplete their firms of capital, potentially reducing investment and thus economic growth. This concern pervades policy debates but has seen virtually no academic attention.

There are two main drivers for why there is little empirical evidence to guide policy makers. First, most recent experiences with a wealth tax involve abolishing it. Hence, there are few empirical laboratories in which we can study how an introduction affects economic activity. Introducing a wealth tax may reduce economic activity through irreversible firm exits and reductions in investment that cannot be fully understood by studying the removal of wealth taxes. Second, identifying the causal effects of wealth taxes on wealthy entrepreneurs is particularly challenging. While it is possible to obtain quasi-experimental variation in wealth taxation due to quirks in the tax code, these settings rarely allow one to study the wealthiest households. For these taxpayers, whether couples face a double exemption threshold (Jakobsen et al. 2020) or their housing stock is assessed more heavily (Ring 2024, Ring and Thoresen 2025) is immaterial in affecting their overall tax burden.

I tackle these empirical challenges in two ways. First, my empirical laboratory consists of a recent reform in Norway that substantially *increased* the tax burden faced by the wealthiest households. Second, I exploit the fact that the wealth tax only applies to Norwegian tax residents. Hence, firms owned by non-resident foreigners should not be affected—offering a natural control group for the firms of wealthy Norwegians.[1] This allows me to match treated firms (whose owners must pay a wealth tax) with similar other firms. This is not possible when

[1]See also Le Guern Herry (2024) who exploits resident and non-resident taxpayers' differential exposure to a wealth tax reform in France to study household portfolio allocation.

comparing billionaires to less wealthy (and thus less exposed due to the progressivity of the wealth tax schedule) entrepreneurs, since less wealthy entrepreneurs own smaller firms.

The reforms implemented during 2021–2024 were controversial. Upon announcing higher wealth and dividend tax rates in 2021, a political and media frenzy quickly ensued. The public debate persisted well into 2025, by which time scores of billionaires had, not so quietly, migrated to Switzerland (Financial Times 2023, Bloomberg 2024, Guardian 2025). Migrants purportedly left due to several changes to the wealth tax code that particularly affected entrepreneurs. The top statutory tax rate increased from 0.85% to 1.1% while preferential treatment of stocks in private and public companies was substantially reduced. Directly before the reform, each \$1 of book equity in private firms entered taxable wealth at a discounted value of \$0.55. After the reform, \$1 of book equity increased taxable wealth by \$0.80. Hence, the reform almost doubled the top marginal tax rate on business wealth from 0.47% to 0.88%. I show that this had a material impact on the annual wealth tax paid by Norwegian business owners. At the same time, the dividend tax rate increased from 32% to almost 38% by 2023, which exacerbated the effect of the reform on business owners who rely on dividend distributions to pay their wealth tax.

The government responded to the widely publicized outmigration of wealthy business owners by implementing new policies to ensure that outmigrants eventually paid income taxes on accumulated retained earnings. In November of 2022, the government removed a loophole that forgave tax liabilities on unrealized gains after a taxpayer had spent at least five years as a foreign tax resident. Closing this loophole, but allowing taxes on unrealized capital gains to be permanently deferred brought the rules closer to the current scheme for outmigrants in Denmark. This policy change was followed by stricter rules in 2024, when it was announced that taxes on unrealized capital gains must be paid within 12 years, bringing the exit-tax scheme closer to current rules in, e.g., Germany.

In this paper, I study whether the 2021–2024 reforms led to capitalist flight and the extent to which firms' owned by affected Norwegian business owners increased their dividends and reduced their investment rates. I use entirely (nominally) publicly available data sources. These include the shareholder register that lists all shareholders and their ownership shares for all Norwegian corporations during 2003–2024. These data also contain the address (including country of residence) of the shareholders. I link these with extensive public tax lists containing taxable wealth, income, and total taxes paid for wealthy Norwegians, and with journalistic estimates of actual wealth for the wealthiest 400 Norwegians. I obtain firm financial data from BvD Orbis Historical, which provides a long panel of financial statements for virtually all Norwegian firms. Orbis Historical also contains financial statements for a large sample

of other European firms, as well as ownership data. These ownership data allow me to link non–Norwegian firms to their ultimate Norwegian owners by merging the BvD ownership data with the Norwegian shareholder register.

The most salient and widely reported effect of the reforms was the departure of wealthy business owners to Switzerland. Hence, my analyses first consider the extent of capitalist flight. I find a cumulative increase in outmigration, that cannot be explained by pre-reform trends, of about 0.9% among the top-1% of business owners. This translates into an excess outmigration of 29 individuals. Given an increase in effective top marginal tax rate on taxable wealth of 0.47 pp., this implies an outmigration semi-elasticity of about 2, which is in the lower end of the elasticities found in the existing literature. However, when I use magazine wealth rankings to account for the fact that entrepreneurial wealth is significantly undervalued by the tax authorities (Ring, Seim, and Zucman, 2026), the effective tax rate change is smaller (0.24 pp.). Hence, the cumulative outmigration elasticity increases to almost 4. Importantly, this outmigration elasticity is only significant for the top-1% of business owners. In the top 90–99%, the cumulative outmigration rate is 0% despite a comparable increase in effective tax rates on market-value wealth of 0.21. These findings suggest that changes to average tax rates is not the right statistic in determining outmigration responses.

Overall, outmigration responses appear quite small—considerably smaller than those documented in other settings. However, the overall effect on tax revenues may be significant if the outmigrants were among the largest tax payers. To address this, I calculate counterfactual wealth tax revenues from business owners with and without any outmigration. I find that aggregate wealth tax revenues sourced from business owners would have been 2.19% higher absent outmigration responses. Dividing by the change in the effective tax rate on market-value wealth, this implies an outmigration-driven revenue semi-elasticity of about 9.

I proceed by examining the impact on firms' financing and investment behavior, regardless of whether their owners outmigrated. I compare size-and-industry matched Norwegian-owned firms with other foreign-owned firms. To measure a firm's exposure to the reform, I allocate an owner's wealth tax liability to her firm proportionally to the size of the firm in the owner's equity portfolio. I then consider the ratio of allocated wealth tax to revenues, and find that this increased by about 2 percentage points from 2020 to 2023. To address claims that the reform required business owners to deplete their firms of capital via higher dividends, I measure "operating dividends" as operating profits minus the change in book equity. This measure of net dividends ignores dividends that pass through firms in complicated ownership chains, and it accounts for both dividend payments and reductions in paid-in capital. There is no indication that Norwegian owned firms increased their dividends during 2022–2023. I then

measure a firm's investment intensity as the ratio of net investment (change in book tangible fixed assets plus depreciation) to its tangible-fixed-asset capital stock, according to the perpetual inventory methodology. Here, there is some indication that the investment rate decreases during 2022–2023, but the point estimates are modest and statistically insignificant.

I also consider whether Norwegian-owned firms dissolve or enter bankruptcy at a higher rate than foreign-owned firms during 2021–2024. I first find no effect on dissolution (excluding M&A related closures). However, Norwegian-owned firms are become more likely to enter bankruptcy following the reforms. By 2024, Norwegian-owned firms are about 0.2% more likely to have gone bankrupt.

To account for potential identification issues related to comparing foreign and domestically-owned firms, I repeat the main analyses on a sample of foreign-domiciled corporations. That is, I consider European companies in the Orbis database that have global ultimate owners domiciled in other countries. I then compare, e.g., Norwegian-owned German firms with Danish-owned German firms. This confirms the null result in terms of firm payouts, and it confirms the modest and statistically insignificant reduction in firm investment intensity.

Literature. A growing body of research examines the behavioral responses to wealth taxation (Seim 2017; Zoutman 2018; Durán-Cabré María, Esteller-Moré, and Mas-Montserrat 2019; Bach, Bozio, Guillouzouic, and Malgouyres 2020; Jakobsen, Jakobsen, Kleven, and Zucman 2020; Berg and Hebous 2021; Londoño-Vélez and Ávila-Mahecha 2021; Brülhart, Gruber, Krapf, and Schmidheiny 2022; Alstadsæter, Bjørneby, Kopczuk, Markussen, and Røed 2022; Fagereng, Guiso, and Ring 2023; Jakurti and Süssmuth 2023; Le Guern Herry 2024; Ring 2024; Londoño-Vélez and Avila-Mahecha 2025; Ring and Thoresen 2025), where the emerging consensus is that wealth taxation has minor real effects in terms of individuals' saving behavior (as emphasized by Brülhart et al. 2022 and Ring 2024). However, the tax base may still be elastic due to evasion, avoidance, and migration. A much smaller body of research examines mobility responses. Brülhart, Gruber, Krapf, and Schmidheiny (2022) find significant elasticities of taxable wealth with respect to marginal tax rates in Switzerland, of which one quarter are driven by within-country but across-tax-regime migration responses. Iacono and Smedsvik (2024) similarly finds that a Norwegian municipality that reduced its local tax rate saw a large increase in the municipal-level amount of taxable wealth. Agrawal, Foremny, and Martínez-Toledano (2025) further document significant within-country mobility responses to wealth taxes in Spain, indicating that a one percentage point increase in the wealth tax rate reduces the stock of wealth tax payers by 8%. Considering *outmigration*, Jakobsen, Kleven, Kolsrud, Landais, and Muñoz (2024) find a more modest response in response to the Swedish wealth tax abolition. A 1 percentage point decrease in the top tax rate increases the stock of

taxpayers by about 2% by reducing outmigration.

An even smaller body of research considers the real effects of wealth taxation on the firms owned and financed by wealth tax payers. The existing evidence is inconclusive and identified from gradual changes to the wealth tax rules. Bjørneby, Markussen, and Røed (2023) find that higher wealth tax exposure increases employment while Berzins, Bøhren, and Stacescu (2020) find the opposite.[2]

Comments. Writing and analyses are incomplete. I am awaiting (a) new data releases from Orbis containing financial statement information for 2024 arriving in Februrary; (b) more detailed financial statements for Norwegian firms from business registers; (c) shareholder register for 2025, arriving in March. The shareholder register also contains updated addresses, allowing me to consider outmigration over a longer horizon. I am also in the process of examining outcomes related to **start-up** financing: that is, whether Norwegian investors reduced their investment in startups after the reforms. I also have access to data that would allow me to consider the effect on patenting.

2 Institutional Details and Data Sources

2.1 The 2021–2024 Reforms

The 2021 election replaced the previous right-wing coalition government with a left-wing coalition government. In 2022, the left-wing government implemented several changes to the tax code that affected (wealthy) business owners.

Reversed the assessment discounts on stocks. The raw tax base for listed stocks is the market value of the shares. For non-listed stocks, the raw tax base is the book value of equity subject to various adjustments (e.g., if the corporation owns listed stocks). In 2017, the right-wing government began phasing in an assessment discount creating a wedge between the raw tax base and the value used to determine the wealth tax. In 2017, the discount rate was 10%, and in the following years it grew to 20%, 25%, and 35%. By 2021, the discount had reached 45%, which implied that each additional \$1 of book-value business wealth increased taxable wealth by only \$0.55. The left-wing government decreased this discount to 25% in 2022 and 20% in 2023, where it remains as of 2026.

[2] Bjørneby, Markussen, and Røed (2023) obtain variation in wealth tax exposure from tax schedule changes that differentially affected households with different taxable wealth composition. Similarly, Berzins, Bøhren, and Stacescu (2020) compare individuals with more or less housing wealth that were differentially affected by gradual increases in the effective taxation of housing wealth during 2006–2009.

Increased statutory tax rate and thresholds. The government modestly increased the wealth-tax exemption threshold from 1.5 MNOK in 2021 to 1.7 MNOK in 2022. At the same time they increased the baseline tax rate (0.85% during 2015–2021) to 0.95% in 2022 and 1.0% in 2023. The left-wing government also increased the progressivity of the tax schedule by adding another threshold of 20 MNOK, above which any marginal wealth is subject to an additional 0.1% tax rate. Thus the top marginal tax rate increased to 1.1% in 2022, bringing the top marginal tax rate back to same level as during 1998–2013.

Summing up the wealth tax changes. Summing up the rate changes, the top statutory marginal rate was 0.85% during 2015–2021 but rose to 1.1% by 2023. The changes are larger if we consider effective tax rates by accounting for changes in the assessment discount on stocks. The effective top marginal tax rate on stocks rose from $0.85\% \times 0.55 = 0.4675\%$ in 2021 to $0.011\% \times 0.8 = 0.88\%$ in 2023.

Dividend taxation. The dividend tax rate was 28.75% in 2016, and rose gradually to 31.68% by 2019.[3] The dividend tax rate then stayed at this level until the new government increased it to 35.20% by the end of 2022, and to 37.84% in 2023. The increase in dividend tax rates was announced by the new government ahead of time, giving entrepreneurs the opportunity to pay more dividends before the higher rates became effective.

Exit taxation. Prior to 2022, individuals would see their stocks effectively "step up" in basis five years after outmigration. They would then be free to sell their shares without paying capital gains taxes, even if this occurs after returning to Norway. By April 2022, the new government indicated that they were working on new rules to limit the use of this five-year exemption. On November 29th, the government announces that individuals who migrate on or after November 29th can no longer make use of the five-year exemption rule and they will be permanently liable for taxes on the amount of unrealized gains at the time of outmigration. In March 2024, the government indicated that they would also implement a payment deadline of 12 years. This change moved the rules closer to those implemented in Germany in 2021, where taxes on unrealized capital gains needs to be paid within 7 years of outmigration. In comparison to the U.S., the new Norwegian rules are more generous in that they do not require interest payments, but less generous in the sense that the tax must be paid within twelve years as opposed to at the actual realization event.

[3] During 2010–2013, the tax rate was 28%. During 2014–2015, it was 27%.

2.2 Data

Orbis Historical. The Orbis historical data contains all financial statements for firms present in the BvD (now Moody's) Orbis dataset. The coverage for Norwegian firms is nearly complete due to Orbis purchasing these data from Experian who obtain them from the Norwegian business registration office.

Shareholder Register. The shareholder registers for 2003–2024 is obtained from the tax authorities (as of October 2025). These data contain the most recent address of shareholders as of delivery. Hence, I supplement these data with historical vintages, purchased from a private data provider, that contain historical addresses. The shareholder register contains the name of the shareholder and their birth year (organization number if a domestic LLC).

Newspaper Tax Lists. Individuals' taxable income, taxable wealth, and total taxes paid are considered public information in Norway. Each year, since 2013, the tax authorities send complete "tax lists" to media organizations who may choose to disclose information on persons of interest. The tax authorities explicitly allow media organizations to publish "top-100" lists: top 100 individuals per municipality in terms of taxable personal income, taxable wealth, and taxes paid. In addition, since 2019, it is common to publish top-15 zip-code lists. I obtain all of these lists for the years 2012–2024 (zip-code lists available from 2019). In addition, during 2007–2009, the entire lists were made available in their entirety my media organizations. I obtain the 2007 list, for the universe of taxpayers. These lists contain address (zip code, city) information, the full name, as well as the year of birth.

Magazine wealth rankings. Another benefit of relying on (notionally-) publicly available data sources is the possibility of linking the data with journalistic or forensic estimates of wealth (see, e.g., Ring, Seim, and Zucman 2026). Wealthy Norwegian business owners disproportionately own private infrequently-traded assets for which market values are not readily available in administrative data sources. I therefore supplement my data with wealth estimates from the magazine Kapital. Kapital has assessed the wealth of the wealthiest Norwegians for more than two decades and reports that roughly two years worth of labor goes into their forensic analyses (Kapital, 2023).

I verify that my data provides broad coverage of the top-400 wealthiest individuals per Kapital. In 2020, 388 of the top-400 individuals appear either in the shareholder register or in the municipal or zip-code level tax lists. The remaining individuals are typically Norwegian citizens who are foreign residents during the entire sample period.

Innovation and startup grants. Innovation Norway provides a large amount of small to medium-sized grants to foster innovative entrepreneurship. I obtain data on all grants awarded from January 2016 to February 2026. The data describe the support category (e.g., startups, scale-ups), award date and amount, and the organization ID of the recipient firm. Startup grants are awarded to ventures deemed to be innovative and have credible growth potential. These data are used to isolate innovative startups.

2.3 Measuring the wealth tax burden

For business owners who primarily save within their firm, it may be reasonable to consider the effective wealth tax as that which accounts for dividend taxes paid on the dividends required to pay the tax. Consider the following equation in which the left hand side is the amount of taxes that must be paid and the right hand side equals the amount of dividends that are required to pay these taxes. If we consider this amount of dividends as the adjusted wealth tax (denoted $\widetilde{wtax_{i,t}}$), we may write

$$wtax_{i,t} + \widetilde{wtax_{i,t}} \cdot \tau_t^{div} = \widetilde{wtax_{i,t}}. \tag{1}$$

rearranging, we get $\widetilde{wtax_{i,t}} = \frac{wtax_{i,t}}{1-\tau_t^{div}}$. To the extent that wealth primarily consists of unrealized capital gains, this dividend-tax inclusive measure of the wealth tax burden is arguably the most natural measure to use when calculating, e.g., average tax rates on wealth. Nevertheless, it is a clearly a useful measure for thinking about how the wealth tax affected the tax burden of entrepreneurs if their liquidity mostly resides inside corporate vehicles.

3 Descriptive findings

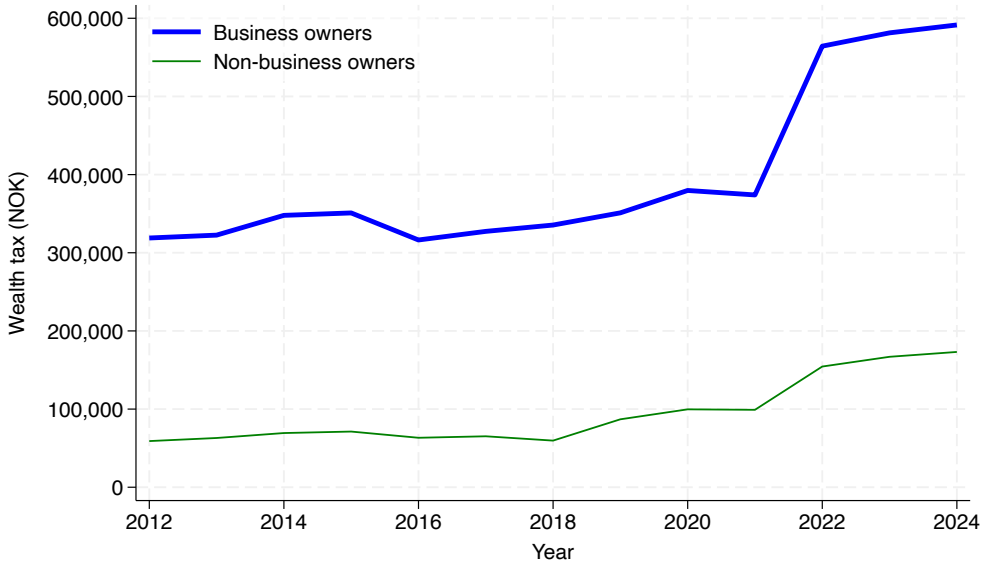
3.1 Effect on Wealth Tax Exposure

The changes to the tax code and broad media coverage indicate that business owners' wealth taxes went up significantly due to the reform. We illustrate the increased wealth tax burden in Figure 2. Panel A considers business owners and non-business owners, where criteria for being a business owner is owning at least 50% of a limited liability company (LLC). The main sample restriction is that individuals appear in the top-100 municipal tax lists when sorted by wealth. This restriction thus selects on paying non-trivial amounts of wealth taxes. The increase around the reform is nevertheless interesting because it tells us, among those who paid the most wealth tax, how much more did they pay because of the new rules? I find that the average amount increased from about NOK 380,000 ($38,000) to NOK 590,000 from 2021 to 2024, or about 60%. The increase for non-business owners was more modest in levels

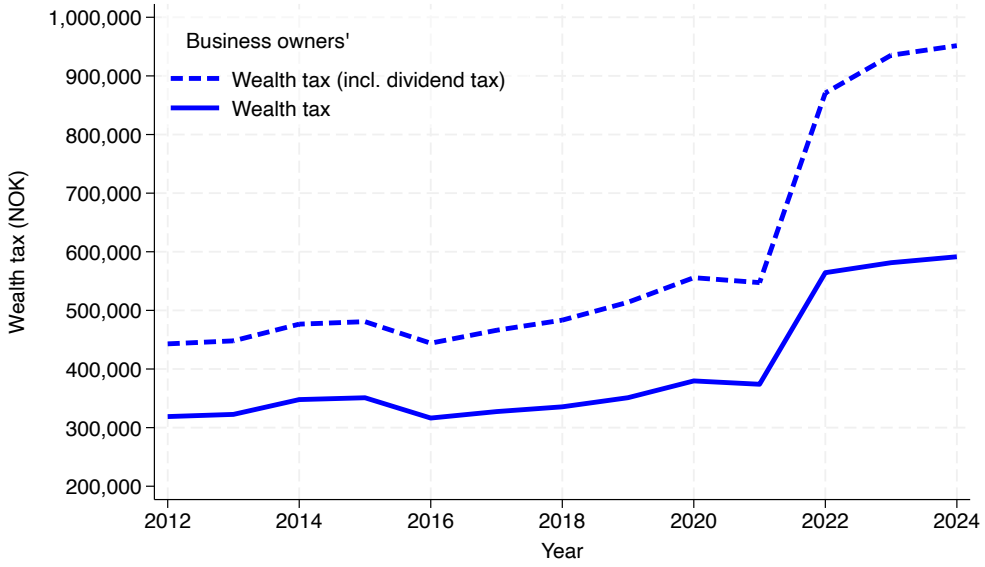
(from NOK 100,000 to NOK 180,000), but in fact larger in a relative sense. The large relative increase for non-business owners may be driven by higher effective tax rates on high-value primary homes.

FIGURE 1: HIGHER WEALTH TAXES FOR BUSINESS OWNERS

Panel A: Wealth tax bill by whether business owner



Panel B: Wealth tax plus dividend taxes on required dividends



Notes: Panel A provides average wealth tax bills for individuals in the municipal top-100 lists (available 2012–2024). Individuals are split into business owners and non-business owners based on whether they own at least 50% of an LLC (using data from the shareholder register). Panel B focuses on business owners and provides also wealth tax inclusive of implied dividends. That is, I account for the fact that if wealth tax payments are financed with dividends, these payments also trigger dividend taxes; and payments must be large enough to pay for both dividend and wealth taxes (see equation 1).

Panel B considers also the dividend-tax inclusive wealth tax measure. This assumes that

wealth taxes are paid for with dividends that trigger dividend taxation (see equation 1). This amplifies the effect of the reform, partly due to a pure scaling effect, and partly due to increased dividend tax rates. Wealth tax exposure nearly doubles from NOK 550,000 ($55,000) in 2021 to about NOK 950,000 in 2024, once I we account for dividend taxation. Appendix Figure OA.1 shows that there are no concurrent changes to personal income taxes during this period.[4]

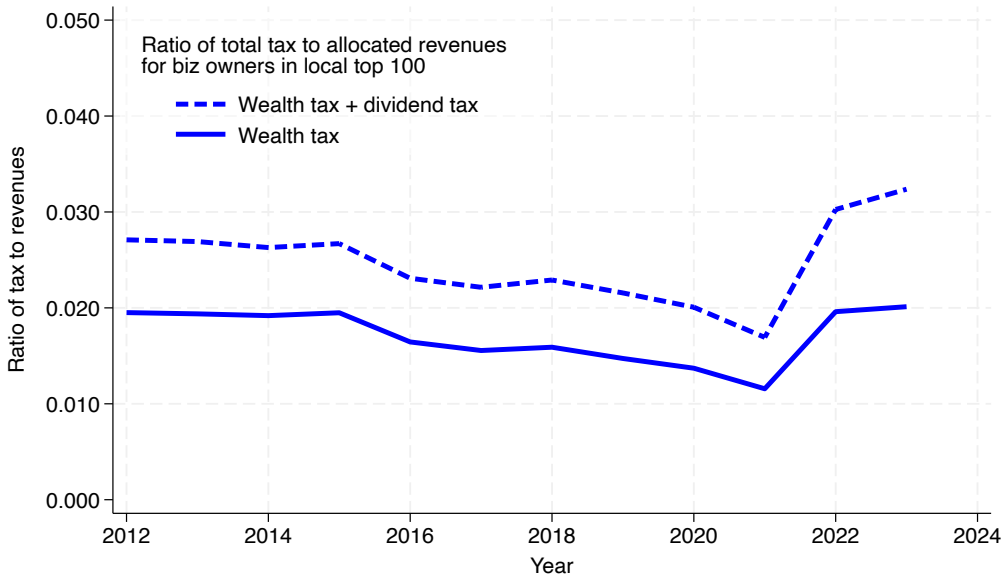
Figure 2 illustrates the changes to the entrepreneurial wealth tax burden relative to their revenues. Corporate revenues are allocated to business owners using iterated ownership shares. Panel A finds an increase from about 0.012 to 0.020. Interestingly, the ratio of wealth tax exposure to revenues in 2023 is no larger than during the 2012–2015 period. Hence, in a rough sense, when inflation is accounted for, the 2021–2022 reforms simply restored previous levels of wealth taxation. However, when we included dividend taxes, wealth tax exposure is somewhat larger in 2023 (at about 0.032) than during 2012–2015 (when it was closer to 0.028). However, this roughly 15% increase is considerably smaller than in the increase in the wealth tax amounts demonstrated in Figure 2.

Panel A suggests that the level of wealth tax exposure is relatively high. For each dollar of revenue, business owners pay about 2 to 3 cents in wealth taxes in 2023. This high *level* of the ratio is driven by the sample restriction that the business owners are in the top-100 municipal lists. When we also restrict business owners to be in the top 50% of the overall revenue distribution. This additional restriction reduces the sample of taxpayers by about 28% (from 15,326 to 11,019) and significantly lowers the ratios of wealth tax payments to revenues.

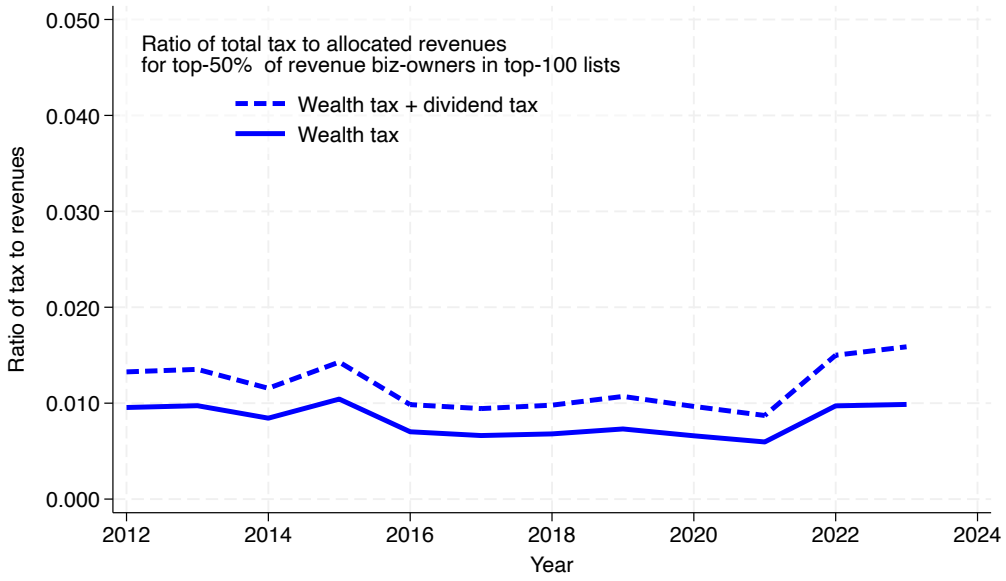
[4]We note that there is a spike in personal income taxes in 2021, but this can be attributed to increased dividend payments in 2021 in anticipation of (pre-announced) higher future dividend tax rates.

FIGURE 2: WEALTH TAX EXPOSURE RELATIVE TO TOTAL REVENUES

Panel A: Wealth Tax as Share of Revenues



Panel B: For Entrepreneurs in Top-50% of Revenue Distribution



Notes: Panel A considers wealth tax exposure as the ratio of aggregate wealth tax (solid line) and dividend-tax-adjusted wealth tax (dashed line) to aggregate revenues for individuals in the municipal top-100 lists. See equation 1 for details on the dividend-tax adjustment. Panel B considers only the subset of entrepreneurs in the top-50% of the revenue distribution, where firm-level revenues are allocated to their owners according to ownership shares.

4 Mobility

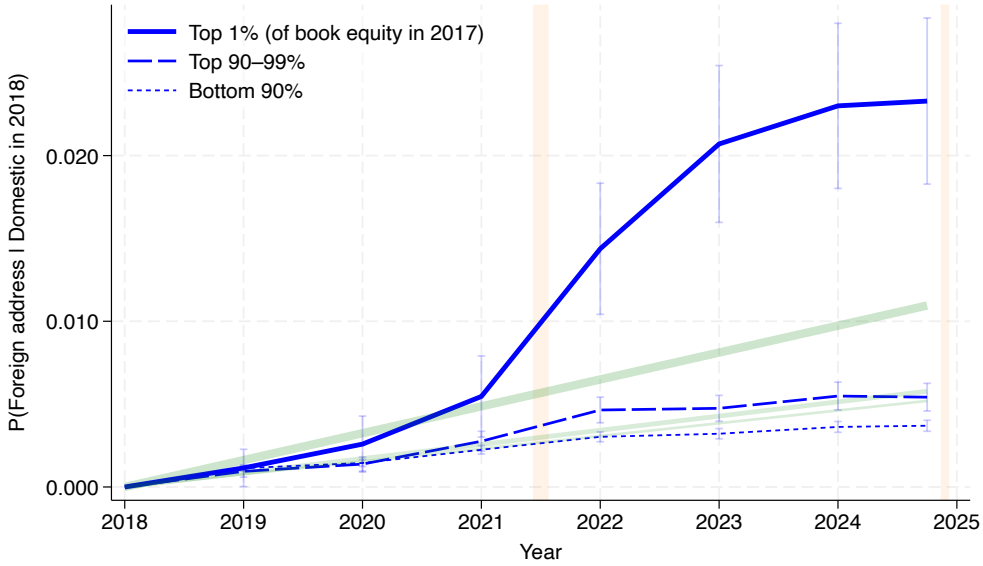
The public shareholder register contains information on the most recent country of residence for all shareholders. We supplement the data with historical versions of the public

shareholder register to obtain a panel of residency starting in 2018.

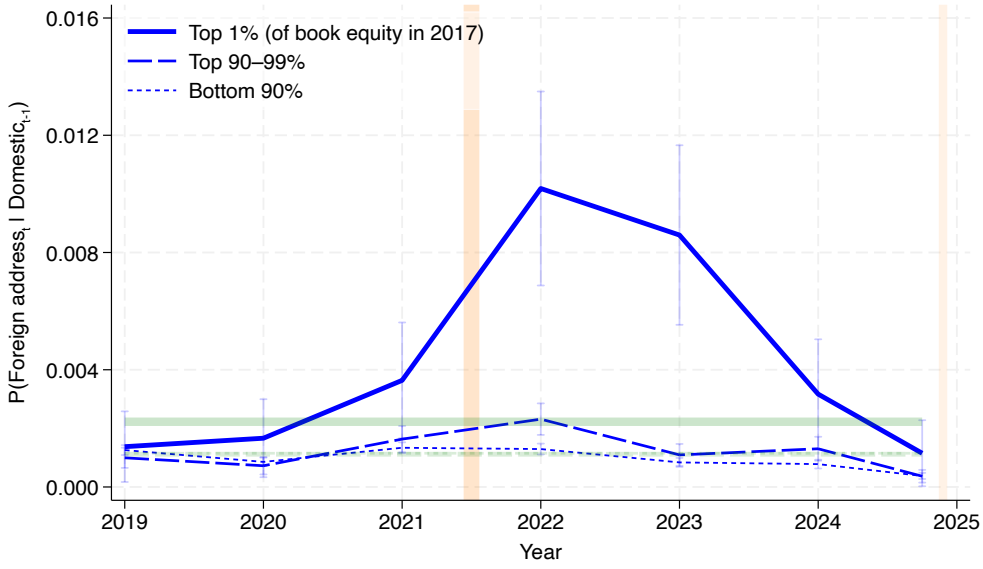
4.1 Outmigration

FIGURE 3: A MODEST EFFECT ON OUTMIGRATION

Panel A: Cumulative Outmigration Since 2018



Panel B: Annual Outmigration Rate



Notes: Panel A considers the probability that an individual who was a Norwegian resident in 2018 is a foreign resident during year $t > 2018$. Individuals who appear as foreign residents and subsequently leave the data remain coded as foreign residents. The linear solid green lines extrapolate the pre-period trends (forced to equal zero in 2018). Individuals are sorted by their allocated (by direct ownership share) book equity as of 2017. Panel B considers annual outmigration probabilities. The sample for year t is restricted to those who were Norwegian residents in $t-1$. The solid green lines equal the 2019–2021 means for each group of entrepreneurs.

Panel A of Figure 3 limits the sample to those residing in Norway as of 2018. The figure shows the probability that this individual appears with a foreign address in subsequent years. Individuals who enter with a foreign address and subsequently leave the register are coded as still being foreign residents. Individuals who return will then be coded as having a domestic address in the return year and onward. I split the sample into three bins based on their allocated book equity in private firms as of 2017. We see that those in the top-1% (of book equity) leave Norway at higher rates even before the 2022–2024 reforms. This group consists of 3,221 individuals. The thick green shaded line extrapolates the pre-2022 linear trend to give a rough idea of the counterfactual cumulative outmigration rate.

By October 2024, we see that the cumulative outmigration probability is about 2.1%, which is about 1 percentage point higher than the extrapolated trend. In terms of the number of individuals, there were about 30 excess outmigrants in the top-1% group by October 2024. In the other groups (top 90–99% and the bottom 90% of book equity), there is no indication of any excess outmigration.

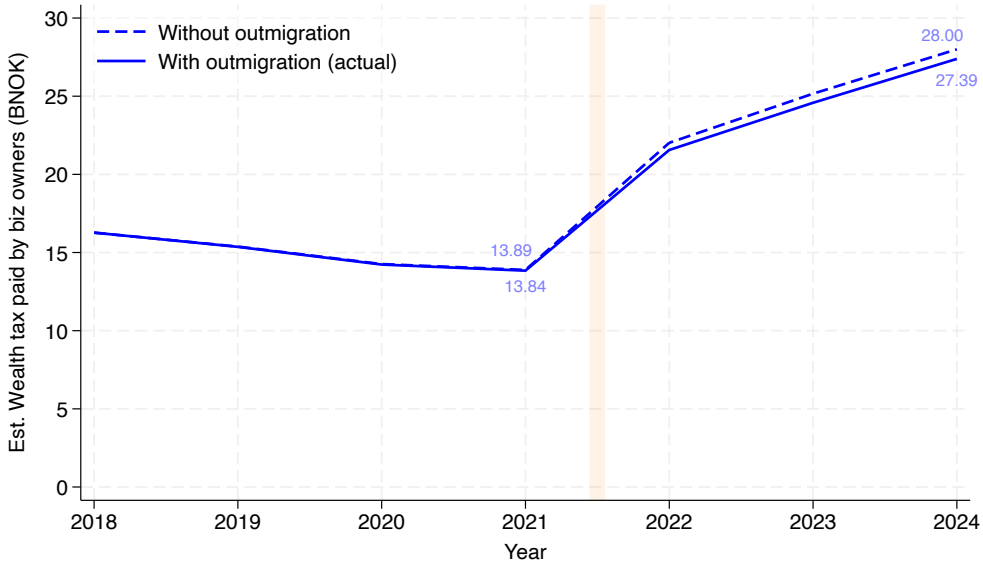
Panel B of Figure 3 considers annual outmigration rates. That is, the sample is always restricted to those residing in Norway during $t-1$. This figure confirms the main insights from Panel A, that there was (statistically) significant outmigration during 2022–2023, but not thereafter, likely due to the stricter exit tax rules.

4.2 Outmigration and wealth wax revenues

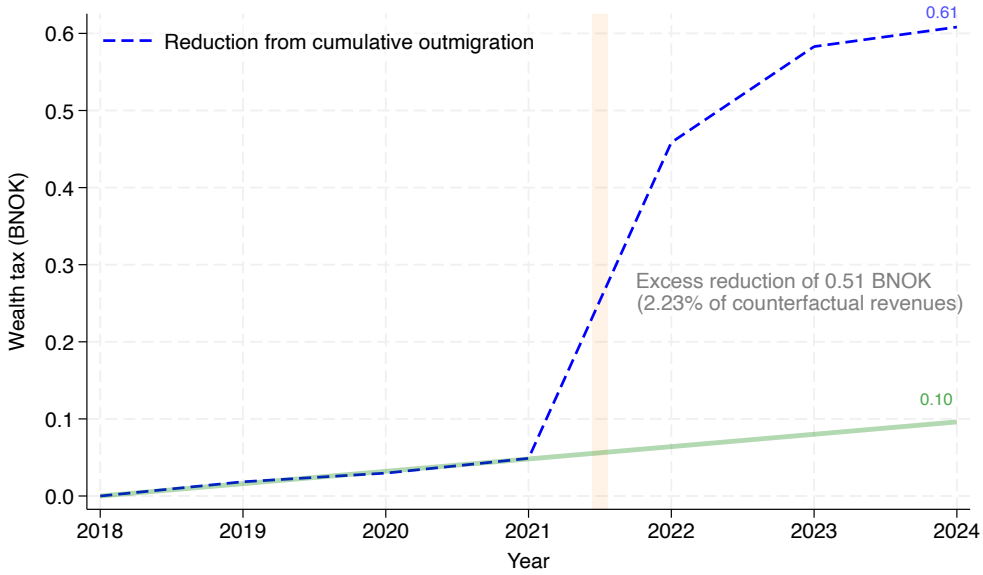
Counterfactual wealth tax payments. To obtain a measure of wealth tax (non-)payments made by outmigrants, I use data on pre-period taxable net wealth and business assets to predict their (possibly unobserved) taxable wealth. For billionaires ($TNW_{i,2020} > 1$ BNOK), I assume that their wealth entirely consists of stocks. I first assume that their taxable wealth (TNW) changes only according to the tax assessment rules (i.e., no behavioral responses). I then scale each individual's TNW up (or down) according to the observed growth rate of aggregate TNW among 2020–billionaires who did not outmigrate. This provides a measure of (counterfactual) TNW for all 2020–billionaires, including those who outmigrate (and for whom I do not see observe TNW directly).

FIGURE 4: OUTMIGRATION AND COUNTERFACTUAL WEALTH TAX REVENUES

Panel A: Wealth Tax Revenues With and Without Outmigration



Panel B: Annual Revenue Loss Due to Cumulative Outmigration



Notes: Panel A estimates wealth tax revenues with and without the actual outmigration occurring since 2018. See text for a description of the methodology. Panel B zooms in on the difference between the two aggregate tax amounts. The solid green line provides the extrapolated difference (fitted to pre-2022 data).

For non-billionaires, I begin by estimating

$$\log(TNW_{i,t}) = \beta_t \log(\text{BookEquity}_{i,t}) + \alpha_t + \varepsilon_{i,t}, \tag{2}$$

for (i,t) that are in the municipal top-100 lists and satisfy book equity$_{i,t} > 1,000,000$, where BookEquity$_{i,t}$ is book equity allocated according to ownership shares. I then predict, largely out of sample, $\log(TNW_{i,t})$ for all (i,t) satisfying book equity$_{i,t} > 100,000$. I then set

$$\widehat{TNW_{i,t}} = \exp(\widehat{\log(TNW_{i,t})} + 0.5RMSE^2) \tag{3}$$

for non-2020-billionaires. The purpose of this dual approach is to avoid underestimating the TNW of ultra-wealthy (i.e., billionaires) outmigrants, which would occur if I only used the log-log prediction approach. I then use an individuals $TNW_{i,t}$ and the wealth tax rules for year t to determine wealth tax amounts.

4.3 Wealth Tax ATRs for Outmigrants

In order to produce migration elasticities comparable to other findings in the literature, I need an estimate of the treatment intensity. That is, by much much would the wealth tax ATR have increased for outmigrants had they stayed? Changes to the wealth tax thresholds and statutory rates directly affect this ATR. However, the reduced discount on stocks also increases the ATR when we consider "undiscounted" taxable wealth to be the relevant tax base. In addition, I need to account for the fact that the tax-base contribution of business assets can deviate substantially from market values. To do this, I match data on estimated wealth from the rich lists with taxable wealth from the tax lists. I then focus on the sample of wealthy individuals who were classified as tax refugees, and calculate the median ratio of estimated to taxable wealth, which I use to inflate taxable wealth to get an estimate of ATRs on market-value wealth. Interestingly, the ex-ante ratio of TNW to estimated market wealth is considerably higher for those classified as "tax refugees" by the magazine. Subsequent tax refugees have ratio of 49.58% while stayers have a ratio of only 26.77%.

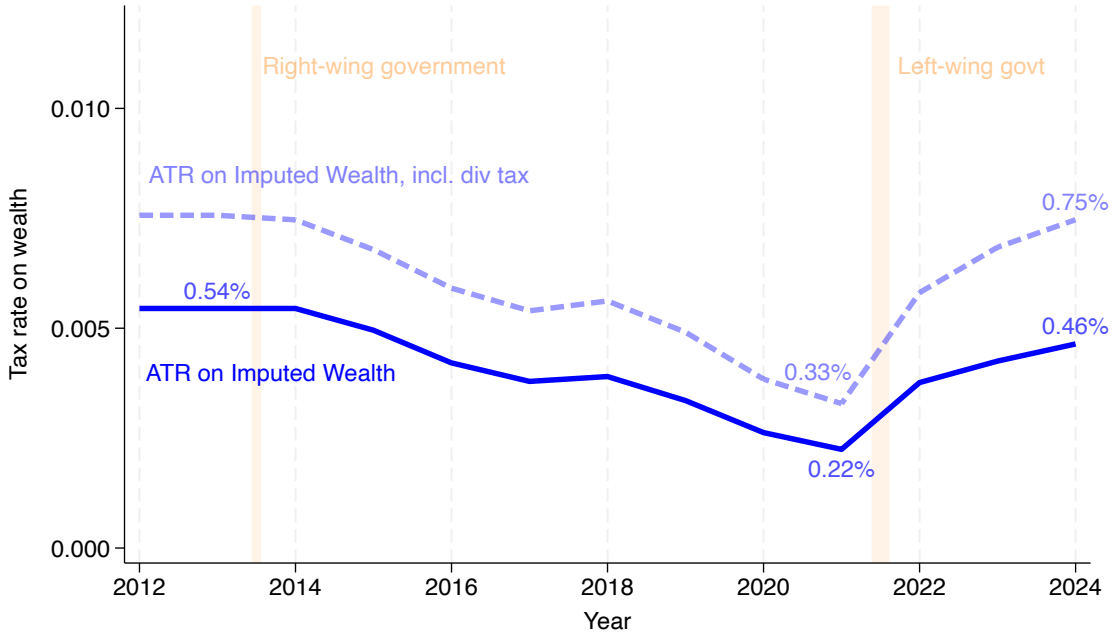
Figure 5 plots counterfactual ATRs for outmigrants in 90–99% and top 1% of the book equity distribution. Since taxable wealth is typically not observed after leaving Norway, I impute TNW using the approach in section 4.2, where I scale up TNW by removing the stock discount (assumed to apply to all taxable wealth) and then divide by the TNW to market wealth ratio of 49.58%. Panel A considers the top 1%. I find an increase in the wealth tax ATR of 0.24 percentage points (rom 0.22% in 2021 to 0.46% in 2024). When including the implied dividend taxes on wealth tax payments, the ATR increases by 0.42 percentage points (from 0.33% to 0.75%).

Panel B considers individuals in the 90–99th percentiles of book equity as of 2017. While Figure 3 finds no impact on cumulative outmigration in this group, this is not due to no increase

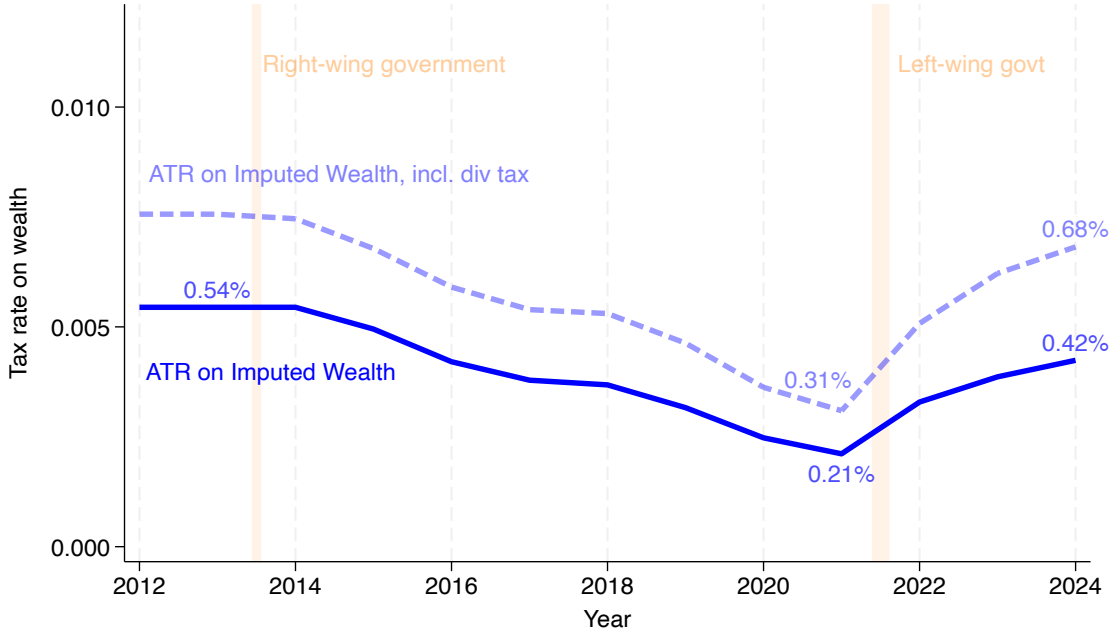
in effective tax rates. On the contrary, this group saw their ATRs on wealth increase from 0.21% to 0.42%. The difference of 0.21 percentage points is quite close to the 0.24 pp. increase for those in the top 1%. The fact that those in the 90–99th percentiles were affected but did not move has two potential explanations suggest that the change in the ATR on wealth may not be the relevant statistic in determining outmigration responses. For example, the costs associated with moving abroad may not be linear in wealth. For example, wealthier individuals may operate better-organized firms that are easier to operate from abroad.

FIGURE 5: (COUNTERFACTUAL) ATRS ON WEALTH FOR OUTMIGRANTS

Panel A: Business owners in the top 1% of book equity distribution



Panel B: Business owners in the 90th–99th percentile



Notes: This figure shows the imputed ratio of wealth tax payments to market-value wealth for those who migrated between 2018 and 2024. I impute taxable net wealth from actual taxable net wealth and allocated book equity as of 2017. Imputed taxable net wealth and wealth tax payment then changes according to assessment rules (i.e., stock discount) and the wealth tax schedule. Market-value wealth (the numerator) is imputed by first scaling up taxable net wealth to remove any stock discounts (which was, e.g., 45% in 2021), and then I scale it up by the median ratio of estimated wealth (from the magazine rich list estimates) to (undiscounted) taxable net wealth. This ratio is calculated using 2018–2020 data on individuals subsequently classified by the magazine as tax refugees.

5 Corporate Outcomes for Norwegian Firms

5.1 Empirical specification

I infer the effects of the 2022–2024 reforms by comparing Norwegian-owned firms with other firms. When focusing on firms domiciled in Norway, the key identification challenge is that Norwegian-owned firms are considerably smaller on average. There are likely additional fixed costs associated with creating firms in other countries, hence foreign-owned firms tend to be much larger. I address this by constructing matching cells, M, valued using 2013–2014 data on size and fixed assets, as well as industry codes. Firms in the same M cell have average log revenues during 2013–2014 that are at most 0.2 (log points) apart, are in the same tangible-fixed asset bin (NOK 0; more than 0; more than 500,000; more than 5,000,000), and share 3-digit NACE industry codes.

The results are based on estimating the following regression equation,

$$y_{f,t} = \beta_t Treat_{f,2018} + \alpha_f + \gamma_{M,t} + \rho_t X_f + \varepsilon_{f,t}, \tag{4}$$

at the firm-year level, where α_f is a firm fixed effect, $\gamma_{M,t}$ is an M-cell–year fixed effect, and X_f is a vector of controls: a second-order polynomial in firm age as of 2018 and 4-digit NACE code fixed effects. Standard errors are clustered at the firm level.

5.2 First-stage effects

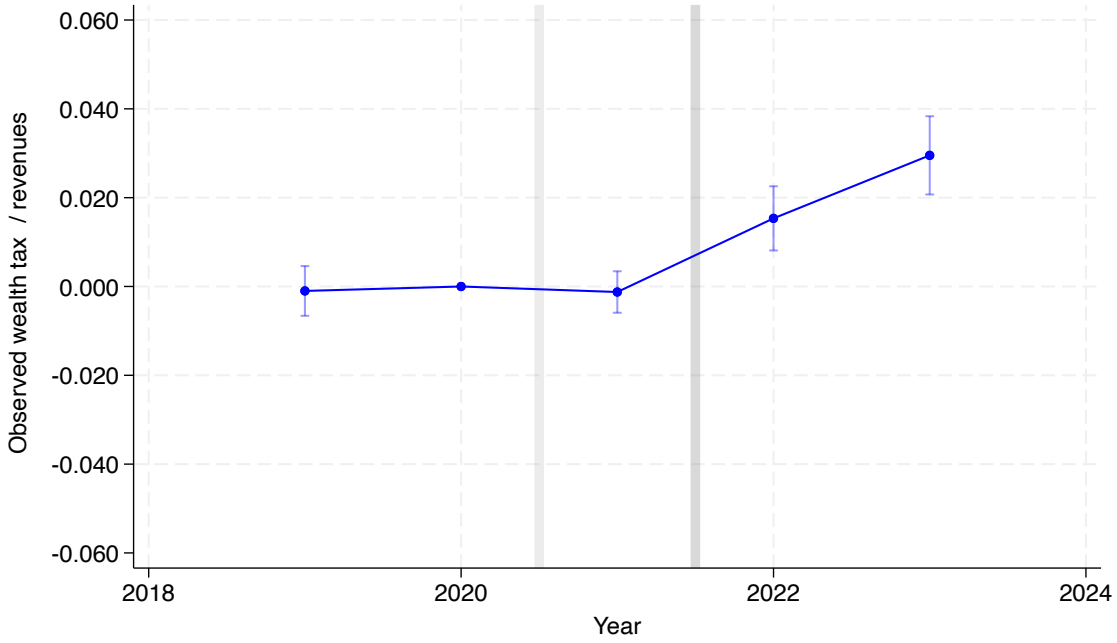
While the descriptive analyses demonstrate a large increase in wealth tax payments for entrepreneurs, it is useful to quantify this effect using the same empirical methodology that I use to consider real effects on firm outcomes.

I first allocate observed wealth tax payments to firms proportionally to the firm's "size" in the owners' over-all private equity portfolio, where revenues are used as the size measure. That is, if I own 50% of a firm with 50 i revenues and 50% of a firm with 150 in revenues, the first firm is allocated 1/3 of my wealth tax payment, and the second firm is allocated 2/3. Importantly, this is only done for treated firms, the wealth tax exposure of non-treated (foreign-owned firms) is always set to zero.

Figure 6 demonstrates the effects on wealth tax exposure. Wealth tax exposure is measured as allocated wealth tax payments (scaled up to account for implied dividend tax payments) divided by the firm's total revenues. See Appendix Figure OA.2 which also includes imputed wealth tax payments (which addresses the fact that some business owners are unaffected due

to being below the wealth tax threshold.

FIGURE 6: EFFECT ON WEALTH TAX EXPOSURE



Notes: I only consider years 2019 onward because these are the years for which both municipality (top-100) and zip-code level lists are available, implying stable coverage within the sample. I allocate wealth tax payments from individuals to firms proportional to that firm's contribution to the individuals allocated revenues: that is is ownership share in f times f's revenues divided by the sum of ownership shares times revenues for all the other firms that i owns. Wealth tax payments are scaled up by $1/(1-\text{dividend tax rate})$. I only retain in the sample firms for whom we observe wealth tax amounts for at least 50% of the shares. See Appendix Figure OA.2 which also includes imputed wealth tax payments (which addresses the fact that some business owners are unaffected due to being below the wealth tax threshold.

5.3 Effect on firm payouts

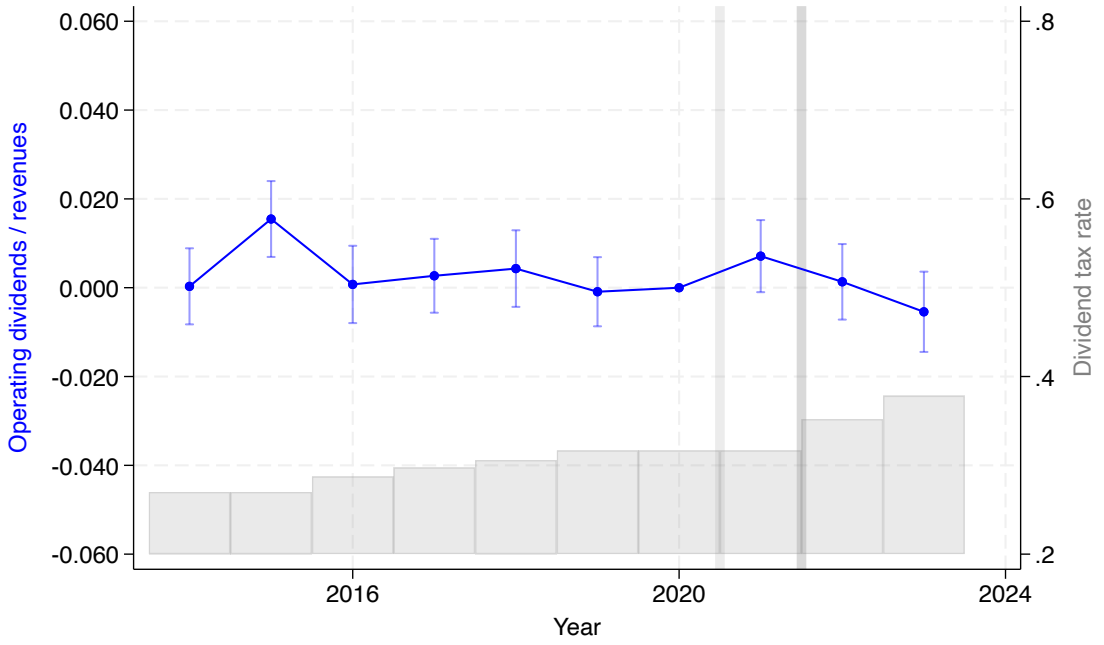
The key challenge in studying the effect on dividend payments is that wealthy individuals typically own corporations through several layers of ownership. If an owner owns firm A through B, and C, a dividend that originates in firm A and passes through B and C, would be observed four times in the data. To avoid this double (and triple) counting, I define "operating dividends" as

$$\text{OperatingDividends}_{f,t} \equiv \text{OperatingProfits}_{f,t} - \Delta\text{Equity}_{f,t}. \tag{5}$$

With this definition, which does not include *financial income*, I do not count dividends that are received by f and immediately paid back out. By including the (negative of) the change in total equity, as opposed to only retained earnings, this definition also treats reductions in paid-in shareholder capital as dividends.

I report the results in Figure 7. We see a spike in dividend payments in 2015, which is undoubtably attributable to anticipatory responses to dividend increases during 2016–2018. We further see a modest spike in 2021, which is likely driven by anticipatory responses to higher dividend taxes starting in 2022. However, we see no evidence of higher dividend payments during 2022–2023 during which wealth tax payments were substantially higher.

FIGURE 7: NO DISCERNIBLE EFFECT ON PAYOUTS



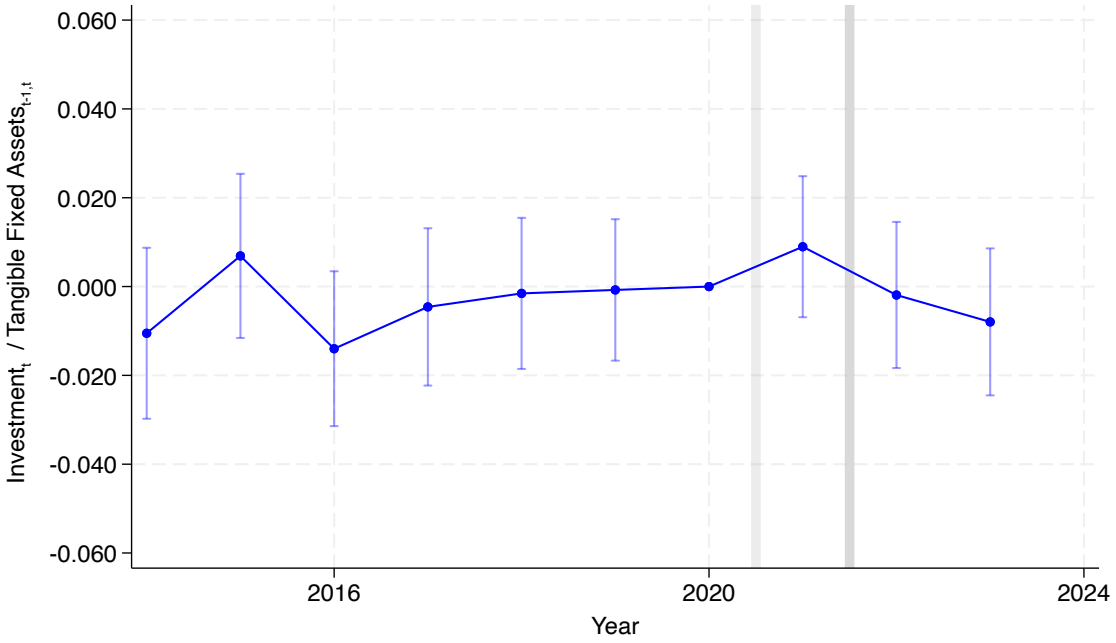
Notes: We define operating dividends as $\text{OperatingDividends}_{f,t} \equiv \text{OperatingProfits}_{f,t} - \Delta\text{Equity}_{f,t}$. This is divided by concurrent revenues, and then winsorized at the 5% and 95% levels. This measure accounts for both dividend payments and reductions in paid-in capital, but does not double-count dividends passing through several ownership layers (see text for additional discussion).

5.4 Corporate investment

Figure 8 considers the effect on corporate investment. I measure investment intensity as $I_{f,t} \equiv \Delta TFA_{f,t} + DEP_{f,t}$, where TFA is tangible fixed assets and DEP is depreciation. We divide $I_{f,t}$ by K_{t-1}, which is the amount of capital (tangible fixed assets) implied by the perpetual inventory method (PIM).

We see no clear indication that higher wealth tax payments during 2022–2023 coincided with less investment. [However, note that there is some indication that investment decreases, hence new data for 2024 (arriving shortly) will be useful.]

Figure 8: No Discernible Effect on Investment



Notes: Investment is defined as $I_{f,t} \equiv \Delta TFA_{f,t} + DEP_{f,t}$, which is then divided by the $t-1$ stock of tangible fixed assets per the perpetual inventory (PIM) method. The resulting ratio is winsorized at the 5% and 95% levels.

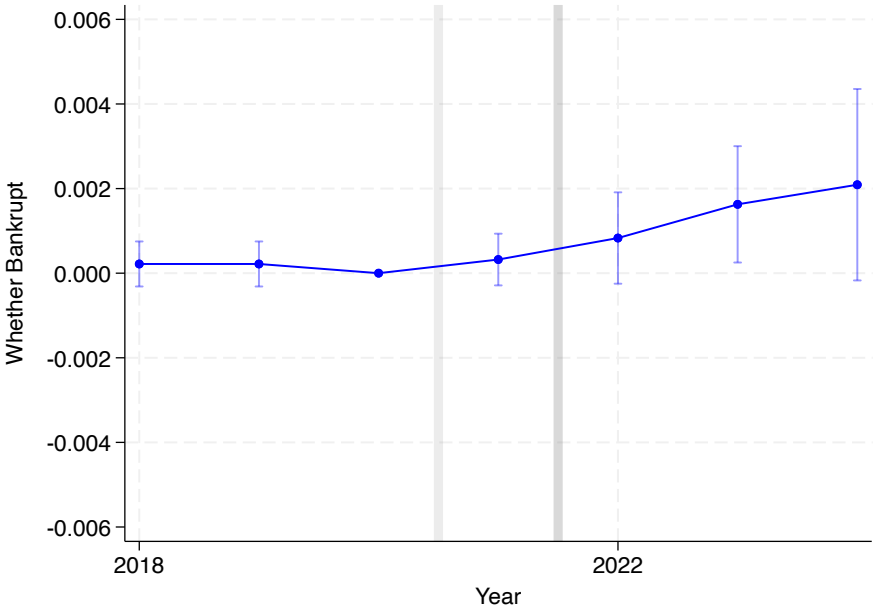
5.5 Firm closure and bankruptcy

I use information from Orbis as of October 2025 to infer a corporation's status history. If a firm appears as in bankruptcy as of, e.g., July 2023, we define the firm as being active (not bankrupt) until 2022, and then bankrupt in 2023 and onward. We consider two status indicators. Panel A of Figure 9 considers whether the firm has entered bankruptcy (and is not subsequently observed as not in bankruptcy). Panel B considers whether the corporation is dissolved (where we omit M&A-related dissolutions).

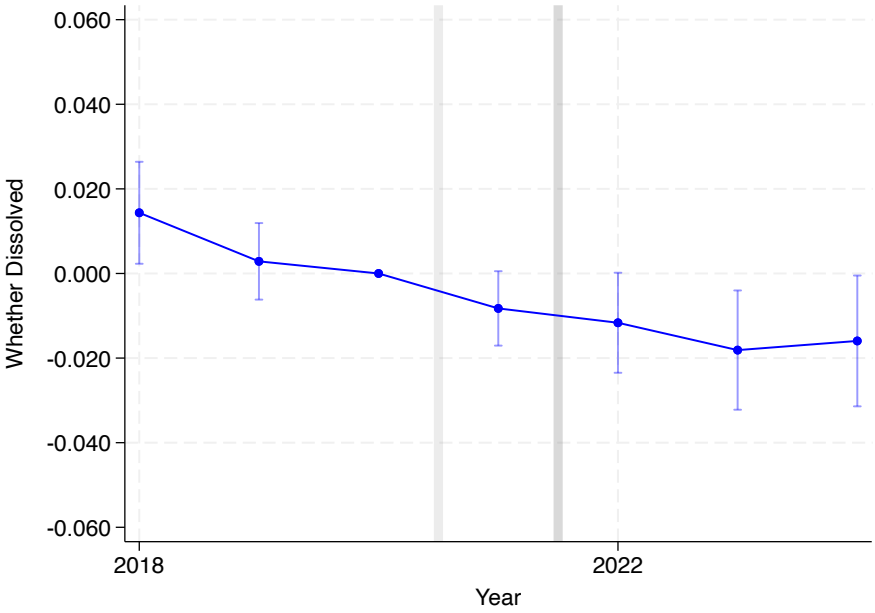
We find evidence that Norwegian-owned firms are more likely to become bankrupt, but the effects are economically modest. By 2023, Norwegian firms are 0.2 percentage points more likely to have entered bankruptcy. We find no evidence that Norwegian-owned firms are more likely to be dissolved. The point estimates are negative, but these appear entirely driven by pre-existing trends. Norwegian-owned firms are dissolved at lower rates even before 2022–2024.

FIGURE 9: BANKRUPTCY AND DISSOLUTION

Panel A: Whether firm goes bankrupt



Panel B: Whether firms dissolve (excl. M&A)



Notes: We use information from WRDS Orbis as of October 2025 to infer a corporation's status history. If a firm is, e.g., in bankruptcy as of July 2023, we define the firm as being active until 2022, and then bankrupt in 2023 and onward.

5.6 Innovation as measured by patenting

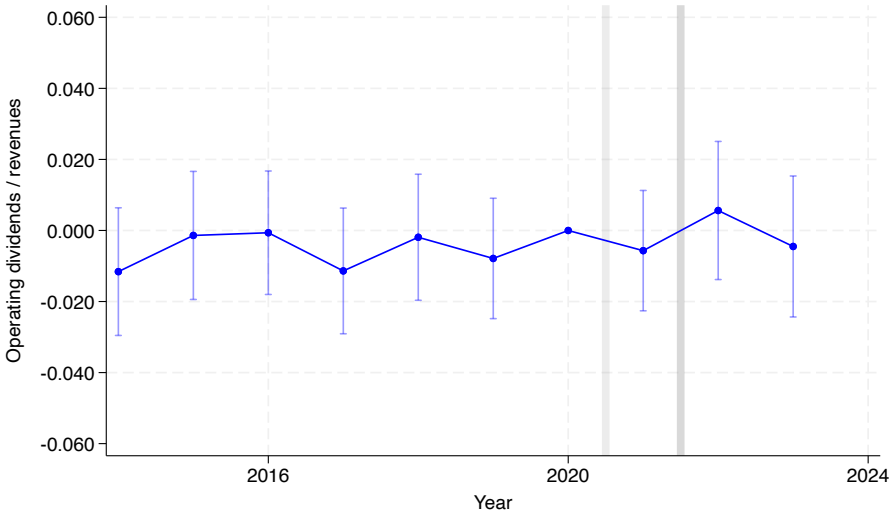
In progress.

5.7 Corporate Outcomes: Firms Located Abroad

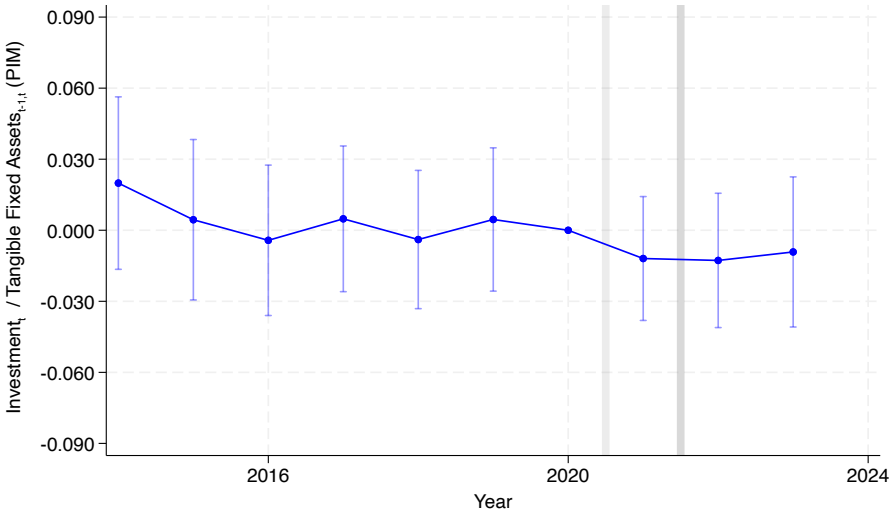
I use the historical ownership data from BvD Orbis to identify the global ultimate owner (GUO) as of 2018. For Norwegian-owned firms, we focus on the case when the ultimate owner is a norwegian corporation. We then use data from the Norwegian shareholder register to identify the ultimate owners to verify that they are Norwegian residents (and thus subject to the wealth tax). We require that Norwegians own (possibly indirectly) strictly more than 50% of the Norwegian corporation that appears as the GUO in Orbis. These firms make up the treatment group. The control group consists of firms whose global ultimate owner is not domiciled in the same country as the firm itself. Hence, both treatment and control firms are foreign-owned firms (from the perspective of the firm).

Figure 10: Effect on Payout and Investments in Firms Located Abroad

Panel A: Payouts: Operating Dividends / Revenue



Panel B: Investment Rate



Notes: This figure shows the differential evolution of payouts (A) and investments (B) for Norwegian versus non-Norwegian owned firms located abroad. Panel A considers the ratio of operating dividends (operating profits minus the change in book equity). Panel B considers the ratio of investment (change in tangible fixed assets plus depreciation) to the stock of tangible fixed assets according to the PIM methodology. Domestically owned firms are excluded from the analyses.

6 Startup financing

Did the tax reforms of 2021–2023 reduce the propensity of domestic investors to invest in potential high-growth startups? I identify such startups using data on innovation and startup grants from Innovation Norway. *In progress.*

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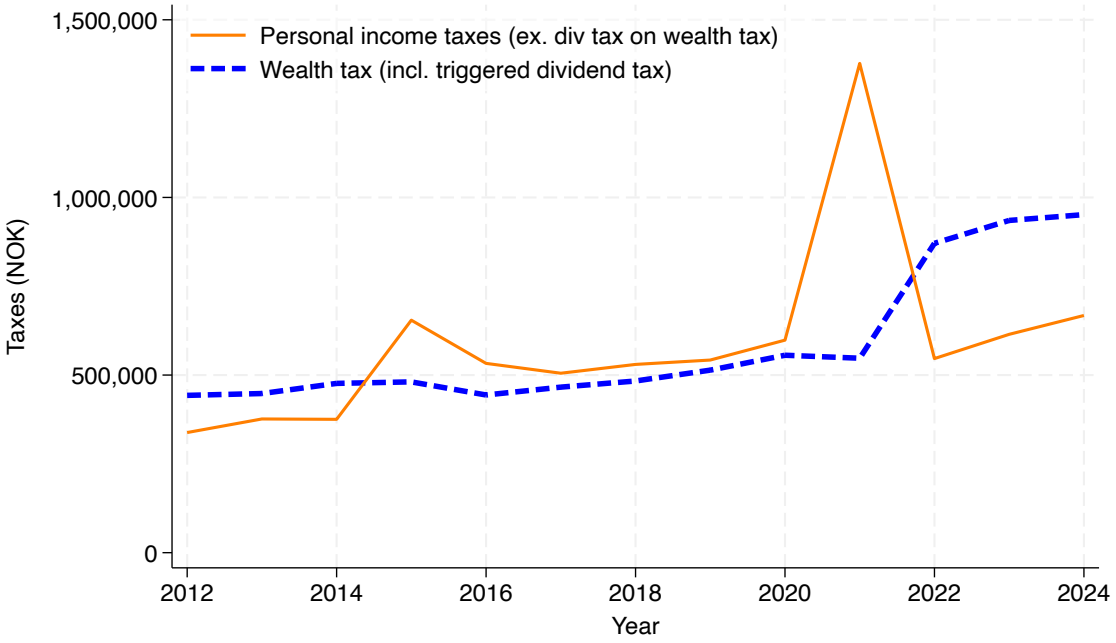
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Online Appendix

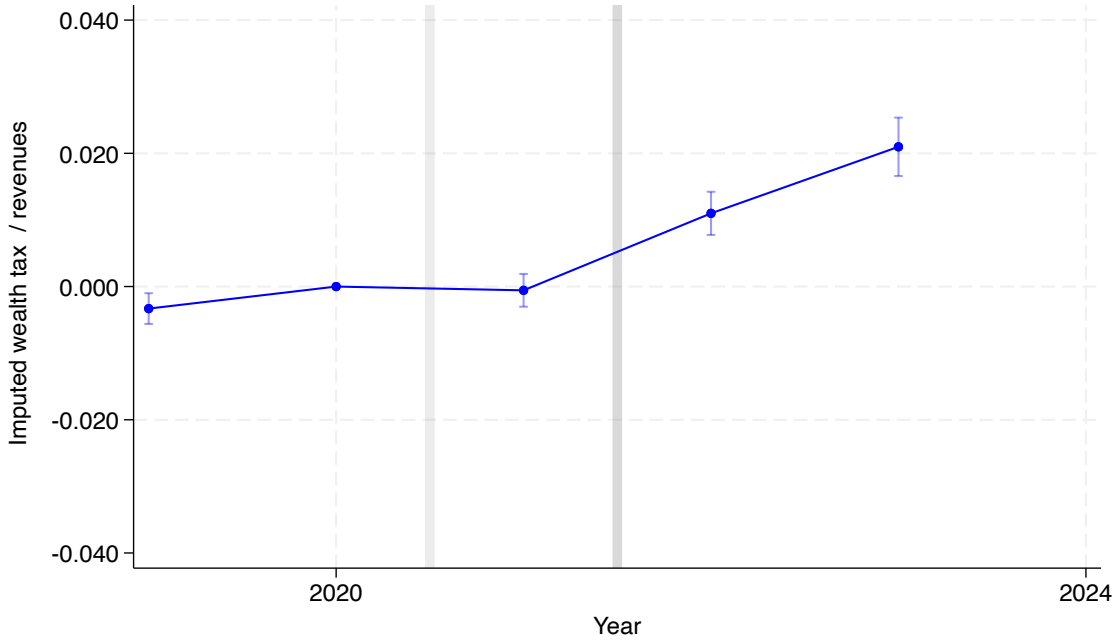
A Data Appendix

Figure OA.1: Wealth Tax versus Personal Income Taxes



Notes: The solid orange line shows average personal income taxes (total taxes minus wealth tax with implied dividend taxes). The dashed blue line show average wealth tax payments (with implied dividend taxes). Spikes income taxes in 2015 in 2021 can be attributed to large anticipatory dividend payments prior to dividend tax rate hikes during 2016–2018 and 2022–2023.

FIGURE OA.2: EFFECT ON WEALTH TAX EXPOSURE



Notes: See main-text Figure 6 which considers only observed tax payments. In this figure, we replace missing wealth tax amounts (i.e., not observed in either top-muni or top-zip-code lists) with imputed wealth tax amounts. Essentially, we use observed taxable net wealth to calculate the relationship between book equity and taxable wealth, and then use data on book equity to predict taxable wealth and thus annual wealth tax payments. Appendix B.1 explains the imputation procedure more formally.

B Data appendix

B.1 Imputed tax payments

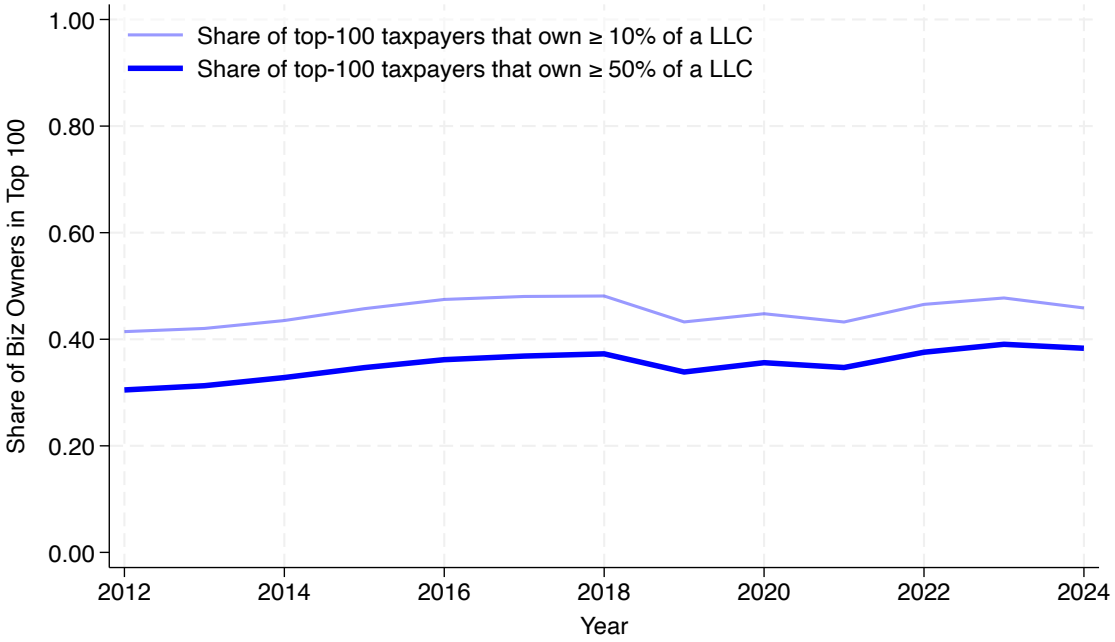
I first estimate

$$\log(TNW_{i,t}) = \beta_t \log(DirectBookEquity_{i,t}) + \alpha_t + \epsilon, \tag{6}$$

on a sample of observations where $DirectBookEquity_{i,t} > 1,000,000$ and the individual is in the municipal top-100 lists. $DirectBookEquity_{i,t}$ is the sum of directly-held book equity allocated (via ownership share) to a given individual. Regressions are run at the individual-year level.

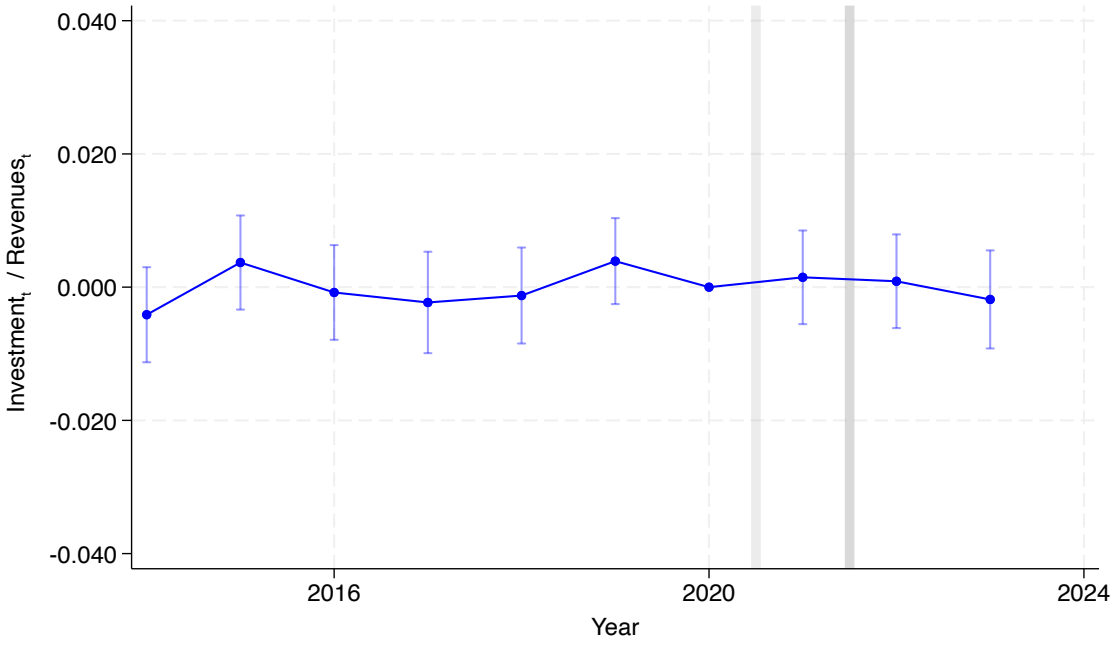
I then predict $\log(TNW_{i,t})$ for all i such that $DirectBookEquity_{i,t} > 100,000$. Predicted TNW is then set to $\exp(\widehat{\log(TNW_{i,t})} + 0.5\text{RMSE}^2)$, where $RMSE$ is the root mean squared error of the regression above. I then use predicted TNW to calculate tax payments using the prevailing tax scheme for year t.

Figure OA.3: Share of Top Wealth Tax Payers that are Business Owners



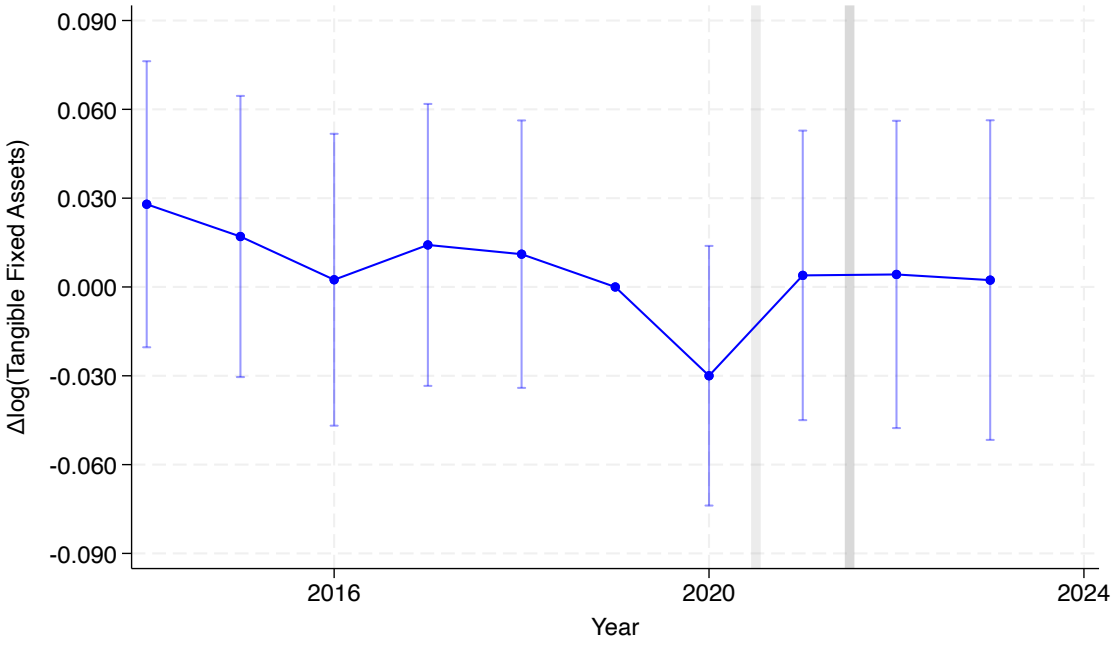
Notes: This figure plots the share of individuals in the municipal top-100 lists that own more than 10% or 50% of an LLC.

Figure OA.4: No Discernible Effect on Investment: As a Fraction of Revenue



Notes: Instead of dividing investment by the PIM capital stock (see Figure 8), I now divide by concurrent revenues. The ratio is winsorized at the 5% and 95% levels.

FIGURE OA.5: FIRMS LOCATED ABROAD: LOG-DIFFERENCED TANGIBLE FIXED ASSETS



Notes: This figure considers the effect on log-differenced tangible fixed assets. This complements Panel B of Figure **??** which considers the investment rate (change in book TFA plus depreciation divided by PIM-method capital stock). The key difference is that log-differenced tangible fixed assets can be measured even when data on depreciation is missing. The log-difference is winsorized at the 5% and 95% levels.