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Tax planning and investment responses to dividend taxation



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Abstract

This study explores empirically how business owners respond to dividend taxes in a range of different margins including tax planning and investment. Using administrative tax data on all privately held Finnish corporations, I find exceptionally clear dividend payment responses to tax rate discontinuities and changes. Heterogeneity analysis suggests that more experienced owners and owners with lower income have higher tax base elasticities. Studying the income composition of owners around tax changes reveals clear income shifting between wage and dividends with negligible effect on gross income received from the firm. Evidence on the asset composition of firms indicates that a notable part of the payment response is due to inter-temporal income-smoothing, while changes in the tax schedule did not cause significant real responses in output or investment.

JEL classification codes: G38, H21, H24, H25

Keywords: Dividend taxation, investment, income shifting, bunching

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1 Introduction

Concerns over investment, international competitiveness and growth have led to several countries reducing their taxes on capital income, including dividend taxes. Firms are incremental for innovation and growth¹ and policymakers are rightly concerned about the implications of taxation on business dynamism. Dividend taxes reduce the return on invested capital and the owner's own work, hence decreasing the incentives for new investments and exerting effort. However, business owners have many channels for adjusting their tax burden (e.g. tax planning) and several channels to fund investment, so the distortions can also be small. Understanding the mechanisms of how business owners respond to dividend taxation is essential in planning a good income tax scheme. While equity reasons favor taxing entrepreneurial income as progressively as labour income, these efficiency considerations may suggest a lower rate. Despite the importance of the topic, there are still few comprehensive studies on the range of impacts of dividend taxation. As earlier studies typically focus on one response margin², this study empirically brings together the variety of potential responses in a setting with tax thresholds and policy changes.

In this paper, I study how Finnish firms and firm owners respond to dividend taxation in different decision margins, including tax planning and investment. I use discontinuities in the owner's dividend tax schedule as well as changes in tax rates to empirically study the importance of various response channels. I find that business owners adjust their dividend income strongly to match the tax schedule thresholds. The strong observed bunching in different margins implies taxable dividend income elasticities from 0.5 at the threshold for higher capital income tax to 3.6 at the threshold where a progressive labor income tax kicks in. Further investigation suggests that the bunching mainly reflects intra-temporal and intertemporal tax planning, while I do not observe responses in investment when studying changes in the tax brackets. The findings in this study are not only relevant to the discussion on the Finnish tax framework, but also for broader considerations in tax design. In various countries, a prevailing trend involves corporate owners gaining advantages by keeping profits within the company, often due to disparities between corporate tax rates and capital

¹E.g. Acemoglu (2009)

²Studies on income shifting: Harju and Matikka, 2016; Pirttilä and Selin, 2011; Alstadsaeter and Jacob, 2016, studies on inter-temporal income-smoothing: Le Maire and Schjerning, 2013 and on investment: Yagan, 2015; Alstadsaeter et al., 2017.

income tax rates.

The Finnish dividend tax schedule provides exceptionally large incentives for firms to respond. The owners of privately held corporations can quite freely choose whether to receive income from the firm as dividends (taxed as profit with corporate tax and at the owner level with dividend tax) or to pay wages (only progressive earned income tax on wages). The dividend tax schedule includes deduction thresholds, effectively causing clearly lower marginal tax rates for certain amounts of dividend income in comparison to e.g. labor income. The dividend tax rate jumps notably at a threshold that is set first at a 9% (2006–2013) then at an 8% (2014–) return on net assets, after which a more progressive labour income tax kicks in. Moreover, there is a monetary threshold for dividends exempted from most capital income tax to alleviate the double taxation of corporate profits.³ These discontinuities create strong incentives, and both the thresholds and the tax rates have changed over the past decade. I use detailed administrative data to study the responses to these dividend tax schedule discontinuities and to changes in the brackets.

First, I study the incidence of dividend payments at the thresholds using the bunching method, developed by Saez (2010). I find exceptionally clear dividend responses to the dividend tax rate thresholds. I estimate an elasticity of 0.5 at the monetary thresholds. This implies that a 1% increase in the net of dividend tax rate increases taxable dividend income by 0.5%, which is a large response. I find an even larger elasticity of 3.6 at the net asset thresholds. This massive elasticity is likely driven by the fact that above the net asset threshold, dividends are taxed higher or as highly as wages depending on the income level of the owner, so there is no benefit in paying dividends instead of wages. Furthermore, the owner may increase the future net asset position by retaining earnings instead of distributing dividends. These incentives lead to business owners reacting to the net asset threshold very strongly. The strong bunching responses also highlight that business owners are well informed about the tax schedule and find it easy to adjust accordingly. Studying the heterogeneity across individuals suggests that experienced business owners respond more strongly, while in this context, income is not positively connected to the elasticity estimate, as suggested by earlier literature with data on both wage-earners and self-employed (Gruber and Saez, 2002).

³For example, the marginal tax rate on dividends (including corporate taxes) jumped from 28% to 40.5% at 90,000 EUR between 2006 and 2011.

Second, I then examine a variety of potential response channels potentially driving bunching at the thresholds, as the bunching elasticity in this type of single tax base setting is clearly not based merely on labor supply decisions as in the original study by Saez, 2010. Moving the dividend tax threshold brings new firms into the range of the higher/lower marginal tax rate and I use that feature as a quasi-experiment to study various outcomes. By studying the income composition of firm owners around the time of tax changes, I observe that owners engage actively in income shifting across wage income and dividends to minimize their tax burden. Analysis of the asset structures of the firms suggests that a notable part of the payment response is due to inter-temporal income-smoothing, as the balance sheet information shows firms at the thresholds accumulating financial assets in the firm. Hence, owners avoid the higher tax bracket by retaining (and withdrawing) earnings in the firm, which is also predicted in earlier literature as the capitalization of dividend tax (Auerbach, 1979). Retaining profits has several tax benefits. In addition to avoiding the higher tax bracket, the retained earnings increase the firm's value by increasing its net assets. Therefore, it allows for a higher amount of dividend to be distributed at the lower capital income tax in the future as the tax schedule in the Finnish setting depends on the firm's net assets. Also, some forms of capital income are taxed more lightly when received by a firm, so saving by investing through a firm may be lucrative. This is likely to further boost the capitalization of dividend taxes into share values. Finally, I study real economic effects, using changes in the dividend tax thresholds, but I find no statistically significant responses in the investment or output of these firms. While no real effects are found, the evidence presented in this study shows the bunching is mostly driven by tax planning via income shifting and retaining earnings.

The detailed data allow me to trace the dividend income of the owner of a particular firm and to study different outcome variables as potential response channels with more precision than earlier studies have, for example by studying the heterogeneity of responsiveness and including components of the outcomes such as impacts on financial assets. This study builds on several strands of tax literature.

First, I contribute to the bunching literature. I show sizeable responses to the dividend tax schedule in a new institutional context and provide an elasticity estimate, which could be helpful e.g. in policy analysis. Furthermore, the rich data allow me to study the heterogeneity in elasticities within the self-employed. Kinks and notches have been used to study the responsiveness of taxpayers in various income tax bases. Earlier literature has shown that bunching at income tax thresholds ap-

pears to be particularly driven by the self-employed as wage earners are likely to face greater adjustment costs and hours constraints. This literature includes Mortenson and Whitten (2020) on tax credit maximizing kinks in the US, Chetty, Friedman, et al. (2011), who study kinks in the Danish income tax schedule and Bastani and Selin (2014), who find similar results in the Swedish income tax schedule. Kreiner, Søren Leth-Petersen, et al. (2014) and Kreiner, Soren Leth-Petersen, et al. (2016) use the bunching method to study year-end income shifting in Denmark, finding that high-income individuals in particular shift income around the end of the year if tax rates are about to change the next year. Focusing solely on business-owners and the dividend tax base, I show that while experience is linked to higher elasticity estimates, higher income business-owners do not seem to have higher dividend income elasticities. Rather the evidence points in the opposite direction, which is likely driven by the stronger income-shifting incentives due to lower tax rates for wages in lower income groups. Unlike in the literature on labor income tax rates⁴, there is no clear connection between gender and tax responsiveness in the dividend tax base.

Second, I contribute to the literature on the tax planning of business owners by describing the income shifting responses to the complex Finnish dividend tax schedule. I show that Finnish business owners shift income both intra-temporarily across income bases and inter-temporarily by retaining and distributing profits in accordance with the tax thresholds and changes. Lindhe et al. (2004) highlight the incentives created by the Finnish system to retain earnings within firms which I now show empirically happening. Including inter-temporal income shifting and real responses as a response margin builds on the earlier evidence by Pirttilä and Selin (2011) and Harju and Matikka (2016), who show that corporate owners in Finland actively shift income between dividend and wage tax bases⁵. Previously, evidence in Le Maire and Schjerning (2013) for Denmark and Miller et al. (2022) for the UK has given empirical support to the theoretical presumption⁶ of business owners using retained and withdrawn earnings to adjust their taxation, particularly in response to thresholds.

Finally, I build on the intricate dividend tax literature by exploring the impacts on investment in new capital. Real responses to dividend taxes have challenged

⁴E.g. Blomquist and Selin (2010), Bargain and Peichl (2016) and Jacquet and Lehmann (2020).

⁵Literature showing income shifting between tax bases in other countries includes Tazhitdinova (2020), López-Laborda et al. (2018), Alstadsaeter and Jacob (2016) and Waseem (2018).

⁶Auerbach, 1979.

economists for decades. The so-called new view (Auerbach, 1979 and King, 1974) suggests that dividend tax does not enter marginal investment decisions as marginal investment is funded from retained earnings (or debt). It thus suggests that dividend taxes have no impact on investment and dividend payments mainly reflect responses to inter-temporal incentives to pay dividends, and this leads taxes on dividends to capitalize into share values⁷. Yagan (2015) gives support to the new view empirically by showing that despite the notable dividend windfall (also documented in Chetty and Saez, 2005), there was no increase in investment following a dividend tax cut in the US. However, the so-called old view suggests that dividend taxes affect investment by firms negatively even if the investment is funded from retained earnings (Poterba and Summers, 1985). The reason may be that shareholders do not consider retained earnings as valuable as paid-out profits due to asymmetric information, i.e. principal-agent conflicts⁸, and dividend taxation amplifies these principal-agent conflicts of interest by incentivizing the retention of profits (Chetty and Saez, 2010). Alstadsæter et al. (2017) lend support to this point empirically. While finding no average investment response to a dividend tax cut in Sweden, they show that as a response, investment by cash-constrained firms increased relative to cash-rich firms, in line with the principal-agent conflict theory. Evidence in my study lends support to the new view of dividend tax literature: I find no impact on investment or output, while my evidence suggests dividend taxes capitalize into share values via retained earnings.

The rest of the paper is organized as follows. Section 2 outlines the institutions and the data. In Section 3, I present the payment responses to dividend taxation using the bunching method and estimate the corresponding elasticity. Section 4 discusses what the payment responses imply, covering real responses, income-smoothing and income shifting. Section 5 concludes.

Table 1: Dividend tax schedule in Finland

A. Dividend tax thresholds			
Years	Kink	Net asset threshold	
2006–2011	90,000 EUR	9%	
2012–2013	60,000 EUR	9%	
2014–2016	150,000 EUR	8%	

B. Owner-level tax burden around the tax thresholds			
Years		Effective marginal tax rate	
		Below net asset threshold	Above net asset threshold
2006–2011		26%	26–~55%
2012–2013	Below	24.5%	24.5–~55%
2014–2016	kink	26–26.8%	20–~55%
2006–2011	Above	40.5%	26–~55%
2012–2013	kink	40.36%	24.5–~55%
2014–2016		40.4–43.12%	20–~55%

Note: Panel A lists the monetary thresholds and the net asset thresholds in place in the dividend tax schedule in 2006–2016. The earned income tax rate varies depending on the taxpayer’s income and municipality. Panel B lists the implied marginal tax rates below and above each threshold in 2006–2016. The highest rate above the net asset threshold depends on the other earned income of the taxpayer. The highest overall marginal earned income tax rate has been circa 55%.

2 Institutions and Data

2.1 Institutions

In Finland, personal capital income, such as capital gains and rental income, are taxed at an almost flat capital tax rate. Other income, such as wages and social benefits, is taxed at a progressive earned income tax rate schedule. The ~30% capital income tax is lower than the highest marginal tax rates on earned income of ~55%, and aims to boost capital mobility and to respond to international tax competition. The

⁷For example, Zodrow (1991) describes the capitalization mechanism in more detail.

⁸Dividends signal the true value of the firm, and retaining earnings leaves more cash under the control of managerial choices, and thereby disincentivizes the close monitoring of managers, potentially leading to unproductive investments using retained earnings.

dividends of privately held corporations⁹ face a somewhat complicated tax scheme, with both capital and earned income tax schedules applied, depending of the size of the dividends. Furthermore, owners of privately held firms can quite freely choose whether to receive their income as wages or dividends, or leave income in the firm as retained earnings.¹⁰

To prevent extensive income shifting, the tax rate on dividends from a privately held corporation depends on the level of net assets of the firm: only the amount of distributed dividends below a predetermined rate of return on the firm's net assets, 8% since 2014, is taxed at the lower capital income tax rate. Moreover, for dividends below the net asset threshold, part of the capital income tax is deducted in order to reduce the double taxation of distributed profits. This creates an additional monetary threshold in the tax schedule. The monetary kink is applied at the individual level and not at firm level, so for owners receiving income from multiple privately held corporations their dividends are added up. The overall tax burden on distributed dividends includes both the flat corporate tax rate, 20% from 2014 onward, and personal dividend taxes. In 2006–2011, dividends below both the net asset threshold and the monetary threshold were taxed at an effective tax rate of 26%, including both corporate and dividend tax. Dividend payments above the monetary threshold but below the net asset threshold are taxed at a 40.5% effective marginal tax rate. Dividend payments above the net asset threshold are taxed at the progressive earned income tax rate, implying an effective marginal tax rate above around 55% at most. The earned income tax is applied to 75% of excess dividends to reduce double taxation, causing the higher effective tax rates to nearly equal the tax on wages, and for lower income levels, wages effectively face a lower tax than dividends above the net asset threshold¹¹. The earned income share of the dividends is added to the other earned income of the owner when calculating the effective tax rate.

Table 1 collects the parameters of the dividend tax schedules in use in 2006–2016. Panel A compiles the thresholds in the tax schedule and panel B displays the effective tax rates around each threshold in each period. The first column in Table 1 B features

⁹Dividends from publicly traded firms face a different dividend tax scheme.

¹⁰The Finnish dividend tax system varies depending on the organizational form of the company. In this study, I focus on privately held corporations that are limited companies owned by a single person or a group of individuals. The privately held corporation is the most common corporate form in Finland, covering nearly half of all firms.

¹¹For example in 2008 the highest earned income tax rate kicked in at 62,000 EUR.

the marginal tax rates below and above the monetary kink for dividends below the net asset threshold. For example, from 2006 to 2011, the effective tax rate below the monetary threshold was 26% as capital tax was fully exempted, and above the 90,000 EUR kink the effective tax rate rate was 40.5%¹². The marginal tax rate above the net asset threshold in the second column depends on the owner's other personal income, as dividends above this threshold face the progressive earned income tax schedule, with the highest rates around 55%.

While there were two consecutive changes in the parameters during the period, the first was originally intended as a permanent rather than a temporary change (Government proposal 50, 2011). An active discussion around corporate and dividend taxation continued after the change and the government changed the parameters already after two years (Government proposal 185, 2013). Both policy changes were motivated by the aim of shifting the tax burden of businesses from firm level to the owner level in order to incentivize investments and to respond to international tax competition. The permanent nature of the changes is important as owners are likely to react to temporary changes in taxes via inter-temporal tax arbitrage (Korinek and Stiglitz, 2009).

To sum up, the key features of the schedule are: i) below the net asset threshold the effective dividend tax rate including corporate tax is clearly lower (max. $\sim 40\%$) than the highest ($\sim 55\%$) income tax rates on wages. This means that excluding low levels of wage income¹³, it is optimal to pay dividends instead of wages up to the net asset threshold. ii) Above the net asset threshold the difference in tax between paying dividends or wages is negligible after reaching the highest tax bracket for earned income (below that wages face a lower tax). This means that iii) the net asset threshold creates additional incentives to shift income to wages or to retain earnings exceeding the net asset threshold in the firm as they increase the firm's asset position, enabling higher dividend payments in the lower tax bracket in the future. This complex system creates a challenging tax-minimization puzzle for the owner. I study bunching caused by both the monetary and the net asset threshold in order to estimate dividend tax elasticities. I then use the changes in the tax schedule to study

¹² $0.26+(1-0.26)*0.7*0.3$. Above the monetary threshold the capital tax rate has been applied to 85% of excess dividends since 2014, and before 2014 to 70%.

¹³It is usually optimal to pay wages until the marginal tax reaches the level of the dividend tax. The optimal low amount of wage depends on the particular year and municipality (more detail in the Appendix) as well as the amount of dividend, but the tax rate was always lower for wages than for dividends for wage income of below 20,000–25,000 EUR at the time.

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estimated as

$$\widehat{C}_j^0 = \sum_{i=0}^p \beta_i^0 \cdot (Z_j)^i + \rho \cdot \mathbf{1} \left[\frac{Z_j}{r} \in \mathbb{N} \right] + \varepsilon_j, \quad Z_j \notin [-R; R], \quad (2)$$

where \widehat{C}_j^0 is the estimate of the counterfactual distribution in each bin j with dividend income Z_j . β_i^0 are the regression estimates, and p denotes the degree of the polynomial. ρ in the second term captures the round number fixed effect that is observed in Figure 1. $[-R; R]$ is the excluded range of the distribution, which denotes the area where the kink point affects the owners' behavior. Following earlier literature (e.g. Chetty, Friedman, et al. (2011)), this area is selected by visual observation of the data. My results and conclusions are not sensitive to the choice of $[-R; R]$ or the order of the polynomial.

I estimate the counterfactual distribution around the net asset threshold following Equation 3.

$$\widehat{C}_j^0 = \sum_{i=0}^p \beta_i^0 \cdot (Z_j)^i + \frac{\sum_{j=-R}^R C_j}{2A+1} + \varepsilon_j, \quad Z_j \notin [-R; R], \quad j \in [-A; A] \quad (3)$$

The basic principle is the same as in Equation 2. Given the very strong bunching, the second term is used to spread the bunchers to the surrounding region to make the sum of firms in the counterfactual distribution match that of the realized distribution. For this distribution, there is no need to consider round number bunching. In estimating the counterfactual distribution, I include both the region below and above the threshold, as the system is likely to induce early payments of dividends, as discussed in Kari and Laitila (2014).

The sum of the excess observations in the bunching range is

$$\sum_{j=-R}^R \widehat{B}_j = \sum_{j=-R}^R (C_j - \widehat{C}_j^0). \quad (4)$$

The estimate of excess bunching \hat{b} is then the estimated excess mass around the kink relative to the average density of the counterfactual dividend distribution between $-R$ and R

$$\hat{b} = \frac{\sum_{j=-R}^R \widehat{B}_j}{\sum_{j=-R}^R \widehat{C}_j^0 / (2R+1)}. \quad (5)$$

Finally, the excess bunching can be turned into an elasticity estimate. The elasticities at the kink points are estimated as

$$\varepsilon_D = \frac{dD}{d(1-\tau)} \frac{1-\tau}{D} = \frac{\hat{b}}{D^* \cdot \log\left(\frac{(1-\tau_D)}{(1-\tau_D-\Delta\tau_D)}\right)}. \quad (6)$$

D denotes dividend income, τ the dividend income tax rate that jumps at a kink point D^* from τ_D to $\tau_D + \Delta\tau_D$. When estimating the elasticities at the net asset thresholds, I specify the marginal tax rate above the threshold for each firm owner individually. Then I use the aggregate bunching response to estimate the elasticity for each owner and report the mean elasticity.

Following earlier literature, I use the bootstrap method to construct standard errors (see Kleven (2016) for a review). In the bootstrap method, I sample the residuals from the regression a large number of times (300), with replacement, and estimate an elasticity for each draw. Using these elasticities, I calculate a standard error for the original elasticity estimate.

A.3 Additional empirical details

Table A1 gives the summary statistics for the full data. Altogether, the data consist of 641,558 observations across 11 years.

Figure A3 shows how various industries are represented in each bin around the 90,000 EUR threshold. The horizontal dashed line shows the industry's average share in the data. The figure shows that the finance industry is overrepresented among the firms bunching at the monetary threshold.

Table A2 shows the proportion of firms that move together with the threshold. When the monetary threshold moved from 90,000 EUR to 60,000 EUR, 47% of the preceding excess mass firms followed the threshold. At the 150,000 EUR threshold, one third of the observations had previously paid exactly 60,000 EUR of dividends, which was the preceding threshold. At the 8% net asset threshold, 70% of firms had previously bunched at the 9% threshold.

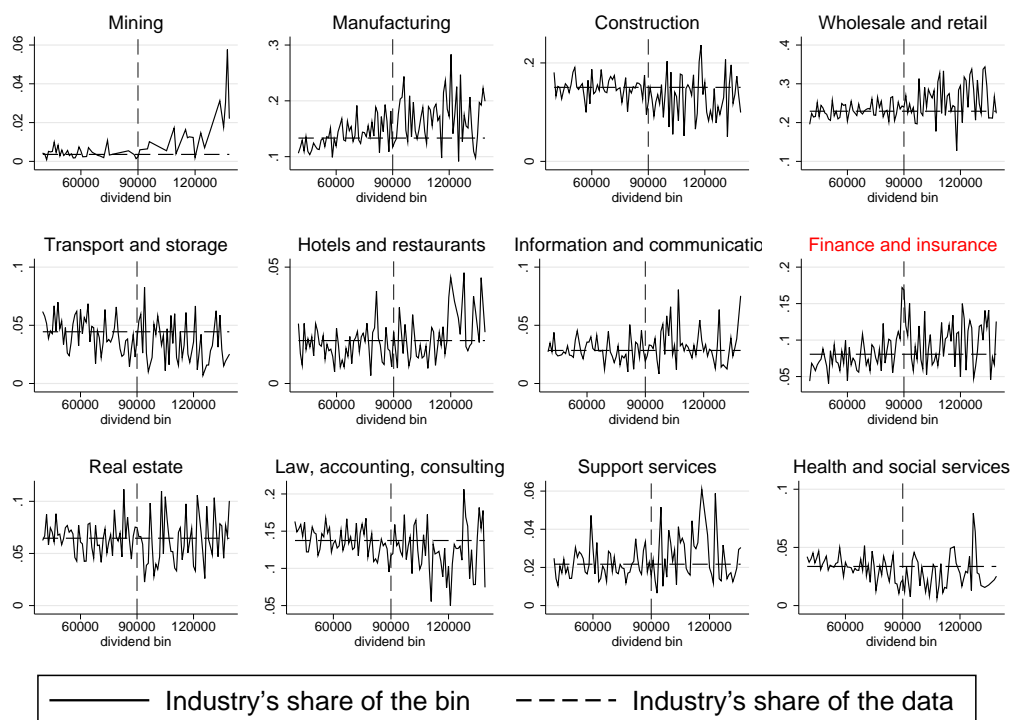
Figure A5 shows the income composition in two consecutive years when there was no tax change. There is now no change in the owners' income composition. The figure acts as a robustness check that the shift observed in Figure 4 was driven by the tax change.

Table A1: Summary statistics of the data 2006-2016

	Firm level		
	mean	sd	p50
Turnover	1074031	8470531	210749
Profit	99678	4566064	15125
Net Assets	639844	8057283	119400
Financial assets	382373	4410980	80450
Investment	54562	672584	1773
No. owners (all)	4.48	272.23	2.00
No. owners (individuals)	4.29	259.43	2.00
	Owner level		
	mean	sd	p50
Dividends	25568	138318	8500
Wages	22931	28290	15660
Share female	0.18		
Age	51.41	11.30	52.00
Taxable income	79488.62	274178.02	48059.42
Observations	641558		

Note: This table provides the summary statistics for the whole pooled panel data covering the years 2006–2016. Turnover refers to annual sales, profit is the taxable income of the firm, net assets refers to the book value of assets after depreciation and investment refers to additions to depreciating assets, such as newly installed fixed capital. Dividends and wages are the main owner’s income from the firm. Each firm has only one main owner in the data. The owner with the highest share of stock is considered the main owner. Taxable income includes both taxable capital income and earned income and also income from other sources than the firm in question.

Fig. A3: Industry shares among 90k bunchers 2006-2011



Note: The figure plots the shares of each industry in bins around the 90,000 EUR threshold. The horizontal axis shows the dividend amount and the vertical axis the share of the industry in each bin. The dashed horizontal line denotes the average share of the industry in the data. According to the figure, the financial sector seems to be over-represented at the kink.

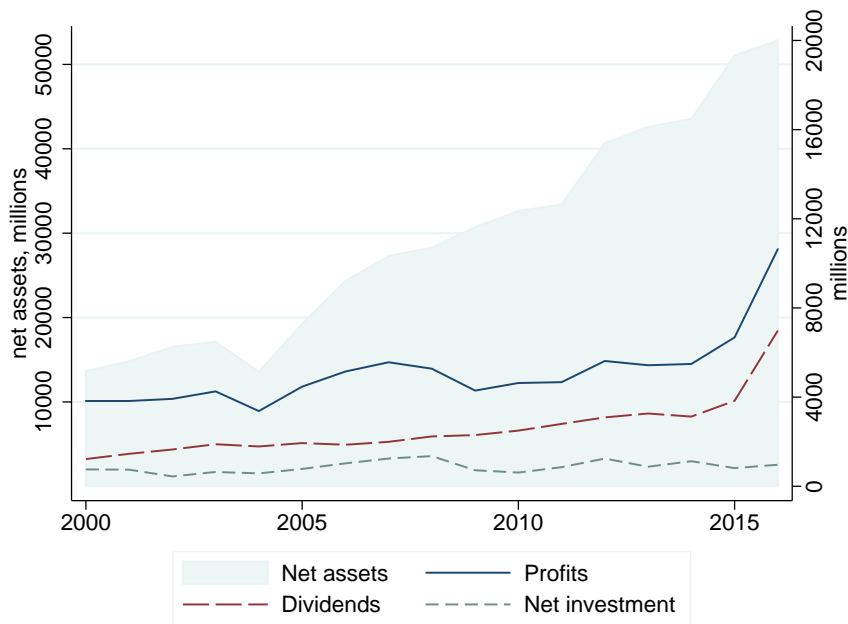
Figure A4 shows the accumulation of aggregated assets in privately held corporations in 2000–2016. Net assets consists of retained earnings, financial assets, and additions to depreciating capital. The figure also shows the evolution of aggregated profits, dividends and net investment in depreciating capital. The figure shows a clear increase in accumulated assets, starting especially after the introduction of the current dividend tax system in 2005. There is no increase in aggregate investment, so this is not likely to solely explain the accumulation of assets.

Table A2: Percentage share of firm owners relocating together with the kink

Tax change	Year	Movers as a share of bunchers before tax change	Movers as a share of bunchers after tax change
90k → 60k	2011/2012	46.72%	24.52%
60k → 150k	2013/2014	8.12%	35.45%
9pr → 8pr	2013/2014	60.33%	70.40%

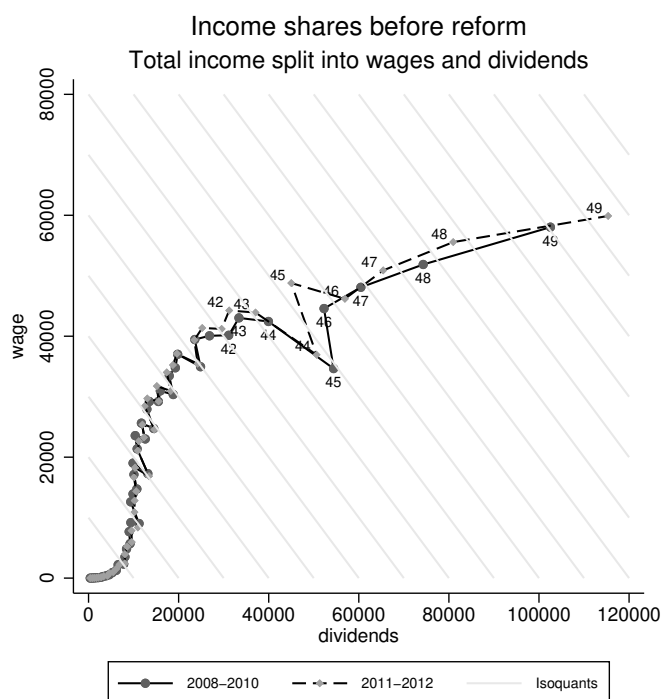
Note: This table reports the share of observations in the bunching region following a threshold change that in previous years bunched at the preceding threshold range. The share is reported as the proportion of bunchers at the preceding threshold as well as the proportion of bunchers after the tax change.

Fig. A4: Aggregate net asset accumulation, profits and retained earnings



Note: This figure shows the accumulation of aggregate net assets among the privately held firms studied in this paper in gray. The blue line shows annual aggregate profits, the red dashed line the main owner's annual aggregate dividends and the dashed green line annual aggregate net investment.

Fig. A5: Income shifting between wages and dividends



Note: This figure plots the income composition between wages and dividends in 2008–2009 and in 2010–2011. For the figure, the main owners' wages and dividends from the firm are counted together as total income. Then the owners are divided into 50 income quantiles (2-percentiles). Finally, for each quantile average wages and dividends are calculated. The horizontal line shows the average dividends and the vertical line the average wage in each bin. The isoquant lines show total income from the firm. The figure shows that when there was no tax change the owners' income composition stayed more or less the same. This figure acts as a placebo check for Figure 4 in the main text.