IFN Working Paper No. 1565, 2026

Incentives and Neutrality in the Taxation of Active Owners: Evidence from Sweden, 1991–2024

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9 September 2026

Abstract: Sweden's dual income tax (DIT) system, introduced through the 1990–1991 tax reform, relies on income-splitting rules for active owners of closely held corporations to limit income shifting. This article quantifies how the tax system has shaped investment incentives and tax neutrality since the reform. Using an extended King–Fullerton framework, we construct annual marginal effective tax rate (METR) series for a marginal investment, distinguishing financing through new equity, retained earnings, and debt, and allowing for different rates of return and owner income positions. The results show substantial non-neutrality and pronounced time variation, especially for new equity. Debt is typically tax-favored, while new equity can be favored over retained earnings at low returns but becomes less favorable at higher returns as more surplus is taxed as labor income. Inflation materially affects long-run comparisons and short-run fluctuations. The analysis is relevant for other DIT countries designing anti-shifting regimes for owner-managed firms.

JEL Codes: H24, H25, H26, G35

Keywords: cost of capital, marginal effective tax rates, dual income tax, income splitting rules

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We are grateful for comments from Daniela Andrén, Dan Johansson, Henrik Lundquist and Jacob Lundberg as well as participants at seminars at Örebro University and the 86th Annual SEA Conference in Washington. Mikael Stenkula gratefully acknowledges financial support from Jan Wallander and Tom Hedelius Foundation (P23-0186) and the IFN Taxation and Society program.

Introduction

The 1990–1991 tax reform represented a radical transformation of the Swedish tax regime, aimed at enhancing incentives and reducing significant economic distortions (e.g., Lodin 2011). A central element was the introduction of a dual income tax (DIT) with a flat tax rate on capital income and progressive taxation on labor income (Agell, Englund, and Södersten 1996). The DIT system was subsequently introduced in other Nordic countries as well (Norway 1992, Finland 1993, and in Iceland in 1997) and the model has received sustained attention in both academic research and policy debate (see, e.g., Nielsen and Sørensen 1997; Thoresen et al. 2012; Knuutinen 2018). A recurrent theme in this literature is that the DIT's analytical appeal hinges on the feasibility of separating labor and capital income in practice.

A key difficulty arises for owner-managed firms. When owners are active in the business, part of the return reflects labor input while another part reflects invested capital.[1] In closely held corporations, active owners can influence the composition of remuneration, e.g., the division between wages and dividends, making the labor–capital distinction empirically and administratively challenging. The resulting scope for income shifting has motivated special income-splitting provisions in Nordic DIT systems. In Sweden, these provisions are commonly referred to as the 3:12 rules and have been subject to repeated reforms and extensive public controversy (see, e.g., Sørensen 2008; Alstadsæter and Jacob 2016, 2018).[2]

The economic relevance of these rules is substantial. Closely held corporations comprise the majority of Swedish-owned limited liability corporations, and they account for large shares of activity among private limited companies (e.g., Andersson et al. 2018; SOU 2024:36). Yet, despite their importance, the tax consequences of the rules are not easily

[1] The regulatory framework allocates any surplus only between labor and capital income. However, its origin may also stem from and be a compensation for entrepreneurial efforts. The latter is not recognized as a distinct income category by tax authorities, but it is beyond the scope of this article to discuss this conceptual issue further.

[2] The widely used phrase "3:12 rules" refers to the original placement of these rules in the code of laws.

inferred from statutory rates alone. Moreover, the tax code governing closely held corporations has been frequently revised, which complicates planning and—in combination with its complexity—makes it difficult even for informed observers to evaluate the system retrospectively.

This paper analyzes investment incentives and neutrality for closely held corporations in Sweden over the entire post-reform period. The purpose is to quantify how the evolution of the tax system has affected (i) incentives to invest, and (ii) neutrality across financing margins (new equity, retained earnings, and debt) for active owner-investors between 1991 and 2024. To do so, we construct consistent annual time series of marginal effective tax rates (METRs) on capital income for a marginal investment undertaken by an active owner, applying the King and Fullerton (1984) approach extended to the Swedish DIT and the 3:12 framework. The method allows the analysis to capture discrete reforms as well as cumulative effects of interacting rule changes in combination with inflation dynamics.

The Nordic experiences with DIT systems and income splitting rules have been discussed extensively in earlier works (see, e.g., Sørensen 1994, 1998; Selin 2024). The present tax analysis is centered on measures of effective marginal taxation (METR), a well-established and analytical distinct quantitative measure used for analyzing neutrality and time variation. While prior contributions also use METR to analyze Swedish and Nordic DIT systems (e.g., Öberg 2003; Lindhe, Södersten, and Öberg 2004; Sørensen 2008), no study has, to the best of our knowledge, provided a consistent annual METR series for closely held corporations spanning the full post-1991 period and explicitly comparing financing margins, income positions, and return levels within a unified framework.

The results show substantial non-neutrality and pronounced time variation. Across the period, the METR varies widely across financing sources, return levels, and income positions, with particularly strong volatility for new equity finance. Abstracting from

inflation, the tax treatment of new share issues has become more favorable over time, while the incentives for retained-earnings and debt-financed investment have been broadly unchanged—or have, if anything, deteriorated slightly. Stil, debt finance is on average the most tax-favored margin, mainly a result of the deductibility of interest at the firm level. A distinctive feature of the Swedish closely held setting is that, for low-return projects, financing via new share issues can be more tax-favored than financing via retained earnings—a result that reverses at higher returns. Inflation-driven variation is quantitatively important, especially in high-inflation years.

The remainder of the paper is structured as follows. The next section briefly presents the 3:12 rules, the METR framework and the time-series results, including counterfactual series that hold inflation fixed to isolate tax-system changes. The final section concludes and discusses implications for neutrality and predictability in the taxation of active owners. Appendix 1 illustrates the tax rates facing the active owners of closely held corporations whereas Appendix 2 offers comprehensive tables detailing the tax rates and tax rules used in the analysis. Appendix 3, finally, discusses the importance of the so-called ceiling rules not included in the baseline analysis.

The Marginal Effective Tax Rate on Capital Income (METR)

To quantify how investment incentives for active owners have been shaped by Sweden's closely held corporation rules—and how these incentives have evolved over time—this study applies the King and Fullerton (1984) approach, adapted to the DIT system and the 3:12 regulation. Using this method requires tracing the evolution of the splitting rules over time, documenting changes in all relevant tax rates, and accounting for a number of special provisions in the tax system.

The Rules for Closely Held Corporations: A Brief Background[3]

Following the Swedish 1990–1991 tax reform, Sweden introduced a dual income tax system in which labor and capital income are taxed separately—labor income under a progressive schedule and capital income at a flat, lower rate. Labor income is subject to a proportional local income tax and becomes progressive through the addition of state income tax above a specified income threshold. The tax differential between labor and capital income is particularly large for taxpayers above this threshold, hereafter denoted high-bracket earners (HBEs), while it is smaller for taxpayers below it, denoted low-bracket earners (LBEs).[4] To prevent income-shifting, Sweden introduced rule-based income splitting for active owners of closely held corporations (the "3:12 rules").[5]

The basic idea behind the splitting rule is to divide the remuneration of an active owner into a capital-income-taxed and labor-income-taxed part. Formally, the legal framework determines a rate of return allowance (RRA) within which dividends can be taxed as capital income.[6] Dividend income exceeding the RRA was taxed as labor income.

Initially, the RRA was solely dependent on the owner's invested capital (denoted the equity base) and an imputed return.[7] Already in 1994, the rules for the RRA were altered so that labor input could also expand the allowance, formally internalized by adding a share of the firm's wage, excluding the owner's own wage, to the equity base.[8] Between 1997 and

[3] See Selin (2024) or Stenkula and Wykman (2026) for a more extensive discussion about the 3:12 regulation and its evolution.
[4] See Appendix 1 for further details.
[5] Limited companies are normally classified as closely held if four or fewer owners—counting close relatives and all active owners as one owner—control more than 50% of the ultimate voting rights. However, a limited company is not regarded as closely held if less than 70% of the shares are owned by active owners.
Non-active owners, i.e., passive owners, of a closely held corporation are taxed similarly to a shareholder in a widely held, unlisted corporation, i.e., all dividends and capital gains are taxed as capital income.
[6] Occasionally, it is termed the *dividend allowance*, but because it also might be used for capital gains (as discussed below), this term may be somewhat misleading.
[7] The equity base has been calculated throughout the period as the sum of the acquisition cost of shares and capital injections by the owner (SOU 2002:52; Government Bill 2005/06:40; Alstadsæter and Jacob 2016). Unused RRA could always be carried forward with interest.
[8] The wage sum could be seen as a proxy for risk-taking. Additionally, as the increased labor cost would be higher than the potential tax reduction resulting from increasing the wage sum, the rules would be difficult to

2005, part of the RRA was also exempt from personal taxation. In 2006, a major reform changed both the structure of the allowance and the relevant tax rates. The common equity-and-wage base was divided into two components so that the imputed rate of return continued to apply to the original equity base while a separate wage-based allowance was added independently of the imputed return. The owner's own wage was now also included in the wage bill affecting the size of the RRA. The wage-based allowance has increased steadily over time, reinforcing the relative advantage of firms with large payrolls.

Capital gains on shares in closely held corporations were, in principle, treated analogously to dividends. From 2010 onward, and temporarily in 2006, capital gains exceeding unused RRA were taxed fully as labor income, in the same way as dividends. However, before 2010, except in 2006, an apportionment rule (*klyvningsregeln*) applied to capital gains above the RRA, so that the excess was taxed partly as labor income and partly as capital income.

Ceiling rules have constrained the amount of income taxed as labor income (from the start for capital gains and from 2012 for dividends). From 2006, there has also been a simplification rule attractive mainly for small firms or for owners with strong preferences for administrative simplicity (see Appendix 1 and 2 for more details about the 3:12 rules and all applicable tax rates).

The rules are not without tensions. For example, active owners generating high returns can face substantially higher marginal tax rates than wage earners investing in listed shares, which conflicts with the principle motivating the framework.[9] From the outset, the rules therefore included thresholds and relief mechanisms to prevent excessively high taxation.

abuse from an income-shifting perspective (Lodin 2011). When labor input affects the RRA, eligibility has also depended on a minimum wage-withdrawal requirement for the owner (see Appendix 2).

[9] Critics have also argued that the normal return is too low for entrepreneurial activities, is difficult to determine, or is even unsuitable to serve as the basis of a legal framework for entrepreneurship within closely held corporations (Bjuggren, Du Rietz, and Johansson 2007).

Over time, these mechanisms expanded, often to pursue political objectives (for example, employment and entrepreneurship). New exceptions created new shifting incentives, which were met with further countermeasures. Some measures generated unintended consequences and were later reversed or adjusted. The result is a complex framework that has been revised repeatedly and has remained comparatively unstable, as described above.

Altogether, the taxation of closely held corporations depends on several factors, some completely out of control of the owner (e.g., the imputed rate of return decided by the politicians or the inflation rate), some which the owner can decide by herself (such as how much wage to pay to herself and how many people to employ) whereas other may depend on the owner's entrepreneurial talent, but also business cycles or serendipity (such as the profitability measured as the rate of return or in absolute terms).[10] The analysis below examines how these factors jointly affect neutrality and incentives by calculating marginal effective tax rates (METRs) for alternative sources of finance and rates of return.

The Method

The objective of King and Fullerton (1984) is to calculate the marginal effective tax rate (METR) on investment projects in the nonfinancial corporate sector, taking inflation as well as all personal income taxes, corporate taxes, and wealth taxes into account. The METR is formally defined as the difference between the pre-tax (s) and post-tax (p) real rate of return on a marginal investment project relative to the pre-tax real rate of return, i.e., $METR = \frac{p-s}{p}$.

The METR can be calculated either for a given fixed pre-tax real rate of return, p, or a given fixed real interest rate, r. The post-tax real return, s, is in both cases a function of r. The METR is a theoretical value based on an equilibrium model.

[10] See Wykman (2026) for a detailed summary of the factors affecting the METR.

The original King and Fullerton model examines the effective marginal tax rates on investments from different sources of finance (new share issues, retained earnings, and debt), across different groups of savers, in different assets, and across different industries. As already established in the tax literature about the King and Fullerton method, a standard implication is that the dividend tax is relevant for marginal investments financed by new share issues, while capital gains taxation is relevant for marginal investments through retained earnings (see, e.g., King and Fullerton 1984, or Sørensen 2004, for further discussion). For debt finance, the relevant personal tax is the tax on interest income, while interest expenses are deductible at the corporate level. Over the sample period, Sweden's corporate income tax rate fell markedly—from 30 percent in 1991 to 20.6 percent in 2024. This reduction mechanically weakens the interest-deduction shield.

The original King–Fullerton framework is not, without extensive revision, applicable to a DIT system with regulations for closely held corporations such as in Sweden. Major complications in the calculations arise from the question of how to allocate the total surplus between wages and dividends. Another complication is that depreciation reduces proceeds over time, while the RRA increase from new-share financing remains constant, creating scope to convert unrelated labor income into lower-taxed dividends. We address this by adopting the standard assumption that shares are repurchased at the depreciation rate. These repurchases are not taxed at the personal level, but they reduce the equity base and consequently lower the RRA.[11]

To keep the analysis comparable over time, we consider an initial marginal investment in machinery and assume a constant economic depreciation rate of 10% throughout. The

[11] Other financial strategies can, however, be used. In addition to repurchasing of shares, the corporation may pay out the whole surplus as wages and dividends, save part of the surplus within the firm, or reinvest in new physical capital. See Stenkula and Wykman (2026) for a discussion and analyses of these alternatives. The qualitative results presented in this article will be the same regardless of the strategy chosen. Wykman (2026) also shows why earlier King–Fullerton extensions, such as Öberg (2023), require further development to construct time series covering the full period.

calculations and necessary assumptions will differ depending on the source of finance analyzed. For debt finance, the METR does not vary with the owner's income level, because interest income is taxed at a flat rate. For new share issues, by contrast, the effective tax outcome can differ across income levels because the marginal surplus may be taxed as labor income with a progressive tax rate above the RRA. Since the income splitting is most relevant for high-bracket earners (HBEs) and has the largest potential to affect their effective marginal taxation, we will focus our analysis on these owners.[12] For retained earnings, it is assumed that the marginal realization generate gains outside the RRA and are taxed at the HBE rate.[13] In the baseline analysis, we will also assume that the ceiling rules are not binding and that the simplification rule is not used (see Appendix 3 for further details about the ceiling rules).[14]

To isolate the role of the 3:12 regulations and facilitate intertemporal comparisons, we will ignore a few special regulations at the individual and at the corporate level without significantly affecting the overall conclusions.[15] We will also exclude the wealth tax, that was totally abolished in 2006, from the baseline analysis Whether wealth taxation should be

[12] For a comprehensive analysis of low-bracket earner, LBE, see Wykman (2026).

[13] Capital gains are taxed upon realization, and this benefit is accounted for by converting the statutory rate into an accrued effective tax rate. For simplicity, we will assume that the accrued effective tax rate is half the statutory rate. This assumption is also made by, e.g., King and Fullerton (1984, p. 146) and Södersten (2002, p. 422).

[14] Not all aspects of the tax system can be captured within a single baseline model. An important change in the tax code not fully reflected in the figures below is the more favorable treatment of labor inputs when calculating the size of the RRA. Under these rules, corporations with a large wage sum can shift significant amounts from wage payments to dividend payments, thereby substantially reducing the METR for their owners.

[15] At the *individual level*, we ignore the so-called church tax (approximately about 1 percentage point), which formally was regarded as an income tax in the official statistics until 1999. We also exclude the earned income tax credit and other personal-level tax reductions or credits from the analysis with minor effect on the marginal analysis. In 2013, an investment deduction (*investeraravdrag*) was, further, introduced for new share issues. Under certain restrictive conditions, it allows a portion of the investment to be deducted from the capital-income tax base.

At the *corporate level*, we ignore allowances such as the tax equalization funds (1991–1993), the periodization fund (1994–) and the so-called Annell deduction (1991–1993). The Annell deduction was designed to mitigate the double taxation of returns on investments financed through new share issues. Among the corporate-level provisions excluded from the baseline analysis, it is the only one likely to have a non-negligible effect on the METR, and only for investments financed with new share issues. For technical descriptions and analyses of the Annell deduction and its implications for the results, see Appendix C in King and Fullerton (1984), Öberg (2003), and Appendix D in Wykman (2026).

included depends on how the investment's proceeds are held and whether the resulting wealth is taxable. In many cases the wealth tax may not apply, and ignoring it for the full period is not unreasonable and gives a consistent baseline.[16]

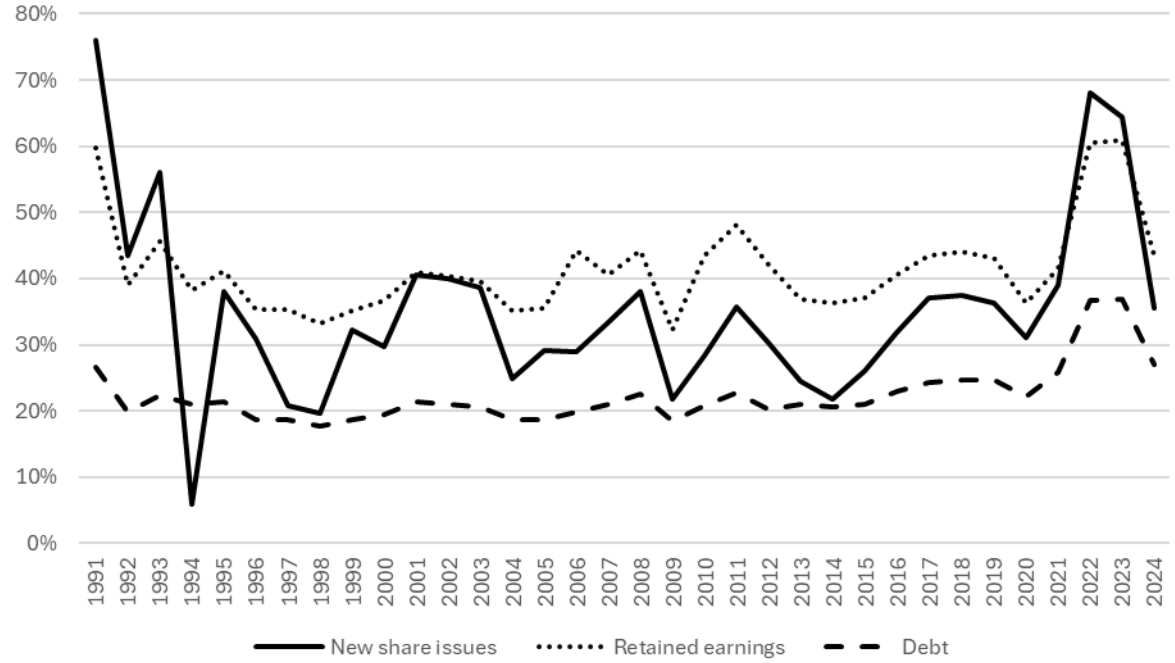
Results

This section outlines the time series of marginal effective tax rates, spanning from 1991 to 2024. The presented tax rates below are calculated for different sources of finance and different rates of return. We also conduct an analysis with fixed inflation to illuminate how inflation affects the results in order to highlight changes in the tax system that are not driven by inflation.

In Figure 1, the METR over time for a high-bracket income earner assuming a pre-tax real rate of return (p) of 10% is illustrated for different sources of finance. With a depreciation rate of 10%, this corresponds to a marginal rate of return (MRR) of 20%. As can be seen in the figure, there has been significant volatility in the METR both over time and across different sources of finance, reflecting changes in statutory tax rates, the structure of the splitting rules, and fluctuations in inflation.

[16] If the owner is subject to wealth taxation, the METR would be higher in 1991–2006, followed by a discrete reduction in 2007. The magnitude depends on the assumed marginal return, see Wykman (2026) for more details about the wealth tax and how it may affect the analysis.

Figure 1. Marginal Effective Tax Rate at a 20% Marginal Rate of Return for a High-bracket Income Earner by Year, 1991–2024.



Note: High-bracket denotes an income earner paying the top state income tax. The depreciation rate is set at 10%.
Source: Own calculations.

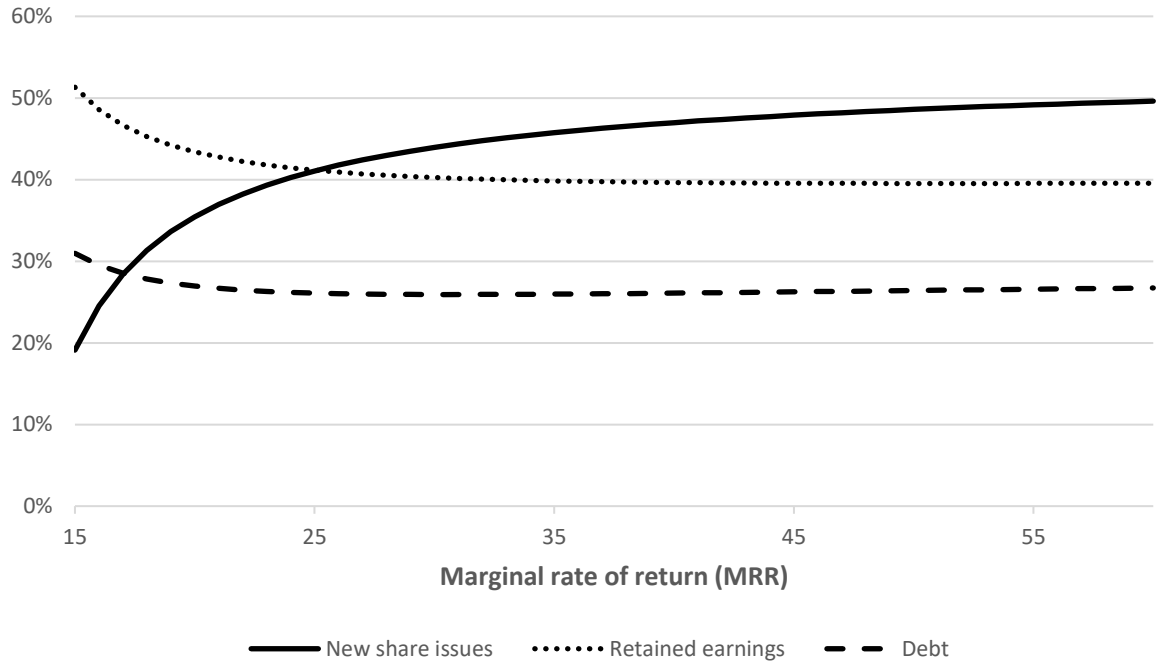
The METR is highest at the beginning and end of the sample, largely driven by higher inflation in those periods—highlighting the sensitivity of effective taxation under nominal taxation. Debt-financed investment displays comparatively low volatility because the tax on interest income has been constant at 30% during the whole period and has not been subject to the splitting rules. As in the standard tax literature, debt tends to be tax-favored because interest payments are deductible.

A more distinctive result concerns equity finance. For many years, investment financed with new share issues is more favorable than investment financed with retained earnings. This counterintuitive finding reflects the construction of the splitting rule and the 3:12 rules. New share issues increase the equity base and thereby the RRA, allowing part of the marginal surplus to be taxed as capital income. If the allowance exceeds the surplus generated by marginal investment, unused RRA can be used for income shifting purposes, which also reduces the effective taxation. Retained earnings do not increase the equity base, due to the

construction of rules, and if there is no saved RRA, the marginal surplus will be taxed outside the allowance.

This advantage of new share issues over retained earnings is, however, sensitive to the assumed return on the marginal project, as is shown in Figure 2. This figure depicts how the METR varies with the MRR for each financing source.[17]

Figure 2. The METR by Source of Finance and the Marginal Rate of Return (MRR).



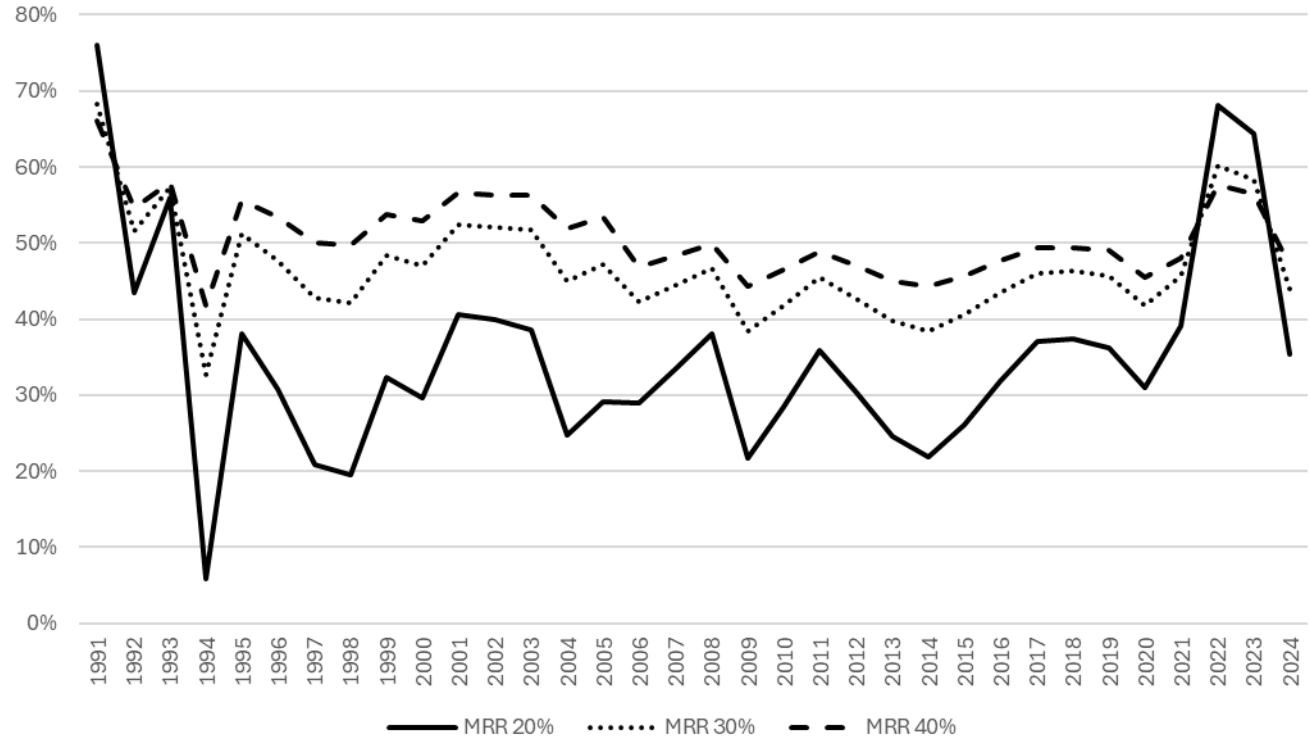
Note: Calculations based on the tax system in 2024 and with actual inflation.
Source: Own calculations.

As can be seen from the figure, the METR for new share issues can increase sharply with the MRR. As the return rises, a larger share of the marginal surplus falls above the allowance and is taxed as labor income, pushing the METR upward.[18] At sufficiently high returns, the METR approaches the rate implied by labor taxation (which in this example results in an METR corresponding to about 50%). New share issues therefore produce the most return-sensitive effective taxation. By contrast, the METRs for retained earnings and debt vary

[17] The figure is drawn based on the tax system in 2024 and with the actual inflation rate, but the conclusion will be the same regardless of year analyzed.
[18] If the surplus is below the RRA, less unused RRA can be used for income shifting giving rise to the same pattern.

much less with the MRR, and changes are dominated by the interaction between nominal taxation and inflation (which matters most when real returns are low giving rise to the decreasing pattern depicted in the figure).[19]

Figure 3. Marginal Effective Tax Rate, New Share Issues at Different Levels of Marginal Rate of Return, High-bracket Income Earner by Year, 1991–2024.



Note: MRR refers to the marginal rate of return on an investment, with the depreciation rate fixed at 10%.
Source: Own calculations.

With this result in mind, Figure 3 shows METRs for new share issues across different MRRs (holding depreciation at 10%). Two patterns stand out. First, average METRs are higher at higher MRR, consistent with Figure 2. Second, volatility is generally higher at lower returns, because inflation constitutes a larger share of the taxed nominal return when real returns are small.[20] Variations in the MRR also affect METRs for retained earnings and

[19] With low or no inflation there might, however, instead be a weak increasing pattern.
[20] Additional contributing factors include changes in how the RRA is calculated and variation in the applicable tax rates within the allowance, as these affect investments with lower returns more.

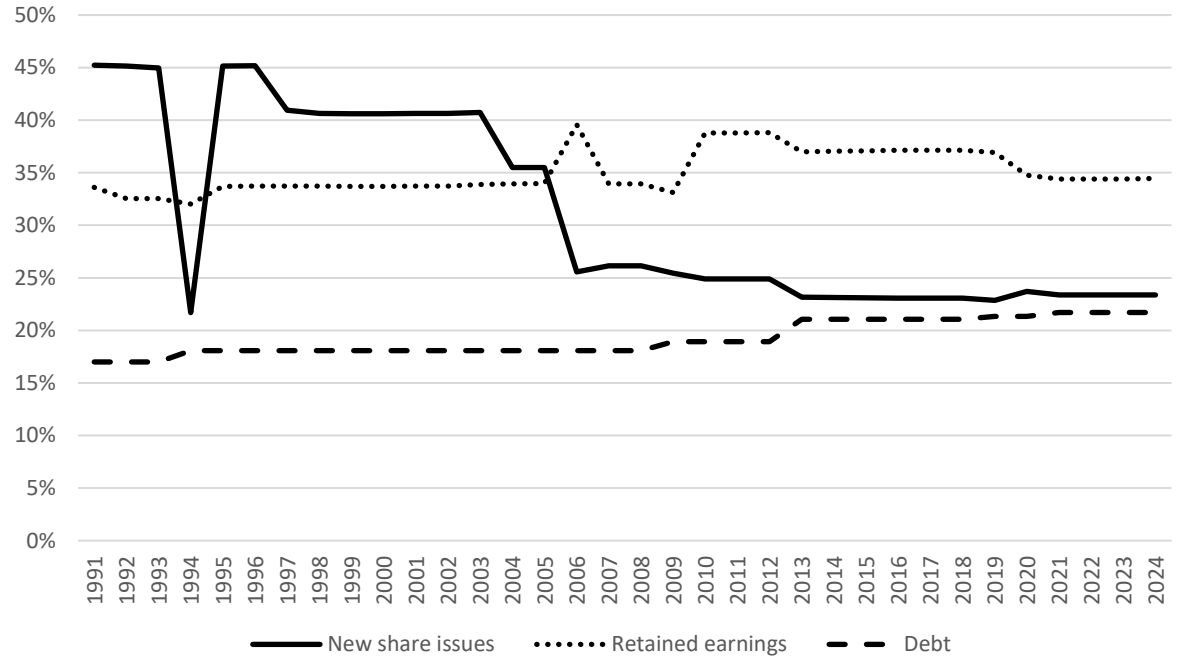
debt, but, as shown in Figure 2, the sensitivity is much weaker because the allowance mechanism does not operate at the margin in the same way.

Some regulatory changes are visible in Figures 1 and 3. Among those affecting investments financed through new share issues are the temporary abolition of the dividend tax in 1994 (affecting all corporations), the introduction of the relief amount in 1997 and increases in the imputed rate of return in 2004. For retained earnings, the most significant visible change is the permanent abolition in 2010 of the apportionment rule for capital gains above the RRA. The temporary abolition in 2006 is also noticeable. In 1992, 1993, and 1994 the capital gains tax was reduced, but the effect for retained earnings is small and can hardly be seen in Figure 1 because of the apportionment rule. At the same time, many statutory changes are partly masked by inflation variation, and reductions in the corporate income tax rate are not always visually prominent.

In order to better illuminate how changes in the tax system have affected the METR, we also calculate the METR without inflation. To conduct an analysis without inflation requires a consistent assumption for the nominal government borrowing rate, since it is linked to inflation through nominal interest rates.[21] In the calculations below, the government borrowing rate is set to two percentage points.[22] Figures 4 and 5 replicate Figures 1 and 3 under fixed inflation.

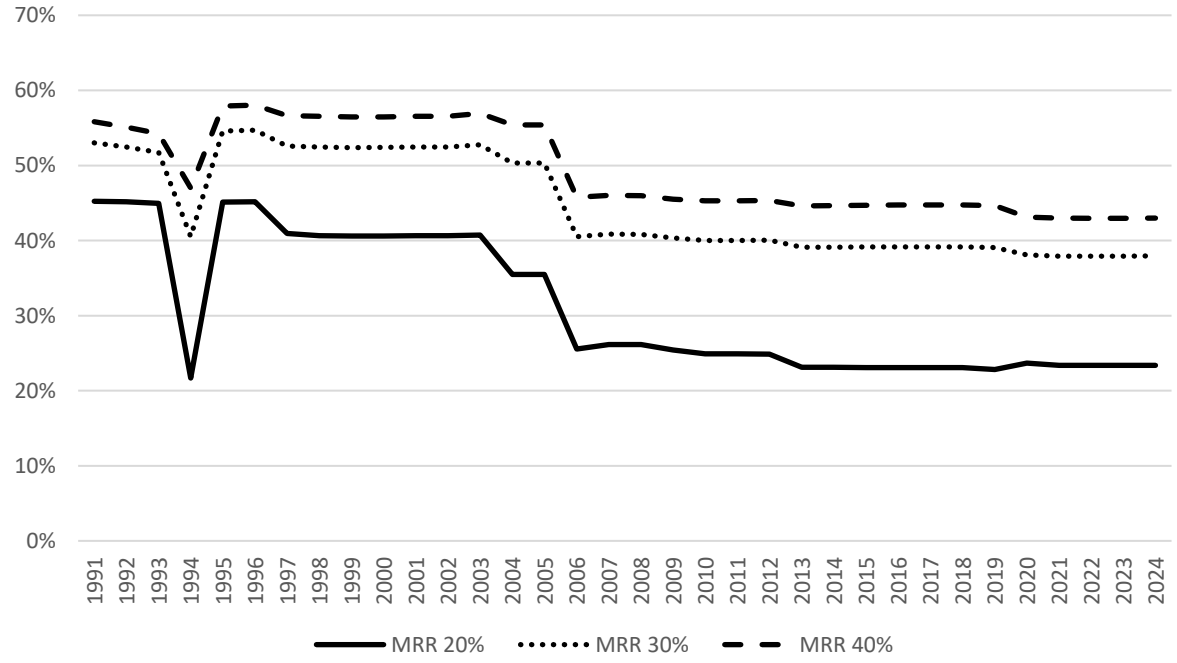
[21] It is important to note that inflation impacts the METR across all sources of finance, whereas the borrowing rate influences only the METR for new share issues.
[22] This corresponds to the average markup during the examined period.

Figure 4. Marginal Effective Tax Rate at a 20% Marginal Rate of Return for a High-bracket Income Earner, Zero Inflation by Year, 1991–2024.



Note: The inflation rate is set at 0%, and the government borrowing rate is set at 2%.
Source: Own calculations.

Figure 5. Marginal Effective Tax Rate, New Share Issues at Different Levels of Marginal Rate of Return, for a High-bracket Income Earner, Zero Inflation by year, 1991–2024.



Note: The inflation rate is set at 0%, and the government borrowing rate is set at 2%. MRR refers to the marginal rate of return on an investment, with the depreciation rate fixed at 10%.
Source: Own calculations.

Without inflation, several reforms become easier to identify. For new share issues, the effects of the 1997 relief amount and the increases in the imputed return in 2004 and 2006 are more visible. For retained earnings, the temporary (2006) and permanent (from 2010) abolition of the apportionment rule is also clearly discernible. The gradual reduction in corporate income tax—raising the METR for debt and lowering it for equity—becomes more apparent as well. As depicted in Figure 5, the case without inflation also clarifies that increases in the allowance tend to benefit relatively low-return projects more strongly. The same can be said about the changes in 1994 and 1997. The reduction in the top state labor income tax rate from 25 to 20 percent in 2020 is also visible in Figure 5. For investments with MRRs of 30 and 40 percent, it appears as a small decline in the METR. For investments with an MRR of 20 percent, however, the METR increases slightly, since income shifting may be used and the value of this is reduced when the labor tax rate falls.

Abstracting from inflation, the METR for investment financed by new share issues is lower at the end of the period than at the beginning, primarily because the rate-of-return allowance (RRA) has become more generous, but also because the corporate income tax rate has been lowered. For retained earnings, the METR is broadly unchanged as a tighter treatment of capital gains above the RRA is largely offset by lower corporate income tax. By contrast, the METR for debt-financed investment is higher, since declining corporate tax rates reduce the value of interest deductibility.

Summary of Results

It is impossible to give a complete picture of all possible outcomes given that the METR will depend on a range of parameter values which can be combined in countless ways. No single set of calculations can describe all possible outcomes. Nevertheless, in order to give an overview, Table 1 summarizes the main patterns by reporting average METRs for the three

financing sources for three MRR values (20%, 30%, and 40%). The statistics use actual inflation.

Table 1. Summary Statistics: Marginal Effective Tax Rates, 1991–2024.

METR (%)	New share issues	Retained earnings	Debt
MRR=20			
Mean	35.2	41.5	22.3
Max	75.9	60.9	36.9
Min	5.8	32.2	17.8
Std. Dev.	13.7	7.0	4.3
MRR=30			
Mean	46.8	39.9	22.8
Max	68.3	49.0	30.9
Min	32.7	34.4	20.3
Std. Dev.	6.9	3.7	2.5
MRR=40			
Mean	50.8	39.9	23.7
Max	66.0	45.5	29.4
Min	41.8	35.8	21.8
Std. Dev.	5.1	2.6	1.8

Note: MRR is the marginal rate of return on an investment, with the depreciation rate fixed at 10%. The interest income tax is independent of income level, and for retained earnings it is assumed that all sales of shares at the margin generate gains outside the rate of return allowance, which are subject to the highest marginal tax rate on capital gains.
Source: Own calculations.

As can be seen from the table, METRs range from roughly 5% to almost 75%. Consistent with the preceding results, the table underlines that, on average, debt finance is the most tax-efficient source of finance, while retained earnings are often the least tax-efficient. For low-return projects, new share issues tend to yield lower METRs than retained earnings but for higher-return projects, this ranking often reverses because a larger share of the surplus is taxed as labor income.[23]

[23] The relatively lower METR for new share issues at lower rates of return is not solely attributable to the favorable tax treatment within the rate of return allowance itself. It also depends on the possibility of transforming additional income from labor taxation into dividend taxation. If this income shifting is not feasible due to the absence of supplementary income, the METR for new share issues may be underestimated.

Inflation is a primary driver of year-to-year variation. Volatility (measured by the standard deviation and depicted in Table 1) is highest for new share issues and lowest for debt, and volatility declines with the return across all financing sources.

Concluding Remarks

This paper has examined how Sweden's tax treatment of active owners in closely held corporations has shaped marginal investment incentives and neutrality over the full post-1991 period. It presents the central tax parameters influencing marginal effective tax rates, including statutory tax rates, ceilings, and thresholds on an annual basis, from 1991 to 2024.

The institutional setting is characterized by a dual income tax system combined with income splitting provisions (the 3:12 rules) intended to limit income shifting between labor and capital tax bases. The system is complex and can be perceived as unpredictable, both because of repeated parameter changes within the splitting rules and because of interactions with, e.g., the corporate taxation, the progressive labor taxation as well as the inflation rate.

To quantify the implications for investment incentives, we constructed annual time series of marginal effective tax rates (METRs) for 1991–2024 using an extended King–Fullerton framework tailored to Sweden's closely held corporation regime. The METR series were computed for different sources of finance (new equity, retained earnings, and debt) and for different rates of return. This design allows the analysis to distinguish structural features from reform-induced changes and from changes in macroeconomic conditions, specifically inflation and the government borrowing rate.

Two results stand out. First, the taxation of closely held corporations is not neutral across financing margins, and the degree of non-neutrality is economically large. Debt finance is, on average, the most tax-favored margin, reflecting the deductibility of interest at the corporate level and flat personal taxation of interest income. Retained earnings are often the least

favored source of finance. New equity finance can be relatively tax-favored at low returns because it increases the equity base that governs the rate-of-return allowance, thereby allowing a larger share of marginal surplus to be taxed as capital income. However, this advantage is not robust to higher returns. As the marginal project becomes more profitable, a growing share of the marginal surplus falls above the allowance and is taxed as labor income, which raises the METR and can reverse the ranking between new equity and retained earnings. This is a distinct feature of closely held corporation taxation in the Swedish DIT system.

Second, effective marginal taxation is highly time-varying, and this variation is especially pronounced for new equity finance. Part of the volatility is policy-driven, reflecting frequent adjustments to allowances, thresholds, and related parameters within the 3:12 framework. But an important part is macro-driven. Because the tax system is largely nominal, inflation has a first-order effect on effective marginal tax rates, particularly when real returns are low. For the purposes of policy evaluation, this implies that movements in effective taxation over time cannot be interpreted as evidence of reform effects without controlling for inflation and related interest-rate components. Counterfactual series with fixed inflation in the paper show that several major institutional changes become more visible when this macro-driven variation is removed.

Taken together, the results support two general conclusions for the evaluation of Sweden's closely held corporation regime—one substantive and one methodological. First, the system generates persistent distortions across financing margins and across return levels, and it tends to penalize high-return projects financed by new equity more strongly than low-return projects—precisely the margin where after-tax returns may be most important for risk-taking and innovative entrepreneurship. Second, for closely held corporations under a DIT with income splitting rules, credible policy evaluation requires a model for effective tax rate

measures that incorporate the full interaction between all relevant parts, preferably in a time-series design that allows for separation between tax-system changes and inflation-driven variation.

These findings do not, on their own, establish the magnitude of real effects that taxation may have on investment, entry, growth, or organizational form. Those questions require complementary empirical work. However, the METR series in this article provides a unified quantitative basis for assessing neutrality and predictability in the taxation of active owners and for evaluating the likely direction and magnitude of incentive effects implied by future reforms of the taxation of closely held corporations.

Although the institutional details are Swedish, the mechanisms are not. Any country that taxes capital income at a lower and flatter rate than labor income—whether under a formal dual income tax or through preferential dividend/capital gains treatment—faces similar trade-offs. Our results show how such rules can generate return-dependent and time-varying distortions across new equity, retained earnings, and debt. The framework and long-run METR series therefore offer a portable approach for policy evaluation and reform design in other jurisdictions with closely held corporations and anti-income-shifting regimes.

Appendix 1. The Tax Rates Facing the Active Owners of Closely Held Corporations

Dividends

Active owners may face a wide range of statutory marginal tax rates, depending on how the owners choose to withdraw the surplus from their corporation, and, if withdrawn as dividends, how large the surplus is in relation to the Rate of Return Allowance (RRA) and potential ceiling limits.

Figure 6 depicts the statutory personal marginal tax rates on dividends that active owners may face. It distinguishes dividends taxed within the RRA (capital income tax, 20 or 30%), dividends within the relief amount (tax-exempt), dividends above the RRA (taxed as labor income), and dividends above the ceiling (capital income tax, 30%).

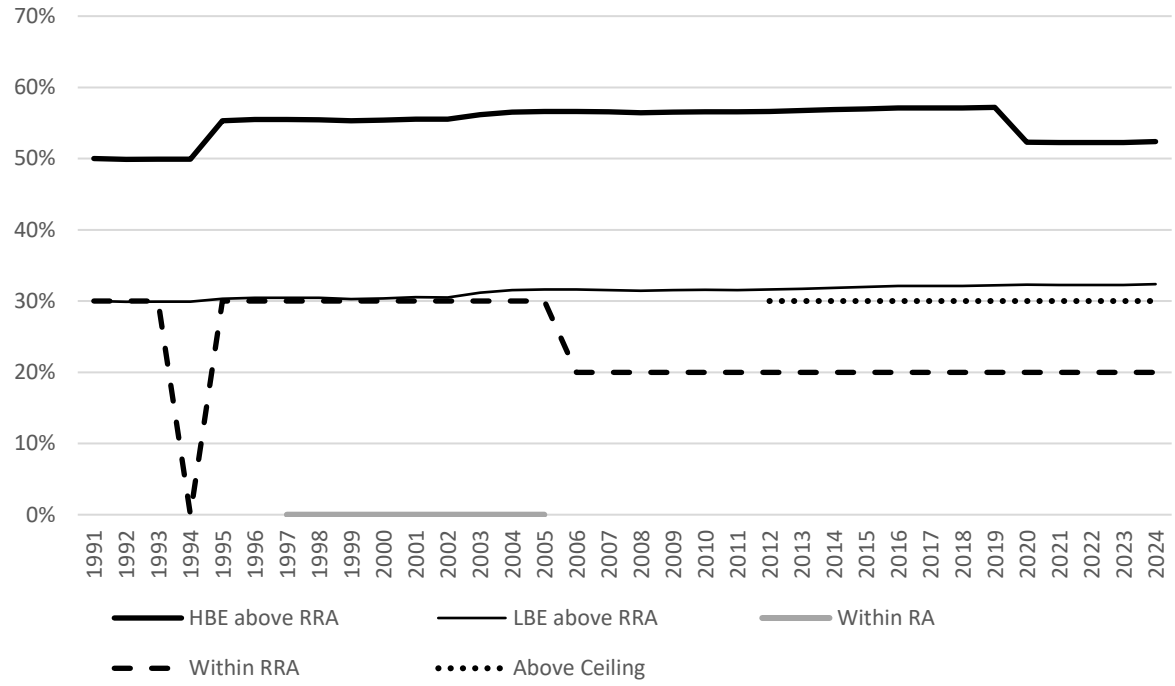
As labor income is subject to local proportional income tax but also an additional state income tax above a threshold, making the labor income tax progressive, the figure depicts (i) low-bracket income earners (LBE), subject only to proportional local tax, and (ii) high-bracket income earners (HBE), subject also to the top state income tax. The local income tax varies somewhat across municipalities but has remained relatively stable at slightly above 30%, whereas the state income tax has been 20 or 25% (for some period both tax rates applied with two different thresholds).[24]

As can be seen from the figure, the statutory marginal tax rates vary considerably, ranging from zero to almost 60%, depending on the year and whether the dividends fall within or above the rate of return allowance or the relief amount. The figure also highlights key tensions. Because labor income taxation is progressive, taxation of dividends above the

[24] As already stated in the main text, we exclude the church tax as well as the earned income tax credit and other personal-level tax reductions or credits from the analysis. This simplification does not lead to a significant loss of generality, as the analysis focuses on marginal effects. However, for low-bracket income earners, particularly those with low incomes, this approach may result in an overestimation of the effective tax rate.

RRA differs substantially between LBEs and HBEs. For HBEs in particular, the difference between dividends taxed within the RRA and dividends taxed above the RRA is also large.

Figure 6. Marginal Statutory Tax Rate on Dividends for Active Owners of Closely Held Corporations, 1991–2024.



Note: HBE denotes a high-bracket income earner paying the top state income tax, and LBE denotes a low-bracket income earner with earnings below the threshold for state income tax liability. RRA refers to the rate of return allowance and RA to the relief amount.
Source: Government Bill 1992/1993:50, Government Bill 2019/20:1, RSV 292/SKV 292, and Statistics Sweden (n.d.a).

To evaluate remuneration choices, personal tax rates must be considered together with corporate income tax and social security contributions where applicable.[25] Including these taxes, Figure 7 depicts total statutory marginal tax rates for wage and dividend strategies for HBEs and LBEs. There is no fixed pecking order over time, although tax-exempt dividends (1994 and 1997–2005) are always preferred.[26] Wage withdrawals and dividends above the RRA but below the ceiling yield high and about the same total marginal tax rates for HBEs,

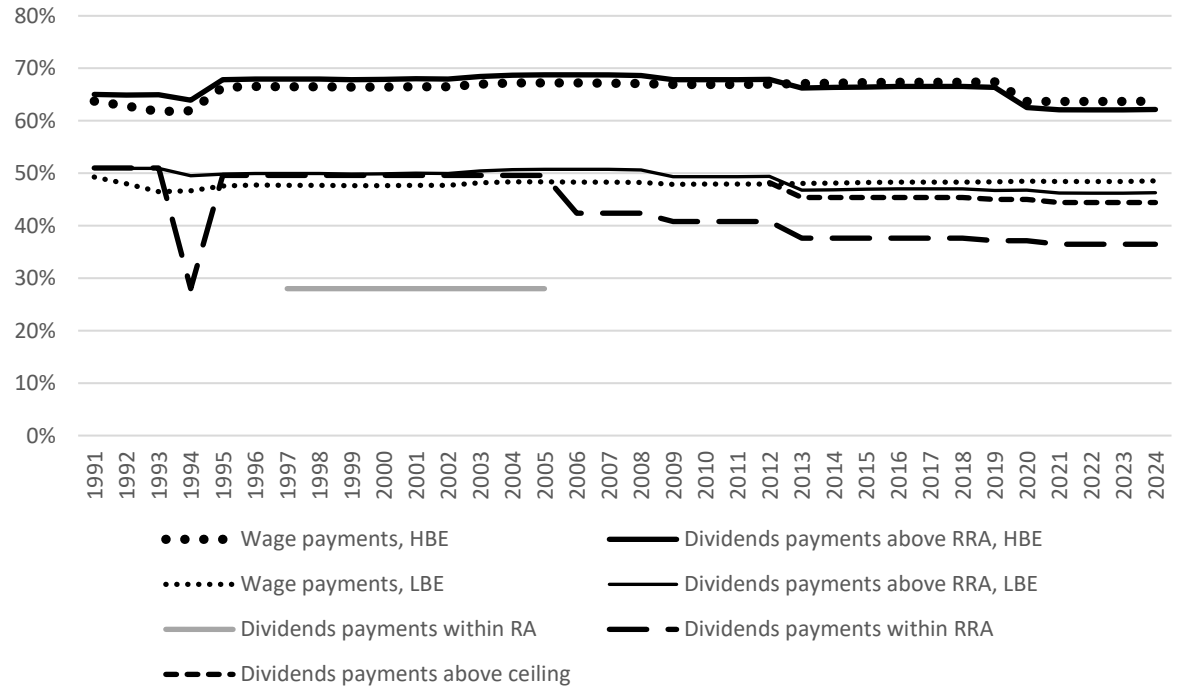
[25] The interpretation of social security contributions is less straightforward than that of other taxes. For high-bracket income earners, these contributions function as a pure tax at the margin, as they provide no additional insurance value. For low-bracket income earners, the situation is more complex. For simplicity, however, we treat social security contributions as a pure tax at the margin for low-bracket income earners as well, although a reduction in social security contributions, at least for years preceding 2003, could be justified.
[26] The optimal choice between wages and dividends may also change if the minimum required wage level to add a wage base/wage-based allowance is not met.

and dividends within the RRA or above the ceiling are clearly preferred. For LBEs, the differences between wages and dividends within the RRA are generally smaller, especially before 2006. The tensions between different strategies are, hence, much smaller for LBEs.

As the owner's own wage expands the RRA from 2006 onwards as detailed above, the choice between wages and dividends can be interdependent. Higher wages increase the amount that can be withdrawn as dividends taxed at the lower rate within the increased RRA.[27]

The exact pecking order and optimal choice by the owner are integrated into the METR calculations presented in the result section.

Figure 7. Total Statutory Marginal Tax Rates, 1991–2024.



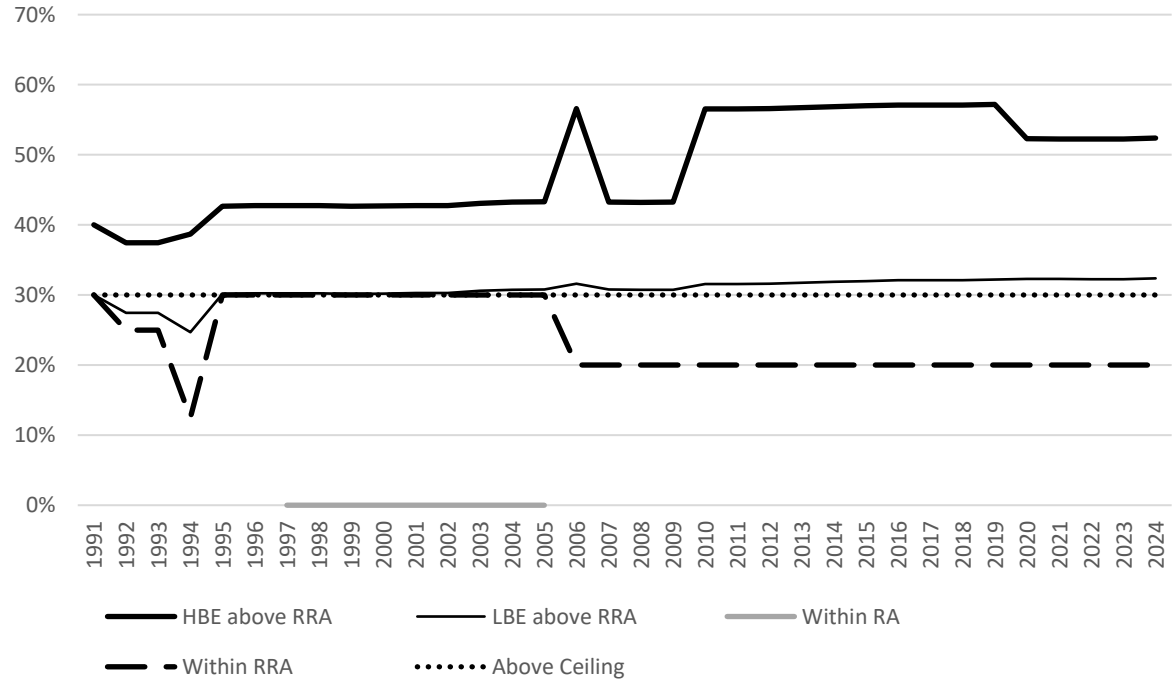
Note: HBE denotes a high-bracket income earner paying the top state income tax, and LBE denotes a low-bracket income earner with earnings below the threshold for state income tax liability. RRA refers to the rate of return allowance and RA to the relief amount.
Source: Own calculations.

[27] The expansion was, however, applied with a one-year lag. Ignoring the time dimension, as of 2014, the owner could, e.g., always withdraw approximately two-thirds from the company as ordinary wage and then use the increased RRA (which then was 50% of the wage bill) to take out the rest as low-taxed dividend.

Capital Gains and Interest Payments

Using retained earnings as source of finance enables investors to accumulate at a rate of return that is taxed by capital gains tax rather than income tax (see King and Fullerton 1984). Unused RRA can be used to tax capital gains as capital income. As described in the main text, capital gains exceeding available RRA are either taxed fully as labor income or, under the apportionment rule (*klyvningsregeln*), taxed as a combination of labor and capital income. The apportionment rule was in force before 2010, except in 2006. Under this rule, 50 percent of the capital gain could, e.g., be taxed as labor income and 50 percent as capital income (see Table 4 for details).

Figure 8. Marginal Statutory Tax Rate on Capital Gains for Owners of Closely Held Corporations, 1991–2024.



Note: HBE denotes a high-bracket income earner paying the top state income tax, and LBE denotes a low-bracket income earner with earnings below the threshold for state income tax liability. RRA refers to the rate of return allowance and RA to the relief amount.
Source: Government Bill 1992/1993:50, Government Bill 2019/20:1, RSV 292/SKV 292, and Statistics Sweden (n.d.a).

Figure 8 presents the statutory personal marginal tax rates for capital gains, again making a distinction between LBEs and HBEs. The tax rates often coincide with the dividend tax

rates (as depicted in Figure 6) but occasionally differ. The differences stem from four factors. First, the capital gains tax rate was reduced to 25% in 1992–1993. Second, dividends were tax-exempt in 1994 while capital gains were taxed at 12.5%. Third, in periods when the special apportionment rule applied, capital gains above the RRA were taxed as a combination of labor and capital income. Fourth, the ceiling for dividends was introduced much later than for capital gains, and with a different threshold and construction.

Using debt as source of finance implies that the corporation has to pay (deductible) interest on the principal amount borrowed. Interest payments have not been subject to the same splitting rule regulations at the personal level as other capital income but have been taxed at a flat 30% rate throughout the whole period examined. However, when an owner lends to their own closely held corporation, specific anti-avoidance rules apply to prevent reclassification of labor income into interest income. Only loans on "commercial grounds" (i.e., with an interest rate comparable to what the firm would pay a third party) are deductible at the corporate level and subject to ordinary interest income tax at the personal level. Excess interest payments are reclassified and taxed as "hidden" dividend payments (Alstadsæter and Jacob 2012).

Appendix 2. Tax Tables

Table 2. Rules and Rates for the Rate of Return Allowances (RRA) in Closely Held Corporations by Year, 1991–2024.

Year	Relief amount	Imputed return	Carry-forward interest	Wage base (WB)	Owner's minimum wage for wage base
1991–1993		SLR+5%	SLR+5%		
1994–1996		SLR+5%	SLR+5%	10%*(W−owner's wage−10 PBB)	150%*Wmax
1997	65%*SLR	SLR+5%	SLR+5%	70%/100%*(W−owner's wage−10 PBB)	Lower amount of 120%*Wmax or 10 PBB
1998–2003	70%*SLR	SLR+5%	SLR+5%	W−owner's wage−10 PBB	Lower amount of 120%*Wmax or 10 PBB
2004–2005	70%*SLR	SLR+7%	SLR+7%	W − owner's wage−10 PBB	Lower amount of 120%*Wmax or 10 PBB

Year	Simplification rule	Imputed return	Carry-forward interest	Wage-based allowance (WBA)	Owner's minimum wage for wage-based allowance
2006	1.5 IBB	SLR+9%	SLR+3%	20%*(W−10 IBB)<60 IBB and 50%*(W−10 IBB)>60 IBB	Lower amount of 15 IBB or 6 IBB+0.05*W
2007–2008	2 IBB	SLR+9%	SLR+3%	25%*W<60 IBB and 50%*W>60 IBB	Lower amount of 15 IBB or 6 IBB+0.05*W
2009–2011	2.5 IBB	SLR+9%	SLR+3%	25%*W<60 IBB and 50%*W>60 IBB	Lower amount of 10 IBB or 6 IBB+0.05*W
2012–2013	2.75 IBB	SLR+9%	SLR+3%	25%*W<60 IBB and 50%*W>60 IBB	Lower amount of 10 IBB or 6 IBB+0.05*W
2014–2024	2.75 IBB	SLR+9%	SLR+3%	50%*W	Lower amount of 9.6 IBB or 6 IBB+0.05*W

Note:
The RRA is calculated as
Rate of return allowance = Imputed rate of return × equity base, between 1991 and 1993
Rate of return allowance = Imputed rate of return × (equity base + wage base), between 1994 and 2005
Rate of return allowance = Imputed rate of return × equity base + wage based allowance, from 2006.
SLR: Government borrowing rate (*statslåneräntan*). PBB: Price base amount (*prisbasbelopp*). IBB: Income base amount (*inkomstbasbelopp*). PBB and IBB are government standards related to the development of prices and income, used to calculate, e.g., social benefits. W: Total wage bill of the corporation. Wmax: The highest wage payment to an employee (not shareholder). See, e.g., Wykman (2026) for information about SLR, IBB and PBB over time. SLR, IBB and PBB used in calculations in year *t* are taken from year *t-1*. From 2014, there is a requirement that owners hold at least 4% of the shares to use the wage-based allowance. In 1997, the wage base was raised from 70% to 100% during the year.
The following restrictions are also applied:
1994–1996: (WB*imputed return) may not exceed the owner's wage.
1997–2005: WB must not exceed 50 times the owner's wage.
2014–2015: Wage used to calculate the WBA must not exceed 50 times the owner's wage.
Source: Own table based on RSV 292/SKV 292.

Table 3a. Marginal Tax Rates on Dividends (%) by Year, 1991–2024.

	Widely held corporations		Closely held corporations			
			Passive owner	Active owner		
Year	Listed shares	Unlisted shares	Within relief amount	Within rate of return allowance	Above rate of return allowance	Exceeding 90 IBB
1991–1993	30	30	30	30	Local tax or local tax + 20	
1994	0	0	0	0	Local tax or local tax + 20	
1995–1996	30	30	30	30	Local tax or local tax + 25	
1997–1998	30	30	0	30	30	Local tax or local tax + 25	
1999–2005	30	30	0	30	30	Local tax or local tax + 20 or 25	
2006–2011	30	25	25	20	Local tax or local tax + 20 or 25	
2012–2019	30	25	25	20	Local tax or local tax + 20 or 25	30
2020–2024	30	25	25	20	Local tax or local tax + 20	30

Note: IBB refers to *inkomstbasbelopp* (income base amount). The relief amount applies to all unlisted shares, both widely and closely held.
Source: Own table based on RSV 292/SKV 292 and SKV 152.

Table 3b. Average Local Tax Rates (%) by Year, 1991–2024.

Year	Local tax	Year	Local tax	Year	Local tax
1991	30.00	2003	31.17	2015	31.99
1992	29.89	2004	31.51	2016	32.10
1993	29.90	2005	31.60	2017	32.12
1994	29.91	2006	31.60	2018	32.12
1995	30.33	2007	31.55	2019	32.19
1996	30.47	2008	31.44	2020	32.28
1997	30.47	2009	31.52	2021	32.27
1998	30.46	2010	31.56	2022	32.24
1999	30.29	2011	31.55	2023	32.24
2000	30.38	2012	31.60	2024	32.37
2001	30.53	2013	31.73		
2002	30.52	2014	31.86		

Note: The church tax before the year 2000 is excluded, which reduces the tax rate by approximately 1 percentage point for these years.
Source: Statistics Sweden (n.d.a).

Table 4. Marginal Tax Rates on Capital Gains (%) by Year, 1991–2024.

	Widely held corporations			Closely held corporations			
				Passive owner	Active owner		
Year	Listed shares	Unlisted shares	Within relief amount		Within rate of return allowance	Above rate of return allowance	Exceeding 100 PBB/IBB
1991	30	30		30	30	50% labor; 50% capital (30)	30
1992–1993	25	25		25	25	50% labor; 50% capital (25)	30
1994	12.5	12.5		12.5	12.5	70% labor; 30% capital (12.5)	30
1995–1996	30	30		30	30	50% labor; 50% capital (30)	30
1997–2005	30	30	0	30	30	50% labor; 50% capital (30)	30
2006	30	25		25	20	100% labor	30
2007–2009	30	25		25	20	50% labor; 50% capital (30)	30
2010–2024	30	25		25	20	100% labor	30

Note: IBB refers to *inkomstbasbelopp* (income base amount) and PBB to *prisbasbelopp* (price base amount). Between 1991 and 2000, the ceiling was calculated using the price base amount, and after 2000 the income base amount was used. The relief amount applies to all unlisted shares, widely as well as closely held. The numbers within parentheses refer to the tax rate on the capital gains that are taxed as capital.
Source: Own table based on RSV 292/SKV 292 and SKV 152.

Appendix 3. Ceiling Rules

Ceilings have constrained the amount of income taxed as labor income. A ceiling on labor taxation of capital gains has existed since the introduction of the rules, limiting the amount subject to labor income taxation over a six-year period (Lodin 1994). A corresponding ceiling for dividends was introduced later, in 2012, restricting the amount that can be taxed as labor income in any given year (Government Bill 2011/12:1). Earlier, the expanding wage-based allowance was viewed as providing sufficient incentives for dividend payments (Edin, Hansson, and Lodin 2005).

The baseline calculations in the main text assume that the owner has not reached the ceiling. If the owner's labor-taxed capital income exceeds the relevant ceiling, the effective taxation changes for both retained earnings and new share issues. How much the METR will change will depend on the year analyzed and the assumed return on the investment.

Table 5 replicates Table 1 for new share issues and retained earnings given that the surplus is taxed with the applicable tax rates above the dividends and capital gains ceilings. As can be seen from the table, the average METR could be up to 10 percentage points lower, and occasional years the difference is even larger. The volatility of the METR is also lower when the tax ceiling can be used.[28]

[28] Note that the METR for new share issues only refers to the period 2012–2024, when the tax ceiling for dividends was in place, and, hence, is not fully compared with Table 1 in the main text. Average METR for new share issues without ceiling for the period 2012–2024 is 37.2% (MRR 20%), 45.6% (MRR 30%), and 48.6% (MRR 30%).

Table 5. Summary Statistics: Marginal Effective Tax Rates when the Tax Ceilings are Used, Actual Inflation.

METR (%)	New share issues	Retained earnings
MRR=20		
Mean	36.9	31.5
Max	59.0	51.5
Min	26.7	24.7
Std. Dev.	9.7	5.5
MRR=30		
Mean	39.2	31.0
Max	49.9	42.6
Min	34.3	25.0
Std. Dev.	4.7	3.2
MRR=40		
Mean	40.3	31.5
Max	47.1	40.2
Min	37.1	25.9
Std. Dev.	3.0	2.7

Note: MRR is the marginal rate of return on an investment, with the depreciation rate fixed at 10%. It is assumed that marginal dividends and share sales are taxed with the applicable tax rates above the dividends and capital gains ceilings. The METR for new share issues refers to 2012–2024, when the dividend ceiling was in place, whereas the figures for retained earnings refer to the full period analyzed.
Source: Own calculations.

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