A Sufficient Statistics Approach to Optimal Corporate Taxes*

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Abstract

This paper characterizes the equity–efficiency tradeoff of corporate taxation using a stylized model that draws on the corporate investment and tax incidence literatures. We derive optimal corporate tax formulas in terms of estimable reduced-form elasticities and welfare weights on workers and firm owners. While much empirical work emphasizes investment responses, these elasticities do not feature in optimal tax formulas. The elasticity of taxable profits is a sufficient statistic for the efficiency costs of the corporate tax. Higher corporate tax rates are desirable when firm owners have low welfare weights, and less desirable when taxing profits reduces wages. These empirical objects remain central across extensions, including heterogeneous production technologies, tax sheltering, international capital mobility, monopsony, and linear labor income taxes. We survey the empirical literature and find that existing estimates can support a wide range of optimal tax rates. An inverse-optimum analysis provides combinations of welfare weights of workers and firm owners that would rationalize the post-2017 US corporate tax cut as optimal.

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1 Introduction

Proponents of corporate taxes claim that they can raise substantial revenue and redistribute income from affluent capital owners. Opponents argue that corporate taxes distort investment and capital accumulation, thereby reducing employment and wages. Empirical and theoretical research supports both points of view: corporate taxes can yield distributional gains at the cost of generating distortions in the economy. How should policymakers trade off equity and efficiency in setting the optimal corporate tax rate? Consider, for example, the 2017 US corporate tax cut. Kennedy et al. (2024) and Chodorow-Reich et al. (2025) find that the reform increased investment, capital accumulation, employment, and wages of high earners, at the cost of decreasing tax revenue and increasing inequality. Which empirical objects should inform whether the post-2017 US corporate tax rate is too high, too low, or about right?

This paper proposes a simple normative framework to characterize the optimal corporate tax as a function of estimable sufficient statistics. The equity-efficiency tradeoff of the corporate tax is formalized using a model that bridges the literatures on corporate investment and corporate tax incidence, two cornerstones of the corporate tax tradition. While the framework is stylized, it provides insights into how corporate taxes should reconcile distributional and efficiency concerns. It also shows which elasticities inform optimal policy and, therefore, should be targeted by empirical researchers. To the best of our knowledge, we are the first to develop this kind of benchmark for corporate taxation.

We propose a simple model which builds on the static ("long-run") version of the user cost of capital framework (Hall and Jorgenson, 1967), in which a representative capitalist chooses labor and capital to maximize after-tax profits. Production technology exhibits decreasing returns to scale, profits are taxed with a linear corporate tax, and capital expenses are partially deductible from the corporate tax base. A population of workers with heterogeneous costs of working makes extensive-margin labor supply decisions. The labor market is perfectly competitive, so the wage is determined in equilibrium by equating labor supply with labor demand. Corporate taxes affect labor demand and, therefore, wages. Pure profits, partial deductibility, a restricted set of policy instruments, and the consequent distortionary effects of corporate taxes constitute realistic departures from the production efficiency benchmark (Diamond and Mirrlees, 1971a,b; Auerbach and Hines Jr, 2002). Therefore, production distortions caused by distortionary corporate taxes could be optimal for addressing distributional considerations.

Using this model, we consider a social planner who chooses the linear corporate tax to maximize social welfare. The analysis yields a closed-form expression for the optimal corporate tax in terms of estimable sufficient statistics. The elasticity of taxable profits with respect to the net-of-corporate tax rate is a sufficient statistic for the efficiency costs of corporate taxation. The planner weighs this efficiency cost against two distributional effects. First, the optimal corporate tax decreases with the capitalist's welfare weight, because a higher corporate tax reduces the capitalist's consumption. Second, the elasticity of wages with respect to the net-of-corporate tax rate affects the optimal corporate tax in proportion to the relative welfare weights on workers and the capitalist because wage changes are net transfers from the capitalist to workers. Notably, investment or capital elasticities–which are frequently the focus of related empirical work–do not appear in the baseline formulas. Their efficiency effects are implicit in the elasticity of taxable profits, and their welfare impacts are second-order because of the envelope theorem.

It is well known that, while avoiding full specification of the underlying structural model, the sufficient statistics approach is still "structural" as the optimal formulas and the sufficient elasticities may depend on the assumptions of the model (Chetty, 2009b; Kleven, 2021). We therefore probe the robustness of the derived formulas by deriving optimal tax formulas under alternative assumptions. We find that the conclusions from the simple model are robust: taxable profits elasticities, welfare weights, and wage incidence elasticities remain central in determining the optimal corporate tax. In some extensions, the optimal tax formula features additional elasticities that account for further fiscal externalities. However, these objects are estimable, so the modified formulas maintain a sufficient statistics form.

The first extension relaxes the assumption that workers' skills and capitalists' technologies are homogeneous, leading to a non-degenerate equilibrium distribution of profits, elasticities, and welfare weights. We obtain a formula that is very similar to the original, with two additional insights. First, the relevant capitalist-level objects–profit elasticities and welfare weights–are replaced by weighted averages across individual capitalists. Second, the welfare impacts of wage effects now enter additively into the formula: what matters is the sum of wage effects across workers weighted by their corresponding welfare weights. This latter result implies that empirically characterizing heterogeneous wage incidence within the firm is crucial for characterizing the optimal corporate tax rate (Kennedy et al., 2024; Risch, 2024; Duan and Moon, 2025). Wage effects are more critical when the affected workers have relatively low welfare weights. Conversely, if affected workers have high incomes and, therefore, similar welfare weights to firm owners, wage effects will play a secondary role in determining optimal corporate taxes.

We then consider cases where firms have more margins of adjustment to changes in corporate taxes. We first study a case in which the capitalist can shelter profits from the corporate tax base at some private cost. Then, we consider a case with international capital mobility, in which the capitalist has access to foreign investments with potentially higher after-tax returns than its domestic production technology. Both extensions yield the same formulas for the optimal corporate tax as the baseline case. This result reflects standard rationales from the labor income tax literature, which finds that the elasticity of taxable income is sufficient to assess the efficiency costs of labor income taxes (Feldstein, 1999; Chetty, 2009a; Saez et al., 2012). Intuitively, the elasticity of taxable profits incorporates all behavioral responses to the net-of-corporate tax in a reduced-form fashion, including sheltering and international capital mobility, and therefore remains sufficient for assessing the efficiency costs of corporate taxation. These extensions also highlight that the characterization of optimal corporate taxes does not require taking a stance on whether profit shifting strategies have real effects on domestic activity: the optimal tax formulas are the same regardless of whether corporate taxes reduce profits through tax evasion or actual capital flight.

We also consider a case which departs from the assumption of a perfectly competitive labor market, in which a monopsonistic capitalist internalizes the upward-sloping labor supply curve when choosing employment. The resulting optimal tax formula is almost equivalent to that of the baseline case, except that wage effects no longer affect the capitalist's utility. Intuitively, the wage is a choice variable for the monopsonistic capitalist, so envelope theorem arguments apply to it. Despite this change in the corporate tax's welfare effects on the capitalist, the sufficient statistics needed to calibrate the formula are the same as those in the baseline case. Importantly, estimating the labor supply elasticity is not required: its importance is implicit in both the elasticities of taxable profits and wages.

A final extension enables the social planner to jointly choose a linear labor income tax together with the corporate tax. The resulting optimal corporate tax formula differs from that of the baseline because the effects of the corporate tax on wages and employment now generate fiscal externalities. This formula reveals a strategic complementarity between in-work benefits, such as the Earned Income Tax Credit (EITC), and the corporate tax. Decreases in wages and employment from corporate tax hikes reduce negative labor income tax expenditures, attenuating the efficiency costs of corporate taxation. In addition, when labor supply is subsidized using negative marginal tax rates, part of the subsidy is captured by firm owners through reduced equilibrium wages, increasing the distributional benefit from taxing profits. A further extension featuring organizational form choice (e.g., between C and S corporations) in response to tax differentials between the labor and corporate income tax bases yields similar intuition as firms switches from corporate to labor income tax bases in response to corporate tax hikes generate positive fiscal externalities in labor income tax revenue with no first-order welfare effects.

The final section conducts calibration exercises to illustrate the applicability of our formulas. We first review the empirical literature for the welfare-relevant reduced-form effects. We identify 25 estimates of taxable profit elasticities with respect to net-of-tax rates reported in 15 papers. These estimates come from diverse settings and range from 0.08 to 4.79, with a median of 0.58. Wage elasticities with respect to net-of-tax rates are scarcer: we identify 12 estimates from 7 papers. Evidence on wage effects is also mixed, with some papers finding significant positive effects and others reporting precisely estimated zeros. Our review highlights the need for more evidence on these sufficient statistics: additional estimates are necessary to narrow the wide range of values found in the existing literature and to understand the sources of dispersion in elasticity estimates, which likely reflect institutional tax features (e.g., capital expensing, state capacity) and research design choices (e.g., methods, samples, tax variation). We also urge empirical researchers to report elasticities with respect to the net-of-tax rate, as these are the relevant inputs for the normative analysis. Many studies estimate the effects of corporate taxes on profits or wages but do not present results in this elasticity form, making them inapplicable for calibrating the optimal formulas.

The first calibration exercise uses the estimates identified in our review to calibrate optimal tax formulas and simulate comparative statics. We caution against strong quantitative interpretation of this calibration because the estimates vary widely, come from diverse settings, and often reflect short-run responses. Nevertheless, these simulations illustrate how the complex interplay between elasticities and welfare weights can rationalize a wide range of optimal corporate taxes. For example, in our baseline parametrization, moving from the 25th percentile of the available estimates of the profit elasticity to the 75th percentile generates a 20 percentage point reduction in the optimal corporate tax rate. Because wage effects primarily affect the optimal tax by affecting the welfare of inframarginal workers, the relationship between optimal corporate taxes and wage elasticities becomes less pronounced when affected workers have relatively low welfare weights, which is likely to be the case when high-income workers' wages react more strongly to changes in corporate taxes. The exercise also confirms that the ability of the corporate tax to redistribute profits is necessary to justify high corporate tax rates. When the welfare weight of the capitalist increases, the optimal corporate tax decreases and may eventually become negative.

Our second calibration exercise quantitatively evaluates a recent and salient corporate tax reform. We implement an inverse-optimum analysis (Bourguignon and Spadaro, 2012; Lockwood and Weinzierl, 2016; Hendren, 2020) of the 2017 US corporate tax cut, leveraging the Kennedy et al. (2024) internally consistent reduced-form estimates of its effects on taxable profits, wages, and employment. We characterize the combination of welfare weights on C corporation owners and high-income workers that can rationalize the optimality of the post-2017 US corporate tax rate. If the utility of the richest 5% of workers were valued as much as the utility of the average worker in the economy, then the post-2017 US corporate tax would only be optimal if C corporation owners' utility were valued 60% as much as that of the average worker. Assuming society places a lower weight on the richest 5% of workers increases the welfare weight on capitalists needed to rationalize the reform as optimal.

Related literature Our analysis speaks to an extensive literature studying the effects of corporate taxes on investment, capital, employment, wages, and other outcomes, built on the seminal contributions of Harberger (1962) and Hall and Jorgenson (1967). Surveys include Hassett and Hubbard (2002), Auerbach (2006), Fuest and Neumeier (2023), and Lester and Olbert (2025). Section 5 reviews the empirical tradition in this literature, focusing on the elasticities that the analysis suggests are crucial for calibrating the formulas.[1] We contribute to this literature by providing a normative framework that bridges the user cost of capital tradition with models of corporate tax incidence to assess the implications of these analyses for the optimal corporate tax policy. Studying the optimal redistribution of profits is

[1]In Section 5, we focus on taxable profits, wages, employment, payroll costs, and organizational form switching. A large literature estimates the effects of corporate taxes on investment or capital accumulation (e.g., Bustos et al., 2004; Djankov et al., 2010; Yagan, 2015; Zwick and Mahon, 2017; Ohrn, 2018, 2019; Curtis et al., 2022; Chen et al., 2023; Chodorow-Reich et al., 2025; Cloyne et al., 2025). We do not review this literature as investment elasticities are not part of the sufficient statistics highlighted by the model because investment effects are implicitly accounted for by the taxable profit elasticities.

policy-relevant, as evidence shows that profits and firm ownership are concentrated among top earners (Cooper et al., 2016; Piketty et al., 2018; Smith et al., 2019, 2023; Kopczuk and Zwick, 2020).

The main contribution of the paper is the characterization of a simple sufficient statistics benchmark for assessing the equity-efficiency tradeoff of the corporate tax. To the best of our knowledge, we are the first to develop this kind of benchmark for corporate taxation. The analysis and results share similarities with the rich literature on optimal labor income taxes (for surveys, see Piketty and Saez, 2013a and Kaplow, 2024). The typical Mirrleesian setting, however, abstracts from the role of firms and investment in determining wages and the potential effects of taxes on wages in general equilibrium by assuming exogenous wages. Some research in this tradition characterizes optimal labor income tax rates when top incomes generate externalities for the rest of the wage distribution (Piketty et al., 2014; Rothschild and Scheuer, 2016; Lockwood et al., 2017; Jones, 2022; Kleven, 2025). Corporate taxes can be thought of as particular top marginal tax rates, with the effects of corporate taxes on wages being an externality to the rest of the wage distribution. Our analysis extends these intuitions to corporate taxes, incorporating the realistic feature that firm profits make up a large share of top earners' incomes, so firm adjustments should play an important role in mediating the wage externalities.[2] Given this parallel, our results echo central conclusions in the elasticity of taxable income (ETI) literature (Feldstein, 1999; Saez et al., 2012). Mirroring the well-known result that the ETI is sufficient for assessing the efficiency costs of labor income taxes, we show that the elasticity of taxable profits is sufficient for assessing the efficiency costs of corporate taxes. Although we are not the first to note this parallel (e.g., Devereux et al., 2014), our analysis extends this intuition beyond a characterization of the deadweight loss from the corporate tax by deriving the optimal corporate tax that also depends on welfare weights and wage effects.

Relatedly, a long tradition built upon Atkinson and Stiglitz (1976) studies the optimality of saving taxes in the presence of labor income taxation. The typical setting is one in which individuals earn labor income, pay labor income taxes, and then decide how much to consume and save. This literature explores whether taxes on savings can improve welfare given a labor income tax and different assumptions about preferences, rates of return to saving, and initial wealth (Saez, 2002a; Cremer et al., 2003; Diamond and Spinnewijn, 2011; Golosov et al., 2013; Gahvari and Micheletto, 2016) and has recently provided sufficient statistics formulas for optimal savings taxes (Piketty and Saez, 2013b; Saez and Stantcheva, 2018; Ferey et al., 2024; Gerritsen et al., 2025; Hellwig and Werquin, 2025). We claim this tradition does not directly address the problem of optimal corporate taxes for two reasons. First, by considering passive savings

[2] One related paper is Scheuer (2014), who studies the optimal taxation of entrepreneurs. We emphasize two key differences between our analyses. First, the normative analysis in Scheuer (2014) considers fully non-linear tax schedules for labor and entrepreneurial incomes, and focuses on studying how instrument flexibility (in terms of the availability of occupation-specific schedules) matters for production efficiency. On the contrary, we consider a simpler policy environment that resembles actual corporate tax policy, and focus on the connection between optimal policy and the available empirical evidence on corporate taxation. Second, Scheuer (2014) considers a model with selection into entrepreneurship but no capital investment, making it more suitable for studying the taxation of self-employed individuals. In contrast, our framework considers fixed populations but explicitly models capital investment, making it more suitable for studying the taxation of corporate profits.

and therefore abstracting from the relationship between firms, capital, and wages, this literature cannot study the welfare effects of investment and does not connect with the corporate tax incidence literature. Our analysis considers the investment decisions of firm owners and the link between capital and wages, enabling us to provide formulas more naturally applicable to the taxation of corporate profits. Second, the assumption that all individuals pay the labor income tax before investing is at odds with the observation that some business income never reaches individual income tax bases and, therefore, may only be taxed with corporate taxes (Burman et al., 2017; Bach et al., 2025; Balkir et al., 2025; Love, 2025).

A large strand of research uses structural dynamic general equilibrium models to study corporate taxation (e.g., Judd, 1985; Chamley, 1986; Conesa et al., 2009; Saez, 2013; Straub and Werning, 2020; Akcigit et al., 2022; Chen et al., 2023; Dávila and Hébert, 2023; Morrison, 2024; Rotberg and Steinberg, 2024; González et al., 2025; Smith and Miller, 2025). The relationship between our analysis and this scholarship follows the well-known contrast between sufficient statistics and structural analyses (Chetty, 2009b; Kleven, 2021). The structural literature introduces additional mechanisms, sources of heterogeneity, and margins of adjustment, enriching the analysis. Our paper complements these papers by providing a stylized benchmark that retains key channels of this tradition–in particular, the equilibrium interactions between capital and labor–while providing a more direct connection between the large body of reduced-form empirical research on the effects of corporate taxation and optimal corporate tax policy.

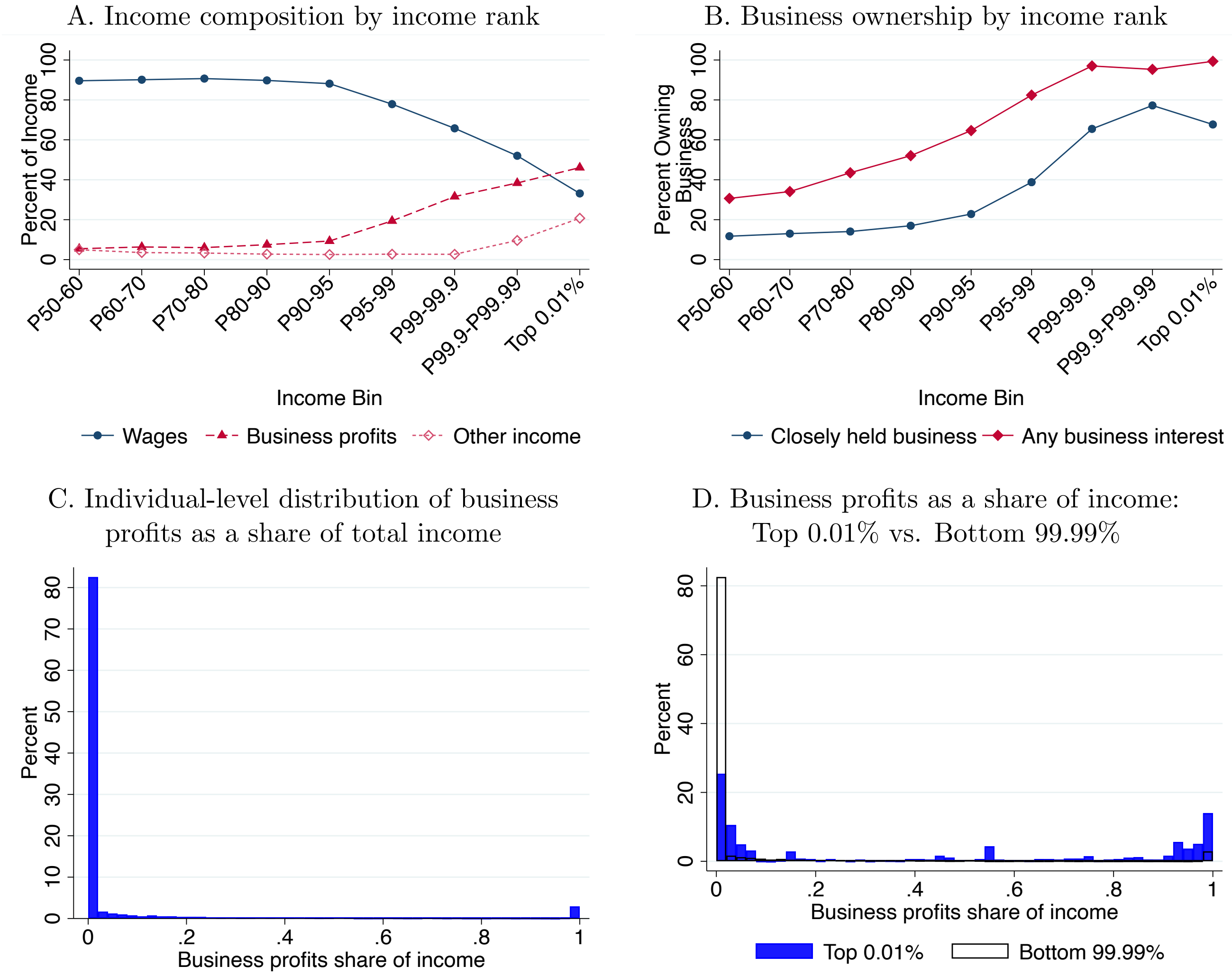
Finally, our study focuses on the equity-efficiency tradeoff of the corporate tax by characterizing the optimal all-in wedge of the corporate tax but does not explore its optimal split between entity- and payout-level taxes. Berg (2025) adopts a sufficient statistics approach to study whether corporate profit taxation should be implemented with entity- or shareholder-level taxes in the presence of foreign shareholders. Other papers analyze the desirability of corporate taxes for enforcement purposes in the presence of evasion (Kopczuk and Slemrod, 2006; Best et al., 2015). We see our analyses as complementary.

2 Motivating Facts

We motivate our analysis with a descriptive exercise based on the 2004-2022 waves of the Survey of Consumer Finances (SCF). The SCF is a survey conducted by the US Federal Reserve Board in collaboration with the US Treasury Department, which asks detailed questions to US families about income and wealth and uses income tax returns to over-sample high-income households. We consider households headed by individuals of prime working age (25 to 55 years old) and build measures of total income composed of three components: business profits, wage income, and other capital income (such as interest income).[3] We closely follow Piketty and Saez (2003) and Smith et al. (2019) to build these variables; see Appendix C for more details. Our analysis likely understates the concentration of business income, as the SCF does

[3]The age restriction aims to exclude individuals who are likely to have substantial capital income because they are retirees.

Figure 1: Prime-Age Households' Income Composition and Business Ownership



Notes: These figures use data from the Survey of Consumer Finances to characterize the composition of US households' income. We use the 2004-2022 waves and focus on households headed by individuals of prime working age (25 to 55 years old). Panel A plots the income composition by total income rank, distinguishing between wage income, business income, and other income. Panel B plots the share of households within each income rank with business interests. Panel C plots the individual-level distribution of business profits as a share of total income. Panel D replicates Panel C, distinguishing between the top 0.01% and the bottom 99.99% of the income distribution. Additional details can be found in Section 2 and Appendix C.

not provide enough information to compute and allocate retained profits, a component of business income that has been shown to be quantitatively important in related research (Piketty et al., 2018; Kopczuk and Zwick, 2020; Smith et al., 2023; Bach et al., 2025; Fox and Liscow, 2025). Figures D.1 and D.2 of Appendix D reproduce the descriptive exercises in this section using more expansive income concepts which include realized and unrealized capital gains, and show more extreme income concentration and business ownership patterns, suggesting that the figures in this section should be interpreted as conservative.

We first explore the potential equity gains from taxing business profits, which, intuitively, depend on how well-off business income earners are relative to workers. Panel A of Figure 1 shows the composition of income by percentile of total income. The figure shows that capital income in general, and business income in particular, is highly concentrated among top earners, consistent with existing evidence (Cooper et al., 2016; Piketty et al., 2018; Smith et al., 2019, 2023; Kopczuk and Zwick, 2020). Wage income accounts for the overwhelming majority of income paid to individuals in the bottom 90% of the income distribution, with shares around 90%, while business income only represents between 5.5% and 7.5% of their total income on average. However, the wage income share declines precipitously towards the top of the income distribution, with a corresponding increase in the relative importance of business income. Business income represents 9.3%, 19.4%, 31.6%, 38.4%, and 46.1% of the total income of households between the 90th and 95th percentiles, between the 95th and 99th percentiles, between the 99th and 99.9th percentiles, between the 99.9th and 99.99th percentiles, and the top 0.01%, respectively. These numbers are likely underestimates: Figure D.2 of Appendix D shows that virtually all income of the top 1% is business income when unrealized and realized capital gains are added to this baseline business income measure. The fact that business income is concentrated at the top suggests that taxing business profits may yield equity gains.

Consistent with Cooper et al. (2016), Panel B of Figure 1 shows that the concentration of business income among top earners is mediated by the extensive margin of business ownership, as top earners are more likely to own businesses. Compared to median earners, less than a third of whom have any business ownership, virtually all households in the top 0.1% of the income distribution own businesses through traded stocks, mutual funds, or trusts. These patterns also apply to closely-held businesses, where ownership rates in the top 1% of the income distribution range between 65% and 77%, whereas those shares for the median household only reach 11.7%.

Finally, Panel C of Figure 1 displays the distribution of the individual-level business income share (as a share of total income). The figure shows that more than 80% of households earn precisely zero business income, while about 4% of households depend entirely on business profits, and very few households earn significant fractions of both wage income and business profits. Panel D of Figure 1 shows that this pattern varies with income by contrasting the business profits share distribution between the top 0.01% and the bottom 99.99%. While the distribution for the bottom 99.99% mechanically resembles the distribution displayed in Panel C, the distribution for the top 0.01% shows a very different pattern, with only 25% of the households of this group earning exactly zero business income, while 14% earning exclusively business income, and an additional 16% having business income shares between 90% and 99%. Again, Appendix D displays even more striking contrasts between the top 0.01% and the rest of the population when including capital gains in business income measures. Together, these figures reveal that business income concentration not only manifests through higher business income shares on average, but also by substantially higher propensities of being purely business income earners. They also suggest that wage earners and business income earners represent different populations of individuals.

3 Model and Main Result

The model is static and features a representative capitalist and a population of workers who interact in a competitive labor market. We use this model to characterize the optimal corporate tax rate as a function of sufficient statistics. The next section considers several extensions to our baseline analysis.

3.1 Setup

Capitalist We consider the simplest version of the user cost of capital model of Hall and Jorgenson (1967). A representative capitalist is endowed with a revenue function $F(K, L)$ with decreasing returns to scale, where K is the capital invested in the firm and L is labor, and $F(K, L)$ satisfies $\partial F/\partial K \equiv F_K > 0$, $\partial^2 F/\partial K^2 \equiv F_{KK} < 0$, $\partial F/\partial L \equiv F_L > 0$, and $\partial^2 F/\partial L^2 \equiv F_{LL} < 0$. The capitalist is a price taker in the output market (with the price normalized to 1), the labor market (with w the wage paid to each hired worker), and the capital market (with r the cost of capital). Firm profits are taxed with a linear corporate tax t. A fraction $\theta \in [0, 1)$ of the capital costs can be deducted from the corporate tax base.

The problem of the capitalist is given by:

$$\max_{K,L} \Pi(K, L) = (1-t)\left(F(K, L) - wL\right) - r(1-\theta t)K, \tag{1}$$

$$= (1-t)\pi(K, L) - (1-\theta)rK, \tag{2}$$

where $\pi(K, L) = F(K, L) - wL - \theta rK$ are taxable profits. The first-order conditions (FOCs) with respect to K and L are given by $F_K = \frac{r(1-\theta t)}{1-t}$ and $F_L = w$, respectively. These FOCs characterize optimal capital $K^* = K^*(w, 1-t, \theta)$ and optimal labor demand $L^* = L^*(w, 1-t, \theta)$, as a function of the wage w and the policy parameters $(1-t, \theta)$. Given the static nature of the model, we use "capital demand" and "investment" interchangeably. This model reflects the standard intuition of more general models of the user cost of capital. The corporate tax distorts investment if capital costs are partially deductible ($\theta < 1$). When capital costs are fully deductible ($\theta = 1$), the corporate tax does not distort investment nor employment and becomes a tax on pure profits. In what follows, we assume the empirically-relevant case of a fixed $\theta < 1$ and discuss its optimality at the end of the section.

The capitalist's indirect utility is given by $U^K = \Pi(K^*, L^*) = (1-t)\pi(K^*, L^*) - (1-\theta)rK^*$. The envelope theorem implies that $\partial U^K/\partial(1-t) = \pi(K^*, L^*) - wLe_w^{1-t}$, where $e_w^{1-t} = d\log w/d\log(1-t)$ is the elasticity of the wage w with respect to the net-of-corporate tax rate $1-t$. The capitalist mechanically benefits from an increase in the net-of-tax rate $1-t$ in proportion to the taxable profits. However, the benefit is attenuated by potential general equilibrium effects on wages: for a given labor supply, an increase in labor demand will lead to higher wages, so $e_w^{1-t} > 0$.

While the model is static, the combination of linear utility and the absence of capital adjustment costs gives the model a steady-state ("long-run") interpretation, as in Saez and Stantcheva (2018). Intuitively, firms immediately react to changes in taxes by adjusting to the new steady state, so the solution to the static problem also solves the dynamic problem. Because of this feature, the empirical implementation of the formulas below will provide a more policy-relevant assessment of optimal policy when the estimated elasticities capture long-run responses to corporate taxes.

The long-run interpretation of the static model comes with two caveats. First, assuming away transitional dynamics in investment is at odds with empirical evidence on the importance of capital adjustment costs for explaining investment decisions (Auerbach and Hassett, 1992; Caballero and Engel, 1999; Winberry, 2021; Chen et al., 2023). Therefore, our steady-state interpretation does not fully capture short-run investment dynamics that may affect optimal time-varying corporate tax policy.[4] Second, our model implicitly assumes that the capitalist consumes all after-tax profits, so the net-of-tax rate $1-t$ in our model is the total net-of-tax rate faced by the firm owner. In practice, governments often tax business profits first at the entity level when they are accrued, and again when distributed to shareholders as dividends. Within the model's structure, this simplification comes without loss of generality. However, more general dynamic models could incorporate mechanisms through which dividend taxes may have different effects on investment and welfare relative to entity-level corporate taxes related to strategic intertemporal corporate financing and payout decisions. One interpretation of our abstraction from entity vs. dividend taxation is that we are considering "traditional view" firms where elasticities with respect to net-of-corporate taxes and net-of-effective equity taxes are isomorphic if payout taxes are fixed.[5] We leave dynamic generalizations of our model to future research.

Workers A population of workers (for simplicity, of size 1) makes extensive margin labor supply decisions. Workers are endowed with a cost of participating in the labor market c that is distributed with CDF H and PDF h, assumed to be smooth. The baseline model abstracts from the labor income tax system and assumes that workers simply receive a transfer T_0 from the government regardless of whether they work. If a worker works, she gets utility $w+T_0-c$. If a worker does not work, she gets utility T_0. Workers therefore work whenever $w \geq c$, so the market-level labor supply is given by $H(w)$. A case with labor income taxes is analyzed in the next section.

Labor market equilibrium The wage is determined in equilibrium by the market-clearing condition $H(w) = L^*(w, 1-t, \theta) \equiv L$, with L denoting equilibrium employment. The equilibrium wage w depends

[4]The lack of consumption smoothing considerations also implies a departure from the Chamley-Judd tradition that emphasizes the intertemporal distortions of the corporate tax via the Euler equation.

[5]Discussions related to the debate on the traditional vs. the new view on dividend taxation require modeling equilibrium retained earnings from previous operations available for funding new investment (see Auerbach, 2002; Auerbach and Hassett, 2003; Chetty and Saez, 2005; Yagan, 2015; Love, 2022; Moon, 2022; Cortés and Gutiérrez, 2025; Goodman et al., 2025 for discussions). Because of that, we caution against interpreting our analysis as informative for optimal dividend taxation.

on $1-t$ and θ through their effects on labor demand.

Planner's problem The government chooses $(1-t, T_0)$ to maximize a generalized utilitarian social welfare objective:

$$SWF = (1-L)G(T_0) + L\frac{\int_0^w G(w+T_0-c)dH(c)}{H(w)} + G(U^K), \tag{3}$$

where G is increasing and concave, thus measuring preferences for redistribution. The government budget constraint is given by $T_0 = t\pi(K^*, L^*)$ because the transfer to workers must be funded by the corporate tax revenue. Let λ be the budget constraint multiplier. Following Saez (2001), social marginal welfare weights (WWs) of non-employed workers, employed workers, and the capitalist, are defined as follows:

$$g_L^0 = \frac{G'(T_0)}{\lambda}, \quad g_L^1 = \frac{\int_0^w G'(w+T_0-c)dH(c)}{L\lambda}, \quad g_K = \frac{G'(U^K)}{\lambda}. \tag{4}$$

WWs represent the social value of the marginal utility of consumption normalized by the social cost of raising public funds, thus measuring the social value of redistributing one dollar uniformly across a group of individuals. At the social optimum, the planner is indifferent between giving one more dollar to an individual i or having g_i more dollars of public funds.

3.2 Main result

Proposition 1. *At the social optimum, the optimal corporate tax t^* is given by:*

$$t^* = \frac{1 - g_K\left(1 - ae_w^{1-t}\right) - g_L^1 ae_w^{1-t}}{1 - g_K\left(1 - ae_w^{1-t}\right) + e_\pi^{1-t}}, \tag{5}$$

where $a = wL/\pi$ is the wages-to-taxable profits ratio, $e_w^{1-t} = [dw/d(1-t)] \cdot [(1-t)/w]$ is the elasticity of wages w with respect to the net-of-corporate tax rate, and $e_\pi^{1-t} = [d\pi/d(1-t)] \cdot [(1-t)/\pi]$ is the elasticity of taxable profits π with respect to the net-of-corporate tax rate.

Proof. See Appendix A. □

Equation (5) formalizes the equity-efficiency tradeoff of the corporate tax.[6] The optimal corporate tax t^* increases when g_K is small, as there are equity gains from redistributing profits if the wage effect does not overcome the mechanical impact on after-tax profits.[7] The optimal corporate tax t^* also decreases

[6]As shown in Appendix A, we also show that T_0 is chosen such that $\overline{g}_L \equiv (1-L)g_L^0 + Lg_L^1 = 1$. This is a standard result in optimal tax models with quasi-linear utilities (Piketty and Saez, 2013a).

[7]An increase in t mechanically decreases the capitalist's utility, but this decrease is attenuated by lower equilibrium wages. As wages change due to general equilibrium factors, the wage change is expected to be smaller than the mechanical effect and, therefore, the corporate tax increase is expected to have a net negative impact on the capitalist's utility.

with the wage effect e_w^{1-t} if $g_L^1 > g_K$ (equity loss from indirectly redistributing wages to profits) and the elasticity of taxable profits e_π^{1-t} (efficiency cost driven by the fiscal externality). This formula is a closed-form expression for the optimal corporate tax based on reduced-form sufficient statistics as many relevant primitives do not need to be specified for calibrating the formula. While θ does not directly affect t^*, it does so indirectly through the elasticities e_π^{1-t} and e_w^{1-t}, as θ mediates how distortionary the corporate tax is. The formula provides an intuitive reconciliation of the efficiency and equity effects of the corporate tax documented in the empirical literature. Interestingly, the functional form resembles standard results on optimal linear labor income (e.g., Piketty and Saez, 2013a) and capital income taxes (e.g., Saez and Stantcheva, 2018), extended to incorporate general equilibrium effects on wages.

The role of the elasticity of taxable profits resembles that of the ETI in the problem of optimal labor income taxation (Feldstein, 1999; Saez et al., 2012): the elasticity of taxable profits e_π^{1-t} is a sufficient statistic for the efficiency costs of corporate taxes (Devereux et al., 2014). The wage effect e_w^{1-t} is a transfer between the capitalist and workers and, as such, only affects the optimal corporate tax due to distributional considerations if $g_K \neq g_L^1$: the efficiency considerations of wage effects are implicit in e_π^{1-t}. That is why employment elasticities do not appear in equation (5). The efficiency consequences of employment effects are implicit in e_π^{1-t}, and these effects have no first-order welfare impacts because of the envelope theorem: individuals who change employment status are initially indifferent between working and not. A similar argument holds for capital or investment elasticities, where the envelope theorem implies there are no first-order welfare effects, and whose efficiency effects are also implicit in e_π^{1-t}. The fact that investment elasticities are not part of the optimal formula is an insightful finding, as this empirical object has attracted substantial attention in the empirical literature on corporate taxes. Moreover, this finding implies that Proposition 1 remains valid when firm owners affect profits through channels other than capital investment (for example, through an additional labor input such as managerial effort), as suggested by recent literature (Smith et al., 2019; Kopczuk and Zwick, 2020).[8]

We emphasize that a non-zero optimal corporate tax t^* requires distributional gains: with no equity benefit, the only effect of the corporate tax is to distort production. If G is linear so that $g_K = g_L^1 = 1$, then $t^* = 0$. In contrast, if e_π^{1-t} is finite, t^* is likely to be positive when $g_K < 1$. When $g_K \to 0$, the optimal corporate tax resembles a Laffer rate, adjusted downward by the welfare-weighted wage effect:

$$t^* = \frac{1 - g_L^1 a e_w^{1-t}}{1 + e_\pi^{1-t}}. \tag{6}$$

[8] To see why, suppose that, instead of renting capital, the firm owner exerts effort and managerial skills m at some private disutility cost $v(m)$ that cannot be deducted from the corporate tax base and is combined with the labor input to generate revenue according to some function $\widetilde{F}(m, L)$. The problem of the firm owner is:

$$\max_{m,L} \Pi(m, L) = (1-t)(\widetilde{F}(m, L) - wL) - v(m) = \pi(m, L) - v(m).$$

The FOCs are given by $F_L = w$ and $F_m = v_m$. Indirect utility is $U^K = \Pi(m^*, L^*) = \pi(m^*, L^*) - v(m^*)$. The envelope theorem yields $\partial U^K/\partial(1-t) = \pi(m^*, L^*) - wLe_w^{1-t}$. Then, the planner's problem is equivalent and e_π^{1-t} remains sufficient.

As a final remark, recall that, in our model, t represents the all-in wedge of the corporate tax, factoring in both entity- and payout-level taxes: $(1-t) = (1-t_e)\cdot(1-t_p)$. While this subtlety does not affect the economic analysis within the context of our model, it is worth noting that numerous combinations of t_e and t_p can implement equation (5) in the real world. The stylized nature of our model prevents us from shedding light on the optimal combination of t_e and t_p for implementing t^* because the mechanical, welfare, and behavioral effects of both instruments are isomorphic in our model. Characterizing the optimal combination of t_e and t_p would require modeling either differential behavioral responses with respect to both taxes (for example, because of dynamic or enforcement considerations) or additional populations which are differentially affected by both taxes (for example, foreign or institutional shareholders), as in Kopczuk and Slemrod (2006), Best et al. (2015), or Berg (2025). Despite this limitation, our decision not to distinctly model entity- and payout-taxes on business profits does not reduce the model's empirical applicability. To understand why, suppose we have empirical estimates of e_x^{1-t}, with $x \in \{\pi, w\}$, that were identified from variation in t_e, while holding t_p fixed. It follows that $d\log x/d\log(1-t_e) = [d\log x/d\log(1-t)]\cdot[d\log(1-t)/d\log(1-t_e)] = d\log x/d\log(1-t)$.

3.3 Optimal deductibility

The analysis assumes that the fraction θ of the capital costs that can be deducted from the corporate tax base is fixed at a level below 1. This is a reasonable assumption as, in the real world, countries implement tax codes with partial deductibility. More generally, the available empirical evidence on investment effects requires partial deductibility to be rationalized. In Appendix B, we show that $\theta < 1$ is indeed optimal in this model. The intuition of this result is as follows. The optimal deduction rate θ^* balances two countervailing forces. On the one hand, increasing θ^* enhances efficiency, as it alleviates investment distortions. On the other hand, increasing θ^* mechanically decreases the tax base and, therefore, reduces the corporate tax revenue for a given corporate tax. Departing from $\theta = 1$, the second effect always dominates at the joint optimum and, therefore, it is optimal to decrease the deduction rate below 1. Note that this argument in favor of partial deductibility is orthogonal (and, therefore, complementary) to other arguments in the literature that support imperfect deductibility to limit over-reporting of deductions for avoidance or evasion purposes (e.g., Best et al., 2015).

The intuition of this result is rooted in reasoning developed by the ETI literature, mainly Slemrod and Kopczuk (2002). The elasticity of taxable profits e_π^{1-t} is not a structural parameter: it is a function of the deduction rate θ. When θ is large, the corporate tax becomes less distortionary (as illustrated by the capitalist's FOCs), making e_π^{1-t} smaller. As a consequence, the optimal corporate tax rate t^* is larger. When $\theta \to 1$, then $e_w^{1-t} \to 0$ and $e_\pi^{1-t} \to 0$ and, therefore, t^* is large and chosen so that $g_K = 1$, as no behavioral distortion arises from its use.[9] Then, starting from $\theta = 1$, it follows that a marginal decrease

[9]Note that replacing $e_\pi^{1-t} = e_w^{1-t} = 0$ in equation (5) yields $t^* = 1$. However, that conclusion is misleading as the

in θ generates substantial revenue from the mechanical effect, with negligible efficiency losses. Then, at the joint optimum, θ^* is smaller than one. In Appendix B, we provide a formula for the optimal θ^* (see equation (B.12)). This formula depends on the elasticities $e_w^\theta = [dw/d\theta] \cdot [\theta/w]$ and $e_K^\theta = [dK/d\theta] \cdot [\theta/K]$ that can in principle be estimated (e.g., House and Shapiro, 2008; Zwick and Mahon, 2017; Ohrn, 2019).

4 Extensions

Proposition 1 provides a benchmark for the optimal corporate tax t^* based on estimable reduced-form sufficient statistics. However, sufficient statistics results are, in principle, only valid under the positive framework used to derive them (Chetty, 2009b; Kleven, 2021). We therefore develop several extensions to our baseline framework to assess the robustness and generality of the main result. Throughout this section, we maintain the assumption that θ is fixed and smaller than 1.

4.1 Heterogeneity

The analysis of Section 3 assumes a representative capitalist who hires equally productive workers. The real world, however, is populated by heterogeneous workers and firms. To study how worker- and capitalist-level heterogeneity affects the optimal corporate tax rate, we extend the baseline model as follows. We consider low- and high-skill workers, with skill-specific participation cost distributions. We also replace the representative capitalist with a continuum of capitalists, arbitrarily heterogeneous in terms of technologies, accounting, for example, for differences in productivity, factor shares, elasticities of substitution, or returns to scale. All these capitalists compete for the same low- and high-skill workers in segmented labor markets subject to perfect competition, so they all pay the same skill-specific wages. Because of their different technologies, capitalists are likely to have different equilibrium levels of profits (and, therefore, heterogeneous welfare weights) as well as different reactions to changes in taxes (and, therefore, heterogeneous profit elasticities). Because this extension requires introducing new primitives, additional notation, and updated market-clearing conditions and planning objectives, we provide the details of this extension in Appendix B to maintain clarity in the exposition.

With the extended model, we derive an expression for the optimal corporate tax rate t^* that reflects the same intuition of equation (5) (see equation (B.8) of Appendix B). While it maintains the general structure and economic intuition of Proposition 1, two additional insights emerge from the expression for t^* under heterogeneity. First, the welfare impacts of wage changes on workers enter additively, meaning that the term $g_L^1 a e_w^{1-t}$ in the numerator of equation (5) is replaced by the sum of this term across skill types. This nuance, while intuitive, is economically important because empirical work has found that

derivation of equation (5) is only valid under positive elasticities. The optimal corporate tax under no productive distortions (chosen so that $g_K = 1$) is below 1 as it allocates a minimum level of consumption to the capitalist.

wage incidence varies along the income distribution (Kennedy et al., 2024; Risch, 2024; Duan and Moon, 2025). Therefore, wage incidence will mainly impact the optimal corporate tax t^* when concentrated in workers with relatively large welfare weights (i.e., lower earnings). Second, all terms in equation (5) pertaining to the representative capitalist (the welfare weight g_K and the elasticity of taxable profits e_π^{1-t}) are replaced by weighted averages of the individual-level capitalist terms. Their role in determining t^* is the same as in equation (5) after replacing them with their corresponding weighted averages.

4.2 Avoidance and evasion

The analysis in Section 3 assumes that profit responses to corporate taxes solely reflect real responses in investment. In practice, taxable profit elasticities with respect to the net-of-corporate tax e_π^{1-t} can also be driven by avoidance or evasion strategies in ways that reported profits respond independently from real capital responses. Examples of such avoidance and evasion include the misreporting of costs (e.g., Best et al., 2015; Almunia and Lopez-Rodriguez, 2018; Bachas and Soto, 2021; Heiser et al., 2025), the consumption of profits without distribution (e.g., Leite, 2024), the shift of profits to low-tax countries (e.g., Zucman, 2014; Bustos et al., 2025), or the division of big firms into small ones to take advantage of tax benefits targeted at small businesses (e.g., Onji, 2009; Agostini et al., 2018; Liu et al., 2021).

To explore this possibility, suppose that the capitalist can shelter an amount e of profits with a cost $\phi(e)$, with $\phi_e > 0$ and $\phi_{ee} > 0$. The problem of the representative capitalist is now given by:

$$\begin{aligned}\max_{K,L,e} \Pi(K, L, e) &= (1-t)\left(F(K,L) - wL - e\right) + e - r(1-\theta t)K - \phi(e), && (7)\\ &= (1-t)\pi(K,L,e) + e - (1-\theta)rK - \phi(e), && (8)\end{aligned}$$

where taxable profits are now given by $\pi(K,L,e) = F(K,L) - wL - \theta rK - e$. The FOCs with respect to K and L remain unchanged relative to the baseline case and, therefore, labor demand L^* and the domestic capital supply K^* are as in Section 3. Optimal sheltering e^* obeys the standard condition $\phi_e = t$ (profits are sheltered until the marginal cost equals the marginal benefit). Because of the envelope theorem, $\partial U^K/\partial(1-t)$ remains unchanged relative to the baseline case, with now $U^K = \Pi(K^*, L^*, e^*)$. Therefore, the planner's problem is the same as in Section 3 and the optimal corporate tax t^* is still given by Proposition 1.[10] The fact that the elasticity of taxable profits e_π^{1-t} remains sufficient for assessing the efficiency costs of the optimal corporate tax t^* after accounting for sheltering is not surprising through the lens of the ETI literature, which has established that, as long as sheltered income does not generate fiscal externalities, allowing for sheltering does not affect optimal formulas (Chetty, 2009a).

Two remarks are in order. First, this extension assumes away fiscal externalities of sheltered profits.

[10] The assumption that evasion costs are non-deductible is without loss of generality: the same result is achieved if $\phi(e)$ can be deducted from the corporate tax base, so $\pi(K,L,e) = F(K,L) - wL - \theta rK - e - \phi(e)$.

However, profits can be sheltered in tax-preferred forms that are subject to positive taxes. In this case, the elasticity of taxable profits e_{π}^{1-t} is an upper bound for the efficiency costs of corporate taxation as fiscal externalities attenuate the revenue cost of profit responses. Then, Proposition 1 can be interpreted as a lower bound for the optimal corporate tax t^* if fiscal externalities are in place. Second, we have ignored that the extent of profit sheltering may matter for optimal policy if governments have alternative policies to curb it (Slemrod and Kopczuk, 2002). That is, disentangling real, avoidance, and evasion responses may affect the design of policies that increase the sheltering costs of the capitalist (e.g., more aggressive audit programs or the implementation of third-party reporting) and their corresponding effects on taxable profit elasticities and optimal corporate taxes, as in Keen and Slemrod (2017).

4.3 International capital mobility

The analysis in Section 3 assumes that the only source of corporate tax distortions is the partial deductibility of capital costs. Another source of real distortions is the possibility that domestic corporate taxes may induce capitalists to reallocate capital to foreign lower-tax jurisdictions (Hines Jr and Rice, 1994; Gordon and Hines Jr, 2002; Devereux et al., 2008, 2021; Keen and Konrad, 2013). We now consider the baseline model with homogeneity and no profit sheltering but augmented by the presence of a foreign investment opportunity for which the capitalist can allocate capital.

As in Swonder and Vergara (2024), consider a capitalist that has a fixed amount of capital $\overline{K}$ who allocates it between the domestic firm and a foreign investment. Capital allocated to the domestic firm can be deducted at rate θ from the domestic corporate tax base at cost r. The foreign investment has an after-tax return $\widetilde{r}$ and, unlike domestic capital expenditures, is not taxable and it cannot be deducted as investment expenses from the domestic corporate tax base. The problem of the capitalist is given by:

$$\begin{aligned} \max_{K,L} \Pi(K,L) &= (1-t)\left(F(K,L) - wL\right) + \left(\overline{K} - K\right)\widetilde{r} + t\theta rK, & (9) \\ &= (1-t)\pi(K,L) + \widetilde{r}\overline{K} - (\widetilde{r} - r\theta)K, & (10) \end{aligned}$$

where $\pi(K,L) = F(K,L) - wL - \theta rK$. The FOCs with respect to K and L are given by $F_K = \frac{\widetilde{r}-\theta tr}{1-t}$ and $F_L = w$, respectively. If $r = \widetilde{r}$, the FOC with respect to K is the same as in the baseline case. However, we allow r to differ from the international after-tax return $\widetilde{r}$, which implies that the domestic corporate tax may be distortionary even if $\theta = 1$. This extension does not directly affect the workers' problem and also does not affect the planners' problem, given that $\partial U^K/\partial(1-t)$ remains unchanged because of the envelope theorem. Then, as in the profit-sheltering case discussed above, Proposition 1 remains valid to characterize the optimal corporate tax rate t^*. Intuitively, these additional margins of response (sheltering or international capital mobility) are indirectly captured by the elasticity of taxable profits e_{π}^{1-t}, so it remains true that this object is sufficient for measuring the efficiency costs of corporate taxation. Again, this result relies on the absence of fiscal externalities of foreign investments. Fiscal externalities could arise from provisions like the Global Intangible Low-Taxed Income (GILTI), which in turn would suggest that the elasticity of domestic taxable profits is an upper bound for the efficiency costs of corporate taxation, being Proposition 1 a lower bound for the optimal corporate tax.

This result contrasts with models that suggest that international capital mobility makes capital infinitely elastic, pushing optimal corporate taxes towards zero (Kotlikoff and Summers, 1987). The main reason why t^* can be positive in our model is the assumption of decreasing returns to scale. As the domestic technology becomes linear, domestic capital becomes infinitely elastic. We note, however, that our sufficient statistics representation nests this possibility. A case with linear technologies and infinitely responsive capital would imply that the elasticity of taxable profits e_{π}^{1-t} is, indeed, infinite. When $e_{\pi}^{1-t} \to \infty$, Proposition 1 delivers $t^* \to 0$. Therefore, our result generalizes the standard intuition in the international tax competition literature to cases where responses to capital are allowed to be finite.

A final remark is in order. The fact that both the model with income sheltering and the model with international capital mobility yield the same formulas for the optimal corporate tax implies that the characterization of optimal corporate taxes does not require taking a stance on whether profit shifting strategies have real effects on domestic activity or not, an issue that has been explored in related literature (e.g., Bilicka, 2019; Suárez Serrato, 2019; Bilicka et al., 2022; Tørsløv et al., 2023; Altshuler et al., 2025; Bustos et al., 2025). The formulas are the same regardless of whether corporate taxes reduce profits through tax avoidance and evasion or actual capital flight.

4.4 Labor market power

The analysis in Section 3 assumes perfect competition in the labor market. However, an extensive literature in labor economics argues that labor markets feature imperfect competition in the form of monopsony power (Manning, 2021; Card, 2022; Kline, 2025). While it can take many different forms, monopsony power manifests in employers' ability to set wages by the internalization of upward-sloping labor supply curves, so that wages are "marked down" relative to marginal productivities. To assess the role of monopsonistic wage-setting in optimal corporate taxes, we now consider the baseline model with no sheltering and no international investment, but assume that the capitalist has monopsony power.

We model monopsony power by assuming that the representative capitalist internalizes the upward-sloping labor supply curve in the profit maximization problem:

$$\max_{K,L} \Pi(K, L) \quad = \quad (1 - t) \left(F(K, L) - w(L)L \right) - r(1 - \theta t)K, \tag{11}$$

where $w(L)$ is the inverse labor supply curve, with $\partial w(L)/\partial L \equiv w_L > 0$ and with elasticity of labor supply $\epsilon = w/w_L L$. Here, the capitalist internalizes that hiring more workers raises wages, which in turn lowers employment. The FOCs with respect to K and L are given by $F_K = \frac{r(1-\theta t)}{1-t}$ and $F_L \frac{\epsilon}{1+\epsilon} = w$, respectively. With labor market power, wages are below the marginal product of labor in inverse proportion to the labor supply elasticity (Robinson, 1933). In a perfectly competitive market, the firm perceives $\epsilon \to \infty$ ($w_L = 0$), nesting the baseline case discussed in Section 3.

Workers' labor supply decisions are the same as in the baseline model, as is the labor market clearing condition (with a modified labor demand function) and the planner's problem. The only qualitative difference for the planner is that, with monopsony power, we now have that $\partial U^K/\partial(1-t) = \pi$, where before it was $\pi - wLe_w^{1-t}$. The reason is that monopsony power transforms the wage into an implicit choice variable for the capitalist. The FOCs, therefore, internalize the relationship between wages and employment. As such, the envelope theorem applies to the wage, so changes in the equilibrium wage have no first-order welfare costs for the capitalist.

Proposition 2. *At the social optimum, the optimal corporate tax t^* is given by:*

$$t^* = \frac{1 - g_K - g_L^1 a e_w^{1-t}}{1 - g_K + e_\pi^{1-t}}, \tag{12}$$

where $a = wL/\pi$ is the wages-to-taxable profits ratio, $e_w^{1-t} = [dw/d(1-t)] \cdot [(1-t)/w]$ is the elasticity of wages w with respect to the net-of-corporate tax rate, and $e_\pi^{1-t} = [d\pi/d(1-t)] \cdot [(1-t)/\pi]$ is the elasticity of taxable profits π with respect to the net-of-corporate tax rate.

Proof. See Appendix A. □

The optimal corporate tax t^* under monopsony power is similar to the case with perfect competition (Proposition 1). The main difference is that the wage effect no longer affects the welfare of the capitalist due to the envelope argument sketched above, reflected by the fact that the welfare weights g_K are no longer adjusted by e_w^{1-t}. Given that the only qualitative nuance is on the welfare effect on the capitalist, the optimal corporate tax t^* as $g_K \to 0$ is exactly the same as in the competitive case (see equation (6)). Despite this difference, the elasticities of wages e_w^{1-t} and taxable profits e_π^{1-t} remain the sufficient statistics needed for the normative analysis. Importantly, the explicit quantification of the labor supply elasticity ϵ is not required to compute t^*, as its effect is implicitly captured by the reduced-form wage elasticities. To some degree, this result is not surprising: the labor supply elasticity also plays a role in the perfectly competitive case by mediating wage effects through the labor market clearing condition.

4.5 Labor income taxes

The analysis in Section 3 abstracts from the labor income tax system. Labor income taxes, however, seem important for studying optimal corporate taxation, given that corporate responses on employment and wages may induce fiscal externalities beyond their effects on the corporate tax base.

We now consider the baseline model with no sheltering, no international investment, and perfect competition, but assume that the government can impose a linear tax τ on wages, so workers' utility when working is given by $w(1-\tau)+T_0-c$. The presence of the labor income tax τ does not directly affect the capitalist's problem, so its solutions remain unchanged conditional on w. On the contrary, the workers' problem is modified, as labor supply is now given by $H(w(1-\tau))$. Changes in the labor income tax τ will affect equilibrium wages through changes in labor supply.

The government chooses $(1-t, T_0, \tau)$ to maximize a generalized utilitarian social welfare objective:

$$SWF \;\; = \;\; (1-L)G(T_0) + L\frac{\int_0^{w(1-\tau)} G(w(1-\tau)+T_0-c)dH(c)}{H(w(1-\tau))} + G(U^K), \tag{13}$$

but now subject to the budget constraint $t\pi(K^*, L^*) + \tau wL = T_0$ with multiplier λ. The labor income tax τ affects the participation decision of workers, as illustrated by the limits of integration. The labor income tax τ also affects the budget constraint, potentially giving rise to fiscal externalities.

Proposition 3. *At the social optimum, the optimal corporate tax t^* is given by:*

$$t^* = \frac{1 - g_K\left(1 - ae_w^{1-t}\right) - (1-\tau)g_L^1 ae_w^{1-t} - \tau a(e_w^{1-t} + e_L^{1-t})}{1 - g_K\left(1 - ae_w^{1-t}\right) + e_\pi^{1-t}}, \tag{14}$$

where $a = wL/\pi$ is the wages-to-taxable profits ratio, $e_w^{1-t} = [dw/d(1-t)] \cdot [(1-t)/w]$ is the elasticity of wages w with respect to the net-of-corporate tax rate, $e_L^{1-t} = [dL/d(1-t)] \cdot [(1-t)/L]$ is the elasticity of employment L with respect to the net-of-corporate tax rate, and $e_\pi^{1-t} = [d\pi/d(1-t)] \cdot [(1-t)/\pi]$ is the elasticity of taxable profits π with respect to the net-of-corporate tax rate.

Proof. See Appendix A. □

Equation (14) augments equation (5) with fiscal externalities pertaining to the labor income tax: the optimal corporate tax t^* depends on τ mainly because changes in wages and employment due to changes in t^* affect labor income tax revenue. An increase in the corporate tax t^* decreases labor demand and, therefore, depresses wages and employment, with magnitudes governed by e_w^{1-t} and e_L^{1-t}. Therefore, employment elasticities (or, equivalently, total taxable labor earnings elasticities $e_w^{1-t} + e_L^{1-t}$) join the set of sufficient statistics needed for calibrating t^*. Equation (14) shows that τ also affects the optimal corporate tax t^* by attenuating the welfare effects on workers driven by wage changes since workers will only retain a fraction $1-\tau$ of the incidence.

Not surprisingly, the sign of the fiscal externality depends on the sign of the labor income tax rate τ. If workers pay net taxes on their labor earnings (i.e., $\tau > 0$), the effect on wages and employment pushes the optimal corporate tax t^* downwards as corporate tax cuts increase labor income tax revenue. On the contrary, if workers receive in-work benefits such as the Earned Income Tax Credit (EITC) (i.e., $\tau < 0$), then wage and employment effects generate net savings for the government in terms of reduced transfers for active workers. This fiscal externality pushes the optimal corporate tax t^* upwards. The interaction between τ and the welfare weights also affects t^* indirectly. Implementing $\tau < 0$ generates an expansion in labor supply, meaning that it generates a transfer of utility to the capitalist through lower pre-tax wages. As such, the welfare weight on the capitalist g_K decreases when $\tau < 0$. This set of arguments suggests that in-work benefits like the EITC are strategic complements to the corporate tax.[11]

In Appendix A, we also present a sufficient statistics expression for τ^*, which, consistent with the intuition above, depends on the corporate tax t, further underscoring the strategic complementarity between instruments (see equation (A.16)). When firms are passive and wages are fixed (as in the standard Mirrleesian framework), the formula for τ^* reduces to well-known expressions for optimal labor income taxes when labor supply responses are at the extensive margin (Saez, 2002b; Piketty and Saez, 2013a). Then, equation (A.16) generalizes this standard result to a case that allows for general equilibrium effects of labor income taxes on wages (Rothstein, 2010; Zurla, 2024; Gravoueille, 2025).

Organizational form choice Allowing for labor income taxes naturally raises the question of how the optimal corporate tax t^* changes if firms can manipulate the organizational form (for example, in the context of the US system, between C and S corporations) to benefit from tax differentials between labor and capital (Gordon and MacKie-Mason, 1994; Cooper et al., 2016; Clarke and Kopczuk, 2017; Smith et al., 2019, 2022; Kopczuk and Zwick, 2020). We explore this case in Appendix B, where we replace the representative capitalist with a continuum of capitalists with heterogeneous incorporation costs who decide whether to set up their businesses as C corporations–whose profits are taxed under the corporate tax system–or S corporations–whose profits are taxed as labor income. The model delivers an endogenous distribution of C and S corporations, which is elastic to changes in the corporate tax.

The characterization of t^* in this model differs in two ways from that of Proposition 3 (see equation (B.20)). First, changes in the distribution of C and S corporations generate fiscal externalities. While switches out of the C corporation sector contribute to the efficiency cost of t^* (giving rise to an elasticity of taxable profits that encompasses both intensive and extensive margins), switches into the S corporation sector have a corresponding positive fiscal externality in the labor income tax base. Importantly, firm switches do not generate first-order welfare effects on the capitalists because of the envelope theorem: switchers are at the margin and, therefore, initially indifferent between sectors. Second, a new welfare effect arises, as general equilibrium changes in wages driven by changes in the labor demand of C corporations can also affect the utility of inframarginal capitalists organized as S corporations. The presence of general equilibrium effects on inframarginal capitalists raises a subtle point: the wage and employment elasticities required for calibrating the optimal corporate tax t^* may be more accurately captured by the

[11] A similar argument is developed in Lee and Saez (2012) and Vergara (2025) regarding the use of in-work benefits programs like the EITC in tandem with minimum wage policies.

macro elasticities that identify aggregate changes.

5 Calibrating Optimal Corporate Taxes

Sections 3 and 4 provide sufficient statistics formulas for optimal corporate taxes. This section performs calibration exercises to illustrate how to apply the formulas. We first survey the empirical literature to get estimates of the key elasticities with respect to the net-of-tax rate. Given the caveats of our framework discussed in Section 3, we only consider papers that use corporate tax (rather than dividend tax) variation to identify the elasticities. We then compute the range of optimal corporate tax rates implied by these estimates and perform comparative statics. As a final exercise, we utilize the elasticities of profits, wages, and employment estimated by Kennedy et al. (2024) to conduct an inverse optimum exercise of the US corporate tax cut of the 2017 Tax Cuts and Jobs Act (TCJA), leveraging the fact that the aforementioned paper provides internally consistent estimates for all necessary elasticities using the same institutional context, data, empirical strategy, and reform.

5.1 Survey of empirical literature

Elasticity of taxable profits The theoretical analysis reveals that the elasticity of taxable profits with respect to the net-of-tax rate e_{π}^{1-t} is a sufficient statistic for the efficiency costs of the corporate tax. We identified 15 papers that provide a total of 25 estimates of the elasticity, which are shown in Table 1. We report multiple estimates from the same paper when a paper reports bunching estimates at different kinks or notches of a single tax system; we do not record estimates reported as robustness exercises.[12]

The estimated elasticities range widely, with a minimum estimate of 0.08 (Massenz, 2024) and a maximum estimate of 4.79 (Bachas and Soto, 2021). The median estimate is 0.58 (Basri et al., 2021), and the 25th and 75th percentiles estimates are 0.17 (Boonzaaier et al., 2019) and 1.40 (Duan and Moon, 2025), respectively. Over half of the elasticities are estimated using bunching research designs, while others are obtained from differences-in-differences designs, distributed lag regressions, and the IV strategy of Gruber and Saez (2002). These estimates also span a wide range of countries, which differ in their level of development and the details of the underlying tax system.[13] The wide variety of settings analyzed, combined with the fact that the papers we reviewed did not always provide detailed discussions of the institutional features of the relevant tax codes, makes it difficult for us to isolate the institutional and econometric factors that contribute to the sizes of the various estimates. In particular, the degree of

[12]While Riedl and Rocha-Akis (2012), Fossen and Steiner (2018), Harju et al. (2022), and Goodman et al. (2025) estimate the effects on taxable profits, we exclude them from the review as they do not report results in the form of elasticities with respect to the net-of-tax rate. We also exclude Suárez Serrato and Zidar (2016, 2024) as they only report results for after-tax profits, and Best et al. (2015) and Lobel et al. (2024) as they estimate revenue, rather than taxable profits, responses.

[13]The reviewed papers use data and reforms from Canada, Costa Rica, Germany, Indonesia, the Netherlands, Slovakia, South Africa, Switzerland, the United Kingdom, and the United States.

Table 1: Elasticity of Taxable Profits With Respect to the Net-of-Tax Rate e_{π}^{1-t}

Paper	Setting	Methods	Estimate	Bounds
Bachas and Soto (2021)	Costa Rica, 2008-2014	Bunching	4.79	[4.63, 4.95]
Bachas and Soto (2021)	Costa Rica, 2008-2014	Bunching	2.65	[2.49, 2.81]
Basri et al. (2021)	Indonesia, 2008-2010	Gruber-Saez IV	0.58	[0.19, 0.97]
Boonzaaier et al. (2019)	South Africa, 2010-2013	Bunching	0.17	[0.14, 0.19]
Boonzaaier et al. (2019)	South Africa, 2010-2013	Bunching	0.72	[0.58, 0.86]
Buettner (2003)	Germany, 1980-2000	Event study/DiD	4.56	[2.61, 6.51]
Bukovina et al. (2025)	Slovakia, 2010-2020	Bunching	2.28	[2.23, 2.33]
Bukovina et al. (2025)	Slovakia, 2010-2021	Bunching	1.52	[1.46, 1.58]
Bukovina et al. (2025)	Slovakia, 2010-2022	Bunching	0.33	[0.28, 0.38]
Coles et al. (2022)	USA, 2004-2014	Bunching	0.91	[0.89, 0.93]
Cortés and Gutiérrez (2025)	Canada, 2005-2006	Bunching	0.84	[0.80, 0.88]
Devereux et al. (2014)	UK, 2001-2005	Bunching	0.37	[0.25, 0.49]
Devereux et al. (2014)	UK, 2001-2008	Bunching	0.13	[0.09, 0.17]
Duan and Moon (2025)	Canada, 2011-2017	Triple difference	1.40	-
Dwenger and Steiner (2012)	Germany, 1998-2004	Gruber-Saez IV	0.58	-
Gruber and Rauh (2007)	USA, 1960-2003	Gruber-Saez IV	0.20	[0.05, 0.34]
Kennedy et al. (2024)	USA, 2013-2019	Event study/DiD	0.46	[0.24, 0.68]
Krapf and Staubli (2025)	Switzerland, 2003-2017	Distributed lag	3.50	[1.54, 5.46]
Lediga et al. (2019)	South Africa, 2009-2011	Bunching	0.79	-
Lediga et al. (2019)	South Africa, 2009-2011	Bunching	0.12	-
Lediga et al. (2019)	South Africa, 2012	Bunching	0.08	-
Lediga et al. (2019)	South Africa, 2012-2015	Bunching	1.33	-
Lediga et al. (2019)	South Africa, 2013-2015	Bunching	0.14	-
Lediga et al. (2019)	South Africa, 2013-2015	Bunching	0.12	-
Massenz (2024)	Netherlands, 2007-2018	Bunching	0.08	-
		Mean:	1.15	
		Min:	0.08	
		P25:	0.17	
		P50:	0.58	
		P75:	1.40	
		Max:	4.79	

Notes: This table shows estimates of elasticities of pre-tax taxable profits with respect to net-of-tax rates reported in related literature. All values displayed in the table, including point estimates and bounds, were directly reported in the cited papers.

capital expensing should play a role in rationalizing the heterogeneous estimates, as well as other features such as differences in estimation methods and sample restrictions, state capacity, or the nature of the identifying variation. We leave future work to consider why the estimates in Table 1 vary so widely.

Elasticity of wages The theoretical analysis also highlights the importance of the elasticity of wages with respect to the net-of-tax rate e_w^{1-t}. Because the model abstracts from intensive margin labor supply decisions, this elasticity is equivalent to an elasticity of labor earnings (wages times hours) conditional on employment. We identified 7 papers that provide 12 different estimates of this elasticity, which are shown

Table 2: Elasticity of Wages with respect to the Net-of-Tax Rate e_w^{1-t}

Wage distribution moment	Setting	Methods	Estimate	Bounds
Duan and Moon (2025)				
Average	Canada, 2011–2017	Triple difference	0.27	–
Bottom tercile	Canada, 2011–2017	Triple difference	0.21	–
Middle tercile	Canada, 2011–2017	Triple difference	0.37	–
Top tercile	Canada, 2011–2017	Triple difference	0.15	–
Fuest et al. (2018)				
Median	Germany, 1999–2008	Event study/DiD	0.39	[0.14, 0.64]
Kennedy et al. (2024)				
Median	USA, 2013–2019	Event study/DiD	-0.01	[-0.13, 0.11]
95th percentile	USA, 2013–2019	Event study/DiD	0.20	[0.08, 0.32]
Executives	USA, 2013–2019	Event study/DiD	0.73	[0.51, 0.95]
Ljungqvist and Smolyansky (2018)				
Average	USA, 1969–2010	Event study/DiD	0.34	[0.20, 0.47]
Margolin (2024)				
Average	France, 2009–2019	Gruber-Saez IV	0.01	[0.00, 0.02]
Risch (2024)				
Average	USA, 2008–2016	Event study/DiD	0.24	–
Bottom 10%	USA, 2008–2016	Event study/DiD	-0.01	–
P10–20	USA, 2008–2016	Event study/DiD	-0.01	–
P20–30	USA, 2008–2016	Event study/DiD	-0.01	–
P30–40	USA, 2008–2016	Event study/DiD	-0.01	–
P40–50	USA, 2008–2016	Event study/DiD	0.00	–
P50–60	USA, 2008–2016	Event study/DiD	0.00	–
P60–70	USA, 2008–2016	Event study/DiD	0.00	–
P70–80	USA, 2008–2016	Event study/DiD	0.06	–
P80–90	USA, 2008–2016	Event study/DiD	0.13	–
Top 10%	USA, 2008–2016	Event study/DiD	0.11	–
Suárez Serrato and Zidar (2016)				
Average	USA, 1980–2010	Long difference	0.58	[-0.07, 1.23]

Notes: This table shows estimates of elasticities of wages and earnings (conditional on employment) with respect to net-of-tax rates reported in related literature. With the exception of Risch (2024), all values displayed in the table, including point estimates and bounds, were directly reported in the cited papers. Risch (2024) estimates the effects of a tax reform reducing the top marginal tax rate paid by S corporation owners by 4.6 percentage points, relative to a state and federal combined pre-reform rate of 41.5% (35% federal tax rate and 6.5% average state tax rate). We divide the difference-in-differences effects on log wages by the log net of tax rate change to arrive at the elasticity estimates reported in the above table.

in Table 2. Papers with multiple estimates correspond to estimates of the effects of corporate taxes on wages at different points in the within-firm earnings distribution.[14]

Fewer studies estimate net-of-tax elasticities of wages than of taxable profits, and the estimates reflect a narrower range of methods and countries, but still depict an inconclusive picture. When focusing on average or median wages, Fuest et al. (2018), Ljungqvist and Smolyansky (2018), Risch (2024), and

[14] As with the discussion above, we exclude papers that estimate effects of tax reforms on workers' earnings but do not translate their estimates into elasticities with respect to the net-of-tax rate. These papers include Hassett and Mathur (2006), Arulampalam et al. (2012), Riedl and Rocha-Akis (2012), Clausing (2013), Liu and Altshuler (2013), Garrett et al. (2020), Dobridge et al. (2021), Carbonnier et al. (2022), Ohrn (2023), and Andreani et al. (2025).

Table 3: Elasticity of Employment and Payroll Costs With Respect to the Net-of-Tax Rate

Paper	Setting	Methods	Estimate	Bounds
Panel A. Elasticity of employment e_L^{1-t}				
Duan and Moon (2025)	Canada, 2011-2017	Triple difference	0.35	-
Giroud and Rauh (2019)	USA, 1977-2011	Event study/DiD	0.41	[0.31, 0.51]
Kennedy et al. (2024)	USA, 2013-2019	Event study/DiD	0.35	[0.11, 0.59]
Ljungqvist and Smolyansky (2018)	USA, 1969-2010	Event study/DiD	0.22	[0.10, 0.34]
Risch (2024)	USA, 2008-2016	Event study/DiD	0.05	-
Suárez Serrato and Zidar (2016)	USA, 1980-2010	Long difference	2.20	[0.41, 3.99]
Panel B. Elasticity of total payroll costs $e_w^{1-t} + e_L^{1-t}$				
Duan and Moon (2025)	Canada, 2011-2017	Triple difference	0.47	-
Kennedy et al. (2024)	USA, 2013-2019	Event study/DiD	0.51	[0.27, 0.75]
Risch (2024)	USA, 2008-2016	Event study/DiD	0.17	-
Margolin (2024)	France, 2009-2019	Gruber-Saez IV	0.74	[0.72, 0.76]

Notes: This table shows estimates of elasticities of employment and payroll costs with respect to net-of-tax rates reported in related literature. With the exceptions of Suárez Serrato and Zidar (2016) and Risch (2024), all values displayed in the table, including point estimates and bounds, were directly reported in the cited papers. Suárez Serrato and Zidar (2016) provide estimates of wage growth with respect to an apportioned business tax rate, and report in their Table 1 that apportionment weights on payroll, property, and sales are 22.7%, 22.8%, and 54.5%, respectively. Assuming conservatively that, on average, businesses have 10% of their sales in the same state as their payroll and property, we divide Suárez Serrato and Zidar (2016) estimates by $1/(0.227 + 0.228 + (0.545 \times 0.1)) \approx 2$ to arrive at the elasticity estimates reported in the above table. Risch (2024) estimates the effects of a tax reform reducing the top marginal tax rate paid by S corporation owners by 4.6 percentage points, relative to a state and federal combined pre-reform rate of 41.5% (35% federal tax rate and 6.5% average state tax rate). We divide the difference-in-differences effects on log wages by the log net of tax rate change to arrive at the elasticity estimates reported in the above table.

Duan and Moon (2025) find comparable elasticities of 0.39, 0.34, 0.24, and 0.27, respectively. In contrast, Kennedy et al. (2024) and Margolin (2024) find precisely estimated zero effects for median and average wages, respectively. Suárez Serrato and Zidar (2016) find the largest long-run elasticity of 0.58. Some of these studies test for within-firm heterogeneity in wage effects. Despite estimating a precise zero effect for the median worker, Kennedy et al. (2024) find sizable wage effects for workers at the 95th percentile, and especially for the top 5 paid workers within the firm, whom they call "executives." Risch (2024) also finds that taxes mainly affect the wages of the within-firm top earners. By contrast, Duan and Moon (2025) find weaker effects for workers in the top tercile of the within-firm earnings distribution. Further research is necessary to better characterize a plausible range of empirical magnitudes for corporate tax wage incidence and its economic determinants, with a particular focus on the within-firm heterogeneity.

Other elasticities Section 4 shows that employment elasticities and organizational form switching elasticities also matter for calibrating optimal corporate taxes in the presence of labor income taxes, as they may induce additional fiscal externalities. Regarding employment, we note that the total labor income tax fiscal externality in, e.g., equation (14), combines both wage and employment effects, and therefore can also be approximated using the total payroll cost elasticity.[15] Estimates of employment and payroll cost elasticities are also scarcer than profit elasticities. We reviewed 7 papers that provide employment or payroll estimates, which are shown in Table 3. The available estimates show less dispersion than profit and wage elasticities. Ljungqvist and Smolyansky (2018), Giroud and Rauh (2019), Kennedy et al. (2024), and Duan and Moon (2025), find employment elasticities of 0.22, 0.41, 0.35, and 0.35, respectively. Risch (2024) employment estimates imply a lower elasticity of 0.05, while Suárez Serrato and Zidar (2016) find a much larger elasticity of 2.20. The payroll elasticities available in Kennedy et al. (2024), Margolin (2024), Risch (2024), and Duan and Moon (2025) range from 0.17 to 0.74.[16]

Finally, we are not aware of studies that report elasticities of organizational form switching with respect to the net-of-tax rate. Several studies, however, provide related estimates that suggest this margin warrants further exploration. Carroll and Joulfaian (1997) estimate an elasticity of organizational form with respect to the "grossed-up tax wedge" between corporate and non-corporate businesses. Smith et al. (2022) report counts of switches between C and S corporation organizational form in the United States between 2000 and 2012, while Kennedy et al. (2024) report profit-weighted shares of firms that switch organizational forms.[17] The statistics in each of these studies suggest that organizational form switching spikes around tax reforms. However, it is uncertain whether these spikes are economically significant, an issue that is magnified by the absence of elasticity estimates that would allow an apples-to-apples comparison across papers. Gordon and MacKie-Mason (1997) argue that non-tax factors dominate corporate form decisions, which would imply minimal organizational form responses to tax reforms, and Kennedy et al. (2024) argues empirically that switchers represent a negligible share of overall economic activity. However, Kopczuk and Zwick (2020) suggest that switching is a relatively low-cost activity that may be available for many organizational forms. Given the paucity of estimated elasticities with respect to net-of-tax rates, we abstract from organizational form switching in the calibrations below, but see the topic as worthy of further empirical research.

5.2 Exercise 1: Calibrating optimal corporate taxes

We calibrate equation (14) using the elasticity values reported in Tables 1, 2, and 3, to then perform several comparative statics with respect to the inputs of the optimal formula. Since the values of the

[15]In principle, the total payroll elasticity should equal $e_w^{1-t} + e_L^{1-t}$. This identity may not hold exactly, as it depends on the earnings levels of the workers who change employment, given the potential for heterogeneous wage incidence. This equivalency could be violated even in the absence of heterogeneity if wage and payroll elasticities are estimated among different samples; for example, Risch (2024) and Duan and Moon (2025) estimate average wage effects at the worker level but estimate payroll effects at the firm level. We are not aware of studies reporting heterogeneity in employment or payroll effects by within-firm earnings level.

[16]Liu and Altshuler (2013), Lester (2019), Dobridge et al. (2021), and Carbonnier et al. (2022) also estimate employment or payroll cost effects but they do not report the estimates in the elasticity form necessary for our normative analysis.

[17]Other studies analyze taxes' influence on organizational form choice, but do not provide statistics on the frequency of organizational form switches (e.g., Nelson, 1991; Gordon and Slemrod, 2000; Nelson, 2016; Clarke and Kopczuk, 2017).

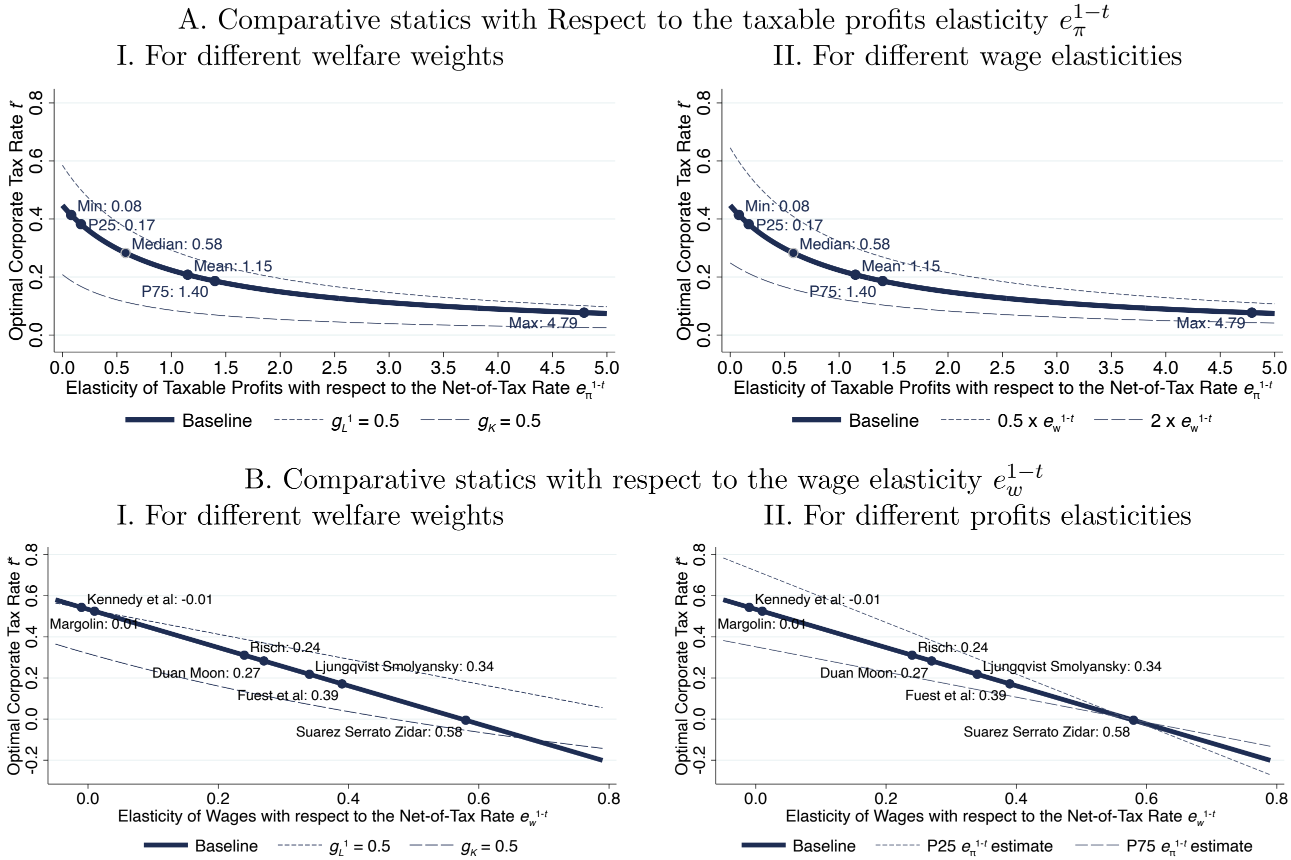
different estimates originate from distinct institutional contexts, reforms, datasets, samples, and research designs, we acknowledge that comparisons are not "apples to apples." We also recognize that these estimates often reflect short-run responses. Therefore, magnitudes should be interpreted with caution, and this exercise should be approached as merely illustrative to understand the economics of the formula. The second calibration exercise below focuses on a set of internally consistent estimates that generate more rigorous and precise quantitative insights.

To calibrate the right-hand-side of equation (14), we impute values for the net-of-tax elasticities of profits e_{π}^{1-t}, wages e_{w}^{1-t}, and employment e_{L}^{1-t}; welfare weights on workers g_L^1 and the capitalist g_K; the wages-to-taxable profits ratio a; and the labor income tax rate τ. We define a baseline vector of values and then perform numerical comparative statics for each of its components. Elasticities are set at the median values of the related empirical literature: $e_{\pi}^{1-t} = 0.58$ (Table 1), $e_{w}^{1-t} = 0.27$ (Table 2), and $e_{L}^{1-t} = 0.35$ (Table 3).[18] We set $g_L^1 = 1$ at baseline and vary it from 0 to 2 in comparative statics. Likewise, we first assume that $g_K = 0$, which constitutes a lower bound justified by the evidence in Section 2, but then perform comparative statics assuming values between 0 and 1. The relative tax base parameter a is approximated using the corrected labor shares reported in Smith et al. (2022), by taking $a = wL/\pi = 0.595/(1 - 0.595) = 1.47$. Finally, to calibrate τ, we use the Piketty et al. (2018) micro-files and estimate an empirical average marginal tax rate on labor income of $\tau = 0.303$ (see Appendix C for details). At the baseline values, the optimal corporate tax t^* is 28.3%, but Figures 2, 3, D.3 of Appendix D, and D.4 of Appendix D, show that t^* is highly sensitive to the choice of inputs.

Figure 2 shows comparative statics with respect to e_{π}^{1-t} and e_{w}^{1-t}. Panel A of Figure 2 shows that t^* decreases with e_{π}^{1-t} in a non-linear fashion. Moving to the 25th percentile estimate in Table 1 of 0.17 increases t^* to 38.2%. Conversely, moving to the 75th percentile estimate in Table 1 of 1.4 decreases t^* to 18.6% and assuming the maximum value in Table 1 of 4.79 further decreases its value to 7.7%. Panels A.I and A.II of Figure 2 show that assuming different values for g_L^1, g_K, and e_{w}^{1-t} when doing the comparative static with respect to e_{π}^{1-t} affects the levels of t^* in the expected direction, but not the relationship (slope) between e_{π}^{1-t} and t^*. Panel B of Figure 2 shows comparative statics with respect to the wage elasticity e_{w}^{1-t}. t^* also decreases with e_{w}^{1-t}, but the pattern is linear. When e_{w}^{1-t} approaches zero (Kennedy et al., 2024; Margolin, 2024), t^* increases to 53% given the smaller welfare gains for workers and the smaller fiscal externality. On the contrary, when e_{w}^{1-t} grows large, t^* may substantially decrease. For example, when e_{w}^{1-t} is set to 0.58 (Suárez Serrato and Zidar, 2016), t^* becomes essentially zero. Panels B.I and B.II of Figure 2 show that changing the values of g_L^1, g_K, and e_{π}^{1-t} when doing the comparative static with respect to e_{w}^{1-t} affect both the levels of t^* and the slope of the relationship. Interestingly, when cutting g_L^1 by half, t^* is positive even if e_{w}^{1-t} is very large, implying that the welfare effect on workers is an important mediator of the displayed pattern. This is an additional indication

[18] This exercise abstracts from within-firm heterogeneity in wage incidence and therefore focuses on estimates of e_{w}^{1-t} for median or average workers.

Figure 2: Comparative Statics with respect to Taxable Profits Elasticities e_{π}^{1-t} and Wage Elasticities e_{w}^{1-t}



Notes: This figure plots calibrated optimal corporate taxes based on equation (14). Comparative statics are conducted departing from the baseline set of inputs given by $(e_{\pi}^{1-t}, e_{w}^{1-t}, e_{L}^{1-t}, g_L^1, g_K, a, \tau) = (0.58, 0.27, 0.35, 1, 0, 1.47, 0.303)$ (see Section 5 for details). Panel A conducts comparative statics with respect to e_{π}^{1-t}. Panel B conducts comparative statics with respect to e_{w}^{1-t}. Panel A highlights values of e_{π}^{1-t} based on Table 1, while Panel B highlights values of e_{w}^{1-t} based on Table 2. The different curves in Panel A.I and Panel B.I conduct the comparative static with respect to e_{π}^{1-t} and e_{w}^{1-t} assuming different values for g_L^1 and g_K. The different curves in Panel A.II conduct the comparative static with respect to e_{π}^{1-t} assuming different values for e_{w}^{1-t}. The different curves in Panel B.II conduct the comparative static with respect to e_{w}^{1-t} assuming different values for e_{π}^{1-t}.

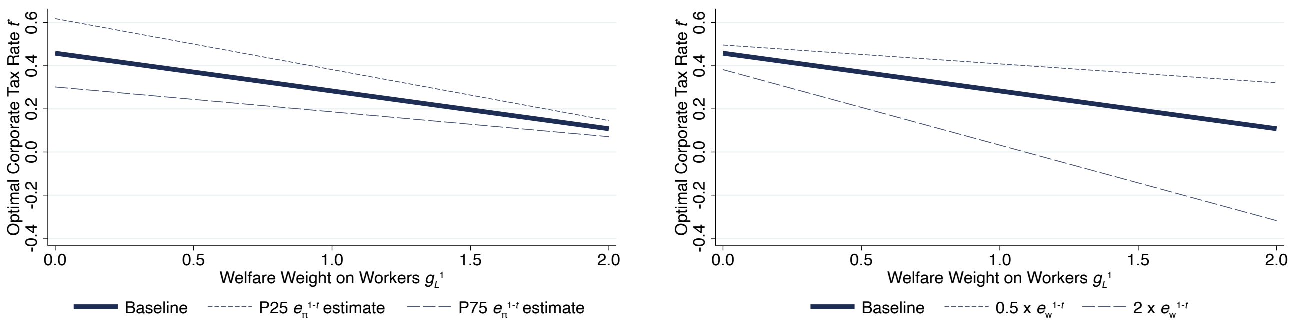
that a better understanding of within-firm heterogeneity in wage incidence is key for calibrating optimal corporate taxes, because wage elasticities need to be weighted by welfare weights that likely differ across the within-firm wage distribution.

Figure 3 shows comparative statics with respect to the welfare weights g_L^1 and g_K. Panel A of Figure 3 shows that t^* linearly decreases with g_L^1, ranging from $t^* = 45.8\%$ when $g_L^1 = 0$ to $t^* = 10.8\%$ when $g_L^1 = 2$. This pattern reinforces the fact that understanding who benefits from corporate tax cuts is central for assessing the optimal level of t^*. As illustrated in Panel A.II of Figure 3, this is particularly true when e_w^{1-t} grows large, where the range of values for t^* widens from $t^* = 38.2\%$ when $g_L^1 = 0$ to $t^* = -31.8\%$ when $g_L^1 = 2$. Panel B of Figure 3 shows that t^* non-linearly decreases with g_K. This exercise once again reveals that the distributional consequences of corporate taxes are key to assessing the optimal level of t^*: the ability of t^* to redistribute profits is a crucial justification for large corporate

Figure 3: Comparative Statics with respect to welfare weights g_L^1 and g_K

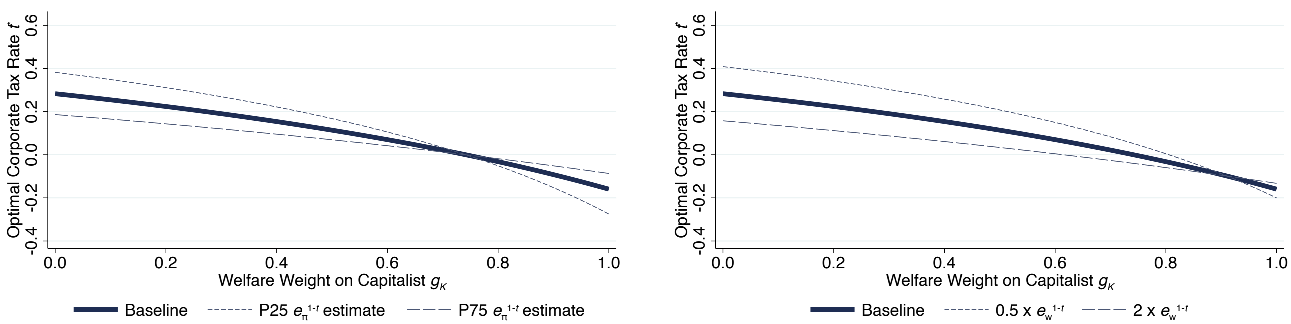
A. Comparative statics with respect to the welfare weight on workers g_L^1

I. For different profits elasticities — II. For different wage elasticities



B. Comparative statics with respect to the welfare weight on capitalists g_K

I. For different profits elasticities — II. For different wage elasticities



Notes: This figure plots calibrated optimal corporate taxes based on equation (14). Comparative statics are conducted departing from the baseline set of inputs given by $(e_\pi^{1-t}, e_w^{1-t}, e_L^{1-t}, g_L^1, g_K, a, \tau) = (0.58, 0.27, 0.35, 1, 0, 1.47, 0.303)$ (see Section 5 for details). Panel A conducts comparative statics with respect to g_L^1. Panel B conducts comparative statics with respect to g_K. The different curves in Panel A.I and Panel B.I conduct the comparative static with respect to g_L^1 and g_K assuming different values for e_π^{1-t}. The different curves in Panel A.II and Panel B.II conduct the comparative static with respect to g_L^1 and g_K assuming different values for e_w^{1-t}.

taxes, because when the distributional gains from doing so vanish (as g_K goes to 1), t^* decreases and eventually becomes negative. Changing the values of e_π^{1-t} and e_w^{1-t} significantly affects the mapping between g_K and t^*, as they change the relative importance of mechanical, welfare, and behavioral effects.

Figure D.3 of Appendix D shows comparative statics with respect to τ. The figure clearly shows that t^* decreases with τ because the fiscal externality in labor income taxes increases. Moving from $\tau = 30.3\%$ to $\tau = 0$ rises t^* to almost 40%. Negative values of τ further increase t^*, reinforcing the strategic complementarity that corporate taxes may have with in-work subsidies. Finally, Figure D.4 of Appendix D shows that the choice of a matters for the levels of t^*, with t^* decreasing in a. In this exercise, specifying a meaningful value for a is challenging as this parameter is very context-specific.

5.3 Exercise 2: Analyzing the US 2017 corporate tax cut

The previous exercise provides a rich illustration of how the different inputs affect the optimal corporate tax rate t^*. The exercise, however, is not well-suited for generating meaningful quantitative insights. To make progress on this front, we leverage the fact that Kennedy et al. (2024) presents internally consistent estimates of all the needed sufficient statistics based on the variation induced by the 2017 corporate tax cut in the US. With these inputs, we conduct an inverse optimum analysis (Bourguignon and Spadaro, 2012; Lockwood and Weinzierl, 2016; Hendren, 2020) to characterize the combination of welfare weights on workers and capitalists that render the post-reform corporate tax optimal.

Formally, consider equation (14). Considering that the 2017 US entity-level corporate tax cut applied to the corporate sector, the corresponding representation of the optimal tax is given by:

$$1 - t^* = (1 - t_e)(1 - t_p) = 1 - \frac{1 - g_K \left(1 - ae_w^{1-t}\right) - (1-\tau) g_L^1 a e_w^{1-t} - \tau a (e_w^{1-t} + e_L^{1-t})}{1 - g_K \left(1 - ae_w^{1-t}\right) + e_\pi^{1-t}}, \tag{15}$$

where t_e is the entity-level tax (i.e., the corporate tax) and t_p is the effective payout tax, which can be approximated by the dividend tax. By plugging-in values for $(e_\pi^{1-t}, e_w^{1-t}, e_L^{1-t}, t_p, a, \tau)$, we can infer combinations of g_1^L and g_K that would make the post-2017 rate $t_e = 0.21$ optimal. Manipulating terms in equation (15) we can write:

$$\begin{aligned} g_K &= \frac{1 + e_\pi^{1-t}}{1 - ae_w^{1-t}} - \frac{e_\pi^{1-t} + \tau a (e_w^{1-t} + e_L^{1-t})}{(1-t_e)(1-t_p)(1 - ae_w^{1-t})} - \frac{(1-\tau) a e_w^{1-t}}{(1-t_e)(1-t_p)(1 - ae_w^{1-t})} g_L^1 \\ &\equiv \rho_0 + \rho_1 g_L^1, \end{aligned} \tag{16}$$

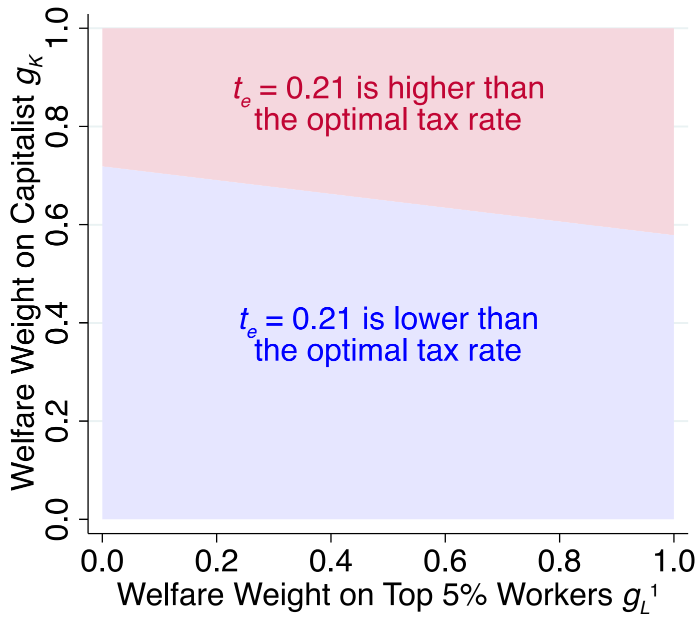
with (ρ_0, ρ_1) constant given parameters. Then, the solution to equation (15) is a linear relationship between g_K and g_L^1 that we can use to characterize the optimality of the post-2017 corporate tax rate.

To characterize the function $g_K(g_L^1)$, we compute (ρ_0, ρ_1) using Kennedy et al. (2024) estimates. We set $e_\pi^{1-t} = 0.46$ and $e_L^{1-t} = 0.35$. Since Kennedy et al. (2024) report a zero wage elasticity e_w^{1-t} for the median worker, we only consider estimates at the top 5% of the within-firm distribution to recover wage effects. We proceed by considering the top 5% of workers as a single group with homogeneous welfare weight g_L^1. Since Kennedy et al. (2024) only reports values for the 95th percentile and the top 5 workers within the firm, we recover the within-firm top 5% averages by simply taking averages between values at the 95th percentile (lower bound) and top 5 workers (upper bound), which yields $e_w^{1-t} = 0.465$. A similar procedure is done to compute the labor income to profits ratio a, which yields $a = 0.24$.[19] To calibrate t_p, we conservatively assume that all profits are distributed and taxed at the maximum dividend tax rate of 20%. Finally, as in the exercise above, we calibrate $\tau = 0.303$ based on Piketty et al. (2018) micro-files.[20]

[19] Table 1 of Kennedy et al. (2024) shows that the average pre-tax profits of C corporations in 2016 were \$381.9 million. Table 5 of Kennedy et al. (2024) reports that the average annual earnings of workers at the 95th percentile of the within-firm distribution and the top 5 paid workers in each firm in 2016 were \$175,757 and \$951,309, respectively, yielding a within-top 5% average of $wL = \$563,533$. Also from Table 1 of Kennedy et al. (2024), we get that the average number of employees in a C corporation in 2016 was 3,274 in 2016. Then, we have that $a = (\$563,533 \times 3,274 \times 0.05)/\$381.9$ million $= 0.24$.

[20] One caveat of this exercise is that the employment elasticity e_L^{1-t} is not reported separately for different workers based on their pre-reform wages. As such, we approximate a fiscal externality on labor income taxes solely based on workers in the top 5% of the within-firm distribution, valid under the assumption that their employment effects align with employment

Figure 4: Welfare Weights on Workers and Capitalists Rationalizing the Post-2017 US Corporate Tax



Notes: This figure shows the results of the inverse-optimum analysis of the US corporate tax cut in the Tax Cuts and Jobs Act of 2017 based on the results presented in Kennedy et al. (2024) described in Section 5. The line dividing the red and blue regions represents the combination of the welfare weights on top 5% workers g_L^1 and capitalists g_K that rationalize the post-2017 corporate tax as optimal, following the $g_K(g_L^1)$ mapping characterized in equation (16). Computations use $(e_\pi^{1-t}, e_w^{1-t}, e_L^{1-t}, t_p, a, \tau) = (0.46, 0.465, 0.35, 0.2, 0.24, 0.303)$ and $t_e = 0.21$, which imply that any combination of g_L^1 and g_K satisfying $g_K = 0.72 - 0.14g_L^1$ render the post-2017 corporate tax $t_e = 0.21$ optimal. If $g_K > 0.72 - 0.14g_L^1$, then $t_e = 0.21$ is above the optimal level, a situation represented by the red area. If $g_K < 0.72 - 0.14g_L^1$, then $t_e = 0.21$ is below the optimal level, a situation represented by the blue area.

Using these values for $(e_\pi^{1-t}, e_w^{1-t}, e_L^{1-t}, t_p, a, \tau)$ and $t_e = 0.21$, we get that $(\rho_0, \rho_1) = (0.72, -0.14)$. Welfare weights (g_L^1, g_K) that satisfy $g_K = 0.72 - 0.14g_L^1$ make the post-2017 entity-level corporate tax $t_e = 0.21$ optimal. For a given g_L^1, any g_K above $0.72 - 0.14g_L^1$ implies that the corporate tax $t_e = 0.21$ is above the optimum (i.e., is "too high"). On the contrary, for a given g_L^1, any g_K below $0.72 - 0.14g_L^1$ implies that the corporate tax $t_e = 0.21$ is below the optimum (i.e., is "too low").

To correctly interpret the results of this exercise, recall that, under the optimal corporate tax t^* and the optimal lump-sum transfer T_0^*, the welfare weight of all workers (including the employed and the non-employed) averages to 1 under the optimum. That means that welfare weights are interpreted in relation to the social value of the utility of the average worker in the economy. In simple words, $(g_K, g_L^1) = (x_1, x_2)$ means that the utility of firm owners and the top 5% workers are valued x_1% and x_2% as highly as the utility of the average worker by the social planner, respectively.

Figure 4 shows the result. If the richest 5% of workers are valued as highly as the average worker in the economy ($g_L^1 = 1$), then, the post-2017 corporate tax of $t_e = 0.21$ is optimal if $g_K = 0.58$. Decreasing the welfare weight on the top 5% workers makes the requirement on g_K more restrictive. For example, if

effects estimated on average. This specification omits fiscal externalities stemming from other workers, which might be quantitatively less important given the absence of wage effects.

$g_L^1 = 0.5$, then the g_K that makes $t_e = 0.21$ optimal is 0.65, and any g_K below (above) 0.65 would imply that $t_e = 0.21$ is below (above) its optimum. Figures D.5 and D.6 of Appendix D replicate Figure 4 with different assumptions. Assuming different values for e_w^{1-t} and a has little implication for the results, especially if we assume that the welfare weight on the top 5% richest workers within the firm g_L^1 is small (see Figure D.5). Assuming different profit elasticities (based on the bounds reported in Kennedy et al., 2024) have small quantitative effects on the result, and realistically assuming lower effective payout rates ($t_p = 0.15$ and $t_p = 0.1$) make the condition on g_K even more restrictive (see Figure D.6).

6 Conclusion

This paper derives simple sufficient statistics formulas for optimal corporate taxes that incorporate equity and efficiency considerations. The formulas reveal the sufficiency of taxable profit elasticities for assessing the efficiency costs of corporate taxation and make explicit the importance of the potential for equity gains from redistributing profits for justifying positive corporate taxes. The formulas also highlight the importance of wage incidence effects given their welfare impacts on affected workers, and of employment and organizational form switching elasticities given their implied fiscal externalities. While the results stem from a stylized model, they are shown to be stable under several empirically relevant model extensions. To the best of our knowledge, this is the first paper to provide closed-form formulas for optimal corporate taxes based on a framework that links the literature on corporate investment with the literature on corporate tax incidence, with results that connect the rich empirical literature on corporate taxation to optimal policy. We hope that these formulas become a normative benchmark that can be extended to more general settings in future research.

Our analysis provides a unified normative framework to interpret existing empirical evidence and identifies which elasticities should be targeted by future empirical research. The analysis also encourages empirical researchers to report elasticities with respect to the net-of-tax rate, which are the relevant inputs for the normative analysis. Our review of the available evidence suggests that more evidence on the sufficient statistics is required. There is a need for more estimates to narrow down expected orders of magnitude. Also, a deeper analysis is required to better understand the drivers of the observed dispersion in elasticity estimates, as these elasticities are likely functions of other details of the underlying institutional background, such as capital expensing policies and state capacity.

The calibration of the formulas with the available evidence and the corresponding comparative statics illustrates how the complex interplay between elasticities and welfare weights can support a wide range of plausible values for the optimal corporate tax. An internally-consistent inverse optimum exercise applied to the 2017 US corporate tax cut concludes that the optimality of the post-2017 corporate tax rate relies on a non-trivial valuation of C corporation owners' utilities, once again highlighting the importance of incorporating the welfare effects from redistributing profits when assessing the optimal level of the corporate tax.

Our analysis does not incorporate all the elements that should be considered when designing the corporate tax system. In particular, our analysis is silent on the optimal implementation of corporate income taxes between entity-level and payout-level instruments. For example, corporate taxes can be useful for enforcement and revenue, especially when state capacity is weak, ownership is complex and opaque, and it is difficult to levy payout taxes on certain shareholders (e.g., foreign or institutional shareholders). Also, corporate taxes and the payout taxation upon distribution may induce intertemporal distortions based, for example, on tax planning strategies that strategically use retained earnings and distributions. Finally, the real effects may differ between instruments if firms behave according to the "new view" of dividend taxation. Understanding the implications of these (and other) mechanisms absent from our model for the desirability of the corporate tax is a fruitful avenue of future research.

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A Sufficient Statistics Approach to Optimal Corporate Taxes

Online Appendix

A Proofs

Proposition 1 Using $L = H(w)$, the Lagrangian is given by:

$$\mathcal{L} = (1-L)G(T_0) + \int_0^w G(w + T_0 - c)dH(c) + G(U^K) + \lambda \left[t\pi(K^*, L^*) - T_0\right], \tag{A.1}$$

where λ is the budget constraint multiplier. The FOC w.r.t. T_0 is given by:

$$\frac{\partial \mathcal{L}}{\partial T_0} = (1-L)G'(T_0) + \int_0^w G'(w + T_0 - c)dH(c) - \lambda = 0, \tag{A.2}$$

which implies that, at the optimum, T_0 is chosen so that $\overline{g}_L \equiv (1-L)g_L^0 + Lg_L^1 = 1$.

The FOC w.r.t. $1-t$ is given by:

$$\begin{aligned} \frac{\partial \mathcal{L}}{\partial(1-t)} &= -\frac{\partial L}{\partial(1-t)}G(T_0) + G(T_0)h(w)\frac{\partial w}{\partial(1-t)} + \frac{\partial w}{\partial(1-t)}\int_0^w G'(w + T_0 - c)dH(c) \\ &\quad + G'(U^K)\left(\pi(K^*, L^*) - wLe_w^{1-t}\right) + \lambda\left[-\pi(K^*, L^*) + t\frac{\partial \pi}{\partial(1-t)}\right] = 0. \end{aligned} \tag{A.3}$$

In equilibrium, $L = H(w)$, so $dL = h(w)dw$, so the first two terms cancel out (envelope theorem). Define $e_\pi^{1-t} = [\partial\pi/\partial(1-t)] \cdot [(1-t)/\pi]$. Then, the FOC can be rewritten as:

$$\frac{g_L^1 wLe_w^{1-t}}{1-t} - g_K wLe_w^{1-t} + \pi\left(g_K - 1 + \frac{te_\pi^{1-t}}{1-t}\right) = 0. \tag{A.4}$$

Solving for t^* yields:

$$t^* = \frac{1 - g_K\left(1 - ae_w^{1-t}\right) - g_L^1 ae_w^{1-t}}{1 - g_K\left(1 - ae_w^{1-t}\right) + e_\pi^{1-t}}, \tag{A.5}$$

where $a = wL/\pi$.

Proposition 2 Using $L = H(w)$, the Lagrangian is given by:

$$\mathcal{L} = (1-L)G(T_0) + \int_0^w G(w + T_0 - c)dH(c) + G(U^K) + \lambda \left[t\pi(K^*, L^*) - T_0\right]. \tag{A.6}$$

The FOC w.r.t. $1-t$ is given by:

$$
\begin{aligned}
\frac{\partial \mathcal{L}}{\partial(1-t)} \quad = \quad & -\frac{\partial L}{\partial(1-t)}G(T_0) + G(T_0)h(w)\frac{\partial w}{\partial(1-t)} + \frac{\partial w}{\partial(1-t)}\int_0^w G'(w+T_0-c)dH(c) \\
& +G'(U^K)\pi(K^*,L^*) + \lambda\left[-\pi(K^*,L^*) + t\frac{\partial \pi}{\partial(1-t)}\right] = 0. \qquad \text{(A.7)}
\end{aligned}
$$

A similar argument to the one above allows us to cancel out the first two terms. Let $e_{\pi}^{1-t} = [\partial\pi/\partial(1-t)]\cdot[(1-t)/\pi]$. Then, the FOC can be rewritten as:

$$
\frac{g_L^1 wLe_w^{1-t}}{1-t} + \pi\left(g_K - 1 + \frac{te_{\pi}^{1-t}}{1-t}\right) = 0. \qquad \text{(A.8)}
$$

Solving for t^* yields:

$$
t^* = \frac{1-g_K-g_L^1 ae_w^{1-t}}{1-g_K+e_{\pi}^{1-t}}, \qquad \text{(A.9)}
$$

where $a = wL/\pi$ is the wages-to-taxable profits ratio.

Proposition 3 The Lagrangian of the government is given by:

$$
\begin{aligned}
\mathcal{L} \quad = \quad & (1-L)G(T_0) + \int_0^{w(1-\tau)} G(w(1-\tau)+T_0-c)dH(c) + G(U^K) \\
& +\lambda\left[t\pi(K^*,L^*) + \tau wL - T_0\right]. \qquad \text{(A.10)}
\end{aligned}
$$

The FOC with respect to $1-t$ is now given by:

$$
\begin{aligned}
\frac{\partial \mathcal{L}}{\partial(1-t)} \quad = \quad & -\frac{\partial L}{\partial(1-t)}G(T_0) + G(T_0)h(w(1-\tau))\frac{\partial w}{\partial(1-t)}(1-\tau) \\
& +(1-\tau)\frac{\partial w}{\partial(1-t)}\int_0^{w(1-\tau)} G'(w(1-\tau)+T_0-c)dH(c) + G'(U^K)\left(\pi(K^*,L^*) - wLe_w^{1-t}\right) \\
& +\lambda\left[-\pi(K^*,L^*) + t\frac{\partial\pi}{\partial(1-t)} + \tau\left(\frac{\partial w}{\partial(1-t)}L + \frac{\partial L}{\partial(1-t)}w\right)\right] = 0. \qquad \text{(A.11)}
\end{aligned}
$$

Again, the first two terms cancel out (envelope theorem), so the expression can be re-written as:

$$
\frac{(1-\tau)g_L^1 wLe_w^{1-t}}{1-t} - g_K wLe_w^{1-t} + \pi\left(g_K - 1 + \frac{te_{\pi}^{1-t}}{1-t}\right) + \frac{\tau wL(e_w^{1-t}+e_L^{1-t})}{1-t} = 0. \qquad \text{(A.12)}
$$

Solving for t^* yields:

$$
t^* = \frac{1-g_K\left(1-ae_w^{1-t}\right)-(1-\tau)g_L^1 ae_w^{1-t} - \tau a(e_w^{1-t}+e_L^{1-t})}{1-g_K\left(1-ae_w^{1-t}\right)+e_{\pi}^{1-t}}. \qquad \text{(A.13)}
$$

The FOC w.r.t. $1-\tau$ is given by:

$$\begin{aligned}\frac{\partial \mathcal{L}}{\partial(1-\tau)} &= w\left(e_w^{1-\tau}+1\right)\int_0^{w(1-\tau)} G'(w(1-\tau)+T_0-c)dH(c) - G'(U^K)\frac{1-t}{1-\tau}wLe_w^{1-\tau} \\ &\quad -\lambda t\frac{\partial \pi}{\partial(1-\tau)} - \lambda wL + \lambda\tau\left(w\frac{\partial L}{\partial(1-\tau)} + L\frac{\partial w}{\partial(1-\tau)}\right) = 0, \qquad \text{(A.14)}\end{aligned}$$

which can be written as:

$$\left(e_w^{1-\tau}+1\right)g_L^1 + g_K\frac{1-t}{1-\tau}e_w^{1-\tau} - \frac{t}{a(1-\tau)}e_\pi^{1-\tau} - 1 + \frac{\tau}{1-\tau}\left(e_w^{1-\tau}+e_L^{1-\tau}\right) = 0, \qquad \text{(A.15)}$$

which yields:

$$\tau^* = \frac{1-g_L^1(1+e_w^{1-\tau}) + te_\pi^{1-\tau}/a - g_K(1-t)e_w^{1-\tau}}{1-g_L^1(1+e_w^{1-\tau}) + e_w^{1-\tau} + e_L^{1-\tau}}. \qquad \text{(A.16)}$$

When firms are passive and wages are fixed, the formula reduces to:

$$\tau^* = \frac{1-g_L^1}{1-g_L^1+e_L^{1-\tau}}. \qquad \text{(A.17)}$$

B Additional Results

B.1 Main result with heterogeneity

Consider two populations of workers, y and z, with exogenous shares (β_y, β_z), with $\beta_y + \beta_z = 1$. These populations are fixed and meant to approximate some notion of low- and high-skill occupations. Workers remain endowed with working costs c, which are now distributed with occupation-specific distributions (H_y, h_y) and (H_z, h_z). Labor markets are segmented, meaning that workers behave as in the baseline model within occupation, yielding occupation-specific aggregate labor supplies $\beta_y H_y(w_y)$ and $\beta_z H_z(w_z)$, where (w_y, w_z) are the equilibrium wages. Implicit in this formulation is the abstraction from intensive margin responses regarding occupational choice, an assumption we maintain for simplicity.

On the capitalists' side, we now consider a continuum of capitalists of size N who are endowed with a parameter ψ, distributed with CDF Γ and PMF γ. The object ψ flexibly accommodates heterogeneity in technologies, accounting, for example, for differences in productivity, factor shares, elasticities of substitution, or returns to scale. Then, a capitalist of type ψ has a revenue function $F(K, L_y, L_z; \psi)$. Conditional on ψ, capitalists behave as in the baseline model, with the only subtlety that now they optimize over two types of labor, taking the two wages (w_y, w_z) as given:

$$\max_{K,L_y,L_z} \Pi(K, L_y, L_z; \psi) = (1-t)\left(F(K, L_y, L_z; \psi) - wyL_y - w_z L_z\right) - r(1-\theta t)K, \tag{B.1}$$

$$= (1-t)\pi(K, L_y, L_z; \psi) - (1-\theta)rK, \tag{B.2}$$

where $\pi(K, L_y, L_z; \psi) = F(K, L_y, L_z; \psi) - w_y L_y - w_z L_z - \theta r K$ are taxable profits. Defining $F_x^\psi \equiv \partial F(K, L_y, L_z; \psi)/\partial x$, for $x \in \{K, L_y, L_z\}$, we get the FOCs $F_K^\psi = \frac{r(1-\theta t)}{1-t}$, $F_{L_y}^\psi = w_y$, and $F_{L_z}^\psi = w_z$, which in turn implicitly define optimal input demands that, to economize notation, we denote by K^ψ, L_y^ψ, and L_z^ψ. Then, indirect utility is given by $U_\psi^K = \Pi(K^\psi, L_y^\psi, L_z^\psi; \psi)$, so $\partial U_\psi^K/\partial(1-t) = \pi_\psi - w_y L_y^\psi e_{w_y}^{1-t} - w_z L_z^\psi e_{w_z}^{1-t}$, with $\pi_\psi = \pi(K^\psi, L_y^\psi, L_z^\psi; \psi)$.

All capitalists compete for the same workers in segmented competitive labor markets, leading to labor market clearing conditions $\beta_y H_y(w_y) = N \int L_y^\psi d\Gamma(\psi) \equiv L_y$ and $\beta_z H_z(w_z) = N \int L_z^\psi d\Gamma(\psi) \equiv L_z$.

The government chooses $(1-t, \theta, T_0)$ to maximize a generalized utilitarian social welfare objective:

$$\begin{aligned} SWF &= (1 - L_y - L_z)G(T_0) + L_y \frac{\int_0^{w_y} G(w_y + T_0 - c)dH_y(c)}{H_y(w_y)} \\ &\quad + L_z \frac{\int_0^{w_z} G(w_z + T_0 - c)dH_z(c)}{H_z(w_z)} + N \int G(U_\psi^K)d\Gamma(\psi), \end{aligned} \tag{B.3}$$

subject to the budget constraint $tN \int \pi_\psi = T_0$ with multiplier λ. The WWs in this case are given by:

$$\begin{aligned} g_L^0 &= \frac{G'(T_0)}{\lambda}, \qquad & g_{L_y}^1 &= \frac{\beta_y \int_0^{w_y} G'(w_y + T_0 - c)dH_y(c)}{L_y \lambda}, \\ g_{L_z}^1 &= \frac{\beta_z \int_0^{w_z} G'(w_z + T_0 - c)dH_z(c)}{L_z \lambda}, \qquad & g_K^\psi &= \frac{G'(U_\psi^K)}{\lambda}. \end{aligned} \tag{B.4}$$

Using $L_y = \beta_y H_y(w_y)$ and $L_z = \beta_z H_z(w_z)$, the Lagrangian is given by:

$$\begin{aligned} \mathcal{L} &= (1 - L_y - L_z)G(T_0) + \beta_y \int_0^{w_y} G(w_y + T_0 - c)dH_y(c) + \beta_z \int_0^{w_z} G(w_z + T_0 - c)dH_z(c) \\ &\quad + N \int G(U_\psi^K)d\Gamma(\psi) + \lambda \left[tN \int \pi_\psi d\Gamma(\psi) - T_0 \right]. \end{aligned} \tag{B.5}$$

The FOC w.r.t. $1-t$ is given by:

$$\begin{aligned} \frac{\partial \mathcal{L}}{\partial(1-t)} &= -\frac{\partial L_y}{\partial(1-t)} G(T_0) + G(T_0)h_y(w_y)\frac{\partial w_y}{\partial(1-t)} + \frac{\partial w_y}{\partial(1-t)}\beta_y \int_0^{w_y} G'(w_y + T_0 - c)dH_y(c) \\ &\quad - \frac{\partial L_z}{\partial(1-t)} G(T_0) + G(T_0)h_z(w_z)\frac{\partial w_z}{\partial(1-t)} + \frac{\partial w_z}{\partial(1-t)}\beta_z \int_0^{w_z} G'(w_z + T_0 - c)dH_z(c) \\ &\quad + N \int G'(U_\psi^K)\left(\pi_\psi - w_y L_y^\psi e_{w_y}^{1-t} - w_z L_z^\psi e_{w_z}^{1-t}\right) d\Gamma(\psi) \\ &\quad + \lambda \left[-N \int \pi_\psi d\Gamma(\psi) + tN \int \frac{\partial \pi_\psi}{\partial(1-t)} d\Gamma(\psi) \right] = 0. \end{aligned} \tag{B.6}$$

The first two terms in the first two lines cancel out because of the same envelope argument developed in the proofs of Appendix A. Let $\pi = N \int \pi_\psi d\Gamma(\psi)$ and $e^{1-t}_{\pi_\psi} = [\partial \pi_\psi / \partial(1-t)] \cdot [(1-t)/\pi_\psi]$. Then, the FOC can be rewritten as:

$$\begin{aligned} \frac{g^1_{L_y} w_y L_y e^{1-t}_{w_y}}{1-t} + \frac{g^1_{L_z} w_z L_z e^{1-t}_{w_z}}{1-t} + N \int g^\psi_K \left(\pi_\psi - w_y L^\psi_y e^{1-t}_{w_y} - w_z L^\psi_z e^{1-t}_{w_z} \right) d\Gamma(\psi) & \\ -\pi + \frac{tN \int \pi_\psi e^{1-t}_{\pi_\psi} d\Gamma(\psi)}{1-t} &= 0. \end{aligned} \tag{B.7}$$

Define $a^\psi_y = w_y L^\psi_y / \pi$, $a_y = w_y L_y / \pi = N \int a^\psi_y d\Gamma(\psi)$, $a^\psi_z = w_z L^\psi_z / \pi$, and $a_z = w_z L_z / \pi = N \int a^\psi_z d\Gamma(\psi)$. Also, define $\omega_\psi = N \pi_\psi \gamma(\psi) / \pi$, so $\int \omega_\psi d\psi = 1$, and $\kappa^x_\psi = N a^\psi_x \gamma(\psi) / a_x$, with $x \in \{y, z\}$, so $\int \kappa^x_\psi d\psi = 1$. Then, solving for t^* yields:

$$t^* = \frac{1 - \overline{g_K} + \widehat{g_K} a_y e^{1-t}_{w_y} + \widetilde{g_K} a_z e^{1-t}_{w_z} - g^1_{L_y} a_y e^{1-t}_{w_y} - g^1_{L_z} a_z e^{1-t}_{w_z}}{1 - \overline{g_K} + \widehat{g_K} a_y e^{1-t}_{w_y} + \widetilde{g_K} a_z e^{1-t}_{w_z} + \overline{e^{1-t}_\pi}}, \tag{B.8}$$

where $\overline{x} = \int \omega_\psi x_\psi d\psi$, $\widehat{x} = \int \kappa^y_\psi x_\psi d\psi$, and $\widetilde{x} = \int \kappa^z_\psi x_\psi d\psi$, for $x_\psi \in \{g^\psi_K, e^{1-t}_{\pi_\psi}\}$.

B.2 Optimal deductibility

We have that $\partial U^K / \partial \theta = trK^* - \frac{1-t}{\theta} w L e^\theta_w$, where $e^\theta_w = d \log w / d \log \theta$. Then, from equation (A.1), we have that the FOC w.r.t. θ is given by:

$$\frac{\partial \mathcal{L}}{\partial \theta} = \frac{\partial w}{\partial \theta} \int_0^w G'(w + T_0 - c) dH(c) + G'(U^K) \left(trK^* - \frac{1-t}{\theta} w L e^\theta_w \right) + \lambda t \frac{\partial \pi}{\partial \theta} = 0, \tag{B.9}$$

where we omitted derivatives with respect to L and the integration limit since, as in Proposition 1, they cancel out because of the envelope theorem. The fiscal externality comprises both mechanical and behavioral effects:

$$\frac{\partial \pi}{\partial \theta} = F_K \frac{\partial K}{\partial \theta} + F_L \frac{\partial L}{\partial \theta} - w \frac{\partial L}{\partial \theta} - L \frac{\partial w}{\partial \theta} - rK^* - \theta r \frac{\partial K}{\partial \theta} = \frac{\partial K}{\partial \theta} \frac{r(1-\theta)}{1-t} - L \frac{\partial w}{\partial \theta} - rK^*, \tag{B.10}$$

where we used the capitalist's FOCs in the second equality. Using this expression, we can write equation (B.9) as:

$$\frac{wL}{\theta} e^\theta_w \left(g^1_L - (1-t) g_K - t \right) + g_K trK^* + t \left(\frac{K^*}{\theta} e^\theta_K \frac{r(1-\theta)}{1-t} - rK^* \right) = 0, \tag{B.11}$$

where $e^\theta_K = d \log K / d \log \theta$. Before solving for θ^*, we note that if $\theta = 1$, then $e^{1-t}_w = e^{1-t}_\pi = 0$, as the corporate tax becomes a tax on pure profits (see the capitalist's FOCs). As such, the FOC of the planner with respect to t evaluated at $\theta = 1$ yields $g_K = 1$. Using this insight, we note that the left-hand side of the FOC w.r.t. θ evaluated at $\theta = 1$ and $g_K = 1$ is $wLe^\theta_w(g^1_L - 1)$. Since $g^1_L < 1$ because of incentive compatibility and the FOC w.r.t. T_0, it follows that the FOC w.r.t. θ is always negative at $\theta = 1$, meaning that at the joint optimum it is necessarily smaller than 1. Finally, solving for θ^* in equation (B.11) yields the interior solution:

$$\theta^* = \frac{wLe_w^\theta \left(g_L^1 - (1-t)g_K - t\right) + \frac{tK^* e_K^\theta r}{1-t}}{trK^*(1-g_K) + \frac{tK^* e_K^\theta r}{1-t}}. \tag{B.12}$$

B.3 Organizational form switching

We replace the representative capitalist with a continuum of capitalists of size N who decide whether they want to set up their businesses as C corporations or S corporations. C corporations pay the corporate tax t, while S corporations pay the labor income tax τ. Capitalists are endowed with an incorporation scalar cost (or benefit) α representing their (additive) disutility of setting up the business as an S corporation, distributed with CDF P and PDF p. Apart from the incorporation cost α, capitalists are homogeneous and behave as described in Section 3. The indirect utility of being a C or S corporation before accounting for the incorporation costs α is given by:

$$U_C^K = (1-t)\pi(K^*(w,1-t,\theta), L^*(w,1-t,\theta)) - (1-\theta)rK^*(w,1-t,\theta), \tag{B.13}$$

$$U_S^K = (1-\tau)\pi(K^*(w,1-\tau,\theta), L^*(w,1-\tau,\theta)) - (1-\theta)rK^*(w,1-\tau,\theta), \tag{B.14}$$

respectively, where we made explicit that the optimal demand functions vary between organizational forms because of the differences in taxes. It follows that a capitalist will choose to operate as an S corporation whenever $U_S^K - \alpha \geq U_C^K$. Then, the number of S corporations is given by $S \equiv NP(U_S^K - U_C^K)$ and the number of C corporations is given by $C \equiv N - S = N(1 - P(U_S^K - U_C^K))$. To economize notation, we define $\pi_C = \pi(K^*(w,1-t,\theta), L^*(w,1-t,\theta))$ and $\pi_S = \pi(K^*(w,1-\tau,\theta), L^*(w,1-\tau,\theta))$. If the distribution P is smooth, there are well-defined finite elasticities $e_C^x = [dC/dx] \cdot [x/C]$ and $e_S^x = [dS/dx] \cdot [x/S]$, for $x \in \{1-t, 1-\tau\}$, as changes in net-of-taxes will affect the object $U_S^K - U_C^K$, with $e_C^x = -e_S^x$. Note that the modeling choice of α affecting the S corporation utility is without loss of generality, as in any discrete choice problem of this sort, the preference shock only identifies the differences in utilities.

The workers' problem is equivalent to the case developed in Section 4 with labor income taxes. The main difference, however, is that the labor market clearing condition is now given by $H(w(1-\tau)) = CL^*(w,1-t,\theta) + SL^*(w,1-\tau,\theta)$. To economize notation, we use $L_C = L^*(w,1-t,\theta)$ and $L_S = L^*(w,1-\tau,\theta)$ to denote individual labor demands of each organizational form, with $CL_C + SL_S = L$. Unlike other cases presented in the paper, both corporate and labor income taxes affect both labor supply and labor demand. Implicit in this equilibrium condition is the assumption that workers are indifferent between working in a C or an S corporation and, therefore, all firms participate in the same labor market regardless of the organizational choice.

The government chooses $(1-t, T_0, \tau)$ to maximize a generalized utilitarian social welfare objective:

$$\begin{aligned} SWF &= (1-L)G(T_0) + L\frac{\int_0^{w(1-\tau)} G(w(1-\tau)+T_0-c)dH(c)}{H(w(1-\tau))} \\ &\quad +CG(U_C^K) + S\frac{\int_0^{U_S^K-U_C^K} G(U_S^K-\alpha)dP(\alpha)}{P(U_S^K-U_C^K)}, \end{aligned} \tag{B.15}$$

subject to the budget constraint $tC\pi_C + \tau S\pi_S + \tau wL = T_0$ with multiplier λ. Implicit in this formulation is the assumption that the planner observes the organization form chosen by capitalists but α is private information. Consequently, we allow the government to assign different WWs to different types of capitalists. The WWs in this case are given by:

$$\begin{aligned} g_L^0 &= \frac{G'(T_0)}{\lambda}, \qquad g_L^1 = \frac{\int_0^{w(1-\tau)} G'(w(1-\tau)+T_0-c)dH(c)}{L\lambda}, \\ g_K^C &= \frac{G'(U_C^K)}{\lambda}, \qquad g_K^S = \frac{N\int_0^{U_S^K-U_C^K} G'(U_S^K-\alpha)dP(\alpha)}{S\lambda}. \end{aligned} \tag{B.16}$$

The Lagrangian of the government is given by:

$$\begin{aligned} \mathcal{L} &= (1-L)G(T_0) + \int_0^{w(1-\tau)} G(w(1-\tau)+T_0-c)dH(c) + CG(U_C^K) \\ &\quad +N\int_0^{U_S^K-U_C^K} G(U_S^K-\alpha)dP(\alpha) + \lambda\left[tC\pi_C + \tau S\pi_S + \tau wL - T_0\right]. \end{aligned} \tag{B.17}$$

The FOC with respect to $1-t$ is now given by:

$$\begin{aligned} \frac{\partial\mathcal{L}}{\partial(1-t)} &= -\frac{\partial L}{\partial(1-t)}G(T_0) + G(T_0)h(w(1-\tau))\frac{\partial w}{\partial(1-t)}(1-\tau) \\ &\quad +(1-\tau)\frac{\partial w}{\partial(1-t)}\int_0^{w(1-\tau)} G'(w(1-\tau)+T_0-c)dH(c) \\ &\quad +CG'(U_C^K)\left(\pi_C - wL_C e_w^{1-t}\right) - N\int_0^{U_S^K-U_C^K} G'(U_S^K-\alpha)dP(\alpha)wL_S e_w^{1-t}\frac{1-\tau}{1-t} \\ &\quad +\lambda\Bigg[-\pi_C + t\frac{\partial C}{\partial(1-t)}\pi_C + tC\frac{\partial \pi_C}{\partial(1-t)} + \tau\frac{\partial S}{\partial(1-t)}\pi_S + \tau S\frac{\partial \pi_S}{\partial(1-t)} \\ &\quad +\tau\left(\frac{\partial w}{\partial(1-t)}L + \frac{\partial L}{\partial(1-t)}w\right)\Bigg] = 0. \end{aligned} \tag{B.18}$$

Again, the first two terms cancel out because of the envelope theorem. Grouping terms and using the elasticity and WWs definitions, the expression can be written as:

$$\frac{(1-\tau)a_L g_L^1 e_w^{1-t}}{1-t} + g_K^C\left(1-a_C e_w^{1-t}\right) - \frac{g_K^S a_S e_w^{1-t}(1-\tau)}{1-t} - 1$$
$$+\frac{t\left(e_C^{1-t}+e_{\pi_C}^{1-t}\right)}{1-t} + \frac{\tau b_S\left(e_S^{1-t}+e_{\pi_S}^{1-t}\right)}{1-t} + \frac{\tau a_L\left(e_w^{1-t}+e_L^{1-t}\right)}{1-t} = 0, \tag{B.19}$$

where $a_L = wL/C\pi_C$, $a_C = wL_C/\pi_C$, $a_S = sL_S w/C\pi_C$, and $b_S = S\pi_S/C\pi_C$. Solving for t^* yields:

$$t^* = \frac{1-g_K^C\left(1-a_C e_w^{1-t}\right)-(1-\tau)e_w^{1-t}\left(a_L g_L^1 - a_S g_K^S\right)-\tau\left(a_L\left(\left(e_w^{1-t}+e_L^{1-t}\right)+b_S\left(e_S^{1-t}+e_{\pi_S}^{1-t}\right)\right)\right.}{1-g_K^C\left(1-a_C e_w^{1-t}\right)+e_{\pi_C}^{1-t}+e_C^{1-t}} \tag{B.20}$$

C Data Appendix

C.1 Survey of Consumer Finances

This appendix describes the data from the Survey of Consumer Finances (SCF) used in Section 2 and Figures 1, D.1, and D.2. We downloaded summary extract public data and the full public dataset from the SCF website (`https://www.federalreserve.gov/econres/scfindex.htm`) for the waves 2004-2022. We adjust the income concepts in the full public dataset to reflect current dollars, taking into account that, for example, income questions asked in the 2010 survey pertain to respondents' 2009 incomes. Our adjustment exactly follows the adjustment in the SAS macro used to generate the summary extract bulletin files from the full public dataset. All of the statistics shown in Figures 1, D.1, and D.2 are calculated using survey weights.

We define total income as total fiscal income, including all income concepts which would be reported on a tax return, following Piketty and Saez (2003) and Smith et al. (2019). This is the sum of wage income (variable name `wageinc` in bulletin files), business and farm income (`bussefarminc` in bulletin files), taxable interest income (`X5708` in full public dataset), dividend income (`X5710` in full public dataset), transfers (`transfothinc` in bulletin files), and early pension withdrawals (`ssretinc` in bulletin files). The total income definition excludes capital gains. We refer to the sum of business income (`bussefarminc`) and dividends (`X5710`) as "business profits," and the sum of taxable interest income, transfers, and early pension withdrawals as "other income." Realized capital gains are measured using the `kginc` variable, and unrealized capital gains in business profits are measured as the sum of the the `kgbus`, `kgstmf`, and `kgore` variables, respectively, all in the bulletin files.

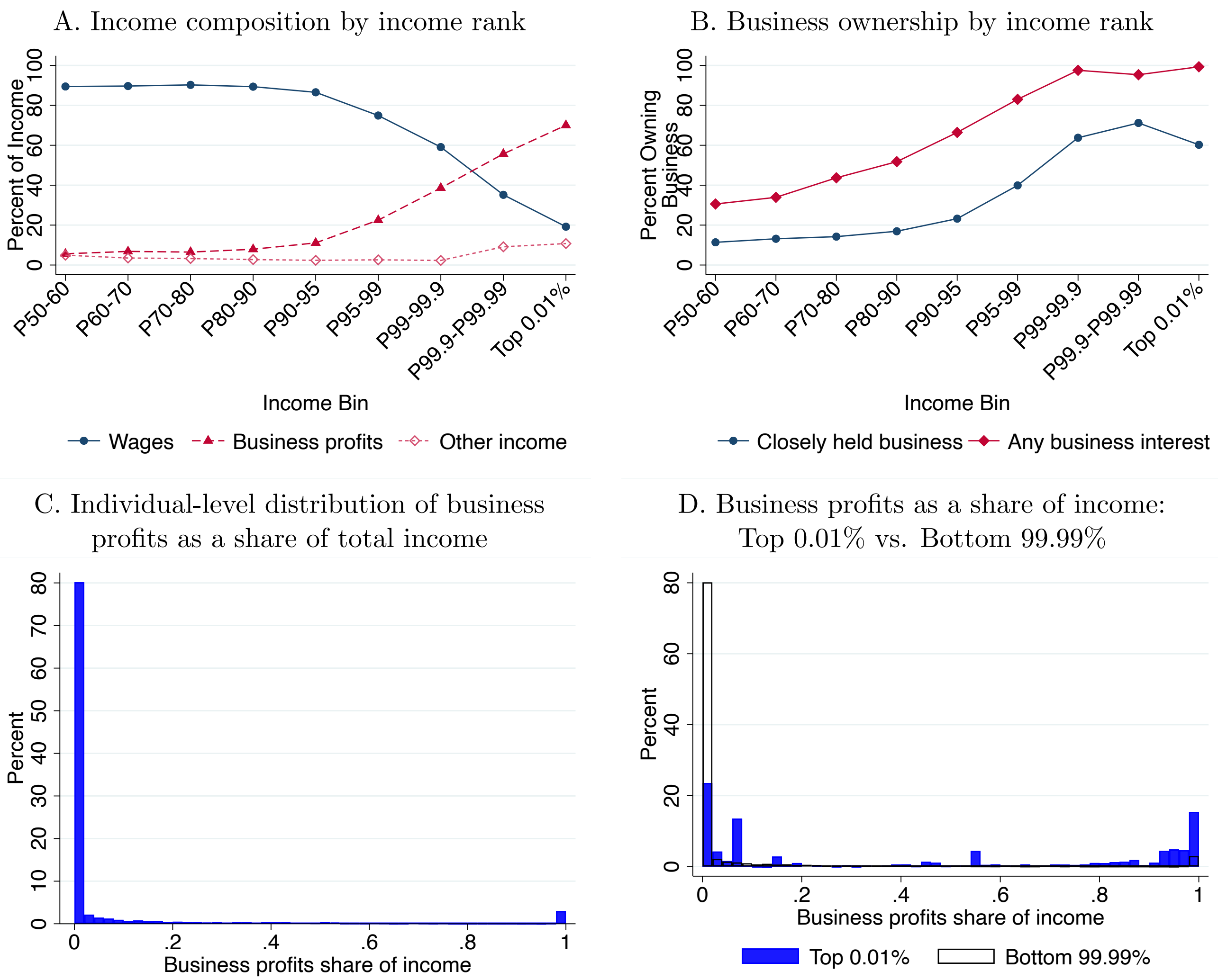
We say that a household in the Survey of Consumer Finances owns a closely held business if they report that the total net value of actively-managed business(es) in which they have an interest is positive, i.e., the bulletin variable `bus` is greater than zero. We say that a household has "any business interest" if the value of the equity portion of their portfolio, defined as in Smith et al. (2023), is positive. Specifically, a household's equity portfolio is the sum of its traded stocks (`stocks` in bulletin files); closely held businesses (`bus` in bulletin files); stock, combination, or other mutual funds (`stmutf`, `comutf`, `omutf`, respectively, in bulletin files); or the equity share of its trusts assets (`trusts` in bulletin files, times the trust share of assets constructed from full files variables $(\texttt{X6591} = 1) + \text{inlist}(\texttt{X6591}, 3, 30) \times \max(0, \texttt{X6592})/10,000)$).

C.2 Distributional National Accounts

We use Piketty et al. (2018) distributional national accounts (DINA) public micro-files, downloaded from the paper's webpage, to estimate an empirical linear tax rate on labor income earners τ for our calibration exercises in Section 5. For the empirical linear tax rate estimation, we pool the 2016–2020 datasets (properly adjusted for inflation) and focus on working-age households where all members are between 30 and 60 years old and are primarily labor income earners (with a share of labor income over total income above 95%). Then, we consider pre-tax labor income as personal factor labor income (`flinc`) and total taxes net of transfers as the sum of federal personal income taxes (`ditaf`), state personal income taxes (`ditas`), sales and excise taxes (`salestax`), and contributions for government social insurance other than pension, UI, and DI (`othercontrib`), minus social assistance benefits in cash (`dicab`) and social transfers in kind (`inkindinc`). We then estimate a (properly weighted) linear regression of net taxes on pre-tax labor income, flexibly controling by family structure (marriage status $\times$ number of kids). The estimated coefficient on pre-tax income yields the estimate of τ.

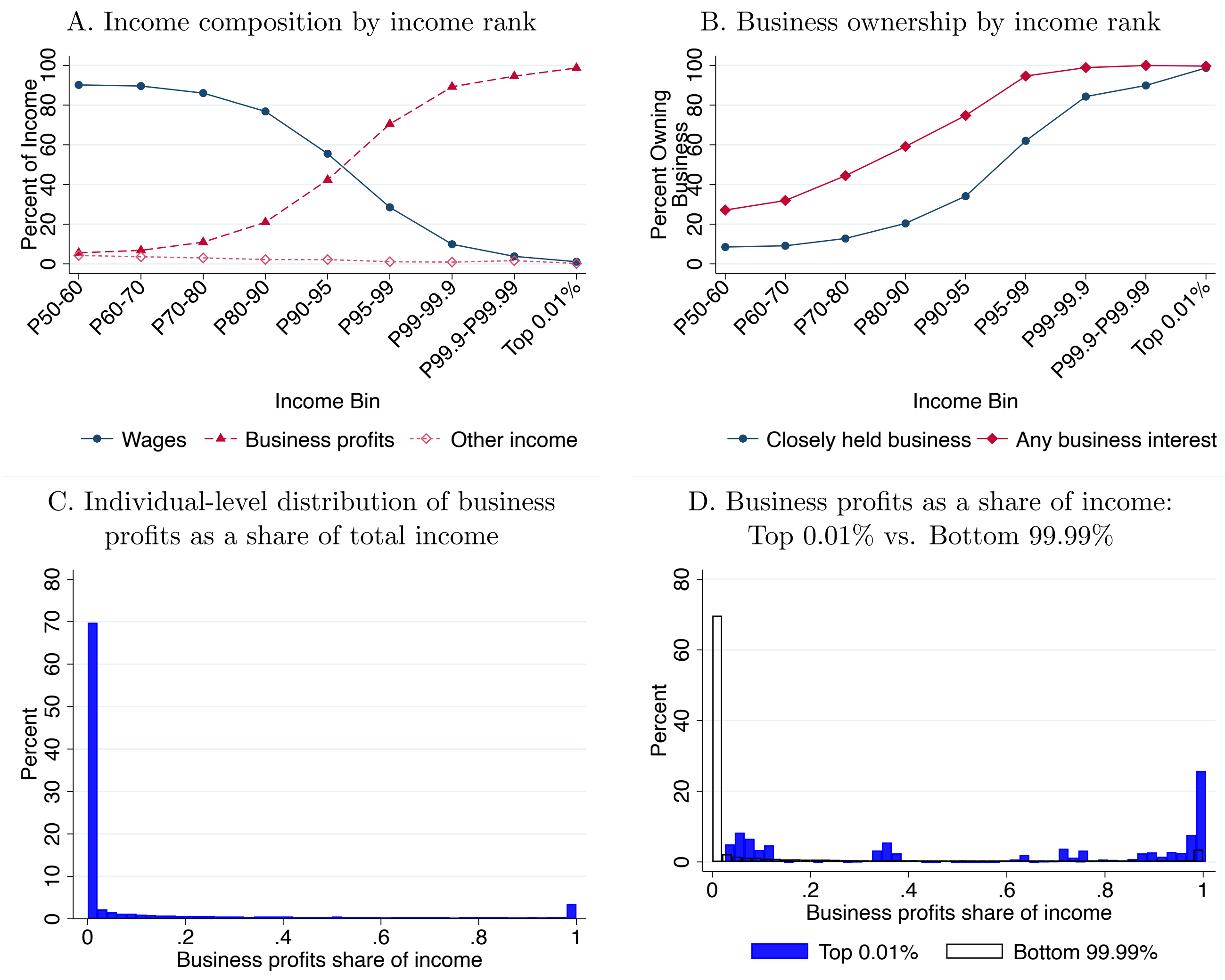
D Additional Figures

Figure D.1: Prime-Age Households' Income Composition and Business Ownership: Fiscal Income Plus Realized Capital Gains



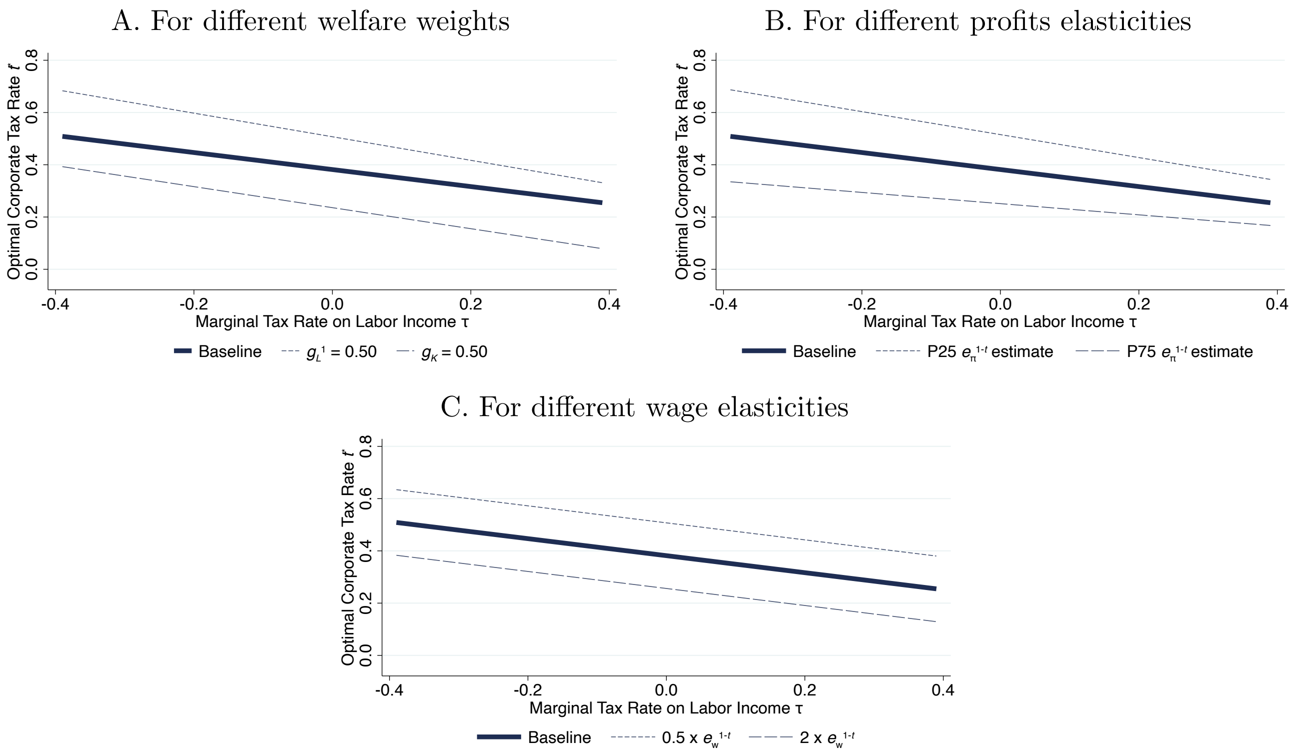
Notes: These figures reproduce the statistics shown in Figure 1 using more expansive definitions of business income and fiscal income which includes realized capital gains. We use data from the 2004-2022 waves of the Survey of Consumer Finances and focus on households headed by individuals of prime working age (25 to 55 years old). Panel A plots the income composition by total income rank, distinguishing between wage income, business income, and other income. Panel B plots the share of households within each income rank with business interests. Panel C plots the individual-level distribution of business profits as a share of total income. Panel D replicates Panel C, distinguishing between the top 0.01% and the bottom 99.99% of the income distribution. Additional details can be found in Section 2 and Appendix C.

Figure D.2: Prime-Age Households' Income Composition and Business Ownership: Fiscal Income Plus Realized and Unrealized Capital Gains



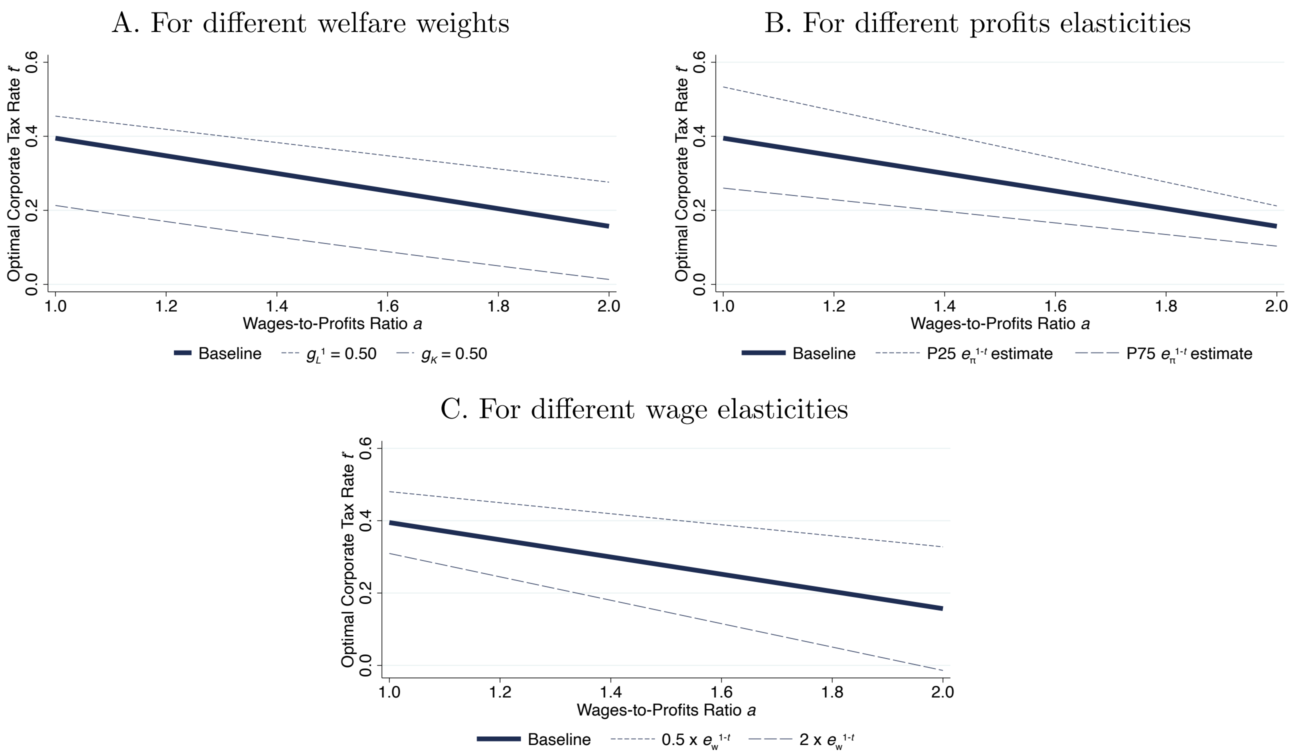
Notes: These figures reproduce the statistics shown in Figure 1 using more expansive definitions of business income and fiscal income which includes realized capital gains and unrealized capital gains for closely-held businesses, stocks and mutual funds, and other real estate. We use data from the 2004-2022 waves of the Survey of Consumer Finances and focus on households headed by individuals of prime working age (25 to 55 years old). Panel A plots the income composition by total income rank, distinguishing between wage income, business income, and other income. Panel B plots the share of households within each income rank with business interests. Panel C plots the individual-level distribution of business profits as a share of total income. Panel D replicates Panel C, distinguishing between the top 0.01% and the bottom 99.99% of the income distribution. Additional details can be found in Section 2 and Appendix C.

Figure D.3: Comparative Statics with respect to the Marginal Tax Rate on Labor Income τ



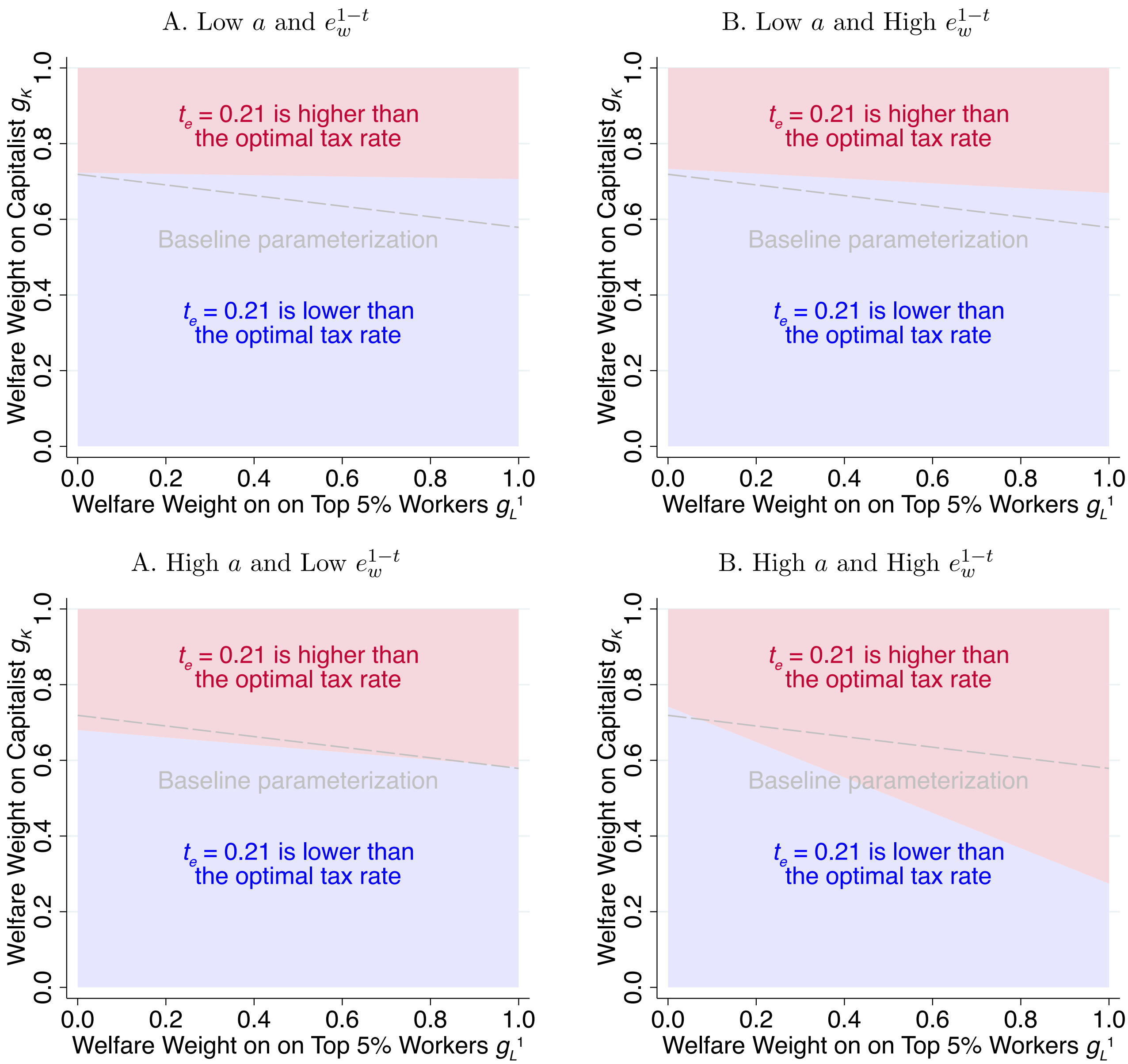
Notes: This figure plots calibrated optimal corporate taxes based on equation (14). Comparative statics with respect to τ are conducted departing from the baseline set of inputs given by $(e_{\pi}^{1-t}, e_{w}^{1-t}, e_{L}^{1-t}, g_{L}^{1}, g_K, a, \tau) = (0.58, 0.27, 0.35, 1, 0, 1.47, 0.303)$ (see Section 5 for details). The different curves in Panel A conduct the comparative static with respect to τ assuming different values for g_L^1 and g_K. The different curves in Panel B conduct the comparative static with respect to τ assuming different values for e_{π}^{1-t}. The different curves in Panel C conduct the comparative static with respect to τ assuming different values for e_{w}^{1-t}.

Figure D.4: Comparative Statics with respect to the Wages-to-Profits Ratio a



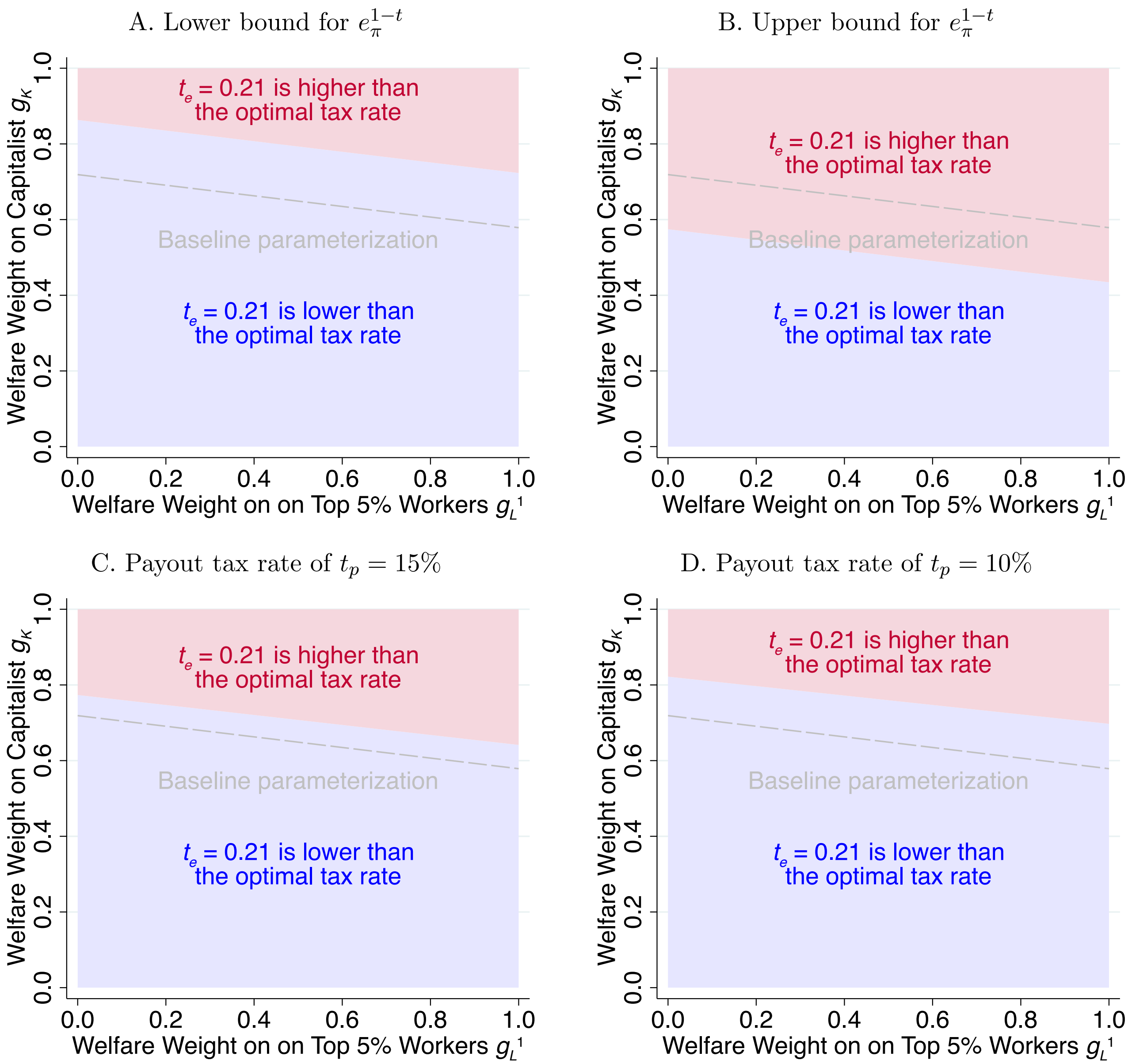
Notes: This figure plots calibrated optimal corporate taxes based on equation (14). Comparative statics with respect to a are conducted departing from the baseline set of inputs given by $(e_\pi^{1-t}, e_w^{1-t}, e_L^{1-t}, g_L^1, g_K, a, \tau) = (0.58, 0.27, 0.35, 1, 0, 1.47, 0.303)$ (see Section 5 for details). The different curves in Panel A conduct the comparative static with respect to a assuming different values for g_L^1 and g_K. The different curves in Panel B conduct the comparative static with respect to a assuming different values for e_π^{1-t}. The different curves in Panel C conduct the comparative static with respect to a assuming different values for e_w^{1-t}.

Figure D.5: Welfare Weights on Workers and Capitalists Rationalizing the Post-2017 US Corporate Tax: Alternative Parameterizations for the Wage Elasticity and the Wage-to-Profits Ratio



Notes: This figure replicates the results of the inverse-optimum analysis of the US corporate tax cuts in the Tax Cuts and Jobs Act of 2017 based on the results presented in Kennedy et al. (2024) described in Section 5 presented in Figure 4 for different values of a and e_w^{1-t}. The line dividing the red and blue regions represents the combination of the welfare weights on top 5% workers g_L^1 and capitalists g_K that rationalize the post-2017 corporate tax as optimal, following the $g_K(g_L^1)$ mapping characterized in equation (16). Computations use $(e_\pi^{1-t}, e_L^{1-t}, t_p, \tau) = (0.46, 0.35, 0.2, 0.303)$ and $t_e = 0.21$. For comparison, the gray lines reproduce the frontier presented in Figure 4 that uses $(e_w^{1-t}, a) = (0.465, 0.24)$. The baseline values of e_w^{1-t} and a come from averaging incomes and elasticities between the within-firm 95th percentile and the within-firm top 5 workers. We consider the former as a lower bound, with implied $(e_w^{1-t}, a) = (0.20, 0.075)$ and the latter as an upper bound, with implied $(e_w^{1-t}, a) = (0.73, 0.41)$. The plots consider all four combinations between these two tuples.

Figure D.6: Welfare Weights on Workers and Capitalists Rationalizing the Post-2017 US Corporate Tax: Alternative Parameterizations for the Profits Elasticity and Payout Taxes



Notes: This figure replicates the results of the inverse-optimum analysis of the US corporate tax cuts in the Tax Cuts and Jobs Act of 2017 based on the results presented in Kennedy et al. (2024) described in Section 5 presented in Figure 4 for different values of e_π^{1-t} and t_p. The line dividing the red and blue regions represents the combination of the welfare weights on top 5% workers g_L^1 and capitalists g_K that rationalize the post-2017 corporate tax as optimal, following the $g_K(g_L^1)$ mapping characterized in equation (16). Computations use $(e_w^{1-t}, e_L^{1-t}, a, \tau) = (0.465, 0.35, 0.24, 0.303)$ and $t_e = 0.21$. For comparison, the gray lines reproduce the frontier presented in Figure 4 that uses $(e_\pi^{1-t}, t_p) = (0.46, 0.2)$. Panels A and B set $t_p = 0.2$ and consider two values for $e_\pi^{1-t} \in \{0.24, 0.68\}$, which are the bounds for the profit elasticity reported in Kennedy et al. (2024). Panels C and D set $e_\pi^{1-t} = 0.46$ and consider two values for $t_p \in \{0.1, 0.15\}$.