Corporations and People

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Abstract

This paper studies the effects of historically large federal corporate income tax cuts on U.S. firms and workers, leveraging quasi-experimental policy variation from the 2017 law known as the Tax Cuts and Jobs Act. To identify causal effects, we use employer-employee matched federal tax records and a difference-in-differences design comparing similar firms that faced divergent tax changes due to their pre-existing legal status. We find that reductions in marginal income tax rates increase sales, pre-tax profits, investment, and workers' annual earnings. Earnings gains are concentrated in executive pay and in the top 10% of the within-firm income distribution, while workers in the bottom 90% of the distribution see no change in earnings. We estimate that approximately 15% of the increase in executive pay is attributable to improved firm performance, and 85% is due to rent-sharing. Exploiting differential exposure to tax cuts at the industry-level, we find suggestive evidence of market-level adjustments that amplify the positive effects on investment, but no evidence of market-level earnings adjustments. Overall, the results imply that corporate tax cuts improve aggregate economic efficiency but exacerbate inequality.

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1 Introduction

We study the effects of corporate income tax cuts on firms and workers in the United States, where in 2017 Congress enacted the most sweeping and significant legislation on American federal business taxation in a generation. Commonly known as the Tax Cuts and Jobs Act (TCJA), the legislation included provisions affecting corporate marginal income tax rates, investment incentives, taxation of foreign income, and much more. Collectively, the breadth of these provisions and the magnitude of the tax rate changes constitute the largest overhaul of American business taxation since the Tax Reform Act of 1986, providing a rare and sharp natural experiment to shed light on contemporary research and policy debates.

Public debate over corporate tax policy is hardly new. Even as governments around the globe have dramatically reduced corporate income tax rates over the past half-century — from an unweighted average country worldwide statutory tax rate of 40% in 1980 to just 23% in 2021 (Tax Foundation 2021) — policymakers and researchers today fiercely debate the costs and benefits of declining corporate tax burdens. Advocates for tax cuts argue that lower rates increase economic growth and broadly increase workers' living standards, while opponents argue they primarily benefit the wealthy and reduce revenues for valuable public services.

In this paper we bring new evidence to these debates. Our empirical analysis specifically studies the core provisions of TCJA affecting firms' marginal income tax rates (MTRs), using a rich employer-employee matched panel dataset constructed from random samples of federal tax records. Our analysis sample covers large firms with at least 100 employees, which, as we will describe, account for the vast majority of corporate tax revenue, sales, and employment. The data allow us to observe a holistic set of firm outcomes — such as sales, profits, shareholder payouts, and investment — and to merge them with worker-level data on employment and annual labor earnings.

Our main empirical strategy leverages a dynamic difference-in-differences design to compare the outcomes of similarly sized firms in the same industry that faced divergent changes in their marginal income tax rates. In particular, TCJA cut the top marginal tax rate for a legal entity type of firms known as C-corporations from 35% to 21% (a 14 percentage-point or 40% reduction). At the same time, TCJA cut the implied top marginal tax rate for a separate legal entity type of firms known as S-corporations from 39.6% to 37% (a 2.6 percentage point or 6% reduction), and also introduced a new tax deduction that, for most but not all of these firms, further reduced the top marginal rate to 29.6% (for a cumulative 10 percentage point or 25% reduction).[1] C-corporations and S-corporations operate in the same industries, overlap in their firm size distributions, and

[1]The top marginal tax rate for an S-Corporation is "implied" because, unlike for a C-Corporation, it must be computed as a weighted average of the marginal tax rates faced by each firms' individual owners and cannot be directly inferred from firms' tax records. The newly introduced tax deduction for S-corporations is known as the Qualified Business Income (QBI) deduction. We discuss both points in greater detail in Sections 2 and 3. As we will describe, the main differences are that C-corporations may have unlimited shareholders and pay taxes directly to the federal government, whereas S-corporations face greater shareholder restrictions and pay taxes indirectly to the government via the individual tax filings of the shareholders.

faced broadly similar tax burdens prior to TCJA, inviting a natural comparison between the two.

We exploit the fact that the average C-corp received a significantly larger tax cut than the average S-corp to study the impacts of MTR changes on firm sales, profits, investment, and employment, as well as on workers' annual earnings. As in Yagan (2015), the identifying assumption of our research design is not random assignment of C or S status; rather, it is that outcomes for C- and S-corps would have trended similarly in the absence of MTR cuts. Event studies allow us to rule out that outcomes of comparable C- and S-corps were on different trends prior to TCJA, and we further implement a series of robustness checks to ensure that our causal estimates are driven by changes in top marginal tax rates rather than other features of the law, superficial tax shifting behaviors, or unrelated economic forces differentially affecting C- and S-corps.

Our benchmark regression specifications, which compare trends in outcomes of C- versus S-corps controlling for firm and industry-size-year fixed effects, indicate that MTR cuts cause economically and statistically significant increases in firm sales, profits, payouts to shareholders, and real investment in capital goods. We estimate a small positive effect on employment, although it is not statistically significant. Quantile regressions show that annual earnings do not change for workers in the bottom 90% of the within-firm distribution, but do increase for workers in the top 10%, and increase particularly sharply for firm managers and executives.

To probe the extent to which the sharp increases in executive pay reflect higher managerial productivty versus rent-sharing, we examine whether executive pay increases are correlated with several measures of firm performance. We find that increases in executive pay are only weakly correlated with changes in firm sales, profits, or sales growth relative to other firms in the same industry. Synthesizing this evidence, we estimate that approximately 15% of the executive pay bump is driven by improved firm productivity, while the remaining 85% is driven by rent-sharing.

Descriptively, the executives and workers in the top 10% who benefit from higher earnings are typically older, have longer employment tenures at the firm, and are more likely to be men. However, we find little evidence that earnings effects vary heterogeneously by gender, age, or tenure after controlling for workers' place in the within-firm earnings distribution.

Having estimated firm and worker-level effects, we then turn to assessing impacts of the tax cuts at the market level, where a market is defined as a NAICS-6 industry. A key feature of our empirical setting is that C- and S-corps received tax cuts of different magnitudes. However, a limitation of the difference-in-difference analysis is that market-level effects affecting both C- and S-corps may be absorbed by time fixed effects. For example, if tax cuts increase the wages of both C and S workers equally, as in a standard model with perfectly competitive labor markets, or if investment increases in both C- and S-corps via general equilibrium forces, the firm-level difference-in-differences estimate will not capture these market-level effects.

To address these issues, we first characterize the economic forces that may amplify or attenuate various firm-level responses, and then implement a series of empirical tests to assess their relevance. Exploiting differential exposure to tax cuts at the industry level, we find evidence of

market-level adjustments that amplify the positive effects on investment, but no clear evidence of market-level adjustments in annual earnings. With respect to investment, the results are consistent with models in which dividend payouts and stock buybacks provide liquidity to investors, who in turn re-invest their capital elsewhere in the economy (e.g., Jensen 1986). With respect to earnings, the results are consistent with extensive empirical and theoretical research on imperfect labor market competition (e.g., see Card 2022 for a review).

We reconcile our estimated firm-level elasticities with the industry-level elasticities; with existing estimates of comparable elasticities from the literature; and with contemporaneous macroeconomic time series evidence. We find suggestive evidence that difference-in-difference designs that do not account for general equilibrium effects are likely to understate impacts on firm investment, and show that business cycle fluctuations drive macroeconomic trends to such a large extent that the impacts of tax policy are rarely discernable from macroeconomic time series data.

To evaluate the excess burden and tax revenue impacts of the corporate tax, we combine the estimated reduced-form elasticities from the empirical analysis with a simple model in the style of Feldstein (1999). Using the classic sufficient statistics approach, we estimate that, for a 1% reduction in the tax rate, aggregate welfare increases by 0.30%. Government revenues decline by 0.77%, with behavioral responses of firms and workers modestly blunting mechanical revenue losses, and consistent with the notion that contemporary top corporate marginal income tax rates in the US are well below the revenue-maximizing "Laffer Curve" peak.

Using methods similar to those developed by Fuest, Peichl, and Siegloch (2018) and Suárez Serrato and Zidar (2016), we estimate that approximately 70% of the short-run incidence of the corporate tax falls on capital, 30% falls high-skilled labor, and 0% falls low-skilled labor. Moving beyond factors of production, we also evaluate incidence across the income distribution. Under plausible assumptions about the distributional ownership of capital, we estmate that 85% of the short-run incidence falls on the top 10% of earners, and 15% of the incidence falls on the bottom 90%. While we cannot observe longer time horizons in our sample period, we show that, drawing on our empircally estimated investment impacts and on various plausible assumptions about the complementarity of labor and capital, in both the short-run and the long-run the corporate income tax appears highly progressive.

This paper builds on several strands of related literature that study the effects of corporate taxes on employment, wages, executive compensation, taxable income, consumer prices, and investment.[2] Recent contributions exploit policy variation across states or sub-national regions (e.g., Link, Menkhoff, Peichl, and Schüle 2022; Garrett, Ohrn, and Suárez Serrato 2020; Giroud and Rauh 2019; Fuest, Peichl, and Siegloch 2018; Suárez Serrato and Zidar 2016), while others

[2]Other outcomes studied in the literature include: establishment counts (e.g., Suárez Serrato and Zidar 2016; Gruber and Rauh 2007); consumer prices (Baker, Sun, and Yannelis 2020); innovation and the mobility of inventors (Akcigit, Grigsby, Nicholas, and Stantcheva 2021); macroeconomic performance (Romer and Romer 2010, Lee and Gordon 2005); international tax competition (Devereux, Lockwood, and Redoano 2008); the location and investment decisions of multinational firms (Becker, Fuest, and Riedel 2012; Devereux and Griffith 2003); and tax avoidance and profit shifting (Garcia-Bernardo, Janskỳ, and Zucman 2022; Desai and Dharmapala 2009; Hines and Rice 1994). These outcomes are beyond the scope of this paper.

exploit industry-level variation in exposure to business taxes, such as deductions or credits that are more likely to benefit capital-intensive industries (e.g., Curtis, Garrett, Ohrn, Roberts, and Serrato 2021; Ohrn 2022; Dobridge, Landefeld, and Mortenson 2021; Ohrn 2018; Zwick and Mahon 2017). More rarely, researchers have leveraged firm-level variation in corporate or capital taxes induced by plausibly arbitrary legal or circumstancial distinctions between firms (e.g., Carbonnier, Malgouyres, Py, and Urvoy 2022; Bachas and Soto 2021; Risch 2019; Saez, Schoefer, and Seim 2019; Yagan 2015).

Despite major advancements in recent research, there are natural reasons to question whether existing evidence is generalizable to understanding the effects of MTR cuts in the context of TCJA. Both theoretical and empirical research emphasizes the importance of institutional context, and existing evidence from subnational governments, developing countries, or narrowly targeted tax provisions may have limited applicability to larger reforms in a diverse advanced economy such as the United States (e.g., see reviews by Auerbach 2006, Gravelle 2013, and Auerbach 2018). This concern is especially salient with respect to the U.S. federal corporate income tax, where the tax base is broader, evasion is more difficult, top tax rates are higher, and revenues are greater by several orders of magnitude. In this light, it is not surprising that, due to both empirical and normative considerations, debates over the effects of TCJA remain hotly contested by researchers and policymakers (e.g., see Barro and Furman 2018).

We make four main contributions to the literature.

First, we study a policy that generated historically large variation in federal corporate tax rates, and moreover generated variation even across similarly sized firms in the same industry. As a share of GDP, the TCJA tax cut is orders of magnitude larger than previous studies that focus, for example, on changes in subnational taxes or highly targeted provisions of the business tax code, which tend to have lower rates and/or a smaller tax base (e.g., Fuest, Peichl, and Siegloch 2018; Zwick and Mahon 2017; Suárez Serrato and Zidar 2016).

Second, we complement the large shock with detailed employer-employee matched tax records that allow us to observe an unusually holistic set of firm- and worker-level outcomes relative to existing research. The richness of our data allow us to estimate distributional incidence of the corporate income tax using fewer assumptions than are typically required when data availability are more limited.

Third, our analysis expands on previous work by illustrating the importance of both firm-level and market-level responses to corporate income tax cuts. While existing research typically studies direct policy impacts on firms and/or workers, we highlight the economic forces that may amplify or attenuate these effects in competitive equilibrium. Empirically, we show suggestive evidence that market-level responses amplify positive effects on investment, but as in Saez, Schoefer, and Seim (2019) we find no evidence of market-level adjustments in workers' earnings.

Finally, we contribute to the literature on the efficiency and distributional implications of corporate taxes (e.g., Carbonnier, Malgouyres, Py, and Urvoy 2022; Bachas and Soto 2021; Risch 2019; Fuest, Peichl, and Siegloch 2018; Patel, Seegert, and Smith 2017; Suárez Serrato and Zidar

2016; Devereux, Liu, and Loretz 2014; Gruber and Rauh 2007). We estimate substantial deadweight loss from the corporate tax and, in contrast to much existing research, find that the incidence falls heavily on capital owners and highly-paid workers. We devote significant discussion to understanding what factors may drive differences in results across studies. Overall, our results imply that federal corporate income tax cuts improve aggregate economic efficiency but exacerbate inequality.

The rest of the paper proceeds as follows. Section 2 summarizes key features of the Tax Cuts and Jobs Act, including its legislative history, institutional context, and major policy changes. Section 3 describes the data sources and variable definitions. Section 4 details our empirical strategy for analyzing both firm-level and market-level effects, and presents the results. Section 5 presents a simple model that we use to estimate the excess burden, incidence, and revenue impacts of the U.S. federal corporate income tax. Section 6 empirically and theoretically reconciles the firm-level and market-level effects, and further reconciles them with existing estimates from the literature and with macroeconomic evidence. Section 7 concludes.