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THE INCIDENCE AND DISTRIBUTIONAL EFFECTS OF THE CORPORATE INCOME TAX

THE ROLE OF RENT SHARING

William G. Gale and Samuel I. Thorpe

ABSTRACT

Standard analysis of corporate income taxation assumes shareholders bear the burden of taxes on rents. But recent research finds that firms share rents with workers, implying that workers bear some of the burden. Using the Urban-Brookings Tax Policy Center microsimulation model, we show that rent sharing has significant implications for understanding corporate taxes. Allowing for rent sharing shifts the incidence of the tax, placing more burden on labor, but the progressivity implications depend crucially on which workers obtain rents. In the U.S, where rents are shared disproportionately with high-income workers, the tax remains approximately as progressive as under standard assumptions.

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DISCLOSURES

I. Introduction

Economists have devoted substantial attention to understanding the effects of the corporate income tax. These issues have grown even more salient in recent years with the passage of historic corporate tax changes in the Tax Cuts and Jobs Act (TCJA) of 2017 and recent OECD activities related to a global minimum tax.[1] Building on recent empirical research on rent sharing between firms and workers, this paper extends the academic literature on corporate taxation by providing the first large-scale microsimulation analysis of how rent sharing affects the incidence and distributional impact of the corporate tax.

Traditional incidence analysis typically finds that taxes on corporations' normal returns are shifted to some combination of all workers and all capital owners as firms adjust their investment and hiring and as workers and capital move to the noncorporate sector. In contrast, taxes on rents or excess returns are not expected to affect investment or hiring at all and so are borne by shareholders.[2]

Recent literature, however, provides evidence that firms in the U.S. and Europe share a substantial portion of their excess returns with workers in general, and with high-income workers, managers, and executives in particular (e.g., Carbonnier et al. 2022; Dobridge et al. 2021; Kennedy et al. 2024; Kline et al. 2019; Ohrn 2022; Saez et al. 2019). The implication for analysis of tax policy is clear: To the extent that firms share rents with workers, some of the burden of taxes on corporate excess returns will be borne by workers (Arulampalam et al. 2012), in contrast to the standard assumption that shareholders bear all taxes on rents and above and beyond any burden that workers bear due to taxes on the normal return.

This paper fills the gap between empirical analysis of rent sharing and simulation analysis of the distributional impact of the corporate tax. Our contribution is quantitative; we build on the recent empirical literature on rent sharing and apply the results to quantitative tax distribution analysis. We provide new insights about the corporate tax by showing, in the context of a tax microsimulation model, how variations in the key parameters governing the rent sharing process affect the overall incidence and distributional effects of the corporate tax.[3]

Specifically, we reassess the incidence and distributional effects of the corporate tax by incorporating rent sharing in the Urban-Brookings Tax Policy Center (TPC) micro-simulation tax model. The TPC model (TPC 2022; Nunns 2012) is frequently used in research and policy debates and is similar in most respects to models employed by the Congressional Budget Office (CBO 2018), the Joint Committee on Taxation (JCT 2013), and the Department of the Treasury (Cronin 2022; Cronin et al. 2013; Power and Frerick 2016).

In the current TPC model, 40% of the corporate tax base consists of normal returns, taxes on which are assumed to be split evenly between labor and capital. The remaining 60% is excess returns, taxes on which are assumed to fall entirely on shareholders. As in the CBO, JCT, and Treasury models, rent sharing is ignored.

Distributional analyses that incorporate rent sharing will depend on three key parameters: (1) the share of the corporate tax base that consists of rents; (2) the proportion of rents that are shared with workers; and (3) the distribution of shared rent among workers. Based on the literature review below, our central simulation retains the base case specification that 60% of the corporate tax base consists of rents and specifies that half of these rents are shared proportionally to labor income with workers in the top quartile of the wage distribution. Thus, relative to the base case, the central simulation shifts half of the incidence of taxes on excess returns from shareholders to high-income workers.

The effect of this change on progressivity depends on the distribution of income among shareholders relative to workers in the top 25% of the wage distribution. We show that wages in the top 25% of the wage distribution are more concentrated in the 60th-99th percentiles of the income distribution than is the distribution of stock holdings. As a result, allowing for rent sharing with workers in the top 25% of the wage distribution

raises corporate tax burdens in the 60th-99th percentiles of the income distribution but reduces burdens in lower percentiles and in the top 1%. Although labor bears substantially more of the burden in the central simulation than in the base case, the corporate tax is estimated to be slightly more progressive under the Kakwani index of progressivity and only slightly less progressive under the Suits progressivity index. The difference arises because the Kakwani index implicitly weights observations based on the number of tax returns, while the Suits index weights based on shares of income; hence, the Suits index is more affected by the decrease in burden on the top 1% (and especially the top 0.1%), who account for a much larger share of total income than of total returns.

We provide extensive sensitivity analysis for the three key parameters. When rents are shared predominantly with high-income workers, as evidence suggests they are in the U.S., raising the share of rents that firms share with workers magnifies the effects above: The burden on taxpayers in the 60th-99th percentile rises more, and burdens in other groups fall more. Likewise, raising the share of the corporate tax base that consists of excess returns raises the progressivity of the tax. Both effects, however, can look dramatically different if rents are shared mainly with low- and middle-income workers.

Thus, the third key parameter, how rents are shared among workers, emerges as a crucial input. For example, if rents are shared according to estimates in Dobridge et al. (2021), who find that workers in the top 1% of firms' earnings distribution receive about half of all rents that workers obtain, the tax becomes more progressive than in the central simulation—both the Suits and Kakwani indices rise. In contrast, if rents are shared proportionally to labor income or lower in the income distribution, the corporate tax becomes significantly more regressive than in the base case.

We draw several conclusions. First, rent sharing is an important empirical phenomenon that analysis of corporate taxation should address. Previous analyses that ignore rent sharing may have been mis-specified or misinterpreted. Second, although the estimates vary somewhat, the recent literature concludes that, in the United States, rents are shared predominantly with high-income workers, managers, and executives. In this case, incorporating rent sharing shifts the incidence of the corporate tax toward labor but does not meaningfully reduce the progressivity of the tax relative to standard assumptions.

Third, there is a strong need for further research on the three key parameters, which help determine the incidence and progressivity of the corporate tax. The burdens the tax creates will vary in turn depending on factors as diverse as firms' market power, tax depreciation schedules, labor market institutions, corporate governance rules, and the geographic scope of the tax. Pinning down the relevant empirical parameters and explaining how different economic and institutional arrangements affect the incidence and distribution of corporate taxation should be a high priority for future research.

Section II provides background information and documents key empirical regularities regarding excess returns and rent sharing that motivate the analysis. Section III describes the TPC microsimulation model. Section IV presents the main results. Section V concludes by discussing how consideration of rent sharing can provide new insights regarding several enduring issues in public finance and by describing several ways to extend the literature.

II. Background: Excess Returns and Rent Sharing

The incidence and distributional effects of the corporate tax are complicated issues both because the corporate tax base consists of normal and excess returns and because taxes on corporations are ultimately borne by individuals. Several definitions are pertinent here. We define incidence as the allocation of tax burdens across factors of production (e.g., workers, shareholders, and capital) and distributional effects as the allocation of tax burdens across tax filing units (loosely, "households"). A firm's normal return is the

sum of the safe return (e.g., the return on government bonds) plus the return to risk.

Excess or super-normal returns are any returns above the normal return. For purposes of this paper, we use the terms "rents," "excess returns," "super-normal returns," and "excess profits" interchangeably and to mean "excess returns consistently above the normal return." In the Conclusion, we discuss the need for clearer distinctions between sources of supernormal returns in future work.

Firms may earn super-normal returns through patents, special expertise or skills, economies of scale, location-specific factors, monopoly power in product markets, monopsony power in labor markets, restrictive regulations, luck, or other factors. Rents generated by corporate activities can be shared with workers in any of several ways: explicit bargaining; implicit bargaining, in which firms that earn rents choose to pay their workers more; contracts that link executive compensation to firm performance measures, which are in turn affected by taxes; and self-dealing behavior on the part of executives. In practice, the production and sharing of rents are likely to depend on a combination of these and other factors.

In standard models of corporate tax incidence, companies face perfect competition in product and labor markets and generate normal returns to capital. Taxes on the normal return are typically borne by some combination of labor, in the form of reduced wages, and all capital, in the form of reduced after-tax rates of return. (Classic examples include Harberger 1962 and Shoven 1976.)

In models that incorporate excess returns, taxes on excess returns are typically assumed to be borne entirely by shareholders, as the taxes do not affect investment or hiring. (See, for example, Auerbach 2010, Gentry and Hubbard 1997 and Power and Frerick 2016.)

Arulampalam, Devereux, and Maffini (ADM 2012) model corporate tax incidence in an environment where firms earn both normal and excess returns and where firms negotiate with workers on the allocation of the excess returns. (ADM do not specify a particular reason for the existence of excess returns or a specific bargaining mechanism with workers, just that excess returns exist, and that firms and workers bargain somehow over the distribution of such returns.) The key point is that when workers share in a firm's excess returns, they also share the burden of taxes on excess returns, above and beyond the burden they face on taxes on the normal return.[4] In addition, as Gale and Thorpe (2022) show, the greater worker market power is in a bargaining framework, the more workers will share in rents, and the more a given tax increase will reduce their wages. This result will matter in interpreting results from Fuest et al. (2018) below.

In such an environment, three questions arise: What share of taxable corporate profits represent excess returns? What proportion of those excess returns are shared with workers? And how are shared rents allocated across workers? Section A addresses evidence on the first question. Section B addresses evidence on the last two questions.

A. EXCESS RETURNS IN THE CORPORATE TAX BASE

Table 1 reports the findings of several studies—using a variety of time frames and methodologies—that show that the share of the corporate tax base accounted for by risk-free returns is small.[5] Several studies even suggest that the corporate income tax acts similar to a cash-flow tax, where the risk-free return is entirely exempted from taxation (Fox 2020; Gordon and Slemrod 1988; Patel and McClelland 2017).[6] Although Gravelle (2015) notes that these studies do not account for the return to risk, Damodaran (2020) shows that the return to risk has been moderate and relatively constant over time outside of recessions (as shown in Figure 1). The implication, given the studies in Table 1, is that excess returns account for a substantial share of the corporate tax base.[7]

Several related empirical regularities are consistent with this idea. The share of rents in the corporate tax base depends on both how much rent the economy is generating and how the tax system treats rents versus normal returns. Economic patterns have led to a higher share of rents in the corporate tax base. Profits of C

corporations have risen as a share of the economy over the past four decades, even as the normal return has declined (Figure 1), consistent with evidence on increases in economy-wide rise in rents, mark-ups, and intangibles (most of which are expensed and many of which generate excess returns).[8] The tax system has also moved toward taxing rents, by shifting toward lower taxation of safe returns: Some bonus depreciation rule was in effect in 12 of the 16 years before 2017 and TCJA allowed 100% bonus depreciation (expensing) of equipment investment through 2022, after which it phases out over 5 years (Fox, 2020; Guenther, 2018). Bonus depreciation reduces the tax on the safe return and expensing eliminates it.

B. RENT SHARING

Empirical analysis of rent sharing has a long pedigree in labor economics.[9] Many older studies found that firms share a relatively small proportion of rents with workers (Gravelle 2021). These studies, however, typically focused on a particular industry (often manufacturing), did not feature plausibly exogenous sources of variation in rents, and did not distinguish between rank-and-file workers as compared to executives or managers.

In contrast, several recent studies (Table 2) address these shortcomings and provide quasi-experimental evidence that firms share a substantial portion of plausibly exogenous increases in rents with workers. Moreover, in the contemporary U.S., the evidence shows that rents are shared predominantly with high-income workers, managers, and executives.

Dobridge et al. (2021) create a 1999-2015 data set linking the universe of workers' W-2 forms with the tax returns of public and private corporations to investigate the wage effects of the Domestic Production Activities Deduction (DPAD). In their preferred specification, workers captured 80% of the rents generated by DPAD. In other specifications, the worker share was even higher. Of the rents shared with workers, about half went to the top 1% of workers ranked by within-firm compensation. Another 24% of the shared rents went to the next 9% of workers. Workers in the bottom 75% of the within-firm earnings distribution received less than 13% of the rents shared with labor.

Focusing on TCJA, Kennedy et al. (2024) undertake a similar study using matched employer-employee tax data. They find that executives and the top 10% of workers within each firm accrued significant earnings gains after the tax cut, indicative of substantial rent sharing with those groups, but that those in the bottom 90% did not see statistically significant gains.[10]

Perhaps the sharpest results come from Ohrn (2022), who examines the effects of changes in bonus depreciation rules and DPAD using Execucomp data from 1998 to 2012. He finds that the compensation of just the top five executives at publicly traded firms increased by 17-25 cents for each dollar of a firm's tax reduction. The effects are seen mainly in firms with weaker governance, indicating that the results are due primarily to rent seeking by executives.

Risch (2024) examines the effect of the 2013 top marginal tax rate increase on pass-through businesses. Like the studies described above, he finds that income taxes on businesses are highly progressive. Owners bear more than 80% of the burden, while 10-20% of the burden is passed to workers, falling on those in the top 30% of the earnings distribution. Other workers are not affected. Risch's work complements the research highlighted above because it applies to (a) S corporations rather than C corporations; (b) mostly small and moderately sized firms rather than large firms; and (c) tax increases rather than tax cuts. It is difficult to determine how much rent sharing occurs between owners and managers, though, because in pass-through businesses owners tend also to be managers.[11]

While the studies above exploit exogenous variation in tax rules, Kline et al. (2019) examine the impact of rents generated by successful approval of a valuable patent in U.S. firms. They find that workers capture roughly 30 cents of every dollar of patent-induced rent and that rent sharing is highly concentrated among earners in the top quartile and among officers in particular. Wage changes for nonmanagerial employees and employees in the bottom three earnings quintiles are statistically indistinguishable from zero. Notably, these results relate to the distribution of quasi-rents, since the firms made extensive research investments to secure the patents, whereas the tax-related studies

arguably relate to the distribution of pure rents.[12] Quasi-rents arise in situations such as patents or research awards (Fox and Liscow 2020; Howell and Brown 2020; Kline et al. 2019), where many firms compete, some lose, and only one (or a few) can win.

Several other strands of the literature generate results consistent with the studies in Table 2. Executive compensation is often linked to firm performance measures, which are in turn affected by taxes (Hall and Liebman 1998; Bertrand and Mullanaithan 2001; Bebchuk and Fried 2003, 2006).[13] Studies consistently show that firms that earn higher profits pay their workers more, in particular their high-income workers (Barth et al. 2016; Furman and Orszag 2018; Song et al. 2019). Nallareddy et al. (2018) show similar results for state-level corporate tax cuts, raised income by 4.2% for high-wage (above $200,000) workers but only 1.2% for others.[14]

Evidence from European countries is largely consistent with the findings above for national taxes but also shows that institutional context and the geographic scope of a tax can influence how rents are shared. Carbonnier et al. (2022) exploits variation created by a French corporate tax credit and, using a matched employer-employee data set covering the universe of workers and firms in France, estimates that firms share 50% of rents, almost exclusively with high-income workers. A one percentage point increase in the tax credit rate translated into a 0.6% increase in wages for higher-skill workers but no statistically significant change in lower-skill wages. Several other studies (Bloesch et al. 2021; Gürtzgen 2009; Saez et al. 2019) also find that rents are shared with higher-income workers in European firms.

In contrast, Fuest et al. (2018) find that low- and middle-income German workers bear just over half of the burden from increases in municipal corporate taxes while high-income workers bear almost none. This result, like the other studies noted above, demonstrates the quantitative importance of rent sharing. But the results appear to be less applicable to the U.S. corporate tax for two reasons. First, as the authors note, their finding "highlight[s] the importance of labor market institutions," which differ markedly between the U.S. and Germany, particularly regarding collective bargaining coverage (including sectoral bargaining) and the unique German system of "codetermination" on corporate boards.[15] Second, taxpayers' ability to avoid taxes by shifting capital and labor are meaningfully different for a municipal corporate tax than for a national tax in an economy as large as the U.S. (Auerbach, 2018). Nevertheless, consideration of this paper is important because it demonstrates how the incidence and distributional effects of corporate taxes can be expected to vary with a variety of factors, including the geographic scope of the tax and the power of labor unions.

In summary, the modern rent sharing literature finds that firms share a substantial portion of their excess returns with workers and that, in the U.S. at least, rents are shared predominantly with high-income workers, managers, and executives, who therefore in turn bear some of the burden of taxes on excess returns. The extent to which these conclusions alter the distributional effects of the corporate tax is the subject of the remainder of this paper.[16]

III. The Tax Policy Center Microsimulation Model

A. OVERVIEW

This section provides a high-level summary of the Urban-Brookings Tax Policy Center (TPC) microsimulation model, focusing on features used to undertake the analysis in this paper and emphasizing basic definitions, incidence assumptions, inputs, and outputs. Several additional sources provide more detailed and technical information.[17]

In a nutshell, the model calculates federal tax burdens under the current system and under alternative policies and assumptions, in dollars and as a percentage of income, for a nationally representative sample of tax filing units. The TPC model is similar in most re-

spects to the large-scale microsimulation models employed by CBO (2018), JCT (2013), and the Department of the Treasury (Cronin 2022; Cronin et al. 2013; Power and Frerick 2016) to calculate the level and distribution of tax burdens.

The model includes all major federal taxes; for this paper, we focus on the corporate tax. A tax unit is defined as an individual or married couple that is required to file a tax return, or that would be required to file a tax return if their income were high enough, along with all dependents of that individual or married couple. The nationally representative sample is created by merging a data set containing tax returns (from the IRS public use files) with a data set that includes non-filers from the Current Population Survey, as described further below.

B. KEY INPUTS

For each tax filing unit, the key inputs are the items needed to calculate income and tax burdens. This includes the sources and level of income, demographic characteristics such as marital status and the number of dependents, and certain types of expenditures (for example, charitable contributions and mortgage interest payments).

A desirable income classifier corresponds as closely as possible to a taxpayer's economic well-being before taxes and is stable with respect to tax policy changes. Adjusted gross income (AGI), for example, is a poor measure by these criteria. It omits many forms of economic income, and its definition is not robust over time to some changes in tax law. More broadly, any income measure that closely aligns with tax rules will likely be a poor measure. Recognizing these concerns, in 2013, TPC developed an income concept called "expanded cash income" (ECI) (Rosenberg 2013). As shown in Table 3, ECI is a broad measure of pre-tax income. Besides AGI, ECI includes a variety of sources of cash income (e.g., employer and employee contributions to payroll tax and retirement plans, inside buildup in retirement plans, tax-exempt interest) as well as near-cash items such as SNAP (formerly "food stamps") receipts and employer-provided health insurance. It also includes an imputation of corporate tax liability based on the corporate tax incidence assumptions discussed below.[18] The federal tax calculators used by the CBO, JCT, and Treasury employ similar income measures that are broader than AGI.

Because the tax returns contain no direct information about wealth holdings, SCF data is used to impute, for each tax unit, ownership and amounts held for 18 categories of assets and debt and a comprehensive set of pension and retirement savings variables. By design, the SCF excludes the Forbes 400. To account for this, for each member of the list, the model creates a tax unit using the wealth data assigned by Forbes and demographic and income variables based on a matching procedure with other tax units in the tax return data.

C. DATA

Constructing the data requires a variety of sources and methods. The primary data source is the 2006 Public Use File (PUF) from the Statistics of Income Division of the Internal Revenue Service, which provides detailed information on federal income tax returns for more than 145,000 households from 2003 and 2006.[19] A nationally representative sample is created in a series of steps: (a) the data are aged to 2011, (b) non-filers and information on people's age and other demographic characteristics are added to the files, based on statistical merges with 2011 data from the Current Population Survey; (c) the data are "aged" to represent 2019 income and demographics, using data from a variety of sources, and (d) a constrained optimization algorithm reweights the records to match a set of about 100 national targets (Khitatrakun, Mermin, and Francis 2016). The inclusion of non-filers allows estimation of the distributional impacts of the corporate tax to include the impact on the wages of tax units who do not file returns.[20]

D. KEY OUTPUTS

The key output is the tax burden for each tax filing unit. The tax burden includes not only the taxes the tax unit pays directly—such as the personal income tax and the employee share of the payroll tax—but also the indirect burden placed on the unit by the corporate tax and the employer share of the payroll tax. For example,

although the corporate tax is remitted by companies to the government, individuals ultimately bear the tax, in their roles as workers, shareholders, capital owners, customers, etc. The "corporate tax burden" refers to the extent that individuals are made worse off by the tax via reduced wages (workers), reduced dividends or capital gains (shareholders), reduced rate of return on capital (all capital owners), or higher prices (customers).

To determine corporate tax burdens, the model specifies (a) the allocation of the corporate tax base between normal and excess returns and (b) the incidence of taxes on each type of return. In the TPC model base case specification, 60% of the corporate tax base is assigned to excess returns and 40% to normal returns. These figures were originally based on an exhaustive review of the literature through 2012 (Nunns 2012) and remain consistent with results since then, which are summarized in Section II above. Estimates from the Treasury Department (Cronin 2022; Power and Frerick 2016; Cronin et al. 2013) are somewhat lower, while Patel and McClelland (2017) and Fox (2020) provide support for a higher estimate. In Section IV, we provide sensitivity analysis with respect to this parameter.[21]

Normal and excess returns are allocated to individuals as shown in Table 3. Normal returns derive from the opportunity cost of delaying consumption and the reward for bearing risk and so are associated with items like interest income and a portion of equity returns. Excess returns come from several sources, including monopoly power, economies of scale, control of natural resources, luck, and other factors. Returns from corporate stocks (dividends and capital gains) are divided between normal and excess returns in a 40/60 ratio, the same ratio that the corporate tax base is divided.

In the TPC base case, the burden of taxes on the normal return is split equally between all labor, in proportion to labor income, and all capital owners, in proportion to capital income, based on a review of the literature described in Nunns (2012). Taxes on excess returns are assumed to be borne by shareholders in proportion to their equity holdings, consistent with Cronin (2022), Cronin et al. (2013), Power and Frerick (2016), Nunns (2012), and others.[22]

For each scenario, for every year from 2011 to 2031, for whatever taxes are included in the analysis, the TPC tax calculator can report tax burdens in dollars and as a share of income for each income class as well as the distribution of tax burdens across income classes. In this paper, we focus on the distribution of the corporate tax burden across ECI classes for calendar year 2019, the most recent year before the COVID-19 pandemic.[23]

In addition, to provide formal measures of the changes in the distribution of burdens, we present Kakwani and Suits indices for corporate tax burdens and test in each scenario for whether differences in these values and the analogous values in the base case are statistically significant. To help interpret the magnitude of the changes we report below, we note that Splinter (2020) estimates that the Kakwani index for the overall federal tax system fell by .04 (34%) from 1979 to 1986 and rose by .11 (120%) from 1986 to 2016.[24]

E. DISCUSSION

While distributional analysis using cross-sectional samples is common, the procedure has important limits. It distributes the cash value of tax burdens but does not provide welfare analysis. And it omits the short-run and dynamic impacts of taxes and focuses instead on the long-run comparative static impact (Auerbach 1993, 2018).[25]

Nevertheless, distributional analysis is valuable—particularly for taxes such as the corporate income tax, where the payor is not the agent that bears the burden of the tax—in that it shows how alternative incidence assumptions and tax policies affect the distribution and level of households' income, taking tax shifting into account. Moreover, our methodology—using an existing distributional model that is similar to other state-of-the-art models in the field, and then changing the model in one key regard (allocating some share of excess returns to workers)—facilitates comparisons with prior results and analyses.

IV. Results

A. DESCRIPTIVE STATISTICS

Analyzing the distributional effects of rent sharing is an exercise in shifting some of the burden of the tax on excess returns from shareholders to different groups of workers. The progressivity of the change will be driven by the distribution of ECI among shareholders compared to the distribution of ECI among workers who obtain some of the rents. To provide intuition for the simulation results, we first present information on the distribution of different forms of income.

Figure 2 and Table 4 show that labor income is distributed more equally than ECI, while supernormal returns are distributed far more unequally. The top 1% of tax units by ECI earn more than 40% of supernormal returns, compared to just 15% of total income and less than 9% of labor income. Each ECI class in the bottom 95% of the ECI distribution contains a greater share of wages than of excess returns, implying that shifting tax burdens from shareholders to all workers in proportion to their wages would make the corporate tax more regressive.

In contrast, comparing the distribution of excess returns with the distribution of the top 25% of wages (the group that receives rents in Kline et al., 2019) generates a different and important pattern. In the 60th-99th percentiles of the ECI distribution, the share of the top 25% of labor income exceeds the share of supernormal returns. This implies that transferring tax burdens on excess returns from shareholders to workers in the top 25% of the wage distribution will raise burdens in the 60th-99th percentiles of the ECI distribution. In ECI groups below the 60th percentile and above the 99th percentile, the share of the top 25% of labor income is lower than the share of supernormal returns. As a result, shifting tax burdens from shareholders to the top 25% of workers will reduce tax burdens in these income groups.

The same qualitative patterns also hold when comparing the distribution of excess returns and the distribution of wages within the top 50% of the wage distribution (the group that receives rents in Carbonnier et al. 2022).

But different findings apply to the distribution of rents among workers according to estimates in Dobridge et al. (2021). In this case, taxpayers in the 99.0th-99.9th percentile of the ECI distribution account for much more of the rents shared with workers than of excess returns. When rents are shared according to these estimates, burdens on tax units in the 60th-99.9th percentiles are higher. Burdens on the top 0.1% would still fall, however, because that group receives 25.9% of excess returns but only 10.3% of the rents allocated to workers.

Distributing rents according to results from Fuest et al. (2018) paints a very different picture.[26] These results suggest that rents are distributed far lower in the income distribution and fall disproportionately on labor income in the bottom four quintiles. Specifically, the bottom three quintiles account for more than 70% of all shared rents, while the top quintile accounts for 9.2% and the top percentile just 0.2%. While the Fuest et al. (2018) results are not directly applicable to the U.S. corporate tax, as discussed in Section II, we include the results here as an illustration of how much differences in institutions and tax design can affect the distribution of shared rents and the overall distributional effects of the corporate tax.

B. TPC BASE CASE AND CENTRAL SIMULATION

Table 5 lists key parameters in the TPC base case and our central simulation and the ranges used in the sensitivity analysis. The base case specification is described above. In the central simulation, we set the three key parameters based on central tendencies in the literature. Specifically, we set the share of the corporate tax base that represents excess returns at 60% (i.e., the same as in the base case). We specify that firms share 50% of rents with workers (as in Carbonnier et al. 2022 and Fuest et al. 2018; Dobridge et al. 2021 and Kennedy et al. 2024 obtain higher estimates but Kline et al. 2019 generate lower estimates). We further specify that rents are allocated among workers in proportion to labor income in the top quartile (as in

Kline et al. 2019; this estimate is less progressive than in Dobridge et al. 2022 and Kennedy et al. 2024 but more progressive than in Carbonnier et al. 2022 and Fuest et al. 2018).

Figure 3 and Table 6 present the main results for the TPC base case and the central simulation (shown in bold). The corporate tax is progressive under baseline assumptions. Tax units in the top 1% of the ECI distribution accounted for 15% of ECI (Table 4) but bore 33% of the burden of the corporate tax. The ratio of share of corporate tax burden to share of ECI rises steadily as ECI rises, from 40% in the bottom quintile to 94% in the 90th-95th percentiles and to almost 3 among the top 0.1%.

Under the central simulation, the distributional effects of the corporate tax change relative to the base case. Households in the 60th-99th percentiles see a substantial increase in their share of the corporate tax burden, from 50.8% in the base case to 61.2% in the central simulation. The burdens borne by the top 1% and the bottom 60% fall by 7.9 p.p. (24%) and 2.3 p.p. (15%), respectively. These results are consistent with the income patterns shown in Figure 2 and Table 4. Specifically, labor income in the top quartile of the labor income distribution is more concentrated in the 60th-99th percentiles of the ECI distribution than are excess returns. As a result, the shift in burden from shareholders to top quartile labor earners raises the tax burden in those ECI groups.[27]

Given the non-monotonic nature of the changes, the effect on progressivity is unclear ex ante. As shown in Table 6, despite labor bearing a much larger share of the tax in the central simulation (50%) compared to the base case (20%), the Kakwani index is slightly higher—indicating greater progressivity—in the central simulation (increasing by 2.5%) than in the base case and the difference is statistically significant. The Suits index, however, decreases by more than 0.04 points (a 16% decline, also statistically significant). These differences are driven by the way the two indices are calculated: Because the Suits index integrates over the total share of income, while the Kakwani index integrates over the total number of returns, the decline in tax burden for very top earners has a much larger impact on the Suits index, while the decline in tax burden at the bottom and increase on the 60th-99th percentiles has a larger impact on the Kakwani index. In both cases, the economic magnitude of the change in progressivity is small.

C. SENSITIVITY ANALYSIS

We provide sensitivity analysis for each of the three key parameters. Besides showing the base case and the central simulation, Figure 3 and Table 6 also show the sensitivity of the conclusions to variations in how rents are allocated across workers, while still specifying that excess returns account for 60% of the corporate tax base and that firms share 50% of their rents. The incidence of the tax—defined across labor, all capital owners, and shareholders—does not change across the scenarios, but the distributional effects do.

For example, if rents are allocated in accordance with estimates in Dobridge et al. (2021), the burden of the corporate tax increases for those in the 60-99.9th percentiles relative to baseline, with larger increases for the 95th-99.9th percentiles than for other groups. As in the central simulation, the burden on the top 0.1% falls substantially—in this case, by 4.7 p.p., or about one quarter. It also falls by 1.6 p.p. (11%) for tax units in the bottom 60%. In this case, both the Kakwani and Suits indices rise, by about 9% and 2%, respectively, relative to the base case. Unlike in the central simulation, these results indicate that regardless of the choice of progressivity index, the corporate tax is slightly more progressive than conventionally assumed when rents are allocated according to the results in Dobridge et al.

The other three specifications generate more regressive distributions than in the baseline because rents are shared with workers at lower points in the income distribution. When rents are allocated in proportion to labor income in the top half of the distribution (as in Carbonnier et al., 2022), the corporate tax burden is somewhat more regressive than in the base case or central simulation. Taxpayers from the 20th to 95th percentile bear more of the burden, while the burden on the top 1% falls by 8 percentage points (26%). The Kakwani and Suits indices fall by more than 20% compared to both the base case and central simulation.

When rents are allocated in proportion to all labor income, tax units throughout the bottom 95% of the ECI distribution bear more of the burden than under Carbonnier et al. (2022) assumptions, with their share of the burden increasing by more than 30% relative to the base case, while those in the top 5% bear less, with their share declining by nearly the same amount. The Suits and Kakwani indices fall by more than 30% relative to the base case.

Using estimates from Fuest et al. (2018), where rents are shared with low- and moderate-income workers, taxpayers in the lowest quintile bear more than double the burden they do in the other cases. Those in the top 10% (and especially the top 1%) bear significantly less. Both the Kakwani and Suits indices become negative in this scenario, indicating that the corporate tax is overall regressive under these assumptions. The burden on the lowest and second-lowest quintiles of taxpayers more than doubles, while the burden on the top quintile declines by nearly 20 percentage points.

Figure 4 and Table 7 present the base case, the central simulation (in bold in the Table), and sensitivity analysis that varies the proportion of rents that firms share with their workers. The base case (no rent sharing) is shown in the first column. As the proportion of rents shared with labor rises, holding constant the distribution of the rents among workers, several changes occur. First, the incidence shifts: Namely, the burden on labor rises gradually from 20% to 80% while the burden on shareholders falls from 60% to 0%. (The burden on capital stays constant at 20%.) Second, tax units in the 60th-99th percentile of the ECI distribution see their tax burdens rise, increasing from 50.8% with no rents shared with workers to 71.7% with 100% rent-sharing. Those in the top 1% and bottom 60% see their burdens fall, with the top 1% burden declining from 33% to just over 17%.

The progressivity of the tax changes in different ways when measured according to the Kakwani and Suits indices. The Suits index declines significantly, falling gradually from 0.276 to 0.185, but the Kakwani index does not decline (and in fact rises slightly from 0.161 to 0.169). As noted above, this difference occurs because the Suits index places more weight on declining burdens for the top 1% and especially top 0.1%, while the Kakwani puts more weight on the rising burden for the 60th to 99th percentiles.[28]

Figure 5 and Table 8 present the base case, the central simulation (again, in bold in the Table), and sensitivity analysis that varies the share of excess returns in the corporate tax base. Under the central simulation assumptions, raising the share of the tax base due to excess returns (and thus reducing the share attributable to the normal return) makes the corporate tax more progressive. The burden of taxes on the normal return is divided equally between all capital income, in proportion to capital income, and all wages, in proportion to wages. In the central simulation, the burden of taxes on excess returns is divided equally between shareholders and workers in the top quartile of labor income distribution. Since all wages are distributed more equally than wages in the top quartile, and since capital income is distributed more equally than shareholder wealth, shifting the tax base from normal returns to excess returns predictably makes the tax more progressive.

This logic is borne out in Figure 5 and Table 8. As the composition of the corporate base shifts towards excess returns and away from normal returns, burdens among tax units in the bottom 60% of the ECI distribution consistently fall, burdens in higher income groups rise, and the tax becomes substantially more progressive according to both the Kakwani and Suits index.[29] In all the cases in Table 8, however, labor bears 50% of the burden of the tax. This occurs because these specifications assume that labor bears 50% of the normal return and firms share 50% of rents with workers, so workers bear 50% of the tax on excess returns as well. In this case, the incidence does not change, even though the progressivity of the tax does.

To help put the various scenarios in perspective, Figures 6 and 7 display the Kakwani and Suits indices (normalized relative to the base case) for a representative selection of the scenarios simulated above. The progressivity of the corporate tax varies in a substantial (and statistically significant) manner across the scenarios.

The two indices move in similar directions relative to the base case in scenarios that vary the allocation of rents across workers (Figure 6). As expected, the progressivity of the tax falls significantly when rents are allocated lower in the income distribution and rises when they are allocated to top earners. For example, when rents are allocated to workers according to Dobridge et. al (2021), both indices rise relative to the base case. In contrast, both indices fall relative to the base case when rents are allocated to all labor compensation, and both become negative (indicating a regressive tax) if rents are allocated according to Fuest et al. (2018). The two indices also move similarly across scenarios that vary the proportion of rents in the tax base: raising the proportion of rents in the tax base makes the tax more progressive.

However, the two indices move in opposite directions in the central simulation (Figure 6) and when varying the proportion of rents shared with workers (Figure 7). The central simulation is slightly more progressive when measured using the Kakwani index but slightly less progressive using the Suits because although it raises tax burdens for the 60th-99th percentile of the income distribution, it reduces burdens on the top 1%. Similarly, varying the proportion of rents that are shared with workers from 30% to 80% has little impact on the Kakwani index under our central assumptions but reduces the Suits index significantly because of its effect on the top 1% share of the burden.

As a final robustness check, Appendix Table A3 reports results using each paper's unique combination of estimates for each rent-sharing parameter. (For example, results using the Dobridge et al. (2021) specification assume 80% of rents are shared with workers and distribute those rents according to their findings.) The results show the breadth of possible outcomes and illustrate how widely the implications of rent-sharing for the corporate tax can vary depending on institutions and economic circumstances.

V. Conclusion

This paper incorporates insights from the recent empirical literature on rent sharing between firms and workers into large-scale microsimulation analysis of the incidence and distributional effects of the corporate income tax. The essence of our argument is simple: Several recent studies find that excess returns account for a substantial share of the corporate tax base and that firms tend to share a substantial share of their excess returns with workers. Together, these findings imply that standard public finance analyses that allocate all the burden of taxes on excess returns to shareholders are inconsistent with important features of the real world.

Using the TPC microsimulation model, we show that consideration of rent sharing can have substantial effects on the estimated progressivity of the corporate income tax. Depending on three key parameters—the share of rents in the corporate tax base, the proportion of rents shared with workers, and, especially, the distribution of shared rents among workers—allowing for rent sharing can make the corporate tax more or less progressive than in the standard case without rent sharing. Under current U.S. institutions and policies, however, the evidence indicates that rents are shared predominantly with high-income workers, managers, and executives. We show that under these circumstances, rent sharing does not meaningfully reduce (and may increase) the progressivity of the corporate tax relative to standard assumptions that shareholders bear the entire burden of taxes on rents.

The three key parameters are in turn determined by factors as diverse as tax depreciation rules, the geographic scope of the tax, labor market institutions, and corporate governance. Consideration of these factors can help explain the wide differences in the estimated incidence of the corporate tax in different contexts (e.g., Fuest et al. (2018) compared to the U.S. evidence on rent sharing). The implication is that there is no single, universal incidence of the corporate tax that applies across all economic settings.

One empirical application of these results relates to the fact that in the two years after the corporate tax cuts in TCJA, median wage growth was lower than in the two years before, but mean wage growth was higher (Gale and Haldeman 2021). This result would not be predicted in a standard Harberger-style model of corporate tax incidence, because the general equilibrium adjustments to investment and hiring that need to take place take time (Viard 2019; Slalov 2019). But it makes perfect sense in a model where a substantial share of the corporate tax cut accrued to managers and executives, and little benefit accrued to rank-and-file employees. Rent sharing with executives, for example, can occur quickly, sometimes even contemporaneously (Ohrn 2022) and would help explain the wage patterns.

The empirical regularity that rent sharing among rank-and-file workers has fallen (Stansbury and Summers 2020) while rent sharing among executives has remained high (Thorpe 2022; Ohrn 2022) over the last several decades may also have implications for the progressivity of the corporate tax. Other things equal, these trends imply that the tax has become more progressive over time. Of course, other factors such as increasing globalization likely worked in the opposite direction.

Our results point to several directions where future research could be especially insightful. First, further empirical research that can pin down estimates of the three key parameters—the most important appearing to be the allocation of rents among different worker groups—and more precisely link institutional and economic factors to the incidence of the tax should be a high priority.

Second, the analysis of corporate taxes could fruitfully move towards developing conceptual models that can distinguish different types of labor—at the very least differentiating between rank-and-file workers and top executives. This reinforces and builds on points made by Auerbach (2018), Dobridge et al. (2021), Fuest et al. (2013, 2018), and others.

Third, a crucial unanswered question is whether increases and decreases in rents have symmetric effects. Almost all the evidence above focused on rent increases (tax cuts or patent awards). From a theoretical perspective, the effects may be asymmetric since wages may be downwardly rigid, as observed in the context of a tax increase in Risch (2024), who found that the adjustment of wages to a tax increase took the form of slower future wage growth, rather than a reduction in wages. Moreover, items like bonuses, new stock options, and long-term incentives are unlikely to take on negative values. There is evidence consistent with asymmetric effects for increases and reductions in value-added taxes (Benzarti et al. 2020) and retail sales taxes (Butters et al. 2022). A finding that rent sharing is asymmetric with respect to increases and decreases in rents would have important implications for tax policy.

Fourth, it is unclear whether firms share rents with workers differently depending on the source of the rents. We speculate that firms might be less willing to share rents that are generated in private ways than rents generated in public ways (e.g., by tax cuts). In addition, it is not obvious that private rents generated through monopoly in product markets, monopsony in labor markets, and quasi-rents like those from patents are shared in the same way.

Fifth, analysis of the distributional effects of other taxes that place burdens on rents (such as a value-added tax (Gale 2020) or the destination-based cash-flow tax (Auerbach 2010)) could be reconsidered in light of the evidence on rent sharing.

Finally, as highlighted earlier in the paper, we have used terms like “rents,” “excess returns,” “excess profits,” and “super-normal” returns interchangeably. While this is consistent with usage in the rest of the long literature on rent sharing, an important direction for future research is to understand the extent to which observed excess returns represent true “rents” versus “quasi-rents” and how would that affect the impact of rent sharing. Notably, empirical estimates of the allocation of rent sharing among workers following a patent award (Kline et al. 2019), or a research grant (Howell and Brown 2020) are reasonably consistent with the allocation of rents among workers following tax cuts (Carbonnier et al. 2022; Dobridge et al. 2021; Kennedy et al. 2024; Ohrn 2022). But more research is needed to clarify this issue.

Endnotes

1 For surveys of issues in corporate taxation, see Auerbach (2006, 2018), Clausing (2023), Gentry (2007), and Gravelle (2021). For discussions related to the corporate tax provisions in TCJA, see Auerbach (2018); Borden (2018); Chodorow-Reich, Smith, Zidar, and Zwick (2023), Clausing (2020); Council of Economic Advisors (2016); Donohoe, McGill, and Outslay (2019); Dowd, Giosa, and Willingham (2020); Furman (2017); Gale and Haldeman (2021); Henry, Plesko, and Utke (2018); Henry and Sansing (2020); and Kennedy et al. (2024). For analysis of the OECD initiative, see Avi-Yonah and Kim (2022), Devereux (2023), JCT (2023), and Johannesen (2022).

2 Harberger (1962, Appendix), the Department of the Treasury (Cronin et al. 2013, Power and Frerick 2016, Cronin 2022) and the Tax Policy Center (Nunns 2012) follow this approach. Auerbach (2006, 2010, 2018), Gentry (2007), and Gravelle (2021) describe the logic behind this type of conclusion while also clarifying that there are situations where the assumptions may not hold. For further discussion, see Risch (2022).

3 Our analysis is similar in spirit to previous work by Cronin et al. (2013), who explain why and how the Treasury distributional model was changed to incorporate then-recent findings in the literature that justified allocating the burden of taxes on excess returns to shareholders rather than to all capital owners. Our analysis explains how and why recent evidence on rent sharing can be incorporated into distributional models, using the TPC model.

4 Note that because wages are fully deductible to the firm, there is no substitution effect in favor of, or against, labor when corporate tax rates change (See ADM 2012; Felix and Hines 2023; and Gravelle 2021). But, as ADM also show, there is still an income effect from changes in taxes – which raise or reduce the available after-tax profit to be split between workers and the firm via rent sharing.

5 Note that because wages are fully deductible to the firm, there is no substitution effect in favor of, or against, labor when corporate tax rates change (See ADM 2012; Felix and Hines 2023; and Gravelle 2021). But, as ADM also show, there is still an income effect from changes in taxes – which raise or reduce the available after-tax profit to be split between workers and the firm via rent sharing.

6 The authors use corporate tax return data and remove financial flows—interest paid and received, dividends, and capital gains—from the tax base, yielding a base that would be a cash-flow tax except for the treatment of depreciation and amortization of inventories and intangible capital. Then, the authors compare the revenue produced under that system to the revenues produced under a cash flow tax—that is, under the same rules but with investments and inventory changes expensed. The resulting difference is an estimate of how much of the corporate tax base is due to taxation of safe returns.

7 Slemrod (2007), Gravelle (2015), and Power and Frerick (2016) note that the approach used in the studies requires steady state assumptions, and in particular is only strictly valid if the corporate capital stock is growing at the rate of interest. If capital grows more slowly (rapidly), the method will understate (overstate) the portion of the tax raised by the normal return, as investment is expensed under an R-base and thus deductions are timed earlier than under an income tax. Power and Frerick (2016) undertake a variety of sensitivity tests to address the steady state assumptions and find that the results are robust.

8 For evidence and discussion on rents in the economy as a whole, see Autor et al. 2020, Barkai 2020, Berry et al. 2019, De Loecker et al. 2020, Edmond et al. 2023, Gravelle 2023, Grullon et al. 2019, Karabarbounis and Neiman 2013, and Stansbury and Summers 2020. For critical analysis of these studies, see Basu 2019, Edmond et al. 2023, Syverson 2019, and Traina 2018. Beer et al. (2020) show that excess returns are substantial, even under a stringent definition of such returns, in a sample of 10,000 multinational companies. Regarding intangibles, see Auerbach 2018, Corrado et al. 2022, Crouzet et al. 2022, Crouzet and Eberly 2018, de Ridder 2024, Gravelle 2021, Orhangazi 2019. Power and Frerick (2016) find that rising intangibles helps explain their finding that excess returns have increased over time. Clausing (2023) reviews the evidence on rising market

power and markups and discusses the implications of these trends for the taxation of capital.

9 Notably, like this paper, almost all the studies use "rent" to mean the same thing as "excess returns." See, among others, Slichter 1950, Lester 1952, Dickens and Katz 1987, Krueger and Summers 1988, Katz and Summers 1989, and Manning 2011. Budd et al. (2005) find that profits are even shared across borders by multinational firms. Card et al. (2018) review 22 studies of rent sharing and find a "surprisingly consistent" range of wage elasticities with respect to value-added per worker of 0.05-0.15 after adjusting for worker quality. (Note that these estimates do not imply rates of rent-sharing on the order of 0.05-0.15, as rents make up a much smaller share of total value added than they do of the corporate tax base). The authors suggest that firm-specific wage premiums explain roughly 20% of overall wage variation, and thus that rent sharing plays a statistically and economically significant role in the determination of wages. The literature on how unions reduce firm value (Clark 1984, Lee and Mas 2009) and how deregulation reduced wages in the airline and trucking industries (Card 1996, Rose 1987) are consistent with rent sharing. Sociologists have also examined these issues. See Kalleberg et al. (1981) and the citations therein.

10 Fox and Pyle (2022) find smaller effects of the TCJA on employee compensation but focus on a group of less than 2,000 small and medium size financial intermediaries, which as the authors note likely face different incidence and distributional consequences from tax reform than the broader market.

11 As Risch notes, the median firm in his sample has 7 employees and a single owner, while the mean firm has 20 employees and 1.8 owners. Dobridge et al. (2021) show that more than half of top percentile workers at small firms are themselves owners. In large C corporations, the focus of the other studies, owners and high-income managers are distinct groups, even if top executives often hold shares.

12 Related evidence (also on the distribution of quasi-rents) comes from Howell and Brown (2020), who examine the impact on wages in small firms who receive an R&D grant (with no restrictions on how the funds are used). They find that the distribution of within-firm wages becomes more unequal after grant receipt. The difference is driven by changes in the wages of longer tenured workers, which rise, relative to new hires, whose wages do not rise.

13 Executive self-dealing—acting in the interests of the executive, by extracting rents, rather than in the interests of the corporation or the shareholders—may generate further rents. See for example Berle and Means 1934, Bebchuk et al. 2002, and Chetty and Saez 2005.

14 Stansbury and Summers (2020) use CPS data to show that college-educated workers obtain a significantly greater share of rents than non-college-educated workers and that rent sharing for workers with income below about $150,000 per year has fallen precipitously over the past four decades. Thorpe (2022) complements these results by showing—using data on executive compensation and firm profitability from Execucomp and WRDS firm-level financial ratios—that rent sharing with top executives has increased since the 1990s, suggesting that these rents have been at least in part redistributed from rank-and-file workers to executives.

15 Fuest et al. (2013) report that half of workers in West Germany and almost two-thirds in East Germany were covered by a collective bargaining agreement in 2009. In the U.S., unionization rates are quite low—6% in 2020 (Stansbury and Summers 2020). Issues of union coverage and sectoral bargaining in Germany are reviewed thoroughly in Jäger, Noy, and Schoefer (2022), while Sandrock (2015) provides an overview of how workers are legally integrated into corporate decision-making in Germany through the Codetermination Act of 1976. As Gale and Thorpe (2022) show (extending the model by Arulampalam et al. 2012), workers with more market power would be expected to be exposed to a greater share of both increases and reductions in corporate rents. In addition, 13% of the Fuest et al. (2018) sample have top-coded wage data, which may cause the analysis to miss important effects among high earners. In Dobridge et al. (2021), for example, the top 10% of workers alone received 60% of all rents, and 75% of the rents shared with labor.

16 Numerous additional empirical studies of corporate tax incidence have been undertaken but have (a) not distinguished rents from normal returns and (b) not focused on heterogeneous affect across workers. An

early generation of empirical studies aims to estimate the relationship between corporate taxes and wages by focusing on cross-country comparisons (Hassett and Mathur 2006; Felix 2007; Desai et al. 2007). These papers generally generated very large negative impacts of corporate taxes on wages, but in some cases the results seemed an order of magnitude larger than could be plausible, often suggesting labor burdens of more than 200% of the tax. Liu and Altshuler (2013) use an imperfectly competitive framework with industry concentration included as an explanatory variable to estimate that labor bears between 42% and 80% of the corporate income tax. Suárez Serrato and Zidar (2016) extend the literature in both theoretical and empirical directions. They estimate the incidence of state-level corporate taxes and apportionment rules in a spatial equilibrium model with location specific-rents that accrue to business owners. In that framework, state corporate taxes impose significant burdens (about 40% of the overall burden) on firm owners. Gravelle (2021) provides a recent survey and extensive criticism of the literature. Clausing (2012, 2013) provides further critiques. Several studies estimate the "direct" effects of corporate taxes on wages (holding output, investment and interest rates constant), but do not distinguish between types of earners. Using data from 9 countries, Arulampalam et al (2012) estimate that, holding constant value added per worker, a $1 increase in corporate income tax reduces long run real wages by $0.49. Dwenger et al. (2019), using German data, find similar results holding employment constant; when employment changes are considered, the wage bill only falls by 19-28% of the tax increase. See also Azémar and Hubbard 2015 and Felix and Hines 2022.

17 For a complete model summary, see https://www.taxpolicycenter.org/resources/brief-description-tax-model. For description and justification of the use of Expanded Cash Income as the income classifier, see Rosenberg (2013). For a description and justification of the corporate tax incidence assumptions, see Nunns 2012. For a description of the aging of the data and how it is matched to more than 100 aggregate dimensions of the tax code, see Khitatrakun, Mermin, and Francis 2016.

18 For a complete model summary, see https://www.taxpolicycenter.org/resources/brief-description-tax-model. For description and justification of the use of Expanded Cash Income as the income classifier, see Rosenberg (2013). For a description and justification of the corporate tax incidence assumptions, see Nunns 2012. For a description of the aging of the data and how it is matched to more than 100 aggregate dimensions of the tax code, see Khitatrakun, Mermin, and Francis 2016.

19 The 2006 PUF was the most representative available PUF when TPC revised the tax model's core data file in 2015. The PUF for 2007 was judged to be from too much of a "boom" year and the one from 2008 was judged to be from a recession year.

20 Aging of data is common practice (see Avery et al. 2015) and is present in the CBO, JCT, and Treasury models as well as the TPC model. To assuage any potential concerns with the aging and matching process used for the data, in addition to the extensive matching in Khitatrakun, Mermin, and Gordon (2016), we have re-estimated the model with 2011 data as a sensitivity analysis. Those results, available on request, are very similar to the main results using 2019 data, which are reported in the next section.

21 Like the other simulations and empirical studies noted in the paragraph, the TPC model does not distinguish between profits from corporations' domestic versus foreign operations. Multinational corporations clearly account for a large share of corporate activity, but only a small share of corporate tax revenues appears to derive from foreign operations. For example, the corporate tax is projected to raise $479 billion in 2024 (CBO 2023), including about $27 billion from the levy imposed in the TCJA on previously accrued but not repatriated foreign earnings (JCT, 2017). Thus, revenues from corporate activity in 2024 are projected to be about $450 billion. Toder (2023) estimates that in 2024, GILTI will raise $15 billion and subpart F will raise about $8 billion, for a total of $23 billion (about 5% of total corporate revenues, not accounting for the repatriation tax). These calculations may produce over-estimates of the share of revenues due to foreign source income. For example, JCT (2017), in their revenue estimates for TCJA, actually predict a smaller revenue impact ($9 billion) for GILTI in 2024. Thus, only about 5% of corporate revenues come from taxing foreign profits. Even if those revenues were ignored—or distributed to foreigners or someone else outside the TPC calculator—our

results would not change significantly. Also, there is evidence (Budd et al. 2005) that rent sharing can occur across borders by multinational firms. Thus, on the one hand instead of allocating rents between shareholders and domestic workers, U.S. MNCs could allocate rents between shareholders and domestic workers and foreign workers. On the other hand, foreign-based firms could allocate rents from foreign profits to domestic workers. The net bias is unclear but likely to be small. Similarly small estimates come from the Penn-Wharton Budget Model, which estimates that the international provisions of TCJA raised $15 billion in 2018 and $17 billion in 2019, before plummeting in 2020 (Penn-Wharton Budget Model 2023).

22 By way of comparison, the Congressional Budget Office (2018) and the Joint Committee on Taxation (2013) allocate 75% of the burden of corporate income taxes to all capital owners and 25% to labor without explicitly distinguishing between normal and excess returns.

23 The model allows for some behavioral responses as well and can measure effective marginal tax rates, but we do not employ either capability in this paper. Because we examine changes in incidence assumptions rather than changes in policy, there are no behavioral or revenue effects in our analysis.

24 The Kakwani (1977) index is defined as twice the area between the concentration curve of the tax, which measures income groups' share of total taxes, and the Lorenz curve of pre-tax income, which measures income groups' share of pre-tax income, integrated over the proportion of tax returns. It is used to analyze the effects of taxation on the income distribution and the effects of income distribution on taxes. The concentration coefficient for tax is calculated similarly to a Gini coefficient for taxes paid but ranks tax units by pre-tax income instead of taxes paid. The index ranges between -1 and 1 and is zero for proportional (to income) taxes, negative for regressive taxes, and positive for progressive taxes. For further discussion, see Formby et al. (1981) and Lambert (2021). The Suits (1977) index is similar: like the Kakwani index, it ranges from -1 to 1, is zero for taxes proportional to income, and is negative (positive) for regressive (progressive) taxes. The main difference between the two measures is that the Suits index integrates the area between the concentration curve and pre-tax income curve with respect to total income, rather than total tax returns. For a comparison of the indices and further discussion of this difference, see Formby et al. (1981). Standard errors for both indices are calculated using a standard bootstrap technique (Efron 1986) with 10,000 replicates, as applied to the Suits index in Anderson et al. (2003) and the Kakwani index in Brzezinski et al. (2022).

25 The empirical literature that documents rent sharing (for example, Ohrn 2022; Dobridge et al. 2022; Kennedy et al. 2024) finds effects that are firm-specific and short-run in nature. In contrast, our distributional analysis focuses on the long-term. In the long-term, it makes sense that the wage gains from rent sharing are diffused throughout the economy due to competition. If wages rise for workers at firms or sectors making excess returns, one would naturally expect other workers to migrate there, reducing labor supply in other sectors and raising wages in other sectors via general equilibrium effects. Indeed, it would be odd if consistently "excess" wages in one sector did not cause labor market adjustments—whether for rank-and-file workers or for executives and managers. Such adjustments are a key equilibrating mechanism in Harberger (1962) and every general equilibrium analysis of the corporate tax since then.

26 To construct the simulation for Fuest et al. (2018), we use results from their Table 4. The authors estimate that corporate tax changes have a statistically insignificant effect with a near-zero point estimate for high-skill workers, compared to statistically significant estimates of wage elasticities with respect to the net-of-tax rate of 0.357 for medium-skill workers and 0.377 for low-skill workers. We assume those two elasticities are equal and define high-skilled labor as individuals in the top third of the labor compensation distribution, medium-skilled workers as the middle third, and low-skilled workers as the bottom third. To implement Fuest et al.'s results in the TPC model, therefore, we distribute the tax on rents proportional to labor compensation among individuals in the bottom two thirds of the labor compensation distribution. In fact, Fuest et al. (2018) report that only 15% of workers fall into the high-skill category, and some low- or medium-skill workers may still be highly compensated, so our results provide a lower bound on (and may overstate) the regressivity implied by the Fuest et al. (2018) analysis.

27 For each of the alternative scenarios, the observed base case distribution of wages (and other income) is assumed to stay the same. That assumption is typical in simulation studies that look at changes in tax policies, but it raises an issue in this study—which looks at changes in incidence. To see this, let each individual's wages be the sum of a productivity component and a rent sharing component. As the amount of rent sharing with workers changes across the various scenarios in the paper, the rent sharing component of wages in the base case should also presumably change. We implicitly allow that change to occur and we implicitly adjust the productivity component so that we keep wages unchanged in the base case in each scenario. We follow this approach because we want to keep the base case numerically constant across scenarios (and consistent with real-world data), so that we can meaningfully compare the base case distribution of taxes to the distribution of taxes in each of the scenarios. An alternative approach would be to keep the productivity component constant across the various scenarios and thus change the wage reported in the base case in each scenario. This could plausibly be the right approach in certain contexts. In our analysis, however, it would make it more difficult to interpret results because wages in the base case would no longer correspond to real world values.

28 Varying the proportion of overall rents that are shared with workers can have different effects on both progressivity measures depending on which workers receive the rents. These parameters interact in intuitive ways. As shown in Appendix Tables A1 and A2, as the amount of rents going to workers rises, the tax becomes more progressive if rents are allocated progressively across workers relative to supernormal returns (as in Dobridge et al. 2021) and less progressive if rents are allocated regressively across workers (as in Fuest et al. 2018).

29 Note that while the Suits index does not increase markedly relative to the base case (which assumes 60% excess returns and no rent-sharing), it increases substantially relative to the scenario with 0% excess returns.

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TABLE 1

Safe Returns as a Share of Corporate Tax Base

Study	Time Period	Safe Returns as a Share of Corporate Tax Base (%)
Power and Frerick (2016)	1992 - 2013	40 in 1992, < 20 in 2013
Cronin et al. (2013)	1997 - 2007	37
Toder and Rueben (2007)	2004	32
Slemrod (2007)	2002-3	15
Gordon et al. (2004)	1995	16
Hubbard and Gentry (1997)	1980s	40
Fox (2020)	1995 - 2013	4-21

NOTES: The table lists studies and their main conclusions regarding the share of the corporate tax base that consists of the safe return. The safe return is one component of the return to capital, the other two being the return to risk and excess returns (or rents).

TABLE 2

Allocation of Rents Among Workers: Estimates Using Plausibly Exogenous Variation in Rents

Study	Event	Data	Time Period	Share of Rents Obtained by Workers	Approximate Distribution of Rents Among Workers
Dobridge et al. (2021)	Changes in Domestic Production Activities Deduction (DPAD)	Universe of U.S. W-2s linked with corporate tax returns	1995 - 2015	80%	56% to the top 1 percent of within-firm earnings distribution and owner; 24% to the 90-99th percentile; 12% to the 50-90th percentile; 7% to the bottom 50%.
Kennedy et al. (2024)	TCJA	Universe of employer-employee matched IRS tax records	2013-2019	N.A.	No effect among the bottom 90% of earners. 90th (99th) percentile earnings rise by 1.0% (4.5%).

TABLE 2 CONT.

Study	Event	Data	Time Period	Share of Rents Obtained by Workers	Approximate Distribution of Rents Among Workers
Ohrn (2022)	Changes in bonus depreciation and DPAD	Execucomp data linked to firm-level financial statement data and governance variables.	2013 - 2019	19-25% of rents with just top 5 executives	N.A.
Kline et al. (2019)	Approvals of economically valuable patents	USPTO universe of patent applications since 2000 linked with Treasury business and individual tax filings	2000 - 2013	29%	Almost entire change concentrated in top quartile of within-firm earnings distribution. Effects indistinguishable from zero in quartiles 1-3.
Carbonnier et al. (2022)	Corporate income tax credit in France	Universe of French social security declarations linked with corporate tax returns and public finance administration data on tax credit claims	2009 - 2015	40 - 60%	All the effects accrue to high-skill workers (above the median).
Fuest et al. (2018)	Municipal corporate income tax changes in Germany	Administrative linked employer-employee data from German social security records and administrative panel data on the universe of German municipalities	1993-2012	50%	Effects accrue almost entirely to low- and medium-skill workers (no college degree). No significant impact on workers with college degree or higher. No impact on low-skill workers.

NOTES: The table lists recent studies that provide quasi-experimental evidence on the extent to which firms share rents with workers and how the shared rents are allocated among workers.

TABLE 3

Key Definitions in the Tax Policy Center Microsimulation Model

Term	Definition
Expanded Cash Income	Adjusted gross income plus above-the-line adjustments (for example, IRA contributions, student loan interest, and self-employed health insurance deductions), employer-paid fringe benefits, employer and employee contributions to tax-deferred retirement saving plans, tax-exempt interest, non-taxable social security benefits, non-taxable pension and annuity income, accruals within defined benefit pension plans, inside buildup within defined contribution plans, cash and cash-like transfer programs (for example, SNAP).
Normal returns	• 40 percent of dividends (taxable and inside retirement accounts) • 40 percent of capital gains (taxable and inside retirement accounts) • 40 percent of passthrough business income not subject to self-employment taxes • 100 percent of capital portion of self-employment income (assume 20 percent of self-employment income is capital income) • 100 percent of capital portion of defined benefit (DB) pension accrual (assume 40 percent of DB accrual is capital income) • 100 percent of interest income (taxable and exempt) • 100 percent of supplemental gains
Excess returns to shareholders	• 60 percent of dividends (taxable and inside retirement accounts) • 60 percent of capital gains on stocks (taxable and inside retirement accounts)
Labor income	Wages, employee and employer contributions to defined contribution pensions, the contribution portion of DB accrual (accrual is divided into contribution and return portions), employer Social Security and Medicare taxes, employer health care contributions, 80% of self-employment income (the assumed labor portion of the SECA tax base), and distributions from pensions and defined contribution plans (excluding rollovers).

NOTES: The table summarizes the definitions of key variables in the Urban-Brookings Tax Policy Center microsimulation model.

TABLE 4

Distribution of Different Types of Income and Shared Rents

ECI Percentile	ECI	Supernormal returns	Rents allocated according to:				
			All Labor Income	Carbonnier et al. (2022) Top 50%	Kline et al. (2019) Top 25%	Dobridge et al. (2021)	Fuest et al. (2018)
Lowest quintile	4.0	1.1	3.1	0.0	0.0	0.7	11.7
Second quintile	8.6	3.5	8.4	4.0	0.0	2.0	31.5
Middle quintile	14.5	7.4	15.7	15.5	4.3	3.9	29.7
Fourth quintile	20.7	13.0	23.5	25.0	25.3	14.2	17.4
Top quintile	52.1	73.9	48.9	55.2	70.1	78.8	9.2
Addendum							
80 – 90th	14.2	10.8	16.2	18.0	21.2	11.9	5.8
90 – 95th	10.0	8.9	11.2	12.6	16.1	9.1	2.0
95 – 99th	12.8	14.5	12.9	14.7	19.4	24.7	1.2
99 - 99.9th	8.1	13.7	6.2	7.1	9.5	22.7	0.2
Top 0.1 Percent	6.9	25.9	2.5	2.9	3.9	10.3	0.0

NOTES: The table shows the distribution of Expanded Cash Income (ECI), estimated corporate tax burdens, and various forms of income, all by ECI class, under the TPC base case for calendar year 2019. ECI, supernormal returns, and labor income are defined in Table 3. The top 50% (25%) of labor income is the group that Carbonnier et al., 2022, (Kline et al. 2019) identify as receiving the rents that are allocated to workers. Fuest et al. (2018) identify rents as accruing only to low- and medium-skill labor; we attribute Dobridge et al. (2021) obtain the following distribution of rents among workers: 51.0 percent go to the top 1 percent of workers in a firm's earning distribution, 16.2% to the 95th-99th percentile, 7.9 to the 90th-95th percentiles, 6.9% to the 75th-90th percentiles, 5.2% to the 50th-75th percentiles, and 6.7% to the bottom 50 percentiles. The data include both filing and non-filing tax units but not those who are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective ECI class but included in the totals. Each income percentile contains an equal number of people. The dollar breaks (in 2022 dollars) are: $29,300 (20%), $57,400 (40%), $101,100 (60%), $181,600 (80%), $267,600 (90%),$380,900 (95%), $912,900 (99%), and $3,748,000 (99.9%).

TABLE 5

Specification of Base Case, Central Simulation, and Range of Sensitivity Analysis

	TPC Base Case	Central Simulation	Sensitivity Analysis
Proportion of the corporate tax base that consists of excess returns	60	60	0 - 100
Proportion of rents going to workers	0	50	0 - 80
How rents are distributed among workers	N/A	Top quartile	Ranging from the distribution in Fuest et al. (2018) to the distribution in Dobridge et al. (2021)
Share of overall burden borne by:			
Labor	20	50	0 - 68
All capital owners	20	20	0 - 50
Shareholders	60	30	0 - 60

NOTES: The table reports key parameters for the TPC base case and the central simulation and reports the range of parameter values used in the sensitivity analysis.

TABLE 6

Incidence and Distribution of Corporate Tax Burdens: Central Simulation and Sensitivity Analysis for the Allocation of Rents Among Workers

ECI Percentile	(1) TPC Base Case	Rents Allocated According to:				
		(2) Proportional to All Labor Income	(3) Carbonnier et al. (2022)	(4) Central Simulation	(5) Dobridge et al. (2021)	(6) Fuest et al. (2018)
Corporate Tax Burden						
Lowest quintile	1.6	2.2	1.3	**1.3**	1.5	4.8
Second quintile	4.5	6.0	4.7	**3.5**	4.1	12.8
Middle quintile	9.1	11.6	11.5	**8.1**	8.0	15.7
Fourth quintile	15.0	18.2	18.6	**18.7**	15.4	16.3
Top quintile	68.7	61.3	63.1	**67.6**	70.2	49.5
Addendum						
80 – 90th	11.9	13.5	14.1	**15.0**	12.2	10.5
90 – 95th	9.4	10.1	10.5	**11.6**	9.5	7.4
95 – 99th	14.5	14.0	14.5	**15.9**	17.6	10.5
99 – 99.9th	12.7	10.4	10.8	**11.4**	15.4	8.6
Top 0.1 Percent	20.3	13.3	13.4	**13.7**	15.6	12.6
60 – 99th	50.8	55.8	57.7	**61.2**	54.7	44.6
Kakwani Index	0.161	0.096***	0.126***	**0.165****	0.175***	-0.05***
Suits Index	0.276	0.150***	0.178***	**0.230*****	0.281*	-0.01***
Incidence						
Labor	20	50	50	**50**	50	50
All capital	20	20	20	**20**	20	20
Shareholders	60	30	30	**30**	30	30

NOTES: The table reports the distribution of corporate tax burdens under the TPC base case, the central simulation (in bold), and sensitivity analyses that examine the effects of different ways to allocate rents across workers for calendar year 2019. ECI and labor income are defined in Table 3. All simulations assume that 60% of the corporate tax base is composed of rents and that 50% of rents are shared; for more details on the interaction between these assumptions, see the Appendix.

TABLE 6 NOTES CONTINUED: Allocating rents to all workers (in proportion to labor income) is intended to represent studies that do not distinguish among types of labor. The column for Carbonnier et al. (2022) allocates rents to workers in the top 50% of the labor income distribution (in proportion to their labor income), based on the authors' findings. Dobridge et al. (2021) obtain the following distribution of rents among workers: 51.0 percent go to the top 1 percent of workers in a firm's earning distribution, 16.2% to the 95th-99th percentile, 7.9 to the 90th-95th percentiles, 6.9% to the 75th-90th percentiles, 5.2% to the 50th-75th percentiles, and 6.7% to the bottom 50 percentiles. The column for Fuest et al. (2018) assumes all rents are shared with the bottom 2/3rds of the labor income distribution. The data include both filing and non-filing tax units but not those who are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective ECI class but included in the totals. Each income percentile contains an equal number of people. The dollar breaks (in 2022 dollars) are: $29,300 (20%), $57,400 (40%), $101,100 (60%), $181,600 (80%), $267,600 (90%),$380,900 (95%),$912,900 (99%), and $3,748,000 (99.9%). For the Kakwani index, *p<0.10, **p<.05, ***p<.001, with all comparisons relative to the TPC Base Case.

TABLE 7

Distribution and Incidence of Corporate Tax Burdens: Central Simulation and Sensitivity Analysis with Respect to the Proportion of Rents that Firms Share with Workers, 2019

ECI Percentile	(1) 0% Shared (Base Case)	(2) 30% Shared	(3) 50% Shared (Central Simulation)	(4) 80% Shared	(5) 100% Shared
Corporate Tax Burden					
Lowest quintile	1.6	1.4	**1.3**	1.1	0.9
Second quintile	4.5	3.9	**3.5**	2.8	2.4
Middle quintile	9.1	8.5	**8.1**	7.6	7.2
Fourth quintile	15.0	17.2	**18.7**	20.9	22.4
Top quintile	68.7	68.1	**67.6**	66.9	66.5
Addendum					
80 – 90th	11.9	13.8	**15.0**	16.9	18.1
90 – 95th	9.4	10.7	**11.6**	12.9	13.7
95 – 99th	14.5	15.4	**15.9**	16.8	17.4
99 – 99.9th	12.7	11.9	**11.4**	10.6	10.1
Top 0.1 Percent	20.3	16.3	**13.7**	9.7	7.1
60 – 99th	50.8	57.1	**61.2**	67.5	71.7
Kakwani Index	0.161	0.164**	**0.165****	0.167**	0.169***
Suits Index	0.276	0.249***	**0.230*****	0.203***	0.185***

TABLE 7 CONT.

ECI Percentile	(1) 0% Shared (Base Case)	(2) 30% Shared	(3) 50% Shared (Central Simulation)	(4) 80% Shared	(5) 100% Shared
Incidence					
Labor	20	38	**50**	68	80
All capital	20	20	**20**	20	20
Shareholders	60	42	**30**	12	0

NOTES: The table reports the distribution of corporate tax burdens under the TPC base case, the central simulation (in bold), and sensitivity analyses that examine the effects of allowing the amount of rents that are shared to be 30% (as in Kline et al. (2019), 80% (as in Dobridge et al. 2021)), or 100% instead of 0 (the base case) or 50% (the central simulation). All simulations assume 60% of corporate profits are rents and that rents are shared according to the central simulation estimates; for more details on the interaction between these changes, see the Appendix. The table reports data for calendar year 2019. The data include both filing and non-filing tax units but not those who are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective ECI class but included in the totals. Each income percentile contains an equal number of people. The dollar breaks (in 2022 dollars) are: $29,300 (20%), $57,400 (40%), $101,100 (60%), $181,600 (80%), $267,600 (90%), $380,900 (95%), $912,900 (99%), and $3,748,000 (99.9%). For the Kakwani index, *p<0.10, **p<.05, ***p<.001, with all comparisons relative to the TPC base case.

TABLE 8

Distribution and Incidence of Corporate Tax Burdens: Central Simulation and Sensitivity Analysis with Respect to Share of the Corporate Tax Base That Consists of Excess Returns, 2019

ECI Percentile	(1) TPC Base Case (60% Excess Returns, No Rent Sharing)	(2) 0% Excess Returns	(3) 40% Excess Returns	(4) 60% Excess Returns (Central Simulation)	(5) 100% Excess Returns
Corporate Tax Burden					
Lowest quintile	1.6	2.3	1.6	**1.3**	0.6
Second quintile	4.5	6.0	4.3	**3.5**	1.8
Middle quintile	9.1	11.5	9.3	**8.1**	5.9
Fourth quintile	15.0	18.1	18.5	**18.7**	19.2
Top quintile	68.7	61.2	65.4	**67.6**	72.0

TABLE 8 CONT.

ECI Percentile	(1) TPC Base Case (60% Excess Returns, No Rent Sharing)	(2) 0% Excess Returns	(3) 40% Excess Returns	(4) 60% Excess Returns (Central Simulation)	(5) 100% Excess Returns
Addendum					
80 – 90th	11.9	13.6	14.5	**15.0**	16.0
90 – 95th	9.4	10.1	11.1	**11.6**	12.5
95 – 99th	14.5	14.2	15.4	**15.9**	16.9
99 – 99.9th	12.7	10.8	11.2	**11.4**	11.6
Top 0.1 Percent	20.3	12.6	13.2	**13.7**	14.9
60 – 99th	50.8	55.9	59.5	**61.2**	64.7
Kakwani Index	0.161	0.095***	0.141***	**0.165****	0.213***
Suits Index	0.276	0.146***	0.202***	**0.230*****	0.289**
Incidence					
Labor	20	50	50	**50**	50
All capital	20	50	30	**20**	0
Shareholders	60	0	20	**30**	50

NOTES: The table reports the distribution of corporate tax burdens under the TPC base case, the central simulation (in bold), and sensitivity analyses that examine the effects of allowing the amount of rents that are shared to be 30% (as in Kline et al. (2019), 80% (as in Dobridge et al. 2021)), or 100% instead of 0 (the base case) or 50% (the central simulation). All simulations assume 60% of corporate profits are rents and that rents are shared according to the central simulation estimates; for more details on the interaction between these changes, see the Appendix. The table reports data for calendar year 2019. The data include both filing and non-filing tax units but not those who are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective ECI class but included in the totals. Each income percentile contains an equal number of people. The dollar breaks (in 2022 dollars) are: $29,300 (20%), $57,400 (40%), $101,100 (60%), $181,600 (80%), $267,600 (90%), $380,900 (95%), $912,900 (99%), and $3,748,000 (99.9%). For the Kakwani index, *p<0.10, **p<.05, ***p<.001, with all comparisons relative to the TPC base case.

FIGURE 1

C corporation Profits and Normal Returns Since 1982

Panel A: 3-Year Rolling Average Corporate Profits

Source: IRS Statistics of Income historical corporate tax information reports, available on request

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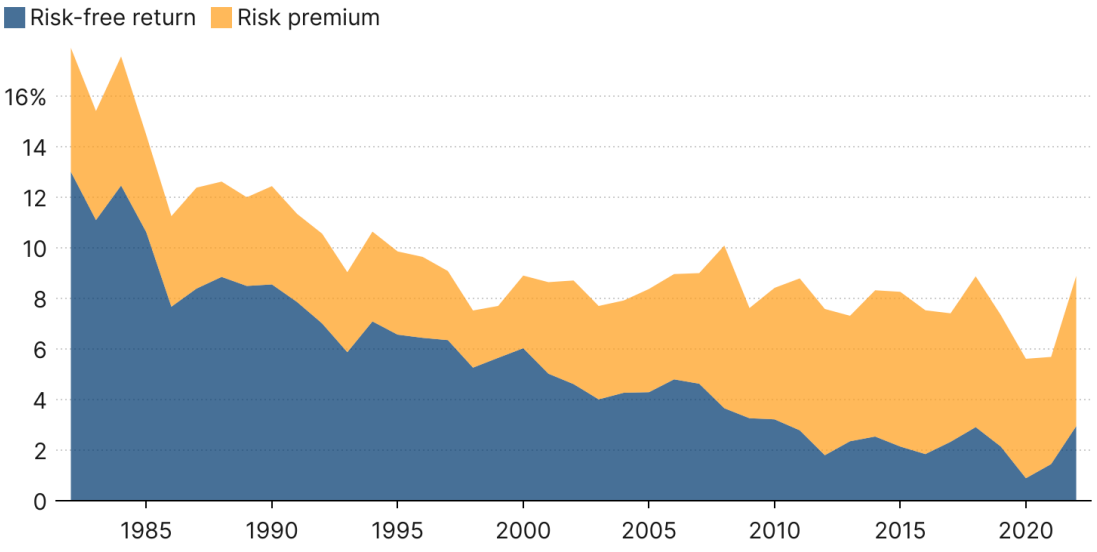
Note: Panel A reports a rolling average of aggregate C-corporation profits as a share of US GDP, on a pretax basis (blue line) and an after-tax basis (orange line). Data for 1994-95 were unavailable because of issues with the archival SOI data - values for those years in this figure are interpolated.

Panel B: Normal Return and Its Components



Note: Figure uses data on the 10-year Treasury rate (considered a proxy for the safe return on capital) from the St. Louis Federal Reserve (series DGS10) and estimates of historical risk premia from Damodaran (2024) to present an estimate of the normal return on capital and its components.

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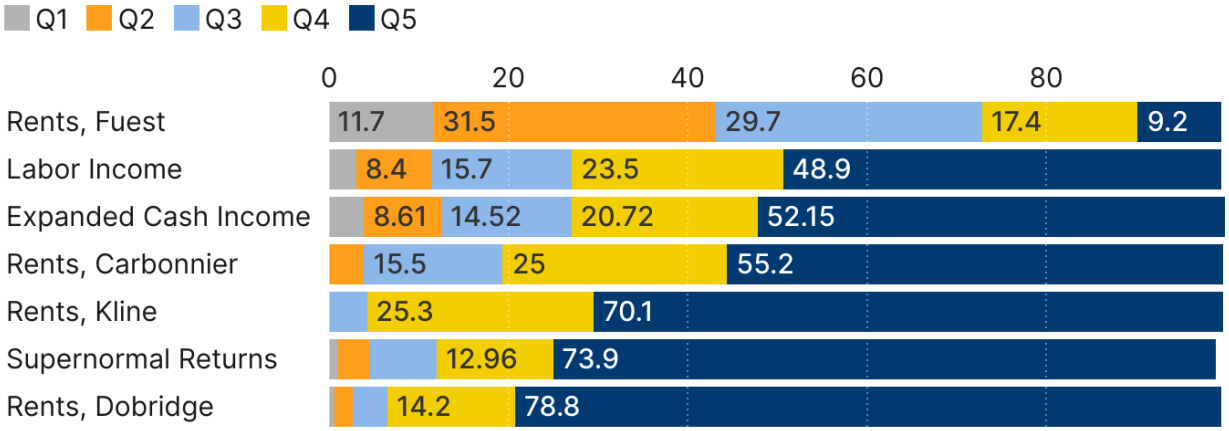
FIGURE 2

Distribution of Different Types of Income and Shared Rents



Note: The figure reports the distribution of income, returns, and rents under a range of rent-sharing specifications for calendar year 2019. The data include both filing and non-filing tax units but not those who are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective ECI classes, so numbers add to slightly less than 100 in each class. Each income percentile contains an equal number of people. The dollar breaks (in 2022 dollars) are: $29,300 (20%), $57,400 (40%), $101,100 (60%), $181,600 (80%), $267,600 (90%), $380,900 (95%), $912,900 (99%), and $3,748,000 (99.9%).

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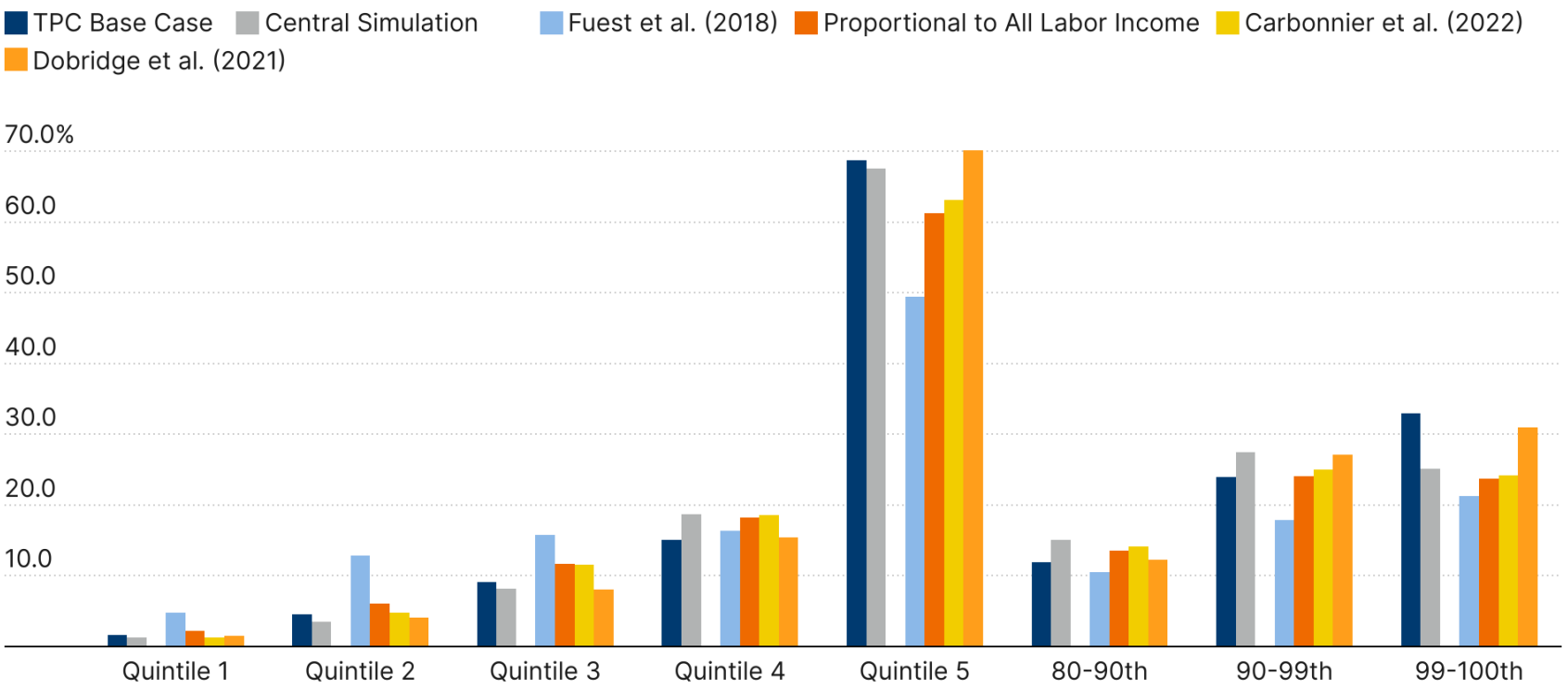
FIGURE 3

Distribution of Corporate Tax Burdens as a Share of CIT Burden

Base Case, Central Simulation, and Sensitivity Analysis with Respect to Allocation of Rents Among Workers



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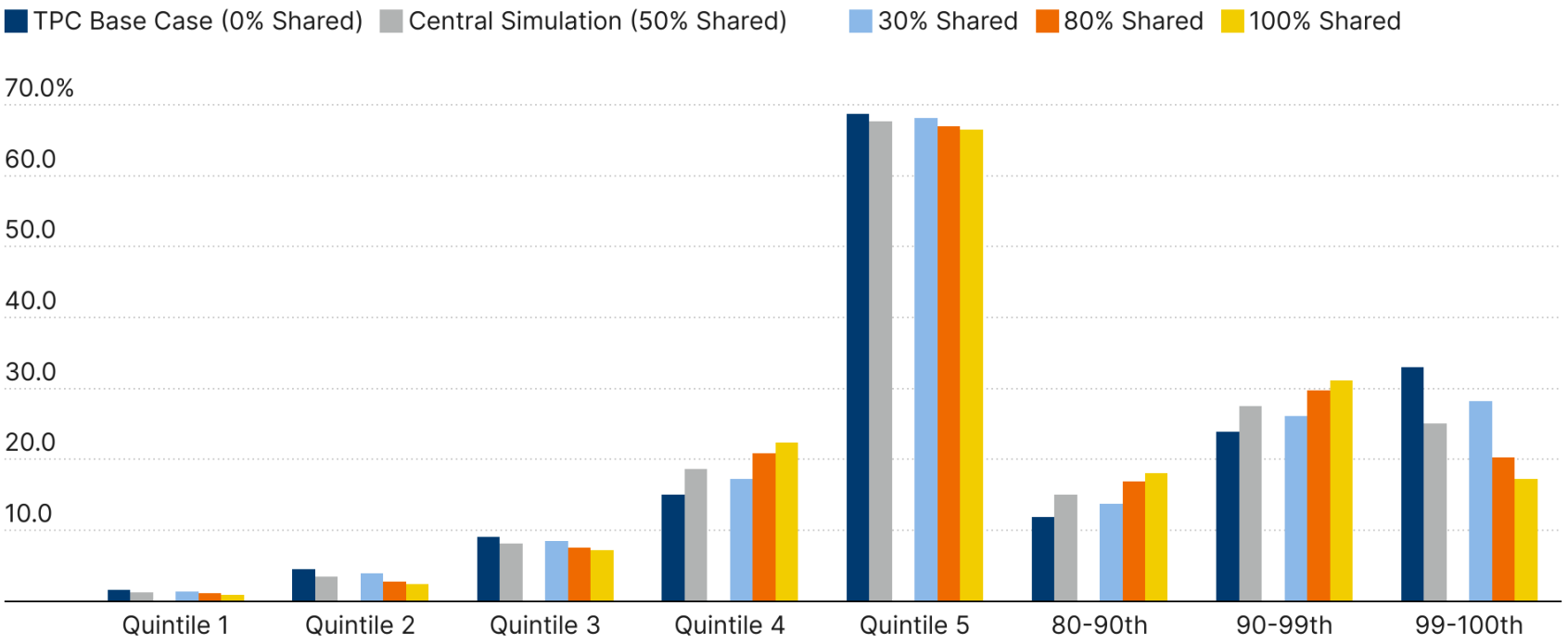
Note: The figure reports the distribution of corporate tax burdens under the TPC base case (shown in dark blue), the central simulation (shown in grey), and sensitivity analyses that examine the effects of different ways to allocate rents across workers. The data are taken from Table 6 and are for calendar year 2019. ECI and labor income are defined in Table 3. Allocating rents to all workers (in proportion to labor income) is intended to represent studies that do not distinguish among types of labor. Allocating rents to workers in the 50% (25%) of the labor income distribution (in proportion to their labor income) is based on the findings in Carbonnier et al. 2022 (Kline et al. 2019). Dobridge et al. (2021) obtain the following distribution of rents among workers: 51.0% go to the top 1% of workers in a firm's earning distribution, 16.2% to the 95th-99th percentile, 7.9% to the 90th-95th percentiles, 6.9% to the 75th-90th percentiles, 5.2% to the 50th-75th percentiles, and 6.7% to the bottom 50 percentiles. The remaining share goes to owners, which we allocate to the top 1% of the distribution. The data include both filing and non-filing tax units but not those who are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective ECI classes. Each income percentile contains an equal number of people. The dollar breaks (in 2022 dollars) are: $29,300 (20%), $57,400 (40%), $101,100 (60%), $181,600 (80%), $267,600 (90%), $380,900 (95%), $912,900 (99%), and $3,748,000 (99.9%).

FIGURE 4

Distribution of Corporate Tax Burdens as Share of CIT Burden

Base Case, Central Simulation, and Sensitivity Analysis with Respect to Proportion of Rents that Firms Share with Workers



Note: The figure reports the distribution of corporate tax burdens under the TPC base case (shown in dark blue), the central simulation (shown in grey), and sensitivity analyses that examine the effects of allowing the amount of rents that are shared to be 30% (as in Kline et al. (2019) or 80% (as in Dobridge et al. 2021)) instead of 0 (the base case) or 50% (the central simulation, based on Carbonnier et al. 2022) . The data are taken from Table 7 and are for calendar year 2019. The data include both filing and non-filing tax units but not those who are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective ECI classes. Each income percentile contains an equal number of people. The dollar breaks (in 2022 dollars) are: $29,300 (20%), $57,400 (40%), $101,100 (60%), $181,600 (80%), $267,600 (90%), $380,900 (95%), $912,900 (99%), and $3,748,000 (99.9%).

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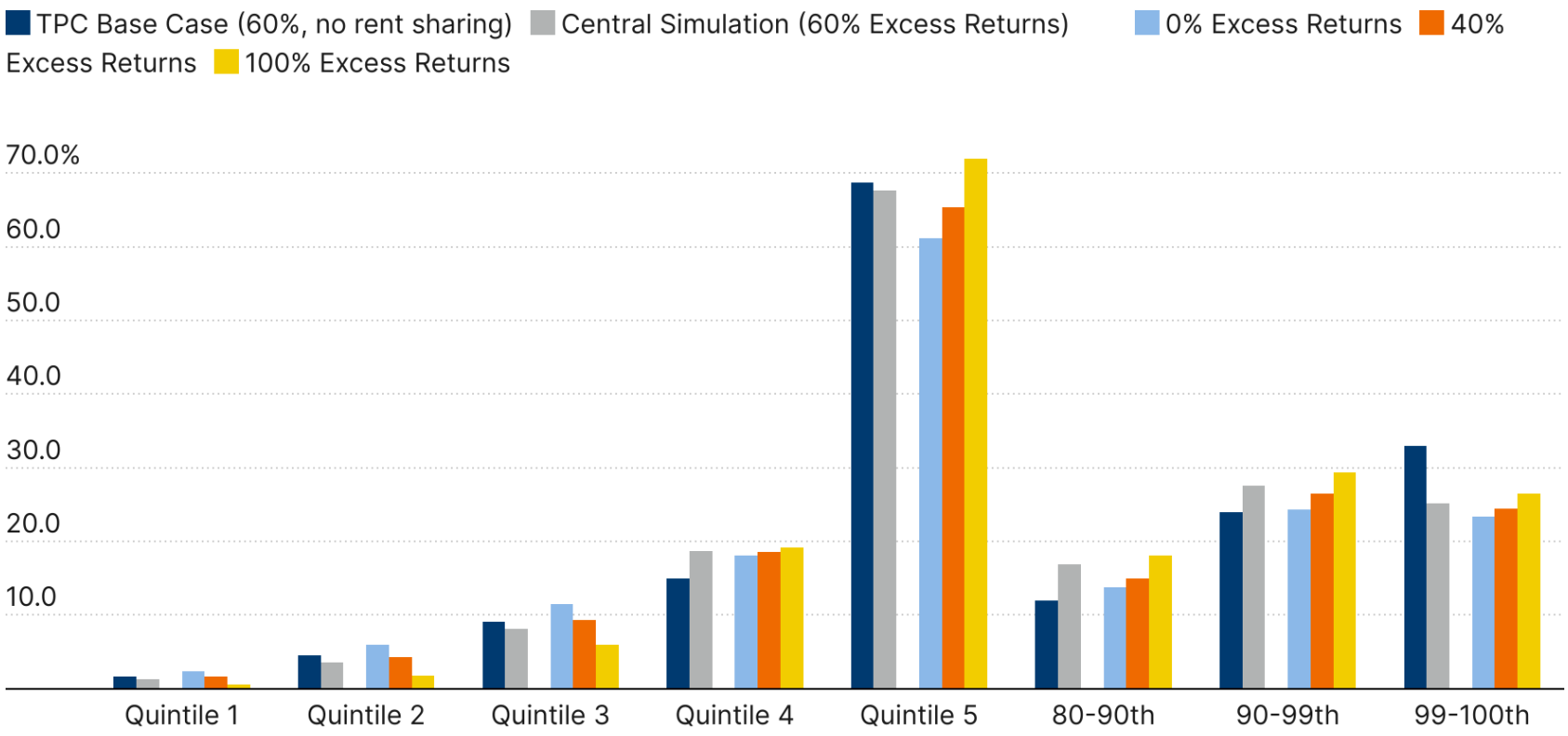
FIGURE 5

Distribution of Corporate Tax Burdens as a Share of CIT Burden

Base Case, Central Simulation. and Sensitivity Analysis with Respect to the Proportion of the Corporate Tax Base Consisting of Excess Returns



Note: The figure reports the distribution of corporate tax burdens under the TPC base case (shown in dark blue), the central simulation (shown in grey), and sensitivity analyses that examine the effects of varying the proportion of the corporate tax base that consists of excess returns, by ECI class for calendar 2019. The data are taken from Table 8. The data include both filing and non-filing tax units but not those who are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective ECI classes. Each income percentile contains an equal number of people. The dollar breaks (in 2022 dollars) are: $29,300 (20%), $57,400 (40%), $101,100 (60%), $181,600 (80%), $267,600 (90%), $380,900 (95%), $912,900 (99%), and $3,748,000 (99.9%).

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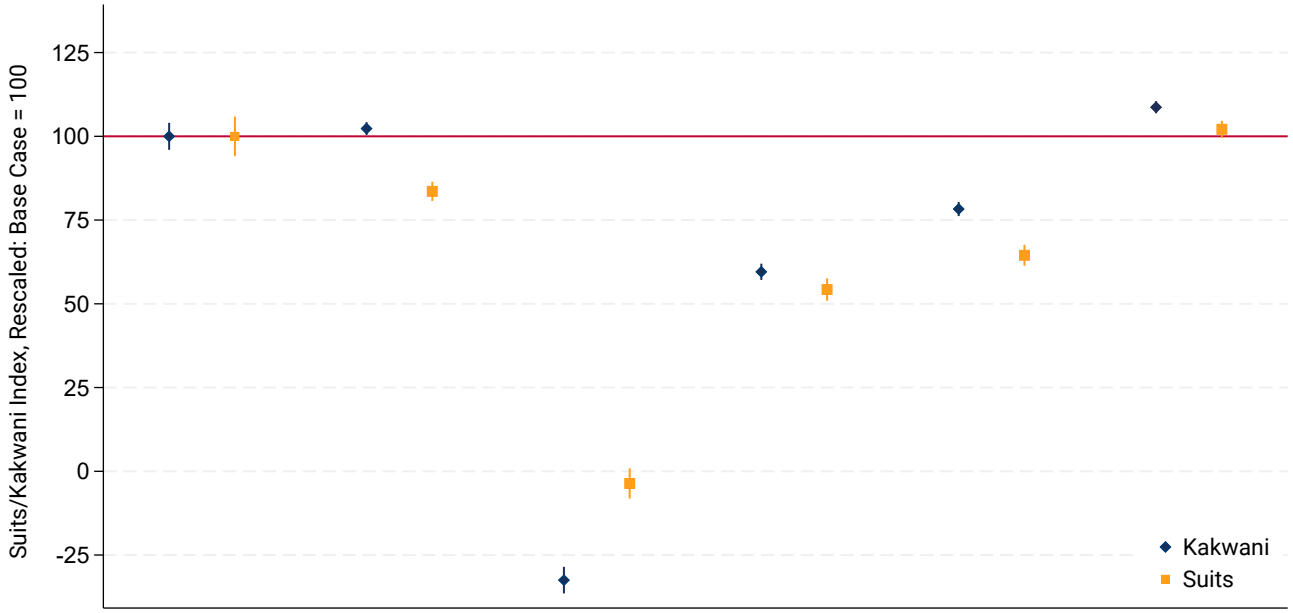
FIGURE 6

Kakwani and Suits Indices

Base Case, Central Simulation, and Varying Allocation of Rents



	Base Case	Central Sim.	Vary Allocation of Rents Among Workers			
Excess Returns in Tax Base, %	60	60	60	60	60	60
Rents Shared, %	0	50	50	50	50	50
How Rents are Allocated	N/A	Top 25%	Fuest	All	Top 50%	Dob.

NOTES: The figure shows the point estimate and the 95% confidence interval for the Kakwani and Suits indices for each of the specified scenarios, which correspond to the scenarios examined in earlier tables and figures. Confidence intervals for the Kakwani and Suits indices are calculated using bootstrapped standard errors, as described in the text. All = proportional to all labor income; Top 25% = proportional to labor income in the top 25%; Top 50% = proportional to labor income in the top 50%; Dob. = according to Dobridge et al. (2021), Fuest = according to Fuest et al. (2018).

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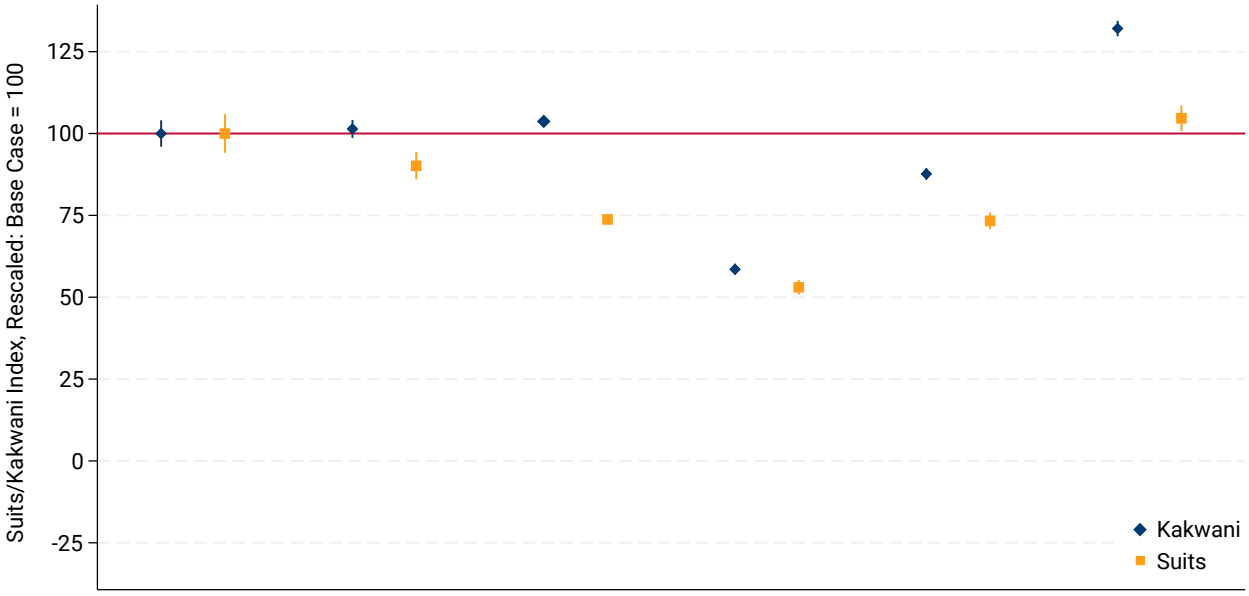
FIGURE 7

Kakwani and Suits Indices

Base Case, Central Simulation, and Varying Allocation of Rents



	Base Case	Vary Proportion of Rents Shared with Workers		Vary Proportion of Rents in Tax Base		
Excess Returns in Tax Base, %	60	60	60	0	40	100
Rents Shared, %	0	30	80	N/A	50	50
How Rents are Allocated	N/A	Top 25%	Top 25%	N/A	Top 25%	Top 25%

NOTES: The figure shows the point estimate and the 95% confidence interval for the Kakwani and Suits indices for each of the specified scenarios, which correspond to the scenarios examined in earlier tables and figures. Confidence intervals for the Kakwani and Suits indices are calculated using bootstrapped standard errors, as described in the text.

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TABLE A1

Incidence and Distribution of Corporate Tax Burdens: Sensitivity Analysis with Respect to Proportion of Excess Returns Shared with Labor, Dobridge et al. (2021) Simulation

ECI Percentile	0% Shared with Labor (Base Case)	30% Shared with Labor	50% Shared with Labor	80% Shared with Labor	100% Shared with Labor
Corporate Tax Burden					
Lowest quintile	1.6	1.4	1.5	1.4	1.4
Second quintile	4.2	3.9	4.1	3.8	3.6
Middle quintile	8.4	8.5	8.0	7.3	6.9
Fourth quintile	15.2	17.2	15.4	15.6	15.8
Top quintile	69.6	68.1	70.2	71.1	71.7
Addendum					
80 – 90th	12.1	13.8	12.2	12.4	12.6
90 – 95th	9.4	10.7	9.5	9.5	9.5
95 – 99th	16.3	15.4	17.6	19.4	20.6
99 – 99.9th	14.3	11.9	15.4	17.0	18.1
Top 0.1 Percent	17.5	16.3	15.6	12.8	10.9
Kakwani Index	0.161	0.170***	0.175***	0.184***	0.189***
Suits Index	0.276	0.279	0.281*	0.285***	0.288***
Incidence					
Labor	20	38	50	68	80
All capital	20	20	20	20	20
Shareholders	60	42	30	12	0

NOTES: The table reports the distribution of corporate tax burdens under the TPC base case, the central simulation (in bold), and sensitivity analyses that examine the effects of varying the proportion of rents which are shared with workers, by ECI class for calendar year 2019. All simulations in this case assume that 60% of the corporate income tax base is composed of rents, and shares rents (when applicable) according to the results from Dobridge et al. (2021), who obtain the following distribution of rents among workers: 51.0 percent go to the top 1 percent of workers in a firm's earning distribution, 16.2% to the 95th-99th percentile, 7.9 to the 90th-95th percentiles, 6.9% to the 75th-90th percentiles, 5.2% to the 50th-75th percentiles, and 6.7% to the bottom 50 percentiles. The data include both filing and non-filing tax units but not those who are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective ECI class but included in the totals. Each income percentile contains an equal number of people. The dollar breaks (in 2022 dollars) are: $29,300 (20%), $57,400 (40%), $101,100 (60%), $181,600 (80%), $267,600 (90%), $380,900 (95%), $912,900 (99%), and $3,748,000 (99.9%). For the Kakwani index, *p<0.10, **p<.05, ***p<.001, with all comparisons relative to the TPC Base Case.

TABLE A2

Incidence and Distribution of Corporate Tax Burdens: Sensitivity Analysis with Respect to Proportion of Excess Returns Shared with Labor, Fuest et al. (2018) Simulation

ECI Percentile	0% Shared with Labor (Base Case)	30% Shared with Labor	50% Shared with Labor	80% Shared with Labor	100% Shared with Labor
Corporate Tax Burden					
Lowest quintile	1.6	3.5	4.8	6.7	7.9
Second quintile	4.5	9.5	12.8	17.9	21.2
Middle quintile	9.1	13.0	15.7	19.7	22.4
Fourth quintile	15.0	15.8	16.3	17.1	17.6
Top quintile	68.7	57.2	49.5	37.9	30.1
Addendum					
80 – 90th	11.9	11.0	10.5	9.6	9.0
90 – 95th	9.4	8.2	7.4	6.1	5.3
95 – 99th	14.5	12.1	10.5	8.1	6.5
99 – 99.9th	12.7	10.3	8.6	6.2	4.6
Top 0.1 Percent	20.3	15.7	12.6	7.9	4.8
Kakwani Index	0.161	0.033***	-0.052***	-0.181***	-0.268***
Suits Index	0.276	0.105***	-0.010***	-0.183***	-0.298***
Incidence					
Labor	20	38	50	68	80
All capital	20	20	20	20	20
Shareholders	60	42	30	12	0

NOTES: The table reports the distribution of corporate tax burdens under the TPC base case, the central simulation (in bold), and sensitivity analyses that examine the effects of varying the proportion of rents which are shared with workers, by ECI class for calendar year 2019. All simulations in this case assume that 60% of the corporate income tax base is composed of rents, and shares rents (when applicable) according to the results in Fuest et al. (2018), who find that rents are shared exclusively with low- and medium-skill workers in the German context. Specifically, our estimates share rents proportional to income for workers in the bottom two-thirds of the labor income distribution. The data include both filing and non-filing tax units but not those who are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective ECI class but included in the totals. Each income percentile contains an equal number of people. The dollar breaks (in 2022 dollars) are: $29,300 (20%), $57,400 (40%), $101,100 (60%), $181,600 (80%), $267,600 (90%), $380,900 (95%), $912,900 (99%), and $3,748,000 (99.9%). For the Kakwani index, *p<0.10, **p<.05, ***p<.001, with all comparisons relative to the TPC Base Case.

TABLE A3

Distribution of Corporate Tax Burdens in Selected Complete Scenarios

ECI Percentile	TPC Baseline	Fuest (Germany)	Carbonnier (France)	Central Simulation	Kline	Dobridge
Lowest Quintile	1.6	4.8	1.3	1.3	1.4	1.4
Second Quintile	4.5	12.8	4.7	3.5	3.9	3.8
Middle Quintile	9.1	15.7	11.5	8.1	8.5	7.3
Fourth Quintile	15.0	16.3	18.6	18.7	17.2	15.6
Top Quintile	68.7	49.5	63.1	67.6	68.1	71.1
Addendum						
P0-80	30.2	49.6	36.1	31.6	31.0	28.2
P80-95	21.3	17.8	24.6	26.6	24.5	21.9
P95-99	14.5	10.5	14.5	15.9	15.4	19.4
P99 - 99.9	12.7	8.6	10.7	11.4	11.9	17.0
Top 0.1 Percent	20.3	12.6	13.4	13.7	16.3	12.8

NOTES:: The table reports the numbers underlying Figure 2; namely, the distribution of corporate tax burdens under the TPC base case, the central simulation, and scenarios based on the results in Fuest et al. (2018) (50% of rents shared with workers in the bottom two thirds of the labor income distribution), Carbonnier et al. (2022) (50% of rents shared with the top half of the labor income distribution), Kline et al. (2019) (30% of rents shared with workers in the top quintile of labor income), and Dobridge et al. (2021) (80% of rents shared as described in the notes to Table A2). The table reports data for calendar year 2019. The data include both filing and non-filing tax units but not those who are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective ECI class but included in the totals. Each income percentile contains an equal number of people. The dollar breaks (in 2022 dollars) are: $29,300 (20%), $57,400 (40%), $101,100 (60%), $181,600 (80%), $267,600 (90%), $380,900 (95%), $912,900 (99%), and $3,748,000 (99.9%). For the Kakwani index, *p<0.10, **p<.05, ***p<.001, with all comparisons relative to the TPC base case.

BROOKINGS

1775 Massachusetts Ave NW,
Washington, DC 20036
(202) 797-6000
www.brookings.edu