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Business Incomes at the Top

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When it comes to business income, the exact boundary between labor and capital can be nebulous. When a person in a partnership receives business income, in addition to regular wages, should the additional payment be categorized as "wages" or "profits"? Although this topic may seem arcane, it turns out that changes in the tax treatment of business income over time—and the resulting changes in organizational form and how business income is paid out over time—have profound implications for interpreting trends in income inequality. In addition, shifts in how business income is paid out have important consequences for interpreting tax reforms and for measuring what is counted as "labor income."

We begin with an overview of the different ways a country can choose to tax business income and how they arise in the US legal context as C-corporations, S-corporations, and partnerships. Compared with 40 years ago, a much larger share of US business income is now passed through to owner-managers rather than being subject to the corporate profits tax. We highlight the role of changing tax incentives and legal rules as crucial factors behind this shift.

Recognizing the change in how business income is being paid out and the shift to pass-through organizational forms raises questions about the measurement of top incomes, levels and trends in income and wealth inequality, and the labor and capital share of top incomes. When the rules change, the amount and timing of

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income visible on tax returns adjusts. One consequence, we argue, is that a considerable part of the increase in the top 1 percent share of income since the 1980s can be accounted for as a shift to the pass-through corporate form, not an actual rise in business income for this group. In addition, we argue that pass-through income has a substantial human capital component: for example, when the partners in a law firm or the doctors in a medical practice receive their end-of-year profit distributions, these are closer to labor income for the previous year than a return to capital.

We also discuss how changes in the form in which business income is paid out feeds into research controversies over changes in the concentration in wealth and over the progressivity of the US tax code. Income inequality in the United States has clearly risen by a variety of measures, but recent literature has been battling over the magnitude and underlying causes of increases (Piketty, Saez, and Zucman 2018; Auten and Splinter 2019). We critically discuss a number of the underlying assumptions in this work, focusing on those that pertain to business income and state which ones we currently prefer. But perhaps the key point is that conclusions here can depend heavily on underlying assumptions, which remain unsettled, but matter for fundamental questions about the interpretation and implications of changes in inequality in the United States and elsewhere. We point toward how new data might help narrow the gap between results based on competing assumptions.

At the end of the paper, we provide an overview of how these issues of pass-through and stand-alone corporate forms play out in other high-income countries, some of which offer choices for the corporate organizational form and methods of paying out business income that do not exist in the United States. We discuss fruitful avenues for future research on these topics, including the impact of relevant changes in the 2017 Tax Cuts and Jobs Act.

Pathways for Payout of Business Income

Different Forms of Businesses and their Taxation

Conceptually, there are two ways of taxing a business. One is to allocate any business income to the owners. This method is commonly used everywhere to tax small unincorporated businesses—and self-employed individuals, in particular—but it can also extend to larger firms. This approach automatically integrates the taxation of business and individual income, with the implication that business income will be taxed by the progressive marginal rates of the personal income tax. The other approach involves entity-level taxation—namely, a corporate tax. In that case, business income is taxed at the firm level and then typically taxed again when income leaves the firm and is paid to owners/shareholders.

When policymakers decide how to tax business income, they make choices about whether to have both regimes for different types of firms, or rules that decide which firms belong in each regime and how exactly personal and corporate taxes interact. Taxation on accrual—in which all profits are allocated to owners as profits are earned—implies no tax advantage to retaining funds within a firm. Conversely,

an entity-level tax with additional income taxation when owners are compensated directly may imply tax consequences of retaining earnings within a firm. In some countries, particular small businesses can be taxed in a lump-sum or withholding-tax fashion. In Australia, the corporate tax is integrated with personal income taxation so that owners receiving corporate dividends can claim offsetting credit for corporate taxes that were paid. We will discuss some international variations in a later section.

In the United States, a business more complex than a sole proprietorship can organize in multiple ways. If electing corporate form, there are two possibilities: C- or S-corporation. A C-corporation is usually the only feasible choice for publicly traded firms because it has no limit on its number of shareholders, it can have foreign or corporate owners, and it can have multiple classes of stock. Profits of a C-corporation might be distributed to shareholders as dividends (or share repurchases), but often the profits are reinvested in the firm, with the shareholders hoping to make a profit via capital gains when they sell their stock. A C-corporation falls under the traditional corporate tax regime: an entity-level tax coupled with individual-level taxes on dividends and capital gains.[1] However, firms can also finance their operations through debt, so that receipt of interest income on corporate debt becomes another possible stream of (taxable) compensation.

The S-corporation structure is more restrictive. Its shareholders are limited to individuals, estates and certain types of tax-exempt entities and trusts, and US residents. It also imposes limitations on "passive income" (which in this context includes income from royalties, dividends, interest payments, and certain other sources). In an S-corporation, profits each year must be passed through directly to the owners, which means that business income falls under the individual income tax. Most S-corporations could choose to be C-corporations, which leads to important consequences. On one hand, businesses choosing non-pass-through treatment will be subject to corporate taxation, and then shareholders will be taxed either for dividends or capital gains, but the timing and consequences of these payouts are to some extent under the owner's control. On the other hand, businesses choosing pass-through treatment avoid the corporate income tax, but each year, owners pay personal ordinary income tax treatment on their business income. With pass-through treatment, losses can also be passed through to owners, which allows for the possibility that owners could use those losses to offset other types of income. A corporation can easily switch its status between C- and S- (assuming it meets the legal conditions), except that switching can't be done more often than once every five years, and in some cases transition can entail additional one-time taxes.

An alternative to incorporation is a partnership form. Since the 1990s, as the result of state-level legal innovations, limited liability partnerships have become an option for a broader range of firms. A partnership allows for less transparency to the broad public, does not have restrictions on the types of shareholders, and allows for

[1] See Gordon and Sarada (2019) for an in-depth discussion of the role of corporate taxation.

much more flexibility in allocating income to shareholders than corporate forms do. A partnership can easily choose to be taxed as either an S- or a C-corporation through a "check-the-box" rule. A disadvantage of partnership form relative to S-corporations is that active partnership income is subject to self-employment taxation, while in the case of S-corporations the payroll tax applies only to the salary portion of income (which has to be set at a "reasonable" level).

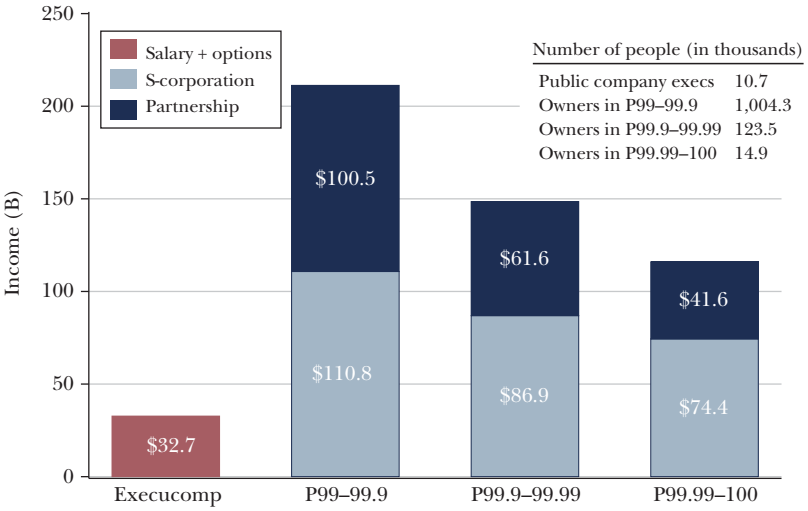
The Big Shift of Business Income to Pass-Through Firms

The category of pass-through businesses—both S-corporations and partnerships—includes, among others, consultants, lawyers, doctors, and owners of large non-publicly traded businesses, such as auto dealers and wholesale distributors. It turns out that a majority of the top income earners in the United States are owners of "pass-through" businesses (Smith et al. 2019). In 2014, 69 percent of the top 1 percent of income earners and 84 percent of the top 0.1 percent of income earners accrued some pass-through business income. In absolute terms, that amounts to more than 1.1 million pass-through owners with annual incomes above $390,000 and 140,000 pass-through owners with annual incomes of more than $1.6 million. In both number and aggregate income, these groups far surpass the top executives at public companies, who have been the focus of much inequality commentary. As shown in Figure 1, the 10,700 top public company executives earned a total of $33 billion in 2014 in salary and options. In contrast, the 14,900 business owners in the top 0.01 percent of the income distribution received more than $100 billion in income from S-corporations and partnerships. In 2014, approximately 270,000 wage earners in the top 1 percent and 27,000 wage earners in the top 0.1 percent worked for public companies, earning a total of $260 billion and $110 billion in wages and salaries, respectively. For every public company employee in the top 1 percent and top 0.1 percent, there are four and five pass-through owners, respectively.

In short, the typical top 1 percent earner is not a public company executive or tech billionaire; instead, a top earner is typically a doctor, lawyer, or the owner-operator of a middle-sized business. These top pass-through owners are predominantly working age, in contrast to the older top earners whose income comes from other categories of capital. Looking at those with more than $1 million in annual income, Smith et al. (2019) find that 60–70 percent of the millionaires who get a majority of their income from either wages or pass-through ownership are in their 40s and 50s. However, the millionaires who get a majority of their income from C-corporation dividends or other capital tend to be older, with about two-thirds falling into age brackets from their 50s to their 70s.

Since the 1986 Tax Reform Act, tax incentives have favored pass-through treatment. The trend toward more S-corporations started soon after, further encouraged by later rule changes that allowed for more shareholders. The trend toward rising partnerships followed in the mid-1990s, reflecting the state-level changes that allowed for more flexible limited liability company forms and federal guidance on how these entities would be taxed. Cooper et al. (2016) assemble data from de-identified administrative tax records on the population of US businesses linked to their

Figure 1
Pass-Through Owners Prevail at the Top of the Income Distribution

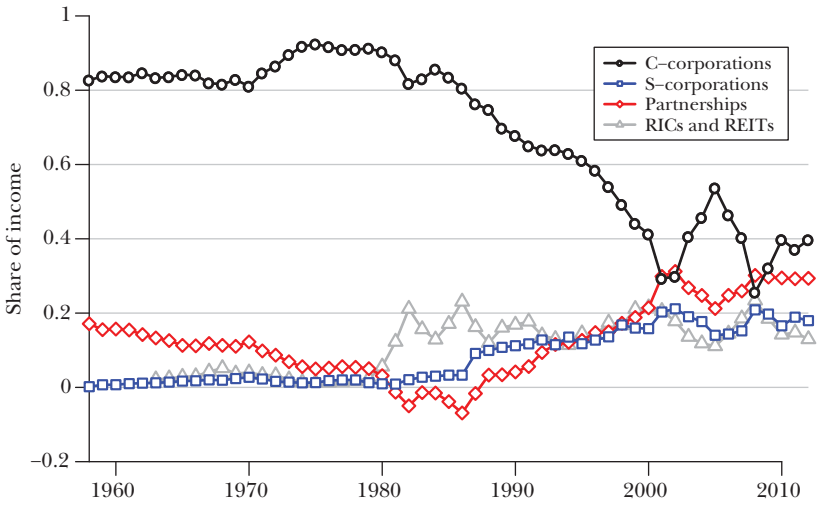


Source: Smith et al. (2019).

owners and workers and document that the role of pass-through businesses in the US economy has been rising since the Tax Reform Act of 1986. Clarke and Kopczuk (2017) also document the rise of pass-through businesses in recent decades. In 1960, the US economy had about 1 million C-corporations, 1 million partnerships, and almost no S-corporations. By 1980, the number of C-corporations had risen to 2.2 million, the number of partnerships to 1.4 million, and S-corporations had reached about 500,000. But by 2012, the number of C-corporations had declined to 1.6 million, while partnerships had climbed to 3.4 million and S-corporations to 4.2 million.

Specific C-corporations tend to have greater revenues and profits than single S-corporations and partnerships, but these shifts in the number of firms also show up clearly in business income. As shown in Figure 2, the share of business income going to C-corporations was 90 percent and higher in the late 1970s. But by 2012, C-corporations represented only about 40 percent of business income, while partnerships represented about 30 percent of business income, and S-corporations and the category of "RICs and REITs" each made up about 15 percent of business income. A "regulated investment company" (RIC), like most mutual funds or closed-end investment funds, must legally pay out at least 90 percent of its income each year to its owners; similarly, a "real estate investment trust" (REIT) must also pay a minimum of 90 percent of its income to its shareholders each year. Thus, both RICs and REITs are pass-through forms of corporate organization for certain types of mostly publicly held investment firms.

Figure 2
The Evolution of the Share of Business Income Accounted for by Different Types of Entities



Source: Clarke and Kopczuk (2017, Figure 3).

How Categorization of US Business Income Responds to Shifting Rules

When tax laws shift, and tax revenues shift in response, does the change represent a real shift in economic behavior or just a shift in accounting practices? In this section, we review the choices about how and when to receive business income. In the next section, we discuss some implications. As Gordon and Slemrod (2000) argued, shifts between receiving business income in personal or corporate form might help to explain what otherwise looks like changes in inequality or in the labor share of income.

Let's start by imagining a firm with current profits to be distributed to owners. To make the exercise concrete, we focus on a representative pass-through firm owned by a top earner using data from 2014 (as specified in Smith et al. 2019). The firm has $10 million in sales, $1 million in profits, 50 employees, and two owners. The firm makes $1.5 million in payments to the two owners: that is, it pays each owner $250,000 in salary and $500,000 in profits.

How might an enterprising owner-manager choose to receive the corporate profits? One possibility is for the owner to receive an annual bonus, which would be categorized as part of an overall wage compensation payment. Or the owner might pay herself a dividend, which would be issued based on percent ownership

of the firm. For a US pass-through entity, any profits not distributed as wages would be deemed as automatically distributed based on the owner's percent ownership of the firm, even if the money sits in the firm's bank account (this provision prevents pass-through business owners from storing funds in their firm as a method of deferring taxes). The owner would then classify these as-if distributions as ordinary business income on a personal tax return.

Each of these choices faces particular rules, but the rules do allow considerable leeway. For example, if our firm is an S-corporation and the "reasonable compensation" rules consider $250,000 an appropriate salary for such a business owner, then the owner can pay the remaining $500,000 due to her as profits—and thus avoid payroll taxes on the latter income. In contrast, a partnership would not be able to avoid the payroll tax. If the firm is a C-corporation, then the owner would likely prefer to pay this amount as a one-time bonus so that it is not included in the base for the corporate income tax.

Now consider an owner who makes a loan to the firm. In this case, the owner might receive compensation via some combination of principal returned and interest paid on that loan (subject to rules about the interest rate that can be charged). Such arrangements might make sense if the tax rate on interest payments received is lower than the tax rate on payouts, although this is not the case under the current US tax law. Alternatively, interest rates on loans against a personal residence and on direct loans against business assets need not be the same, in which case owners might arbitrage by borrowing against their personal residences rather than taking a more expensive business loan.

Finally, the owner might choose to consume through the firm. The menu of allowable fringe benefits and deductions might include meals and entertainment, club membership, travel expenses, technology, transportation, or even housing if the owner lives in the same building where the firm operates. The owner could also choose to give to charity through the firm—even a charity that the owner personally supervises—which would prevent that money from being taxed as a distribution. In administrative data, this form of income would not appear to have been paid to the owner because the firm would report these expenditures as business expenses or charitable contributions.

The consumption strategy has been less appealing recently because such deductions have become more limited in the tax rules. However, active literature in the 1970s and early 1980s considered the effect of tax preferences for non-wage compensation on the use of perks for executives (Clotfelter 1979, 1983; Long and Scott 1982; Woodbury 1983). Surveys during the Carter administration suggested that these deductions could amount to 20–30 percent of total compensation for managers at that time, and owner-managers would have a particular incentive to use this option. For example, Clotfelter (1983) focused on how tax policy affects non-wage compensation in the form of travel, meals, and entertainment expenses for sole proprietors. He references colorful contemporaneous press accounts from this time period: the president of the Philadelphia Phillies baseball team reported that "at least half the tickets were held by business [. . .which also . . .] account for

70 percent of the sales of season tickets," and a survey of compensation practices at 468 companies found that, inter alia, 53 percent paid for country club memberships and 79 percent paid for travel of spouses.[2] This line of research withered in the wake of the 1986 Tax Reform, which attenuated incentives for non-wage compensation by substantially reducing top income tax rates. The deduction for business meals and entertainment expenses was also limited in 1986 and 1993 (when deductibility was limited to 50 percent; see Schmalbeck and Soled 2009 for discussion). The 2017 tax reform repealed the business entertainment deduction altogether.

Timing issues are another major difference between the corporate tax and pass-through taxation. Pass-through taxation requires that profits be distributed to owners each year; indeed, even if business income of a pass-through firm in a given year is not actually transferred to the owner, it is subject to personal income taxation. Under the corporate tax, corporate income is taxed each year. This approach prevents business owners from completely delaying taxation while income accumulates within the firm. However, the corporation has more control over the timing of payouts to owners and/or shareholders whether via dividends or through share buybacks. In addition, an owner/shareholder of a C-corporation can defer business income from personal income taxation by investing in a firm that reinvests a substantial share of its earnings and waiting to make a profit from selling stock holdings for a capital gain at some point in the future. Of course, this choice also has to take into account the rate of return inside and outside of a business, including the fact that returns to reinvesting profits within a business can be subject to corporate taxation.

Though we usually only associate deferral of taxes with C-corporation distributions, both pass-through and traditional C-corporations can also set up retirement accounts for their owners, which allows them to defer taxation of earnings up to a certain amount until it is withdrawn. When Mitt Romney ran for President in 2012, for example, it was reported by Cohan (2012) that his private equity firm allowed partners to buy stakes in their funds with retirement account savings, which ended up earning dramatically higher returns than typical public company investments in retirement accounts.

Firms can also buy life insurance or other annuity products on behalf of owners, which has the effect of deferring income and taxes. The firm's contributions to these accounts are tax-preferred, as are the accumulated earnings on investments made by the insurance companies on behalf of their policyholders. Such arrangements are especially popular in European countries. For example, in France, the rules governing life insurance-style savings accounts ("Assurance-Vie") have relaxed over time, making such accounts the most important source of tax-deferred private savings. In recent years, these accounts provide for tax-free accumulation, occasional taxed distributions during life, and preferential inheritance tax with no

[2] Sources for these press accounts are "If Congress Taxes Those Business Perks" in *U.S. News and World Report* (February 27, 1978, pp. 53–56), and "Executives' Privileges are Under Heavy Fire but Appear Resilient" in *Wall Street Journal* (October 19, 1977, p. 1+).

contribution limits. In 2010, 83 percent of the top 1 percent of the wealth distribution had Assurance-Vie, accounting for nearly 20 percent of their total wealth (Goupille-Lebret and Infante 2018). We are not aware of research that connects the use of Assurance-Vie specifically to French business owners, though the incentives for them to participate appear strong.

Employees can also be compensated in the form of equity in the firm—either through stock grants directly or through stock options. The market value of such equity compensation is not easily observable for closely held firms, creating an opportunity to understate it (the benefit of which needs to be traded off against business-side tax consequences of reduced wage deductions).

When founders and early employees of start-up companies accept low wages in exchange for stock options, they are also deferring the recognition of income accruing to them in the form of hoped-for capital gains as their options increase in value. Only when the options are exercised, which can be many years after the shares are granted, does this income appear in administrative tax data. Naturally, for all deferred compensation—whether it be retirement accounts, life insurance, or stock options—the extent of deferral depends on the tax wedge between deferring and taking that income now, which will differ by corporate form and for wage versus non-wage income.

A final option for private firms is for the owner to plan to sell a share or all of the business—yet another method of deferring business income. Of course, a sale means losing control over the firm and gives rise to taxation of realized capital gains. Alternatively, US tax law includes a "step-up in basis" at death, which effectively forgives capital gains tax liability on assets transferred at death (for a discussion, see Kopczuk 2017). There are also estate tax-planning strategies that involve transferring some shares into a trust whose beneficiaries are the owner's children. In this case, business income accrues to the children and subsequent estate taxes or capital gains taxes can be avoided. Finally, depending on the business and type of assets, there are options for deferring or avoiding capital gains tax such as "like-kind exchanges" (especially in the case of commercial real estate) or sale to an Employee Stock Ownership Plan (ESOP).

These considerations are not theoretical: for example, evidence from different countries and times shows responses to corporate versus pass-through tax treatment. In most countries, the main choice is between sole proprietorship and a corporation. Romanov (2006) finds that incorporations in Israel respond strongly to changing tax incentives, Thoresen and Alstadsæter (2010) find similar responsiveness in Norway, Edmark and Gordon (2013) in Sweden, Sivadasan and Slemrod (2008) in India, Waseem (2018) in Pakistan, Tazhitdinova (2020) in the United Kingdom, Goolsbee (1998) in the United States using pre-World War II data, and Onji and Tang (2017) in 19th-century Japan. In the modern US economy, such responses are facilitated by the existence of pass-through business forms that allow even large businesses to be subject to individual income tax treatment. Gordon and MacKie-Mason (1994), MacKie-Mason and Gordon (1997), and Goolsbee (2004) provide evidence of the shifts between C- and S-corporation forms. Auten,

Splinter, and Nelson (2016) decompose the growth of S-corporations around the Tax Reform Act of 1986 into conversions and new incorporations, showing that conversions spiked immediately after the reform but continued through the 1990s.

Implications for Inequality

Measurement of Income Inequality

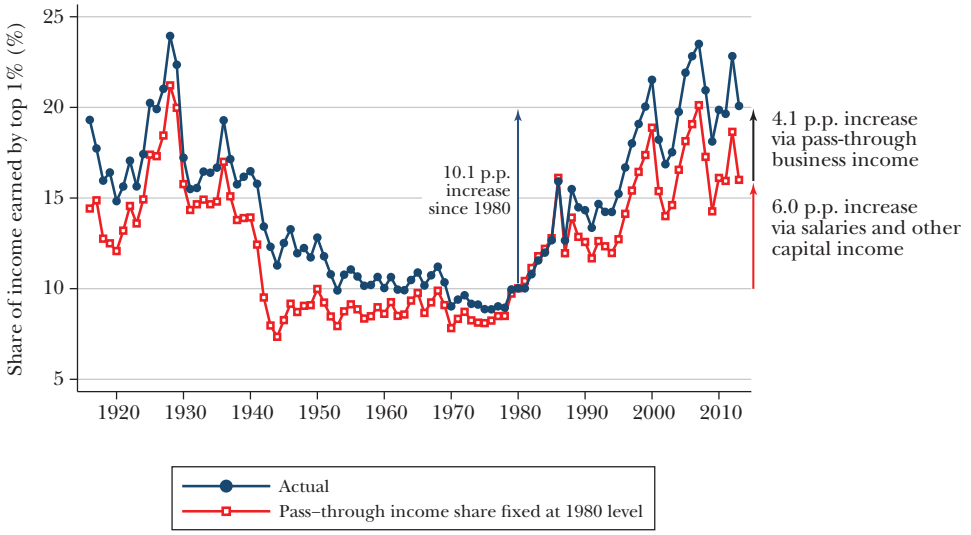
Because business income is concentrated at the top, the murky character of business income implicates several recent lines of research on income and wealth inequality. First, if business income is reported, its measurement and classification depends on whether it is reported before or after entity-level taxes and whether it takes the form of reported capital or labor. Second, there are several cases—such as consumption through the firm, retained earnings, deferred compensation, contributions to pension plans or life insurance, and other forms of tax avoidance and evasion—where such income may not be observed at all, or at least not at the individual level.

Reorganizing from C-corporation to S-corporation form can alter measures of inequality based on income tax returns. For example, after the Tax Reform Act of 1986 there was a massive conversion of C-corporations to S-corporations. The unadjusted Piketty and Saez (2003) series, which only includes fiscal income appearing on individual tax returns, shows a 4 percentage point jump in the top 1 percent share in two years, from 9 percent to 13 percent (Figure II, p. 12). This jump is certainly not a pure reflection of an underlying change in pre-tax income inequality. Instead, when firms switch from C-corporation to S-corporation form, there is a corresponding shift in income tax data from observing business income only when it is realized—and after corporate tax is paid—to observing it annually as it accrues—and before tax is paid. This induces a mechanical increase in top fiscal income shares. A number of different studies, including Piketty, Saez, and Zucman (2018) and Auten and Splinter (2019), have suggested ways to remove this bias by allocating C-corporation retained earnings and corporate taxes to individuals, but considerable controversy remains over the underlying assumptions.

The example raises the question of how to interpret trends at the top of the income distribution. In Figure 3, the line with solid dots shows the share of fiscal income received by the top 1 percent, following Piketty and Saez (2003).[3] Cooper et al. (2016) calculate what the income share of the top 1 percent would be if the share of pass-through income was held constant at its 1980 level. As shown by the hollow points in Figure 3, nearly half of the rise since 1980 in the fiscal income share of the top 1 percent comes from pass-through business. Auten and Splinter

[3]This fiscal income series includes realized capital gains, which partly obscures the 1986–88 increase in income due to corporate form reorganization. The reason is that the tax reform also raised capital gains taxes, which induced a large amount of acceleration to retime capital gains into 1986.

Figure 3
Role of Pass-Through Income in Rising Top 1 percent Income Share



Source: Cooper et al. (2016).
Note: Income in this figure is pretax fiscal income including capital gains.

(2019, see their Online Appendix Table B6) conduct a similar exercise using a panel of individual tax returns in the window around the 1986 reform and find that 20–25 percent of the short-run increase in the top 1 percent fiscal income share comes from pass-through business. Both income from new pass-throughs and limitations on allowed losses from old pass-throughs are responsible for this pattern.

Clearly, holding the share of pass-through income constant at 1980 levels does not alter the broad pattern of changes in inequality in the last century: that is, a fall in (pretax) income inequality from higher levels in the 1920s and 1930s to lower levels from the 1950s through the 1970s and then a rise in income inequality after that. However, one's perspective on the size of the rise in inequality is affected by whether one views the rise in pass-through income as an actual increase in income for those at the top of the income distribution, or whether it only means that business income that top income-earners would have received in other forms has now shifted to the pass-through channel.

In this spirit, Smith et al. (2019) use two complementary approaches to explore this question. According to their estimates, though the majority of the post-1986 growth in pass-through income reflects real economic growth, a significant share (approximately 30 percent) reflects businesses reorganizing to pass-through form without a real increase in pre-tax income inequality. This reorganization continued

through the 1990s and 2000s and even accelerated after the 2001 tax cuts during the Bush administration.

A Broader View of Inequality and the Role of Business Incomes

The income reported on tax records is roughly half of gross national income and 60 percent of net national income. Thus, Piketty, Saez, and Zucman (2018) have been pursuing "distributional national income accounts"—that is, seeking to measure a distribution of income that includes all national income. This task is intertwined with the question of business income because it involves deciding who in the income distribution should be credited with retained business income, entity-level corporate taxes, underreported business income, and pension income.

This is an area of research where, because of missing data, the assumptions play a large role, and an active debate rages on over these assumptions. Deaton (2020) summarized the current state of play in this way:

> Piketty, Saez and Zucman (PSZ) have done a great service by calculating a set of distributionally disaggregated national accounts for the United States. The basic idea is irresistible. Yet these first attempts have raised many serious difficulties that were not apparent at first. Most immediately, only about half of national income appears on individual tax returns. Allocating from tax returns is hard enough, because tax units are neither individuals nor households, but allocating the other half of national income is an immensely more difficult task, requiring assumptions that are rarely well supported by evidence, and often seem arbitrary. Because distribution is such a controversial topic, these assumptions leave plenty of scope for politically-biased challenges, in which each commentator can choose their own alternatives and get almost any result they choose, inequality is increasing, inequality is not increasing, and everything in between.

Saez and Zucman (this volume) provide a discussion of their approach. Garbinti, Goupille-Lebret, and Piketty (2018, 2020) take a similar but not identical approach for France. Auten and Splinter (2019) provide an alternative set of assumptions for the US economy. Smith et al. (2019, in their online Appendix) offer some additional comments on the methodology and explore the robustness of their results under different approaches for allocating retained earnings. Smith, Zidar, and Zwick (2020) use refined wealth estimates (described below) to improve allocation assumptions. Each of these studies proposes and defends a preferred inequality series.

Fundamentally, though, as highlighted by Deaton's comment, there is currently no information allowing us to assign certain macroeconomic aggregates from the national income and product accounts to individuals, and the lack of micro data means that researchers resort to imputations. The vast differences in the resulting levels of inequality and trends reflect the extent of underlying uncertainty. That uncertainty is not explicit when one presents the results as a definitive series

measuring inequality rather than as estimates relying on a large number of assumptions and therefore with a large margin of error. For that reason, we'll refer to these results as "imputations" rather than "estimates."

Much business income is not directly assigned to individuals in tax data, and one possible approach is to make assumptions about asset ownership across the income distribution. Piketty, Saez, and Zucman (2018) start with the income tax data showing taxable capital income received from financial investments or other assets and then, with a set of auxiliary assumptions, infer the underlying distribution of wealth. The wealth imputation method proposed by Saez and Zucman (2016) scales up, or "capitalizes," the income observed on tax returns to impute wealth. Piketty, Saez, and Zucman (2018, following Saez and Zucman 2016) infer this distribution in broad asset categories: for example, fixed income, stocks, pass-through business, housing, and pensions. For example, if the tax data reveals a certain level of interest payments received, a researcher can then try to infer what wealth was needed to receive these interest payments. Clearly, this approach relies upon having an accurate mapping of income to wealth, or equivalently, knowing the rates of return earned on different types of income by different groups of people. Saez and Zucman (2016) deploy the simplifying assumption that all tax units get the same rate of return within an asset class; Piketty, Saez, and Zucman (2018) also assume the same rate of return across asset classes, but instead use a "divide-by-two" method to attribute wealth to individuals within married tax units. The tax return data and wealth imputations are then combined with aggregate data from the national income accounts to impute distributional national income accounts. The overall approach is somewhat circular—we go from (observed) income to (unobserved) wealth to (unobserved) income—but the results by construction will "add up" to published aggregates.

If one is interested in the distribution of household wealth at a point in time, income tax data is not the natural starting point. The natural alternative is the Survey of Consumer Finances done triennially by the Federal Reserve (Bricker et al. 2016). It has its weaknesses—including lack of coverage of the extreme top of the wealth distribution, and the modern version of the survey only goes back to 1983 (with precursor surveys going further back, but more consistent design since 1989)—but it does not require imputation exercises. It also allows for observing the joint distribution of income and wealth, avoiding the need for another set of assumptions. The Federal Reserve now builds on the Survey of Current Finances to construct the Distributional Financial Accounts (Batty et al. 2019) that provide quarterly estimates of the US household income and wealth distribution since 1989.

Other assumptions need to be made in moving from the income data to estimates of the underlying wealth that generates business income: for example, how to attribute the ownership of C-corporations. Saez and Zucman (2016) assume that C-corporation wealth directly held by households is distributed in proportion to the sum of dividends and realized capital gains. Smith, Zidar, and Zwick (2020) propose an alternative assumption that weighs dividends and realized gains based on their relative informativeness in predicting stock wealth in the Survey of

Consumer Finances; this method's results give less weight to realized capital gains. For pass-through business, Saez and Zucman (2016) assume that pass-through business income has equal returns across industries. Alternatively, Smith, Zidar, and Zwick (2020) adjust the valuation of pass-through business for the human capital component of business income and allow returns to vary across narrowly defined industries. Another notable assumption is whether receiving pension income means that you "own" a certain amount of pension wealth. In a defined contribution plan, the pension recipient does own underlying wealth (although the amount is not directly observed in administrative data); in a defined benefit plan, the recipient of pension income does not hold such wealth—and if the plan is underfunded, the underlying wealth may not exist. Both Saez and Zucman (2016) and Smith, Zidar, and Zwick (2020) use a combination of wages and pension distributions to infer pension wealth (see also Sabelhaus and Henriques Volz 2020). Both papers do not attribute any wealth based on the "off-balance-sheet" public pension benefit known as Social Security (Catherine, Miller, and Sarin 2020; Sabelhaus and Henriques Volz 2020).

Distributional national income accounts require allocation of income from assets not reported on tax returns, such as C-corporations, pensions, and underreported business income. Thus, the imputations for wealth inequality then feed back into the imputation of distributional national income accounts, along with tax data and macro data from the national income accounts. In this way, constructed measures of inequality of wealth are used to impute the distributional national income accounts for top income shares (and shares for labor and capital income shares, as discussed in the next section).

Several studies have raised concerns about the set of assumptions required for this imputation. For example, one concern is that the equal returns assumption can bias wealth estimates toward the top when top wealthholders actually earn higher returns than average. Kopczuk (2015) suggests these adjustments are especially important when average returns are close to zero, such as was the case for interest rates in the wake of the Great Recession because a relatively small shift between two very low rates of return will imply a large shift in implied wealth (say, from 0.5 percent to 1.0 percent cuts the implied wealth by a factor of 2). Fagereng et al. (2016), Bricker, Henriques Volz, and Hansen (2019), and others also emphasize the evidence that those at the top of the income distribution typically get higher returns for a given asset class.

Smith, Zidar, and Zwick's (2020) preferred results, using a range of literature to estimate rates of return across wealth groups and geographic areas, find a rise in wealth concentration similar to the data of the Survey of Consumer Finance. The assumption of equal returns across asset classes also implies that fixed income wealth should be rapidly increasing as a share of top portfolios. In contrast, the evidence-based patterns of returns they use lead to an estimated portfolio concentration of top wealth holders that aligns reasonably well with estimates from the Survey of Consumer Finance and from estate tax data, in that private business is more important than fixed income and rivals or exceeds public equity holdings at

the top. Smith, Zidar, and Zwick (2019) also use their wealth results to construct distributional income estimates, which allocate components of capital income not observed on tax returns: for example, fixed income earned in non-taxable accounts, retained earnings of C-corporations, accumulated returns to assets held in pension accounts, and taxes whose statutory incidence does not fall on individual owners. They find top income shares somewhat lower than in Piketty, Saez, and Zucman (2018), but the trends in concentration are similar. However, the composition of top incomes and their recent growth skews much more toward labor than in the Piketty, Saez, and Zucman (2018) series.

Other important assumptions concern allocating "underreported" income (that is, income not reported to tax authorities) and pension income. Auten and Splinter (2019) propose and defend alternative assumptions for these categories. The largest disagreement they emphasize concerns how to allocate underreported income for non-corporate business. Auten and Splinter (2019) use IRS audit data to allocate underreported income; Piketty, Saez, and Zucman (2018) allocate this income in proportion to positive fiscal non-corporate business income, under the assumption that the distributions of observed and unobserved income in this category are the same. The fact that assumptions about underreported income are so consequential highlights the central role missing data on business income plays in controversies about income inequality.[4]

In order to allocate all of national income post-tax (rather than pre-tax), additional assumptions are needed that are not necessarily related to wealth, such as who benefits from defense spending and other public goods. Piketty, Saez, and Zucman (2018) allocate these public goods "neutrally" in proportion to income; in contrast, Auten and Splinter (2019) argue that a significant proportion of such spending should be allocated equally across people.

Finally, Piketty, Saez, and Zucman (2018) take an additional step in using the pretax distributional national income accounts together with aggregate tax payments—such as payroll tax, sales tax, property tax, estate tax, and corporate tax—to estimate the post-tax distribution of income and thereby a measure of broad tax rate progressivity. Conceptually, this measure of tax rates has all of an income group's imputed national income in the denominator and all of their imputed tax payments in the numerator. Saez and Zucman (2019) take a similar approach but make different assumptions to measure tax rate progressivity. Again, a number of assumptions undergird such calculations. A main focus of our discussion has been the flexibility in allocating business income across various corporate forms, and a follow-up question that arises here is the incidence of the corporate tax across income groups. Another one is the incidence of the payroll tax. Questions less related to the allocation of business income include the incidence of the sales tax and the treatment of various social support programs that include transfers and refundable tax credits, such as the earned income tax credit.

[4]Sabelhaus and Park (2020) also note the particularly large gap between the national income and product account and the Survey of Consumer Finances for non-corporate business incomes.

As Splinter (2019, 2020) points out, the assumptions in Saez and Zucman (2019) lead to a conclusion that the overall US tax code is more-or-less proportional. In contrast, a wide variety of other sources including the Joint Committee on Taxation, the US Treasury, the Congressional Budget Office, the Urban-Brookings Tax Policy Center, and Piketty and Saez (2007) all find that the federal tax system is progressive, although somewhat less so than it used to be. The assumptions in Saez and Zucman (2019) are often non-standard and a departure from the widely accepted practice by agencies and economic literature, including their own work (Piketty, Saez, and Zucman 2018). At the top, they make an unusual "statutory incidence" assumption to load the full corporate tax burden on shareholders (rather than allocating part of it to other capital or labor), although they continue the standard practice of disregarding statutory incidence and assigning the burden of sales taxation to consumers and the employer portion of payroll tax to workers—even though these taxes are also legally and administratively collected from firms. They also make unorthodox assumptions about the distinction between taxes and transfers and assign the sales tax burden based on transfers-financed consumption, while not including transfers in measures of income, thereby artificially inflating effective tax rates at the bottom of the distribution (for details, see Splinter 2019; Kopczuk 2019).

Taking Stock

This task of developing distributional national income accounts that cover all of national income is clearly an active area of research.[5] We see value in continuing attempts to reconcile these different approaches to estimating wealth, imputing all of national income to different groups, and thinking through the tax incidence and tax burden issues. Given the current state of this research, it would seem appropriate here though to acknowledge the vast uncertainty of any imputations in a much more systematic way than has been the case so far.

Yet another challenge is the changing tax treatment of various categories of business income, which makes comparisons across years very challenging. First, the tax treatment of capital gains changes over time, which affects imputed stock wealth of C-corporations and imputed retained earnings. Second, the tax incentives to shelter income in corporations or through corporate consumption changes over time, which affects how much income we observe on tax returns. Third, stock options appear partly as wages and partly as capital gains (when realized), which clouds both the timing and reported nature of this important component of top executive compensation. Fourth, the tax treatment and rules for pensions have changed over time, which can affect the amount of business income distributed into pension savings. Finally, the tax treatment of business losses means that some

[5]For other attempts to allocate income, transfers, and taxes not observed on individual tax returns or in household surveys, see the work from the Congressional Budget Office (for example, Congressional Budget Office 2016) and from economists at the US Bureau of Economic Analysis, including Fixler, Gindelsky, and Johnson (2019) and works cited therein.

wealthy individuals can appear to be at the bottom of the income distribution in a given year despite having substantial cash incomes, and this issue has also changed over time.[6]

Future data collection and refinements of methodology could address these various controversies. First, if partnerships and C-corporations were required to trace and report their ultimate owners, this linked data could be used to allocate macroeconomic business income, in the spirit of Cooper et al. (2016). Second, Internal Revenue Service data from random audits could be used to improve our understanding of underreported income, refine inequality estimates, and reconcile disputes. For example, DeBacker et al. (2020) use random audit data from 2006 to 2014 and find that because top earners have higher rates of compliance, measures of income inequality are lower after accounting for noncompliance. Third, more data collection on retirement account balances and portfolio composition could help allocate the assets and income flows accruing in these accounts.

Labor versus Capital Income

Researchers care about the allocation of "labor income" and "capital income" for at least three reasons. First, it provides insight into the role of technology and economic factors versus institutions and public policy in driving economic inequality. Second, it speaks to the nature of typical paths to the top of the income distribution and thus offers insights about intergenerational mobility and barriers to such mobility. Third, studying the labor share can guide policy reforms designed to reduce inefficiencies in markets, alter the post-tax distribution of income, and raise tax revenues.

For all the reasons given in the discussion above, when we wish to compare labor to capital income—especially over time or across countries—we must take into account the effects of changes in the tax code on how income is categorized. Smith et al. (2019) present a comprehensive analysis of pass-through business income with the goal of answering the question: how important is human capital at the top of the US income distribution? Human capital in this research is defined broadly to refer to all factors embodied in people, including labor supply, networks, reputation, and rent-seeking ability. Human capital contrasts with nonhuman or financial capital because (in the modern economy) human capital can't be sold, and it is not bequeathed at death. Combining descriptive analysis with natural experiments, Smith et al. (2019) find that human capital, as opposed to financial capital, remains central to rising top incomes in the US economy.

[6]In their imputations, Auten and Splinter (2019) attempt to account for business losses in three cases: 1) adding net operating loss carryovers from past years because they are unrelated to current national income; 2) applying the limit on business losses from the Tax Reform Act of 1986 to data from before the passage of that law; and 3) allocating underreported income following the audit data analysis of Johns and Slemrod (2010). In contrast, Piketty, Saez, and Zucman (2018) only use positive business profits to impute wealth and business income.

This finding depends crucially on how we think about pass-through income, which Smith et al. (2019) estimate to have a human capital share of 75 percent even though it appears for tax purposes as business profits. They construct this estimate by following firms after premature owner deaths and retirements and observing the impact of withdrawing owners from their firms. When ignoring pass-through income, it appears that only a minority of top earners are human-capital rich. However, when defining labor income comprehensively to include that share of pass-through income, this assessment reverses: most top earners are human-capital rich, not financial-capital rich, as shown in Figure 4. In follow-on work, Smith et al. (2020) find that neglecting how taxes influence income reporting would lead us to overstate how much economic growth has accrued to capital instead of labor since the 1980s. Thus, they add yet another factor that can help account for the recent decline in the labor share of national income in the US economy (Elsby, Hobijn, and Şahin 2013; Karabarbounis and Neiman 2014; Autor et al. 2020; de Loecker, Eeckhout, and Unger 2020).

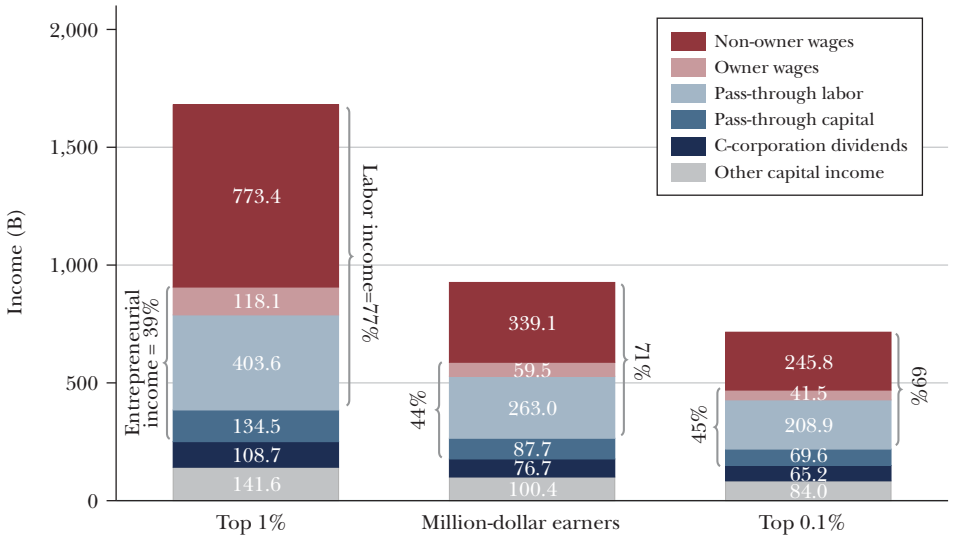
Again, a unifying message is that the underlying assumptions—especially those relevant to how business income is treated and wealth is estimated—will strongly affect one's view of the role of labor and capital income. In Piketty, Saez and Zucman (2018), the estimate of rapidly growing wealth underlies the finding that top capital shares have surged in the past 20 years, reaching 56 percent in 2014. Conversely, the alternative assumptions in Smith, Zidar, and Zwick (2019) imply that, in 2014, only 41 percent of income for the top 1 percent comes from capital. Approximately half of this adjustment comes from differences in wealth estimates discussed earlier. The remainder arises because of the Smith et al. (2019) allocation of 75 percent of pass-through income to labor, rather than attributing it all to capital.

To be clear, our reading of the evidence based on our preferred assumptions is not that inequality in America is low or that it has not increased. Rather our reading is that the increase has been more modest than some well-known estimates suggest. In addition, we believe that the nature of that increase—what factors contribute, who benefits—skews away from the passive capital highlighted in Piketty (2014) and toward human capital, labor, and entrepreneurial activity. We stress also that this belief does not imply the returns to human capital at the top are fair, nor that they necessarily reflect the social returns to labor, rather than the private returns, which could well include unproductive or even destructive activity (Baumol 1990; Murphy, Shleifer, and Vishny 1991).

Some International Perspective and Comparisons

With the US shift to more widespread use of pass-through taxation of business income, the United States now taxes business income quite differently from some other countries. The US economy now taxes about 40 percent of business income at the corporate or entity level, while for the United Kingdom, Canada, and Australia during the last 30 years, 65–80 percent of the business income that is reported on

Figure 4
Are Top Earners Human-Capital Rich?



Source: Smith et al. (2019). Shares of Fiscal Income.

tax returns is subject to entity-level or corporate taxation, rather than pass-through taxation (Clarke and Kopczuk 2017, see Fig. 1). However, the US economy is not an isolated exception. The Joint Committee on Taxation (2013) reports that in 2007, only 34 percent of business incomes in Germany were subject to corporate tax and the corresponding number for Japan was 50 percent.

The rules that guide pass-through taxation of business income vary by country. Sole proprietors are usually taxed by individual income tax or, sometimes, through alternative small business tax regimes. Corporate tax treatments apply to large firms. In between, there are usually some lines drawn concerning limited liability and organizational form. US tax law does not tie pass-through treatment to a lack of limited liability: instead, pass-through of business income in US law applies not just to sole proprietors and farm income, but also to some incorporated businesses (S-corporations) and partnerships. A similar approach is also used in Canada, Germany, and the United Kingdom, with partnerships generally eligible for pass-through treatment (even if they have limited liability), but these countries have no equivalent to S-corporations. Australia taxes most partnerships as companies, as long as at least one partner is subject to limited liability (Joint Committee on Taxation 2013). As another example, Poland nominally ties pass-through treatment to lack of limited liability, but allows a hybrid form with both limited and unlimited liability partners to be eligible as well.

On the international stage, comparisons of top income shares and labor/capital shares ultimately derive to a large extent from tax data. While researchers and statistical agencies do attempt to adjust for some of the measurement issues discussed here, a systematic analysis of the implications for international comparisons remains to be done. For researchers, problems arise in both the measurement of retained business income and in attempts to attribute that income to specific individuals. Gollin (2002) provided an early demonstration that correcting for different treatments of self-employment can reconcile large cross-country differences in factor income shares. More recently, Gutiérrez and Piton (forthcoming) argue that, after correcting for inconsistent treatment of entrepreneurial income (and the inclusion of housing rents in the corporate sector), the decline of the labor share is no longer apparent in advanced economies outside the United States and Canada.

It seems likely that the issues discussed in this paper can make a large difference in other countries too. For example, in many European countries, such as in France where income inequality series based on tax data often imply low and stable inequality, we know that closely held private businesses are even more important for economic activity than in the United States. These countries often have tax rules that encourage business owners to keep income within the firm and off their personal tax returns. In Norway, Alstadsæter et al. (2016) show that omitting retained business income leads to a large mismeasurement of inequality; conversely, accounting for it doubles the income share of the top 1 percent and triples the share of the top 0.1 percent in some years. They find that in the Norwegian data, these issues also affect the trends in inequality in the aftermath of a reform that created strong incentives for businesses to retain earnings. Alstadsæter, Kopczuk, and Telle (2014) find some evidence that retained business earnings were disproportionately invested in financial instruments and durable goods (cars, ships, planes) and thus may have substituted for private investment or consumption. Atkinson (2007) estimates that during the 1950s and early 1960s in the United Kingdom, including retained company profits raises income shares of the top 1 percent (excluding capital gains) by about half. Burkhauser, Hahn, and Wilkins (2015) show that a 1985 Australian tax reform captured a larger share of capital gains and corporate profits on individual tax returns, thereby increasing measured income shares of the top 1 percent by about one-sixth.

As another example of potential issues that arise, return to the role of life insurance in France mentioned earlier. Garbinti, Goupille-Lebret, and Piketty (2018) suggest that retained earnings and corporate dividends in France were each around 10–12 percent of GDP circa 2014. Moreover, dividends paid by French firms as a share of GDP have roughly doubled since 1990. This rise coincided with the expanding importance of life insurance assets (Assurance-Vie), which contain large amounts of indirectly held corporate equity for overall national wealth in France (Piketty 2011; Garbinti, Goupille-Lebret, and Piketty 2020). In the US data, retained earnings and dividends are each only about 4–5 percent of GDP during this period, consistent with a larger role for pass-through firms in the United States. Clearly, how a researcher decides to measure and attribute total

business income and retained earnings can influence measures of inequality and the labor share of income.

Attributing business income to individual owners is complex in other countries, as well, although some countries allow for linking individual tax information to business ownership and accounting data. Examples include work in Denmark (le Maire and Schjerning 2013), Canada (Wolfson et al. 2016), Chile (Fairfield and Jorratt De Luis 2016), Norway (Alstadsæter et al. 2016), and Finland (Harju and Matikka 2016), each of which uses direct links between firms and owners to correct for unobserved, unrealized income.

It would be a useful research project to make a systematic comparison of the rules regarding taxation of business income across countries. Such a project requires thinking about different organizational forms and their flexibility, the role of limited liability, and tax incentives associated with both corporate and non-corporate treatment. In turn, the different approaches to realizing business income have implications for how and when business income is reported and taxed, which in turn, has consequences for data availability.

Looking Forward

Business income reflects a mix of capital and labor income. The implications of this fact require a nuanced understanding of business activity and a thorough understanding of the various connections amongst payout, retained earnings, corporate and non-corporate profits, employee compensation, and the compensation of owner-managers. We believe that a bottom-up, micro-based approach to these questions is most likely to be productive.

We see a number of exciting research directions related to incentives and business incomes at the top. First, as the complexities of the Tax Cuts and Jobs Act of 2017 unfold, a number of research opportunities should emerge. On one hand, the law reduced the marginal and effective corporate tax rates, creating for the first time since 1987 a stronger incentive to shift business income away from a pass-through to a C-corporation structure. As an offset for capital-intensive pass-throughs that are more likely to consider C-corporation form in the first place, the 2017 legislation also introduced a new tax deduction ("Section 199A deduction") on personal income tax returns that amounts to a 20 percent reduction in taxes on business income in this form. As an acknowledgement of the incentives to characterize entrepreneurial income in the tax-preferred form, this rate is not available to a large number of "specified service businesses," including lawyers, doctors, consultants, and similar types of firms that rely primarily on human capital. Goodman et al. (2019) simulate the effect of the 199A deduction for pass-through owners based on 2016 data and conclude that while it benefits business owners throughout the income distribution, over 72 percent of tax savings accrues to the top 5 percent. Henry, Plesko, and Utke (2018) discuss the complex interaction of tax incentives regarding the choice of organizational form in the aftermath of the 2017 legislation.

Second, there is much work to be done in countries outside the United States in drawing links from private businesses to their owners and studying the implications for inequality and tax policy. In addition to the papers already mentioned, Miller, Pope, and Smith (2019) and Aghion et al. (2019), who use newly assembled data on the United Kingdom and France, respectively, are prominent recent examples. We have much to learn from how different incentive structures and rules in other countries affect the measurement and realization of top business income. For example, we are not aware of research that has connected the large pension and insurance industries outside the United States to trends in top income shares and the income-realization behavior of owner-managers.

Finally, future changes in the rates of corporate, personal, or capital gains taxation will further alter the balance between different organizational forms. Steps to increase transparency of gains to wealth are likely to have differential effects across corporate forms as well. For example, valuation of assets for the purposes of a wealth tax is straightforward for publicly traded firms, but much less so for closely held firms. Thus, a wealth tax, or other steps like requiring financial assets to be marked-to-market each would tend to make ownership forms with less effective transparency, like partnerships and S-corporations, more appealing. Both the public finance literature in particular and, more broadly, any study relying on administrative tax data should be aware of the need to take shifts in organizational form of businesses into account.

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