THE SAME BUT DIFFERENT
HOW THE INCOME TAX AFFECTS BLACK, HISPANIC, AND WHITE HOUSEHOLDS

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ABSTRACT

The federal income tax does not explicitly discriminate by race or ethnicity but can still generate disparate outcomes when a group's activity correlates with determinants of tax liability. Using SCF data and NBER's TAXSIM model, we find that untaxed forms of income accrue disproportionately to white households across most income levels. Black and Hispanic households face lower tax rates than whites in low-income groups due to differences in filing status and dependents, but Black units face higher rates than whites in high-income groups due to differences in income composition. We also examine cross-group implications of historical and prospective policy changes.

AUTHORS' NOTE

I. INTRODUCTION

A key issue for researchers and policy makers is the extent to which laws and institutions that are nominally blind with respect to race and ethnicity are in fact neutral in their effects across groups. For example, the federal income tax does not explicitly take race or ethnicity into account; any two tax filing units with identical sources and level of income, deductions, and credits will face the same tax liability, regardless of group identity. Yet the income tax may still generate disparate outcomes across groups because factors that affect liability may be correlated with group identity.[1] These factors include the well-documented and extensively studied differences between Black, Hispanic, and white households in terms of household composition, labor earnings, wealth accumulation, and other measures of economic status.[2]

In this paper, we investigate how the income tax — a central economic institution in the lives of almost all citizens — differentially affects Black, Hispanic and white households.[3] A prominent theme of our analysis is that the differences in economic status noted above are among the primary determinants of tax liability and thus spill over into differences across groups in income tax burdens. In turn, the resulting differential income tax treatment may have significant

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[1]Moran and Whitford (1996) and Brown (2021) provide several examples where the tax code favors the activities, resources, and behaviors more common among white than Black families. Martinez and Martinez (2011) and Martinez (2017) provide similar analysis for Latino families. Gale (2021) provides examples where pre-existing discrimination in public policies, social practices, or economic conditions can cause policies that are race-neutral on the surface to nevertheless have disparate racial impacts.

[2] See, for example, Aladangady et al. (2023); Altonji and Blank (1999); Boddupalli et al. (2024), Derononcourt et al. (2024); Gale et. al. (2022); Haskins and Sawhill (2009); Moynihan (1965), and Thompson and Suarez (2019).

[3] According to the Oxford English Dictionary (2024), "Hispanic" refers to people with ancestry from Spanish-speaking countries, whereas "Latino" refers to people of Latin American origin. The Survey of Consumer Finances asks respondents their racial identification, including one category given as "Hispanic or Latino." We use the term Hispanic throughout the paper and use it to refer to any respondent who identifies with either term. Limited sample size in the SCF constrains our ability to analyze other ethnic or racial groups. For a preliminary analysis of income taxes and Asian-American households see Gale and Gnany (2024). A person's perceptions of their own race may be influenced by culture, place, or social context, and may vary over time as well.

effects on the differences in economic status.

To carry out the analysis, we use data from nine waves of the Survey of Consumer Finances (SCF), a public-use triennial household survey that contains information on demographics, income, wealth, and consistent measures of respondents' self-reported race and ethnicity. We split households into tax units using a methodology developed in Gale et al. (2022a, b) and develop measures of adjusted gross income (AGI), deductions, taxable income (TI), and eligibility for credits. We run the data through the National Bureau of Economic Research (NBER) TAXSIM model, which allows users to specify which year's tax law to use to calculate tax liability. To develop a reliable measure of households' economic status and to examine the racial implications of items that are *not* taxed in the current system, we construct a new, broad measure called "expanded income" (EI), which starts with adjusted gross income (AGI) and adds various forms of cash and non-cash income components.

We obtain several major results, all under 2018 law unless otherwise specified. First, the descriptive data show that Black, Hispanic, and white tax filing units differ systematically. White units have higher average income and, because the income tax is progressive, face higher average tax rates (ATRs), defined as the ratio of income tax liability divided by EI. Even after controlling for EI, important differences remain: white units are least likely to file as head of household; they also receive the lowest share of income in the form of wages and the highest share of income as tax-preferred or -exempt capital income. Hispanic units are the most likely to be married, have the largest average tax unit size, and are most likely to be eligible for the Earned Income Tax Credit (EITC) and Child Tax Credit (CTC). These descriptive findings are crucial because they reflect the underlying economic differences across groups noted above and drive all the results that follow, in intuitive ways.

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Second, on net, the differences between a comprehensive income tax and the current income tax disproportionately benefit white households, on average. These differences include the non-taxation of items such as imputed rent from owner-occupied housing, unrealized capital gains, and a substantial share of business income. This result holds in the aggregate, which is unsurprising because most untaxed income accrues to high-income households, where white units are disproportionately represented. Even after controlling for EI, however, it still holds for Hispanic-white differences in all income groups and Black-white differences in middle- and high-income tax units, reflecting underlying group wealth differences and income tax preferences for capital income. We estimate that white tax units derive between 2 and 5 percentage points less of their income from taxable sources than Black tax units in deciles 5-9 and Hispanic tax units in deciles 2-9. In the lowest two EI deciles, the differences between a comprehensive income tax and the current system benefit Black households on average, who receive a disproportionate share of government transfers that are not taxed but would be under a comprehensive income tax.

Third, the relative taxation of different groups varies over the income distribution. In the bottom five deciles of the EI distribution, controlling for EI, Black and Hispanic tax units face lower ATRs than white tax units (by 1-2 percentage points for Black tax units and by 2-4 percentage points for Hispanic units). These results reflect differences in household composition and largely disappear in regressions after controlling for filing status and number of dependents.[4] In contrast, in the top three deciles of the EI distribution, and again controlling for EI, Black

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[4]There is an issue as to whether to control for tax unit characteristics, as such characteristics themselves may be the results of racism. We believe comparisons both with and without controls are informative. We control for tax unit characteristics here in order to explain the source of the differences in average tax rates, not to argue for the absence of racism in other parts of society. For further discussion, see Logan (2022) and Moran and Whitford (1996).

units face higher ATRs than white units (by 0.6 percentage points) and ATRs for Hispanic units are statistically indistinguishable from white units. For Black units, controlling for filing status and dependents does not eliminate this difference. Instead, the Black-white difference arises because Black tax units receive a smaller share of their income as tax-preferred or tax-exempt capital income, again reflecting racial wealth differences, and a greater share in the form of wages, which are taxed as ordinary income.[5]

Neither set of results — for low-income deciles or high-income deciles — is due to explicit differences in the tax treatment of race, but the two patterns raise different issues. The lower ATRs for Black and Hispanic tax units relative to white units in the bottom income deciles reflects society's desire to invest in children, either because the presence of children is considered to reduce ability to pay taxes or because investments in children have a public-goods aspect to them. The higher ATR for Black tax units relative to white units in the top deciles is more troubling because in each decile the groups have similar ability to pay taxes.

These results display both "vertical" and "horizontal" differences between Black, Hispanic, and white households. Using a decomposition technique proposed in Slemrod (2022) and implemented in Lin and Slemrod (2023) for gender differences in taxes, we show that 59 percent (44 percent) of the overall difference in ATRs between Black (Hispanic) and white units is due to group differences in average income coupled with the progressivity of the income tax. The remainder is due to "horizontal" differences within the same income deciles. Because the difference in ATRs by group changes sign as EI rises, we also decompose ATRs separately in the top and bottom halves of the income distribution and find that horizontal factors (e. g., family structure) dominate the differences in the bottom half while vertical (e.g., income) differences

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[5]Holtzblatt et al. (2023) and Cronin et al. (2023) obtain similar results on the share of wage and capital income.

dominate in the top half. These results are consistent with the regression findings and show that many features of the tax system besides its basic progressivity affect relative tax burdens.

Fourth, we analyze prospective and recent tax reforms. Broadening the tax base by taxing currently-exempt forms of capital income reduces ATRs for Black and Hispanic units relative to white units. Lowering marginal tax rates, while holding the base constant, has the same effect. Both results occur because, in most income deciles, tax-preferred and tax-exempt capital income are a larger share of income for white units than for other units, again reflecting underlying wealth differences.

We apply these results to the Tax Cut and Jobs Act of 2017 (TCJA) and the American Rescue Plan of 2021 (ARP). Although TCJA was regressive on an overall basis, thus benefiting white tax units relative to other groups, we find that within EI deciles the individual income tax provisions did not have substantially different effects by race and ethnicity. In fact, the lower tax rates and increased CTC in TCJA reduced taxes by slightly more for Black and Hispanic tax units than for white units within each income group. In sharp contrast, the American Rescue Plan of 2021 reduced ATRs substantially for Black and Hispanic units relative to white units in the bottom half of the EI distribution by substantially raising the CTC and the EITC.

Finally, we trace the evolution of group differences in the income tax over the past fifty-plus years. We show that, after applying 1970 law to the tax units in our sample, there is essentially no difference in average tax rates across the three groups, except at the very top. This is consistent with Strass and Gouveia (2023), who find no difference in ATRs between Black and white tax units using data from 1967 to 1973. We then trace the effects of the various policy changes that have occurred since then and have led to a system where Black and Hispanic households face lower average income tax rates than white households in the bottom half of the

distribution and higher rates in the top half. The former effect is primarily due to the creation and expansion of the EITC and CTC. The latter effect occurs because Black units receive more of their income from wages than do white units.[6]

Our results help shed light on how the income tax can create, reinforce, or offset pre-existing disparities across groups. Income tax liability depends on sources and levels of income, marital status, dependents, and other factors that have plausibly been affected by a history of racism and racist policies in the United States (Kawano 2022). We do not address why income tax rules might favor one group — for example, whether the differences are due to explicit or implicit racism, lack of representation in the legislature, or other causes (Moran and Whitford, 1996; Martinez and Martinez, 2011; Martinez, 2017; Brown, 2021; and Strand and Mirkay, 2023). Regardless of the cause, however, the results shed light on the racial and ethnic dimensions of the income tax.

Section II reviews previous literature. Section III discusses our data and methodology. Section IV provides descriptive data. Section V provides econometric tests of group differences in (1) the gap between a comprehensive tax base and the current tax base and (2) ATRs within income groups and also reports Lin-Slemrod decompositions. Section VI examines prospective and recent tax reforms. Section VII discusses how changes in tax law over the past 50+ years affect group differences in income tax liability. Section VIII provides concluding remarks.

II. PREVIOUS LITERATURE

There is a small but growing literature on racial differences in income taxation. In their classic paper, Moran and Whitford (1996, p 752, 757) argue that although the income tax is

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[6] As discussed further below, over the last several decades, policy makers have shifted the nature of low-income support away from programs that provide unconditional support, which are not part of the income tax, toward programs that provide support for low-income workers via income tax credits. As a result, our findings for how the income tax evolved should not be interpreted as representing the evolution of the safety net as a whole.

formally race-neutral, variations in circumstances and behavior across people of different races can result in disparate tax liabilities. They provide examples in support of two major hypotheses: first, that "… deviations from the ideal of a comprehensive income tax systematically favor whites over blacks;" second, that "… even if income is held constant, the Internal Revenue Code systematically disfavors the financial interests of Blacks … [which will] trigger different tax results." Brown (2021) and Martinez and Martinez (2011) offer further examples and supporting data on these two themes for Black and Hispanic tax units, respectively. Our analysis in section V generally supports the first hypothesis but finds that the latter hypothesis holds only in the top half of the income distribution.

Most recent work on this topic, however, has focused on the racial disparities inherent in particular provisions of the income tax, rather than the tax as a whole. Using the Treasury tax model and imputing taxpayer race from other data, Cronin, DeFilippis, and Fisher (2023) find that several major tax expenditures (including those for realized capital gains and qualified dividends) disproportionately benefit white households. Likewise, Holtzblatt et al. (2023), using the Urban-Brookings Tax Policy Center (TPC) simulation model and imputing taxpayer race from outside the model, find that preferences for realized capital gains disproportionately benefit white households. Perhaps surprisingly, neither study finds a racial/ethnic difference in use of the mortgage interest deduction, after controlling for income. Our results are consistent with all these findings.

Cronin, DeFilippes, and Fisher (2023) find that refundable credits tend to benefit Black and Hispanic households disproportionately, but the difference disappears after controlling for income, filing status, and number of children (Cronin, DeFilippes, and Fisher, 2024). We find similar results in section V.

Alm et al. (2023a), with Current Population Survey data, and Holtzblatt et al. (2024), with SCF data, use TAXSIM and find that marriage penalties are more prevalent and a larger share of income among Black than white couples, because Black couples generally have more equal spousal earnings and more dependents. Alm et al. (2023a) find similar, though weaker, results for Hispanic couples relative to white couples. These studies use self-reported race data. Costello et al. (2024), however, using the Treasury tax model and imputation procedures for taxpayer race, find different spousal earnings patterns and find that marriage penalties are not more likely among minority couples. The source of the difference in results is unclear.[7]

Other analyses of group differences created by specific aspects of the tax code include Hardy, Hokayem, and Ziliak (2022) and Alm et al. (2023b) on the EITC; Goldin and Michelmore (2021) on the CTC; Choukhmane et al. (2024) on retirement saving; and Elzayn et al. (2023) on audit rates.[8]

The disparities created by the income tax as a whole have received less attention.[9] Strauss and Gouveia (2023) use a 1967-73 panel of income tax returns coupled with taxpayer race data from matching federal records. They find no significant difference in the ratio of income tax liability to AGI for Black compared to white tax units after controlling for income, tax unit size,

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[7] If one accepts that the self-reported race data in the SCF and CPS are correct, and that the wage data on tax forms is correct, then either respondents are reporting wages incorrectly (and in the same incorrect way) in both the SCF and CPS or the imputation procedure used in Costello et al. (2024) is inaccurate in meaningful ways.

[8] See Culp (1991) for an early discussion of race and taxes. In addition, for discussions of varying detail, see Moran and Whitford (1996), Hamilton and Darity (2010) and Brown (2021) on the tax treatment of gifts and inheritances; Moran and Whitford (1996) and Brown (1997, 1999, 2021) on the marriage penalty; Brown (2021) on the mortgage interest deduction; Davis et al. (2021) on the child tax credit; Davis and Schieder (2021) on the state and local income tax deduction; Moran and Whitford (1996) on the taxation of fringe benefits and capital gains; Rhee (2013) on retirement plans; Crawford and Gerzog (2020) on education benefits; and Neubig (2021) on tax expenditures. Boddupalli et al. (2024) provide an overview of these issues.

[9] As far as we are aware, there have not been systematic statistical analyses of the income tax differences between Hispanic and white households.

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and itemization and filing status. We replicate these findings in Section VII. Unlike our work, they estimate a single coefficient for all Black households, rather than allowing the coefficient to vary freely over the income distribution. In addition, they do not have access to an income measure that is substantially broader than AGI — which matters for reasons explained in Section III — and they use data that does not reflect any of the tax changes over the past 50 years, including the creation and expansion of the EITC and CTC.

Sullivan (2021) uses Census and IRS data from 2018 to show that a higher share of Black residents is associated with a lower ratio of income taxes to AGI in low-income ZIP codes, but a higher ratio in high-income ZIP codes. We obtain results consistent with these in section V. We also explore individual-level determinants of tax liability, income measures broader than AGI, and the effects of tax reforms and historical changes in tax rules.

More broadly, Hardy, et al. (2025) use data from the 1976-2021 CPS to examine how the overall tax and transfer system, rather than just the income tax or specific tax provisions, has affected income disparities. Generally, they find that the tax and transfer system reduces Black-white inequality in low-income groups, but that the result fades as income rises, and the policies may actually increase Black-white inequality in higher-income groups. Our results discussed below, which show that Black tax units face lower (higher) average tax rates than whites in lower- (higher-) income groups, are consistent with their findings and, indeed, may help explain their findings.

Finally, the studies of racial differences in income and taxes summarized above are related to analyses that look at much broader, and more charged, topics. Darity and Mullen (2022), for example, provide a comprehensive, historical case for reparations for Black Americans. Derenoncourt et al. (2024) examine the evolution of the Black-white wealth gap

since the Civil War. Thompson and Saurez (2019) and Gale et al. (2022c) provide estimates for

more recent periods using the SCF. Tax policy has been used as a tool for racial suppression in

the U.S. and disagreements about redistributive tax policies have led to racially-linked deaths

and disenfranchisement (Fitzgerald, 2007; Lemann, 2007; Rable, 2007; Williamson, 2020;

Logan, 2023; Kahrl, 2024).

III. DATA AND METHODOLOGY

No publicly available data set contains information about both race/ethnicity and taxes.

To address this shortfall, we use survey data that includes respondent-reported race information,

and we impute tax liabilities. Other analysts have chosen to use data sets that already include tax

information and then impute race. There are advantages and disadvantages of each approach.[10]

A. Converting Households to Tax Filing Units

We use data from nine waves (1998 to 2022) of the SCF. The SCF provides high-quality

data on *household* income, wealth, and demographic characteristics. Tax liability, however, is

based on *tax filing units* not households. A "tax filing unit" (or "tax unit") is an individual or

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[10] Our approach—imputing taxes onto a data set that already contains information about race—captures the respondents' self-reported race and, although it may not generate the exact liability a tax unit faces, the error is likely to be small. Other empirical strategies offer different strengths and weaknesses. For example, starting with a data set that has tax information would provide more precise information on taxes but requires imputations for race. If the analysis considered only Black and white tax units, for example, the costs of imputing race incorrectly would seem to be considerable. With access to confidential tax data, Treasury Department economists have imputed a variety of races and ethnicities to filing units in the Office of Tax Analysis's microsimulation model by using a set of explanatory variables, including the taxpayer's sex, first and last names, and zip code, to make inferences about the person's race and Hispanic origin and then applying Bayesian inference to estimate the probabilities that each taxpayer falls into a race or ethnic category (Cronin et al. 2023; Fisher 2023). Recently, CBO economists have published analysis of a similar procedure (Heller et al. 2024). For a critique of this procedure, see Derby, Dowd, and Mortenson (2023). Using household survey data, the Tax Policy Center has developed race imputations to apply to its microsimulation model (Khitatrakun, Mermin, Page, and Rohaly, 2023). Alternatively, linking data sets with information on race (e.g., the Census) and taxes (e.g., tax returns) would provide greater accuracies on both measures, but the amount of tax data provided by the IRS to the Census department is limited by law and regulations. Akee et al. (2017) and Chetty et al. (2020) follow this approach, although they do not exploit the tax information in the Treasury data. Further, combining tax and Census data would not provide the extensive information on household wealth that the SCF contains and that is helpful for constructing broader income measures.

married couple who is required to file a tax return, or who would be required to file a tax return if their income were high enough, along with all dependents of that individual or married couple.

To create tax filing units out of SCF households, we build on the methodology in Gale et al. (2022a, b) and employed in Holtzblatt et al. (2024). For households that generate the vast majority of income — including singles living alone and married couples with either no dependents or with children younger than 18 — this process is simple. For other households, a variety of financial and demographic measures are used to estimate filing status. We supplement the SCF data with data on households in the Forbes 400, a group that the SCF is prohibited from interviewing (as explained further in the Online Appendix).

B. Observing Race and Sample Size

Beginning with the 1998 survey, the SCF has provided consistent questions about race, asking respondents to describe themselves either as white, Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, Native Hawaiian or Pacific Islander, or other. Each tax filing unit — single or married — has only one respondent. Respondents can report more than one race but are asked which race they identify with most strongly, which we use as the race classifier.[11] We assume that, if the respondent is married, the spouse and respondent are the same race and ethnicity, thus allowing us to define tax units as Black, Hispanic, or white (or neither).[12]

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[11] A relatively small number of people report multiple racial identifications—about 1.7 percent of the sample in the 2022 survey, down from 2.3 percent in 2004. The public-use version of the SCF only provides information about whether a respondent reported identifying as more than one race, not what the other races are. In 2019, 74.5 percent of those who identified their ethnicity as Hispanic or Latino also reported it as their racial identification.

[12] According to the 2010 Census, approximately 70.4 percent of married couples were comprised of two non-Hispanic white spouses, 6.2 percent were comprised of two non-Hispanic Black spouses, and 10.1 percent were comprised of two Hispanic spouses, regardless of race. Black men are more likely to have a racial intermarriage than Black women (Lofquist et al. 2012).

Our overall sample includes all tax filing units for all races and pools the SCF survey waves since 1998. The SCF generates five "implicates" for each unit to account for missing data. We employ information on all five implicates for each tax unit, generating a data set, on an unweighted basis, with about 207,000 white tax units, 35,000 Black tax units, and 29,000 Hispanic tax units (Table 1).

We apply weights using the SCF's replicate weights (divided by the number of survey waves that we use). On a weighted basis, white units account for about 70 percent, Black units account for about 14 percent, and Hispanic units account for about 11 percent of all tax units, with the share accounted for by white units falling from 76 percent in 1998 to 69 percent in 2022, the share accounted for by Hispanic units rising from about 8 percent to 12 percent, and the share accounted for by Black units remaining approximately constant (the remainder being other racial categories).[13] All dollar values are adjusted to 2018 dollars using the urban Consumer Price Index.

C. Constructing AGI

We construct AGI for each tax unit. The SCF income questions are generally written to capture income concepts that are consistent with AGI. The major components of AGI — accounting for almost all AGI — are available in the SCF. However, because the SCF's measures of income do not always align with tax concepts and because some variables — including net business income and respondent's age — are intentionally rounded or masked in the public

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[13] In contrast to the SCF data, analysis of the Current Population Survey (CPS, Flood et al., 2024) finds that there are more Hispanic individuals than Blacks individuals. Likewise, the Department of the Treasury (OTA, 2025) reports a larger number of Hispanic tax filing units than Black units in 2024. These differences may arise because in the CPS and OTA data, Latino/Hispanic is not an exclusive category (that is, a respondent can be Hispanic/Latino and Black or white as well), whereas in the SCF it is an exclusive category. Both the CPS and the SCF show sharply rising Hispanic shares of the population over time — from 9.4 percent in 1997 to 14.3 percent in 2022 in the SCF and from 11.5 percent to 19.1 percent over the same period in the CPS.

version to avoid reidentification of the participants, we derive or estimate (using other variables in the data set) several items that are needed to determine AGI (see Gale et al. 2022 a, b).[14]

D. Calculating Taxes

To compute federal income tax — given the creation of tax units, the construction of AGI, and our imputations for dependents, deductions, and eligibility for credits — we apply TAXSIM (Feenberg and Coutts, 1993). TAXSIM can replicate U.S. federal tax rules for any year from 1960 to 2023 and makes it possible to simulate alternative tax rules.

E. Validating the Results

Validation of the SCF-TAXSIM model against published Statistics of Income (SOI) tables is a key part of our modeling strategy. The SCF is a relatively small sample — roughly 4,000 to 6,000 observations depending on the year — and the incomes reported by respondents are not always conceptually consistent with the incomes that taxpayers report on tax forms. In addition, our modeling exercise requires separating SCF households into tax filing units, assignment of dependents, and imputations for missing tax inputs such as itemized deductions.

Figure A1 (in the Online Appendix) shows that, for each SCF wave, our estimate of aggregate AGI (the blue line) is close to, and trends with, SOI's estimate of the same measure (the orange line). In 6 of the 9 survey years, the estimates are within 2 percent of each other. Figure A2 (Online Appendix) shows that our estimates of aggregate tax revenues before credits

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[14] Our procedures build on the procedures in Gale et. al (2022a, b) in several ways. We (1) include data from the 2022 SCF, (2) include the micro-file on the Forbes 400, (3) separate the alimony and child support received using relevant demographic information from the survey, (4) include non-filers, and (5) incorporate new methods for imputing net operating losses and correcting for gross versus taxable wages and salaries. Specifically, we subtract pension contributions and an estimate of employee-paid health insurance premiums from SCF respondent-reported wages and salaries to bring those into line with the taxable wages and salaries measures that show up on tax forms. Note also that we do not scale or otherwise adjust SCF AGI components to align perfectly with either NIPA or SOI aggregates. As discussed in Gale et al, (2022b), our focus is on broadly capturing the incomes reported on tax forms, not an exhaustive accounting and reconciliation of income flows estimated by either BEA or the IRS.

(the blue line) track published SOI values (the orange line) well. In 7 of the 9 survey years, our estimate is within 4.5 percent of the SOI figure.[15] Table A1 (Online Appendix) shows that we replicate the number of returns by filing status fairly closely and that our estimates of *eligibility* for the CTC and the EITC are slightly higher than SOI's reported *usage* of those credits. This provides confidence in our simulation efforts since less-than-100 percent take-up rates imply that usage rates should be below eligibility rates.

We report eligibility for credits and itemized deductions — rather than attempting to estimate usage — because our focus is on how the *tax code* itself differentially affects people of different races and ethnicities. Take-up rates for the various provisions involve factors beyond the tax rules themselves. (See Goldin and Michelmore (2021) and Davis et al. (2021) on the CTC; Hardy, Hokayem, and Ziliak (2022) and Alm et al. (2023b) on the EITC; and Benzarti (2017) on itemized deductions.) Section III of the Online Appendix provides a more detailed treatment of measuring credit take-up and eligibility in the SCF.

F. Constructing Expanded Income

A distributional model must have a classifier by which to measure a tax unit's economic resources, compare and rank tax units, and use as a denominator for measuring average tax burdens. We sometimes use AGI as a classifier, because of its prominence in the tax system and to validate our data. But AGI is not an ideal income classifier. AGI omits many forms of economic income, making it a poor measure of a tax unit's overall level of resources and well-

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[15] Comparing our simulation results to published SOI data on AGI and pre-credit liability is more conceptually consistent than comparing results for post-credit liability because we measure eligibility for credits rather than usage. Nevertheless, although not shown in the Figures, comparisons of tax liability after credits are similarly close — in 7 of the 8 waves before the 2022 SCF, our estimate is within 5 percent of the corresponding SOI figure. As of this writing, however, we do not have aggregate benchmark data for tax liability after credits in 2021 (which would correspond to the income data collected in the 2022 SCF). It is also worth noting that our estimates of aggregate taxable income track SOI estimates very closely (not shown), which is unsurprising since — as shown in the Figures — AGI and tax liability before credits match SOI estimates closely.

being before taxes at a point in time. Moreover, changes in tax law often change the definition of AGI making it difficult to meaningfully compare values over time.

Recognizing these concerns, TPC (Rosenberg 2013) developed an income concept called "expanded cash income" (ECI). In addition to 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, the cost of employer-provided health insurance, and an imputation of corporate tax liability. For similar reasons, the Congressional Budget Office, the Joint Committee on Taxation, and the Treasury Department have also developed income concepts that are broader than AGI.[16]

We construct a new measure of income, "Expanded Income" (EI), which is broader than ECI or the income concepts used by government agencies (see Gale and Sabelhaus 2024). We measure EI as the sum of our estimate of ECI plus our estimates of additional major income components, including (1) untaxed closely-held business income, (2) unrealized capital gains, (3) imputed rent on owner-occupied housing, (4) inheritance income, (5) net child support income, and (6) the value of Medicare and Medicaid outlays. The SCF is well-suited for estimating these income components because it contains details on businesses, the asset values that determine capital gains and rental income, and respondent-reported inheritance and child support flows.

The Online Appendix describes EI in detail. Two features of EI play prominent roles in our analysis. First, the *amount* of income excluded from AGI (or other existing distributional

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[16] Refundable income tax credits and government transfer programs are equivalent in certain ways in that they both provide cash to the tax filing unit. However, we include government transfers, but not refundable credits, in the definition of EI because we intend EI to provide a measure of resources before applying the income tax and to examine the effects of the income tax, given EI. JCT, CBO, the Treasury Department, and the Urban-Brookings Tax Policy Center make a similar set of distinctions. Neither EI nor any of the other income measures used by the agencies includes the value of home production.

classifiers such as ECI) is substantial. Our estimates of aggregate EI are about 90-100 percent larger than aggregate AGI and about 35-45 percent larger than ECI. Second, although EI is distributed more unequally than ECI or AGI, the ratio of EI to AGI is not monotonic; it is U-shaped over the income distribution when sorting tax units by either EI or AGI. Most of the dollars accounted for by excluded incomes — such as untaxed business incomes and unrealized capital gains — skew towards the top of the income distribution, but some skew towards lower-income groups, such as untaxed government transfers.

IV. DESCRIPTIVE DATA

There are systematic differences between Black, Hispanic, and white tax filing units, on an overall basis and even after controlling for EI. These differences reflect well-known differences in labor earnings, wealth, and household composition noted earlier and, in turn, will drive the results in subsequent sections. The differences imply that both "vertical" and "horizontal" differences can affect the relative tax liability of the two groups.

A. Differences on an Overall Basis

We begin by comparing Black and white tax units (Table 1). The ratio of average EI across the groups is about 2.25 — $154,700 for White units compared to about $68,800 for Black units. This reflects underlying differences in AGI and taxable income (TI). As noted earlier, EI is much broader than the other two income measures. AGI comprises 51 percent of EI for white units and 53 percent for Black units. For taxable income, the analogous figures are 38 percent and 34 percent.

We calculate ATRs in two ways. In all cases, the overall ATRs are higher for white tax units than Black units because white units have higher average income and the income tax is progressive. When calculated as a ratio of aggregate income taxes to aggregate income measures

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for each racial group, the ATRs are 17.2 percent and 8.7 percent using TI as the denominator, 12.8 percent and 5.4 percent using AGI, and 6.5 percent compared to 2.9 percent using EI. When calculated as the mean of the distribution of each unit's tax liability divided by income, the ATRs are much lower.[17] The rates are -4.0 percent for white units and -11.5 percent for Black units using TI as the denominator, 3.0 percent and -2.3 percent using AGI, and 2.2 percent and -0.2 percent using EI.

Filing status also differs substantially across races. Among Black units, 25 percent claim head-of-household status and 19 percent claim married filing jointly. Among white units, the analogous figures are 10 percent and 42 percent, respectively. Black units are more likely to report having children — 38 percent versus 31 percent — but average tax unit size (a combination of filing status and number of dependents) is about the same for two groups. Due to these patterns combined with income differences, Black units are more likely to be eligible for the EITC but the two groups are equally likely to be eligible for the CTC. White units are more likely to be eligible for itemized deductions than are Black units.

White respondents are somewhat older than Black respondents, because a smaller share of the latter are 65 or older, reflecting differential mortality based on income (Chetty et al. 2016).

Table 1 also shows aggregate statistics for Hispanic tax units. Average income among Hispanic units is about the same as among Black units, but Hispanics face lower average tax rates than Black units because of the differences in tax unit size and filing status. The share of Hispanic tax units who are eligible to file married filing jointly (MFJ) or as head-of-household are intermediate between Black and white units. Hispanic units are more likely to have children

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[17] Lin and Slemrod (2023), calculating average tax rates for single men and single women, also find that the ATRs calculated using aggregate tax and aggregate income figures were substantially higher than the ATRs calculated using the means of the distribution of each tax unit's ATR.

and thus to have more dependents, making their eligibility rates for EITC and CTC higher than any other group. The older spouse in Hispanic households is, on average, about 9 and 4 years younger than their counterparts in white and Black tax units, respectively.

Table 2 reports the composition of EI by group. Only 44 percent of EI earned by white tax units is fully taxable, compared to 51-54 percent for Black and Hispanic tax units. One substantial component of that difference is represented by wages, retirement plan withdrawals, and taxable social security benefits, which account for just over half of all EI for Black and Hispanic units but only 41 percent for white units. Fully taxed capital accounts for a small share of income for all three groups.

In contrast, a substantial share of EI is either untaxed or lightly taxed. Untaxed capital income accrues disproportionately to white tax units, who receive 24 percent of EI in this form compared to 10-13 percent for Black or Hispanic units. Within that category, differences in unrealized capital gains stand out, accounting for 17 percent of EI for white units as opposed to 8-10 percent for Black and Hispanic units. Tax-preferred capital income also accrues disproportionately to white units, though it is substantially smaller than untaxed capital income. All told, white tax units obtain 33 percent of their income as returns to capital, compared to only 12-17 percent for Black and Hispanic units.[18]

Untaxed labor income — chiefly fringe benefits and retirement contributions and build-up — constitute about 20 percent of EI for all three groups. Reflecting differences in average income, Black and Hispanic units receive 11-14 percent of their EI in the form of government transfers (including Medicare and Medicaid) compared to just 5 percent for white units. Private transfers and implied corporate tax burdens do not vary substantially by group.

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[18] The table entries may not sum to the totals reported in the text due to rounding issues.

B. Differences After Controlling for Expanded Income

While differences in income drive many of the differences in other group characteristics, some of the differences remain after controlling for EI. To help clarify these issues, we present data on how selected characteristics in Tables 1 and 2 vary by EI category and race/ethnicity.[19]

Figure A3 (Online Appendix) shows the weighted distribution of tax units by EI decile and reflects the unequal levels of income between the three groups. Only 5 percent of Black tax units are in the top two EI deciles; 78 percent are in the bottom half of the EI distribution. The distribution of Hispanic tax units is very similar to that of Black units, except that a higher percentage of Hispanic tax units (28 percent vs. 23 percent) are in the bottom EI decile. Figure A4 (Online Appendix) shows that within EI deciles, average EI for white, Black, and Hispanic units is close to equal, except in the top decile, where average EI for white units substantially exceeds that of Black and Hispanic units.[20]

Figure 1 provides details on demographic characteristics by EI decile.[21] Relative to white tax filing units, in almost every EI category, Black units are less likely to be eligible to file as married filing jointly, more likely to be eligible to file as head-of-household, have larger average tax unit size and are more likely to be eligible for the EITC and the CTC. These within-decile differences are sizable. For example, in the third to fifth EI deciles, white tax units are 6-14

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[19] Following conventional procedure (CBO 2024), percentile breaks are created using counts of persons within the overall population (as opposed to just Black, Hispanic, and white persons). Reported statistics are for tax units within percentile groups. In each of the figures in the paper, we report results for the bottom 9 deciles, the 90-99th percentiles, and separately for the top 1 percentile. The EI decile break points are $25,361, $40,179, $54,523, $70,107, $88,611, $112,519, $142,984, $189,593, and $290,285 for the bottom nine deciles and $1,388,178 for the 99th percentile.

[20] The ratio of average Black (Hispanic) EI to average white EI is between 98.8 percent and 99.7 percent (98.4 percent and 99.9 percent) in the second to ninth decile. It reaches 104 percent (104 percent) in the bottom decile and falls to 85 percent and 85 percent (88 percent and 65 percent), respectively, in the 90-99th percentile (top percentile). For these reasons, in the regressions below, we not only separate sample observations by EI percentile but also control for EI level within each of those categories.

[21] Table A2 (Online Appendix) reports the numbers shown in Figures 1-4.

percentage points more likely to file as MFJ, 16-19 percentage points less likely to file as head of household, and 10-14 percentage points less likely to be eligible for the EITC or the CTC. These differences in marital status and in eligibility for refundable credits play important roles in the analysis below. The tax system provides subsidies for those married filing jointly, those who are head-of-households, and for children. Benefits under both the EITC and CTC are more generous as the number of children rises.

In almost all EI categories, an even higher share of Hispanic units is eligible to file MFJ than white units. Average tax unit size, EITC eligibility rates, and CTC eligibility rates are also higher for Hispanic units than for Black or white units. The share of Hispanic units eligible to file as head-of-household is between that of white and Black units.

Controlling for EI, eligibility for itemized deductions does not vary much by group (i.e., by less than 7 percentage points in each category except the top 1 percent), consistent with earlier studies, and is higher for Blacks and Hispanics than for whites in many of the top income categories.

Figure 2 displays information on the composition of income by EI decile. Relative to white tax filing units, in almost every EI decile, Black units have a higher share of EI from wages, from labor income more generally (wages, taxable retirement withdrawals, and taxable social security), and a lower share of income from various measures of overall or tax-preferred and tax-exempt capital income. These differences are especially noticeable in the 90-99th percentiles and the top percentile. Untaxed government transfers constitute a higher share of income for Black units relative to white units in the bottom half of the EI distribution but transfers are about the same share of EI for the two groups in the top half.

Hispanic units derive a higher share of EI from wage income than both Black and white

units in almost all deciles, and this difference is especially large at the bottom of the EI

distribution. In terms of capital income, Hispanic tax units fall somewhere in between Black and

white units: in the bottom 3 deciles, Hispanic tax units have a similar share of EI from capital

income to Black units (5-7 percent), and in deciles 7-9 that share is similar to white tax units (16-

22 percent).[22] Hispanic units also derive a similar proportion of their income to white units from

untaxed government transfers in the bottom 3 deciles (between 18 and 23 percent), but in deciles

5 and 6, government transfer receipt for Hispanic units looks more similar to Black units (11 to

16 percent of EI).

V. ANALYSIS OF TAX DIFFERENTIALS

In this section, we analyze three questions: Do deviations from a comprehensive income

tax favor whites over other groups? Controlling for income, how does the income tax

differentially affect each group, and why? To what extent are overall differences in average tax

burdens due to differences in income versus differences in other factors?

A. Deviations from a Comprehensive Income Tax

As noted above, Moran and Whitford (1996) hypothesize that deviations from a

comprehensive income tax systematically favor white over Black tax units. Martinez and

Martinez (2011) suggest the same conclusion for Hispanic units.

In general, deviations between a comprehensive income tax base (which we approximate

using EI) and the current income tax base (TI) can be divided into two forms: exclusions that

never show up in AGI and those that are included in AGI but not TI. Those that do not show up

in AGI in the first place can be further divided into two broad categories — market income and

government transfers.

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[22] Untaxed labor/retirement income, private transfers, and corporate tax burdens do not vary significantly by race, after controlling for EI decile.

The descriptive data provide some clues about the hypothesis. AGI is a smaller share of EI for white tax units (51 percent) than for Black (53 percent) or Hispanic units (57 percent), suggesting that white units benefit more from untaxed components of EI. The difference arises because white units have more EI on average and most untaxed forms of private income accrue mainly to high-income households. But TI comprises a smaller share of EI for Black and Hispanic units (33-34 percent) than for white units (38 percent), mainly because the standard deduction is a much larger share of average AGI for Black and Hispanic units than for white units.

Figure 3 shows how these patterns play out by EI percentile. In the bottom two EI deciles, AGI and TI are higher for white tax units than Black tax units. This reflects the higher level of government transfers for Black relative to white tax units in these EI categories (and in the first decile, a higher share of labor income in EI for white units, as shown in Figure 4). From the fourth decile to the top of the income distribution, the result is reversed — in each EI category, AGI and TI are lower for white units than Black units. That is, in this income range, the deviations between a comprehensive income tax and the current system are larger for whites than Blacks. This result stems from several factors: as EI rises, the composition of EI changes, with government transfers declining and untaxed capital income and fully taxed labor/retirement income rising (until the top decile). All these trends raise AGI and TI for Black units relative to whites, holding EI constant. For Hispanic tax units, AGI and TI are higher than for white units in every income category.

To examine these issues more formally, in Table 3, we estimate Equation (1)

$$(1) \quad Y_i = \alpha + \beta\,(EI_i) + \gamma_1 Black_i + \gamma_2 Hispanic_i + \sum_{j=2}^{9} \delta_j SurveyYear_j + \varepsilon_i$$

where i indexes tax units, j indexes survey waves, Y_i is either the ratio of AGI to EI or the ratio of TI to EI for tax unit i (represented as a percent), EI is expanded income, and Black and Hispanic identify the tax unit's race and ethnicity (with white as the omitted category). We run separate regressions for each EI category to allow for heterogeneity across the income distribution.

Table 3 shows the results.[23] Even after controlling for EI within EI classes, Black units have higher ratios of AGI to EI than white units from the fifth through the ninth decile of the income distribution and higher TI in the fifth through eighth deciles. In those deciles, AGI and TI are about 3-4 percentage points of EI higher for Black units than white units, indicating that the deviations between a comprehensive income tax and the current tax base are larger for white tax units in that group. In the top decile, similar qualitative results occur, but they are not statistically significant. In contrast, in the bottom EI deciles, AGI and TI are lower for Black than white units, due to the higher share of government transfers in Black EI relative to white EI, though the results are only statistically significant in decile 1.

The point estimates also indicate that Hispanic units have higher AGI and TI than white units in almost every EI category. In the second to ninth EI deciles, the results are precisely estimated and large — ranging between 3 and 15 percentage points for AGI and 2-5 percentage points for TI.

Table 3a reports the results of estimating Equation (1) using the level of AGI or TI, rather than the ratio relative to EI, as the dependent variable. AGI is between about $3,300 and $5,700 higher for Black tax units relative to white tax units in the fifth through ninth EI deciles; TI is about $3,000 to $5,100 higher in the fifth through eighth deciles. In the top EI categories, both

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[23] Tables 3, 3a, 4, and 4a report the coefficients of the indicators for Black and Hispanic tax units. Appendix Tables A3 to A12 report the full set of regressions estimates. In sensitivity analysis, not shown, adding controls for the age category of the household and for itemization status had virtually no impact on the results.

AGI and TI are far higher for Black tax units than white units with the difference reaching more than $22,000 in the 90-99th percentile and exceeding $400,000 in the top 1 percent. These results indicate the extent to which tax preferences or exclusions relating to capital income benefit white households over Black households, even after controlling for EI. In contrast, in the bottom decile, both AGI and TI are lower for Black tax units than white units, because Black tax units receive substantially more government transfers.

The results for Hispanic tax units also show that white tax units disproportionately benefit from deviations from a comprehensive income tax. In the bottom 90 percent of the EI distribution, after controlling for EI, Hispanic units have between about $1,200 and $8,000 more in AGI and between $900 and $6,100 more in TI than white units. These differences are usually statistically significant. The results in the top decile are qualitatively the same but not statistically significant.

Taken together, the results suggest white units in all EI categories disproportionately benefit from excluded forms of income relative to Hispanic units, and that middle- and high-income white tax units disproportionately benefit from excluded forms of capital income relative to Black units with the same EI. In contrast, low-income Black units disproportionately benefit from the non-taxation of government transfers. Thus, the results provide substantial but not complete support for the hypotheses put forth by Moran and Whitford (1996) and Martinez and Martinez (2011) about the racial/ethnic effects of differences between the income tax base and a comprehensive income tax; in particular, the findings support their proposition to the extent that the deviations considered focus on untaxed or tax-preferred forms of capital income.[24]

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[24] In the text, we specify these tests with EI in the denominator for consistency with the other sections of the paper. But one could also test the proposition that deviations from a comprehensive income tax favor white units over Black units by examining EI/AGI and EI/TI by AGI category and TI category, respectively. Doing so provides

B. Differences in Income Taxes Within EI Categories

Moran and Whitford (1996) and Martinez and Martinez (2011) also hypothesize that, even after controlling for income, the income tax discriminates against Black and Hispanic tax units. We find support for that view in the upper income deciles but not in the lower income deciles, and we explain the differences in terms of household composition and income composition.

Figure 4 shows that in the bottom five EI deciles, Black units face lower ATRs (income tax liability divided by EI) than white units. For Black units, the difference with white units is about 2 percent of EI in the bottom three deciles and declines to 1.2 percent in the fourth decile and 0.6 percent in the fifth decile. In contrast, the Figure shows that in the top five deciles, the result is reversed. The difference in ATR is relatively small (between 0.2 percent and 0.5 percent of EI) in the sixth through ninth decile but rises to 1.3 percent in the 90-99th percentile and to 5.0 percent in the top 1 percent.

The differences between Hispanic and white units are somewhat different. In the bottom three deciles, Hispanic units face ATRs that are between 3 and 4 percentage points lower than white units. Moreover, lower ATRs for Hispanic tax units extend through the eighth decile. Only in the top 1 percent do ATRs for Hispanic units exceed those for white units. ATRs for Hispanics are lower than for Black units throughout the EI distribution.

To account for these differences, we employ several regressions, the most general of which is

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unambiguous support (not shown) for the view that deviations from the comprehensive income tax favor white tax units. The ratio EI/AGI is larger for white units than Black or Hispanic units in every AGI decile and the ratio EI/TI is larger for white units than for Black or Hispanic units in every TI decile.

$$(2) \quad Y_i = \alpha + \beta_1(EI_i) + \beta_2 Black_i + \beta_3 Hispanic_i + \sum_{n=1}^{3} \beta_{4n} D_{ni} + \sum_{m=1}^{2} \beta_{5m} C_{mi}$$

$$+ \sum_{j=2}^{9} \delta_j SurveyYear_{ji} + \varepsilon_i$$

where D_n is a vector of demographic controls that contains an indicator for joint filing, an indicator for filing as a head of household, and the number of dependents, and C_m is a vector of income composition controls that contains the share of fully and partially taxed income in EI. We run separate regressions for each EI decile to allow for heterogeneity in responses across the income distribution and as a flexible and straightforward way to allow for the non-linearity of the income tax system without requiring a complicated specification.

In Table 4, we estimate three specifications: the first excludes the demographic and income composition controls, the second adds demographic controls, the third includes both demographic and income composition controls. Each specification contains the indicators for both Black and Hispanic tax units. To present and discuss the results, we first examine the results for Black tax units in each specification and then turn to the results for Hispanic units.

The results from the first specification, excluding the controls for demographics and income composition, confirm the descriptive findings in Figure 4. Controlling for EI, the coefficient on the Black indicator is negative and significant in the bottom five deciles and ranges between 0.6 and 1.9 percentage points. It is positive throughout the top half and significantly different from zero in decile 8 through the 90-99th percentile, ranging between 0.6 and 0.83 percentage points. Figure 5, Panel A, plots the coefficients and 95 percent confidence intervals for the results in Table 4, Panel A, for Black tax units.

The second set of regressions in Table 4 expand on the simple specification to include

basic demographic information (the vector D_n) — indicator variables for those filing as MFJ or as head of households (relative to single or married filing singly as the omitted categories) and the number of dependents. In the bottom half of the income distribution, controlling for these factors greatly reduces the magnitude of the coefficient — to between 0.02 and 0.37 percentage points — and eliminates the impact of race on tax liability in almost all the deciles. The controls also generally slightly weaken the positive coefficients in the top half of the income distribution, as shown in Figure 5.

To help explain the remaining ATR differences in the top half of the income distribution, the third set of regressions in Table 4 add two items (the vector C_m) to the right-hand side — the share of EI that is in the form of fully taxable labor or capital income, and the share of EI that is in the form of tax-preferred capital income (as in Table 2). Adding these variables essentially eliminates the remaining racial differences in ATRs in the top half of the income distribution through the 99th percentile — reducing the size of the coefficient to between 0.009 — 0.17 percentage points. In the top 1 percent, the coefficient on the Black indicator is positive but not significant in all three specifications.

Results for the coefficient on the Hispanic indicator are shown in Table 4, Panel B, and in Figure 5, Panel B, and are similar in many ways to the results for Black tax units. Controlling for EI, the coefficient on the Hispanic indicator is negative and significant in the bottom six deciles. The effect is larger for Hispanic units, though, ranging between 0.6 and 4.1 percentage points. Just adding the basic demographic information greatly reduces (by 69 percent to 92 percent) the magnitude of the estimated coefficient in the bottom half of the income distribution to less than 1 percentage point (although the estimates in the bottom two deciles remain statistically significant). This generally shows the importance of differences in eligibility for MFJ and HOH

filing status and for the EITC and CTC for Hispanics relative to whites. Adding the income composition variables does not have much of an impact on the results, and ATR differences remain in several of the income categories.

Table 4a repeats the analysis and specifications in Table 4 but using the level of income tax liability, rather than the average tax rate, as the dependent variable. Controlling only for EI, in the bottom five deciles, Black tax units face tax bills that average between $282 and $891 less than those faced by white units. In the top four deciles, Black tax units pay higher taxes than white units, with average differences between $381 and $1,417 in the 6th to 9th deciles and rising dramatically in the top decile. The estimates in the second row show that controlling for filing status and number of dependents essentially knocks out the difference in the bottom five deciles. Finally, adding controls for income composition generally reduces the coefficients relative to the first-row specification. Most third-row coefficients are between 80 and 99 percent smaller than their first-row counterparts, and all except the seventh decile are reduced by more than half.

The second panel of Table 4a shows results for Hispanic tax units. In the bottom half of the income distribution, controlling just for EI, Hispanic tax units face lower tax bills than those faced by white units by between $535 and $1,635. Controlling for just a few household demographic variables reduces the coefficients substantially — by just under 70 percent in decile 1, and by around 90 percent in deciles 2-5 — to $165 or less, though the estimates in the bottom two deciles remain significant. Adding income composition variables boosts some of the low-income coefficients.

In summary, the parsimonious list of explanatory variables helps explain differential results for all three groups in the bottom half of the EI distribution but does a better job

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explaining Black-white differences at the top than Hispanic-white differences. As shown in

Figure 5, the results suggest some, but not complete, support for the second Moran and Whitford

(1996) hypothesis — that controlling for income, the tax system is biased against Black units.

Specifically, in the top half of the income distribution, Black tax units generally face higher

ATRs than white units, controlling for EI. This is consistent with the Moran-Whitford hypothesis

because the difference is due to the higher share of wages and the smaller share of lower-taxed

capital income in the income of Black units. In contrast, in the bottom half of the EI distribution,

Black units face lower ATRs than white units, controlling for EI, due to the way the income tax

treats filing status and dependents. These features favor low-income Black units over low-

income white units, in contradiction to the second Moran-Whitford hypothesis.[25] Likewise, in

the bottom half of the income distribution, the data do not support Martinez and Martinez's

claims that the tax system is biased against Hispanic households.[26]

C. Sensitivity Analysis

In the analysis above, the ATR is defined as the ratio of a tax unit's income tax liability

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[25] We have analyzed the hypotheses put forth by Moran and Whitford (1996) in the context of the current tax system. But in fairness to them, they were analyzing the tax system as it existed in the 1990s and before. Thus, it is appropriate to look at racial differences in taxes as they arose under the law in effect at the time. While we cannot use earlier data to undertake this experiment, below we apply earlier years' tax laws to the data. For example, using 1992 tax law (before the EITC increase in 1993 and before the publication of their article), the qualitative pattern of ATRs by income is the same as under recent law — Black tax units face lower ATRs than white units in the bottom several quintiles and higher tax rates in the upper deciles. That said, the differences are less pronounced under 1992 law than under 2018 law — that is, the average tax rate on Black units relative to white units was higher in the bottom half of the income distribution and lower in the top 1 percent than under 2018 law. We conclude that our analysis of the Moran and Whitford's (1996) hypotheses under recent tax law seems justified, and that the results would have been similar qualitatively using prevailing tax law at the time they were formulating their ideas. We report more data on 1992 law in Section VII.

[26] Martinez and Martinez (2011) note that Hispanic families tend to underutilize the dependent care tax credit, because they tend to provide child care via members of the extended family rather than through third-party commercial operations. Thus, our estimates, which examine eligibility — rather than the take-up rates — for various credits could overstate the difference in actual tax burdens between Hispanic and white families in low-income groups. However, the main drivers of those differences are likely to be filing status, number of dependents, the EITC and the CTC, rather than the child care tax credit.

divided by its Expanded Income. In this section, we examine variations in that definition and find that the results are robust to a variety of changes.

First, we examine changes in the numerator. Although the main goal of the paper is to examine the legislated rules of the income tax, it is natural to inquire about other programs. While analysis of the entire tax and transfer system is beyond the scope of the paper, we show the effects of adding receipt of SNAP, TANF, and SSI benefits (which are reported together in the SCF) as negative taxes and of adding employee and employer payroll taxes.[27]

Figure 6A reports the ATR *difference* for Black-white and Hispanic-white comparisons. A negative entry means that Black or Hispanic units face lower ATRs than white units. The (red) "Base Case" line is simply a reconfiguration of the lines in Figure 4.

Including SNAP, TANF, and SSI as negative taxes in the numerator substantially reduces the ATR for Black and Hispanic units relative to white units in the bottom seven deciles of the EI distribution. This occurs because benefit receipt is higher among Black and Hispanic units than white units. Including payroll taxes raises the ATR for Black units relative to white units, compared to the baseline case, in deciles 3-10. For Hispanic units, including payroll taxes raises ATRs relative to white units in all deciles. This occurs because wages, which represent the payroll tax base, constitute a greater share of EI for Black and Hispanic units than white units (as shown in Figure 2).[28] The result is reversed for Black tax units in the lowest decile, where wages are a smaller share of EI than for white units.

Second, we examine the effects of using different denominators in the ATR calculation

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[27] We acknowledge that the share of the employee and employer contributions that represents a true "tax," as opposed to a retirement contribution that will be returned with interest as benefits, varies by a worker's age, gender, marital status, earnings, and other factors. Determining that share, however, is beyond the scope of the paper.

[28] The change in relative ATRs from the base case is essentially equal to (1) the difference in wages as a share of EI times (2) the payroll tax rate.

(Figure 6B). Although EI provides the broadest measure of income that we could develop, results using narrower measures may also be of interest. One natural alternative is to omit most government benefits — SNAP, TANF, SSI, Medicare, and Medicaid — from the income measure, since they are not included in the average income tax liability calculation. This change *reduces* average tax rates for Black and Hispanic units relative to white units in the bottom part of the income distribution, relative to the base case. This may seem counterintuitive, since removing those benefits removes more income from Black and Hispanic units than from white units. The resolution lies in the fact that the ATRs for these groups are already negative in the base case. As a result, reducing income by more means that the ATR rises by more in absolute value (and becomes "more negative").

The results using AGI as the denominator follow the same logic at the bottom of the distribution, since government benefits are excluded from AGI. The only exception to this rule is the comparison of white and Hispanic tax units in the top 1 percent, where changing the denominator to AGI raises the ATR for Hispanic units relative to white units slightly. Expanded Cash Income (ECI) is an intermediate measure between AGI and EI. As a result, in the bottom 5 deciles, the group ATR differences using ECI as the denominator follow a path (relative to the base case) that is qualitatively the same as the path using AGI but quantitatively not as different from the base case.

In the third sensitivity analysis, we calculate "equivalized income" by adjusting EI for tax unit size in different ways. The most straightforward adjustment is to divide EI by the square root of the number of people in the tax unit.[29] This is a special case of the generalized equivalence method, which involves dividing EI by (the number of people in the tax unit) raised to the power

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[29] See CBO (2024) Appendix A for a detailed explanation of adjusting income for household size.

θ, with θ = 0.5. We also adjust EI using θ = 0.65 and use the OECD-modified equivalence method, which creates effective family size by adding 1 + 0.5*(each additional individual age 14 or older) + 0.3*(each individual under 14) (Hagenaars, de Vos, and Zaidi 1994).[30]

Figure 6C presents the results. Because Black tax units have somewhat more members than white tax units, the adjustments raise the absolute value of the differences between ATRs for Black and white units, for the same reasons as above, reducing relative ATRs in the bottom deciles where ATRs are negative and generally raising ATRs in the upper deciles where ATRs are positive. The same qualitative results occur for the comparison of Hispanic and white tax units, but the changes from the base case are larger because Hispanic units are larger than either Black or white units at all levels of income (Figure 1).[31]

D. Decomposing Differences in Group Average Tax Rates

As shown above, Black, Hispanic, and white tax units differ in two ways — they have different levels of income and, holding income constant, they have different demographic makeup and income composition. How much does each factor contribute to the overall group difference in ATRs? To address this question, we employ a decomposition technique developed by Slemrod (2022) and applied to questions of gender differences in taxes by Lin and Slemrod (2023).[32] The technique separates the differences in the groups' average tax rates into

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[30] We chose these equivalence scales because they are intuitive and capture the economies of scale associated with sharing resources in a household. Other income equivalence methodologies (such as the Census official poverty measure, the Census SPM, and TANF benefit scales) involve more detailed household information (in the case of Census measures) or vary by state (in the case of TANF).

[31] In a sensitivity analysis not shown in the Figures, we exclude tax units where the head is aged 55 and above, to address any sample differences that arise from differing mean age or life expectancy across groups. These results are similar to the base case, except for the top 1 percent. The difference at the top arises because the difference in untaxed income (stocks, businesses, etc.) is much larger between middle-aged groups than among their retirement-age counterparts.

[32] In many contexts, a natural way to decompose differences between Black and white households would be to use a Kitagawa-Blinder-Oaxaca decomposition. In this case, however, it would not provide any useful information

components due to (1) the existence of an intentionally progressive tax system combined with differences in income levels between the groups and (2) differences in tax liability across the groups within income classes.[33] We apply the formula presented in Lin and Slemrod (2023).

Table 5 summarizes the results. In the overall sample, under 2018 law, about 59 percent of the difference in the ATR for Black units and white units is due to "vertical" concerns — the progressivity of the tax system combined with differences in the distribution of income between the two groups. The remaining 41 percent is due to horizontal considerations — namely, differences in taxes controlling for income.[34]

Given that the horizontal differences change sign as income rises — that is, that ATRs for Black units are lower than for white units in the bottom half of the income distribution and higher in the top deciles — we also conduct the decomposition separately for each half of the income distribution. In the bottom five deciles, the predominant source — accounting for 86 percent — of group ATR differences has to do with differential taxation of Black and white units with the "same" income (i.e., within the same EI decile). This is consistent with the regression results showing that differences in filing status and number of dependents is the source of the difference between the ATRs for Black and white tax units in the bottom half of the distribution. In contrast, in the top half, vertical concerns dominate, explaining 115 percent of the difference

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because the tax code does not vary explicitly by race. For example, if Black tax filing units were assigned the characteristics of white units, they would face exactly the same tax liability that white units face.

[33] Consistent with the approach taken in Lin and Slemrod (2023) the ATRs are calculated as the average across individuals, rather than tax units and so differ slightly from the data reported in Table 1. The average ATRs are 1.5 percent for white tax units, -2.8 percent for Black tax units, and -5.1 percent for Hispanic tax units.

[34] In all of the scenarios shown, decomposing average tax rates using AGI (instead of EI) in the denominator and sorting households by AGI (instead of EI) leads to broadly similar results.

in group ATR while horizontal considerations work moderately in the opposite direction.[35] This is consistent with the prevalence of white households in the top tail of the income distribution and with Black units having higher ATRs in the top deciles.

We also examine married and unmarried tax units separately. The results for married couples are similar to results for the top half of the income distribution — vertical considerations dominate, explaining in this case about 92 percent of the difference in group ATRs between Black and white couples. For singles or heads of households, the aggregate mix changes to mirror the results for the bottom half of the income distribution. Horizontal considerations explain 81 percent of the differences in group ATRs.

The results for Hispanic-white decompositions are similar but differ in plausible ways. Specifically, the difference due to vertical considerations is lower than for the Black-white differences (44 percent vs. 59 percent) and the role of horizontal considerations is commensurately higher, reflecting the larger tax unit size and different filing status patterns among Hispanic units relative to white units. Otherwise, the same patterns exist — vertical considerations are more important in the top half of the distribution, horizontal considerations are more important in the bottom half. The differences in ATRs among married taxpayers are due predominantly to vertical issues, while the differences in ATR among single taxpayers are due predominantly to horizontal differences.

These results are consistent with the regression results and emphasize the role of both horizontal and vertical differences in tax liability, which will prove important in analyzing both the effects of tax reform and the evolution of the tax system in the next two sections.

VI. IMPLICATIONS FOR TAX REFORM

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[35] While it may seem odd that vertical differences can explain more than 100 percent of the difference in ATRs, the result just means that the horizontal differences work in the opposite direction of the overall difference in ATRs.

What can policy makers do to affect differences in ATR across groups? The methodology and results above have several implications for the impact of prospective and recent tax policy changes on Black-white differences in taxes.

First, increases in statutory tax rates, holding the tax base constant, will raise taxes more for Black (and Hispanic) units than for white tax units in the top eight (in all) EI deciles. This follows directly from the fact that, in those deciles, the ratio of taxable income to EI is higher for Black and Hispanic units relative to white units. In principle, the opposite result occurs in the bottom two deciles for Black units, because they have lower taxable income relative to EI, but few households in those deciles face positive income tax liability, so the effect is small.

To examine this issue further, Figure 7 shows that cutting all statutory income tax rates by 10 percent (not percentage points) would reduce the ATR for Black and Hispanic units relative to white units by slight amounts throughout most of the income distribution and by larger amounts in the top percentile. The effect is small both because the ratio of taxable income to EI does not vary substantially across groups and because the ratio for all groups is relatively small (less than 0.4 on average).

In contrast, broadening the tax base to include more capital income would raise taxes for Black and Hispanic units by less than for white units because tax-preferred and tax-exempt capital income is a smaller share of EI for Black and Hispanic units than white units in every income category. For example, we estimate the impact of a policy that (1) removes preferential rates for realized capital gains and qualified dividends, (2) repeals the section 199A deduction, and (3) incorporates imputed rent, unrealized gains, untaxed business income, and tax-exempt interest into the tax base. We are not arguing that such a policy is plausible, just that it creates an upper bound on how much broader taxation of capital income could affect Black-white tax

differences. Figure 7 shows that this base-broadening policy would generally reduce ATRs for Black and Hispanic units relative to white units throughout the EI distribution. For Black-white comparisons, there are consistent reductions of about 0.2 percent of EI in the bottom eight deciles that rise to 3.4 percent of EI among the top 1 percent. For Hispanic-white comparisons, the reduction at the top is smaller — about 1.3 percent of EI in the 90-99th percentiles — and there is less of a clear trend in other deciles. This occurs because Hispanic tax units have a higher reliance on capital forms of income than Black tax units in deciles 3-9 (see Figure 2).

These results help frame analysis of two recent tax changes, The Tax Cut and Jobs Act of 2017 (TCJA) and the American Rescue Plan of 2021 (ARP). TCJA altered taxes on individuals, estates, and corporations (Gale, Hoopes, Pomerleau, 2024). We examine the changes to the individual income tax, where TCJA cut marginal tax rates, repealed personal exemptions, expanded the standard deduction and the child credit, created a deduction for certain forms of pass-through income, and capped the deduction for state and local income taxes.[36] The TCJA was regressive on an overall basis (Gale, Hoopes, Pomerleau 2024), which benefits white units relative to Black units simply because white units have much more income. In particular, TCJA provided substantial benefits to the top 1 percent, where whites are quite disproportionately represented (see Figure A1). On an overall basis, we calculate that white tax units received 79 percent of the benefits from TCJA although they only accounted for 70 percent of the sample. Black and Hispanic units account for 25 percent of tax units (14 and 11 percent, respectively) but received only about 15 percent of the tax cuts (8 and 7 percent, respectively).

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[36] Bivens (2017) combines (1) TPC measures of the share of the tax cut going to different income groups and (2) SCF data of the share of households by race within each group to generate (rough) estimates of the allocation of the net tax cuts provided by the TCJA to different racial groups, by income level and overall. Wiehe et al. (2018), Huang and Taylor (2019), Hill et al. (2019), and Moran (2024) provide detailed discussions of how the various provisions of the TCJA affect racial disparities in the tax code. None of the studies estimates the impact on ATRs.

Figure 8 shows, however, that under 2018 law relative to 2017 law, the ATRs for Black units relative to white units are virtually unchanged, controlling for expanded income group. This indicates that the individual income tax provisions of TCJA did not have a strong racial impact, after controlling for income differences. This result may be surprising but is due to the lower rates and the increase in the child credit, both of which tend to help Black and Hispanic tax filing units relative to white units through much of the income distribution. In contrast, the 199A deduction and the cap on the SALT deduction affect mainly the highest-income households, most of whom are white, and had at least partially offsetting effects on affluent households. We also note that TCJA did not raise taxes on tax-preferred capital income such as dividends or capital gains and did not bring any of the major untaxed sources of capital income into the tax base, either of which would have raised taxes on white units relative to Black units.

The American Rescue Plan of 2021 (ARP) provided $1.9 trillion in economic stimulus (CBO, 2021). The major income tax provisions included temporary increases (for 2021 only) in the CTC, the child and dependent care credit, and the EITC (CRS, 2021a). Figure 8 shows that, under 2021 law, relative to 2018 law, Black (Hispanic) tax units received substantial tax cuts relative to white units in the bottom half (bottom eight deciles) of the income distribution. These effects are attributable to the higher eligibility for the various credits among Black and Hispanic tax filing units — due to differences in filing status and the presence of dependents, as shown in Figure 2 — combined with the higher credit amounts in ARP.

VII. EVOLUTION OF THE INCOME TAX

Policy makers have changed the income tax in many ways over the last half century. In this section, we examine how those changes plausibly affected racial differences in taxes. To do so, we use the feature of TAXSIM that allows users to specify which year's tax law to apply to a

data set.[37]

In prior work, Strauss and Gouveia (SG, 2023) use a sample of federal income tax returns from 1967-1973, coupled with tax filers' racial identification added from other federal administrative records and matched to the filer by social security number. Their basic finding is that ATRs (defined as income tax liability divided by AGI) did not vary between Black and white tax filing units, once income levels and other prominent features of tax filing (filing status, dependents, itemization status, etc.) are considered.

Figure 9 shows our estimates of the difference in Black-white ATRs and Hispanic-white ATRs in our data set under 1970 law.[38] To maximize comparability, we follow SG in calculating ATRs as income taxes divided by AGI and sort tax filing units by AGI.[39] We essentially replicate the SG results. There is virtually no difference in ATRs across race except among the top 1 percent, a group whose income has changed dramatically relative to the rest of the population over the past 50 years.[40] In contrast, the results using 2018 law (and dividing by, and ranking by, AGI instead of EI) show a generally similar pattern as in Figure 6: lower ATRs for Black and

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[37] To be clear, we are using data from the 1998-2022 SCF and applying tax law from years outside that time range. We acknowledge that this is not the same thing as using data from the specific years in question, but we believe the results are nevertheless informative about how the income tax has evolved because the sample characteristics (e.g., tax units' income and marital status) are being held constant and the tax laws are changing across the years.

[38] Similar results, not shown, arises when using tax law from any year from 1967 to 1973, the range that SG employed.

[39] SG also report results using an income measure broader than AGI, which they call "economic income." Their measure, however, hues fairly closely to AGI. The ratio of their "economic income" measure to AGI is exactly 1.0 (i.e., there is zero broader income beyond AGI) for at least 75 percent of tax filers in their sample, and less than 1.17 for at least 95 percent of filers in their sample. We add substantially more income to AGI to obtain EI. As discussed in the Online Appendix, the EI/AGI ratio in our data is much larger — in 2019 for example, the ratio is 2.31 at its 75th percentile, and 7.30 at its 95th percentile.

[40] As one example that is consistent with the top 1 percent changing substantially over the past 50 years, we note that SG report that the ratio of average AGI for white units relative to Black units in their sample is about 1.40, about one-third lower than what we report in Table 1 for the 1995-2022 SCF sample. More generally, there has been substantial growth in income at the top (Piketty, Saez, and Zucman 2018; Auten and Splinter 2024).

Hispanic units relative to white units in the bottom half of the distribution and somewhat higher rates at the top, especially for the top 1 percent.

These findings suggest that racial differences in the income tax have evolved over time. Before turning to that issue, however, we emphasize the problems — noted above — associated with using AGI as a measure of household resources, either at a point in time or over time. Thus, we turn back to analysis using EI as the income classifier.

Figure 10 displays the evolution of racial differences in income taxation due to changes in tax law, starting in 1970, focusing on tax units in four parts of the income distribution: the 2nd decile (where income is low, but high enough to include substantial wages, so that we can capture the effects of introducing or expanding the EITC and the CTC); the 5th decile (to capture middle-income households); the 8th decile (to capture upper-income households) and the top 1 percent (because the effects of rate and base changes can be seen most clearly in this group).

Focusing first on the 2nd decile, under 1970 law, Black tax units faced a slightly lower average tax rate than white units and Hispanic tax units faced slightly higher rates. This is slightly different than the AGI results in Figure 9, which show no racial difference in average tax rates. The reason is the higher (lower) share of untaxed government transfers in EI for Black (Hispanic) units relative to white units in that decile.

For Black units, this differential grows gradually with the introduction of EITC in 1975 and subsequent major expansions in 1990 and 1993, and the introduction of the child credit in 1997 and expansions in 2001 and during the Great Recession (Congressional Research Service 2018, 2021b). Although the CTC was expanded further in 2017, there is little impact of TCJA on the racial difference in ATRs in this group, as shown earlier, because of the net effect of a wide variety of enacted changes. In contrast, also as noted earlier, the EITC and CTC expansions in

ARP had a very large effect on racial tax differences in this decile under 2021 law. For Hispanic units, the trends are the same, but all the effects are larger in absolute value, because of the differences in filing status and number of dependents.

An important perspective on the results for the second decile is that, because our results cover group burdens under changes in income tax law, consistent with the rest of the paper, they do not cover group burdens under all changes in the tax and transfer system. In particular, over time, legislators have shifted the bulk of funding for safety net programs toward refundable tax credits, such as the EITC and the CTC, which are included in our analysis, and away from direct cash welfare programs, such as TANF, which are excluded. For further analysis of these changes over time, see Bitler, Hoynes, and Kuka (2017) and Hardy, Smeeding, and Ziliak (2018).

The ATR difference in the 5th decile follows the same qualitative pattern as the 2nd decile over time, but the differences in general and effects of ARP in particular are more muted. Notably, the Black-white differential in the 5th decile starts out positive in the 1970s before changing signs in the mid-1990s as a result of the EITC and CTC expansions.

Moving to the 8th decile, the most obvious difference is that Black units consistently face (slightly) higher ATRs than white units over the past 50+ years, whereas Black units in the lower half of the distribution generally faced lower ATRs than their white counterparts. However, Hispanic units face lower ATRs than white units in the same EI decile in later years, again for demographic reasons. The various changes in tax base and tax rates over the last several decades have had little impact on the racial difference in ATRs in this decile, with the exception of the effect of ARP on Hispanic units' ATR.

Finally, in the top 1 percent, Black and Hispanic units have consistently faced substantially higher ATRs than white units. In addition, the relative change in ATRs are more

sensitive to historical policy changes in this group than the others. A straightforward way to interpret the results below is that lower marginal tax rates and expansions of the capital income tax base help Black and Hispanic units relative to white units. The reason is that in the top 1 percent, taxable forms of income are a greater share of EI and tax-preferred and tax-exempt capital income are a lower share of EI for Black and Hispanic units than white units (Figure 2).

For example, the Economic Recovery and Tax Act of 1981 reduced top rates and reduced the taxation of capital income. These effects are of opposite sign for the racial differences in ATRs, but the data suggest that the rate cut dominated and hence that ATRs for Black and Hispanic tax units fell relative to white units under 1984 law relative to 1981 law.

The Tax Reform Act of 1986 lowered marginal tax rates and expanded the capital income tax base, and both changes reduced ATRs for top-income Black and Hispanic units relative to white units from 1986 to 1988. In contrast, increases in the top income tax rate in 1990 (to 31 percent from 28 percent) and 1993 (to 39.6 percent) hurt Black and Hispanic taxpayers relative to white taxpayers in the top 1 percent.

The 2001 tax cut reduced rates over 5 years and thus helped Black taxpayers slightly relative to white taxpayers. The 2003 tax cut is well-known for reducing taxes on realized capital gains and qualified dividends, changes which helped white taxpayers relative to Black taxpayers. But it also accelerated tax rate cuts enacted in 2001, weakened the AMT, and accelerated marriage penalty relief provisions. The net effect of these and other provisions was a slight increase in the taxation of Black and Hispanic units relative to white units in the top 1 percent. As noted earlier, TCJA and ARP did not have substantial effects on the Black-white ATR differential in the highest income group.

VIII. CONCLUSION

Even in a tax system that explicitly avoids mention of race, differences in tax liability can arise because the various behaviors and circumstances that affect tax liability may be associated with race. Slemrod (2022, p. 202) refers to this effect as "implicit discrimination." Alm and Lind (undated, p. 2) call it "implicit bias." Both note that, given the complexity of the tax system and the large number of ways to divide the population, it is inevitable that such differences will occur. This makes it all the more important to understand the nature, source, and magnitude of the differences.

Our paper provides new evidence on the differential impact of the income tax on Black, Hispanic, and white tax units and the factors behind those effects, with specific results summarized in the Introduction. Taken together, the findings suggest that, in income ranges where Black and Hispanic units face higher taxes than white units, the principal factor is the tax preferences or exemptions accorded to various forms of capital income. In addition, in income ranges where Black and Hispanic units face lower tax rates than white units, the reason is that the low-income credits, subsidies to heads-of-households relative to singles, and untaxed government transfers help Black and Hispanic tax units relative to white units.

These differences stem from well-known racial differences in household composition, earnings, and wealth. Differences in family formation lead to differences in filing status. Differences in earnings lead to different eligibility for credits and different marginal tax rates. Differences in the level and composition of wealth affect the level of EI consisting of capital income and hence the share that is taxable.

Both Slemrod (2022) and Alm and Lind (undated) argue that it would be neither feasible nor desirable to eliminate all such differences, given the many goals of tax policy. Still, one notable implication of our results for tax reform is that standard arguments for moving to a

system with a broader base (typically meant to imply removal of the exclusions and tax preferences related to capital and labor income) and lower rates would also have the effect of helping Black and Hispanic taxpayers, on average, relative to white taxpayers, relative to the current system. A second policy implication, given the results under 2018 law versus 2021 law, is that increases in low-income refundable credits — e.g., the Child Tax Credit and the Earned Income Tax Credit — can also help Black and Hispanic households relative to white households.

Future research could constructively build on the results in this paper in at least three ways: by broadening the list of policies considered to include other taxes as well as spending programs; by examining differential tax effects for other racial and ethnic groups; and by examining how the differences in income tax liability in turn affect other factors, such as racial differences in wealth, household composition, and economic mobility.

DISCLOSURES

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Table 1. Summary Statistics

	White	Black	Hispanic
Panel A. Sample Size			
Unweighted	206517	35258	28831
Weighted (thousands)	114943	23199	18419
Panel B. Income			
Average taxable income	58586	23104	21980
Average AGI	79034	36796	37534
Average EI	154696	68821	66220
Average TI/Average EI	0.38	0.34	0.33
Average AGI/Average EI	0.51	0.53	0.57
Panel C. Tax			
Average income tax liability	10078	2000	1151
Average Tax Rate (taxes/TI, aggregate)	0.172	0.087	0.052
Average Tax Rate (taxes/AGI, aggregate)	0.128	0.054	0.031
Average Tax Rate (taxes/EI, aggregate)	0.065	0.029	0.017
Average Tax Rate (taxes/TI, personal)	-0.040	-0.115	-0.223
Average Tax Rate (taxes/AGI, personal)	0.030	-0.023	-0.041
Average Tax Rate (taxes/EI, personal)	0.022	-0.002	-0.019
Panel D. Filing Status and Family Characteristics			
Single	0.46	0.53	0.45
Head of Household	0.10	0.25	0.19
Married filing jointly	0.42	0.19	0.33
Married filing separately	0.01	0.03	0.03
Average tax unit size	2.04	2.00	2.38
Has children	0.31	0.38	0.45
Average Number of Dependents	0.63	0.81	1.06
EITC eligibility	0.13	0.26	0.33
CTC eligibility	0.27	0.27	0.34
Itemized deductions eligibility	0.19	0.10	0.09
Panel E. Age of Head			
Average age	49.6	45.8	40.9
Younger than 25	0.09	0.09	0.14
65 or older	0.24	0.16	0.09

Notes: The Table reports summary statistics by race/ethnicity for our sample, which is comprised of 156,548 weighted tax units constructed according to Gale et al. (2022a, 2022b). Federal income tax liability, filing status, and credit eligibility is determined by the TAXSIM tax calculator (Feenberg and Coutts 1993) and tax rates are calculated either as the ratio of aggregate taxes to aggregate income or the average of individual tax unit ratios of taxes to income. Age of Head refers to the age of the head of household.

Source: Surveys of Consumer Finances and authors' calculations.

	White	Black	Hispanic
Table 2. Composition of Income			
Fully Taxable Labor/Retirement	*0.407*	*0.504*	*0.527*
Wage income	0.357	0.451	0.505
Taxable retirement withdrawals	0.038	0.045	0.017
Taxable social security	0.011	0.008	0.005
Untaxed Labor/Retirement	*0.163*	*0.206*	*0.170*
Employee-paid Benefits	0.009	0.014	0.015
Employer-paid Benefits	0.034	0.053	0.049
Employer-paid Payroll and UI Taxes	0.029	0.040	0.046
Non-taxable Social Security	0.024	0.037	0.020
Retirement contributions and buildup	0.067	0.061	0.041
Fully Taxable Capital	*0.034*	*0.008*	*0.012*
Taxable interest	0.008	0.001	0.001
Net operating loss	-0.003	-0.001	-0.001
Taxable business income	0.029	0.007	0.012
Tax-Preferred Capital	*0.060*	*0.015*	*0.020*
Dividends	0.010	0.001	0.001
Realized Capital Gains	0.040	0.006	0.004
Section 199A	0.012	0.009	0.016
Untaxed Capital	*0.237*	*0.098*	*0.134*
Tax-exempt interest	0.005	0.000	0.000
Unrealized capital gains	0.168	0.075	0.097
Untaxed business income	0.044	0.017	0.028
Imputed rent on OOH	0.020	0.006	0.009
Government Transfers	*0.049*	*0.139*	*0.113*
Unemployment income	0.002	0.004	0.006
SSI, TANF, and other transfers	0.006	0.041	0.028
Medicare	0.027	0.040	0.029
Medicaid	0.014	0.054	0.051
Private Transfers	*0.023*	*0.011*	*0.011*
Alimony income	0.000	0.001	0.000
Net child support	-0.001	-0.001	-0.001
Inheritance income	0.024	0.012	0.012
Corporate Tax Burden	*0.019*	*0.015*	*0.011*
TOTAL	*1.000*	*1.000*	*1.000*

Notes: The Table reports statistics on the composition of Expanded Income (EI) by race/ethnicity for our sample, which is comprised of 156,548 weighted tax units constructed according to Gale et al. (2022a, 2022b). Totals do not sum exactly to 1 due to rounding. For more information on the construction of EI, see the Online Appendix and Gale and Sabelhaus (2024).

Source: Surveys of Consumer Finances and authors' calculations.

Table 3. Regression Estimates: Differences in Adjusted Gross Income and Taxable Income as a Share of Expanded Income, by EI Percentile, Race/Ethnicity, and Income

	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	P90-P99	P99-P100
Panel A. Dependent Variable = AGI/EI											
(1) Coefficient on Black indicator	-6.241***	-0.910	1.209	1.609	3.966***	4.035***	2.961**	3.469***	2.545**	2.315	11.47
	(1.704)	(1.333)	(1.388)	(1.318)	(1.325)	(1.363)	(1.251)	(1.253)	(1.187)	(1.831)	(10.11)
(2) Coefficient on Hispanic indicator	4.154***	15.32***	10.17***	6.616***	5.665***	5.442***	6.395***	2.802*	3.574**	1.080	-5.711
	(1.562)	(1.269)	(1.379)	(1.352)	(1.397)	(1.362)	(1.354)	(1.585)	(1.435)	(2.264)	(8.109)
Panel B. Dependent Variable = TI/EI											
(3) Coefficient on Black indicator	-1.365***	-1.866**	-0.346	1.115	3.664***	4.345***	3.606***	3.151**	1.807	2.358	11.76
	(0.371)	(0.776)	(1.046)	(1.171)	(1.183)	(1.262)	(1.203)	(1.291)	(1.295)	(1.824)	(10.65)
(4) Coefficient on Hispanic indicator	0.301	3.083***	1.974**	2.119*	2.335*	3.300***	4.904***	2.013	2.623*	0.304	-3.725
	(0.397)	(0.848)	(0.993)	(1.109)	(1.213)	(1.249)	(1.379)	(1.498)	(1.577)	(2.432)	(7.978)

Notes: Robust standard errors in parentheses; *p<0.1; **p<0.05; ***p<0.01. The table shows the coefficients on the indicator variable for Black or Hispanic tax units in regressions estimated separately for tax units in each expanded income (EI) decile, where the right-hand side variables include a constant, EI, the Black and Hispanic indicators, and an indicator for SCF survey wave (with one excluded). Each coefficient represents percentage point differences. The full set of regression estimates are shown in Tables A3 and A5.

Source: Surveys of Consumer Finances and authors' calculations.

Table 3a. Regression Estimates: Differences in Adjusted Gross Income and Taxable Income, by EI percentile, Race/Ethnicity, and Income

	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	P90-P99	P99-P100
Panel A. Dependent Variable = AGI											
(1) Coefficient on Black indicator	-831.8***	-309.1	584.6	1,031	3,298***	4,031***	3,823**	5,697***	5,602**	20,647*	380,626
	(215.0)	(439.8)	(658.4)	(814.7)	(1,049)	(1,343)	(1,557)	(2,005)	(2,673)	(12,412)	(265,265)
(2) Coefficient on Hispanic indicator	1,162***	5,007***	4,726***	4,083***	4,552***	5,420***	7,932***	4,124	7,956**	3,271	106,837
	(198.9)	(429.3)	(659.3)	(839.6)	(1,087)	(1,348)	(1,693)	(2,553)	(3,363)	(11,052)	(183,459)
Panel B. Dependent Variable = TI											
(3) Coefficient on Black indicator	-293.6***	-628.5**	-166.8	725.6	3,034***	4,364***	4,607***	5,117**	4,047	22,214*	402,355
	(82.53)	(263.1)	(496.8)	(720.7)	(938.6)	(1,245)	(1,498)	(2,079)	(2,904)	(12,178)	(284,556)
(4) Coefficient on Hispanic indicator	42.19	1,012***	903.9*	1,266*	1,911**	3,301***	6,077***	2,857	5,836	-459.0	145,531
	(82.98)	(293.0)	(480.1)	(692.3)	(949.5)	(1,246)	(1,720)	(2,428)	(3,659)	(11,854)	(196,215)

Notes: Robust standard errors in parentheses; *p<0.1; **p<0.05; ***p<0.01. The table shows the coefficients on the indicator variable for Black and Hispanic tax units in regressions estimated separately for tax units in each expanded income (EI) decile, where the right-hand side variables include a constant, EI, the Black and Hispanic indicators, and an indicator for SCF survey wave (with one excluded). Each coefficient is measured in (2018) dollars. The full set of regression estimates are shown in Tables A4 and A6.

Source: Surveys of Consumer Finances and authors' calculations.

Table 4. Regression Estimates: Differences in Average Tax Rate by Race/Ethnicity and Expanded Income Percentile

	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	P90-P99	P99-P100
Panel A. Coefficients on the Black indicator											
(1) Controls: EI	-1.778***	-1.774***	-1.868***	-1.185***	-0.558**	0.361	0.290	0.605**	0.608**	0.883*	4.722
	(0.273)	(0.267)	(0.312)	(0.263)	(0.256)	(0.223)	(0.236)	(0.242)	(0.294)	(0.466)	(3.847)
(2) Controls: EI, Demographics	-0.245	-0.0239	-0.367**	0.0789	0.115	0.353*	0.336*	0.463**	0.519*	0.835*	4.255
	(0.185)	(0.176)	(0.184)	(0.186)	(0.166)	(0.187)	(0.192)	(0.231)	(0.275)	(0.465)	(3.445)
(3) Controls: EI, Demographics, Income Composition	-0.321	0.0681	-0.354**	0.0749	-0.0978	0.0960	0.167	-0.0091	-0.0090	-0.0086	0.230
	(0.205)	(0.175)	(0.155)	(0.138)	(0.120)	(0.108)	(0.103)	(0.134)	(0.124)	(0.170)	(0.966)
Panel B. Coefficients on the Hispanic indicator											
(1) Controls: EI	-3.085***	-4.094***	-3.427***	-2.585***	-2.064***	-0.633**	-0.332	-0.277	0.194	0.126	-0.767
	(0.340)	(0.384)	(0.339)	(0.323)	(0.306)	(0.274)	(0.283)	(0.271)	(0.309)	(0.560)	(2.802)
(2) Controls: EI, Demographics	-0.960***	-0.523**	-0.0588	0.211	0.168	0.403**	0.623***	0.204	0.368	0.00922	-1.574
	(0.199)	(0.219)	(0.215)	(0.201)	(0.208)	(0.193)	(0.219)	(0.261)	(0.307)	(0.565)	(2.657)
(3) Controls: EI, Demographics, Income Composition	-0.934***	-1.047***	-0.675***	-0.329**	-0.258	0.000389	0.0699	0.115	-0.131	-0.128	1.502
	(0.202)	(0.212)	(0.209)	(0.168)	(0.160)	(0.120)	(0.123)	(0.116)	(0.127)	(0.175)	(1.044)

Notes: Robust standard errors in parentheses; *p<0.1; **p<0.05; ***p<0.01. The table shows the coefficients on the indicator variables for Black and Hispanic tax units in regressions estimated separately for tax units in each expanded income (EI) decile. Each coefficient represents percentage point differences in average tax rate (defined as income tax liability divided by EI). In the first row of each panel, the right-hand side variables include a constant, EI, the indicators for Black and Hispanic tax units, and an indicator for SCF survey wave (with one excluded). In the second row of each panel, controls are added for those units who file as married filing jointly, those who file as head of household, and the number of people in the tax unit. In the third row of each panel, the specification in the second row is supplemented with two variables — the share of EI that is fully taxable and the share that is partially taxable. The full set of regression estimates are shown in Tables A7-A9.

*Source:* Surveys of Consumer Finances and authors' calculations.

Table 4a. Regression Estimates: Differences in Income Tax Liability by Race/Ethnicity and Expanded Income Percentile

	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	P90-P99	P99-P100
Panel A. Coefficients on the Black indicator											
(1) Controls: EI	-281.5***	-591.6***	-890.8***	-728.1***	-413.0**	380.8*	381.8	984.4**	1,417**	8,452**	161,011
	(44.61)	(87.88)	(146.5)	(163.8)	(200.2)	(222.4)	(293.2)	(389.3)	(677.9)	(3,470)	(110,115)
(2) Controls: EI, Demographics	-24.57	-14.14	-180.7**	58.53	114.3	371.0**	441.4*	754.7**	1,221*	8,146**	138,255
	(32.55)	(57.25)	(86.99)	(115.6)	(131.3)	(187.9)	(239.3)	(376.4)	(631.7)	(3,469)	(97,055)
(3) Controls: EI, demographics, Income Composition	-23.86	17.38	-174.2**	56.73	-53.56	116.2	229.8*	-16.19	6.536	3,311	767.2
	(33.06)	(56.36)	(73.26)	(86.48)	(93.21)	(109.5)	(130.1)	(226.2)	(303.7)	(2,226)	(66,771)
Panel B. Coefficients on the Hispanic indicator											
(1) Controls: EI	-535.2***	-1,361***	-1,610***	-1,635***	-1,602***	-609.4**	-388.3	-484.3	481.6	165.8	55,885
	(59.91)	(126.3)	(158.4)	(202.1)	(240.4)	(272.8)	(352.0)	(444.4)	(712.7)	(2,837)	(74,033)
(2) Controls: EI, Demographics	-165.2***	-165.2**	-9.735	107.4	157.2	416.2**	811.4***	288.2	874.9	-766.2	33,379
	(34.75)	(71.68)	(100.3)	(123.9)	(162.1)	(192.0)	(273.6)	(431.0)	(713.4)	(2,863)	(68,627)
(3) Controls: EI, Demographics, Income Composition	-164.0***	-345.1***	-306.0***	-230.0**	-178.8	16.86	119.4	142.3	-275.2	-1,508	159,282***
	(34.43)	(69.70)	(96.80)	(102.5)	(124.3)	(117.7)	(153.7)	(193.1)	(312.0)	(1,556)	(45,896)

Notes: Robust standard errors in parentheses; *p<0.1; **p<0.05; ***p<0.01. The table shows the coefficients on the indicator variables for Black and Hispanic tax units in regressions estimated separately for tax units in each expanded income (EI) decile. Each coefficient represents differences in income tax liability (in 2018 dollars). In the first row of each panel, the right-hand side variables include a constant, EI, the indicators for Black and Hispanic tax units, and an indicator for SCF survey wave (with one excluded). In the second row of each panel, controls are added for those units who file as married filing jointly, those who file as head of household, and the number of people in the tax unit. In the third row of each panel, the specification in the second row is supplemented with two variables — the share of EI that is fully taxable and the share that is partially taxable. The full set of regression estimates are shown in Tables A10-A12.

Source: Surveys of Consumer Finances and authors' calculations.

Table 5. Summary of Lin-Slemrod Decompositions

	Vertical Considerations	Horizontal Considerations
Panel A. Black and White Tax Units		
All deciles	59%	41%
Bottom half	14%	86%
Top half	115%	-15%
Married taxpayers	92%	8%
Unmarried taxpayers	19%	81%
Panel B. Hispanic and White Tax Units		
All deciles	44%	56%
Bottom half	10%	90%
Top half	58%	42%
Married taxpayers	76%	24%
Unmarried taxpayers	27%	73%

Notes: The Table reports headline results from 10 different applications of the formula developed in Slemrod (2022) and used in Lin and Slemrod (2023). The formula decomposes the raw difference between ATRs for two groups into tax differentials that arise from vertical factors (the relative distribution of two groups across the income distribution combined with an intentionally progressive tax system) and from horizontal factors (differences in tax rate within narrow income bands). We use Expanded Income (EI) as our income classifier, and EI deciles as income bands to analyze horizontal equity. Panel A decomposes the difference in ATRs for Black and white taxpayers with different sample restrictions, and Panel B does the same for Hispanic and white taxpayers.

Source: Surveys of Consumer Finances and authors' calculations.

# Figure 1. Filing Status and Household Composition by EI Percentile
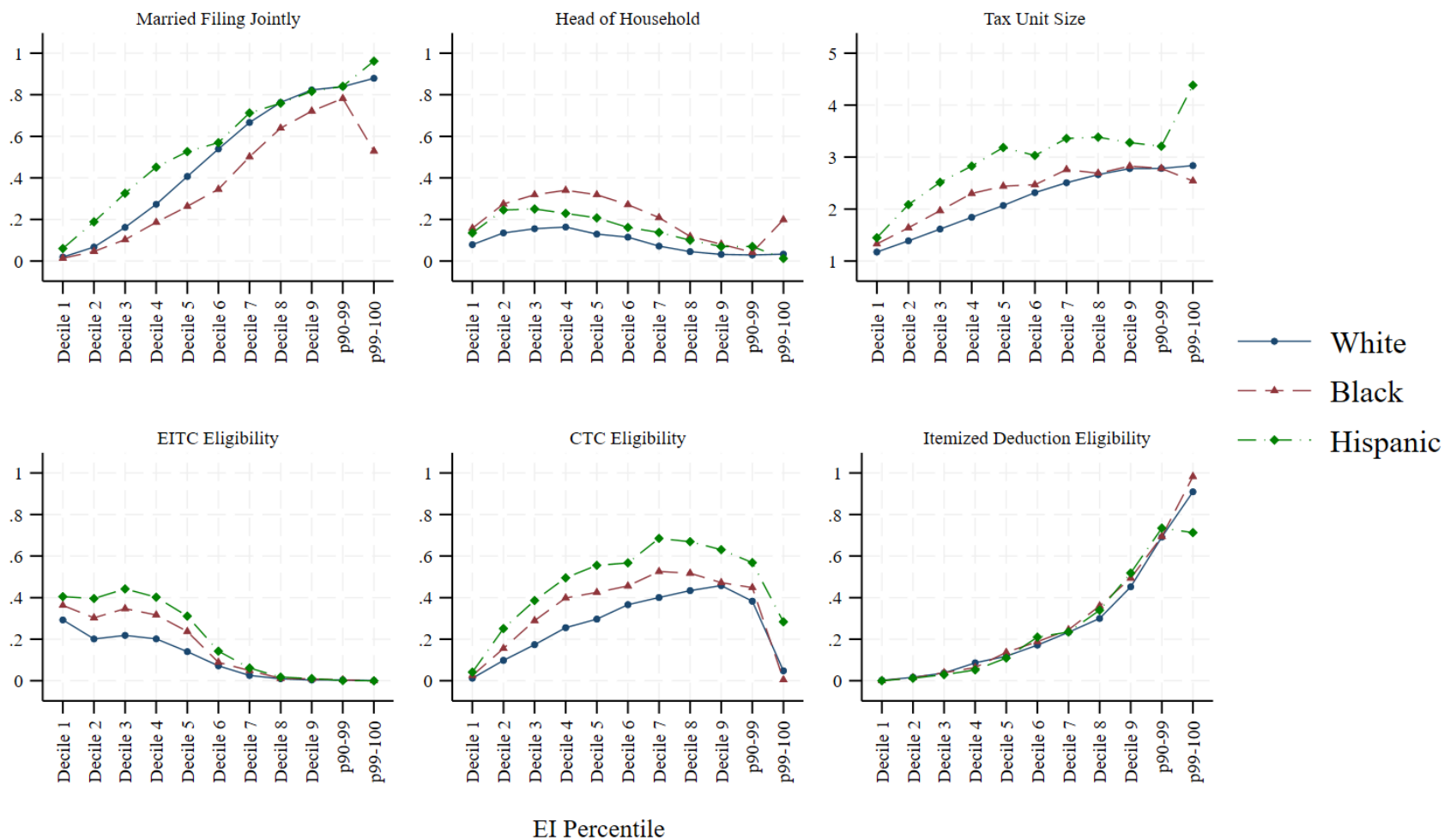
Notes: The Figure reports statistics on filing status, tax unit size, and eligibility for credits and deductions by race/ethnicity across the Expanded Income (EI) distribution. Distributional breaks are calculated using population weights, and other statistics are calculated using tax unit weights. Tax units are constructed according to Gale et al. (2022a, 2022b) and filing status and credit/deduction eligibility are determined by TAXSIM.
Source: Surveys of Consumer Finances and authors' calculations.

Alt text Clustered line graphs showing filing status, average household size, and credit eligibility across income percentiles for white, Black, and Hispanic tax units. Black units' head-of-household share stays highest across most percentiles; Hispanic units show the highest married-filing-jointly rates.

Figure 2. Composition of Income by EI Percentile
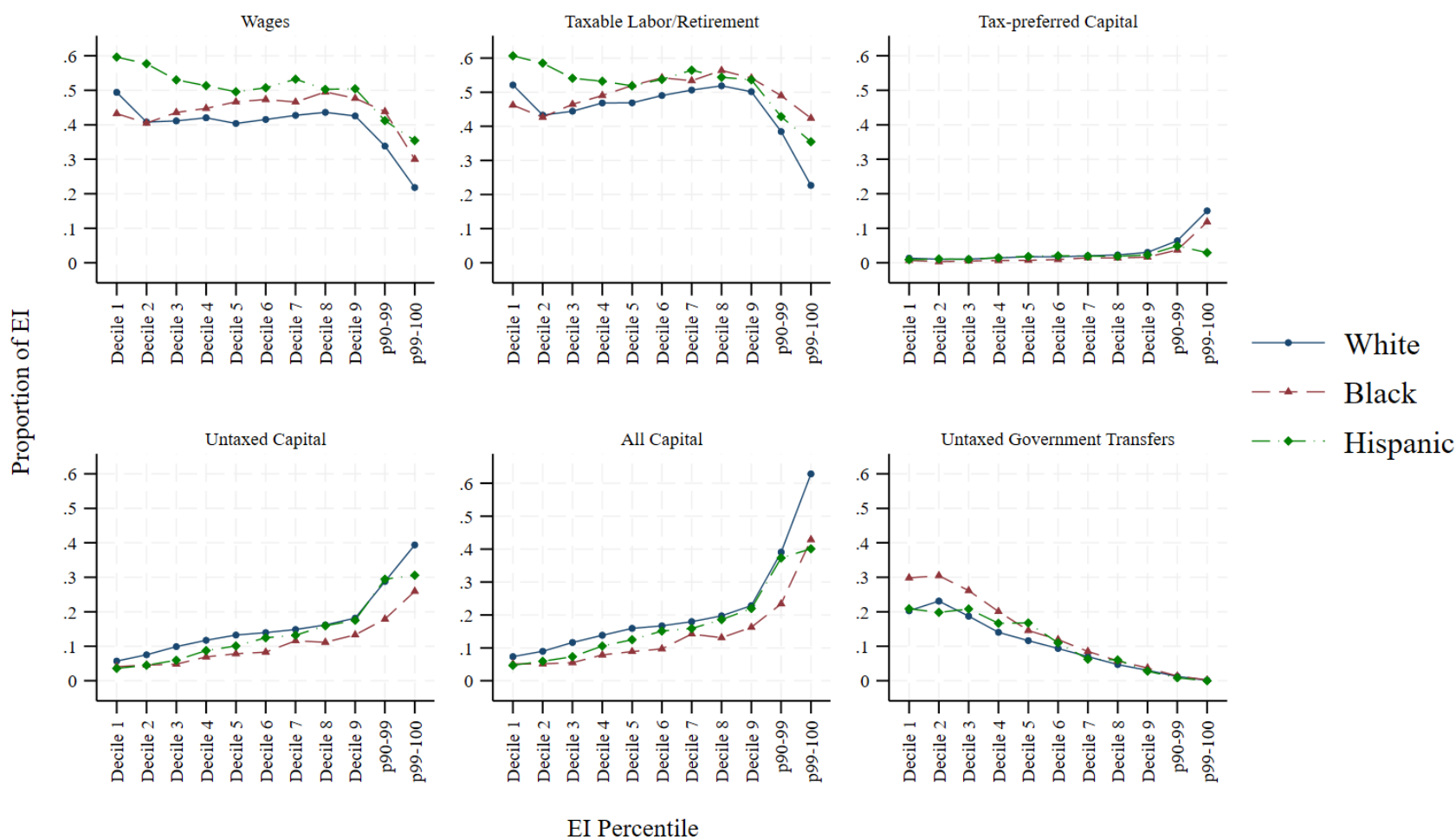
Notes: The Figure reports statistics on filing status, tax unit size, and eligibility for credits and deductions by race/ethnicity across the Expanded Income (EI) distribution. Distributional breaks are calculated using population weights, and other statistics are calculated using tax unit weights. See Figure 2 for the

components of each income category. For more information on the construction of EI, see the Online Appendix and Gale and Sabelhaus (2024).
Source: Surveys of Consumer Finances and authors' calculations.

Alt text: Line graphs by income percentile showing proportions of income sources by race. Wages dominate for all groups but decline with income, while untaxed and tax-preferred capital income expands sharply for white units at upper percentiles. Black and Hispanic units retain higher labor and transfer income shares throughout.

Figure 3. Adjusted Gross Income and Taxable Income as a share of Expanded Income, by Race/Ethnicity and Expanded Income Percentile
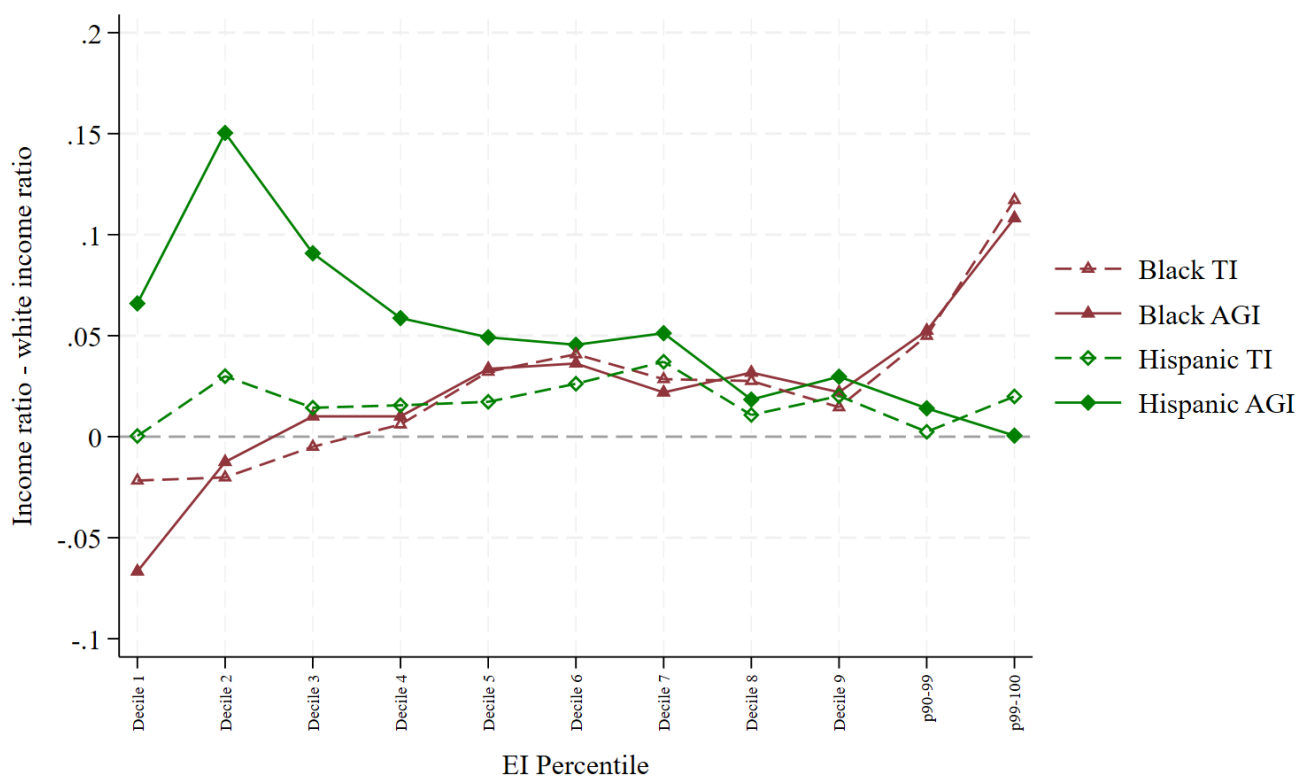
Notes: The Figure reports the difference between Black and Hispanic and white ratios of Taxable Income (TI) and Adjusted Gross Income (AGI) to Expanded Income (EI) by EI percentile. Distributional breaks are calculated using population weights, and income ratios are calculated as the share of aggregate TI (AGI) to EI in a given percentile using tax unit weights.
Source: Surveys of Consumer Finances and authors' calculations.
 Alt text: Line plot showing relative differences from white baseline across income percentiles. For Black units, AGI/EI and TI/EI are below zero in the lowest two deciles, cross near zero around deciles 3–4, then remain modestly positive through decile 9. For Hispanic units, both ratios are positive in nearly all deciles.

Figure 4. Average Tax Rate by Race/Ethnicity and Expanded Income Percentile
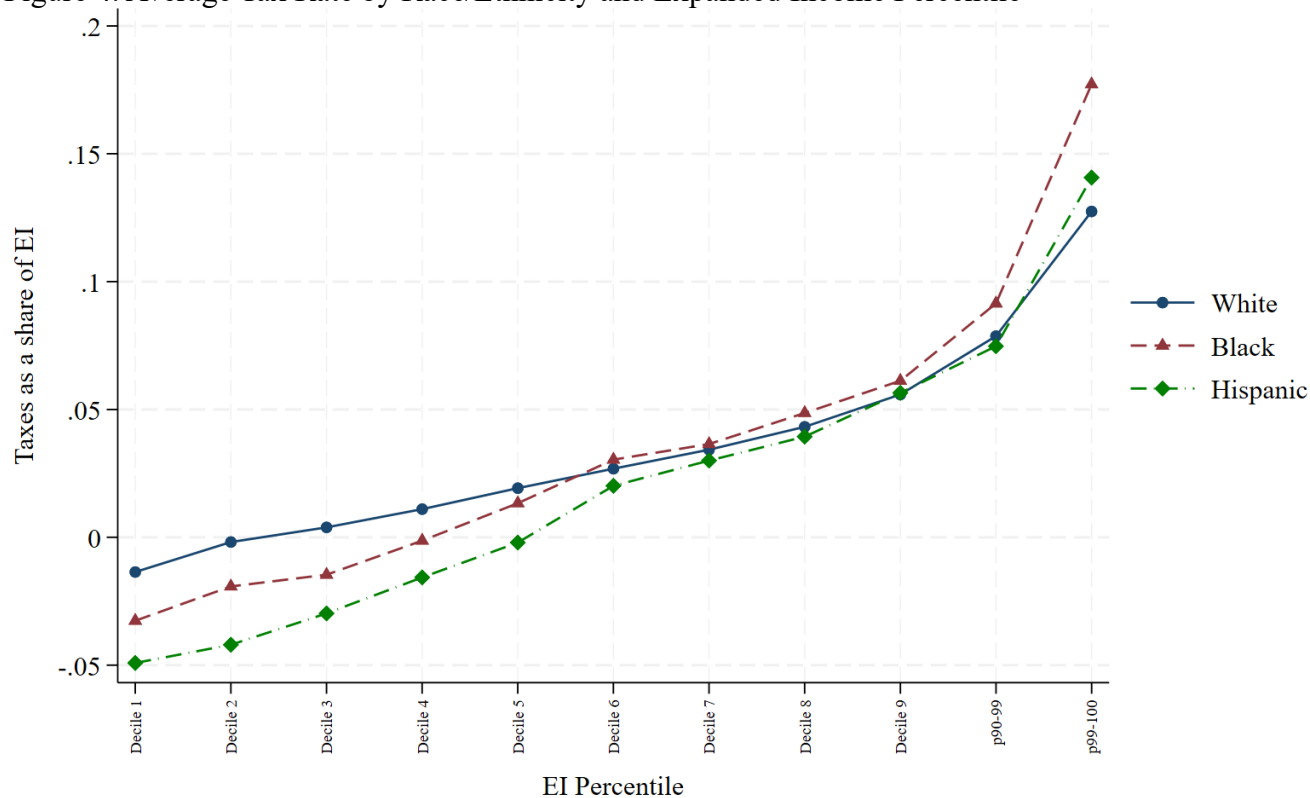
Notes: The Figure reports Average Tax Rates (ATRs) by race/ethnicity across the Expanded Income (EI) distribution. Distributional breaks are calculated using population weights, and ATRs are calculated as the ratio of aggregate income tax liability to aggregate EI in a given percentile using tax unit weights.
Source: Surveys of Consumer Finances and authors' calculations.

Alt text: Three rising lines showing average tax rate by income percentile for white, Black, and Hispanic units. All lines slope upward. Black and Hispanic lines lie below white lines in lower percentiles, converge at mid-levels, and cross above the white line in upper percentiles.

Figure 5. Difference in Average Tax Rate by Expanded Income Percentile
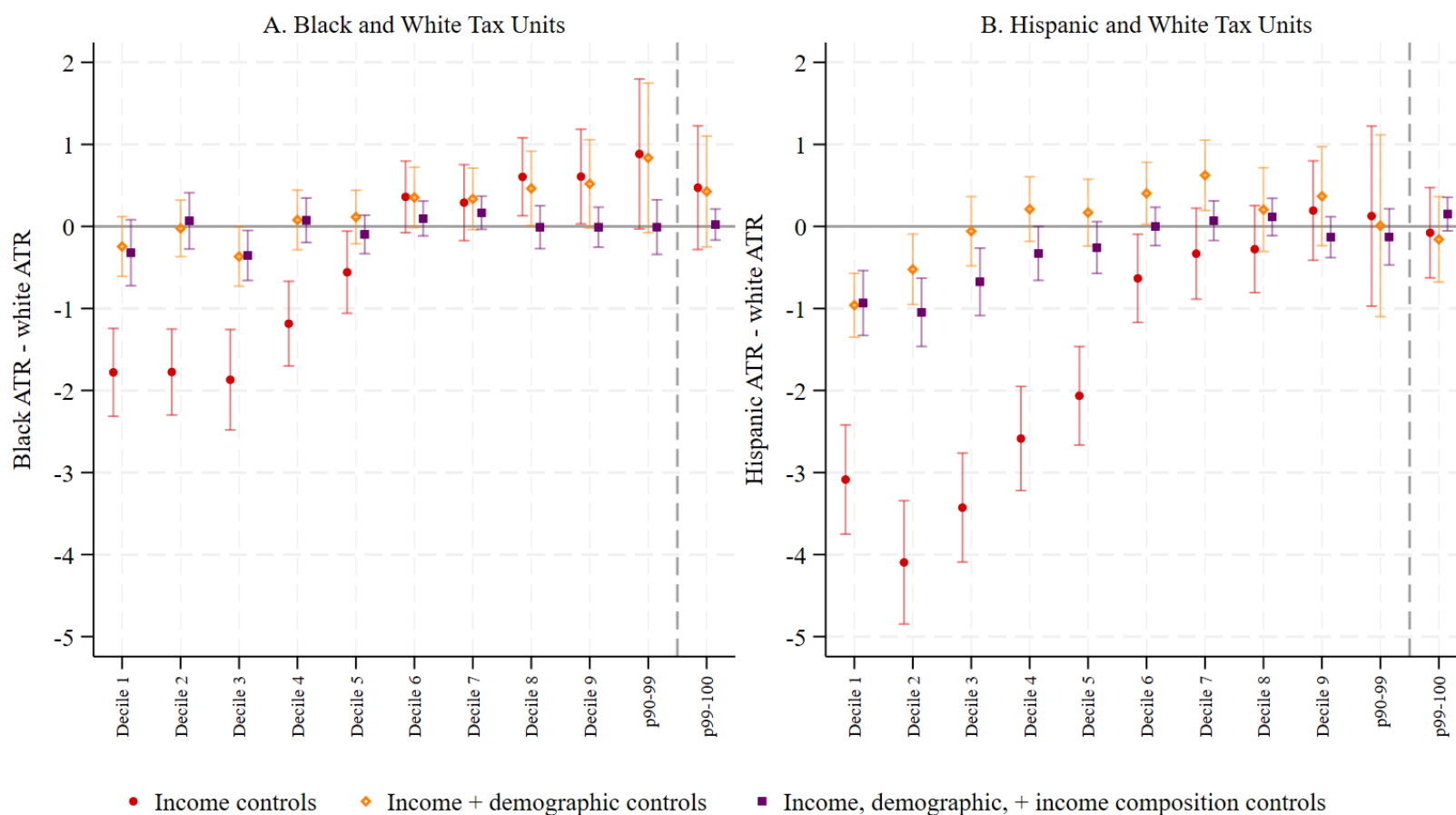
Notes: The Figure reports point estimates and 95 percent confidence intervals (both divided by 10 in the top 1 percent for scale) from regressions displayed in Table 4 and estimated in Tables A7-A9. The red circles plot coefficients for separate regressions by Expanded Income (EI) decile that regress Average Tax Rate (ATR) on EI, a Black indicator, a Hispanic indicator, and survey round fixed effects. The orange diamonds display the same coefficients for regressions that additionally control for filing status and number of dependents, and the purple squares display the same coefficients for regressions that additionally control for the share of fully and partially taxed income in EI. Panel A displays coefficients on the Black indicator variable, and Panel B displays coefficients on the Hispanic indicator variable. Distributional breaks are calculated using population weights, and regressions are estimated using tax unit weights.
Source: Surveys of Consumer Finances and authors' calculations.

Figure 6A. Difference in Average Tax Rate by Expanded Income Percentile: Sensitivity to Tax Definitions
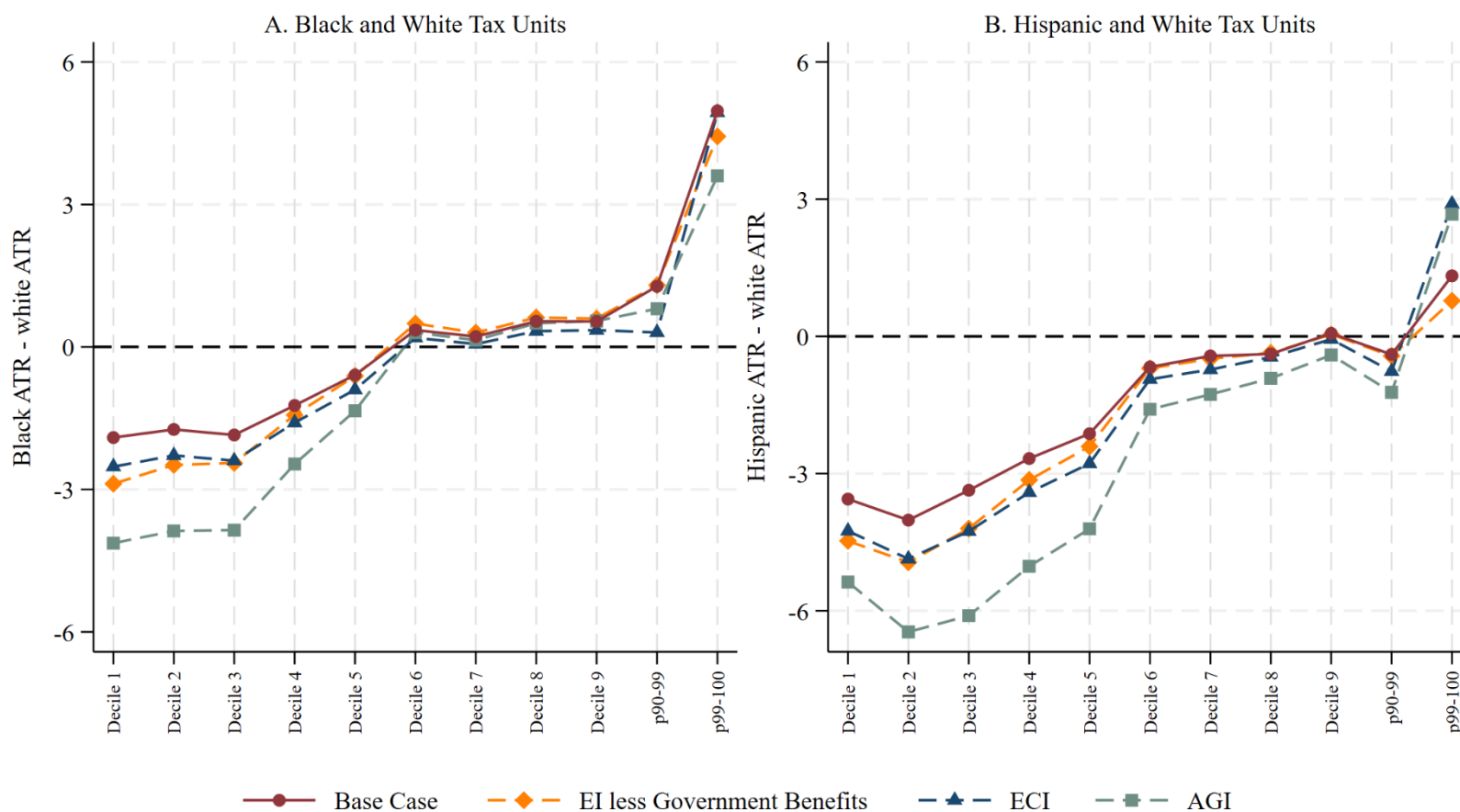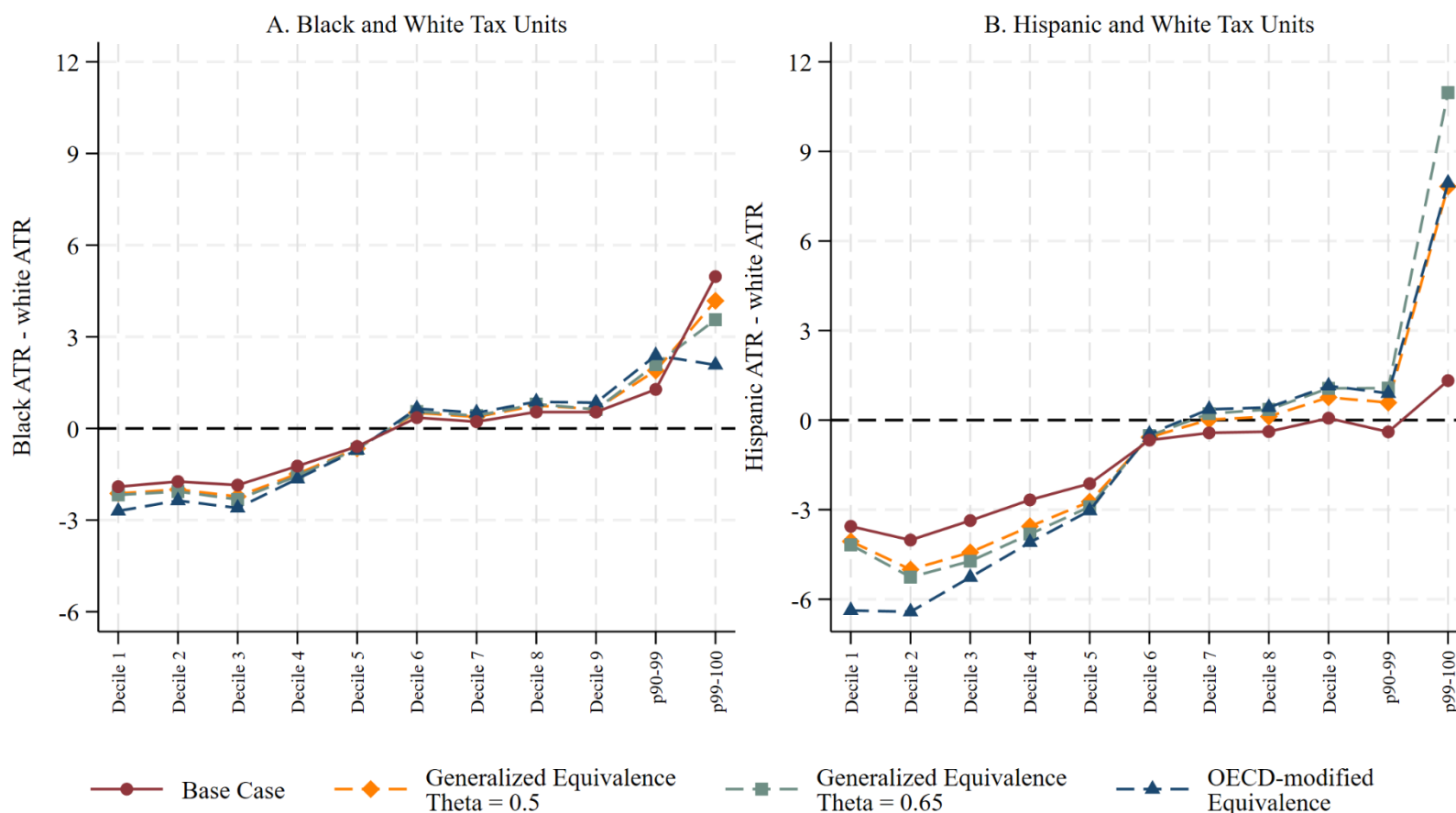

Notes: The Figure reports the difference in average tax rate for Black relative to white tax units in Panel A and Hispanic relative to white tax units in Panel B. The Base Case lines are simply transformations of the results reported in Figure 4. The other two lines modify federal income tax burden in the following ways: by subtracting the value of government transfers such as SNAP, TANF, and SSI, and by adding payroll taxes (paid by both employees and employers). Distributional breaks are calculated using population weights, and other statistics are calculated using tax unit weights.

Source: Surveys of Consumer Finances and authors' calculations.

Alt text: Two line graphs showing changes in average tax rate differences when payroll taxes are included or transfers are excluded. Excluding transfers shifts all lines downward in lower percentiles; adding payroll taxes raises lines for Black and Hispanic units above the base case in all percentiles for Hispanic units and nearly all percentiles for Black units.

Figure 6B. Difference in Average Tax Rate by Expanded Income Percentile: Sensitivity to Income Definitions

Notes: The Figure reports the difference in average tax rate for Black relative to white tax units in Panel A and Hispanic relative to white tax units in Panel B. The Base Case lines are simply transformations of the results reported in Figure 4 (of the main paper). The other 3 lines still classify tax units by EI but calculate average tax rates by dividing aggregate taxes by the following income measures: EI less Medicare, Medicaid, SNAP, TANF, and SSI; ECI (see Rosenberg 2013); and Adjusted Gross Income (AGI). Distributional breaks are calculated using population weights, and other statistics are calculated using tax unit weights.
Source: Surveys of Consumer Finances and authors' calculations.
Alt text: Two line graphs comparing racial tax rate differences under alternative income definitions. Using narrower measures like AGI or excluding transfers deepens negative values at lower incomes, while higher percentiles show minor shifts near zero.

Figure 6C. Difference in Average Tax Rate by Expanded Income Percentile: Sensitivity to Income Equivalence Scales

Notes: The Figure reports the difference in average tax rate for Black relative to white tax units in Panel A and Hispanic relative to white tax units in Panel B. The Base Case lines are simply transformations of the results reported in Figure 4 (of the main paper). The other 3 lines still classify tax units by EI but calculate average tax rates by dividing aggregate taxes by different versions of equivalized EI. The first two equivalized income lines use a generalized equivalence scale and divide EI by the number of individuals in a tax unit ^ θ, where θ equals either 0.5 (taking the square root) or 0.65. The final equivalized income line uses the OECD-modified scale, which divides income by the sum of 1, 0.5*(each additional individual age 14 or older in the tax unit), and 0.3*(each individual younger than 14 in the tax unit). Distributional breaks are calculated using population weights, and other statistics are calculated using tax unit weights.
Source: Surveys of Consumer Finances and authors' calculations.

Alt text: Under alternative income equivalence scales, lines become steeper at both ends, with lower-income deciles more negative and top deciles slightly higher for Hispanic units relative to white units. The effects are smaller for Black units.

Figure 7. Effects of Tax Reform on Average Tax Rate Differences by Expanded Income Percentile
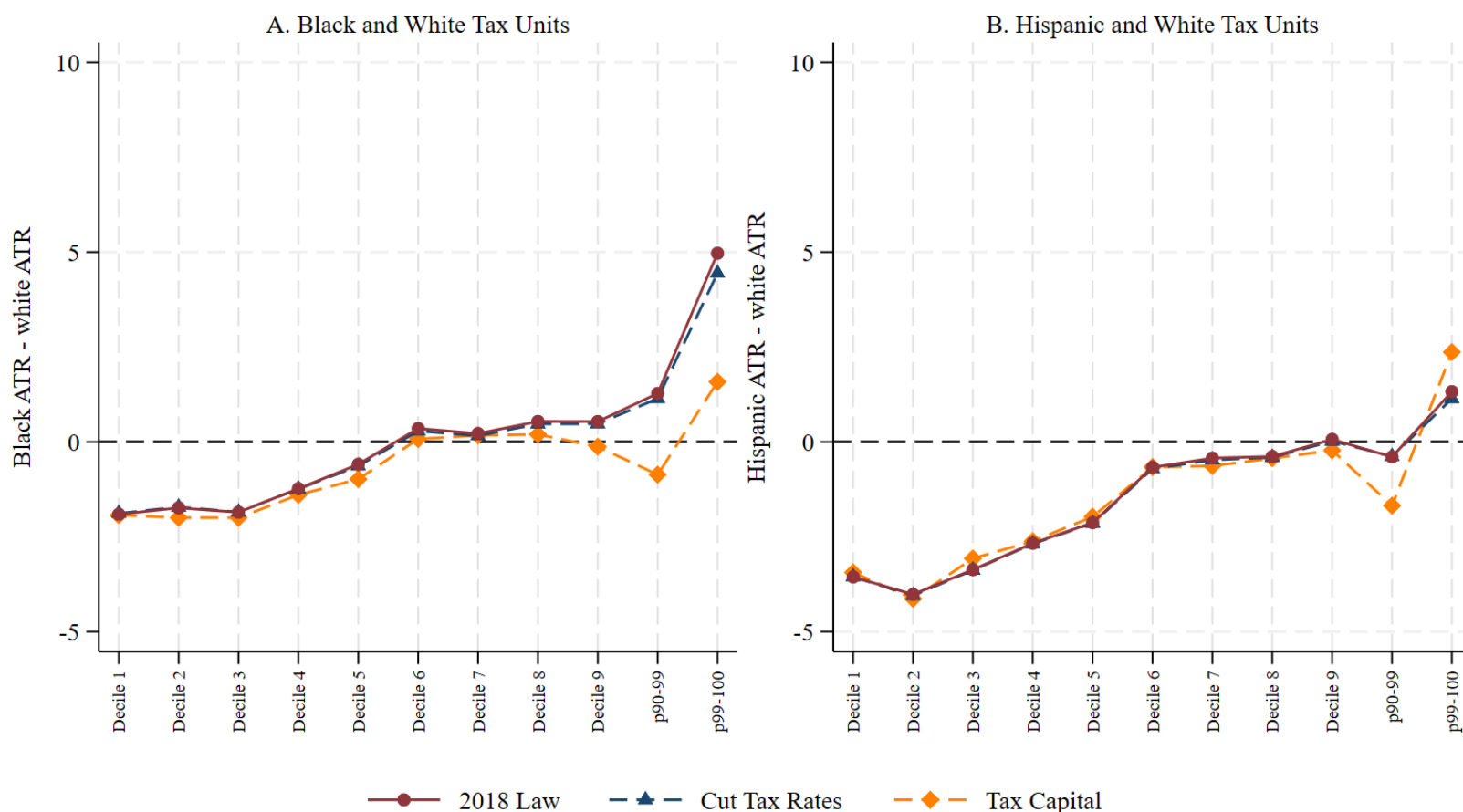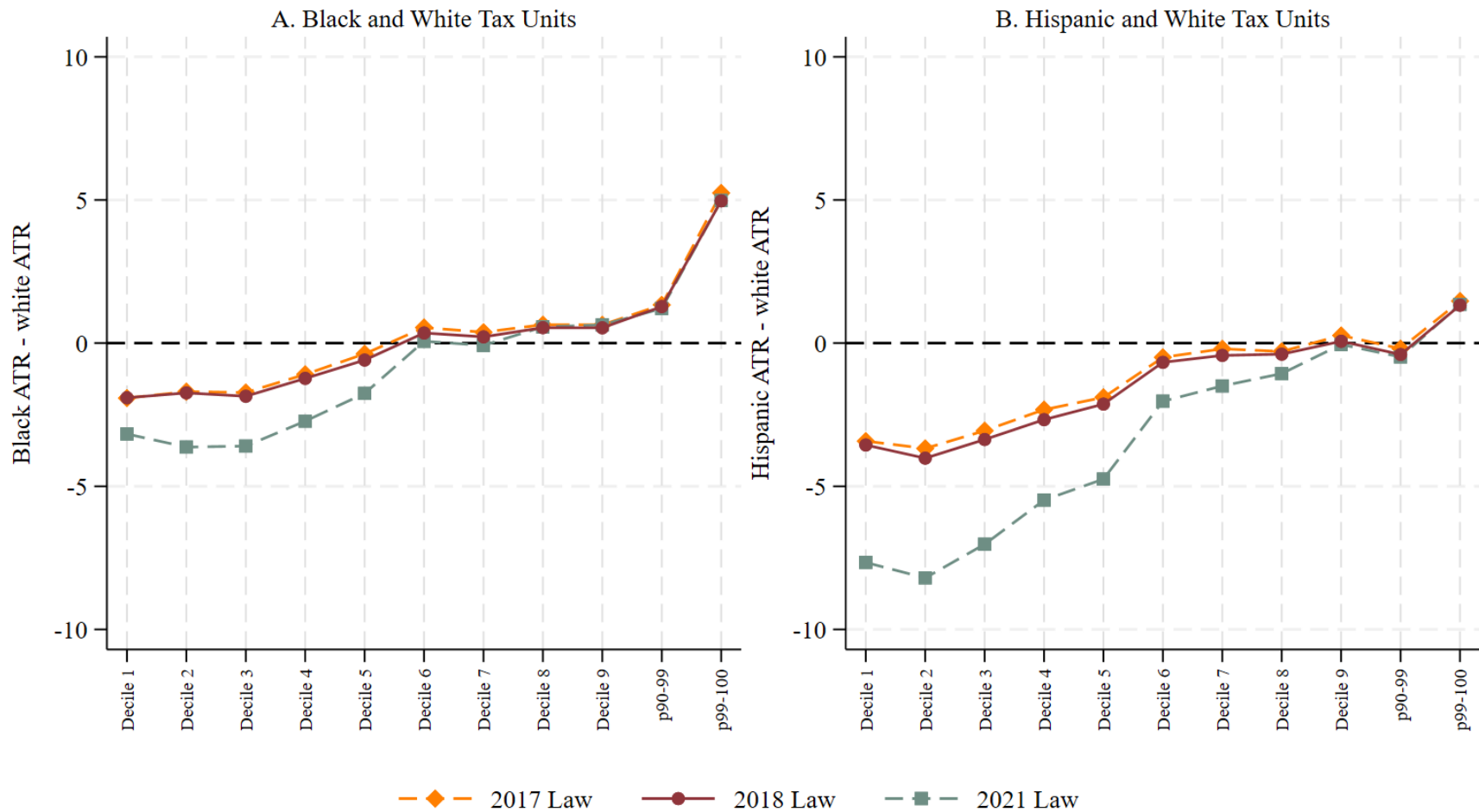

Notes: The Figure reports the differences in ATR by EI decile for Black and white tax units (Panel A) and Hispanic and white tax units (Panel B) under 2018 law, a reform that reduces income tax rates by 10 percent and a reform that broadens the tax base by (1) removing preferential rates for realized capital gains and qualified dividends, (2) repealing the section 199A deduction, and (3) incorporating imputed rent, unrealized gains, untaxed business income, and tax-exempt interest into the tax base. Distributional breaks are calculated using population weights, and other statistics are calculated using tax unit weights.
Source: Surveys of Consumer Finances and authors' calculations.
Alt text: Two line graphs comparing racial tax rate gaps under three policies: current law, a 10% rate cut, and base broadening. Lines mostly overlap in lower deciles.

Figure 8. Effects of TCJA and ARP on Average Tax Rate Differences by Expanded Income Percentile


Notes: The Figure reports the differences in ATR by EI decile for Black and white tax units (Panel A) and Hispanic and white tax units (Panel B) under 2017, 2018, and 2021 tax law. Distributional breaks are calculated using population weights, and other statistics are calculated using tax unit weights.
Source: Surveys of Consumer Finances and authors' calculations.

Figure 9. Differences in Tax Liability as a Share of Adjusted Gross Income Under 1970 and 2018 Law, by Adjusted Gross Income Percentile
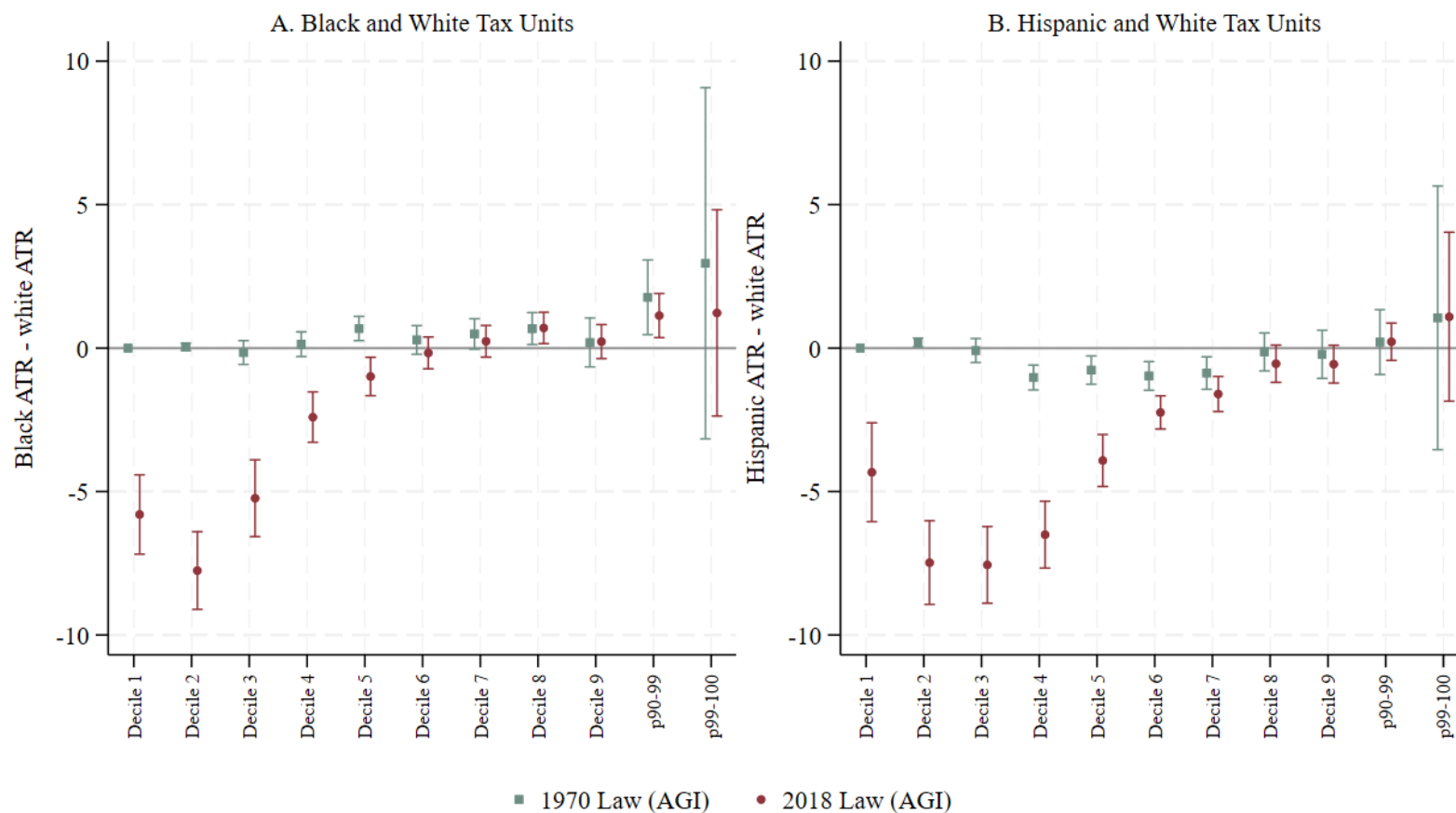

Notes: The Figure reports point estimates and 95 percent confidence intervals from regressions of taxes as a share of AGI on AGI, a Black indicator, a Hispanic indicator, and survey round fixed effects. The 1970 Law point estimates apply 1970 tax law to our sample, and the 2018 Law point estimates apply 2018 tax law

to our sample and can be compared with similar regressions using EI, displayed in Figure 5. Panel A displays coefficients on the Black indicator variable, and Panel B displays coefficients on the Hispanic indicator variable. Distributional breaks are calculated using population weights, and regressions are estimated using tax unit weights.

Source: Surveys of Consumer Finances and authors' calculations.

Alt text: Two panels of coefficient plots showing racial differences in tax rates by AGI percentile under 1970 and 2018 law. 1970 lines hover near zero; 2018 lines dip below zero in lower deciles and rise slightly above zero at the very top.

Figure 10. Differences in Average Tax Rate Under Changing Tax Law, 1970-2021, by Expanded Income Percentile

A. Black and White Tax Units

B. Hispanic and White Tax Units

Top 1   Decile 8   Decile 5   Decile 2
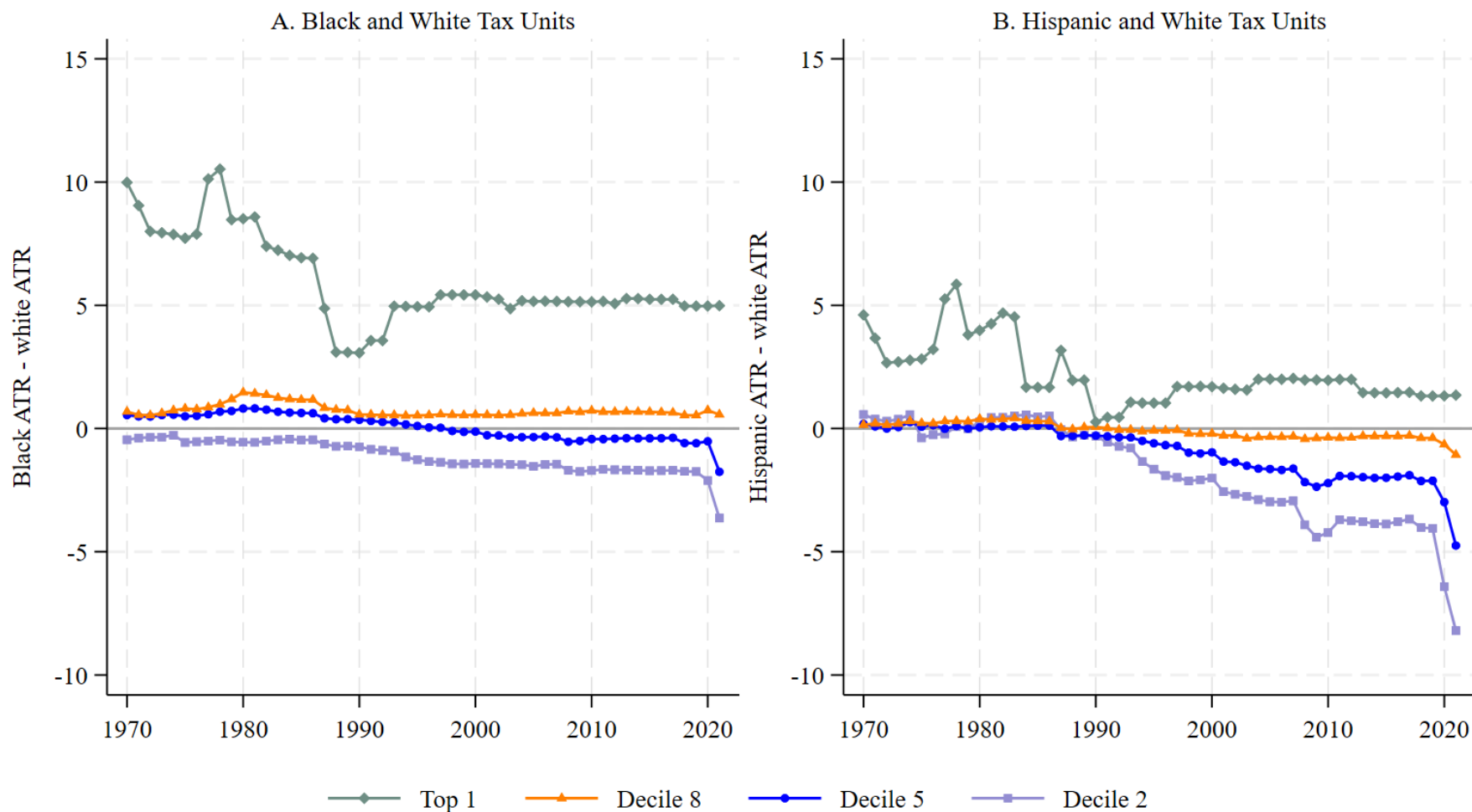
Notes: The Figure displays the difference between Black and white (Panel A) and Hispanic and white (Panel B) Average Tax Rates (ATRs) for select Expanded Income (EI) percentiles across different years' tax law. Distributional breaks are calculated using population weights, and other statistics are calculated using tax unit weights.

Source: Surveys of Consumer Finances and authors' calculations.

Alt text: Four time-series lines tracing racial tax rate gaps for selected income percentiles from 1970 to 2021.

NONTECHNICAL SUMMARY

The federal income tax does not explicitly take race or ethnicity into account; any two tax filing units with identical sources and level of income, deductions, and credits will face the same tax liability, regardless of group identity. But there still may be disparate outcomes across groups because factors that affect liability may be correlated with group identity.

For example, there is a large literature showing that Black, Hispanic, and white households have different marriage rates, number of children, labor earnings, and wealth accumulation patterns. In this paper, we show how these and other group differences translate into income tax burdens that turn out to vary across racial and ethnic groups.

In particular, white households receive higher income, on average, and thus, in a progressive system, they pay a higher share of their income in taxes. At the same time, most exemptions and exclusions from income — such as housing, unrealized capital gains, and other preferential treatment of capital incomes — disproportionately benefit white households.

Relative to other low-income households, low-income Black households are more likely to file taxes as head-of-household and low-income Hispanic households are more likely to file married filing jointly and to have more dependents. Both sets of conditions reduce taxes for those groups relative to low-income white households.

Relative to other high-income households, Black households receive more of their income in the form of fully taxed labor earnings (wages, social security, etc.) and less in the form of tax-preferred or tax-exempt capital (business income, unrealized capital gains, imputed rental income, etc.). As a result, among high-income groups, Black households face higher tax rates than other groups. The result is similar for Hispanic households relative to white households but is not as precisely estimated.

What can policy makers do to affect racial and ethnic group differences in income tax? It turns out that classic tax reform — that is, broadening the base to include capital income and reducing tax rates on taxable income — will tend to help Black and Hispanic families relative to white families, precisely because, holding overall income constant, minority groups currently have a larger share of that income in taxable forms. Expanding refundable credits for children and work will also help minority groups, who are over-represented among low-income households and who have more dependents on average than white households. As a result, the Tax Cuts and Jobs Act in 2017 had little effect on racial/ethnic tax disparities, once we control for income (although on an overall basis, by cutting taxes on the affluent, it benefited white households disproportionately), whereas the American Recovery Act of 2021 provided large benefits to low-income Black and Hispanic households via expanded credits.

We do not explore the reasons why the tax code contains features that affect one group more than another, but the results should be of interest to policy makers and other observers of the tax system.