BLACK-WHITE DIFFERENCES IN INCOME TAX LIABILITY

William Gale, Oliver Hall, John Sabelhaus[1]

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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 – a central economic institution in the lives of most citizens – 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 tax may still generate disparate outcomes across groups because factors that affect tax liability may be correlated with group identity (Moran and Whitford 1996, Brown 2021, Gale 2021).

In this paper, we investigate these ideas using data from the Surveys of Consumer Finances. We obtain two central results. First, untaxed forms of income accrue disproportionately to white households, on an overall basis and even after controlling for income. Second, Black households face lower average tax rates (ATRs) than whites in low-income groups but higher rates than whites in high-income groups. In income ranges where Black units face lower 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 tax units relative to white units. In income ranges where Black units face higher taxes than white units, the principal factor is the

[1] The authors are affiliated with the Brookings Institution and the Urban-Brookings Tax Policy Center (emails: wgale@brookings.edu; jsabelhaus@brookings.edu; oliverhall1224@gmail.com). We thank numerous colleagues for helpful advice and Ian Berlin, Nora Cahill, Julie Gnany, Swati Joshi, Tayae Rogers, and Sam Thorpe for outstanding research assistance, Dan Feenberg for support using TAXSIM, and Arnold Ventures and the California Community Foundation for generous financial support. The views expressed are those of the authors and should not be attributed to any other individual or organization. Keywords: taxation, racial discrimination, distributional analysis. JEL Codes: H2, J15

tax preferences or exemptions given to capital income. These differences in causal factors stem from well-known racial differences in household composition, earnings, and wealth (Altonji and Blank 1999, Derenoncourt et al. (2020).

I. DATA AND METHODOLOGY

We pool 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.[2] We split households into tax units using a methodology developed in Gale et al. (2022) and develop measures of adjusted gross income (AGI), deductions, taxable income (TI), and eligibility for credits. To generate estimates of income tax liability, we run the data through the NBER's TAXSIM model using 2018 law.[3] Our estimates of AGI, tax revenue before credits, and number of returns by filing status match SOI totals closely (Gale, Hall, and Sabelhaus 2025).

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 AGI and adds various forms of cash and non-cash income components (Gale and Sabelhaus 2024). Aggregate EI is about 90-100% larger than aggregate AGI. The ratio of EI to AGI is U-shaped over the income distribution when sorting tax

[2] The SCF generates five "implicates" for each unit to account for missing data. We use all five implicates for each tax unit, generating a data set, on an unweighted basis, with about 207,000 white tax units and 35,000 Black tax units. We apply the SCF's replicate weights (divided by the number of survey waves that we use). All dollar values are adjusted to 2018 dollars using the urban Consumer Price Index.

[3] Our approach 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. In contrast, starting with a data set that has tax information provides accurate information on taxes but requires imputations for race. If the analysis considers only Black and white tax units, however, the analytical cost of imputing race incorrectly may be considerable. For further discussion, see Cronin, DeFilippes, and Fisher (2023), Derby, Dowd, and Mortenson (2024), Heller et al. (2024), and Khitatrakun et al. (2023).

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 affluent but some skew towards lower-income groups, such as government transfers.

II. DESCRIPTIVE DIFFERENCES

Black and white tax filing units differ systematically. White units have higher average income and, because the income tax is progressive, face higher ATRs.[4] White units are more likely to file married filing jointly and less like to file as head-of-household. Black units are more likely to have children and be eligible for the EITC. 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.

The composition of EI varies systematically by group. White units have a smaller share of EI that is fully taxable, and in particular a larger share of untaxed or lightly taxed capital income. Reflecting differences in average income, Black units receive more their EI in the form of government transfers (including Medicare and Medicaid).

Even after controlling for EI, important differences remain (Figure 1). In almost every EI category, Black units are less likely to file as married filing jointly, more likely to file as head-of-household, (substantially) more likely to be eligible for the EITC and the CTC, and have a higher share of EI from labor income and a lower share of income from overall, tax-preferred, and tax-exempt capital income. Untaxed government transfers constitute a higher share of income for

[4] We calculate ATRs in two ways: as a ratio of aggregate income taxes to aggregate income measures for each group, and as the mean of the distribution of each unit's tax liability divided by income, in which case the ATRs are much lower. In all cases, the ATRs are higher for white tax units than Black units because white units have higher average income and the income tax is progressive. Lin and Slemrod (2024), 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. We review the empirical literature on race and taxes in Gale, Hall, and Sabelhaus (2025).

Black units relative to white units in the bottom half of the EI distribution.

III. ANALYSIS OF TAX DIFFERENTIALS

In their classic paper on racial differences in taxes, Moran and Whitford (1996) put forth two 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."

To examine the first hypothesis, we regress the ratio of TI or AGI to EI, controlling for race, EI, and survey year, separately for each EI decile. The first two columns of Table 2 show that, controlling for EI within EI classes, Black units have higher AGI 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% 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 those groups. 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.

To test the second Moran and Whitford (1996) hypothesis, we first provide descriptive data on ATR by race and EI (Figure 2, Panel A). In the bottom five EI deciles, Black units face lower ATRs (income tax liability divided by EI) than white units. The difference is about 2% of EI in the bottom three deciles and declines to 1.2% in the fourth decile and 0.6% in the fifth decile. In the top five deciles, the relative ranking is reversed. The difference in ATR is relatively small (between 0.2% and 0.5% of EI) in the sixth through ninth decile but rises to 1.3% in the

90-99th percentile and to 5.0% in the top 1 percent.

To help understand these results, we regress ATR on several different right-hand specifications, running separate regressions for each EI decile to allow for heterogeneous responses and as a flexible and straightforward way to allow for the non-linearity of the income tax system without requiring a complicated specification. The first specification controls only for only race, EI, and survey year. As shown in column 3 of Table 2 (Figure 2 panel B), 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 in 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.

The second set of regressions adds basic demographic information – indicators for MFJ or head of household filers (relative to filing statuses as the omitted categories) and the number of dependents. In the bottom half of the income distribution, controlling for these factors greatly reduces the coefficient – to between 0.02 and 0.37 percentage points.

To help explain the remaining ATR differences in the top half of the income distribution, the third regression adds two items to the right-hand side – the share of EI in the form of fully taxable labor or capital income, and the share of EI in the form of tax-preferred capital income. 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 coefficient to between 0.009 and 0.17 percentage points. In the top 1%, the coefficient on the Black indicator is positive but not significant in all three specifications.

IV. 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) refers to this effect as "implicit discrimination" and notes 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, and that it would be neither feasible nor desirable to eliminate all such differences, given the many goals of tax policy.

Our paper provides new evidence on the differential impact of the income tax on Black and white tax units and the factors behind those effects, with specific results summarized above. 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 taxpayers, on average, relative to white taxpayers, relative to the current system. A second implication is that increases in refundable credits – e.g., the Child Tax Credit and the Earned Income Tax Credit – can also help Black households relative to white tax households.

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. 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.

Future research could build on these results in at least three ways: by broadening the list of policies considered; 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.

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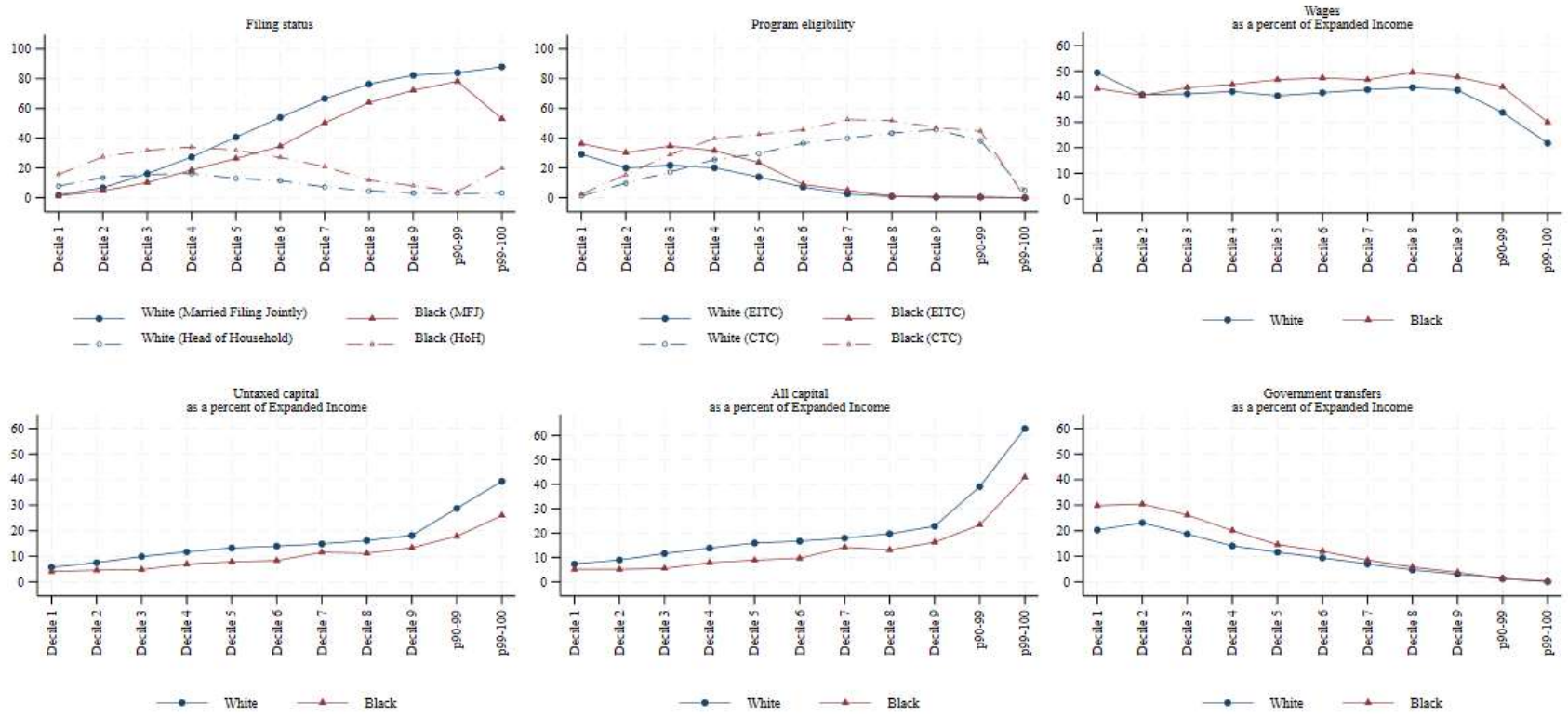
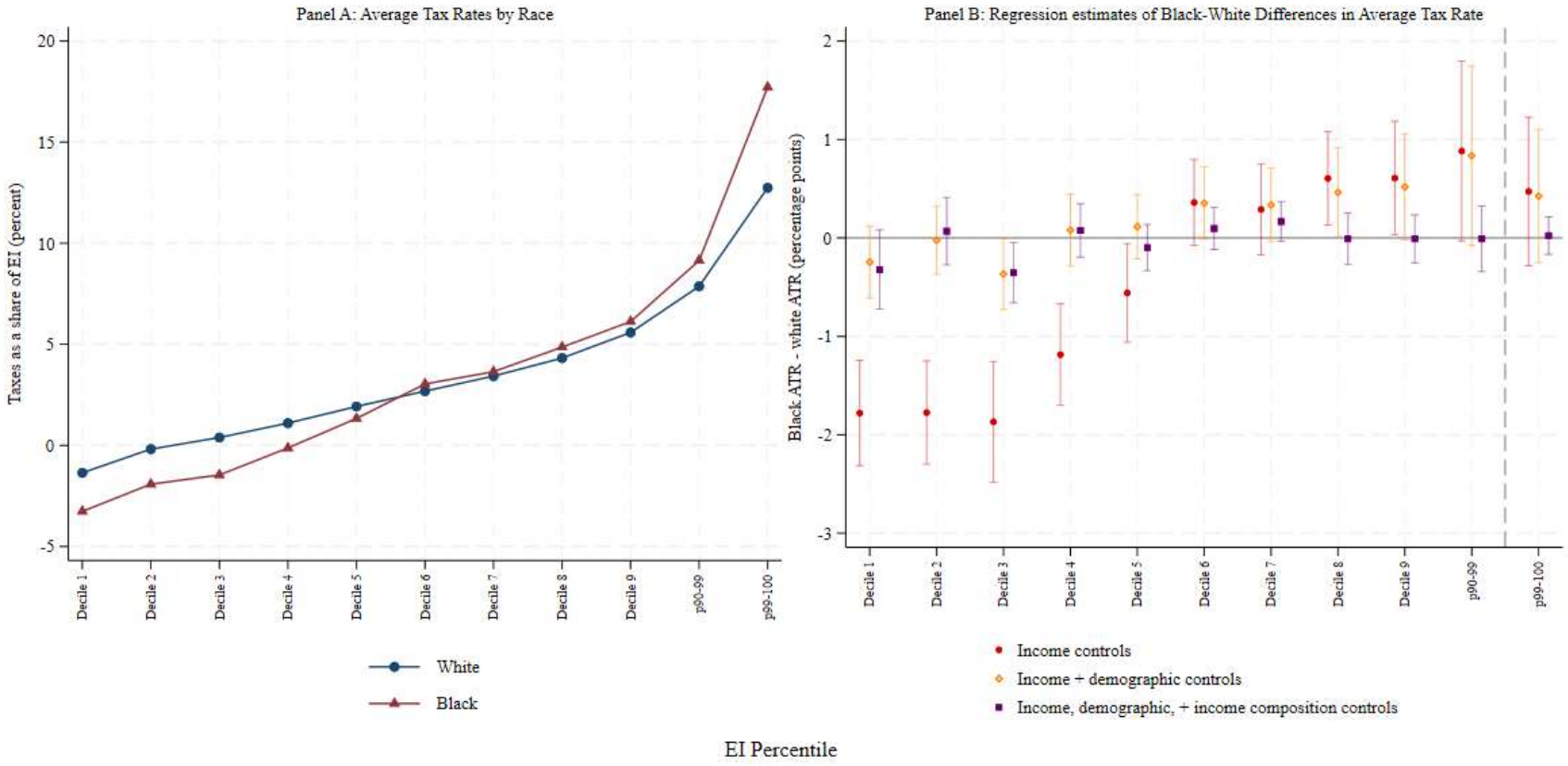
Figure 1. Characteristics of Tax Units by Race and Expanded Income.



Notes: The Figure reports statistics on filing status, and eligibility for credits and deductions by race across the Expanded Income (EI) distribution. Distributional weights are calculated using population weights, and other statistics are calculated using tax unit weights. Tax units are constructed according to Gale et al. (2022) and filing status and credit eligibility are determined by TAXSIM. For more information on the construction of EI, see Gale and Sabelhaus (2024).

Source: Surveys of Consumer Finances and authors' calculations.

Figure 2. Average Tax Rates.



Notes: Panel A reports Average Tax Rates (ATRs) by race for across the Expanded Income (EI) distribution. ATRs are calculated as the ratio of aggregate income tax liability to aggregate EI in a given percentile range using tax unit weights. Panel B reports point estimates and 95% confidence intervals (both divided by 10 in the top 1 percent for scale) from regressions. The red circles plot coefficients for separate regressions for each Expanded Income (EI) category that regress tax units' ATR on EI, a Black 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; the purple squares display the same coefficients for regressions that also control for the share of fully and partially taxed income in EI.

Source: Surveys of Consumer Finances and authors' calculations.

Table 1. Regression Estimates.

Dependent Variable	Taxable Income / Expanded Income	Adjusted Gross Income / Expanded Income	Average Tax Rate	Average Tax Rate	Average Tax Rate
RHS Variables	Basic	Basic	Basic	+Demographics	+Income Composition
Decile 1	-293.6	-831.8	-1.778	-0.245	-0.321
	(82.53)	(215.0)	(0.273)	(0.185)	(0.205)
Decile 2	-628.5	-309.1	-1.774	-0.0239	0.0681
	(263.1)	(439.8)	(0.267)	(0.176)	(0.175)
Decile 3	-166.8	584.6	-1.868	-0.367	-0.354
	(496.8)	(658.4)	(0.312)	(0.184)	(0.155)
Decile 4	725.6	1,031	-1.185	0.0789	0.0749
	(720.7)	(814.7)	(0.263)	(0.186)	(0.138)
Decile 5	3,034	3,298	-0.558	0.115	-0.0978
	(938.6)	(1,049)	(0.256)	(0.166)	(0.120)
Decile 6	4,364	4,031	0.361	0.353	0.0960
	(1,245)	(1,343)	(0.223)	(0.187)	(0.108)
Decile 7	4,607	3,823	0.290	0.336	0.167
	(1,498)	(1,557)	(0.236)	(0.192)	(0.103)
Decile 8	5,117	5,697	0.605	0.463	-0.0091
	(2,079)	(2,005)	(0.242)	(0.231)	(0.134)
Decile 9	4,047	5,602	0.608	0.519	-0.0090
	(2,904)	(2,673)	(0.294)	(0.275)	(0.124)
P90-P99	22,214	20,647	0.883	0.835	-0.0086
	(12,178)	(12,412)	(0.466)	(0.465)	(0.170)
P99-P100	402,355	380,626	4.722	4.255	0.230
	(284,556)	(265,265)	(3.847)	(3.445)	(0.966)

Notes: Robust standard errors in parentheses. The table shows the coefficients on the indicator variables for Black tax units in regressions estimated separately for tax units in each expanded income (EI) decile. In the first two columns, each coefficient represents the percentage point difference in the dependent variable (Taxable Income or Adjusted Gross Income, respectively) as a share of Expanded Income. The controls include Expanded Income and an indicator for SCF survey wave. In the last three columns, each coefficient represents the percentage point difference in average tax rate (defined as income tax liability divided by EI). In the third column, the right-hand side variables include a EI, an indicator for a Black tax unit, and an indicator for SCF survey wave. The fourth column adds an indicator for units filing married filing jointly, an indicator for units filing as head of household, and the number of people in the tax unit. In the fifth column, the specification in the fourth column is supplemented with two variables – the share of EI that is fully taxable and the share that is partially taxable.

Source: Surveys of Consumer Finances and authors' calculations.