United States Government Accountability Office

Report to Congressional Committees

May 2022

TAX EQUITY

Lack of Data Limits Ability to Analyze Effects of Tax Policies on Households by Demographic Characteristics

GAO-22-104553

GAO Highlights

Highlights of GAO-22-104553, a report to congressional committees.

May 2022

TAX EQUITY

Lack of Data Limits Ability to Analyze Effects of Tax Policies on Households by Demographic Characteristics

Why GAO Did This Study

The U.S. has a large and increasing gap in income and wealth by race, ethnicity, and sex. However, little is known about the effects of tax policies across demographic characteristics. The tax code does not tax individuals differentially based on certain demographics. However, some researchers have noted how it could result in potential unintended disparate tax outcomes.

The CARES Act includes a provision for GAO to report on its ongoing COVID-19 monitoring and oversight efforts. GAO was also asked to review how selected tax policies affected households by race, ethnicity, and sex as part of this oversight.

This report (1) examines approaches for analyzing the effect of tax policies, including some in the CARES Act and related legislation, on households by race, ethnicity, and sex, and (2) estimates how households use selected tax provisions by race, ethnicity, and sex. GAO interviewed 21 experts and reviewed literature on tax policy and demographics. GAO also used Census data to estimate households' use of tax provisions.

What GAO Recommends

GAO is making one matter for congressional consideration to revise relevant laws to facilitate interagency data sharing. GAO also recommends that Treasury evaluate the feasibility of other options to produce secure, linked taxpayer and demographic data. Treasury stated it is focusing on imputation and has considered other options. Moving forward, evaluating other options would enhance Treasury's efforts to produce such data.

View GAO-22-104553. For more information, contact Jessica Lucas-Judy at 202-512-6806 or lucasjudyj@gao.gov.

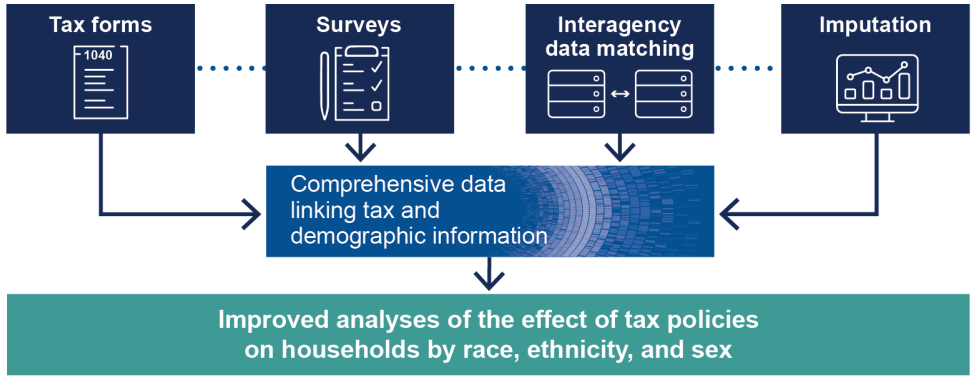
What GAO Found

GAO found that tax data are not consistently linked to households' demographic information. The Internal Revenue Service (IRS) collects demographic data that are explicitly referenced in the tax code. According to the Department of the Treasury, IRS cannot collect demographic data under current law unless such data are necessary for administering the tax code. As a result, analysts have limited ability to assess the effects of tax laws, including COVID-19-related tax relief provisions, by demographics such as households' race, ethnicity, and sex.

Legal restrictions on interagency data sharing limit agencies' ability to analyze how the tax system interacts with households by demographic characteristics. Several entities, such as the Office of Management and Budget, have emphasized the importance of collecting and sharing demographic data for policy evaluation. Entities also highlight the importance of protecting the privacy and security of those data. GAO identified options for consistently producing linked taxpayer and demographic data, such as surveys and interagency data matching. Another option is to impute the demographic information of taxpayers. Treasury is developing an imputation method. While Treasury is evaluating the reliability and limitations of imputation, it has not evaluated the feasibility of other options to produce data that would support more reliable analyses.

If tax data could be linked to households' demographic data in a way that still protects the privacy and security of those data, policymakers and researchers would have better tools for consistently and systematically analyzing the relationship between tax policies and household demographics (see figure).

Examples of Options for Data Collection and Analysis



Source: GAO analysis of agency and expert interviews and literature. | GAO-22-104553

In the absence of linked taxpayer and demographic data, GAO used a model that simulated the tax outcomes of households based on 2017 Census Bureau survey data. For most of the provisions examined, GAO estimated disparities in tax outcomes across households based on race, ethnicity, or sex. For example, there were differences by race in estimated eligibility of use and average dollar amount of the child tax credit. These disparities generally remained after GAO controlled for some variation in income—using income quintiles—indicating potential inequalities beyond those based on income.

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Abbreviations

ACTC	Additional Child Tax Credit
ASEC	Annual Social and Economic Supplement
CPS	Current Population Survey
CRA	Community Reinvestment Act
CTC	Child Tax Credit
EIP	economic impact payment
EITC	Earned Income Tax Credit
ERC	Employee Retention Credit
FTI	federal tax information
JCT	Joint Committee on Taxation
OMB	Office of Management and Budget
SSA	Social Security Administration
TCJA	Tax Cuts and Jobs Act of 2017
TRIM3	Transfer Income Model, version 3

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May 18, 2022

Congressional Committees

Policymakers often consider how tax policies affect taxpayers at various income levels. However, they know little about how policies affect taxpayers across other demographic characteristics, such as race, ethnicity, and sex. In March 2020, Congress passed and the President signed the CARES Act, which was designed, in part, to address economic damage resulting from the COVID-19 pandemic.[1] As with other tax policies, policymakers, researchers, and the public know little about how tax relief provisions in the CARES Act and other COVID-19-related legislation are affecting households based on their demographic backgrounds.[2]

We have previously reported on the criteria for a good tax system, which includes equity, among other things.[3] To balance the equity of the U.S. tax system with other policy goals, it is important for policymakers to understand the potential unintended disparities in how the tax system treats different households. Our prior work has also shown that large gaps in income and wealth by race, ethnicity, and sex persist throughout our society. In addition, certain demographic groups have faced barriers to equal access in some socioeconomic markets, such as housing and retirement.[4] The tax code could also have important interactions with

[1]Pub. L. No. 116-136, 134 Stat. 281 (2020).

[2]Other COVID-19-related legislation includes the American Rescue Plan Act of 2021, Pub. L. No. 117-2, 135 Stat. 4 (2021); Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, 134 Stat. 1182 (2020); Paycheck Protection Program and Health Care Enhancement Act, Pub. L. No. 116-139, 134 Stat. 620 (2020); Families First Coronavirus Response Act, Pub. L. No. 116-127, 134 Stat. 178 (2020); and the Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020, Pub. L. No. 116-123, 134 Stat. 146 (2020).

[3]GAO, *Understanding the Tax Reform Debate: Background, Criteria, & Questions*, GAO-05-1009SP (Washington, D.C.: Sept. 1, 2005). Criteria for a good tax system include considerations of equity, efficiency, simplicity, transparency, and administrability.

[4]See, for example, GAO, *Housing: Preliminary Analysis of Homeownership Trends for Nine Cities*, 20-544R (Washington, D.C.: June 25, 2020); *Rental Housing: As More Households Rent, the Poorest Face Affordability and Housing Quality Challenges*, GAO-20-427 (Washington, D.C.: May 27, 2020); *Retirement Security: Income and Wealth Disparities Continue through Old Age*, GAO-19-587 (Washington, D.C.: Aug. 9, 2019).

households of different familial, racial, and ethnic compositions, even though it does not explicitly reference race, ethnicity, or sex.

Recently, increased social, academic, and media attention on race in the U.S. has renewed policymakers' focus on how our current laws and policies may affect socioeconomic disparities by race and ethnicity. On January 20, 2021, the President signed Executive Order 13985, "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government."[5] The order asserts, "A first step to promoting equity in government action is to gather the data necessary to inform that effort."

The CARES Act includes a provision for us to monitor and oversee the federal government's efforts to prepare for, respond to, and recover from the COVID-19 pandemic.[6] In addition, the Senate Committee on Finance Chairman asked us to review the effects of selected tax policies on households by race, ethnicity, and sex as part of this CARES Act oversight. This report (1) examines approaches for analyzing the effects of tax policies, including some of those in the CARES Act and COVID-19-related legislation, on households by race, ethnicity, and sex and (2) estimates how households could use selected tax provisions by race, ethnicity, and sex using publicly available data.

To address both objectives, we reviewed relevant literature and interviewed 21 experts with a range of experiences in and perspectives on our topics of interest. We obtained their insights on the ways in which certain provisions may interact with households by race, ethnicity, and sex, as well as the approaches to conducting analyses of these interactions. We also asked all experts about the role, if any, they thought the federal government should play in collecting demographic information along with tax information.

To select which experts to interview, we first conducted a detailed literature review.[7] From that review, we identified experts who have written on tax policy and its interactions with taxpayers with regard to

[5]Exec. Order No. 13985, 86 Fed. Reg. 7009 (Jan. 25, 2021).

[6]Pub. L. No. 116-136, § 19010, 134 Stat. at 579–81.

[7]We searched for relevant scholarly publications, government reports, conference papers, working papers, and association or nonprofit publications published from 2015 through 2020 in the following databases: Scopus, ProQuest, EBSCO, Westlaw Edge, Harvard Think Tank, and Google Scholar.

race, ethnicity, and sex. The experts we selected were primarily from academic institutions and public policy organizations, and have varied backgrounds. During interviews with these experts, we also solicited suggestions for other experts to interview. The experts we interviewed provided important perspectives; however, those views cannot be generalized to all experts. Additionally, experts' suggestions for ways in which tax and demographic data could be collected and linked are not exhaustive.

We also analyzed tax policies and households' demographic information, which provided additional details.[8]

- To analyze the distributional effects of administering certain COVID-19 relief provisions on households by race, ethnicity, and sex, we used data from the Census Bureau's 2017 Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC). Those data contain information on demographics of individuals that we used to estimate the share of households that had mixed-immigration status by race and ethnicity.
- To estimate the amount and use of other tax provisions across households by race, ethnicity, and sex, we used the Urban Institute's 2017 Transfer Income Model, version 3 (TRIM3) tax simulation model, which relies on data from the Census Bureau's 2017 CPS ASEC.[9] That model simulates the tax outcomes of selected provisions for households using CPS data that contain tax related information, such as income, marital status, and number of children.[10] We use output from that model to provide estimates of (1) the average amount of a selected provision households would take by race, ethnicity, sex and (2) the share of households that could use the selected provision by race, ethnicity, and sex.

[8]We analyzed the effect of tax provisions by sex rather than gender, which, for the purposes of this report, includes the variables male and female. We use the terms male and female because the dataset we analyzed used these variables.

[9]TRIM3 is a microsimulation model developed by the Urban Institute with primary funding from the Department of Health and Human Services. It simulates major tax, benefit, and health insurance programs primarily using data from the Census Bureau's Current Population Survey, Annual Social and Economic Supplement.

[10]Census Bureau also simulates some tax variables, such as the Earned Income Tax Credit, Child Tax Credit, and Additional Child Tax Credit, for its CPS ASEC data.

- To analyze the effect of changes from the law known as the Tax Cuts and Jobs Act of 2017 (TCJA), we used the TRIM3 model that simulated 2018 tax rules, including changes implemented by TCJA, on 2017 Census data.[11] As previously described, this model simulates 2018 tax outcomes for households based on 2017 CPS data. We used the nonpublic version of the TRIM3 model, provided to us by the Urban Institute, to isolate the effects of TCJA tax changes. The 2018 output was constructed by applying 2018 tax law to 2017 CPS data. We used this updated tax output to identify any disparities post-TCJA.

To assess the reliability of these data sources, we reviewed technical documentation of the CPS database and the TRIM3 model. We also interviewed experts at the Urban Institute on the use of the TRIM3 model and descriptions of the 2018 nonpublic federal tax output. We conducted electronic tests of the data for missing values. We determined the data used in our analyses were reliable for the purposes of this report. See appendix I for additional information on our scope and methodology.

We conducted this performance audit from September 2020 to May 2022 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Recent Tax Provisions

The CARES Act (2020) included two provisions that provided support to economically at-risk households: economic impact payments (EIP) and the Employee Retention Credit (ERC). EIPs were advance payments of a tax credit to households below certain income thresholds. ERCs were tax credits intended to help businesses retain employees. In addition, legislation since the CARES Act has expanded on these provisions. The statutory language and administration of these COVID-19-related provisions did not consider race, ethnicity, or sex.

In December 2017, Congress passed and the President signed TCJA into law. Similar to other tax policies, the statutory language and administration of the provisions contained in TCJA did not consider race,

[11]Pub. L. No. 115-97, 131 Stat. 2054 (2017).

ethnicity, or sex. TCJA made key temporary changes to how individuals are taxed:

- Eliminated personal and dependent exemptions but increased the amount of the Child Tax Credit (CTC) and introduced a nonrefundable credit based on the number of the taxpayer's dependents who could not be claimed for the CTC.
- Increased the standard deduction and introduced limits on certain itemized deductions.
- Changed some wealth-oriented provisions, such as the method for determining applicable capital gains tax brackets and increasing the exemption for the estate tax.
- Changed the individual income tax rates and brackets, generally reducing individual tax rates and income tax liability.

History and Tax Law Analysis

Taxes exist to fund the services provided and the promises made by the government. Generally, the individual income tax has a progressive rate structure, which means it applies lower tax rates at lower income levels and higher tax rates at higher income levels. Congress can promote certain social or economic goals through tax expenditures. Expenditures grant tax relief to aid taxpayers in certain circumstances and to encourage specific behaviors, such as saving in individual retirement accounts. The tax code does not differentially tax individuals or other entities based on race, ethnicity, or sex.

Some researchers in the fields of tax law, economics, and history assert that the tax code is fundamentally biased based on race, ethnicity, and sex.[12] Though demographic characteristics are usually not explicitly included in tax policy, the researchers argue that historical, structural, and cultural factors affect the ways in which tax laws disproportionately benefit various populations. These researchers examine social and economic systems upon which tax law functions, the causes of these systems, and the populations most likely to benefit from them. For example, some of these researchers link what they see as the historical and

[12]See, for example, P. J. Strand and N. A. Mirkay, "Racialized Tax Inequity: Wealth, Racism, and the U.S. System of Taxation," *Northwestern Journal of Law & Social Policy,* vol. 15 (2020); M. Hill et al., "The Illusion of Race-Neutral Tax Policy," Institute on Taxation and Economic Policy (2019); and L. P. Martinez, "Latinos and the Internal Revenue Code: A Tax Policy Primer for the New Administration," *Harvard Latinx Law Review*, vol. 20 (2017).

contemporaneous causes of wealth disparities to the ways that tax law can benefit wealthy households.

These researchers argue that government expenditures and policies have disproportionately provided opportunities in housing, education, and employment to White individuals and men while excluding other demographic groups. For example, they assert that federal, state, and local policies have limited Black households' access to home-ownership, which limits the extent to which these households can benefit from provisions contingent on owning homes. Overall, the researchers conclude that wealthy, more likely White and male, households may disproportionately benefit from certain tax provisions.[13]

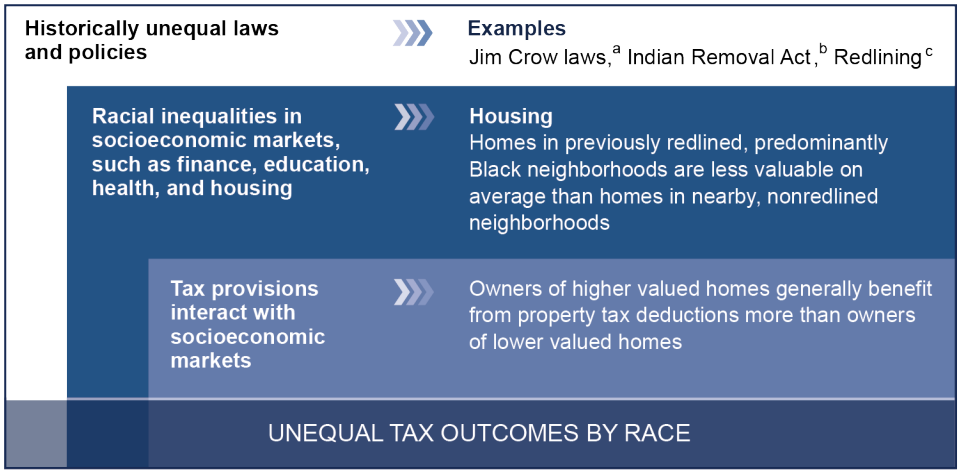
Some researchers note that cultural factors can influence how specific provisions may disproportionately benefit some racial and ethnic groups more than others. For example, some researchers describe how Hispanic households are more likely to choose to live with members who extend beyond the nuclear family. These extended families often care for other relatives' children, which could limit their ability to benefit from provisions such as the Earned Income Tax Credit (EITC) because it contains specific rules for eligible children.[14] Furthermore, EITC-eligible Hispanic households might be less likely than other households to claim the credit. Although this and other family-oriented provisions do not differentiate benefits based on race or ethnicity, their benefits to households might be correlated more commonly with certain racial or ethnic groups.

Figure 1 illustrates how historically unequal laws and policies, such as Jim Crow laws, can affect socioeconomic markets and contribute to unequal tax outcomes for some groups of people.

[13]See, for example, Strand and Mirkay, "Racialized Tax Inequity," and Hill et al., "The Illusion of Race-Neutral Tax Policy."

[14]See, for example, Martinez, "Latinos and the Internal Revenue Code" and D. Thomson et al., "State Policy and Practice Related to Earned Income Tax Credits May Affect Receipt among Hispanic Families with Children," *Child Trends*, (2020).

Figure 1: Example of Historical Socioeconomic Inequity and Current Tax Outcomes



Source: GAO analysis of laws, academic articles, and expert interviews. | GAO-22-104553

[a]"Jim Crow" laws mandated racial segregation with respect to public places and accommodations, including on trains and in hotels, restaurants, barber shops, and theatres.

[b]The Indian Removal Act of 1830 authorized the President to exchange lands west of the Mississippi for Indian lands within state borders. This resulted in the forced relocation of thousands of Native Americans.

[c]According to the Federal Financial Institutions Examinations Council, redlining refers to a form of illegal disparate treatment in which a lender provides unequal access to credit, or unequal terms of credit, because of the race, color, national origin, or other prohibited characteristics of the residents of the area in which the credit seeker resides or will reside, or in which the residential property to be mortgaged is located.

In evaluating the tax code in this respect, some researchers note that a provision-by-provision assessment of the tax code may not provide sufficient evidence of the tax code's equity or inequity.[15] Any differences in income, wealth, or other tax-relevant characteristics between racial or ethnic groups will necessarily result in differential tax amounts. Although they note the importance of analyzing specific tax provisions, they describe the benefits of analyzing the equity of the tax code in its entirety. They also suggest comparing the current code to alternative baselines to better understand the likely causes of any disparities. Potential alternative baselines could include a tax system based on a more comprehensive definition of income, more substantially on consumption, or on prior tax bases.

[15]See, for example, L. Zelenak, "Examining the Internal Revenue Code for Disparate Racial Impacts," *Tax Notes Federal,* vol. 128 (2020) and W. G. Gale., "Public Finance and Racism," *National Tax Journal,* vol. 74, no. 4 (2021).

Lack of Linked Tax and Demographic Data Limits Analysis on the Distributional Effects of Tax Provisions on Households, but Options for Improvement Exist

Lack of Consistently Linked Demographic Information on Taxpayers Limits Analysis of Distributional Effects of Provisions

Certain demographic information, such as race, ethnicity, or sex, on taxpayers are not explicitly referenced in the tax code. IRS only collects taxpayer demographic data that are explicitly referenced in the tax code. According to the Department of the Treasury, IRS is not permitted to collect other demographic data under current law, unless such data are necessary for tax administration.[16]

Treasury's Office of Tax Analysis has conducted some tax-related analysis by matching economic data with information on sex and age from the Social Security Administration. The Office of Tax Analysis: provides economic and policy analyses leading to the development of the administration's tax proposals; assesses major congressional tax proposals; and analyzes the effects of existing laws. In addition, Treasury has some data on sex through IRS's file on sex and social security, which is maintained through the Research, Applied Analytics, and Statistics division at IRS. However, that dataset does not contain race or ethnicity data.

Other examples of federal data sources with demographic and economic data include:

[16]In addition, the Paperwork Reduction Act requires approval for federal agencies to collect information. 44 U.S.C. § 3501 *et seq*. OMB reviews IRS forms and data collection and subsequently approves them if OMB determines the collection of information is necessary for the proper performance of the functions of the agency, including whether the information has practical utility. 44 U.S.C. § 3508.

- The U.S. Census Bureau's (Census) Current Population Survey (CPS) asks for the race, ethnicity, and sex of all respondents. CPS survey participants answer questions on a number of additional topics, including employment, family structure, and income.
- The Social Security Administration (SSA) collects voluntarily provided race data on some Social Security number applications.[17]
- The Consumer Financial Protection Bureau provides data collected under the Home Mortgage Disclosure Act, which includes race, ethnicity, and other demographic information.[18]

However, none of these sources is consistently linked to taxpayers' federal tax information (FTI).[19]

The lack of taxpayer data that are consistently linked to demographic information limits analysts and policymakers' ability to determine how tax policies and their administration might differentially affect households by race, ethnicity, and sex. Further, such data would help inform the deliberations on tax policy by the tax-writing committees of Congress. For example, researchers could then assess the differential effects, if any, of COVID-19-related tax relief provisions by race, ethnicity, and sex of households.

We reported in March 2021 on the distribution of households by race, ethnicity, and sex that were at risk of not receiving their economic impact

[17]According to an author from the SSA's Office of Retirement and Disability Policy, SSA administrative data on race are not reliable. Long-term comparisons of SSA race data are statistically uninformative because the agency changed the number and definitions of race categories over time. Furthermore, most individuals receive their Social Security numbers through a process called enumeration, and SSA does not collect race and ethnicity data as part of this process. According to SSA officials, these data are not collected because they are not required to administer SSA programs. In addition to enumeration, individuals can receive new or replacement Social Security numbers by submitting Form SS-5, which allows applicants to voluntarily report their race and ethnicity information.

[18]The Home Mortgage Disclosure Act requires financial institutions, including mortgage lenders, to maintain, report, and publicly disclose loan-level information about mortgages.12 U.S.C. §§ 2801 *et seq*.

[19]The Comprehensive Income Dataset Project, housed at the University of Chicago, aims to create a detailed dataset of U.S. income by combining administrative, survey, and tax data, and by using imputation techniques. The dataset includes a limited amount of FTI that is linked to demographic information collected through Census surveys.

payments (EIP).[20] That analysis could not confirm whether households varied in their actual receipt of EIPs by race, ethnicity, and sex because there were no linked taxpayer and demographic data. We reported that non-filers and households without bank accounts (i.e., unbanked) were at higher risk of not receiving EIPs than those that filed taxes and had bank accounts. We estimated that Black, American Indian, and Native Alaskan households were more likely to be non-filers than other ethnicities. Further, Black, American Indian, Native Alaskan, and Hispanic households were more likely to be unbanked than households of other races or ethnicities. In addition, we estimated White households were less likely than most other households to have mixed immigrant status. Also, the CARES Act initially included language that may have prevented households with mixed immigrant status from receiving the first EIP (see appendix II, fig. 6).[21] Treasury, with support from IRS, is working with Census to match data for an analysis of first-round EIPs. However, this type of interagency partnership is conducted on a project-specific basis.[22]

Lack of data also limits analysts' ability to analyze the employee retention credit (ERC), which was intended to help businesses retain employees. Although data exist to identify the demographic information of employees in different industries, no data clearly link employees of businesses that did or did not use the ERC. As a result, it is difficult to identify specific households that benefited from the ERC.

Elements of Nontaxation Make Analysis of Certain Provisions Challenging

The U.S. tax system does not tax certain types of income, and IRS does not collect data on provisions resulting in nontaxation. For some provisions, nontaxation results from direct and purposeful exclusion codified in the tax code. For other provisions, non-taxation results from the fundamental structure, assumptions, and definitions on which the tax

[20]GAO, *COVID-19: Sustained Federal Action Is Crucial as Pandemic Enters Its Second Year* GAO-21-387 (Washington, D.C.: Mar. 31, 2021).

[21]Under the CARES Act, married couples who filed a joint tax return were ineligible for payment if their returns did not include Social Security numbers for both spouses. CARES Act, Pub. L. No. 116-136,.div. A, tit. II, subtit. B, § 2201(a), 134 Stat. 281, 337 (2020). Mixed immigrant status households were retroactively granted eligibility to receive the first EIPs, but their ineligibility as outlined in the CARES Act delayed their receipt of this tax benefit. See Pub. L. No. 116-260, div. N, tit. II, subtit. B, § 273(a), 134 Stat. 1182, 1977 (2020).

[22]Census recently estimated taxpayers' receipt of the economic impact payments for the 2021 CPS ASEC data using a tax simulation model. See A.Bee, C. Hokayem and D. Lin, "Imputing 2020 Economic Impact Payments in the 2021 CPS ASEC," SEHSD Working Paper #2021-18 (Washington D.C.: U.S. Census Bureau, September 2021).

code is built. Data on these provisions could not be collected within the current tax code.[23]

Nontaxation as purposeful exclusion. The tax code contains a provision that excludes some of the capital gains earned from the sale of owner-occupied housing from tax, which is an example of a purposeful exclusion of income from taxation.[24] IRS does not consistently collect information on capital gains on owner-occupied housing below the exclusion level because this income is not subject to tax. According to officials, IRS does not consider that information necessary to administer the tax code.[25] If those data were combined with demographic information on the homeowners, analysts could then examine how households differ in their benefit from the provision. Academic literature and an expert we spoke with indicated that because Black households' home values appreciate less than White households' home values, on average, this provision could disproportionately benefit White households to the extent they are able to make full use of the exclusion.[26] Additional tax data could improve analyses of these types of provisions.

Although some tax provisions might have disparate outcomes, when reforming any tax provisions there are the tradeoffs to consider between equity and other criteria of a good tax system, such as efficiency and administrability. For example, benefits of the exclusion of capital gains on owner-occupied housing could include improved labor market efficiency. The exclusion could reduce labor immobility by lowering the burden on taxpayers from selling their homes, allowing homeowners to more readily move to areas with better job opportunities.

Another example of a purposeful exclusion of income from taxation is the exclusion of capital gains at death, also known as step-up in basis. This

[23]There have been proposals to revise the tax code that would change the way some income is taxed.

[24]If a person has capital gains from the sale of their main home, that individual may qualify to exclude up to $250,000 of that gain from income, or up to $500,000 of that gain if filing jointly with a spouse.

[25]Taxpayers who cannot exclude all the gain or who received a 1099-S are required to report the gain from the sale. Taxpayers may also elect to report the gain even if it is fully excludable.

[26]See, for example, A. Perry, J. Rothwell, and D. Harshbarger, "The Devaluation of Assets in Black Neighborhoods: The Case of Residential Property," Metropolitan Policy Program at Brookings, November 2018.

provision excludes potentially considerable amounts of capital gains on long-held assets from taxation. When people die, their assets become part of the estates that are transferred to heirs and other beneficiaries. Beneficiaries do not pay taxes on those assets until they sell them. The tax code also allows beneficiaries to increase the basis of the value of assets to reflect the value at time of death and not when the assets were first acquired. IRS does not collect information on the difference in the value of assets when they were first acquired and when their owners died because this income is not subject to tax and, according to officials, IRS does not consider the information necessary to administer the tax code.[27]

This step-up in basis provision allows owners to transfer wealth to later generations while avoiding taxation on gains prior to inheritance.[28] Policymakers do not know the extent to which households vary in their ability to benefit from this provision by race, ethnicity, and sex. Experts we spoke to said this is another provision that likely benefits wealthy, more likely White, households. However, a lack of tax data makes this analysis challenging.

Nontaxation built into the structure of the tax system. Data on some provisions are unavailable due to the basic structure of the tax system.[29] The tax system taxes income on a realization basis—that is, when the income is actually in a taxpayer's possession. Therefore, the tax system does not tax unrealized capital gains, such as the gains on stocks not yet sold. This feature is not a purposeful exclusion as previously described but an exclusion based on the tax system's concept of income.[30] Similarly, the tax system does not tax owners on the rental value of

[27]The step-up in basis occurs prior to filing the estate tax return, which asks the taxpayer to list the "value at date of death" of inherited assets.

[28]A similar provision is the exclusion on the estate tax. That provision excludes up to $12,060,000 of an estate's value from being taxable in 2022. A married couple can exclude twice that amount.

[29]The structure of the U.S. income tax system differs from the concept of a comprehensive income in its treatment of unrealized capital gains and imputed income from owner-occupied housing and consumer durables. This concept of income is also known as Haig-Simons income: "Personal income may be defined as the algebraic sum of (1) the market value of rights exercised in consumption, and (2) the change in the value of the store of property rights between the beginning and end of the period in question."

[30]For federal income tax purposes, income is generally defined as any undeniable accessions of wealth, clearly realized, and over which the taxpayer has complete dominion. See *Commissioner v. Glenshaw Glass Co.*, 348 U.S. 426, 429 (1955).

homes they occupy.[31] However, if an owner were to rent a home to a tenant, the owner would pay taxes on the rental income.

Nontax data suggest the potential for disparities in the use of wealth-oriented tax provisions. For example, experts we interviewed and other research indicate that White households are likely to have more wealth than households of other races and ethnicities. Research shows that White households hold almost every type of financial and nonfinancial asset, including homes, at higher rates than households of other races and ethnicities.[32] Research also shows that White households are more likely to own their own homes and own higher-valued homes than other households.[33] Experts we interviewed noted that provisions that give preferential treatment to the possession and growth of assets, including homes, may benefit White households. However, the lack of tax data on these provisions limits the potential to analyze their distributional effects on households.

Options Exist to Collect or Produce More Comprehensive Data

There are a number of ways in which data linking tax and demographic information could be provided to Congress, researchers, or the public while still protecting the privacy and security of that information (see fig. 2). These options would likely require additional resources to implement, and changes in law may help facilitate their implementation. Experts we interviewed noted that collecting race, ethnicity, and sex data related to taxes would allow for more thorough analyses of the effects of tax policies on households by demographic characteristics. Most researchers thought that the benefits from these data—improved analyses of the effects of tax

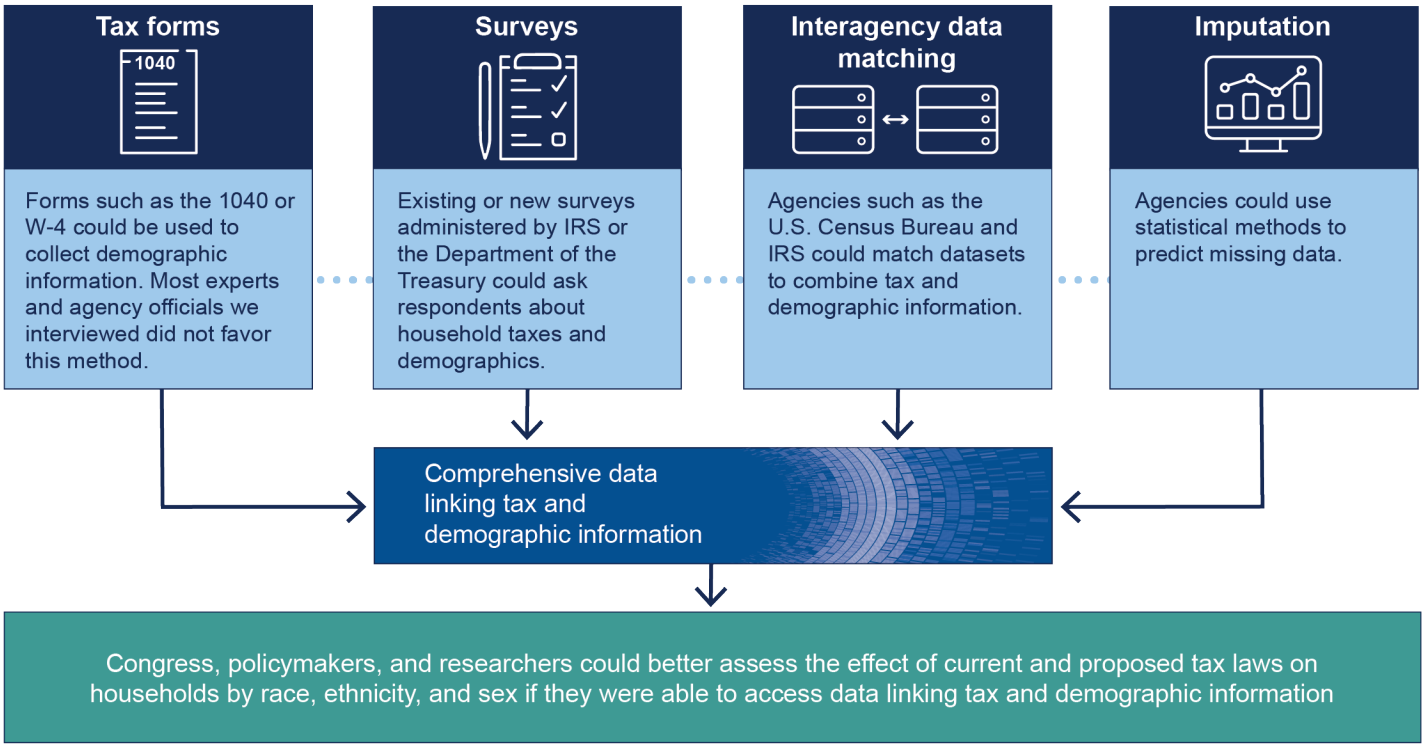
[31]This value is called imputed rent and theoretically applies to all consumer durables, such as cars, that provide value to the owner. The nontaxation of imputed rent from owner-occupied housing accounts for significant uncollected revenue, which is why researchers typically focus on housing—rather than other consumer durables—when writing about imputed rent.

[32]L.J. Dettling et al., "Recent Trends in Wealth-Holding by Race and Ethnicity: Evidence from the Survey of Consumer Finances," *FEDS Notes*, Washington, D.C.: Board of Governors of the Federal Reserve System (September 2017), accessed February 4, 2022, https://doi.org/10.17016/2380-7172.2083.

[33]U.S. Census Bureau, *Quarterly Residential Vacancies and Homeownership, Fourth Quarter 2021*, CB22-10 (Washington, D.C.: Feb. 2, 2022) and J. H. Choi, A. McCargo, and L. Goodman, "Three Differences Between Black and White Homeownership that Add to the Housing Wealth Gap," (Washington, D.C.: Urban Institute, Feb. 28, 2019), accessed February 4, 2022. https://www.urban.org/urban-wire/three-differences-between-black-and-white-homeownership-add-housing-wealth-gap.

provisions on different demographic groups—would outweigh the drawbacks associated with many of the methods for collecting them.

Figure 2: Some Options for Collecting Comprehensive Taxpayer and Demographic Data



Source: GAO analysis of agency and expert interviews and literature. | GAO-22-104553

Note: This is not an exhaustive list of possible options for producing more comprehensive data linking tax and demographic information. Multiple options could be used concurrently to produce linked data.

The following are some options described by experts, agency officials, and literature for collecting demographic information:

Tax forms. IRS could collect demographic information on tax forms such as the Form 1040. Most experts we interviewed did not favor this method. They cited concerns with public reaction and the potential for inadvertent consequences of IRS examiners having access to that information. However, some experts stated that there might be ways of safeguarding that information so it could be used only for research purposes. IRS officials expressed concern that any direct collection of demographic information by the agency could significantly compromise voluntary compliance. One expert suggested the possibility of using tax-withholding

forms, which might feel less invasive to employees since they also provide demographic information to employers.[34] However, this option would limit the number of taxpayers with associated demographic information to those employed and having taxes withheld. In addition, there are provisions in the tax code for which additional information could be collected, although there could be additional administrative costs and taxpayer burden associated with collecting this information. For example, the amount of capital gains for all owner-occupied home sales could be determined if taxpayers were required to provide the increase in value of their homes, even if those gains are fully excluded.

Surveys. IRS could collect demographic information through existing surveys, such as its customer satisfaction survey, or establish a new survey for collecting demographic information.[35] IRS could match the survey with tax-return data to provide consolidated data on taxpayers with associated demographic information. Both IRS and Treasury officials believe this method would be costly and may be unlikely to provide reliable information. If IRS were to use this method for collecting linked data, the agency would need to disclose to survey participants its intention to match survey and tax data. IRS officials expressed concerns that even collection through separate surveys could compromise voluntary compliance with tax laws. They also stated that the agency should not have any demographic information in its possession because they believe the agency's role is to administer the tax law as written. IRS officials expressed concern that, if IRS were to collect demographic information, the public might be skeptical of the agency's ability to conduct unbiased audits. However, other areas within Treasury, such as the Office of Tax Analysis, could collect and maintain survey data, thus ensuring IRS would not possess demographic information.

Interagency data matching. Census' Current Population and American Community Surveys and the Federal Reserve's Survey of Consumer Finances (SCF) are three examples of survey data that Treasury could use to match the demographics of taxpayers to tax data. Census and IRS

[34]Other entities, such as lenders and other financial institutions, also provide information returns and could be an alternative source for collecting demographic information.

[35]IRS conducts 44 different customer satisfaction surveys using various mediums, including online and through the mail. For additional information on IRS customer satisfaction surveys, see GAO, *Taxpayer Service: IRS Could Improve the Taxpayer Experience by Using Better Service Performance Measures* (Washington, D.C.: Sept. 23, 2020).

have employed this method for various analyses. For example, in 2021, IRS presented a paper in which it used 2010 tax data matched with Census data to estimate the extent of individual income tax non-filing.[36] In addition, Census and IRS have an agreement to produce annual estimates of Earned Income Tax Credit participation, including demographic characteristics of eligible and participating taxpayers. Other areas of Treasury, in coordination with IRS, are currently working with Census to expand this analysis to examine the CTC and Additional Child Tax Credit (ACTC). As discussed earlier, IRS is also working with Census to match data for an analysis of first-round EIPs.

However, there are current limitations to implementing an interagency data sharing option. Legal protections on data restrict agencies' abilities to systematically share data. These laws require the confidentiality of information collected. For example, Titles 13 and 26 of the United States Code limit the ability of Census and IRS to share data.

- Title 13 restricts Census from sharing data with other agencies.[37] Although Title 13 permits Census to enter into statistical project agreements with organizations, including federal agencies, Title 13 also requires that the information collected by Census only be used for the statistical purposes for which it was supplied.[38] According to Census officials, Census collects information for purposes of its Title 13 authorized work, and thus any use of Census information must be for Title 13 purposes.[39]

[36]T. Hertz et al., "New Approaches to Estimating the Extent of Nonfiling" (paper presented at the 11th Annual Internal Revenue Service/Tax Policy Center Joint Research Conference on Tax Administration, June 24, 2021).

[37]Specifically, neither the Secretary, nor any other officer or employee of the Department of Commerce or bureau or agency thereof, or local government census liaison, may permit anyone other than the sworn officers and employees of the Department or bureau or agency thereof to examine the individual reports. 13 U.S.C. § 9(a)(3).

[38]13 U.S.C. § 9(a)(1).

[39]Census officials explained that, under 13 U.S.C. Section 8(b), joint project agreements are only authorized when the project is on a matter of mutual interest. They also explained that under Section 23(c), Census is only authorized to share confidential information with individuals who are helping the Census Bureau do the work authorized by Title 13. Census officials conclude that, by law, a joint project is only authorized, and access to Census data is only authorized, if the project benefits the Census's Title 13 work. To ensure compliance with these legal requirements, the Census has an administrative policy that defines the criteria that projects must meet to demonstrate that the projects deliver a benefit to Census's programs and activities.

- Title 26 restricts the way in which IRS can share data with other agencies.[40]

To meet their statutory requirements, Census and IRS enter into project-based statistical research agreements that, according to officials from those agencies, require detailed, often legal, reviews that can involve significant resources and time. These projects must also maintain the confidentiality of any data that are shared to conduct the research.[41]

Treasury officials stated that laws protecting confidentiality prohibit IRS from acquiring demographic data from Census. However, Treasury officials stated they believe that analysts within Treasury's relevant offices, such as the Office of Tax Analysis or Statistics of Income, would be the most appropriate staff to conduct analyses related to tax policies. IRS and Treasury officials agreed that continued work to produce tax analyses in connection with demographic information is important.

If Congress were to modify these laws, it could improve Census and IRS's ability to conduct interagency data matching for the purposes of statistical analyses of tax policies. For example, Title 13 includes specific authorization for data exchanges between Census and the Bureaus of Economic Analysis and Labor Statistics. Congress could expand authority for Census to share data with Treasury's Office of Tax Analysis in a way that ensures the confidentiality of the data.

[40]The tax code includes broad protections of taxpayer information. 26 U.S.C. § 6103 provides that all returns and return information shall be confidential and shall not be disclosed, subject to limited exceptions listed in the section or authorized elsewhere under Title 26 of the United States Code. One such exception is section 6103 (j)(1) of Title 26, which requires IRS to share federal tax information (FTI) with Census for the purposes of, but only to the extent necessary in, the structuring of censuses and national economic accounts, as well as for conducting related statistical activities authorized by law. This provision of the code is implemented by 26 C.F.R. § 301.6103(j)(1)-1. Census policy defines criteria that must be met for FTI to be used in statistical projects. These criteria do not include evaluating public programs; public policy; or demographic, economic or social conditions. According to Census officials, this policy is based on IRS's interpretation of the above-mentioned statute and related regulation, and is reflected in a "Criteria Agreement" between Census and IRS.

[41]Research projects between Census and IRS that require data matching have used a process designed to protect individuals' identities with no direct link of individual and tax data. That process assigns a unique identifier to Census and IRS data within Census to link tax data to data from Census files without the use of private information, such as an SSN.

Imputation. This option does not directly link taxpayers to their self-reported demographic information but rather uses statistical methods to assign that information to taxpayers. For example, one method that is applicable for imputing race onto taxpayer data uses name and geographic data from available administrative and survey data sources to predict race and ethnicity.[42] This method uses data that contain race, surnames, and geographic location to determine the probability of a surname and geographic location being associated with a race. Those probabilities are used to impute race information to data lacking that information.

There are general limitations with using imputation methods to develop taxpayer data that include demographic information. Imputation methods can introduce error in the missing data, which could affect the reliability of summary statistics on tax outcomes by race, ethnicity, and sex. Imputation methods can also introduce bias into the data, which could result in conclusions about the correlation between demographic factors and tax outcomes that may be inaccurate. For example, if analysts use income to impute race and ethnicity, then correlations between race and tax outcomes may actually reflect a correlation with income, the variable used for imputation. These limitations might become more pronounced when imputations are used to conduct detailed analyses of specific tax provisions.

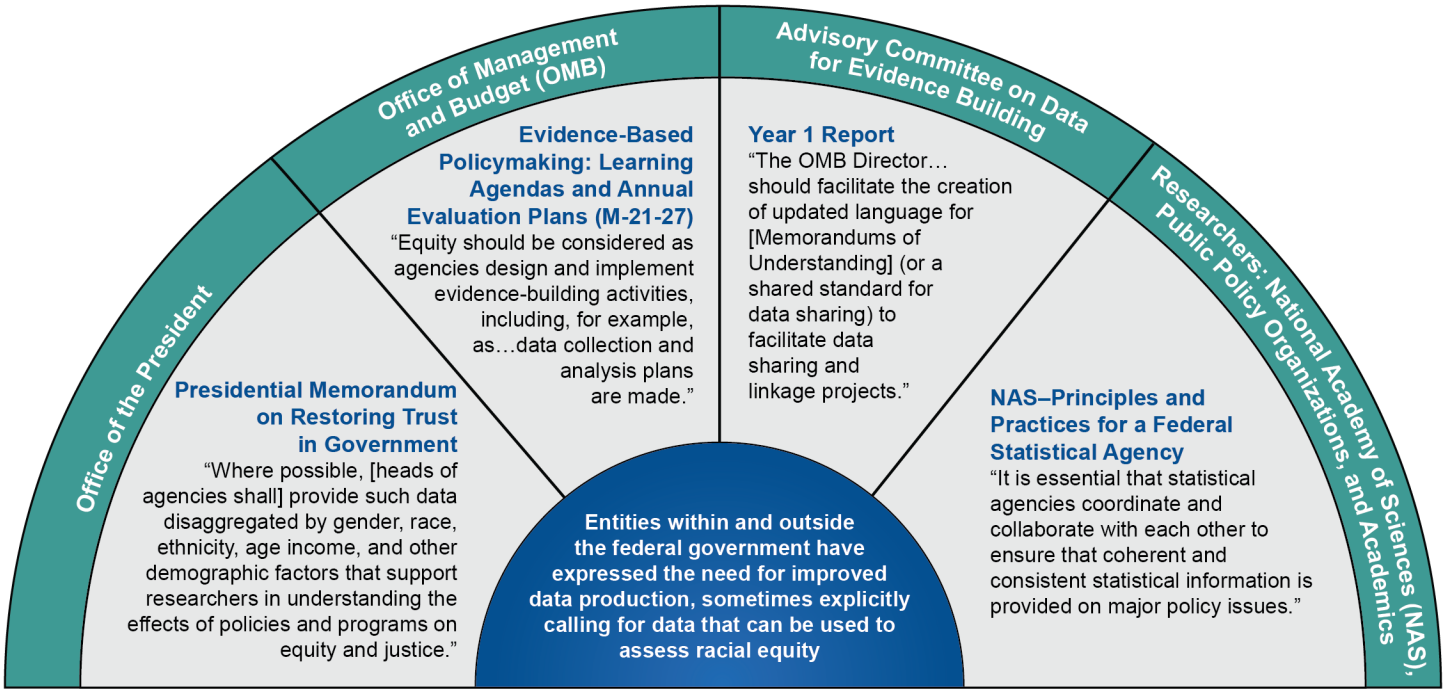
In response to Executive Order 13985 and as part of the Equitable Data Working Group, Treasury has begun work to examine the tax system in relation to race, ethnicity, or other key demographic variables. Its Office of Tax Analysis is developing an imputation approach to estimate demographic characteristics of taxpayers so it can better understand the equity impacts of different policies, and it is validating this method's reliability and limitations. Treasury officials said they hope this imputation model will enable greater public analysis of any racial and ethnic disparities, but they acknowledged the inherent limitations with statistical imputation. Although Treasury has considered other options for producing tax data linked to demographic information—such as interagency data sharing projects—it has not evaluated them. Such an evaluation could include determining both limitations to implementing these options and

[42]The Bayesian Improved Surname Geocoding method predicts race using the probability of racial identification, conditional on surname and residential location. Census publishes these probabilities in public use files for its decennial censuses.

ways in which those limitations could be mitigated, and it could improve Treasury's ability to produce data used for tax policy analysis.

Governmental and nongovernmental entities have emphasized the importance of collecting and sharing data for policy evaluation (see fig. 3). These include the Office of the President, Members of Congress, the Office of Management and Budget (OMB), academics, and public policy organizations. Some have called for improved race, ethnicity, and sex data to assess equity in developing and implementing policies.

Figure 3: Selected Examples of Entities Expressing Need for Improved Data Production



Source: GAO. | GAO-22-104553

For example, on June 30, 2021, OMB, in Memorandum M-21-27, issued guidance on evidence-based policymaking that instructs agencies to consider equity when they design and implement evidence-building activities, including when they collect and analyze data.[43] This guidance

[43]Office of Management and Budget, *Evidence-Based Policymaking: Learning Agendas and Annual Evaluation Plans*, OMB Memorandum M-21-27 (Washington, D.C.: June 30, 2021).

was in response to both the Foundations for Evidence-Based Policymaking Act of 2018 and the presidential memorandum on evidence-based policymaking.[44] The presidential memorandum directed agencies to disaggregate data by gender, race, and ethnicity, when possible, so that researchers can better understand the effects of policies on equity. Memorandum M-21-27 also complements a report from the federal Commission on Evidence-Based Policymaking.[45] The report includes numerous recommendations to improve data collection and sharing, such as easing bans on the collection and use of data for evidence building and establishing a National Secure Data Service. According to the commission, a National Secure Data Service could facilitate access to linked data that are already collected by the federal government while maintaining strict privacy standards.

More recently, the Advisory Committee on Data for Evidence Building provided recommendations for ways to improve data services for use in the federal government.[46] In its report, the committee suggested the OMB Director develop legislative proposals for implementing the Commission on Evidence-Based Policymaking's recommendations. Similarly, the National Academy of Sciences, in a publication on best practices for federal statistical use, has called for eliminating barriers to data sharing between agencies, which can negatively affect data efficiency and quality.[47]

If demographic information were directly linked to households' federal tax information in a way that still protects the privacy and security of that information, Congress, agencies, and other researchers could better understand any differential effects of tax provisions on households by race, ethnicity, and sex. These data would facilitate more complex and comprehensive analyses of the relationship between tax provisions and

[44]Presidential Memorandum, *Restoring Trust in Government through Scientific Integrity and Evidence-Based Policymaking*, 86 Fed. Reg. 8845 (Feb. 10, 2021). See also Foundations for Evidence-Based Policymaking Act of 2018 Pub. L. No. 115-435, 132 Stat. 5529 (2019).

[45]Commission on Evidence-Based Policymaking, "The Promise of Evidence-Based Policymaking" (Sept. 7, 2017).

[46]Advisory Committee on Data for Evidence Building, *Advisory Committee on Data for Evidence Building: Year 1 Report* (Oct. 29, 2021).

[47]National Academy of Sciences, Engineering, and Medicine, *Principles and Practices for a Federal Statistical Agency,* 7th ed. (Washington, D.C.: The National Academies Press, 2021). https://doi.org/10.17226/25885.

demographics by entities such as Treasury's Office of Tax Analysis. For example, data linking taxpayer and demographic data could allow researchers to better determine the use and amount of the mortgage interest deduction by the race, ethnicity, and sex of taxpayers.[48]

In addition, secure, linked taxpayer and demographic data would support some agencies' research goals. For example, IRS's Statistics of Income Joint Statistical Research Program's aim is "to provide new insights and understandings of the ways that existing tax policies affect individuals, businesses, and the economy." Further, these data could improve analyses of how historical inequities, such as redlining, and housing-related tax policies could affect households in different neighborhoods.[49]

Some experts and agency officials acknowledged the risk for such data to be misused. However, risks could be mitigated through proper internal controls standards as outlined in *Standards for Internal Control in the Federal Government*, such as the importance of segregation of duties.[50] For example, within IRS, these data could only be accessible to researchers and policymakers, not auditors. Further, these data could improve transparency about both the potential effects of different tax provisions on various demographic groups and the administration of these provisions.

[48]The Home Mortgage Disclosure Act requires financial institutions, including mortgage lenders, to maintain, report, and publicly disclose loan-level information about mortgages. 12 U.S.C. §§ 2801 *et seq*. This information includes the race and other demographic characteristics of homeowners.

[49]The Community Reinvestment Act (CRA) was enacted, in part, in response to concerns about redlining, or banks' refusal to offer home loans in certain neighborhoods based on the income or racial composition of the area. Because home mortgages are a primary lending product for many banks, they are often a key component of CRA reviews. Pub. L. No. 95-128, title VIII, 91 Stat. 1111,1147-48 (1997), *codified, as amended, at* 12 U.S.C. §§ 2901-2908.

[50]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: September 2014).

Households Varied by Race, Ethnicity, and Sex in Estimated Eligibility to Use Some Tax Provisions

In the absence of matched taxpayer and demographic data, we used a model that simulates the tax outcomes of households based on 2017 Census survey data to estimate households' eligibility to use selected tax provisions by race, ethnicity, and sex.[51] For most of the individual provisions we examined, we estimated there were disparities in tax outcomes across households by race, ethnicity, and sex. These disparities in eligibility generally remained after controlling for some variation in income. Further, these disparities were also mostly unaffected by changes to tax provisions from the Tax Cuts and Jobs Act of 2017 (TCJA). Specifically, similar estimated disparities between households based on race, ethnicity, and sex were present both before and after the implementation of the law.

Our methodology has some limitations.[52] Our simulation results indicate households' estimated eligibility to claim certain provisions, not what households actually claimed.[53] Therefore, our estimates could indicate a higher or lower use of provisions than direct tax data would establish. For example, research suggests low-income Hispanic households are less likely to claim the Earned Income Tax Credit (EITC) because of challenges to obtaining information and confusion about eligibility among families with nontraditional living arrangements.[54] Our methodology also focuses on each individual who completed the survey and does not include information about other people living in the household who may differ from the survey respondent's race, ethnicity, and sex. See appendix I for more details on our methodology.

[51]We provided estimates for six non-Hispanic racial categories: (1) Asian; (2) American Indian or Native Alaskan; (3) Black; (4) Native Hawaiian or other Pacific Islander; (5) two or more races; and (6) White. We also provided estimates for individuals of Hispanic ethnicity. Tax simulation models apply the tax rules, with assumptions as needed, on survey data that include key variables related to taxes, such as income, number of dependents, and marital status to estimate the taxes and other provisions families would take.

[52]Although microsimulation methods have limitations, OMB has noted this method as one potential tool for equity assessment. See Office of Management and Budget, "Study to Identify Methods to Assess Equity: Report to the President," (Washington D.C.: July 20, 2021).

[53]This limitation is fundamental to tax simulation models that do not account for taxpayer usage and could particularly overestimate the potential usage of provisions available to low-income taxpayers who may not file tax returns even if they are eligible for benefits..

[54]Thomson, "State Policy and Practice."

Recognizing that many estimates could vary primarily due to differences in incomes, we also estimated the eligibility to use and the amount of these tax provisions by income quintile.[55] While relying on income quintiles does not fully control for income, it allows for some illustration of the potential for differences across households with more similar incomes. In the following sections, we summarize our estimates of statistical differences in households' eligibility to use selected tax provisions. We also discuss implications for tax policy analysis, including some of the tradeoffs that would need to be considered when trying to make tax provisions more equitable. Appendix II provides detailed figures and tables of our estimates.

Estimated Amounts and Use of Family-Oriented Credits Varied by Households

Earned Income Tax Credit

We estimated there were disparities in the amount of the EITC across households by race, ethnicity, and sex in 2017 (see table 1 and appendix II for details). In addition, although we estimated that 47 percent of eligible EITC claimants were White households and about two-thirds were female-headed households, we estimated proportional differences in households' eligibility to use the credit by race, ethnicity, and sex.[56] Controlling for some variation in income did not eliminate race, ethnicity, and sex differences in the amount and use of the EITC. However, the distribution of some of those disparities changed. We estimated there were no households claiming the EITC in the top two income quintiles. Households in the top two income quintiles would largely be ineligible for the EITC since their incomes generally fall above the phase-out income level.[57] Table 1 summarizes the results of our EITC analysis.

[55]The income quintile thresholds are $5,432 for the 20th percentile, $31,111 for the 40th percentile, $62,415 for the 60th percentile, and $111,832 for the 80th percentile.

[56]The point estimate was 47.4 with a 95 percent confidence interval of 45.0 to 49.9 percent. The point estimate for female-headed households was 62.5 percent with a 95 percent confidence interval of 61.4 to 63.6 percent.

[57]In 2017, the adjusted gross income limits for the EITC were $48,340 ($53,930 for married filing jointly) for households with three or more eligible children, $45,007 ($50,597 for married filing jointly) for households with two eligible children, $39,617 ($45,207 for married filing jointly) for households with one eligible child, or $15,010 ($20,600 for married filing jointly) for households with no eligible children.

Table 1: Summary of Estimated Differences in Households Eligible for the Earned Income Tax Credit (EITC), 2017

Analysis of Estimated Average Dollar Amount of EITC	Analysis of Estimated Rates of Eligibility to Use EITC
• Hispanic households had higher average amounts than most other households.	• White households had lower rates of eligibility than all other households.
• White households had lower average amounts than most other households.	• Asian households had lower rates of eligibility than most other households.
• White households had lower average amounts than Hispanic households throughout the lower income distribution.	• White households had lower rates of eligibility than most other households throughout the lower income distribution.
• Male-headed households had lower average amounts than female-headed households.	• Male-headed households had lower rates of eligibility than female-headed households.
• Male-headed households had lower average amounts than female-headed households in the two lowest income quintiles.	• Male-headed households had lower rates of eligibility than female-headed households through most of the income distribution.

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Notes: All differences in this table are statistically significant at the 95 percent confidence level, unless otherwise noted. Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed. Rates of use indicate our estimates of the share of households that could take the tax provision. Lower income indicates the lowest two quintiles, middle income indicates the 40-60 percent income quintile, and upper income indicates the highest two income quintiles.

The amount of the EITC a household can claim depends, in part, on the filing status and the number of children claimed. Filing as married increases the phase-out amount of the EITC, allowing married households to be eligible for the EITC at incomes at which single households would be ineligible. Based on our analysis of Census data, Black households are less likely to be married (see appendix II, fig. 10) and therefore would be more likely to have lower amounts of EITC. However, having eligible children also increases EITC amounts across the range of income.[58] According to Census research, Black and Hispanic households are disproportionately represented among lower-income households with children.[59] Therefore, these households would be more likely than other households to benefit from the EITC.

Child Tax Credit

[58]EITC phase-out rates and credit limits vary for childless households, households with one child, households with two children, and households with three or more children.

[59]U.S. Census Bureau, *HINC-04. Presence of Children Under 18 Years Old: Households, by Total Money Income, Type of Household, Race and Hispanic Origin of Householder* (Washington, D.C.: Oct. 8, 2021), accessed November. 3, 2021, https://www.census.gov/data/tables/time-series/demo/income-poverty/cps-hinc/hinc-04.html.

We estimated there were disparities in the amount of the Child Tax Credit (CTC) across households by race, ethnicity, and sex in 2017 (see table 2 and appendix II for details).[60] Although we estimated that White and female-headed households accounted for the majority of eligible CTC claimants, we estimated differences in households' eligibility to use the credit by race, ethnicity, and sex. After controlling for some variation in income, differences across households in the eligibility to use and amount of CTC changed. Overall, these differences illustrate the interaction between taxes, family composition, and income. Table 2 summarizes the results of our CTC analysis.

Table 2: Summary of Estimated Differences in Households Eligible for the Child Tax Credit (CTC), 2017

Analysis of Estimated Average Dollar Amount of CTC	Analysis of Estimated Rates of Eligibility to Use CTC
• White households had higher amounts than most other households. • White households in the middle-income distribution had higher amounts than Black and Hispanic households. • White households in the second two highest income quintiles had higher amounts than Asian households. • Male-headed households had higher amounts than female-headed households.	• White households had higher rates of eligibility than Asian, Black, American Indian, and Native Alaskan households. • Asian households had lower rates of eligibility than Black, Hispanic, and White households in the highest income quintile. • Male-headed households had higher rates of eligibility than female-headed households. • Female-headed households in the highest income quintile had higher rates of eligibility than male-headed households.

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) CPS ASEC data. | GAO-22-104553

Notes: All differences in this table are statistically significant at the 95 percent confidence level, unless otherwise noted. Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed. Rates of use indicate our estimates of the share of households that could take the tax provision. Lower income indicates the lowest two quintiles, middle income indicates the 40-60 percent income quintile, and upper income indicates the highest two income quintiles.

The amount of CTC a household can claim depends on both the number of children and the tax liability. It provides a fixed credit per qualifying child that cannot exceed the amount of taxes owed by the household.[61] Households with more children and more taxable income are more likely to have higher CTC amounts. Households unable to take all of their CTC

[60]We estimate the share of households that would take the child credit within a demographic group that had qualifying children.

[61]In 2017, the amount of the credit was $1,000 per qualifying child. The CTC was nonrefundable and therefore if a taxpayer's tax liability were less than the amount of the credit, the taxpayer would be unable to take the full amount of the credit.

because of limits on tax liability may be eligible to claim the Additional Child Tax Credit (ACTC), which is refundable.[62]

Additional Child Tax Credit

We estimated there were disparities in the amount of the ACTC across eligible households by race, ethnicity, and sex in 2017 (see table 3 and appendix II for details). Controlling for some variation in income did not eliminate all of these disparities. Although households can only receive an amount of CTC up to their tax liability, they may be able to claim the excess CTC through the ACTC. Therefore, households that were more likely to receive the full CTC would be less likely to receive the ACTC. Table 3 summarizes our ACTC analysis.

Table 3: Summary of Estimated Differences in Households Eligible for the Additional Child Tax Credit (ACTC), 2017

Analysis of Estimated Average Dollar Amount of ACTC	Analysis of Estimated Rates of Eligibility to Use ACTC
• Hispanic households had higher amounts than Asian, Black, and White households. • Asian households had lower amounts than American Indian, Native Alaskan, and White households. • Asian households had lower amounts than Black households in the highest, middle, and lowest income quintiles. • Male-headed households had higher amounts than female-headed households. • Male-headed households in the second-to-lowest income quintile had higher amounts than female-headed households.	• Asian and White households had lower rates of eligibility than most other households. • White households had lower rates of eligibility than most other households in the middle-income distribution. • Female-headed households had higher rates of eligibility than male-headed households.

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Notes: All differences in this table are statistically significant at the 95 percent confidence level, unless otherwise noted. Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed. Rates of use indicate our estimates of the share of households that could take the tax provision. Lower income indicates the lowest two quintiles, middle income indicates the 40-60 percent income quintile, and upper income indicates the highest two income quintiles.

Estimated Eligibility to Use and Amounts of Wealth-Oriented Provisions Varied by Households

We estimated how households varied in their scheduled capital gains and the extent to which they could itemize deductions.[63] Research indicates that White households hold almost every type of financial and nonfinancial asset at higher rates than other households. Thus, they are more likely to benefit from preferential rates on income from capital gains.

[62]Although a separate tax provision, the Additional Child Tax Credit is often viewed as the refundable portion of the CTC.

[63]This analysis reflects the tax law prior to the Tax Cuts and Jobs Act (TCJA) of 2017. Analysis of provisions changed by TCJA is provided in the following section.

However, we did not identify different amounts of realized capital gains for most households (see appendix II, fig. 13).[64]

When controlling for some variation in income, we found that White households in the highest income quintile had lower amounts of realized capital gains than Hispanic households (see appendix II, table 17). We also estimated White households in the lower income distribution had higher capital losses than Hispanic and Black households. We did not identify different amounts of realized capital gains between male- and female-headed households, overall. However, male-headed households in the second lowest income quintile had higher amounts of capital losses (see appendix II, table 18).

Another provision disproportionately beneficial to the wealthy is the ability to itemize certain deductions instead of taking the standard deduction. Key deductions related to wealth and asset accumulation that can be itemized are real estate and personal property taxes, and mortgage interest.[65] The decision to itemize depends on having deductions that exceed the amount of the standard deduction. Therefore, households with higher valued homes in higher taxed areas would be more likely to itemize than households that rent, have lower valued homes, or live in lower taxed areas. Experts noted the importance of home ownership in wealth building within and across generations. Several experts highlighted historical impediments to homeownership for Black households, such as redlining, which have led to a negative effect on wealth building over time.

For those who would itemize, we estimated that Black and Hispanic households had lower average itemized deduction amounts than Asian and White households (see appendix II, fig. 13). However, controlling for some variation in income eliminated most of those differences (see appendix II, table 19). We did not identify different amounts of itemized deductions between male- and female-headed households (see appendix II, table 20).

[64]One exception was that American Indian and Native Alaskan households had capital gains lower than all other households except Hawaiian/Pacific Islander, and those with two or more races.

[65]Two other significant itemized deductions are medical expenses and donations to charity.

Of those who would itemize, the majority, about 75 percent, were White households.[66] In addition, we estimated White and Asian households were also proportionally more likely to itemize than other households (see appendix II, fig. 14). Controlling for some variation in income shows itemizing rates that were similar across households of different races and ethnicities but did not eliminate differences (see appendix II, table 21). Across the income distribution, White households were more likely to itemize than Black and Hispanic households. In addition, through most of the income distribution, White households were also more likely to itemize than Asian households. Of those who would itemize, the majority, about 55 percent, were male-headed households.[67] Although male-headed households were also more likely to itemize, controlling for some variation in income eliminated any differences (see appendix II, table 22).

As discussed previously, tax data on other provisions related to wealth are not readily available, such as the step-up in basis at death and the exclusion of capital gains on owner-occupied housing. Experts offered several examples of provisions that could result in disparities, including Black households' limited access to benefits from the exclusion of capital gains on owner-occupied housing, tax-advantaged 529 plans, and IRAs.[68] These provisions, though designed to encourage saving for all, likely disproportionately benefit those who are wealthier because they require that households have resources to save. There are no direct data linking benefits of 529 plans and IRAs to race and ethnicity, but these provisions have higher use by White households.[69]

[66]The point estimate was 76.1 with a 95 percent confidence interval of 75.5 to 76.6 percent.

[67]The point estimate was 56.1 with a 95 percent confidence internal of 55.3 to 56.9 percent.

[68]The 529 plans are tax-advantaged saving plans for college tuition. IRAs are tax-advantaged retirement saving accounts that allow the taxpayer to deduct contributions or receive contributions tax-free.

[69]Congressional Research Service, *Individual Retirement Account (IRA) Ownership: Data and Policy Issues*, R46635 (Dec. 20, 2019); *Higher Education: Children's Savings Account Programs Can Help Families Build Savings and Envision College,* GAO-21-10 (Washington, D.C.: Dec. 10, 2020); and GAO, *Higher Education: A Small Percentage of Families Save in 529 Plans*, GAO-13-64 (Washington, D.C.: Dec. 12, 2012).

Estimates of Tax Provisions Changed by Tax Cuts and Jobs Act Show Disparities Remained

We used 2018 tax rules, which incorporate changes implemented by TCJA, and applied them to 2017 Census data to estimate post-TCJA eligibility to use and average amounts of CTC, ACTC, and itemized deductions.[70] Although the average estimated amount of taxes declined for all groups of households by race, ethnicity, and sex, differences remained across households by race, ethnicity, and sex. We discuss our findings in the following sections.

Family-Oriented Credits

Average estimated CTC amounts significantly increased for all eligible households and across most of the income distribution. The estimated distribution of CTCs across households changed little post-TCJA compared to before the law. The distribution of CTC amounts across households differed somewhat across income quintiles. White households, however, continued to have higher CTC amounts than Asian households through most of the income distribution (see appendix II, figs. 8 and 15, and tables 9 and 23). The distribution of average CTC amounts across eligible households by sex did not change, increasing significantly for both sexes (see appendix II, tables 11 and 24). In addition, the eligibility to use the CTC increased post-TCJA for most households across the income distribution (see appendix II, figs. 11 and 16, and tables 10, 12, 25, and 26).

We also estimated that average ACTC amounts increased for most eligible households across the income distribution. However, the distribution of ACTCs across households changed some post-TCJA (see appendix II, figs. 8 and 15, and tables 13, 15, 27, and 28). We also estimated differences in households' abilities to claim the ACTC. As with the CTC, post-TCJA, the share of households we estimated to be eligible to claim the ACTC increased across the income distribution. Those changes also altered the differences in eligibility to claim ACTC across households by race, ethnicity, and sex throughout the income distribution (see appendix II, figs. 12 and 17, and tables 14, 16, 29, and 30).

Itemized Deductions

We estimated small changes in the differences by race, ethnicity, and sex in the estimated average dollar amounts of itemized deductions post-TCJA. These differences varied by income quintile. Even though TCJA limited some itemized deductions, average amounts of itemized deductions increased for most households across the income distribution

[70]Our analysis does not reflect changes to the Internal Revenue Code enacted since 2018. For example, the American Rescue Plan Act of 2021 temporarily expanded the Child Tax Credit and made it fully refundable. It also expanded the Earned Income Tax Credit for households with no qualifying children.

(see appendix II, figs. 13 and 18, and tables 19 and 31). The increase in the average amount of itemized deductions was likely due to the significant reductions in the number of households claiming itemized deductions. We did not identify different amounts of itemized deductions between male- and female-headed households post-TCJA (see appendix II, tables 20 and 32).

All households showed a significant drop in the likelihood of itemizing deductions between 2017 and 2018, ranging from 10 to 20 percentage points. However, White and Asian households continued to be more likely to itemize than other households (see appendix II, figs. 14 and 19). When controlling for some variation in income, we found the share of households that would itemize dropped significantly for most households by race and ethnicity. For households in the lowest income quintile, itemizing rates generally fell by less than a percentage point (see appendix II, tables 21 and 33). Differences in estimated itemizing rates across households by race and ethnicity were similar pre- and post-TCJA.

Considerations for Evaluating Tax Policy by Race, Ethnicity, and Sex

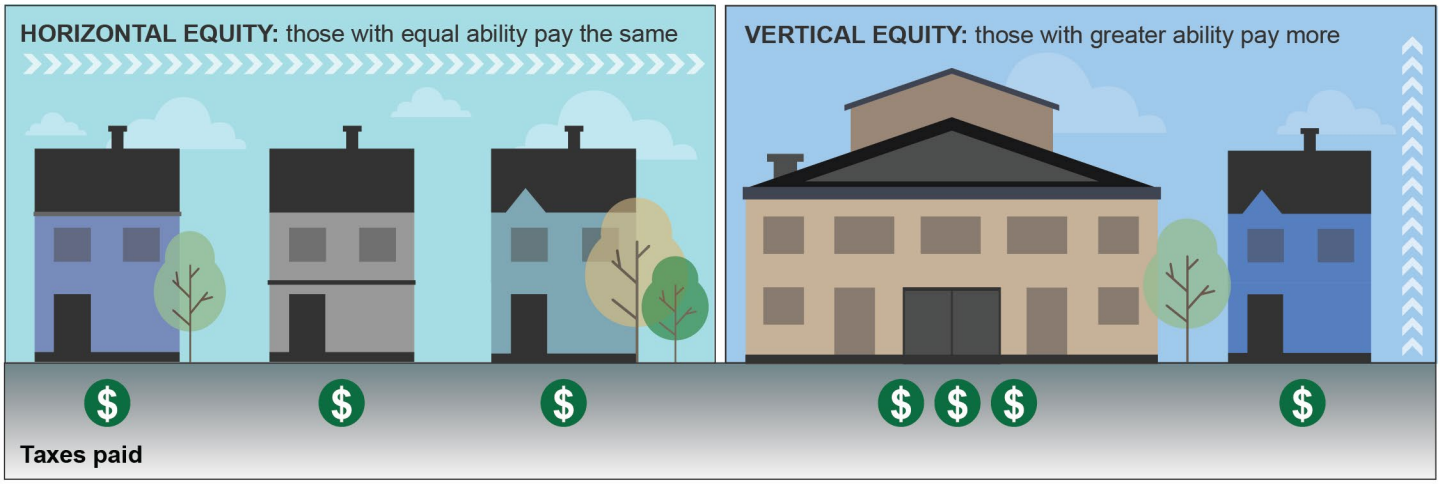
Our analyses in the preceding sections suggest the tax code could have disparate effects on taxpayers by demographics. However, in analyzing the effects of tax policies on households, there are a number of factors to consider in evaluating any provision. Analyses using different measures of equity can provide varying insights into the potential causes of any disparate outcomes. Before reforming any tax provisions, there are tradeoffs to consider between equity and other criteria of a good tax system, such as efficiency and administrability. In addition, in evaluating potential changes to a tax provision, it is important for policymakers to consider the significance of the provision. For example, they can consider measures of revenue, the groups of taxpayers who would be affected, or its relation to other provisions. We discuss some considerations for evaluating tax policies by race, ethnicity, and sex (measures of equity and the significance of tax provisions) in the following section.

This report focuses on one of the criteria for a good tax system—equity. Two principles of equity underlie debates about the fairness of different tax policies. The ability to pay principle and the benefits received principle do not identify one tax policy as more equitable than another, but they can be used to clarify and support judgments about equity. The ability to pay principle states that those who are more capable of bearing the burden of taxes should pay more taxes than those with less ability to pay. The benefits received principle states that people should pay taxes in proportion to the benefits they receive from government goods and services. Because the benefits received principle centers on government

spending in relation to taxes, this report focuses on assessing equity under the ability to pay principle. However, as noted above, in considering the reform of any tax provision to address identified inequalities, it may be important to consider how that provision relates to other government spending.

The concepts of vertical equity and horizontal equity are refinements of the ability to pay principle (see fig. 4). Vertical equity concerns differences in ability to pay. Horizontal equity requires that households with similar ability to pay taxes receive similar tax treatment.

Figure 4: Horizontal and Vertical Equity



Source: GAO and artisticco/stock.adobe.com. | GAO-22-104553

Subjective judgments about vertical equity are reflected in debates about the overall fairness of the tax system. One way that the tax system addresses vertical equity is with a progressive rate structure. This rate structure applies lower tax rates at lower income levels and higher tax rates at higher income levels. It also includes a zero tax rate, meaning some low-income taxpayers pay no federal income taxes despite often paying payroll taxes. Disparities in tax outcomes we identified when not controlling for income demonstrate potential vertical inequities, which might largely reflect the disparities in income and wealth across households by race, ethnicity, and sex. For example, White, Asian, and male-headed households are more likely to have higher income. When not controlling for income, we estimate that Asian households paid more taxes on average than White households, and both Asian and White

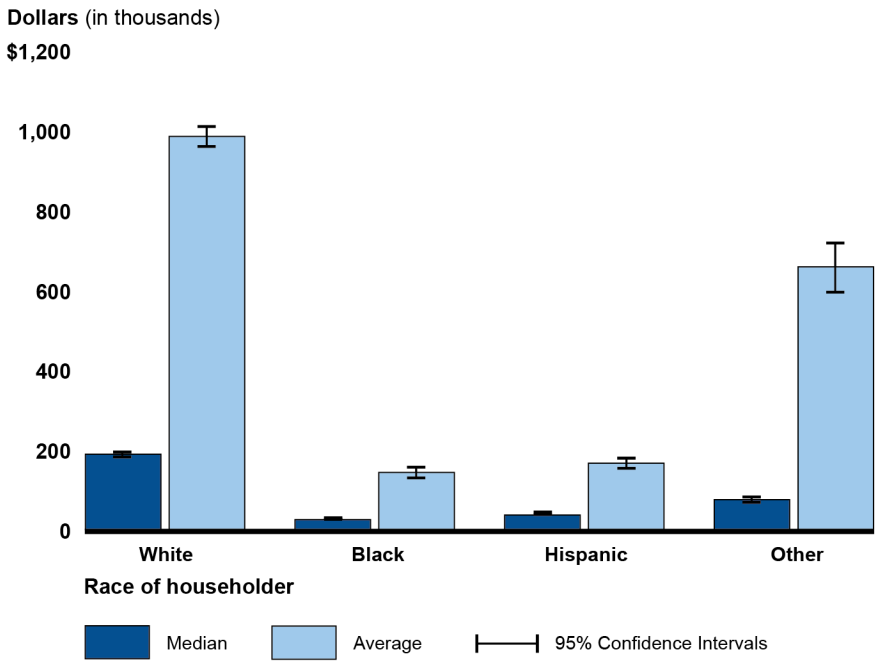
households paid more taxes on average than households of all other races and ethnicities (see appendix II, fig. 7). Additionally, male-headed households paid more taxes on average than female-headed households.[71]

In addition, White households have significantly more wealth than households of other races and ethnicities (see fig. 5). Research indicates that the wealth gap is wider than the income gap.[72] Therefore, though the tax code has a progressive rate structure based on income, it might not lead to wealthier households paying a proportionally higher percentage of their wealth in taxes than less wealthy households.

[71]We estimate male-headed households paid an average of $11,773 with a 95 percent confidence interval of $11,385 to $12,162, and female-headed households paid an average of $7,788 with a 95 percent confidence interval of $7,433 to $8,144.

[72]C. Stone et al. "A Guide to Statistics on Historical Trends in Income Inequality," *Policy Futures*, (Washington, D.C.: Center on Budget and Policy Priorities, Jan 13, 2020) and J. M. Horowitz, R. Igielnik and R. Kochhar, "Most Americans Say There Is Too Much Economic Inequality in the U.S., but Fewer Than Half Call It a Top Priority," (Washington, D.C.: Pew Research Center, January 2020), accessed February 17, 2022, https://www.pewresearch.org/social-trends/2020/01/09/most-americans-say-there-is-too-much-economic-inequality-in-the-u-s-but-fewer-than-half-call-it-a-top-priority/.

Figure 5: Distribution of Net Worth of Households by Race and Ethnicity, 2019



Source: Federal Reserve Board, 2019 Survey of Consumer Finances. | GAO-22-104553

Targeted tax expenditures, such as deductions and credits, could affect horizontal equity throughout the tax system because they may favor certain types of economic behavior over others by taxpayers with similar financial conditions. We identified disparities across households within income quintiles, suggesting the potential for horizontal inequity—inequalities beyond those based on income. The mortgage interest deduction is an example of a provision that could produce horizontal inequity. The amount of the mortgage interest deduction is dependent on a number of factors that could vary across households with similar incomes, such as the amount a household contributes to the down payment, the interest rate the household secures, and the value of the house. Experts we interviewed believe that the mortgage interest deduction does little to help households to buy houses. Rather, they said it benefits those who already have the resources to purchase houses, raises the value of homes, and reduces the cost of living in expensive houses.

Other research also indicates the mortgage interest deduction does not encourage homeownership but encourages the purchase of more

expensive homes. This deduction also does not address a significant barrier to home-ownership: the down payment. Although demographic data on households with mortgages is available, direct data on those who can use the mortgage interest deduction are not readily available. Because White households have higher home ownership rates than other households (75 percent compared to 45-60 percent), they may be more likely to benefit from this deduction.[73]

In evaluating individual tax provisions, it is also useful to consider the revenue implications of potential revisions. We estimated that White households could be eligible for the Earned Income Tax Credit (EITC) and Additional Child Tax Credit (ACTC) at lower rates than other racial and ethnic groups. In addition, we estimated that female-headed households could use the EITC and ACTC more than male-headed households. Although the amounts could be a substantial percentage of a household's annual income, some experts we interviewed highlighted the small relative size of these credits in lost revenue.

Tax expenditures for some provisions that are more beneficial to wealthy households—disproportionately White and Asian—are larger than expenditures for family-oriented provisions.[74] For example, as shown in table 4, wealth-oriented provisions total approximately $252 billion, while family-oriented credits total approximately $187 billion in revenue loss. However, without considering federal expenditure programs and every tax provision or the tax code in its entirety we cannot conclude how all provisions or groups of provisions that relate to certain policy goals, such as education, compare in amounts of revenue.[75]

[73]U.S. Census Bureau, *Quarterly Residential Vacancies and Homeownership, Fourth Quarter 2020*, CB21-15 (Washington, D.C.: Feb. 2, 2021).

[74]With progressive tax rates, deductions are more valuable for higher income households, whereas credits provide equal dollar-for-dollar tax relief.

[75]Other data show that major tax expenditures disproportionately benefit taxpayers in the highest income quintile. See T. S. Neubig, "Disparate Racial Impact: Tax Expenditure Reform Needed," *Tax Notes Federal*, vol. 170 (2021).

Table 4: Joint Committee on Taxation (JCT) Estimates of Federal Expenditures by Tax Provision, Fiscal Year 2022,

Dollars in billions

Examples of wealth-oriented provisions	
Reduced tax rates on capital gains	145.0
Step-up in basis	42.9
Exclusion of capital gains on owner-occupied housing	40.3
Mortgage interest deduction	24.1
Examples of family-oriented provisions	
Earned income tax credit	71.3
Child tax credit	69.9
Additional child tax credit	45.7

Source: GAO analysis of *JCT Estimates of Federal Tax Expenditures for Fiscal Years 2020-2024*. | GAO-22-104553

As noted previously, because the tax system interacts with different socioeconomic markets, analyses of different provisions with respect to the demographics of the taxpayer would help policymakers evaluate the equity implications of the current and future tax system. Our findings are based on a model that simulated tax outcomes, not actual taxpayer behavior. We analyze households with similar incomes by looking at tax provisions by income quintile. However, we did not fully control for income or other household characteristics. More comprehensive analysis and data linking tax and demographic information would allow for analysis and conclusions that are more definitive and detailed (see appendix I for more information on limitations).

Conclusions

Congress and researchers are paying increasing attention to the importance of analyzing all forms of equity in tax policies. However, without data consistently linking taxpayer and demographic information, analysts are limited in their evaluations. Several entities within and outside of government have emphasized the importance of collecting and sharing data while protecting privacy and security. Improvements in the ability to collect and share these data would allow for analyses that use linked tax and demographic data. These analyses could help policymakers better recognize the equity implications when considering the tradeoffs of specific tax provisions and overall tax policy goals.

Our findings suggest disparities in tax outcomes by the race, ethnicity, and sex of households. However, our analysis is limited by a lack of tax and demographic data. In addition, other data on individuals' demographic information is not readily linked to taxpayer information.

Restrictions on interagency data sharing limit the ability of agencies to rely on other resources to provide consistent analysis of how the tax system interacts with households by race, ethnicity, and sex. Congress could address these limitations by revising relevant laws, such as those in Titles 13 and 26, improving the ability for Treasury and Census to share data in a secure and systematic manner that protects the confidentiality of those data. Alternatively, as recommended by the Commission on Evidence-Based Policymaking, Congress could establish a National Secure Data Service to facilitate agencies' data access while ensuring transparency and privacy.

Treasury and its relevant offices could produce data on taxpayers that include associated demographic information through approaches such as surveys, improved interagency data sharing, and imputation methods. Providing those data would be consistent with some agencies' research goals. For example, IRS's Statistics of Income Joint Statistical Research Program's aim is "to provide new insights and understandings of the ways that existing tax policies affect individuals, businesses, and the economy." Treasury's Office of Tax Analysis is developing imputation methods to analyze tax policies with regard to demographic information. However, that method has limitations. While, Treasury is validating the reliability of its imputation method as well as appropriate limitations to its use, it has not evaluated the feasibility of other options for producing tax data linked to demographic information. Such an evaluation would better position Treasury to conduct more comprehensive and accurate analyses of the distributional effects of current and future tax policies. That evaluation would support Treasury's role in: providing economic and policy analyses leading to the development of the administration's tax proposals; assessing major congressional tax proposals; and analyzing the effects of existing laws.

Matter for Congressional Consideration

Congress should consider revising relevant laws, such as those in Titles 13 and 26, as appropriate, to facilitate interagency data sharing that would allow for more accurate, consistent, and systematic analyses of any effects of existing and proposed tax policies in relation to taxpayers' demographics in a secure manner that protects the confidentiality of those data. (Matter for Consideration 1)

Recommendation for Executive Action

We are making one recommendation to Treasury.

The Secretary of the Treasury, as part of the department's work on equity analysis of tax policy, should evaluate the feasibility of alternative

methods, such as interagency data sharing or surveys, for producing secure, linked taxpayer and demographic data. (Recommendation 1)

Agency Comments and Our Evaluation

We provided a draft of this report to the Secretary of the Treasury, Commissioner of Internal Revenue Service, and Secretary of Commerce for review and comment. Treasury neither agreed nor disagreed with the recommendation and its comments are reproduced in appendix III. We also received technical comments from Treasury, IRS, and Census (which is part of Commerce), which we incorporated as appropriate. In its letter, Treasury said it agreed that it is critical to continue to innovate in its efforts to understand the effects of tax policies by demographic characteristics and is focusing its current efforts on developing an imputation method.

Specifically, Treasury stated that it has undertaken significant work to analyze the relationship between tax policies and multiple demographic characteristics. This work includes improving current statistical imputation methods to allow Treasury to model the relationship between race, ethnicity, and taxes. Treasury also stated that it has given options beyond imputation significant consideration. Treasury stated that it is already pursuing interagency agreements, notwithstanding the significant legal and practical limitations to interagency data sharing. Treasury also noted that a survey-based approach would require it and IRS to solicit race and ethnicity data directly from taxpayers, which would raise significant policy questions that must be carefully considered. Treasury stated that, at present, given the numerous requests for analysis that it receives, developing an imputation method remains the best area for focus.

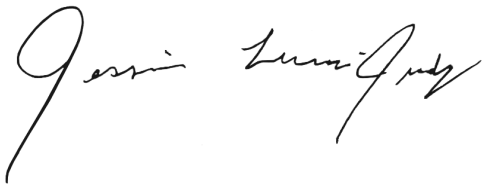
We recognize the challenging work that Treasury is doing to analyze the equity effects of different tax provisions and proposals. We reported on the various limitations to several methods of producing linked taxpayer and demographic data and have suggested Congress take action to better facilitate secure interagency data sharing. Despite those limitations, other methods that link self-reported taxpayer and demographic information could yield data that would support better analyses.

We agree with Treasury's current efforts and acknowledge the benefits of pursuing imputation as a first option. As Treasury continues its ongoing work in this area, it should evaluate the feasibility of alternative methods for linking tax and demographic information. Beyond considering these methods, an evaluation could include identifying limitations and ways to mitigate them. Such an evaluation would better position Treasury to establish linked taxpayer and demographic data that could be used to

analyze the effects of tax policies on households by race, ethnicity, and sex.

We are sending copies of this report to the appropriate congressional committees, Secretary of the Treasury, Commissioner of Internal Revenue, Service Secretary of Commerce, and other interested parties. In addition, the report is available at no charge on the GAO website at https://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-6806 or lucasjudyj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix VI.



Jessica Lucas-Judy
Director, Tax Issues
Strategic Issues

List of Committees

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Chairman
The Honorable Richard Shelby
Vice Chairman
Committee on Appropriations
United States Senate

The Honorable Ron Wyden
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The Honorable Mike Crapo
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United States Senate

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Appendix I: Objectives, Scope, and Methodology

This report (1) examines approaches for analyzing the effects of tax policies, including some of those in the CARES Act and COVID-19 related legislation, on households by race, ethnicity, and sex; and (2) estimates how households could use selected tax provisions by race, ethnicity, and sex using publicly available data.

To examine the CARES Act provisions we focused on the first and second economic impact payments (EIP) and the employee retention credit (ERC). To analyze EIPs, we analyzed the demographic distribution of populations at high risk for not receiving EIPs or receiving them late. These high-risk groups include incarcerated individuals, non-filers, mixed-immigration households, and unbanked households. In a prior report, we provided demographic information on incarcerated individuals, non-filers, and unbanked households.[1] In this report, we analyzed data from the Census Bureau's (Census) 2017 Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) to estimate the distribution of mixed-immigration status households by race and ethnicity. As noted earlier in the report, reliable data linking demographic information of employees to firms that could have taken the ERC were unavailable. This lack of reliable data also provided information on the challenges of analyzing CARES Act provisions.

The CPS is sponsored jointly by Census and the Bureau of Labor Statistics. It is the source of official government statistics on employment and unemployment in the United States. The basic monthly survey is used to collect information on employment, such as employment status, occupation, and industry, as well as demographic information, among other things. The survey is based on a sample of the civilian, non-institutionalized population of the United States.

Using a multistage stratified sample design of about 62,000 eligible sample households, about 50,000 households are interviewed monthly based on area of residence to represent the country as a whole and individual states. The total sample also includes additional households, some of which are not interviewed in a given month for various reasons, such as not being reachable.

In addition to the basic CPS questions, the 2017 ASEC supplementary questions ask about topics including household and family characteristics,

[1]GAO, *COVID-19: Sustained Federal Action Is Crucial as Pandemic Enters Its Second Year*, GAO-21-387 (Washington, D.C.: Mar. 31, 2021).

marital status, income from the previous calendar year, and work status/occupation, among other things. Including the basic CPS sample, approximately 80,000 eligible housing units were in the sample for the CPS, of which 70,000 interviews were obtained. According to Census, the additional sample for the CPS ASEC is to allow for more reliable data for certain groups, including Hispanic and minority households. Since results for the CPS ASEC are based on a probability sample, they are subject to sampling and non-sampling errors, including nonresponse error. The nonresponse rate for the supplement was 25.6 percent. This number combines the nonresponse rate of the basic CPS household-level nonresponse rate of 13.5 percent and the household-level nonresponse rate for the ASEC of 14.0 percent. Unless otherwise noted, we indicate that two estimates based on the ASEC are statistically different when their 95 percent confidence intervals do not overlap.

Because the ASEC followed a probability procedure based on random selections, the sample is only one of a large number of samples that might have been drawn using the same sampling methodology. Since each sample could have provided different estimates, we express our confidence in the precision of our particular sample's results as a 95 percent confidence interval (e.g., plus or minus 7 percentage points). This interval would contain the actual population value for 95 percent of the samples we could have drawn. Specifically, to account for the multistage sampling design, including the additional ASEC sampling, we used publically available ASEC replicate weights when obtaining confidence intervals for our ASEC estimates. Census notes its replicate weights also account for failure to obtain an interview and, among other things, the known distribution of the population according to age, sex, and race.

To estimate the amount and use of other tax provisions across households by race, ethnicity, and sex, we used the Urban Institute's 2017 Transfer Income Model tax simulation model, which uses data from the Census 2017 CPS ASEC. The Transfer Income Model, version 3 (TRIM3) is a comprehensive microsimulation model that simulates the major governmental tax, transfer, and health programs that affect the U.S. population. TRIM3 can produce results at the individual, family, state, and national levels.[2] We examined several tax provisions that were available through this model: family-oriented provisions, such as the Child Tax

[2]TRIM3 is developed and maintained at the Urban Institute under primary funding from Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation.

Credit (CTC), Additional Child Tax Credit (ACTC), and Earned Income Tax Credits (EITC); and wealth-oriented provisions, such as itemized deduction and capital gains.[3] Information on other provisions of interest, such as mortgage interest deductions and the step-up in basis at death, were not readily available.

To analyze the effect of changes from the Tax Cuts and Jobs Act of 2017 (TCJA), we used a special run of the Urban Institute's TRIM3 model that simulated 2018 tax rules, including TCJA, on 2017 CPS ASEC data. We examined those provisions that TCJA affected—CTC and itemized deductions.

This simulation methodology presents some limitations:

- The model assumes that all provisions are taken if the household is eligible or if the provisions would legally reduce its tax liability. However, research suggests that taxpayers do not always optimize their tax liabilities. For example, the simulation model assumes that a household eligible for the EITC would take the full amount for which it is eligible, and itemize if deductions exceed the standard deduction.[4] However, research indicates that these assumptions do not apply equally to all taxpayers. For example, researchers found that low-income Hispanic households are less likely to claim the EITC because of challenges to obtaining information and confusion about eligibility among families with nontraditional living arrangements.[5]
- Urban Institute also makes a number of assumptions in order to determine eligibility for credits as well as other tax- related information needed for the federal tax model. For example, itemized deductions are obtained through a statistical match with IRS's Statistics of Income Public Use File. Alternatively, to determine eligibility of credits

[3]We restricted the sample used to estimate the amount and use of the EITC, CTC, ACTC, and itemized deductions to households that would be eligible to take the provision. Specifically, we estimated the average amount of the credit for households that had a positive amount. We estimated the share of households that could take the CTC and ACTC for those that had qualifying children.

[4]The model also makes a variety of assumptions for certain provisions, such as residency requirements of children for EITC eligibility. For details on specific assumptions made, see https://boreas.urban.org/documentation/federaltax/main.php

[5]D. Thomson, et al., "State Policy and Practice Related to Earned Income Tax Credits May Affect Receipt among Hispanic Families with Children" *Child Trends*, November 2020.

requiring residency rules for dependents, Urban Institute assumes that dependents in the CPS sample met the residency time requirements.[6]

- There are also limitations in determining the race, ethnicity, and sex of a household. The tax simulation model we used for our analysis relies on Census data. Household demographic characteristics reflect the race, ethnicity, and sex of the individuals who complete the CPS survey—termed a householder—even if those characteristics do not reflect other members of the house. For example, if a White woman completes the survey for her household, Census would reflect a White race and female sex for the householder and our results provide the household demographics based on those of the householder.
- We are also limited to the Census definition of a household, which may not be the tax unit that would file individual tax returns. For example, a census household consisting of a married couple and a single relative who is not a dependent could reflect two separate tax units—a married filing jointly tax unit and a single tax unit.
- The CPS sample frame does not fully overlap with the taxpaying population, as it does not include expatriate filers, people who are housed in institutions, and certain members of the U.S. armed forces. Furthermore, the income distributions in Statistics of Income data do not align with CPS income distributions. These differences arise from several factors, including the overall lack of data on retirement distributions and Census's need to use imputation to create the CPS dataset.
- Census also imputes missing data from non-response on individual survey items. Although Census states item non-response is modest, any imputations of race, ethnicity, or sex or related to those demographics could affect analysis of tax outcomes related to those demographics. However, ignoring such item non-response could bias results of tax outcomes related to those demographics, if such item non-response is not missing completely at random, whereas imputation might remove such bias.

Since the TRIM3 model uses CPS ASEC data to analyze selected federal tax variables across households by demographic information, TRIM3 analyses are weighted by appropriate unit weights that are at either the

[6]A full description of Urban Institute's methodology and assumptions of its federal tax model can be accessed at https://boreas.urban.org/documentation/federaltax/main.php.

personal or household level. CPS ASEC replicate weights are used to obtain standard error estimates.

We also interviewed experts about how certain provisions interact with households by race, ethnicity, and sex. To select which experts to interview, we began by speaking with three prominent academics and a government researcher who have studied similar issues, from whom we solicited recommendations for additional relevant interviewees. We also searched for experts by independently conducting a literature review for work on the intersection of race or ethnicity, tax, and equity. We searched for relevant scholarly publications, government reports, conference papers, working papers, and association or nonprofit publications published from 2015 through 2020 in the following databases: Scopus, ProQuest, EBSCO, Westlaw Edge, Harvard Think Tank, and Google Scholar. We obtained 42 potentially relevant sources through this search, some of which were written by multiple authors. Overall, we found 54 potential expert interviewees.

From the list of 54 authors who were potential experts to interview, two analysts independently assessed each author's relevance to our work. For each, we assessed expertise in the following categories: specific tax provisions that are broad, federal, and nationally relevant; race-and sex-based disparities in household taxes, income, and wealth; and interactions between the tax code and race, ethnicity, and sex. The two analysts discussed differences in their assessments and reached concurrence about each author's relevant expertise. To the extent possible, the analysts considered whether expert selections included a range of research interests, perspectives, educational backgrounds, and varied types of institutional affiliations. We determined 21 of the 54 possible experts were experts on our topics of interest, three of whom we had already interviewed prior to our expert search. We invited the 18 remaining experts to interview, and 15 met with us. We also solicited suggestions for other experts to interview. There were few suggestions for individuals we had not already interviewed, planned to interview, or considered interviewing. We added two interviewees using this snowball method, both of whom were researchers associated with public policy organizations where experts we interviewed also worked.

Overall, we interviewed 21 experts with a range of experiences and perspectives in our topics of interest (see full list of expert interviewees later in this appendix). We obtained their perspectives on the ways in which certain provisions interact with households by race, ethnicity, and sex, as well as the challenges of conducting analyses of these

interactions. We also asked all experts about the role, if any, they thought the federal government should play in collecting information on race alongside tax information on households.

The experts we selected were primarily academics and researchers from public policy organizations. Although the 21 experts we interviewed had varying backgrounds related to our topics of interest, their views may not represent the views of all experts in this area. These experts provided important perspectives; however, those views cannot be generalized to all experts. Additionally, experts' suggestions for ways in which tax and demographic data can be collected and linked are not exhaustive.

We also interviewed officials from the Internal Revenue Service, the Department of the Treasury, and Census. We asked them about:

- Data that could be useful for analyzing effects of tax provisions by the race, ethnicity, and sex of households;
- Agency research about equity in tax code administration;
- Efforts to address Executive Order 13985, "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government";
- Interagency data-sharing agreements; and
- Options for additional potential data collection and data privacy issues.

We also reviewed the results of our database searches and other literature written by our expert interviewees to identify articles related to the intersection of history, tax policy, and race, ethnicity, or sex. We summarized relevant literature about the history and tax law analysis. This literature primarily consisted of articles that used non-tax data in conjunction with analysis of tax law to draw inferences about the potential for disparities in the effect of tax provisions on households by race, ethnicity, and sex. We supplemented this literature review with materials on specific topics, such as the Earned Income Tax Credit and its usage by ethnicity, using targeted web searches. Overall, we identified six articles that, while not exhaustive, offer an overview about ways in which tax provisions could intersect with other historical, cultural, and non-tax factors.

Names and Affiliations of Expert Interviewees:

- Jeremy Bearer-Friend, Associate Professor of Law, George Washington University Law School
- Kim Michael Bloomquist, former staff, Internal Revenue Service
- Aravind Boddupalli, Research Associate, Urban-Brookings Tax Policy Center
- Dorothy A. Brown, Asa Griggs Professor of Law, Emory University School of Law
- Carl Davis, Research Director, Institute on Taxation and Economic Policy
- William Gale, Senior Fellow, Brookings; Co-Director, Urban-Brookings Tax Policy Center
- Janet Holtzblatt, Senior Fellow, Urban-Brookings Tax Policy Center
- Chye-Ching Huang, Executive Director, Tax Law Center at the New York University School of Law
- Anthony C. Infanti, Christopher C. Walthour, Sr. Professor of Law, University of Pittsburgh School of Law
- Francine J. Lipman, William S. Boyd Professor of Law, University of Nevada, Las Vegas, William S. Boyd School of Law
- Leo P. Martinez, Managing Director, Anderson; Professor Emeritus, UC Hastings College of Law
- Amy K. Matsui, Director of Income Security and Senior Counsel, National Women's Law Center
- Nicholas A. Mirkay, Associate Dean for Academic Affairs & Professor of Law, William S. Richardson School of Law, University of Hawai'i at Mānoa
- Benjamin Page, Senior Fellow, Urban-Brookings Tax Policy Center
- Kim Rueben, Sol Price Fellow, Urban-Brookings Tax Policy Center
- Jessica Schieder, former staff, Institute on Taxation and Economic Policy
- Palma Joy Strand, Professor of Law, Negotiation and Conflict Resolution Program, Creighton University
- Phyllis C. Taite, Professor of Law, Oklahoma City University School of Law
- Meg Wiehe, former staff, Institute on Taxation and Economic Policy

- Vanessa Williamson, Senior Fellow, Urban-Brookings Tax Policy Center
- Lawrence Zelenak, Pamela B. Gann Professor of Law, Duke Law School

We conducted this performance audit from September 2020 to May 2022 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Detailed Distributional Analysis of Households' Eligibility to Use Selected Tax Provisions

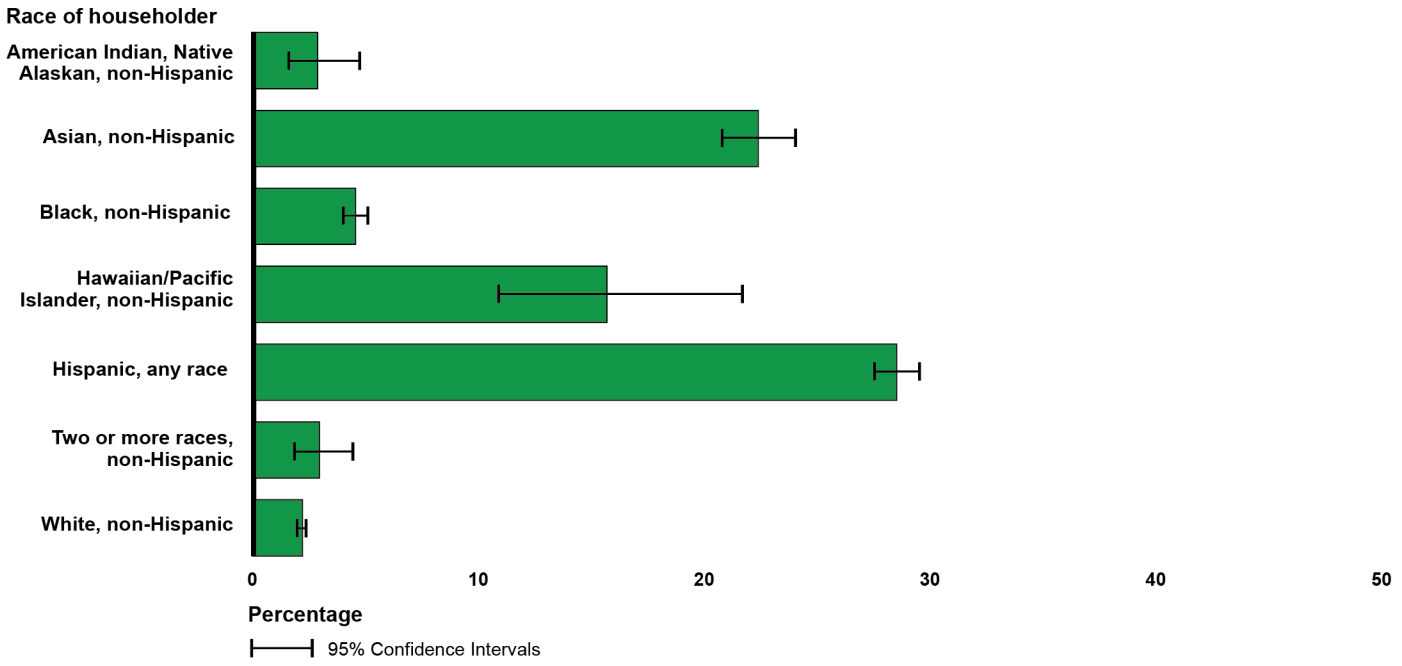
The following figures provide:

- the share of households with mixed immigration status,
- the estimated average amount of a specific tax provision for households within a racial or ethnic group that we estimated were eligible to use the provision, and
- the estimated share of households within a racial or ethnic group that we estimated were eligible to claim a specific tax provision.

For example, figure 10 shows our estimate that 10 percent of Asian households could have claimed the Earned Income Tax Credit (EITC), based on eligibility, in 2017.

Mixed Immigration Status

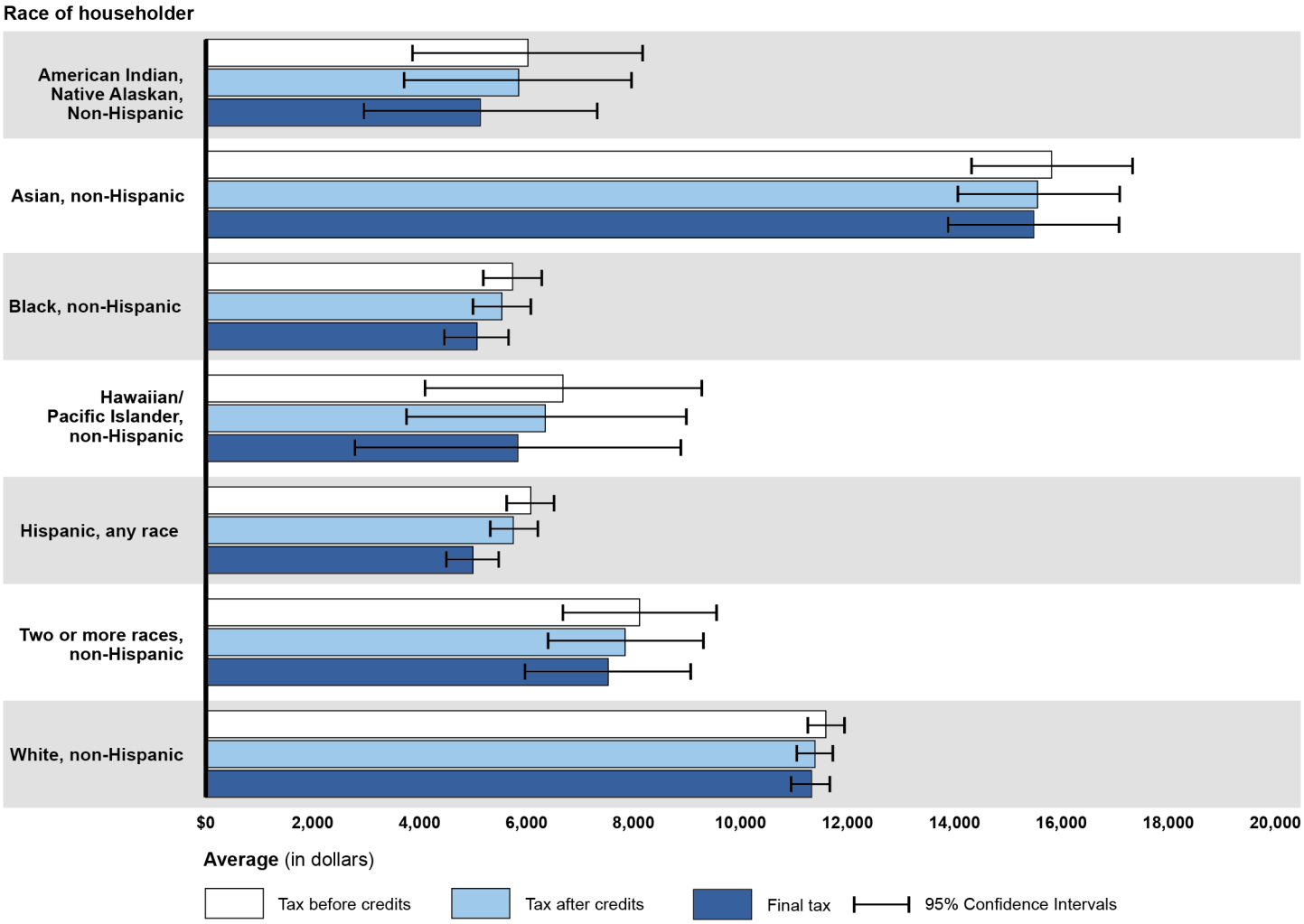
Figure 6: Share of Households that have Mixed Immigration Status by Race and Ethnicity of Householder, 2017



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Selected Tax Provisions Prior to the Tax Cuts and Jobs Act

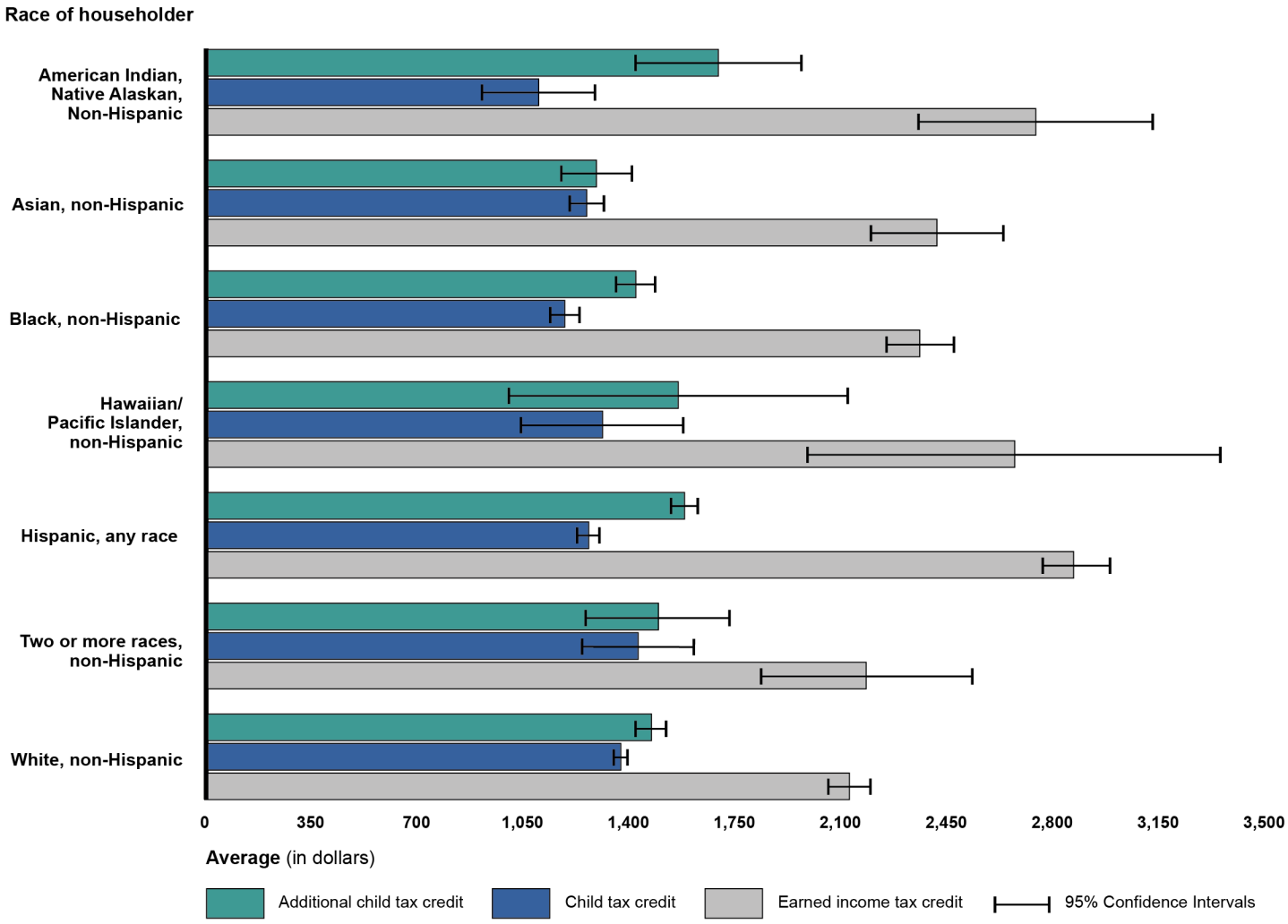
Figure 7: Estimated Distribution of Average Tax Amounts by the Race and Ethnicity of the Householder, 2017



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Tax before credits includes deductions and other provisions, such as progressive tax rates. Tax after credits includes nonrefundable credits. Final tax includes refundable credits. Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Figure 8: Estimated Distribution of Average Family-Oriented Tax Credit Amounts by Race and Ethnicity of Householder, 2017



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

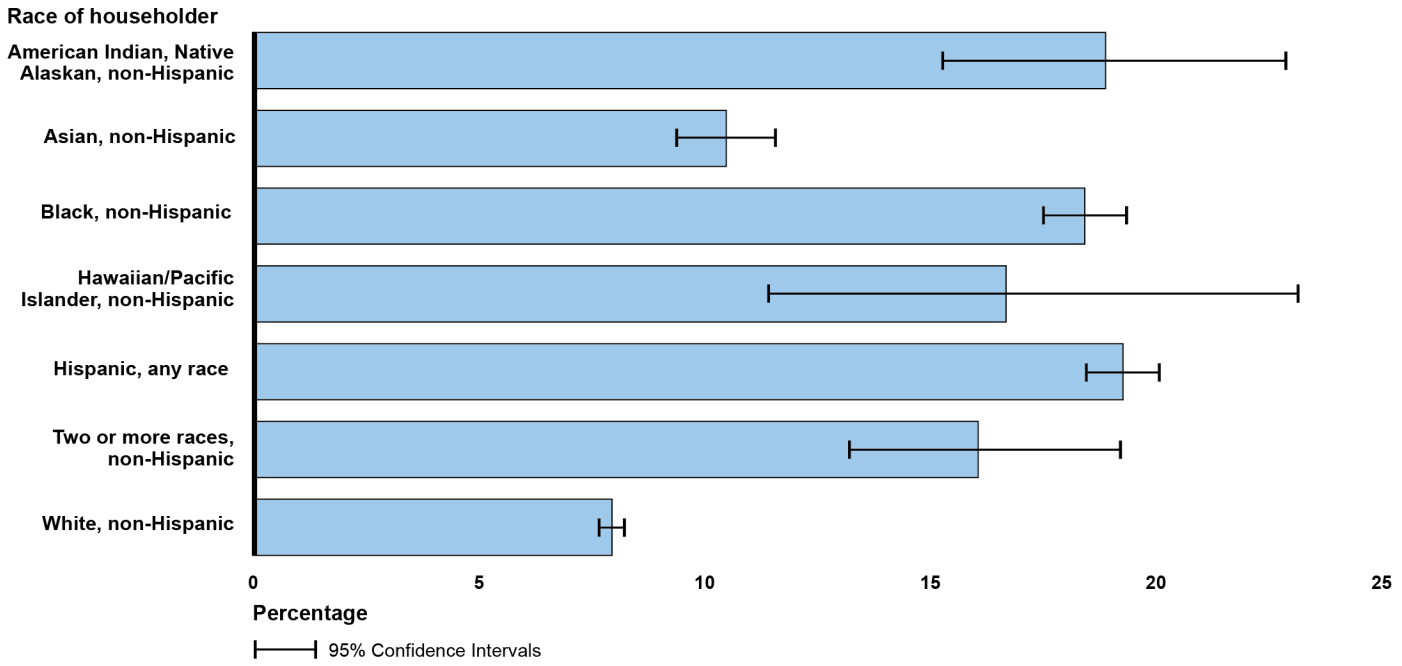
Table 5: Estimated Distribution of Average Earned Income Tax Credit Amounts by Income, Race, and Ethnicity of Householder, 2017

			95% Confidence Interval	
Income Quintile	**Race, Ethnicity**	**Average ($)**	**lower bound**	**upper bound**
40-60	American Indian, Native Alaskan non-Hispanic	1,886	1,303	2,470
	Asian, non-Hispanic	1,765	1,543	1,986
	Black, non-Hispanic	1,709	1,582	1,837
	Hawaiian/Pacific Islander, non-Hispanic	2,471	1,935	3,008
	Hispanic, any race	1,854	1,748	1,960
	Two or more races, non-Hispanic	1,530	1,139	1,921
	White, non-Hispanic	1,554	1,485	1,623
20-40	American Indian, Native Alaskan non-Hispanic	3,388	2,963	3,813
	Asian, non-Hispanic	3,006	2,699	3,312
	Black, non-Hispanic	2,939	2,794	3,085
	Hawaiian/Pacific Islander, non-Hispanic	3,148	1,988	4,308
	Hispanic, any race	3,596	3,473	3,719
	Two or more races, non-Hispanic	2,860	2,376	3,344
	White, non-Hispanic	2,687	2,588	2,786
0-20	American Indian, Native Alaskan non-Hispanic	710	376	1,043
	Asian, non-Hispanic	560	326	795
	Black, non-Hispanic	734	620	847
	Hawaiian/Pacific Islander, non-Hispanic	930	734	1,125
	Hispanic, any race	631	522	740
	Two or more races, non-Hispanic	731	357	1,106
	White, non-Hispanic	425	372	478

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: No households claimed the Earned Income Tax Credit for the top two income quintiles because income limits made them ineligible. Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Figure 9: Estimated Share of Households Claiming Earned Income Tax Credit by Race and Ethnicity of Householder, 2017



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate **households'** eligibility to claim certain provisions, not what households actually claimed.

Table 6: Estimated Share of Households Claiming Earned Income Tax Credit by Income, Race, and Ethnicity of Householder, 2017

			95% Confidence Interval	
Income Quintile	**Race, Ethnicity**	**Percent**	**lower bound**	**upper bound**
40-60	American Indian, Native Alaskan non-Hispanic	28.7	19.6	37.8
	Asian, non-Hispanic	20.7	17.3	24.4
	Black, non-Hispanic	20.3	18.1	22.5
	Hawaiian/Pacific Islander, non-Hispanic	22.4	11.9	36.1
	Hispanic, any race	21.7	19.9	23.6*
	Two or more races, non-Hispanic	16.7	11.1	23.7
	White, non-Hispanic	11.5	10.8	12.2
20-40	American Indian, Native Alaskan non-Hispanic	52.4	42.7	62.1
	Asian, non-Hispanic	41.6	37.0	46.2
	Black, non-Hispanic	46.0	43.7	48.4
	Hawaiian/Pacific Islander, non-Hispanic	39.8	25.3	54.2

			95% Confidence Interval	
Income Quintile	**Race, Ethnicity**	**Percent**	**lower bound**	**upper bound**
	Hispanic, any race	43.9	42.1	45.7
	Two or more races, non-Hispanic	40.5	32.8	48.3
	White, non-Hispanic	27.9	26.6	29.1
0-20	American Indian, Native Alaskan non-Hispanic	4.5	2.3	7.9
	Asian, non-Hispanic	3.9	2.4	5.9
	Black, non-Hispanic	8.3	7.1	9.7
	Hawaiian/Pacific Islander, non-Hispanic	9.4	1.7	26.4
	Hispanic, any race	7.7	6.3	9.3
	Two or more races, non-Hispanic	13.9	8.2	21.5
	White, non-Hispanic	4.7	4.2	5.3

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: No households claimed the Earned Income Tax Credit for the top two income quintiles because income limits made them ineligible. Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 7: Estimated Distribution of Average Earned Income Tax Credit Amounts by Income and Sex of Householder, 2017

			95% Confidence Interval	
Income Quintile	**Sex**	**Average ($)**	**lower bound**	**upper bound**
All	Female	2,562	2,499	2,624
	Male	2,068	1,986	2,150
40-60	Female	1,713	1,645	1,782
	Male	1,635	1,547	1,722
20-40	Female	3,189	3,109	3,269
	Male	2,605	2,481	2,730
0-20	Female	657	595	719
	Male	387	329	445

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: No households claimed the Earned Income Tax Credit for the top two income quintiles because income limits made them ineligible. Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

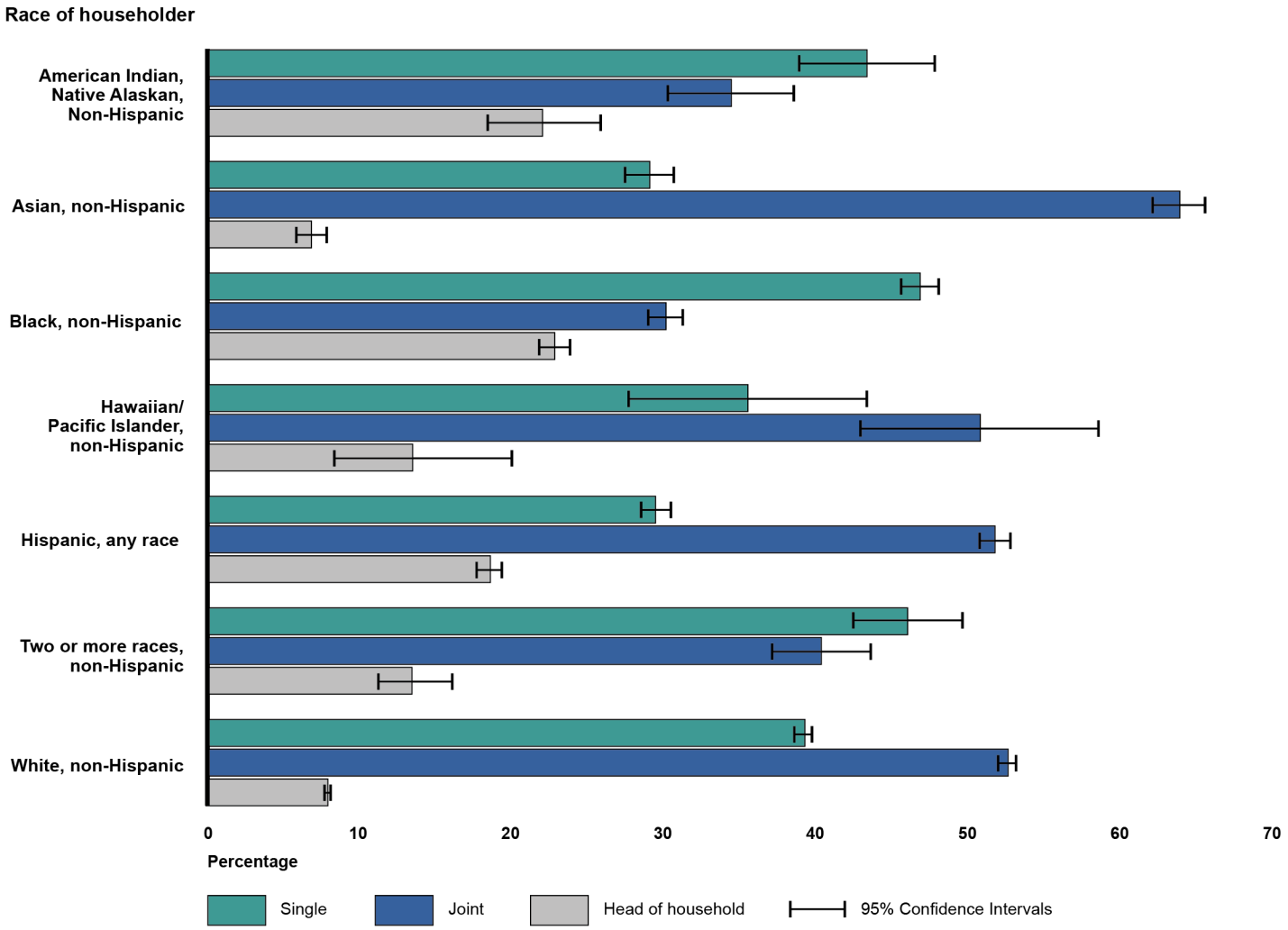
Table 8: Estimated Share of Households Claiming the Earned Income Tax Credit by Income and Sex of Householder, 2017

			95% Confidence Interval	
Income Quintile	Race, Ethnicity	Percent	lower bound	upper bound
All	Female	14.0	13.6	14.3
	Male	8.3	8.0	8.7
40-60	Female	17.6	16.5	18.7
	Male	12.8	12.0	13.6
20-40	Female	39.1	37.8	40.3
	Male	28.8	27.4	30.2
0-20	Female	6.1	5.5	6.7
	Male	5.5	4.8	6.2

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: No households claimed the Earned Income Tax Credit (EITC) for the top two income quintiles because EITC income limits made them ineligible. Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Figure 10: Estimated Share of Households' Filing Status by Race and Ethnicity of Householder, 2017



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 9: Estimated Distribution of Average Child Tax Credit Amounts by Income, Race, and Ethnicity of Householder, 2017

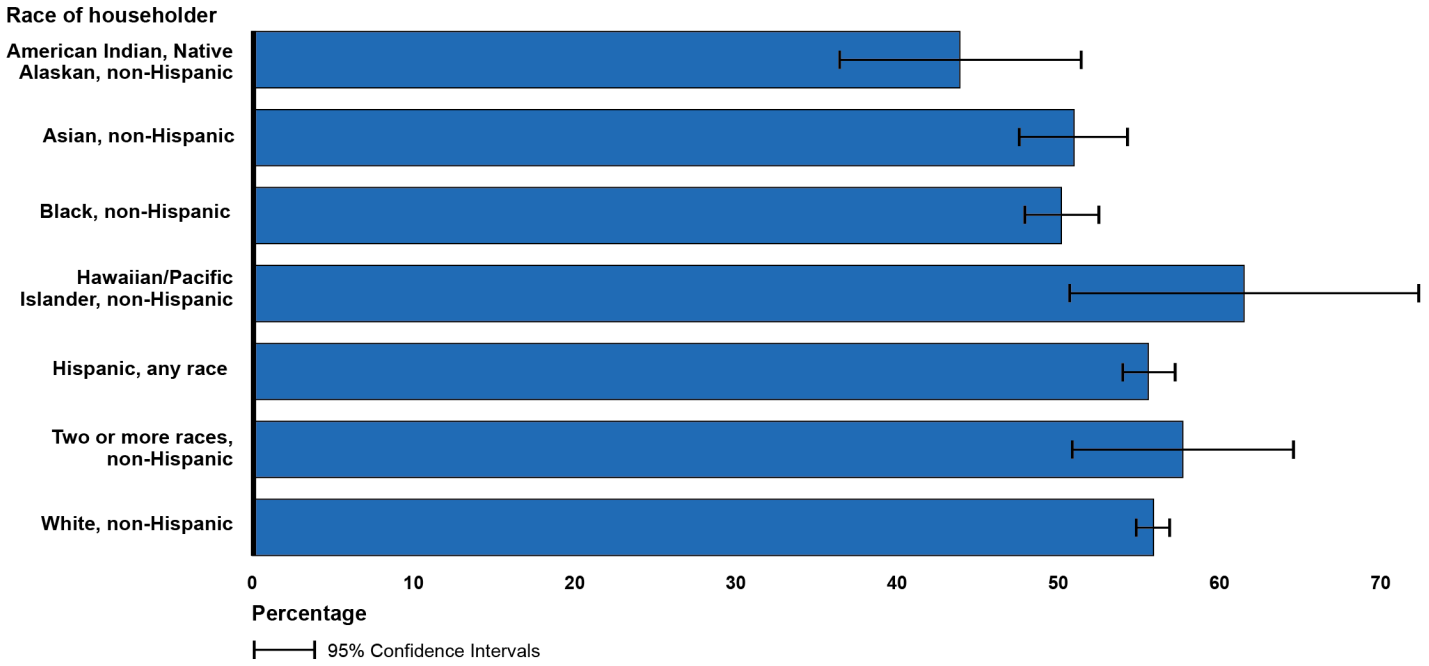
			95% Confidence Interval	
Income Quintile	**Race, Ethnicity**	**Average ($)**	**lower bound**	**upper bound**
80-100	American Indian, Native Alaskan non-Hispanic	717	435	999
	Asian, non-Hispanic	977	862	1,092
	Black, non-Hispanic	1,030	874	1,186
	Hawaiian/Pacific Islander, non-Hispanic	1,043	306	1,780
	Hispanic, any race	1,064	935	1,192
	Two or more races, non-Hispanic	1,510	909	2,112
	White, non-Hispanic	1,160	1,114	1,207
60-80	American Indian, Native Alaskan non-Hispanic	1,642	1,218	2,066
	Asian, non-Hispanic	1,554	1,469	1,640
	Black, non-Hispanic	1,673	1,576	1,770
	Hawaiian/Pacific Islander, non-Hispanic	1,847	1,217	2,478
	Hispanic, any race	1,784	1,725	1,844
	Two or more races, non-Hispanic	1,896	1,572	2,220
	White, non-Hispanic	1,707	1,672	1,741
40-60	American Indian, Native Alaskan non-Hispanic	1,030	881	1,179
	Asian, non-Hispanic	1,141	1,061	1,221
	Black, non-Hispanic	1,123	1,074	1,173
	Hawaiian/Pacific Islander, non-Hispanic	1,128	889	1,368
	Hispanic, any race	1,153	1,116	1,190
	Two or more races, non-Hispanic	1,171	1,024	1,319
	White, non-Hispanic	1,223	1,197	1,250
20-40	American Indian, Native Alaskan non-Hispanic	573	340	806
	Asian, non-Hispanic	478	403	553
	Black, non-Hispanic	476	419	532
	Hawaiian/Pacific Islander, non-Hispanic	579	416	741
	Hispanic, any race	388	346	430
	Two or more races, non-Hispanic	537	350	724
	White, non-Hispanic	438	407	469
0-20	American Indian, Native Alaskan non-Hispanic	0	0	0
	Asian, non-Hispanic	0	0	0
	Black, non-Hispanic	0	0	0
	Hawaiian/Pacific Islander, non-Hispanic	0	0	0
	Hispanic, any race	0	0	0

Income Quintile	Race, Ethnicity	Average ($)	95% Confidence Interval	
			lower bound	upper bound
	Two or more races, non-Hispanic	0	0	0
	White, non-Hispanic	0	0	0

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Figure 11: Estimated Share of Households Claiming Child Tax Credit by Race and Ethnicity of Householder, 2017



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 10: Estimated Share of Households Claiming Child Tax Credit by Income, Race, and Ethnicity of Householder, 2017

Income Quintile	Race, Ethnicity	Percent	95% Confidence Interval	
			lower bound	upper bound
80-100	American Indian, Native Alaskan non-Hispanic	43.5	22.6	64.3
	Asian, non-Hispanic	21.9	18.4	25.7
	Black, non-Hispanic	33.1	27.7	38.4
	Hawaiian/Pacific Islander, non-Hispanic	59.0	25.2	92.9

Income Quintile	Race, Ethnicity	Percent	95% Confidence Interval	
			lower bound	upper bound
	Hispanic, any race	35.4	30.8	40.0
	Two or more races, non-Hispanic	31.0	18.3	43.7
	White, non-Hispanic	29.9	28.5	31.3
60-80	American Indian, Native Alaskan non-Hispanic	95.6	81.6	100.0
	Asian, non-Hispanic	97.9	95.7	99.2
	Black, non-Hispanic	95.3	92.2	97.4
	Hawaiian/Pacific Islander, non-Hispanic	95.7	78.8	99.9
	Hispanic, any race	97.3	95.8	98.4
	Two or more races, non-Hispanic	95.5	87.6	99.1
	White, non-Hispanic	96.7	96.0	97.4
40-60	American Indian, Native Alaskan non-Hispanic	88.6	72.1	97.1
	Asian, non-Hispanic	90.9	85.8	94.6
	Black, non-Hispanic	91.4	88.4	93.8
	Hawaiian/Pacific Islander, non-Hispanic	90.7	70.5	98.8
	Hispanic, any race	90.7	88.8	92.4
	Two or more races, non-Hispanic	90.9	80.3	96.9
	White, non-Hispanic	91.8	90.4	93.1
20-40	American Indian, Native Alaskan non-Hispanic	20.5	10.5	34.1
	Asian, non-Hispanic	29.2	20.3	38.2
	Black, non-Hispanic	28.3	24.0	32.6
	Hawaiian/Pacific Islander, non-Hispanic	23.9	5.7	53.9
	Hispanic, any race	22.8	20.3	25.4
	Two or more races, non-Hispanic	35.7	20.3	51.0
	White, non-Hispanic	27.8	25.3	30.2
0-20	American Indian, Native Alaskan non-Hispanic	0.0	0.0	0.0
	Asian, non-Hispanic	0.0	0.0	0.0
	Black, non-Hispanic	0.0	0.0	0.0
	Hawaiian/Pacific Islander, non-Hispanic	0.0	0.0	0.0
	Hispanic, any race	0.0	0.0	0.0
	Two or more races, non-Hispanic	0.0	0.0	0.0
	White, non-Hispanic	0.0	0.0	0.0

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 11: Estimated Distribution of Average Child Tax Credit Amounts by Income and Sex of Householder, 2017

			95% Confidence Interval	
Income Quintile	Sex	Average ($)	lower bound	upper bound
All	Female	1,269	1,246	1,293
	Male	1,372	1,351	1,394
80-100	Female	1,172	1,104	1,241
	Male	1,092	1,040	1,144
60-80	Female	1,702	1,656	1,747
	Male	1,716	1,680	1,751
40-60	Female	1,172	1,144	1,199
	Male	1,192	1,165	1,219
20-40	Female	439	411	467
	Male	433	388	477
0-20	Female	0	0	0
	Male	0	0	0

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 12: Estimated Share of Households Claiming the Child Tax Credit by Income and Sex of Householder, 2017

			95% Confidence Interval	
Income Quintile	Sex	Percent	lower bound	upper bound
All	Female	51.7	50.6	52.8
	Male	58.0	56.9	59.1
80-100	Female	32.6	30.6	34.7
	Male	28.1	26.6	29.6
60-80	Female	96.8	95.9	97.5
	Male	96.7	95.8	97.5
40-60	Female	91.4	90.0	92.7
	Male	91.2	89.8	92.5
20-40	Female	26.6	24.6	28.5
	Male	25.5	22.5	28.4
0-20	Female	0	0	0
	Male	0	0	0

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-14553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 13: Estimated Distribution of Average Additional Child Tax Credit Amounts by Income, Race, and Ethnicity of Householder, 2017

			95% Confidence Interval	
Income Quintile	**Race, Ethnicity Race, Ethnicity**	**Average ($)**	**lower bound**	**upper bound**
80-100	American Indian, Native Alaskan non-Hispanic	0	0	0
	Asian, non-Hispanic	754	754	754
	Black, non-Hispanic	2,300	2,300	2,300
	Hawaiian/Pacific Islander, non-Hispanic	0	0	0
	Hispanic, any race	1,687	481	2,893
	Two or more races, non-Hispanic	0	0	0
	White, non-Hispanic	1,283	814	1,751
60-80	American Indian, Native Alaskan non-Hispanic	1,716	1,117	2,315
	Asian, non-Hispanic	937	598	1,277
	Black, non-Hispanic	1,735	1,271	2,200
	Hawaiian/Pacific Islander, non-Hispanic	683	683	683
	Hispanic, any race	1,310	1,098	1,523
	Two or more races, non-Hispanic	1,249	769	1,729
	White, non-Hispanic	1,383	1,207	1,559
40-60	American Indian, Native Alaskan non-Hispanic	2,402	1,798	3,006
	Asian, non-Hispanic	1,191	1,005	1,376
	Black, non-Hispanic	1,672	1,532	1,812
	Hawaiian/Pacific Islander, non-Hispanic	1,524	800	2,248
	Hispanic, any race	1,632	1,536	1,728
	Two or more races, non-Hispanic	1,958	1,354	2,562
	White, non-Hispanic	1,602	1,509	1,695
20-40	American Indian, Native Alaskan non-Hispanic	1,394	1,176	1,612
	Asian, non-Hispanic	1,463	1,305	1,622
	Black, non-Hispanic	1,391	1,320	1,462
	Hawaiian/Pacific Islander, non-Hispanic	1,834	1,152	2,516
	Hispanic, any race	1,626	1,578	1,674
	Two or more races, non-Hispanic	1,492	1,246	1,738
	White, non-Hispanic	1,453	1,405	1,502
0-20	American Indian, Native Alaskan non-Hispanic	192	125	258
	Asian, non-Hispanic	83	0[a]	168
	Black, non-Hispanic	240	213	268

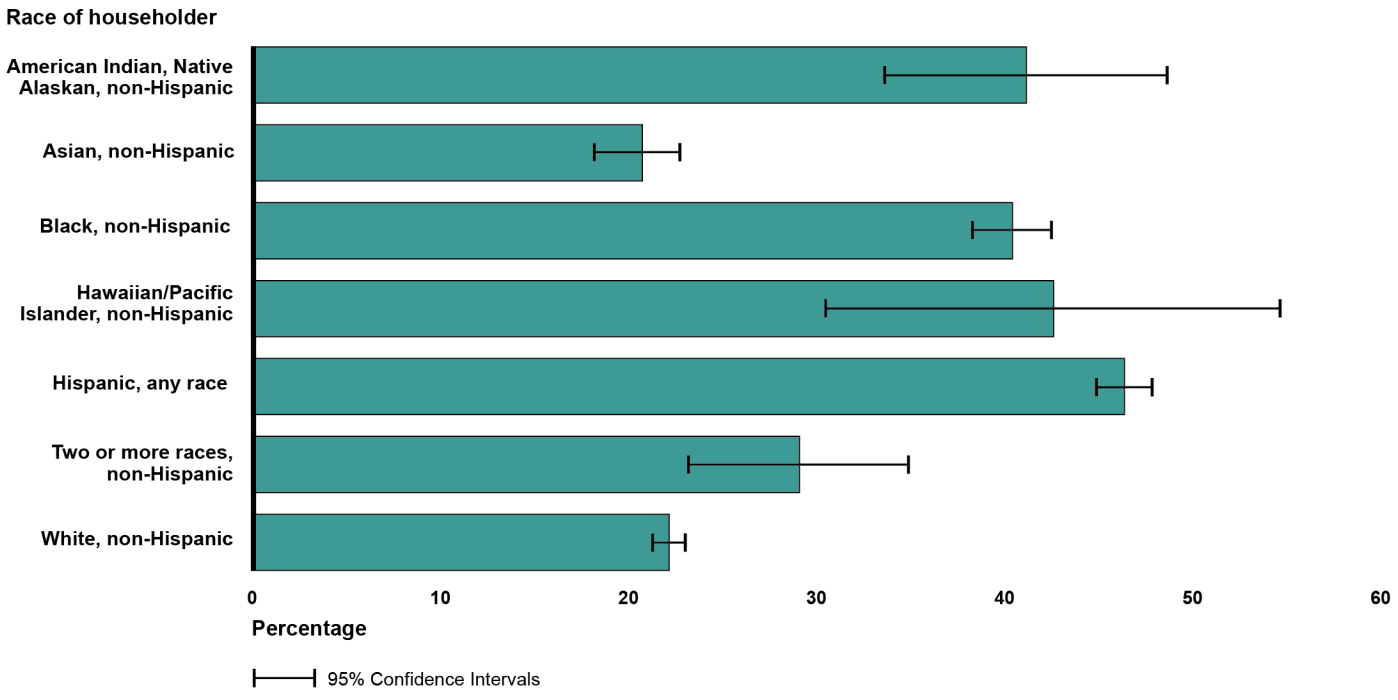
Income Quintile	Race, Ethnicity Race, Ethnicity	Average ($)	95% Confidence Interval	
			lower bound	upper bound
	Hawaiian/Pacific Islander, non-Hispanic	144	130	158
	Hispanic, any race	210	173	247
	Two or more races, non-Hispanic	324	293	356
	White, non-Hispanic	167	133	201

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

[a]The lower bound of the confidence interval is -1.3247 because the standard error is large, indicating imprecision. For purposes of presentation, we truncate the lower bound at zero, which is the natural bound for this quantity.

Figure 12: Estimated Share of Households Claiming Additional Child Tax Credit by Race and Ethnicity of Householder, 2017



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 14: Estimated Share of Households Claiming Additional Child Tax Credit by Income, Race, and Ethnicity of Householder, 2017

			95% Confidence Interval	
Income Quintile	Race, Ethnicity	Percentage	lower bound	upper bound
80-100	American Indian, Native Alaskan non-Hispanic	0.0	0.0	0.0
	Asian, non-Hispanic	0.2	0.0	1.1
	Black, non-Hispanic	0.1	0.0	1.1
	Hawaiian/Pacific Islander, non-Hispanic	0.0	0.0	0.0
	Hispanic, any race	0.5	0.1	1.7
	Two or more races, non-Hispanic	0.0	0.0	0.0
	White, non-Hispanic	0.3	0.2	0.6
60-80	American Indian, Native Alaskan non-Hispanic	5.0	0.5	18.2
	Asian, non-Hispanic	4.0	2.2	6.7
	Black, non-Hispanic	5.6	3.3	8.8
	Hawaiian/Pacific Islander, non-Hispanic	13.2	0.5	51.7
	Hispanic, any race	6.5	4.9	8.6
	Two or more races, non-Hispanic	3.8	0.8	10.4
	White, non-Hispanic	7.7	6.7	8.8
40-60	American Indian, Native Alaskan non-Hispanic	65.5	51.5	79.5
	Asian, non-Hispanic	57.0	49.2	64.7
	Black, non-Hispanic	49.1	44.4	53.8
	Hawaiian/Pacific Islander, non-Hispanic	69.7	50.6	88.9
	Hispanic, any race	54.0	50.9	57.2
	Two or more races, non-Hispanic	30.4	18.7	42.1
	White, non-Hispanic	43.4	41.1	45.8
20-40	American Indian, Native Alaskan non-Hispanic	94.0	84.8	98.5
	Asian, non-Hispanic	94.4	89.5	97.5
	Black, non-Hispanic	93.9	91.5	95.8
	Hawaiian/Pacific Islander, non-Hispanic	94.9	75.0	99.9
	Hispanic, any race	96.8	95.5	97.8
	Two or more races, non-Hispanic	93.4	81.6	98.7
	White, non-Hispanic	92.0	90.5	93.4
0-20	American Indian, Native Alaskan non-Hispanic	4.1	0.9	11.3
	Asian, non-Hispanic	6.7	2.0	15.7
	Black, non-Hispanic	11.0	7.9	14.8
	Hawaiian/Pacific Islander, non-Hispanic	5.3	0.1	30.1
	Hispanic, any race	11.2	8.2	14.9
	Two or more races, non-Hispanic	22.3	7.6	44.8

Income Quintile	Race, Ethnicity	Percentage	95% Confidence Interval	
			lower bound	upper bound
	Two or more races, non-Hispanic	22.3	7.6	44.8
	White, non-Hispanic	6.0	4.1	8.4

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 15: Estimated Distribution of Average Additional Child Tax Credit Amounts by Income and Sex of Householder, 2017

Income Quintile	Sex	Average ($)	95% Confidence Interval	
			lower bound	upper bound
All	Female	1,451	1,418	1,484
	Male	1,578	1,534	1,622
80-100	Female	1,826	1,290	2,362
	Male	950	502	1,398
60-80	Female	1,362	1,170	1,554
	Male	1,388	1,211	1,565
40-60	Female	1,569	1,492	1,646
	Male	1,658	1,577	1,740
20-40	Female	1,467	1,432	1,503
	Male	1,585	1,535	1,636
0-20	Female	210	190	230
	Male	202	147	257

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 16: Estimated Share of Households Claiming the Additional Child Tax Credit by Income and Sex of Householder, 2017

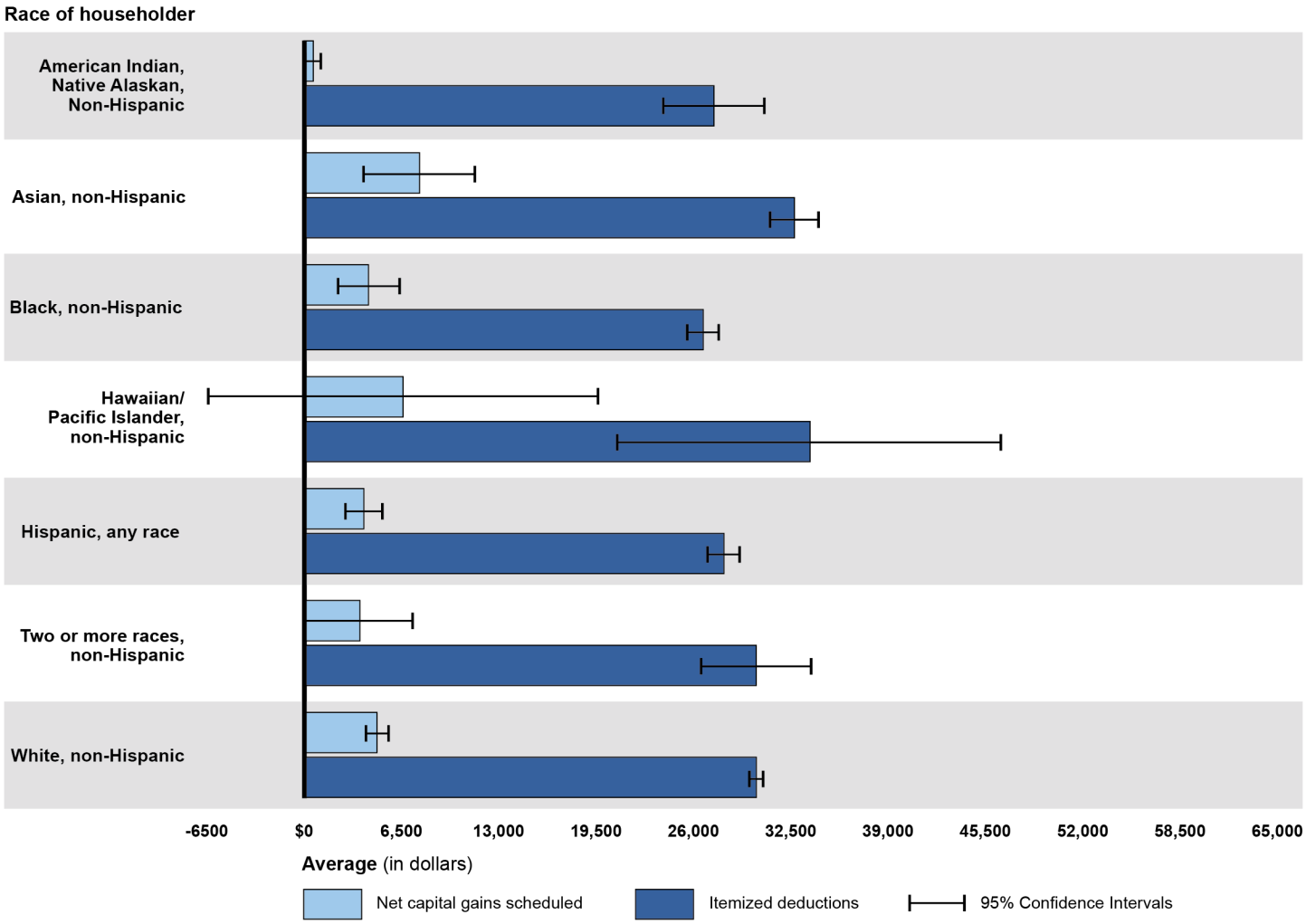
Income Quintile	Sex	Percent	95% Confidence Interval	
			lower bound	upper bound
All	Female	35.9	34.9	36.9
	Male	23.3	22.4	24.2
80-100	Female	0.3	0.1	0.7
	Male	0.3	0.1	0.6
60-80	Female	7.2	6.0	8.6
	Male	6.8	5.7	8.0

Income Quintile	Sex	Percent	95% Confidence Interval	
			lower bound	upper bound
40-60	Female	47.9	45.3	50.5
	Male	48.5	46.4	50.6
20-40	Female	94.2	93.1	95.2
	Male	94.2	92.5	95.7
0-20	Female	9.2	7.5	11.1
	Male	7.9	5.0	11.6

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Figure 13: Estimated Distribution of Wealth-Related Provisions by Race and Ethnicity of Householder, 2017



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 17: Estimated Distribution of Average Capital Gains Amounts by Income, Race, and Ethnicity of Householder, 2017

			95% Confidence Interval	
Income Quintile	**Race, Ethnicity**	**Average ($)**	**lower bound**	**upper bound**
80-100	American Indian, Native Alaskan non-Hispanic	4,792	-508	10,091
	Asian, non-Hispanic	25,355	13,102	37,608
	Black, non-Hispanic	45,193	23,104	67,283
	Hawaiian/Pacific Islander, non-Hispanic	46,361	-42,629	135,352
	Hispanic, any race	37,066	25,241	48,890
	Two or more races, non-Hispanic	24,331	1,133	47,529
	White, non-Hispanic	20,570	17,400	23,740
60-80	American Indian, Native Alaskan non-Hispanic	1,353	-276	2,981
	Asian, non-Hispanic	288	7	570
	Black, non-Hispanic	842	479	1,206
	Hawaiian/Pacific Islander, non-Hispanic	236	-240	712
	Hispanic, any race	608	346	870
	Two or more races, non-Hispanic	486	-322	1,294
	White, non-Hispanic	423	300	545
40-60	American Indian, Native Alaskan non-Hispanic	29	-201	259
	Asian, non-Hispanic	100	-140	340
	Black, non-Hispanic	110	11	210
	Hawaiian/Pacific Islander, non-Hispanic	19	-19	58
	Hispanic, any race	112	33	190
	Two or more races, non-Hispanic	-55	-188	78
	White, non-Hispanic	31	-26	88
20-40	American Indian, Native Alaskan non-Hispanic	-108	-191	-24
	Asian, non-Hispanic	-42	-161	76
	Black, non-Hispanic	-98	-121	-75
	Hawaiian/Pacific Islander, non-Hispanic	-26	-83	30
	Hispanic, any race	-70	-89	-50
	Two or more races, non-Hispanic	-30	-237	177
	White, non-Hispanic	-188	-210	-167
0-20	American Indian, Native Alaskan non-Hispanic	-34	-69	0
	Asian, non-Hispanic	-32	-57	-7
	Black, non-Hispanic	-18	-28	-8
	Hawaiian/Pacific Islander, non-Hispanic	-27	-75	21
	Hispanic, any race	-24	-38	-10

Income Quintile	Race, Ethnicity	Average ($)	95% Confidence Interval	
			lower bound	upper bound
	Two or more races, non-Hispanic	-52	-99	-4
	White, non-Hispanic	-60	-71	-50

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 18: Estimated Distribution of Average Capital Gains Amounts by Income and Sex of Householder, 2017

Income Quintile	Sex	Average ($)	95% Confidence Interval	
			lower bound	upper bound
All	Female	4,556	3,755	5,358
	Male	5,015	4,056	5,974
80-100	Female	28,634	23,645	33,623
	Male	20,336	16,419	24,253
60-80	Female	539	376	703
	Male	438	308	568
40-60	Female	83	24	142
	Male	34	-22	90
20-40	Female	-123	-142	-104
	Male	-170	-193	-146
0-20	Female	-43	-51	-34
	Male	-51	-64	-39

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 19: Estimated Distribution of Average Itemized Deduction Amounts by Income, Race, and Ethnicity of Householder, 2017

Income Quintile	Race, Ethnicity	Average ($)	95% Confidence Interval	
			lower bound	upper bound
80-100	American Indian, Native Alaskan non-Hispanic	33,983	29,007	38,960
	Asian, non-Hispanic	39,629	37,178	42,079
	Black, non-Hispanic	36,151	34,004	38,299
	Hawaiian/Pacific Islander, non-Hispanic	40,134	19,164	61,103
	Hispanic, any race	37,239	34,749	39,730

Income Quintile	Race, Ethnicity	Average ($)	95% Confidence Interval	
			lower bound	upper bound
	Two or more races, non-Hispanic	36,024	30,872	41,176
	White, non-Hispanic	37,667	37,031	38,303
60-80	American Indian, Native Alaskan non-Hispanic	26,959	21,030	32,888
	Asian, non-Hispanic	23,733	22,143	25,324
	Black, non-Hispanic	24,367	22,858	25,876
	Hawaiian/Pacific Islander, non-Hispanic	27,077	20,759	33,395
	Hispanic, any race	24,513	23,484	25,543
	Two or more races, non-Hispanic	23,497	20,927	26,066
	White, non-Hispanic	24,857	24,314	25,400
40-60	American Indian, Native Alaskan non-Hispanic	18,440	15,501	21,379
	Asian, non-Hispanic	23,435	20,782	26,089
	Black, non-Hispanic	20,632	18,716	22,547
	Hawaiian/Pacific Islander, non-Hispanic	15,457	12,228	18,686
	Hispanic, any race	23,730	21,852	25,608
	Two or more races, non-Hispanic	19,808	16,466	23,149
	White, non-Hispanic	22,385	21,220	23,549
20-40	American Indian, Native Alaskan non-Hispanic	20,308	14,769	25,847
	Asian, non-Hispanic	20,157	15,420	24,894
	Black, non-Hispanic	20,587	17,152	24,022
	Hawaiian/Pacific Islander, non-Hispanic	42,788	0[a]	100,371
	Hispanic, any race	18,837	16,667	21,006
	Two or more races, non-Hispanic	52,582	24,177	80,986
	White, non-Hispanic	22,070	20,033	24,107
0-20	American Indian, Native Alaskan non-Hispanic	22,086	13,008	31,164
	Asian, non-Hispanic	25,239	12,877	37,601
	Black, non-Hispanic	21,290	12,139	30,442
	Hawaiian/Pacific Islander, non-Hispanic	Not Available[b]	Not Available[b]	Not Available[b]
	Hispanic, any race	23,070	12,033	34,108
	Two or more races, non-Hispanic	11,254	5,797	16,711
	White, non-Hispanic	18,809	16,355	21,263

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

[a]The lower bound of the confidence interval is -14,795 because the standard error is large indicating imprecision. For purposes of presentation, we truncate the lower bound at zero, which is the natural bound for this quantity.

[b]For probability samples, a different sample selected using the same methodology might result in a different estimate. This uncertainty is typically conveyed by the range of the 95 percent confidence interval. The 95 percent confidence interval is calculated using a standard error based on the variation within the sample. However, for this income quintile, race, and ethnicity category, there is no variation in our sample. No observations for this category in our sample had itemized deductions. Although no observations in our sample for this category had itemized deductions, we cannot imply that no such households have itemized deductions because a different sample might result in a different estimate

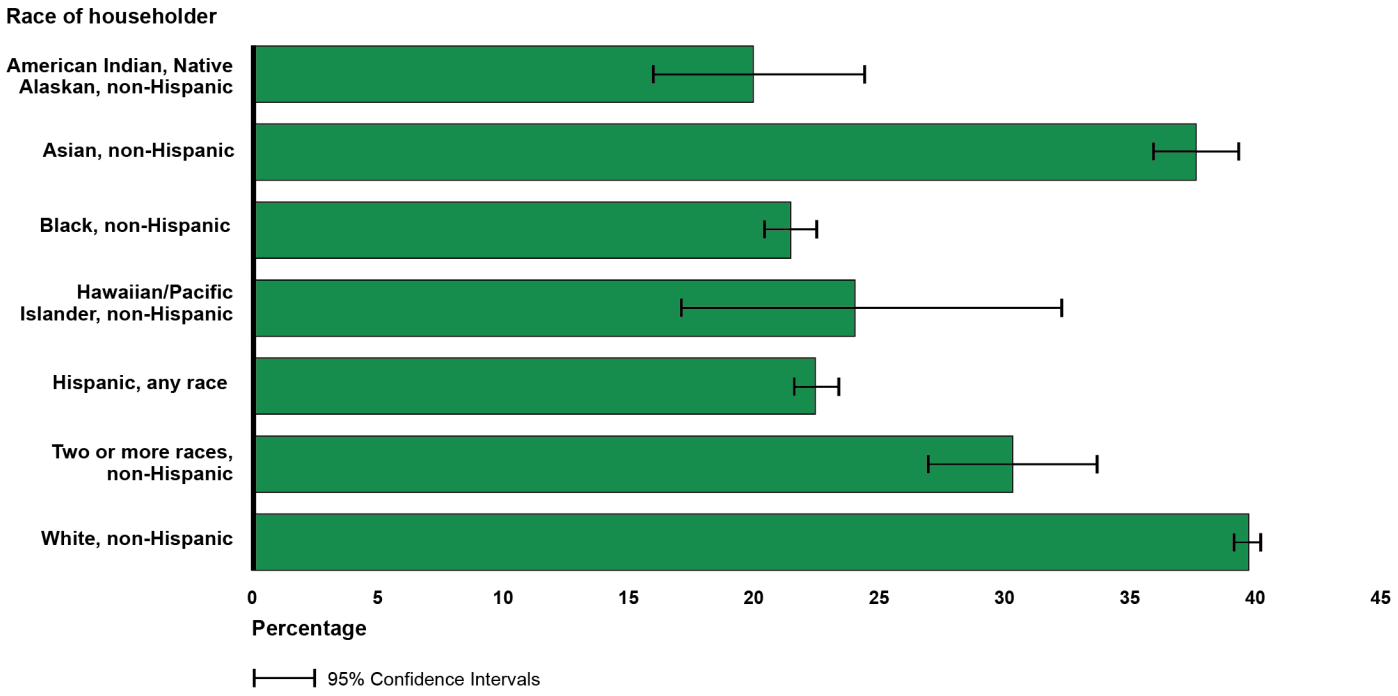
Table 20: Estimated Distribution of Itemized Deduction Amounts by Income and Sex of Householder, 2017

			95% Confidence Interval	
Income Quintile	**Sex**	**Average ($)**	**lower bound**	**upper bound**
All	Female	29,351	28,773	29,928
	Male	30,288	29,797	30,780
80-100	Female	38,161	37,253	39,070
	Male	37,363	36,632	38,095
60-80	Female	24,715	24,044	25,387
	Male	24,736	24,181	25,291
40-60	Female	22,858	21,361	24,355
	Male	21,891	20,733	23,049
20-40	Female	21,515	19,627	23,403
	Male	22,590	19,639	25,541
0-20	Female	19,413	16,264	22,561
	Male	19,236	16,241	22,231

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Figure 14: Estimated Share of Households That Itemize by Race and Ethnicity of the Householder, 2017



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 21: Estimated Share of Households That Itemize by Income and Race and Ethnicity of the Householder, 2017

			95% Confidence Interval	
Income Quintile	Race, Ethnicity	Percentage	lower bound	upper bound
80-100	American Indian, Native Alaskan non-Hispanic	73.8	63.0	84.7
	Asian, non-Hispanic	72.2	69.3	75.2
	Black, non-Hispanic	72.2	68.9	75.5
	Hawaiian/Pacific Islander, non-Hispanic	70.7	51.7	89.6
	Hispanic, any race	72.0	69.2	74.9
	Two or more races, non-Hispanic	73.3	65.7	80.9
	White, non-Hispanic	79.3	78.4	80.1
60-80	American Indian, Native Alaskan non-Hispanic	52.6	43.0	62.2
	Asian, non-Hispanic	44.6	40.5	48.8
	Black, non-Hispanic	45.2	42.4	48.0
	Hawaiian/Pacific Islander, non-Hispanic	31.7	15.6	47.8

Income Quintile	Race, Ethnicity	Percentage	95% Confidence Interval	
			lower bound	upper bound
	Hispanic, any race	42.8	40.4	45.3
	Two or more races, non-Hispanic	58.4	50.6	66.2
	White, non-Hispanic	55.1	53.9	56.4
40-60	American Indian, Native Alaskan non-Hispanic	13.1	6.6	22.5
	Asian, non-Hispanic	27.1	23.5	30.6
	Black, non-Hispanic	23.1	20.6	25.7
	Hawaiian/Pacific Islander, non-Hispanic	12.9	4.4	27.4
	Hispanic, any race	20.8	19.1	22.5
	Two or more races, non-Hispanic	22.6	16.3	30.0
	White, non-Hispanic	32.7	31.4	34.0
20-40	American Indian, Native Alaskan non-Hispanic	14.1	7.7	22.9
	Asian, non-Hispanic	10.2	7.6	13.3
	Black, non-Hispanic	10.6	9.2	12.1
	Hawaiian/Pacific Islander, non-Hispanic	20.9	7.7	41.0
	Hispanic, any race	7.9	6.9	9.0
	Two or more races, non-Hispanic	12.4	7.8	18.4
	White, non-Hispanic	15.5	14.6	16.5
0-20	American Indian, Native Alaskan non-Hispanic	0.3	0.0	1.7
	Asian, non-Hispanic	1.1	0.4	2.5
	Black, non-Hispanic	1.0	0.7	1.6
	Hawaiian/Pacific Islander, non-Hispanic	0.0	0.0	0.0
	Hispanic, any race	0.4	0.2	0.8
	Two or more races, non-Hispanic	0.8	0.1	3.4
	White, non-Hispanic	2.3	1.9	2.7

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-104-553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 22: Estimated Share of Households That Itemize by Income and Sex of Householder, 2017

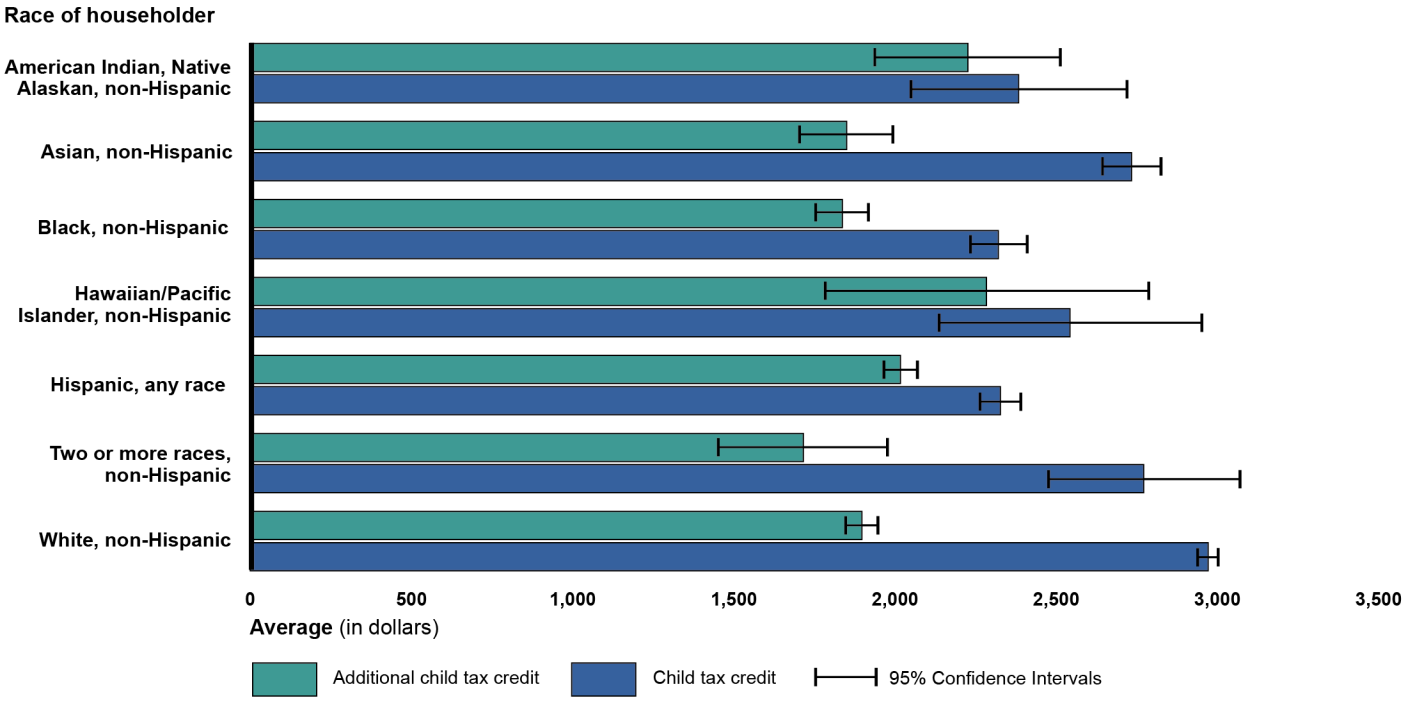
			95% Confidence Interval	
Income Quintile	Sex	Percent	lower bound	upper bound
All	Female	30.5	29.9	31.1
	Male	38.8	38.2	39.5
80-100	Female	77.8	76.4	79.1
	Male	77.7	76.7	78.7
60-80	Female	53.2	51.6	54.7
	Male	51.4	50.1	52.8
40-60	Female	28.6	27.3	30.0
	Male	28.8	27.5	30.1
20-40	Female	13.3	12.5	14.2
	Male	12.6	11.7	13.6
0-20	Female	1.7	1.4	2.1
	Male	1.7	1.3	2.2

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-14553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Selected Tax Provisions after the Tax Cuts and Jobs Act of 2017

Figure 15: Estimated Distribution of Average Additional and Child Tax Credit Amounts by Race and Ethnicity of Household, 2018



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 23: Estimated Distribution of Average Child Tax Credit Amounts by Income, Race, and Ethnicity of Household, 2018

			95% Confidence Interval	
Income Quintile	Race, Ethnicity	Average ($)	lower bound	upper bound
80-100	American Indian, Native Alaskan non-Hispanic	3,027	2,416	3,639
	Asian, non-Hispanic	3,210	3,078	3,342
	Black, non-Hispanic	3,283	3,066	3,500
	Hawaiian/Pacific Islander, non-Hispanic	3,710	2,848	4,571
	Hispanic, any race	3,368	3,217	3,519
	Two or more races, non-Hispanic	3,802	3,220	4,385

Income Quintile	Race, Ethnicity	Average ($)	95% Confidence Interval	
			lower bound	upper bound
	White, non-Hispanic	3,522	3,468	3,575
60-80	American Indian, Native Alaskan non-Hispanic	3,343	2,595	4,091
	Asian, non-Hispanic	2,955	2,797	3,113
	Black, non-Hispanic	3,330	3,164	3,496
	Hawaiian/Pacific Islander, non-Hispanic	3,271	2,454	4,088
	Hispanic, any race	3,429	3,329	3,529
	Two or more races, non-Hispanic	3,498	2,933	4,063
	White, non-Hispanic	3,336	3,282	3,389
40-60	American Indian, Native Alaskan non-Hispanic	1,983	1,790	2,176
	Asian, non-Hispanic	1,951	1,812	2,091
	Black, non-Hispanic	1,986	1,909	2,064
	Hawaiian/Pacific Islander, non-Hispanic	2,042	1,607	2,477
	Hispanic, any race	2,022	1,964	2,080
	Two or more races, non-Hispanic	2,041	1,813	2,269
	White, non-Hispanic	2,152	2,113	2,191
20-40	American Indian, Native Alaskan non-Hispanic	630	439	821
	Asian, non-Hispanic	528	431	624
	Black, non-Hispanic	586	535	637
	Hawaiian/Pacific Islander, non-Hispanic	540	285	795
	Hispanic, any race	503	471	535
	Two or more races, non-Hispanic	600	424	775
	White, non-Hispanic	553	524	581
0-20	American Indian, Native Alaskan non-Hispanic	0	0	0
	Asian, non-Hispanic	0	0	0
	Black, non-Hispanic	0	0	0
	Hawaiian/Pacific Islander, non-Hispanic	0	0	0
	Hispanic, any race	0	0	0
	Two or more races, non-Hispanic	0	0	0
	White, non-Hispanic	0	0	0

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

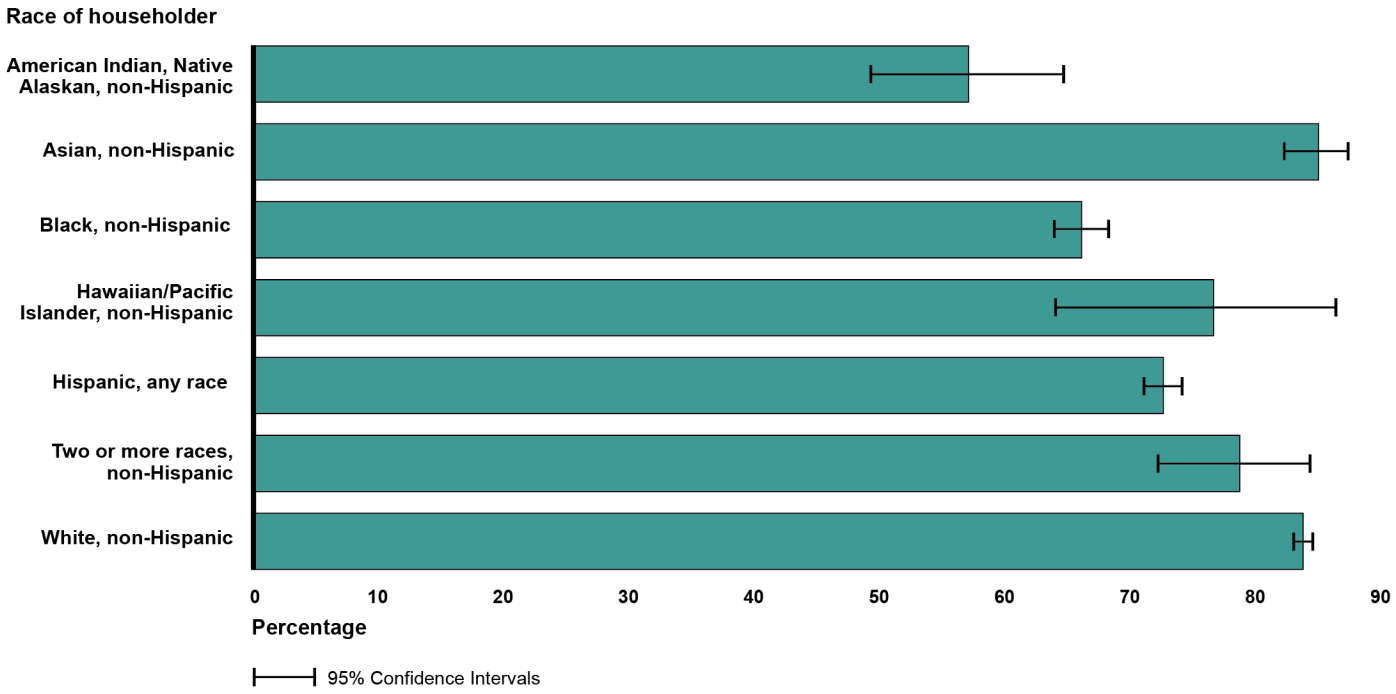
Table 24: Estimated Distribution of Average Child Tax Credit Amounts by Income and Sex of Householder, 2018

			95% Confidence Interval	
Income Quintile	Sex	Average ($)	lower bound	upper bound
All	Female	2,593	2,550	2,637
	Male	2,892	2,859	2,924
80-100	Female	3,588	3,513	3,663
	Male	3,381	3,326	3,436
60-80	Female	3,327	3,256	3,398
	Male	3,331	3,271	3,391
40-60	Female	2,051	2,006	2,095
	Male	2,106	2,067	2,145
20-40	Female	551	527	575
	Male	523	491	554
0-20	Female	0	0	0
	Male	0	0	0

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Figure 16: Estimated Share of Households Claiming Child Tax Credit by Race and Ethnicity of Householder, 2018



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 25: Estimated Share of Households Claiming Child Tax Credit by Income, Race, and Ethnicity of Householder, 2018

			95% Confidence Interval	
Income Quintile	Race, Ethnicity	Percentage	lower bound	upper bound
80-100	American Indian, Native Alaskan non-Hispanic	95.0	82.8	99.4
	Asian, non-Hispanic	91.1	88.1	93.5
	Black, non-Hispanic	95.7	92.2	98.0
	Hawaiian/Pacific Islander, non-Hispanic	87.8	51.6	100.0
	Hispanic, any race	92.5	90.0	95.0
	Two or more races, non-Hispanic	92.8	82.5	98.0
	White, non-Hispanic	93.5	92.7	94.2
60-80	American Indian, Native Alaskan non-Hispanic	96.2	81.1	99.9
	Asian, non-Hispanic	100.0	[a]	[a]
	Black, non-Hispanic	99.4	97.9	99.9

Income Quintile	Race, Ethnicity	Percentage	95% Confidence Interval	
			lower bound	upper bound
	Hawaiian/Pacific Islander, non-Hispanic	100.0	[a]	[a]
	Hispanic, any race	99.3	98.3	99.8
	Two or more races, non-Hispanic	100.0	[a]	[a]
	White, non-Hispanic	99.8	99.5	99.9
40-60	American Indian, Native Alaskan non-Hispanic	98.8	91.6	100.0
	Asian, non-Hispanic	98.2	94.7	99.6
	Black, non-Hispanic	99.5	98.3	99.9
	Hawaiian/Pacific Islander, non-Hispanic	100.0	[a]	[a]
	Hispanic, any race	98.8	97.9	99.4
	Two or more races, non-Hispanic	99.4	93.5	100.0
	White, non-Hispanic	98.5	97.8	99.0
20-40	American Indian, Native Alaskan non-Hispanic	30.0	16.3	43.8
	Asian, non-Hispanic	49.5	40.1	58.9
	Black, non-Hispanic	45.4	41.4	49.4
	Hawaiian/Pacific Islander, non-Hispanic	47.4	18.9	76.0
	Hispanic, any race	46.8	43.8	49.8
	Two or more races, non-Hispanic	54.4	37.3	71.5
	White, non-Hispanic	45.1	42.2	47.9
0-20	American Indian, Native Alaskan non-Hispanic	0.0	0.0	0.0
	Asian, non-Hispanic	0.0	0.0	0.0
	Black, non-Hispanic	0.0	0.0	0.0
	Hawaiian/Pacific Islander, non-Hispanic	0.0	0.0	0.0
	Hispanic, any race	0.0	0.0	0.0
	Two or more races, non-Hispanic	0.0	0.0	0.0
	White, non-Hispanic	0.0	0.0	0.0

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

[a]For probability samples, a different sample selected using the same methodology might result in a different estimate. This uncertainty is typically conveyed by the range of the 95 percent confidence interval. The 95 percent confidence interval is calculated using a standard error based on the variation within the sample. However, for this income quintile, race, and ethnicity category, there is no variation in our sample. All observations for this category in our sample claimed the Child Tax Credit. Although all observations in our sample for this category claimed the Child Tax Credit, we cannot imply that all such households claim the Child Tax Credit because a different sample might result in a different estimate.

Table 26: Estimated Share of Households Claiming the Child Tax Credit by Income and Sex of Householder, 2018

			95% Confidence Interval	
Income Quintile	Sex	Percent	lower bound	upper bound
All	Female	71.5	70.6	72.4
	Male	87.1	86.3	87.9
80-100	Female	92.0	90.7	93.1
	Male	94.2	93.3	95.1
60-80	Female	99.8	99.5	100.0
	Male	99.5	99.1	99.8
40-60	Female	99.1	98.6	99.4
	Male	98.4	97.5	99.0
20-40	Female	45.2	43.0	47.3
	Male	47.4	44.1	50.7
0-20	Female	0.0	0.0	0.0
	Male	0.0	0.0	0.0

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 27: Estimated Distribution of Average Additional Child Tax Credit Amounts by Income, Race, and Ethnicity of Householder, 2018

			95% Confidence Interval	
Income Quintile	Race, Ethnicity	Average ($)	lower bound	upper bound
80-100	American Indian, Native Alaskan non-Hispanic	0	0	0
	Asian, non-Hispanic	0	0	0
	Black, non-Hispanic	0	0	0
	Hawaiian/Pacific Islander, non-Hispanic	151	151	151
	Hispanic, any race	1,453	978	1,929
	Two or more races, non-Hispanic	2,734	2,734	2,734
	White, non-Hispanic	2,363	1,689	3,037
60-80	American Indian, Native Alaskan non-Hispanic	1,333	390	2,276
	Asian, non-Hispanic	1,616	1,007	2,225
	Black, non-Hispanic	1,524	1,132	1,916
	Hawaiian/Pacific Islander, non-Hispanic	2,666	1,378	3,954
	Hispanic, any race	1,510	1,324	1,697
	Two or more races, non-Hispanic	1,664	591	2,737

Income Quintile	Race, Ethnicity	Average ($)	95% Confidence Interval	
			lower bound	upper bound
	White, non-Hispanic	1,662	1,505	1,820
40-60	American Indian, Native Alaskan non-Hispanic	3,536	3,006	4,066
	Asian, non-Hispanic	1,806	1,546	2,066
	Black, non-Hispanic	2,220	2,053	2,387
	Hawaiian/Pacific Islander, non-Hispanic	2,411	1,609	3,213
	Hispanic, any race	2,184	2,073	2,295
	Two or more races, non-Hispanic	1,614	1,095	2,133
	White, non-Hispanic	2,059	1,969	2,150
20-40	American Indian, Native Alaskan non-Hispanic	1,769	1,534	2,004
	Asian, non-Hispanic	1,984	1,817	2,151
	Black, non-Hispanic	1,778	1,700	1,856
	Hawaiian/Pacific Islander, non-Hispanic	2,398	1,815	2,980
	Hispanic, any race	2,018	1,965	2,071
	Two or more races, non-Hispanic	1,942	1,656	2,229
	White, non-Hispanic	1,870	1,815	1,926
0-20	American Indian, Native Alaskan non-Hispanic	151	46	255
	Asian, non-Hispanic	167	83	252
	Black, non-Hispanic	277	240	313
	Hawaiian/Pacific Islander, non-Hispanic	82	0[a]	224
	Hispanic, any race	277	237	318
	Two or more races, non-Hispanic	375	293	458
	White, non-Hispanic	209	175	242

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

[a]The lower bound of the confidence interval is -60 because the standard error is large indicating imprecision. For purposes of presentation, we truncate the lower bound at zero, which is the natural bound for this quantity.

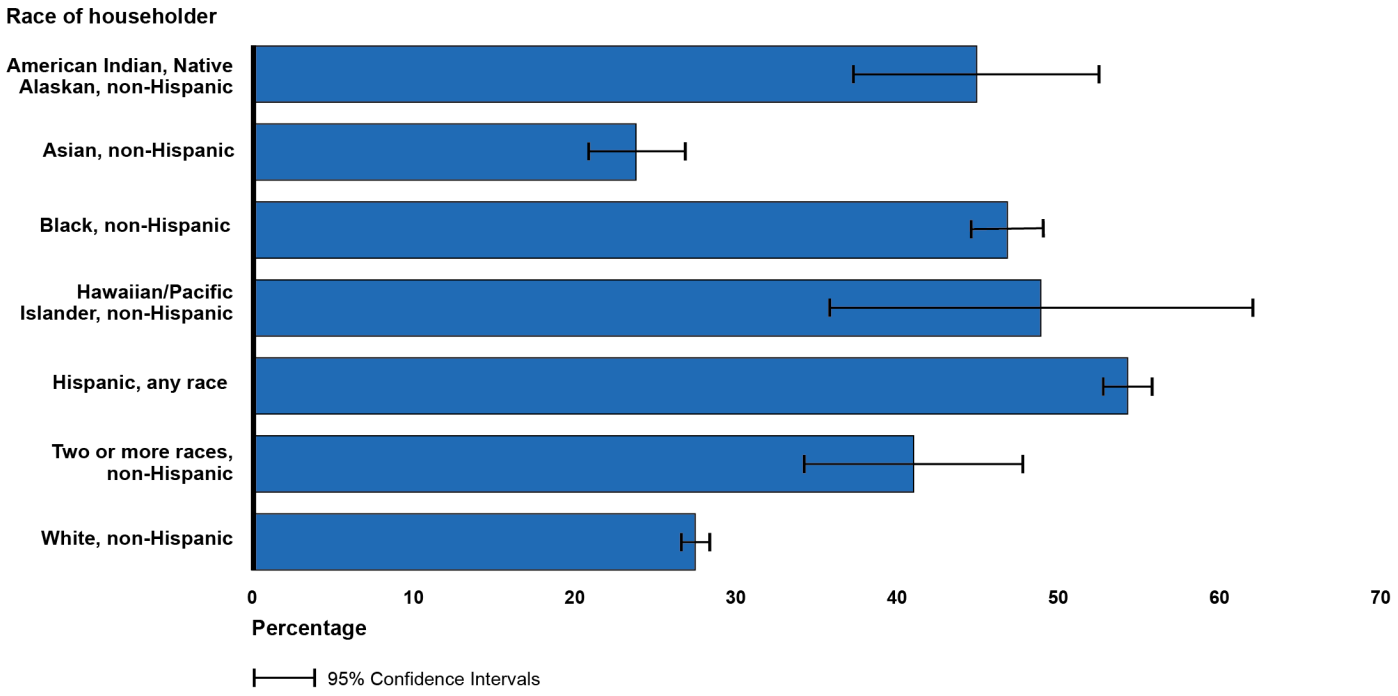
Table 28: Estimated Distribution of Average Additional Child Tax Credit Amounts by Income and Sex of Householder, 2018

			95% Confidence Interval	
Income Quintile	Sex	Average ($)	lower bound	upper bound
All	Female	1,870	1,830	1,909
	Male	2,015	1,959	2,070
80-100	Female	2,4	1,693	3,296
	Male	1,916	1,117	2,714
60-80	Female	1,661	1,493	1,829
	Male	1,578	1,415	1,741
40-60	Female	2,073	1,986	2,161
	Male	2,170	2,079	2,261
20-40	Female	1,859	1,818	1,899
	Male	2,025	1,970	2,080
0-20	Female	260	236	284
	Male	227	170	284

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Figure 17: Estimated Share of Households Claiming Additional Child Tax Credit by Race and Ethnicity of Householder, 2018



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 29: Estimated Share of Households Claiming Additional Child Tax Credit by Income, Race, and Ethnicity of Householder, 2018

			95% Confidence Interval	
Income Quintile	Race, Ethnicity	Percentage	lower bound	upper bound
80-100	American Indian, Native Alaskan non-Hispanic	0.0	0.0	0.0
	Asian, non-Hispanic	0.0	0.0	0.0
	Black, non-Hispanic	0.0	0.0	0.0
	Hawaiian/Pacific Islander, non-Hispanic	2.4	0.0	24.6
	Hispanic, any race	0.3	0.0	1.1
	Two or more races, non-Hispanic	0.5	0.0	4.4
	White, non-Hispanic	0.3	0.2	0.5
60-80	American Indian, Native Alaskan non-Hispanic	15.4	5.3	32.3
	Asian, non-Hispanic	4.9	2.8	7.9
	Black, non-Hispanic	13.4	9.8	17.6

Income Quintile	Race, Ethnicity	Percentage	95% Confidence Interval	
			lower bound	upper bound
	Hawaiian/Pacific Islander, non-Hispanic	18.1	2.0	53.1
	Hispanic, any race	15.7	13.0	18.8
	Two or more races, non-Hispanic	12.8	5.1	25.1
	White, non-Hispanic	12.7	11.3	14.1
40-60	American Indian, Native Alaskan non-Hispanic	68.8	54.5	83.1
	Asian, non-Hispanic	73.1	66.2	80.0
	Black, non-Hispanic	65.4	60.8	70.0
	Hawaiian/Pacific Islander, non-Hispanic	80.2	55.2	94.8
	Hispanic, any race	73.9	71.0	76.8
	Two or more races, non-Hispanic	69.0	56.0	82.0
	White, non-Hispanic	63.7	61.3	66.0
20-40	American Indian, Native Alaskan non-Hispanic	96.4	89.7	99.3
	Asian, non-Hispanic	95.3	90.6	98.1
	Black, non-Hispanic	96.8	94.9	98.1
	Hawaiian/Pacific Islander, non-Hispanic	94.0	72.9	99.8
	Hispanic, any race	99.1	98.5	99.6
	Two or more races, non-Hispanic	98.6	91.4	100.0
	White, non-Hispanic	94.8	93.7	95.8
0-20	American Indian, Native Alaskan non-Hispanic	8.7	3.2	18.0
	Asian, non-Hispanic	7.1	2.1	16.8
	Black, non-Hispanic	13.4	10.0	17.4
	Hawaiian/Pacific Islander, non-Hispanic	20.6	3.5	52.8
	Hispanic, any race	10.9	7.8	14.5
	Two or more races, non-Hispanic	24.3	8.8	47.1
	White, non-Hispanic	7.7	5.6	10.2

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

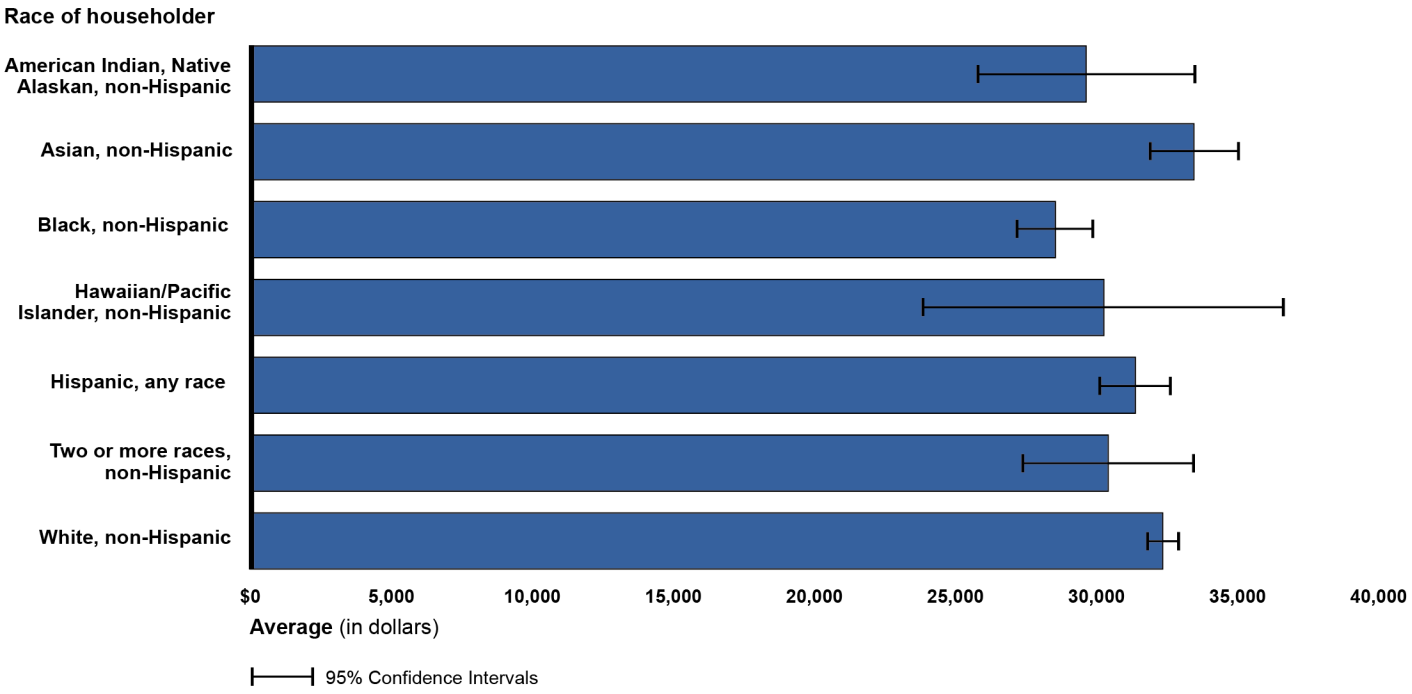
Table 30: Estimated Share of Households Claiming the Additional Child Tax Credit by Income and Sex of Householder, 2018

			95% Confidence Interval	
Income Quintile	Sex	Percent	lower bound	upper bound
All	Female	42.0	40.9	43.0
	Male	29.1	28.1	30.1
80-100	Female	0.4	0.2	0.7
	Male	0.2	0.1	0.4
60-80	Female	13.2	11.5	15.1
	Male	12.5	11.1	14.0
40-60	Female	66.9	64.5	69.2
	Male	68.2	66.1	70.3
20-40	Female	96.8	96.1	97.4
	Male	96.6	95.4	97.6
0-20	Female	10.3	8.5	12.4
	Male	10.3	7.1	14.4

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Figure 18: Estimated Distribution of Average Itemized Deduction Amounts by Race and Ethnicity of Householder, 2018



Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 31: Estimated Distribution of Average Itemized Deduction Amounts by Income, Race, and Ethnicity of Householder, 2018

			95% Confidence Interval	
Income Quintile	**Race, Ethnicity**	**Average ($)**	**lower bound**	**upper bound**
80-100	American Indian, Native Alaskan non-Hispanic	35,571	30,039	41,102
	Asian, non-Hispanic	36,856	34,891	38,820
	Black, non-Hispanic	35,792	33,173	38,410
	Hawaiian/Pacific Islander, non-Hispanic	35,809	31,029	40,588
	Hispanic, any race	36,613	34,471	38,756
	Two or more races, non-Hispanic	37,742	32,450	43,034
	White, non-Hispanic	37,365	36,664	38,066
60-80	American Indian, Native Alaskan non-Hispanic	31,459	23,612	39,306
	Asian, non-Hispanic	27,237	24,945	29,530
	Black, non-Hispanic	26,413	24,555	28,270

Income Quintile	Race, Ethnicity	Average ($)	95% Confidence Interval	
			lower bound	upper bound
	Hawaiian/Pacific Islander, non-Hispanic	25,776	14,531	37,022
	Hispanic, any race	28,226	26,316	30,137
	Two or more races, non-Hispanic	24,805	21,065	28,544
	White, non-Hispanic	27,729	26,970	28,488
40-60	American Indian, Native Alaskan non-Hispanic	17,879	14,177	21,580
	Asian, non-Hispanic	27,676	23,891	31,461
	Black, non-Hispanic	21,632	19,758	23,507
	Hawaiian/Pacific Islander, non-Hispanic	25,570	25,570	25,570
	Hispanic, any race	28,076	25,355	30,797
	Two or more races, non-Hispanic	24,482	20,616	28,348
	White, non-Hispanic	25,044	23,765	26,323
20-40	American Indian, Native Alaskan non-Hispanic	22,635	15,635	29,635
	Asian, non-Hispanic	23,541	20,041	27,042
	Black, non-Hispanic	21,422	18,888	23,957
	Hawaiian/Pacific Islander, non-Hispanic	13,435	13,435	13,435
	Hispanic, any race	23,482	20,468	26,496
	Two or more races, non-Hispanic	23,007	17,294	28,720
	White, non-Hispanic	27,098	24,046	30,150
0-20	American Indian, Native Alaskan non-Hispanic	21,831	12,287	31,374
	Asian, non-Hispanic	38,718	14,188	63,247
	Black, non-Hispanic	29,052	14,200	43,904
	Hawaiian/Pacific Islander, non-Hispanic	Not Available[a]	Not Available[a]	Not Available[a]
	Hispanic, any race	40,511	27,847	53,176
	Two or more races, non-Hispanic	18,553	18,553	18,553
	White, non-Hispanic	24,679	20,405	28,953

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

[a]For probability samples, a different sample selected using the same methodology might result in a different estimate, and this uncertainty is typically conveyed by the range of the 95 percent confidence interval. The 95 percent confidence interval is calculated using a standard error based on the variation within the sample. However, for this income quintile, race, and ethnicity category, there is no variation in our sample. No observations for this category in our sample had itemized deductions. Although no observations in our sample for this category had itemized deductions, we cannot imply that no such households have itemized deductions because a different sample might result in a different estimate

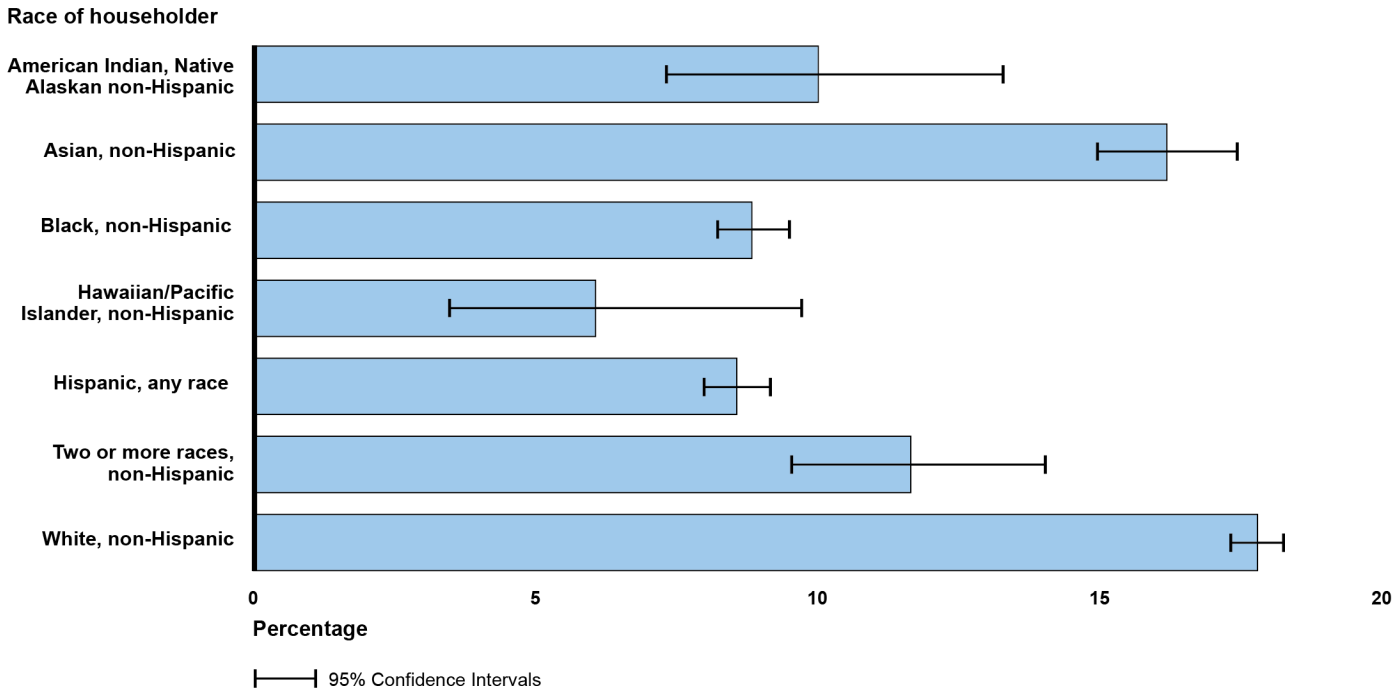
Table 32: Estimated Distribution of Itemized Deduction Amounts by Income and Sex of Householder, 2018

			95% Confidence Interval	
Income Quintile	Sex	Average ($)	lower bound	upper bound
All	Female	31,405	30,795	32,015
	Male	32,501	31,860	33,142
80-100	Female	37,531	36,507	38,554
	Male	36,968	36,148	37,788
60-80	Female	27,473	26,567	28,380
	Male	27,767	26,911	28,624
40-60	Female	24,928	23,755	26,100
	Male	25,265	23,654	26,876
20-40	Female	25,040	22,858	27,222
	Male	26,831	22,185	31,477
0-20	Female	26,011	20,158	31,863
	Male	25,003	19,769	30,238

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Figure 19: Estimated Share of Households That Itemize by Race and Ethnicity of the Householder, 2018



Source: GAO analysis. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 33: Estimated Share of Households That Itemize by Income, Race, and Ethnicity of the Householder, 2018

			95% Confidence Interval	
Income Quintile	**Race, Ethnicity**	**Percentage**	**lower bound**	**upper bound**
80-100	American Indian, Native Alaskan non-Hispanic	39.9	27.0	52.7
	Asian, non-Hispanic	34.9	32.1	37.8
	Black, non-Hispanic	36.5	33.1	39.9
	Hawaiian/Pacific Islander, non-Hispanic	20.2	9.9	34.3
	Hispanic, any race	34.1	31.5	36.8
	Two or more races, non-Hispanic	34.9	26.8	43.0
	White, non-Hispanic	39.7	38.8	40.7
60-80	American Indian, Native Alaskan non-Hispanic	22.8	14.7	32.5
	Asian, non-Hispanic	16.0	13.4	19.0
	Black, non-Hispanic	17.6	15.6	19.7

Income Quintile	Race, Ethnicity	Percentage	95% Confidence Interval lower bound	95% Confidence Interval upper bound
	Hawaiian/Pacific Islander, non-Hispanic	14.9	5.1	31.2
	Hispanic, any race	15.2	13.3	17.3
	Two or more races, non-Hispanic	19.7	13.3	27.6
	White, non-Hispanic	22.7	21.7	23.8
40-60	American Indian, Native Alaskan non-Hispanic	8.3	2.9	17.9
	Asian, non-Hispanic	9.6	7.4	12.2
	Black, non-Hispanic	8.0	6.6	9.6
	Hawaiian/Pacific Islander, non-Hispanic	1.3	0.0	7.5
	Hispanic, any race	6.8	5.9	7.8
	Two or more races, non-Hispanic	6.5	3.5	10.8
	White, non-Hispanic	12.9	12.0	13.9
20-40	American Indian, Native Alaskan non-Hispanic	6.4	2.5	13.1
	Asian, non-Hispanic	3.7	2.1	6.0
	Black, non-Hispanic	3.9	3.1	4.9
	Hawaiian/Pacific Islander, non-Hispanic	0.5	0.0	6.4
	Hispanic, any race	2.3	1.7	2.9
	Two or more races, non-Hispanic	4.9	2.4	8.7
	White, non-Hispanic	5.7	5.1	6.4
0-20	American Indian, Native Alaskan non-Hispanic	0.3	0.0	1.7
	Asian, non-Hispanic	0.3	0.0	1.1
	Black, non-Hispanic	0.3	0.1	0.7
	Hawaiian/Pacific Islander, non-Hispanic	0.0	0.0	0.0
	Hispanic, any race	0.1	0.0	0.4
	Two or more races, non-Hispanic	0.2	0.0	1.8
	White, non-Hispanic	0.9	0.7	1.2

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Table 34: Estimated Share of Households That Itemize by Income and Sex of Householder, 2018

			95% Confidence Interval	
Income Quintile	Sex	Percent	lower bound	upper bound
All	Female	13.5	13.1	14.0
	Male	16.8	16.3	17.3
80-100	Female	39.1	37.8	40.5
	Male	38.4	37.3	39.5
60-80	Female	22.8	21.4	24.1
	Male	19.6	18.5	20.7
40-60	Female	11.2	10.2	12.2
	Male	10.5	9.7	11.4
20-40	Female	4.7	4.2	5.3
	Male	4.6	4.0	5.3
0-20	Female	0.7	0.5	1.0
	Male	0.6	0.4	0.9

Source: GAO analysis of Urban Institute's 2017 Transfer Income Model tax simulation model and Census Bureau's 2017 Current Population Survey Annual Social and Economic Supplement. | GAO-22-104553

Note: Our simulation results indicate households' eligibility to claim certain provisions, not what households actually claimed.

Appendix III: Comments from the Department of the Treasury

DEPARTMENT OF THE TREASURY
WASHINGTON, D.C.

April 29, 2022

Ms. Jessica Lucas-Judy
Director, Tax Issues
Strategic Issues
U.S. Government Accountability Office
441 G Street, N.W.
Washington, DC 20548

Dear Ms. Lucas-Judy

I write regarding the Government Accountability Office's (GAO) draft report entitled *Lack of Data Limits Ability to Analyze Effects of Tax Policies on Households by Demographic Characteristics* (Draft Report). The U.S. Department of the Treasury appreciates GAO's efforts and has provided technical comments under separate cover.

As GAO is aware, tax data do not include information about race and ethnicity, because the IRS does not require race or ethnicity to be included on the tax return. Treasury's Office of Tax Analysis (OTA) is currently undertaking an unprecedented effort to analyze the relationship between tax policies and multiple demographic characteristics, including by improving on current statistical imputation methods to allow Treasury to model the relationship between race, ethnicity, and taxes. This improved imputation method could be used with our various existing tax datasets and models, such as our individual tax and distribution models. It would also enable OTA to perform analyses with new datasets when time and resource limitations do not allow for merging tax data with Census data. Finally, we hope that it will ultimately be possible to make this imputation code public. In addition, the Statistics on Income could potentially include the imputation results with publicly released information, enabling outside researchers to analyze the demographic and equity effects of different tax provisions and proposals, and shedding sunlight on policy choices and trade-offs. As with all research using tax data, this work will carefully follow long-standing data protection protocols to prevent disclosure of taxpayer information. This work is a challenging undertaking for the Office of Tax Analysis that will have huge benefits for improving our understanding of the impacts of the tax code.

We have already begun validating this imputation method to determine its reliability and limitations using existing datasets, and intend to evaluate it further using various other administrative data sources. Treasury is pursuing interagency agreements to support this work. We are also in process of using Census information to evaluate the demographic characteristics of the first round Economic Impact Payments for the White House's Equitable Data Working Group. Treasury is playing critical roles in this work, providing the tax data, technical expertise, and the vehicle for Census to share the data. These validation efforts will help us to refine our variance estimates for some of our equity distributions as well as help establish the limits of the imputation's ability to reflect the racial and ethnic distribution of income and tax variables.

These efforts are all in furtherance of Executive Order 13985, which was issued on January 20, 2021.

As can be expected in such pathbreaking work, alternative approaches might be considered. The Draft Report contains a recommendation that Treasury should evaluate the feasibility of alternative methods to imputation, such as interagency data sharing or surveys, for producing secure, linked taxpayer and demographic data. We agree with GAO that it is critical for Treasury to continue to innovate in our efforts to understand the effects of tax policies by demographic characteristics, and we have given these approaches significant consideration. And, as discussed above, Treasury is already pursuing interagency agreements, notwithstanding the significant legal and practical limitations to interagency data provision, including the time needed to set up these agreements that will satisfy the different non-disclosure requirements of multiple agencies. We also note that a survey-based approach would require Treasury and IRS to solicit race and ethnicity data directly from taxpayers, which would raise significant policy questions that must be carefully considered. Moreover, such survey data would likely have limited usefulness for the OTA individual tax model, and still require an additional imputation.

Given that Treasury and the IRS receive numerous, varied requests for all kinds of analyses, Treasury believes that developing an imputation method for providing such analyses remains the best area for focus at present. Treasury's work to build and improve the imputation algorithm will result in important and long overdue equity analyses of the tax system.

Thank you again for the opportunity to review the Draft Report and for your consideration of our comments. We appreciate your work on this important issue.

Sincerely,

Lily Batchelder

Lily Batchelder
Assistant Secretary for Tax Policy
U.S. Department of the Treasury

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Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Jessica Lucas-Judy, (202) 512-6806 or LucasJudyJ@gao.gov

Staff Acknowledgments

In addition to the contact named above, Sonya Phillips (Assistant Director), Jennifer G. Stratton (Analyst-in-Charge), Walker Adams, Jackie Chapin, Caitlin Cusati, Ed Nannenhorn, Rachel Schultz, Dylan Stagner, Sonya Vartivarian, John Villecco, Peter Verchinski, and Alicia White made key contributions to this report.

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