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Middle-Class Redistribution:
Tax and Transfer Policy for Most Americans

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Abstract: The "middle class" has benefitted from government redistribution in recent decades. For individuals in non-elderly households in the middle three income quintiles (the middle class), the share of federal taxes decreased, and the share of transfers increased. Between 1979 and 2016, market income per person increased 39 percent. But when accounting for taxes and transfers income increased 57 percent. Middle-class income support, however, is a recent phenomenon. Before 2000, market income and income after taxes and transfers grew together. Since 2000, middle-class income after taxes and transfers grew three times faster than market income. In a revenue-neutral exercise, we explore the limits of further support to the middle class.

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Introduction

Government tax and transfer policy has increasingly benefitted the "middle class." The share of federal taxes paid by the non-elderly middle class (which we define as those whose household income places them in the middle 60 percent of the population) has declined over time, while their share of means-tested transfers has risen. Fewer households pay income taxes, and federal tax burdens on low- and middle-income households have declined. At the same time, more middle-income households benefit from government transfers. While middle-class market incomes have grown less quickly than aggregate income, public policies have offset some of this disparity by boosting after-tax, after-transfer income and enhancing economic security. Middle-class market income per person increased 39 percent between 1979 and 2016, their after-tax, after-transfer income increased 57 percent.

The increase in after-tax, after-transfer income from federal policies is mostly the result of two factors. First, federal fiscal policy has increasingly prioritized raising the after-tax, after-transfer income of American households. The long-term decline in defense spending as a share of GDP and a more recent surge in deficit spending has, in the aggregate, allowed Americans to enjoy both lower taxes and increased spending on health and income support programs (DeSilver 2017). Second, the distribution of both taxes and transfers have shifted to the benefit of the non-elderly middle class. The share of total taxes paid by the non-elderly middle class has declined, with an increasing share paid by high-income households. Simultaneously, the share of transfers received by the middle class has increased, with a decreasing share received by low-income households. About one-third of the growth in the after-tax, after-transfer income of middle-class households since 1979 owes to changes in fiscal policy.

While these changes were effective in boosting the after-tax, after-transfer income of non-elderly middle-class households, we are less optimistic they will be sources of future growth for middle-income households. Tailwinds from the "peace dividend" and increasing deficits have largely run their course. Even if deficits could remain at high levels, they cannot *grow* at high rates. Additionally, the aging of the population and the retirement of the Baby Boomer generation results in a headwind against the further expansion of benefits for the non-elderly middle-class. While increases in redistribution through the tax and transfer system are possible, raising the after-tax, after-transfer incomes of the middle class by the magnitudes achieved over the last two decades and financing it by increasing taxes only on top income households would require unprecedented tax rates.

In our analysis of taxes and transfers, we focus on individuals in non-elderly households in the middle three quintiles (60 percent) of the income distribution, whose material living standards

provide a broad view of middle-class incomes and changes over time.[1] Although the elderly middle-class is also important, we focus on non-elderly households in order to avoid the challenge of inferring the income class of non-working retirees. Doing so also allows us to examine the taxes paid and benefits received by households during their working and child-rearing years and to abstract from issues related to the aging of the population and the substantial growth in Social Security, Medicare, and Medicaid benefits.

In 2016, according to estimates using data from the Congressional Budget Office (2019), the average income earned from market activities—like employment, business ownership, or interest—was about $71,900 per non-elderly middle-class household. Social insurance and means-tested transfers boosted this group's average income by $7,900 per household, and they paid (or their employer paid on their behalf) $12,600 in federal income, payroll, corporate, and excise taxes—including their contributions to entitlement programs such as Social Security and Medicare. Hence, the net effect of federal income transfers and taxes is to reduce the after-tax, after-transfer income of middle-class households only by about 7 percent. That "net burden" of taxes and transfers is historically low and relieves the middle class from much of the cost of paying for federal public goods or income support to other groups (like poor, disadvantaged, or elderly households).

What federal benefits are non-elderly middle-class households receiving? Mostly subsidized health insurance or health care. Direct assistance comes from programs like Medicaid and the Children's Health Insurance Program (CHIP), and indirect assistance comes from the exclusion of employer-provided and self-employed health insurance costs from taxation. Middle-class households also benefit from other targeted transfers and insurance programs, like the Supplemental Nutrition Assistance Program (SNAP), unemployment insurance, workers' compensation, and Social Security Disability Insurance. On the tax side, income taxes on many households have been eliminated by child-related tax benefits.

Over the last several decades, more federal support flowed to the middle class, while the payments they made for federal programs through taxes have declined. Focusing just on amounts for non-elderly households, between 1979 and 2016, the share of means-tested transfers received by middle-class households increased from 27 percent to 49 percent. Their share of federal taxes paid fell from 45 to 31 percent. These changes are partially the result of economic trends, which reduced the share of market income earned by the middle class. However, changes in federal tax policy eliminated income tax liability for more middle-class households and reduced average tax rates on all but the highest-income households. Since 1979, the share of non-elderly adults facing no income tax nearly doubled, to about 40 percent. At the same time, average federal tax rates

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[1] There is no consensus definition of the middle class, and alternative definitions are reviewed by Reeves, Guyot, and Krause (2018). For example, some definitions include individuals with higher incomes in the "upper-middle" class. Alternatively, the Pew Research Center defines the middle class as adults with size-adjusted household income that is two-thirds to double the national median, which is narrower than our definition, and Darity, Addo, and Smith (2020) use a wealth-based definition that results in a relatively smaller black middle class.

for non-elderly middle-class households fell about 4 percentage points. Since 1979, the cumulative effect of these policies was to boost the increase in non-elderly middle-class incomes by 18 percentage points. Federal support for middle-class households has clearly improved their economic stability and material well-being.

Whether individuals recognize or value these increased transfers is less clear. One reason is that health insurance represents a growing share of middle-class incomes, both in terms of the share of their compensation earned from employment and the value of federal health benefits. While the Congressional Budget Office (CBO) values in-kind health benefits at their cost, households may value them at lower or higher rates. To the extent that households value health benefits less than more visible forms of consumption or receive excess benefits due to tax subsidies, they will value them at less than their cost. Those with health concerns may value them at well above their cost. More generally, there is widespread concern among economists that America's health-care system is inefficient and that the same health outcomes could be achieved at lower cost. Hence, the value and cost of health benefits are central not just for interpreting the welfare implications of rising federal spending on the middle class but also to the design of federal health policies.

While our analysis mostly focuses on comparisons of households whose income falls into the middle class at specific points in time, a household's income may change from year to year because of events like unemployment or moving to a better job. One implication of this is that a larger share of middle-class households benefits from federal policies, like unemployment insurance, than is apparent in a single year. Likewise, while we refer to comparisons of the average income of the middle class over time as income "growth" and "changes", those comparisons do not necessarily reflect the income growth of individual households because of mobility in and out of the middle class. Indeed, when following the same individuals since 1980, Splinter (2019c) finds that middle-class market incomes grew faster than overall income. Hence, while our analysis compares how much federal policies affect middle-class incomes today compared to the past, it does not assess how those policies affect economic mobility or changes in the income of individual households.

Looking to the future, shifts in federal spending and the increase in tax progressivity over recent decades has left the federal system with a more limited capacity to continue to raise middle-class incomes solely by taxing the top of the distribution. There's no doubt that increases in taxes from high-income taxpayers could raise substantial revenues, and those revenues could be redistributed to increase the incomes of lower-income taxpayers. But in an empirical exercise, we show that fiscal capacity falls substantially when new transfers are extended from just the bottom quintile to also include the middle class. Increasing the material well-being of low-income households requires only modest increases in tax rates on high-income taxpayers. However, meaningfully increasing it for middle-class households requires more dramatic fiscal changes because there are many more middle-class households, they earn higher levels of income, and excluding middle-class incomes from tax-rate increases requires higher marginal

rates on high-income groups. Given that America has already spent the "peace dividend," ramped up deficits, and substantially increased tax progressivity, it will be difficult to continue the recent trend of rising fiscal support for middle-class households.[2]

1. Taxes Paid and Benefits Received across the Income Distribution

How do federal taxes, social insurance programs, and means-tested transfers affect the material well-being of the middle class? One way to consider how federal tax and spending policies affect American households is to compare the distributions of income both before and after taxes and transfers. We primarily use data from the CBO (2019), which use a combination of records from the Internal Revenue Service and the Census Bureau to estimate household incomes from a broad range of sources, and we also follow their assumptions on how income is shared within households, the distribution of taxes, and the value of in-kind benefits.

Figure 1: Income per Person in Non-elderly Households before and after Government Transfers and Federal Taxes, 2016
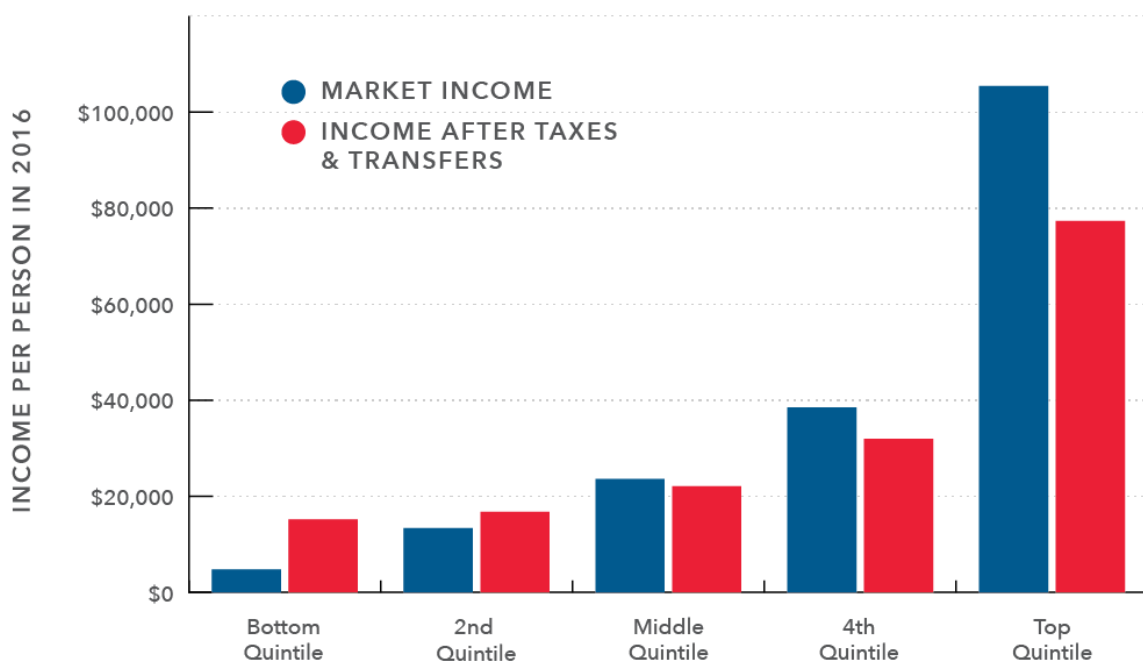
Source: Author's calculations using data from the CBO (2019).
Notes: Quintiles are defined based on household size-adjusted market income of households of all ages.

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[2] While we are relatively pessimistic about the prospect of fiscal policy to directly boost the future incomes of all middle-class households, federal policy also affects the well-being of middle-class households by promoting economic growth and human capital development; promoting safety and health; enforcing the rights of citizens and workers; protecting natural resources and the environment; and many other ways beyond the scope of this paper.

Using these data, Figure 1 ranks non-elderly households by their market income and presents their income before and after the effects of government transfers and federal taxes. Market income includes only the amounts that individuals earn from work, running a business, or investments. Our purpose in ranking by market income (rather than income after social insurance benefits but before taxes and means-tested transfers, which is the CBO convention), is to illustrate the full extent of federal policies on the distribution that would prevail based on market income alone. Furthermore, we present income on a per person basis as a way to adjust for differences in household size and to account for differences in the resources needed for people in large and small households to achieve the same level of well-being. The CBO publishes data corresponding to average household incomes and those averages are not adjusted for differences in household size.[3] A disadvantage of this approach is that comparisons of average household incomes over time can be conflated by changes household size. We focus on income per person as the best available solution.

The grey bars in Figure 1 show that market income of non-elderly households is unequally distributed. For instance, average market income per person in the lowest-income quintile of the population (the bottom 20 percent based on household income) is an average of $4,800 before taxes and transfers. In contrast, among the highest-income quintile the average income per person is $105,000.

But market income presents only a partial view of the material well-being of American households. Transfers and federal taxes affect their after-tax, after-transfer income and provide insurance against adverse outcomes that reduce market income, like unemployment. The red bars show average income per person after social insurance, transfers, and federal taxes. The after-tax, after-transfer income of individuals in the lowest-income households is lifted to $15,200—hence, federal tax and transfer programs triple the incomes of low-income, non-elderly individuals relative to what they earn in the market alone. For households in the top income quintile, transfers and federal taxes reduce market incomes from an average of $105,000 per person to $77,000—or 27 percent less. This effect is more pronounced for higher incomes, with top 1 percent incomes reduced by 34 percent.

In other words, the net effect of taxes and transfers is to reduce disparities that exist when considering only market income. While these redistributive effects are clearest among the lowest-income and highest-income households because of the progressive tax and transfer system, it is also apparent among middle-class households.

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[3] For ranking purposes only, CBO adjusts incomes for household size to account for the fact that people living under the same roof and sharing resources can achieve a higher material living standard than those living alone. Once households are ranked by size-adjusted income, each quintile is set to include the same number of individuals. We measure per person income as the aggregate household income of each income group divided by the number of people in that group.

While there is not a formal definition of who is middle class, we focus on the middle three quintiles of the population.[4] Within the middle three quintiles, we focus on non-elderly households. (These are households whose household head is under age 65, although some non-elderly households will contain other individuals who are older.) This group represents about half of Americans and earns a third of total market income. Figure 1 shows that, on average, public policies modestly boost the incomes of non-elderly households in the second quintile (lower-middle class households) and slightly reduce the incomes of upper-middle class households. It is not just the bottom of the income distribution that benefits from the progressive tax and transfer system. Many in the middle class are net beneficiaries as well.

An additional consideration is that a significant share of federal tax revenue is not redistributed to households as means-tested transfers or social insurance, but instead finances federal purchases such as education, roads, defense, and other public goods that yield value to most households. While the value of such public goods is not included in our analysis, the taxes that finance them are. Including the benefits from these public goods would raise the well-being of low- and middle-income households above that measured by disposable income alone.

Furthermore, while CBO estimates capture a relatively broad measure of income, they exclude a number of income sources: undistributed income earned in retirement accounts, imputed rent of owner-occupied housing, and the employee insurance contributions that are excluded from taxable wages.[5] It also excludes the accrual of social insurance wealth (e.g., increases in the present value of expected Social Security benefits). Each of these are important sources of middle-class income and accounting for them would boost the level of middle-class income and its growth (Auten and Splinter 2019a; Sabelhaus and Volz 2020).

In this section, we discuss the growth in total transfers and the recent distribution of transfers and federal taxes. We also discuss how tax expenditures and social insurance benefits benefit the middle class, often protecting them from economic insecurity, and why standard approaches may understate the degree to which they accrue to the middle class.

1.a.   *Transfers Are a Growing Share of Federal Spending*

Transfer programs reflect a sizeable share of federal expenditures. In 2019, 23 percent of federal spending paid for Social Security and 15 percent provided insurance through Medicare. Hence, these two social insurance programs reflected 38 percent of all federal spending. An additional 13 percent of federal spending provided health insurance through other programs, including

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[4] Under this definition, a four-person household is middle class if their income is between $31,400 and $168,200 while a two-person household is middle class if their income is between $22,000 and $119,000.

[5] These excluded sources total more than $1 trillion in 2014 (Auten and Splinter 2019b). The CBO also includes some sources of income that should not be thought of as current-year income, such as taxable realized capital gains, which reflect asset appreciation in earlier years (Larrimore et al. 2016). However, we do not attempt to adjust the income definitions and distributional estimates from their data.

means-tested programs like Medicaid and CHIP. Non-health-care, means-tested programs include SNAP, supplemental security income (SSI), and many in-kind transfers like school lunches, low-income housing, childcare, or help with home heating costs. These programs amounted to 8 percent of federal spending. Other federal spending largely goes to defense (15 percent of the budget), interest (8 percent), and other smaller programs (OMB Budget, FY 2021 Historical Tables). As noted above, standard measures of after-tax, after-transfer income exclude the value of non-transfer spending, which represents a bit less than half of federal spending.

Over time, the amount that the federal government spent on social insurance, transfers, and other investments in material well-being increased both as a share of the federal budget and as a share of the economy. For instance, between 1979 and 2016, the amount that the federal government devoted to human resources—Social Security, health, education, and veterans' benefits—increased from 53 to 73 percent of the budget and from 10.4 to 15.2 percent of GDP. This increase was accommodated largely with reductions in defense spending—a peace dividend—but also lower interest costs and a higher budget deficit. In other words, in 1979 roughly half of government spending was devoted to social insurance, means-tested transfers, or investments in the health, education, and economic security of Americans. In 2016, it was three-quarters. Moreover, total government spending as a fraction of GDP increased. On net, the federal government now devotes more resources to improve the material well-being of Americans than ever before.

This increase in federal spending on social insurance programs partly reflects the aging of the population, as an increasing share of Americans become eligible for Social Security. But the size of transfer programs has increased in recent decades even excluding elderly households. In 1979, non-elderly households received $212 billion in transfers, including $98 billion of means-tested programs (2016 dollars). By 2016, this had grown to $920 billion of transfers, including $601 billion of means-tested transfers. Consequently, the resources devoted to improving the well-being of the non-elderly population has also increased—with a substantial share of this increase going toward those in the middle class.

1.b.   *The Distribution of Social Insurance and Means-Tested Transfer Spending*

Households across the income distribution benefit from federal social insurance and means-tested transfers, even when excluding elderly households. Figure 2 shows the average per person value of social insurance benefits and means-tested transfers received by non-elderly households in each income quintile in 2016 based on CBO data.

The largest of these transfers are associated with health coverage. In 2016, non-elderly, second-quintile households received Medicaid benefits that cost an average of $7,300 ($2,500 per person) and other means-tested transfers worth $2,200 ($800 per person). Non-elderly, middle-quintile households received Medicaid benefits that cost an average of $4,700 ($1,600 per person). Some programs, like Social Security Disability Insurance and the Medicare coverage

that accompanies it, accrue mostly to low-income households, but disabled members of higher-income households are also eligible for these benefits. Throughout the distribution, a similar share of non-elderly households received unemployment insurance.

Therefore, among non-elderly households, health insurance represents the largest form of benefits accruing not only to low-income households, but also to middle-class households. As we discuss below, it is also the largest source of the increase in transfers to the middle class.

Figure 2: Per Person Benefits from Social Insurance and Means-Tested Transfer Programs in Non-elderly Households, 2016
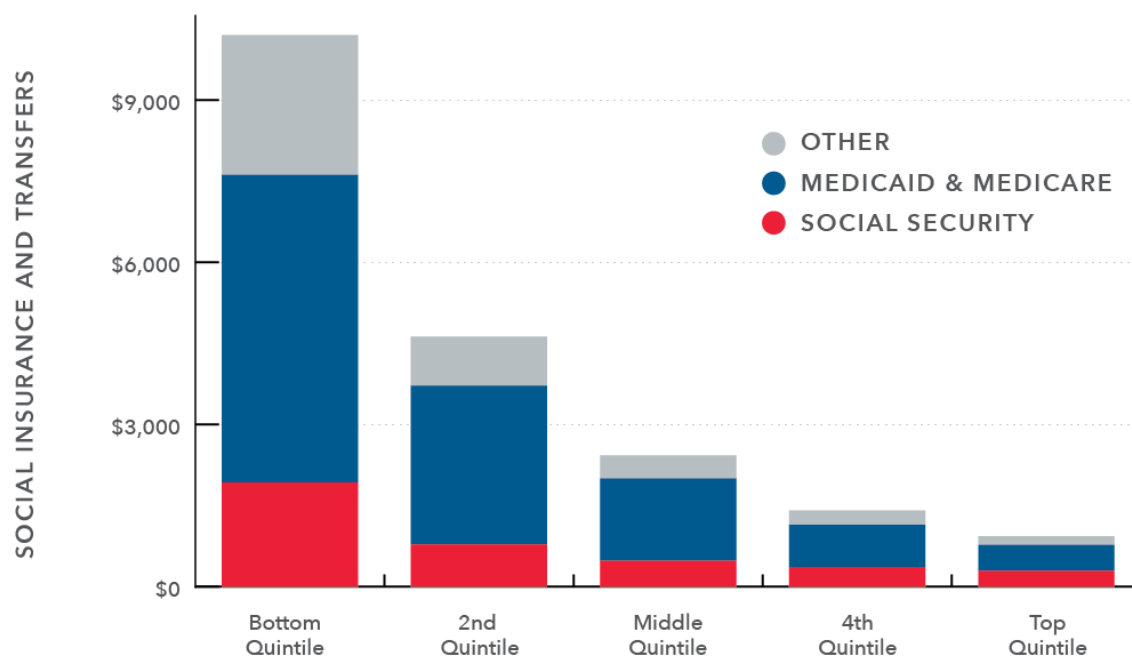
Source: Authors' calculations using data from CBO (2019).
Notes: Quintiles are defined based on household size-adjusted market income of households of all ages. "Other" includes SNAP benefits, unemployment insurance, SSI, workers' compensation, and other smaller transfer programs. Social Security for non-elderly households includes Social Security Disability Insurance as well as benefits to elderly individuals in households headed by a non-elderly person and survivor benefits.

1.c.   The Distribution of Federal Taxes

In 2016, Americans paid about $3 trillion in federal taxes. Individual income taxes accounted for about half of federal taxes, payroll taxes for a third, corporate taxes for a tenth, and other taxes for a small share. Figure 3 illustrates the distribution of these taxes across non-elderly households—who pays the taxes, or, for indirect taxes or those withheld by employers, who is

burdened by those taxes.[6] The American tax system is progressive. Higher-income households pay a higher share of their income in total federal taxes than do lower-income households.

For instance, in 2016, non-elderly households in the lowest income quintile (ranked by market income) faced a negative tax rate—because of refundable income tax credits, the average household received a refund that exceeded the amounts they paid in other federal taxes. Among the highest-income quintile of non-elderly households, the average federal tax burden was equal to about 28 percent of their market income. The top 1 percent paid 34 percent of their market income in federal taxes, or twice as much as the middle class.

Figure 3: The Burden of Federal Taxes among Non-elderly Households, 2016
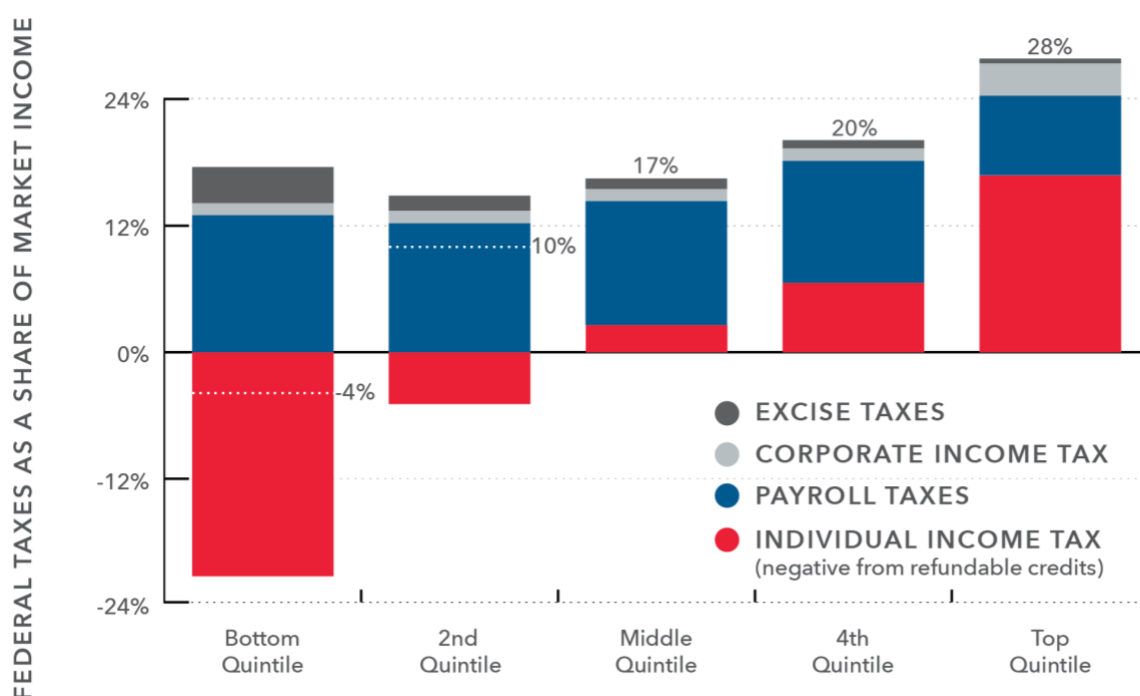
Source: Authors' calculations using data from CBO (2019).
Notes: The dotted white lines and percentages show total federal taxes as a share of market income when accounting for negative income taxes. Quintiles are defined based on household size-adjusted market income of households of all ages.

1.d.   Tax Expenditures

The tax burden households face depends on tax rates but also on exclusions, deductions, special rates, or tax credits that reduce tax burdens. These policies are labeled tax expenditures because they often serve a function similar to spending programs. While their effects on household income are incorporated into the tax burdens described above, they are legislated and debated

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[6] Corporate taxes ultimately are paid by the owners of businesses, their employees, or their consumers; we follow CBO in assuming most corporate taxes are paid by capital owners, but that a quarter is shifted to workers.

independently. Hence, like social insurance and transfer programs, it is worth understanding how tax expenditures affect households.

The largest tax expenditures are often designed to benefit middle- and high-income households. These tax expenditures support employer-provided health insurance, provide benefits for home ownership, subsidize retirement savings, and provide for the earned income tax credit and child tax credit. Besides the credits, these provisions exclude certain types of income from taxation. They therefore disproportionately benefit higher-income households who face higher tax rates. Even among the tax credits, the child tax credit is still available to nearly all households because phase outs start at high income levels.

Middle-class households receive substantial tax expenditures for homeownership, including preferences for mortgage interest, property taxes, and capital gains. The mortgage interest deduction is the largest of these, but its value has fallen over time. For tax units whose incomes are between $50,000 and $100,000 (including elderly filers), this subsidy was about 0.2 percent of GDP around 1990, before it fell to 0.1 percent since the Great Recession and well below that with the recent doubling of standard deductions (Splinter 2019b). Among those deducting mortgage interest in 2019, Joint Committee on Taxation (2019) estimates suggest that middle-class tax returns (incomes between $40,000 and $100,000 and including elderly filers) received an average subsidy of $800. This amount was similar just before the doubling of standard deductions in 2018, but in earlier years nearly four times more middle-class tax returns deducted mortgage interest (11 million versus 3 million). Even when average mortgage interest deduction subsidies were larger, they had little effect on homeownership levels, but instead increased both debt burdens and the size of houses (Gale, Gruber, and Stephens-Davidowitz 2007; Hanson 2012). We discuss the growth of other major middle-class tax expenditures in the next section.

1.e.   *Measuring Distributions of Incomes and Taxes: Households versus Tax Units*

The extent to which means-tested benefits and low tax burdens extend into the middle class may come as a surprise. One reason is that many policies are implemented and designed based on tax units (people who file tax returns together) or families (close relatives who live together) rather than households (people who live together). But many estimates of income inequality or tax burdens use tax units (or families), which tend to disaggregate or split up the incomes of individuals who otherwise live together and share resources.

Although they are often considered interchangeable, households, families, and tax units can be quite different—and these differences matter for policy evaluation. Consider three examples: two married adults living together, a cohabiting couple, and an adult child living with their parents. All three examples represent single households. Yet the cohabiting couple is not a family under the Census definitions, and the cohabiting individuals and the adult child living with their parents are separate tax units.

These distinctions may appear innocuous but can dramatically change the observed distribution of both incomes and transfer policies since there are over 170 million tax units in the United States, but fewer than 130 million households (including elderly households). In 2010, the median pre-tax income of *tax units* was a modest $31,000. But using the same tax data, median pre-tax income of *households* was $51,000 (Larrimore, Mortenson, and Splinter 2019).

The choice of sharing unit can also affect middle-class income shares and growth. Larrimore, Mortenson, and Splinter (2019) estimate that relative to using households as the sharing unit, using tax units lowers the 2010 middle-class income share (including elderly households) by almost 4 percentage points (from 44.3 to 40.7 percent). Due to the growth in cohabitation, where there is one household but at least two tax units, middle-class absolute income increases are under-estimated at the tax unit level. Although these statistics are for pre-tax income of households of all ages, rather than the after-tax, after-transfer income of non-elderly households that we focus on in this paper, this demonstrates the substantial difference between using households and tax units on middle-class incomes.

The CBO has consistently assumed that income is shared within a household for their distributional reports, recognizing that this most closely reflects the resources people have available. Yet, social policies administered through the tax code frequently focus on tax-unit incomes, and may inadvertently shift programs intended for low-income individuals toward the middle class.

Figure 4: Distribution of the Earned Income Tax Credit, 2010
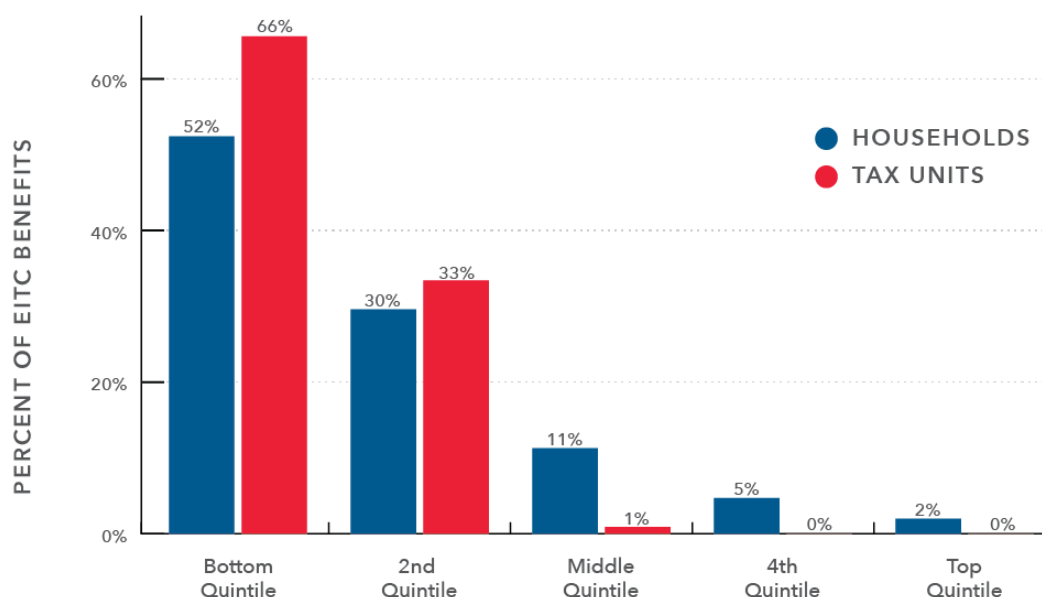
Source: Larrimore, Mortenson, and Splinter (2019).
Notes: Includes households and tax units of all ages, including elderly households. Quintiles are defined based on size-adjusted pre-tax income reported on tax returns.

When measured at the household level, existing tax policies are targeted less at the bottom of the distribution and more at the middle than is commonly believed. Figure 4 shows that two-thirds of earned income tax credit benefits go to the bottom quintile of the tax-unit distribution, although when considering complete households only about half of these credits accrue to the bottom quintile. Instead, a larger share goes to those in the middle quintiles of the distribution. Although the earned income tax credit remains quite progressive, the ability for low-income tax units in higher-income households to receive these credits erodes a portion of the redistributional effect of the program (Larrimore, Mortenson, and Splinter 2019; Jones and Ziliak 2020).

1.f. *Insurance Against Income and Spending Shocks*

Federal policies also benefit middle-class households by providing insurance against economic risks that might otherwise send them plummeting down the income distribution. Among households that are typically middle class based on their usual income and employment, many experience temporary bouts of unemployment or economic strain.

The previous discussion only considered households whose annual incomes placed them in the middle class in that particular year. But most people's incomes do not remain the same every year. An additional way in which the tax and transfer system benefits the middle class is through the social safety net, which shields people from substantial declines in their income when faced with an economic hardship. In particular, while individual-level changes in market income are common, as workers move in and out of employment, after-tax household level income shocks are typically far smaller. In part, this reflects that household-level incomes are insulated by other family members' income, but it also reflects the significant insurance through tax and transfer policies that middle-class families receive.[7]

Federal taxes provide income insurance by buffering income changes: after-tax losses are typically smaller than pre-tax losses. Because the tax system is progressive, a 10 percent reduction in pre-tax income results in a less-than-10-percent decline in after-tax income. Taxes can even provide income insurance if a taxpayer initially paid no income tax because of refundable tax credits, which work like a negative rate tax bracket (Dowd and Horowitz 2011). In recent years, middle-quintile, after-tax losses are usually 5 to 20 percent smaller than pre-tax losses.

Transfers also provide important insurance to the middle class, for both targeted programs like unemployment insurance and income-contingent programs like Medicaid, for which middle-class families often qualify, even if only for specific periods. Policies enacted in response to recessions

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[7] A fifth of workers' earnings have annual decreases of 25 percent or more, while only a tenth of households' incomes decrease that much (non-elderly workers and households only; CBO 2008). But losses are often transitory—nearly half of the middle-quintile with large decreases return to their prior income within a few years (Splinter, Bryant, and Diamond 2009; Larrimore, Mortenson, and Splinter 2016). In this volume, Silverman (2020) discusses other ways that households offset income shocks to smooth consumption.

provide additional support. Measures enacted in response to the Great Recession included stimulus payments to individuals, extended periods of unemployment insurance receipt, and a payroll tax holiday (summarized by Larrimore, Burkhauser, and Armour 2015).[8] Similar policies were enacted to address the COVID-19 recession.

Over the course of several years, the amount (and share) of net federal spending that accrues to middle-class households is much larger than annual measures suggest. For example, Table 1 shows that only a modest share of non-elderly tax filers received unemployment benefits each year (around 7 percent), but nearly a third received them at least once over the last decade.[9] Over time, the largest beneficiaries of unemployment insurance are middle-class households.

Table 1: Unemployment Insurance Receipt Rates during Annual and Multi-Year Periods

Quintile	Annual	5-year	10-year
Bottom	6%	18%	27%
2	8%	22%	34%
3	7%	21%	33%
4	7%	20%	31%
Top	4%	14%	22%

Source: Authors' calculations using population tax data.
Notes: Income quintiles each have the same number of non-elderly adults (aged 20 to 64 in 2015) and are based on 2015 income (AGI plus adjustments, not size-adjusted) and include those filing between 2013 and 2017. The 5-year period includes 2013–2017 and 10-year period 2008–2017. If either spouse on a joint tax return receives unemployment benefits, then both are counted as receiving them.

2. Changes in Middle-Class Taxes and Transfers since 1979

Over the last several decades, market income growth of the middle class has been slow and their share of market income has declined. Between 1979 and 2016, the middle-class share of market income among non-elderly households decreased from 51 to 40 percent. Changes in tax and transfer policies, however, have helped offset some of the slow growth of market income of the middle class.

The middle class benefited from falling tax rates—largely due to tax credit expansions. They have further benefitted from a shifting of tax burdens away from the middle class and toward the

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[8] When capturing the full impact of unemployment insurance and tax policy, the combination of existing and temporary policies almost completely mitigated the rise in poverty over the Great Recession (Larrimore, Mortenson, and Splinter, forthcoming).
[9] These results are through 2017 and do not reflect the substantial increase in unemployment insurance claims initiated in March and April 2020 in response to the COVID-19 public health crisis. Were those claims included, the share of filers ever claiming unemployment insurance would likely be even higher.

top of the distribution, and an expansion of transfers to the middle class. The combined effect of taxes and transfers caused after-tax, after-transfer incomes to increase significantly faster than market incomes, a result previously emphasized by Burkhauser, Larrimore, and Simon (2012). Between 1979 and 2016, real after-tax, after-transfer middle-class incomes increased 18 percentage points more than market income.

For perspective, the relative boost to low-income households over this period from increases in transfers is even larger. Changes in taxes and transfers increased the growth of bottom-quintile after-tax, after-transfer income by 84 percentage points relative to market income (from 33 to 117 percent), even though they are receiving a smaller share of all transfers than they were in 1979. Indeed, changes in tax and transfer policy account for over two-thirds of the increase in after-tax, after-transfer income of such households over this period. In contrast, after-tax, after-transfer income of the top quintile increased at the same rate as market income; policy has neither boosted nor slowed the change in income of this group.

Figure 5 presents a comparison of average middle-class per-person income before and after taxes and transfers. Values are shown in per person terms to control for the declining number of adults per household. Throughout the 1980s and 1990s, the middle class paid substantially more in taxes than they received directly from social insurance and transfers. In 1979, for instance, the average net effect of federal policies was to reduce the after-tax, after-transfer incomes of middle-class households by about 17 percent. That changed starting in the 2000s. By 2016, the net burden on middle-class households had declined to 7 percent.

Figure 5: Effect of Taxes and Transfers on Non-elderly, Middle-Class Income per Person, 1979–2016
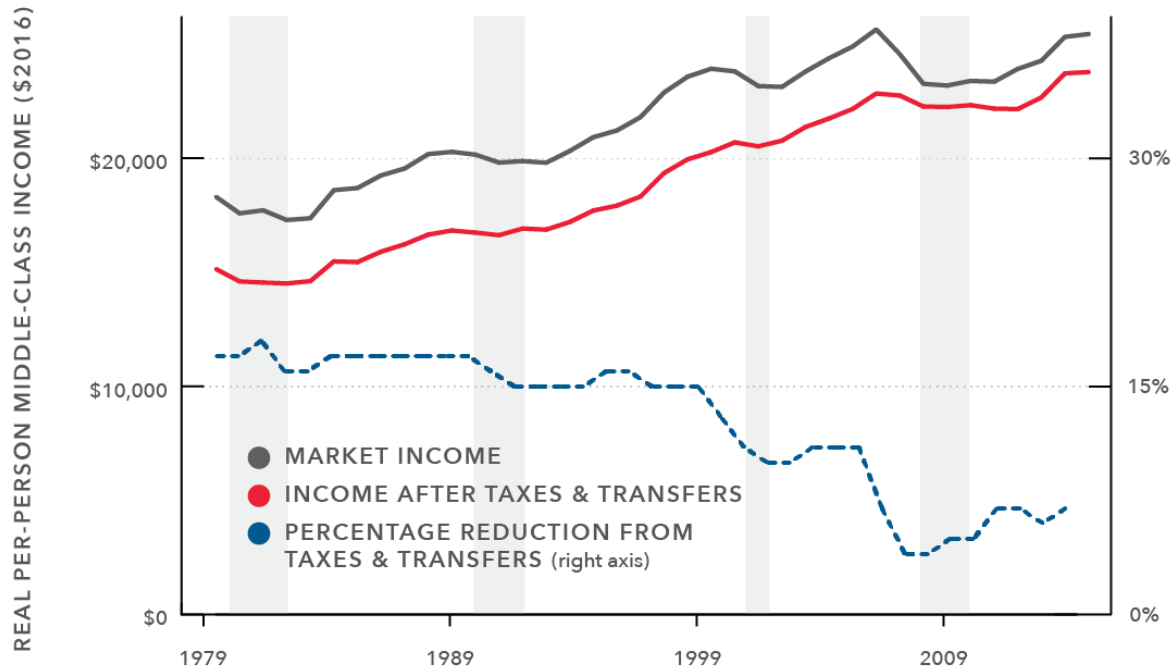
Source: Authors' calculations using data from CBO (2019).
Notes: Transfers include both social insurance benefits and means-tested transfers. Quintiles are defined based on household size-adjusted market income of households of all ages. The middle class includes individuals in non-elderly households in the middle three income quintiles.
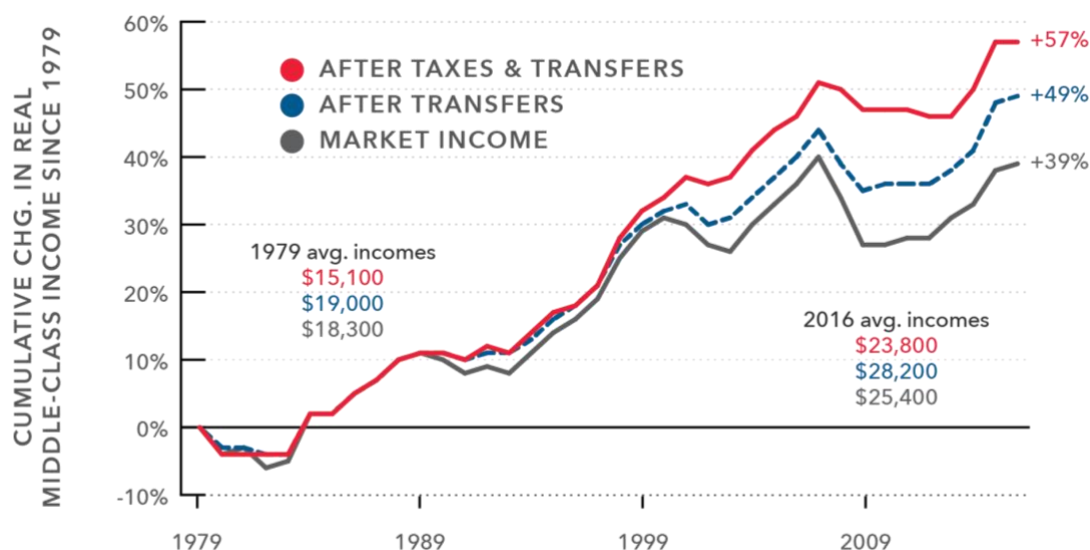
The increase in middle-class incomes after taxes and transfers resulted from changes in both tax and transfer policies. Figure 6 shows the separate effect of taxes and transfers on real percentage changes in middle-class incomes between 1979 and 2016. Before taking taxes or transfers into account, average per person middle-class market incomes increased from $18,300 to $25,400 (in 2016 dollars)—an increase of 39 percent.

Adding transfers increases the level of middle-class incomes in all years, but more so recently—boosting real income growth by 10 percentage points. Accounting for federal taxes decreases income levels in all years, but again, less so recently—and results in additional real income growth of 8 percentage points. Taking both taxes and transfers into account, middle-class per person incomes after taxes and transfers increased from $15,100 to $23,800, an increase of 57 percent.

Figure 6 makes clear that the net effect of taxes and transfers on middle-class income growth was negligible from 1979 through 2000 (on average), and since then has become more pronounced. With the 2001 recession, transfers expanded, and with the Bush tax cuts, the child credit amount doubled and tax rates fell. A similar level-shift occurred following the Great Recession. Legislative changes contributed to this effect: the Affordable Care Act increased middle-class

Medicaid benefits, and created the premium tax credit, while other legislation increased the generosity of the earned income tax credit and child tax credit.

**Figure 6: Real Increases in Average Non-elderly Middle-Class Incomes per Person, 1979–2016**

In other words, between 1979 and the late 1990s, after-tax, after-transfer income and market income of the middle class grew at about the same rate. Since 2000, middle-class income after taxes and transfers grew three times faster than market income. In addition to boosting cumulative income growth over this period, Figure 6 shows that federal policy substantially mitigated the temporary sharp declines in middle-class market incomes that occurred during the 2001 and 2007 recessions.

Increasing transfers to non-elderly middle-class households resulted from growth in Medicaid, disability, and other transfers. Between 1979 and 2016, Figure 7 shows that these transfers grew from about 4 to 11 percent of middle-class market income. For the non-elderly middle-class, average real per person transfers increased $1,360 for Medicaid, $250 for disability and other payments from Social Security, and $190 for SNAP and SSI transfers. These increases occurred throughout the middle class, but especially for the lower-middle class. Total transfers among non-elderly average households increased $3,500 for the second quintile, $1,800 for the middle quintile, and $1,000 for the fourth quintile (2016 dollars).

Figure 7: Non-elderly Middle-Class Transfers as a Share of Market Income, 1979–2016
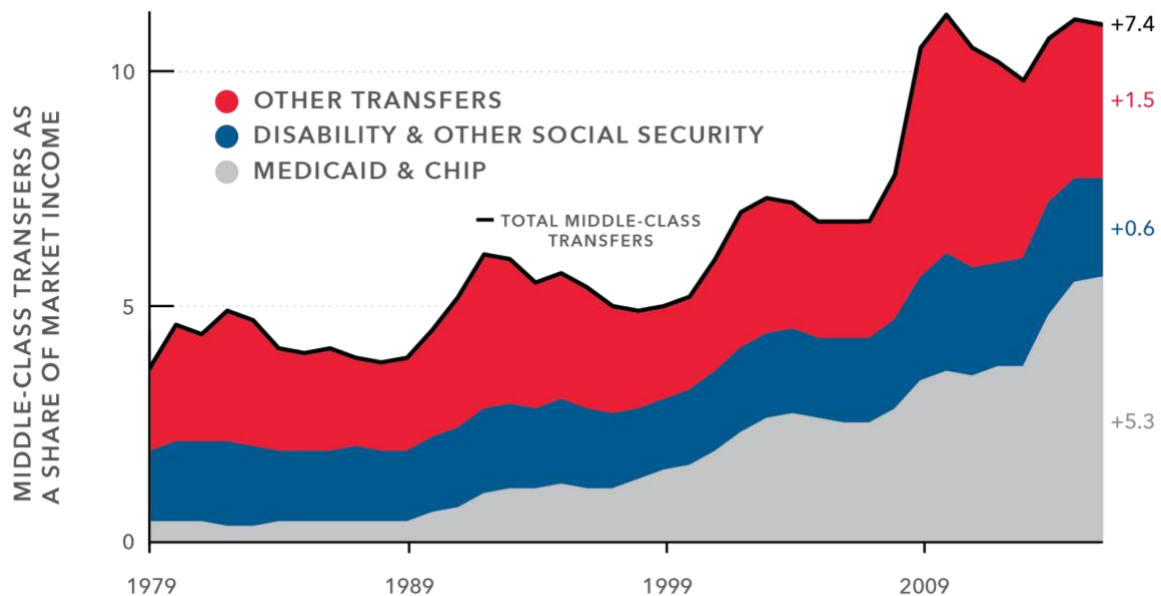
2.a.   Falling Middle-Class Tax Burdens

The decline in taxes on the middle class came primarily from declines in federal income tax liabilities, which have fallen significantly since 1979. For non-elderly middle-class households, Figure 8 shows a decrease of 3.6 percentage points in the federal taxes as a share of market income, from 21.1 to 17.5 percent.[10] Most of this decline in middle-class tax burdens resulted from permanent changes to the income tax code. Indexation in 1985 stopped nominal income increases from pushing the middle class into higher marginal rates via bracket creep. Larger standard deductions and numerous expansions to tax credits also lowered middle-class taxes. The short-lived decrease in middle-class taxes following the Great Recession resulted from temporary provisions, including the recovery rebate credit (2008), the making work pay credit (2009–2010), and the payroll tax holiday (2011–2012).

Another factor contributing to falling middle-class average tax rates was the growth in employer-provided health insurance benefits. These benefits are mostly tax-exempt and therefore their increase tends to reduce taxes that would otherwise be owed. According to the Joint Committee on Taxation, the federal income tax reduction (i.e., tax expenditure) due to the exclusion of employer-

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[10] While including state and local taxes increases middle-class tax rate levels, it does not substantially affect the decrease in middle-class tax burdens. Auten and Splinter (2019a) estimated that average tax rates (federal, state, and local taxes) for the bottom 90 percent fell about 4 percentage points (from 25 to 21 percent).

provided health insurance contributions increased between 1979 and 2016 from about $23 to $155 billion (real dollars) and is forecasted to exceed $200 billion by 2022. When also considering effects on payroll taxes, the exclusion of health and retirement benefits is much larger—reducing annual tax burdens by nearly a trillion dollars, much of which accrues to the middle class.

Figure 8: Non-elderly Middle-Class Federal Taxes as a Share of Market Income, 1979–2016
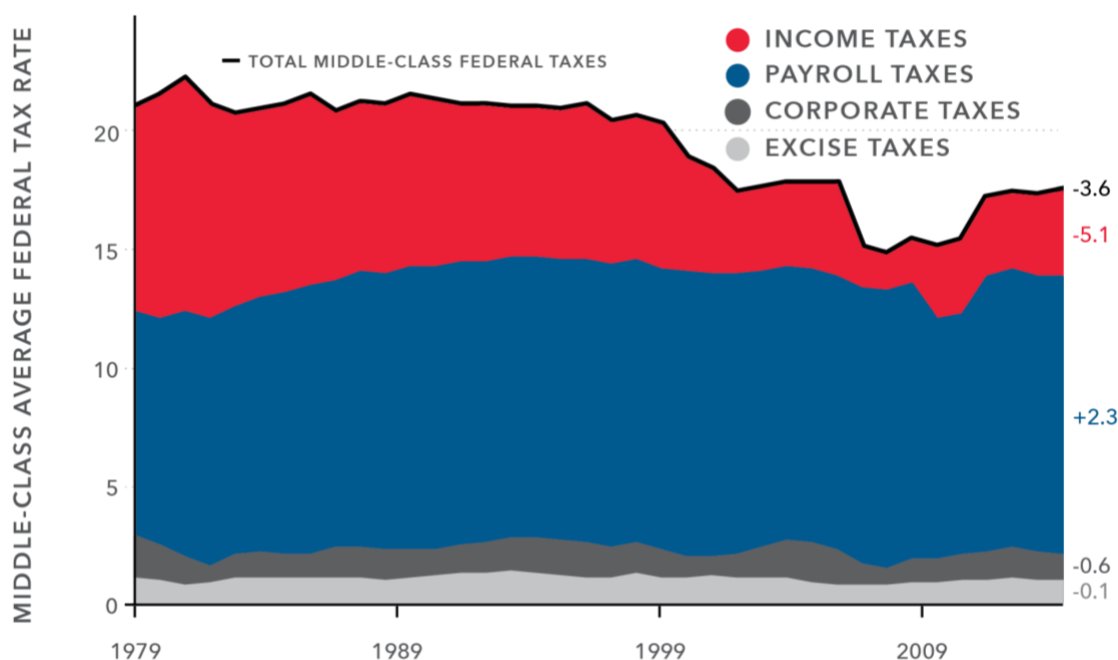
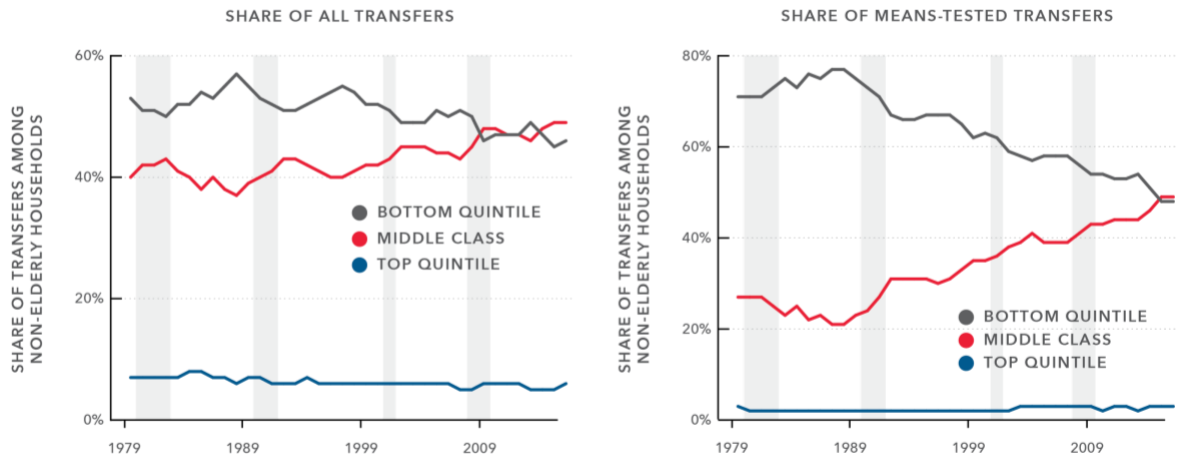**Source:** Authors' calculations using data from CBO (2019).
Notes: Percentage point changes between 1979 and 2016 are shown at the right. Quintiles are defined based on household size-adjusted market income of households of all ages. Middle class includes individuals in non-elderly households in the middle three income quintiles.

Other middle-class tax expenditures are smaller and had offsetting changes. Middle-class tax units, as described above, saw a real increase in earned income and child tax credits between 1979 and 2016 from a negligible amount to over $30 billion. Tax expenditures for prominent deductions (state and local taxes, charitable contributions, and mortgage interest) fell from about $35 to $25 billion (real dollars). The post-2017 tax changes are expected to reduce the value of these deductions by about $20 billion but increase middle-class child credits by about $25 billion.

The middle-class reduction in taxes and increase in transfers resulted in part from changes in the overall magnitudes of taxes and transfers, but also from changes in the *distribution* of who pays taxes and who receives transfers. The left-panel of Figure 9 shows the share of transfers going to non-elderly households, divided among the bottom and top quintiles, as well as the middle class. Since 1979, the share of transfers going to the bottom quintile has fallen, while the share going to the middle class has risen from 40 percent to 49 percent.

The shift is even more dramatic when focusing only on means-tested transfers, which mostly consists of Medicaid, SNAP, and SSI. This is shown in the right panel of Figure 9. The middle class received 27 percent of means-tested transfers that went to non-elderly households in 1979. By 2016, the middle class received 49 percent of these transfers.

Figure 9. Distribution of Transfers among Non-elderly Households, 1979–2016

Source: Authors' calculations using data from CBO (2019).
Notes: Transfers received by elderly households are excluded. Means-tested transfers include Medicaid, CHIP, SNAP, and SSI, as well as other programs where eligibility is based on income. Quintiles are defined based on household size-adjusted market income of households of all ages. Middle class includes individuals in non-elderly households in the middle three income quintiles.

Figure 10. Distribution of Federal Taxes among Non-elderly Households, 1979–2016
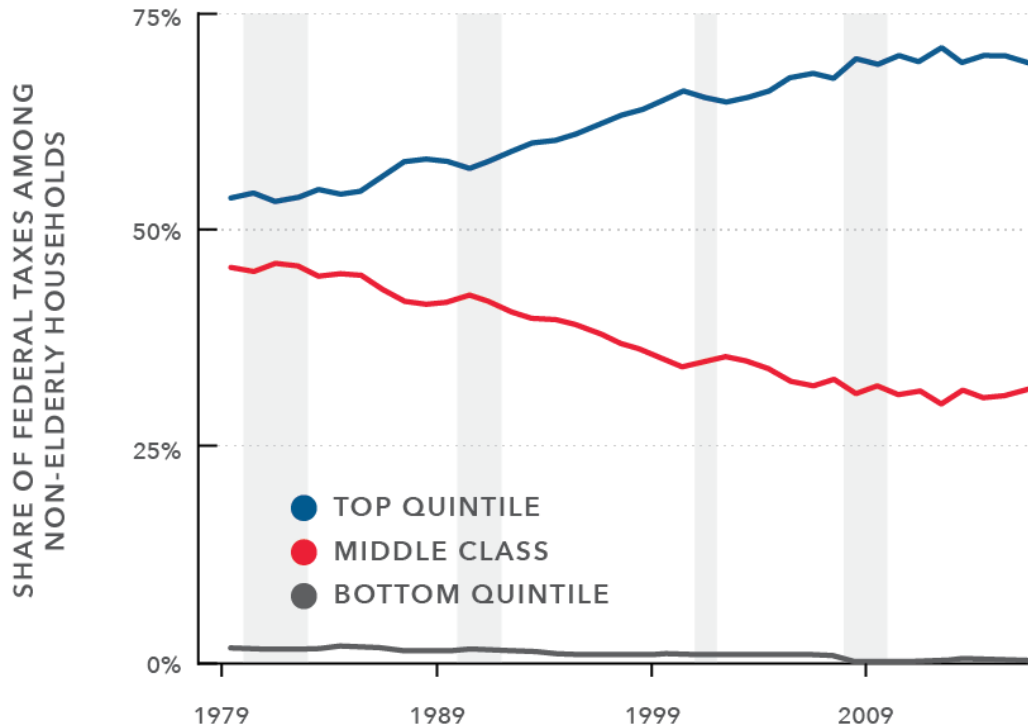
While the middle-class share of transfers has risen over time, their share of federal tax liabilities has fallen. Figure 10 shows the share of federal taxes paid by the non-elderly middle class, as well as those in higher- and lower-income quintiles. Since 1979, the share of federal taxes paid by the middle class has fallen from 45 percent to 31 percent, while the share paid by the top quintile of the distribution has increased from 53 percent to 69 percent.

One obvious factor contributing to the increased concentration of tax burdens is the rising concentration of taxable income among high-income households. The increasing concentration of income in top-income households and the fact that a larger share of their income is taxed at the highest rate under a progressive system means that other things equal, these households pay a larger share of taxes. In other words, among non-elderly households, the main reason the share of taxes paid by the top income quintile increased from 53 to 69 percent between 1979 and 2016 is that the share of market income earned by that group increased from 47 to 58 percent.

Yet even when controlling for this effect, taxes have become more progressive in the sense that average tax burdens on middle-class households have declined more than among higher-income households. Since 1979, average federal tax rates for the top 1 percent of non-elderly households

decreased almost 1 percentage point and for the bottom quintile decreased 11 percentage points. The larger decrease in the bottom of the distribution implies an increase in tax progressivity.[11]

Figure 11 shows two measures of increasing federal individual income tax progressivity. The Kakwani index (a Gini-like measure of tax progressivity) for non-elderly adults increased between 1985 and 2015 by nearly half. This was almost totally explained by expansions in earned income and child tax credits. Another indication of falling middle-class tax burdens is the share of non-elderly adults paying no income taxes. Between 1979 and 2018, this share increased from 22 to nearly 40 percent. Tax filers with children benefitted most from earned income and child tax credit expansions and this group had the largest increase in the share paying no income tax (Splinter 2019a).

Figure 11: Federal Individual Income Tax Progressivity and Share of Non-elderly Adults Paying No Income Tax, 1985–2025
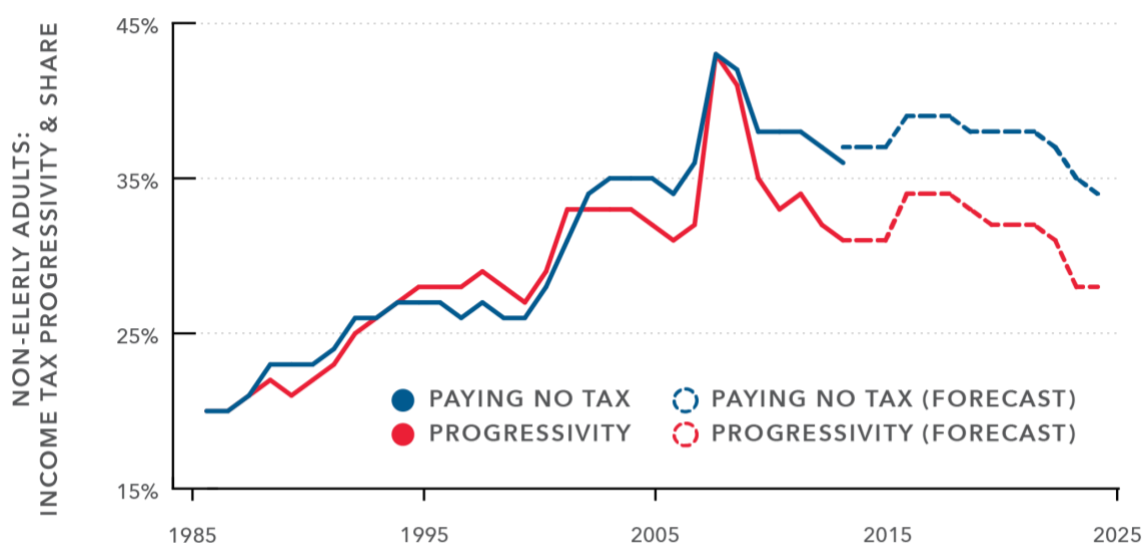
Source: Splinter (2019a).
Notes: Only includes tax units headed by non-elderly adults.

2.b.   Considerations Other than Income for the Well-Being of the Middle Class

The more positive long-run income trends for the middle class that are observed when using after-tax, after-transfer income are also consistent with self-perceptions about their financial well-being and economic progress. The 2018 Survey of Household Economics and Decisionmaking (SHED) found that 56 percent of people felt that they were better off financially than their parents were at the same age, compared to just 19 percent who thought they were

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[11] These tax rates follow the CBO approach of dividing by market income plus social insurance benefits. Although the post-2017 tax changes are expected to have little effect on tax progressivity (i.e., how taxes are allocated over the income distribution), they should reduce levels of redistribution because federal taxes declined by about a tenth (Kallen and Mathur 2019; Splinter 2019a).

doing worse than their parents. These results are nearly the same among people with middle-class incomes between $40,000 and $100,000 per year.

Nevertheless, economic anxieties remain for some households that may not be fully captured by income trends. In particular, some people face a lack of emergency savings, difficulty saving for retirement, or high levels of student loan debt. For example, the SHED suggests that 15 percent of middle-income adults of all ages expected to leave one or more bills partially or completely unpaid in late 2018, and an additional 10 percent would leave bills unpaid if faced with a $400 emergency. Similarly, these data suggest that 16 percent of middle-income non-retirees have no retirement savings. Consequently, while most middle-class households report they are doing at least okay financially, some are stretched financially and struggle both with their immediate expenses and long-term savings goals.

Additionally, some people face anxieties over other expenses that may be higher than for previous generations. The average annual cost for preschool-age childcare averages more than $9,000 (Childcare Aware of America 2019). The costs of childcare have far outpaced the rate of inflation in recent decades (Buffie 2016). Education costs and school debt have also increased rapidly. The net price of tuition, fees, room, and board at a four-year public institution rose by 70 percent in the last two decades, from about $9,000 to over $15,000 in 2019 dollars (CollegeBoard 2019). Consistent with this increase in higher education costs, more students are now borrowing for their education. The Federal Reserve Board (2019) finds that 30 percent of all adults incurred debt from their education, but among young adults (ages 18 to 29), 43 percent had done so.

Despite this rise in student loan debt in recent decades, most people who complete a degree think that the benefits of their education outweigh the costs. Those who feel that their education was not worth the cost are disproportionately people who either did not complete a degree or who went to for-profit institutions, which is consistent with the high rates of student loan default and delinquency found among these borrowers (Looney and Yannelis 2015). High costs of college and rising student loan debt reduce the net benefits of education for students. Yet for most, the net financial return remains positive and college graduates are typically better off financially than those who did not go to college.

Although these rising expenses pose a substantial concern for some middle-class households, subsidies through the tax code (tax expenditures) alleviate some of the burden of these specific expenses. Childcare is subsidized with both the dependent care tax credits and flexible spending accounts. Medical expenses are subsidized with the medical expense deduction. Education expenses are subsidized with the deduction of student loan interest, education tax credits, and section 529 savings plans. Among those receiving each type of subsidy, Joint Committee on Taxation (2019) estimates suggest that middle-class tax units (incomes between $40,000 and $100,000 and including the elderly) received an average of $600 for dependent care credits, $900

for medical expense deductions, and $600 for education credits. Upper-middle-class tax units (incomes between $100,000 and $200,000) have larger average subsides: $800 for dependent care credits, $2,200 for medical expense deductions, and $2,000 for education credits.

3. Implications

3.a.   The Role of Health-Care Spending in Middle-Class Economics

Health-care spending has clearly played a major role in the financial well-being of the middle class in recent decades. A substantial share of transfers is in the form of health insurance benefits, and the exclusion of employer-provided health insurance from taxation represents the largest tax benefit to middle-class households. Hence, healthcare costs increase the pressure on federal budgets as the cost of insurance has risen over time.

In addition, the rising cost of health care and health insurance is also one contributing factor to slower growth in middle-class cash wages over time. The average cost of health insurance to employers in 2019 was about three dollars per hour worked, or $6,365 per year for a full-time worker (Bureau of Labor Statistics 2019). This is up from $4,930 in 2009. Although this is a benefit that is valuable to employees, these health insurance contributions are a substitute for cash wages. As a result, to the extent that the cost of health insurance benefits has risen faster than inflation, it has slowed the growth in cash wages for workers.

While the design of federal health-care policy is beyond the scope of our analysis, we highlight health-care spending because of its outsized role in both government and middle-class budgets, and because many health economists believe the U.S. health-care system is uniquely inefficient. To the extent that health-care spending could deliver the same health outcomes and lower costs, efficiency enhancements could improve middle-class well-being and improve federal (and state) budgets.

3.b.   Will Federal Tax and Transfer Policies Continue to Boost Middle-Class Incomes?

The boost to middle-class incomes from federal policy is partially the result of changes in the budget that are unlikely to continue, like the reduction in defense spending as a percent of GDP and the increase in budget deficits over the last two decades. Government spending on public goods like defense, infrastructure, and research and development have already been reduced to historical lows, which means there is less capacity (and political interest) to swap "guns for butter." Whether recent levels of deficit spending are sustainable is unclear. But perpetual *increases* in deficits are clearly unsustainable. Hence, it is not possible that aggregate increases in net federal spending alone will fund increasingly generous middle-class transfers.

Absent aggregate increases in net transfers, the other avenue to boost the incomes of low- or middle-class households is through redistribution from higher-income households. While more redistribution is certainly feasible, there are also practical limitations to using taxes and transfers to increase material well-being, particularly for the middle class. The key limitations governing the capacity to tax higher-income households and transfer to lower-income households are the relative number and incomes of those households.

For instance, raising the incomes of poor households by "taxing the rich" is straightforward when the number of poor households receiving transfers is a relatively small share of the population. As these poor households earn only a small share of total income, meaningful increases in income can be financed with modestly higher taxes on the remaining tax base. However, increasing the number of households that benefit from transfers (or tax cuts) is costly for two reasons: First, it mechanically increases the number of recipient households and reduces the number of paying households. Second, it requires higher marginal tax rates on paying households that cause a narrowing of the tax base due to avoidance and behavioral changes.

Table 2 provides the results of a simple empirical exercise examining this tradeoff: If you raise the income of specified households by 10 percent and fund these transfers with taxes on higher-income households, what is the necessary tax rate? This illustrates upper bounds on the level of taxes and transfers. In the exercise, we assume that the new tax applies to a broad tax base, inclusive of all market income (including elements of market income currently excluded from tax or taxed at low rates, such as tax-exempt interest or capital gains and dividends), and abstract from practical considerations like how the transfer would be phased out. In practice, if the tax base is narrower or if transfer policies are phased out above the income thresholds we specify, then implied tax rates would be even higher. We also include households of all ages in this exercise, and not just the non-elderly households discussed above. Additionally, we assume a constant elasticity of taxable income, but to the extent that behavioral responses such as tax sheltering are non-linear, this could further underestimate the necessary implied tax rates.

Each panel of Table 2 shows a policy that boosts the income of a low-income group by 10 percent and pays for it by raising the tax rate on higher-income groups, where only income above the group's threshold is subject to the new tax. For instance, the top panel examines the policy of boosting the incomes after taxes and transfer of the bottom quintile of households by 10 percent. We estimate that this policy requires $87 billion in new revenues. Each row assumes that the increase in taxes applies to different income groups, starting with taxpayers in the top 80 percent and culminating with the top 1 percent (i.e., the tax applies to income above the 20th and 99th percentiles, respectively). For reference, the first column shows the current average (or effective) tax rate of higher-income taxpayers. The second column shows the new required average tax rate. The third and fourth columns show the increases in average and marginal tax rates; the latter equals the increase in the tax bracket rate if applied to all market income above the income

group threshold. The final column shows the minimum post-reform average marginal tax rate that must apply to all income above the threshold to achieve the required revenue.

When bottom-quintile households receive the transfer and taxes are increased for the top 80 percent, average and marginal tax rates of the higher-income group must increase by about 1 percentage point. With a modest fiscal cost and a broad tax base, only small changes in fiscal policy are needed to boost the material well-being of low-income households. Even when the tax increase is confined to the top 10 percent of households, their average tax rates must increase by 2 percentage points to fund the transfer; and when only taxing the top 1 percent, their average tax rates must increase by 6 percentage points.

However, expanding the transfer up the income distribution roughly doubles the cost for each additional quintile. And, it also narrows the available tax base (as income amounts under that threshold are no longer subject to tax, even if earned by higher-income households). For instance, when households in the bottom two quintiles are recipients of the transfer (which now costs $212 billion per year), as shown in Panel B, increases in average tax rates for the top 10 percent and 1 percent are 6 and 15 percentage points (and require increases in the marginal rates of 11 and 20 percentage points).

Table 2: Average Federal Tax Rates to Increase Certain Incomes by 10 Percent

Tax increase group	Average tax rates of tax increase group			Marginal tax rate increase	Post-reform average marginal tax rate
	Original	Post-reform	Increase		
Panel A: Increase incomes by 10 percent for bottom quintile. Cost: $87 billion					
Top 80%	27	28	1	1	32
Top 60%	28	29	1	2	34
Top 40%	30	31	1	2	37
Top 20%	32	33	2	3	40
Top 10%	33	36	2	4	42
Top 5%	35	38	3	5	43
Top 1%	37	43	6	8	48
Panel B: Increase incomes by 10 percent for bottom two quintiles. Cost: $212 billion					
Top 60%	28	31	3	4	37
Top 40%	30	33	3	6	41
Top 20%	32	36	4	9	45
Top 10%	33	39	6	11	48
Top 5%	35	43	8	13	51
Top 1%	37	52	15	20	60
Panel C: Increase incomes by 10 percent for bottom three quintiles. Cost $378 billion					
Top 40%	30	35	6	11	46
Top 20%	32	39	8	16	53
Top 10%	33	44	11	20	58
Top 5%	35	50	15	25	63
Top 1%	37	68	30	43	83
Panel D: Increase incomes by 10 percent for bottom four quintiles. Cost $607 billion					
Top 20%	32	44	13	27	64
Top 10%	33	52	18	36	74
Top 5%	35	61	26	46	85
Top 1%	37	infeasible	infeasible	infeasible	infeasible

Source: Authors' calculations using data from CBO (2019).
Notes: Incomes and taxes are for 2016. Only income above the tax increase group threshold is subject to the tax increase. An elasticity of taxable income of 0.35 is used to estimate new revenue-neutral tax rates and original marginal tax rates are assumed to equal average tax rates. No behavioral effects are included among transfer recipients. Income increases of 10 percent are based on after-tax, after-transfer income, which deducts federal taxes and includes all social insurance benefits and means-tested transfers. Quintiles are defined based on household size-adjusted market income of households of all ages, and individuals of all ages are included in these calculations. The bottom quintile excludes those with negative incomes. Although not accounted for, this simple exercise would result in some re-ranking of households.

When extending transfers to cover the middle class, the cost of the transfer increases substantially. This is because, in addition to increasing the number of recipients, the newly eligible households have higher incomes that require additional resources to raise their incomes

by 10 percent. Furthermore, because the increase in tax rates must start at a higher income level (and thus, on a narrower base) the required tax rate increase is substantially greater. Panel D shows how increasing incomes of all households in the bottom four quintiles (i.e., below the 80th percentile) affects average tax rates. This policy costs $607 billion per year. Taxing households in the top 10 percent to fully fund this transfer would increase this group's average tax rate by 18 percentage points, but require their marginal tax rate to increase by 36 percentage points to 74 percent. There is no historical precedent for applying marginal rates of this magnitude to a significant fraction of the population, which would be necessary to fund a 10 percent increase in middle-class incomes.[12] Finally, the top 1 percent could not pay for this middle-class income increase, because the necessary marginal tax rate would exceed 100 percent. While the analysis shows that increases in progressivity and government revenues are clearly feasible, it also suggests larger tax increases concentrated among narrower groups of taxpayers require increasingly outsized changes in tax rates.

Conclusion

On average, non-elderly, middle-class households pay slightly more in taxes than they receive in current transfers and social insurance benefits. While this might suggest that federal policies are neutral—taking in the same amount in taxes as it provides in benefits—several caveats apply.

First, federal policies redistribute across different types of middle-income households and over the course of their lifetimes. For instance, other things equal, households with children benefit more from federal policies as does the lower-middle class as compared to the upper-middle class. Moreover, a substantial fraction of the current tax burden on non-elderly households is in the form of payroll taxes that fund Social Security and Medicare benefits those households will draw on in the future. An implication is that the annual burden from payroll taxes exaggerates the lifetime burden on these households.

Second, federal policies provide substantial insurance to middle-class households against unemployment, disability, or spending needs. Many middle-class households experience such risks temporarily. Hence, a sizable share of benefits from means-tested transfers and low-income tax provisions accrue to middle-class households over the course of their lives.

Finally, changes in transfers and federal tax policies have increasingly boosted the incomes of the middle class over time. Increasing means-tested transfers (primarily related to health care and disability) and decreasing income taxes largely explain this trend. Since 2000, non-elderly, middle-class incomes grew three times faster when accounting for transfers and federal taxes.

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[12] When top individual income tax rates were on this order in the early 1960s, only a few thousand tax returns (less than 0.01 percent) were subject to these rates, in part from the tax sheltering that they caused (Splinter, 2020).

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